

On behalf of
Vantage Data Centers DUB11 Limited



Date
February 2022

Project Number
1620012232-003

KILCARBERY SUBSTATION AND TRANSMISSION LINES ENVIRONMENTAL IMPACT ASSESSMENT REPORT NON-TECHNICAL SUMMARY

KILCABERY SUBSTATION AND TRANSMISSION LINES NON-TECHNICAL SUMMARY

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1. INTRODUCTION

1.1 Purpose of Non-Technical Summary

This is the Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) which has been prepared by Ramboll UK Limited (Ramboll) and a team of technical specialists in accordance with the statutory procedures set out in the Planning and Development Act 2000 (as amended)¹ (the 'Act') and the Planning and Development Regulations 2001 (as amended)² (the 'Regulations').

The EIAR has been prepared to accompany a planning application for full planning permission (the 'application') made by Vantage Data Centers DUB11 Limited (the 'Applicant') to An Bord Pleanála (ABP) in respect of the proposed development for Kilcarbery Substation and Transmission Lines (the 'proposed development') in Profile Park, Dublin (the 'site') within the jurisdiction of South Dublin County Council.

The development proposals comprise construction of a 110kV Gas Insulated Switchgear (GIS) Substation, 3 no. transformer bays, a client control building and associated compounds, site infrastructure and underground transmission lines.

This NTS presents a summary of the main findings of the environmental impact assessment (EIA) that has been undertaken of the proposed development and that has been reported in the EIAR. The NTS provides:

- a description of the site and surrounding context;
- an outline of the reasonable development alternatives considered by the Applicant and an indication of the main reasons for their choice, taking into account the potential environmental impacts;
- a description of the proposed development; and
- a summary of the likely significant environmental effects predicted and key mitigation measures (as relevant).

The aim of the NTS is to summarise the main findings of the EIAR in a clear and concise manner to assist the public in understanding what the significant environmental effects of the proposed development are likely to be. Reference can be made to the full EIAR if further detail is required.

1.2 Viewing of EIAR and Application

The full EIAR comprises the following:

- Non-Technical Summary (this document);
- Volume 1: Main Environmental Impact Assessment Report;
- Volume 2: Landscape, Visual and Cultural Heritage Impact Assessment; and
- Volume 3: Technical Appendices.

The planning application and the EIAR may be inspected during public opening hours at the following locations:

- The Offices of An Bord Pleanála, 64 Marlborough Street, Dublin 1.
- South Dublin County Council, County Hall, Town Centre, Tallaght, Dublin 24.

¹ Government of Ireland, 2000. Planning and Development Act 2000 (as amended). ISB. S.I. No. 30/2000.

² Government of Ireland, 2001-2019. Planning and Development Regulations 2001 (as amended). S.I. No. 600 of 2001. ISB.

The application may also be viewed/downloaded on the following website: www.KilcarterySID.ie

CD versions of the full EIAR are available for purchase from Ramboll at:

240 Blackfriars Road

London

SE1 8NW

Tel: 0207 808 1499

1.3 Commenting on Application

Submissions or observations may be made only to An Bord Pleanála ('the Board'), 64 Marlborough Street, Dublin 1.

2. ENVIRONMENTAL IMPACT ASSESSMENT

2.1 EIA Process and Methodology

EIA is a process that identifies the likely significant environmental effects (both positive and negative) of a proposed development. The process aims to prevent and, where prevention is not possible, to reduce and/or mitigate any significant negative environmental effects, where these are identified, and to enhance any positive effects. It is an iterative process which proactively seeks to integrate mitigation within the development proposals so as to avoid significant effects from arising.

The EIA process adopted for the proposed development has followed best practice guidelines, as set out by the Institute of Environmental Management and Assessment (IEMA) Quality Mark scheme. The process involved the following key steps:

- Consultation with key stakeholders such as the relevant authority, on the issues to be considered within the EIA;
- Collection, use and assessment of the baseline information and likely evolution of that baseline without the proposed development or in the future;
- Interpretation of the proposed development planning drawings and schedules, as well as the formulation of assumptions in the absence of information, as the basis for the individual technical assessments;
- Use of relevant guidance and good practice methods to predict the likely nature, scale, and significance of any environmental change; and
- Reporting of the results of the EIA process in the EIAR in a transparent way, to provide the information required to inform the decision-making process.

2.2 EIA Scoping

The Applicant submitted a pre-application consultation request to ABP on 27 July 2021 and prepared a formal EIA Scoping Opinion Request Report (the 'EIA Scoping Report'). A pre-application meeting was held on 14 October 2021 at which ABP, the client and the project planning consultant attended. The purpose of this meeting was to discuss the scope of the project and to confirm that an EIA would be undertaken. Overall, ABP confirmed their agreement on the approach. The EIA has been undertaken on the basis of the EIA Scoping Report.

ABP confirmed on 25 November 2021 that the proposed development falls within the scope of section 182A of the Planning and Development Act, 2000 as amended and that the proposed development would be strategic infrastructure within the meaning of section 182A of the above, and that an application for such development should be made directly to ABP. This EIAR has been prepared to support that application.

2.3 Topics Included in EIA

The following topics were scoped into the EIA as technical assessment chapters:

- Population and Human Health;
- Transport and Accessibility;
- Air Quality;
- Noise and Vibration;
- Water Resource and Flood Risk;
- Ecology;

- Ground Conditions;
- Climate Change;
- Waste;
- Material Assets;
- Landscape and Visual Impact Assessment; and
- Culture Heritage.

2.4 Topics Excluded from the EIA

The following topics were scoped out of the EIA as technical assessment chapters:

- Daylight, Sunlight and Overshadowing;
- Wind Microclimate;
- Major Accidents and Disasters.

2.5 Assessment Approach

The EIAR provides assessments of potential significant environmental effects during construction and once the proposed development is in operation. Each technical assessment considers different types of effects including direct, indirect, reversible, irreversible, and cumulative; momentary, brief, temporary short-term, medium-term, long-term and permanent; positive, neutral, and negative effects.

Each of the above scoped-in environmental topics have been addressed in a separate technical assessment chapter in EIAR Volumes 1 and 2. In each chapter, a description of the assessment methodology is given together with the existing site conditions. This is followed by an assessment of the likely effects of the proposed development taking into account mitigation measures that are embedded in the development proposals; the consideration of the need for additional mitigation or any recommendations for enhancement measures to reduce or offset any significant negative effects identified during the assessment; and a concluding assessment on the residual effects that would remain after these measures have been implemented.

The technical assessment chapters report upon the likely scale as defined in EPA Guidelines³ (Imperceptible, Not-Significant, Slight, Moderate, Significant, Very Significant and Profound), nature (Positive, Neutral, and Negative) and significance in EIA terms (Significant and Not Significant) of environmental effects.

Consideration is also given to the cumulative effects of the proposed development. The following two types of cumulative effects have been assessed:

- Intra-Project effects are different types of impacts from the proposed development that could interact to jointly affect a particular receptor or receptor group at the site. Potential impact interactions could include the combined effects of noise and dust during construction activities on a particular sensitive receptor; and
- Inter-Project effects which are combined, or additive effects generated from the proposed development together with other 'approved or existing projects' ('cumulative developments') as defined by the Planning and Development Regulations 2001 (as amended)⁴. These cumulative schemes may generate their own individually insignificant effects but when

³ Environmental Protection Agency, 2017. Draft Guidelines on the information to be contained in Environmental Impact Assessment Report.

⁴ Government of Ireland, 2001-2019. Planning and Development Regulations 2001 (as amended). S.I. No. 600 of 2001. ISB.

considered together could amount to a significant cumulative effect, for example, combined transport and accessibility impacts from two or more schemes.

The proposed list of cumulative schemes is provided in EIAR Volume 1, Chapter 2: EIA Process and Methodology.

A list of nine cumulative schemes were identified for assessment during this process. The locations of these cumulative schemes are presented in Figure 2.1.

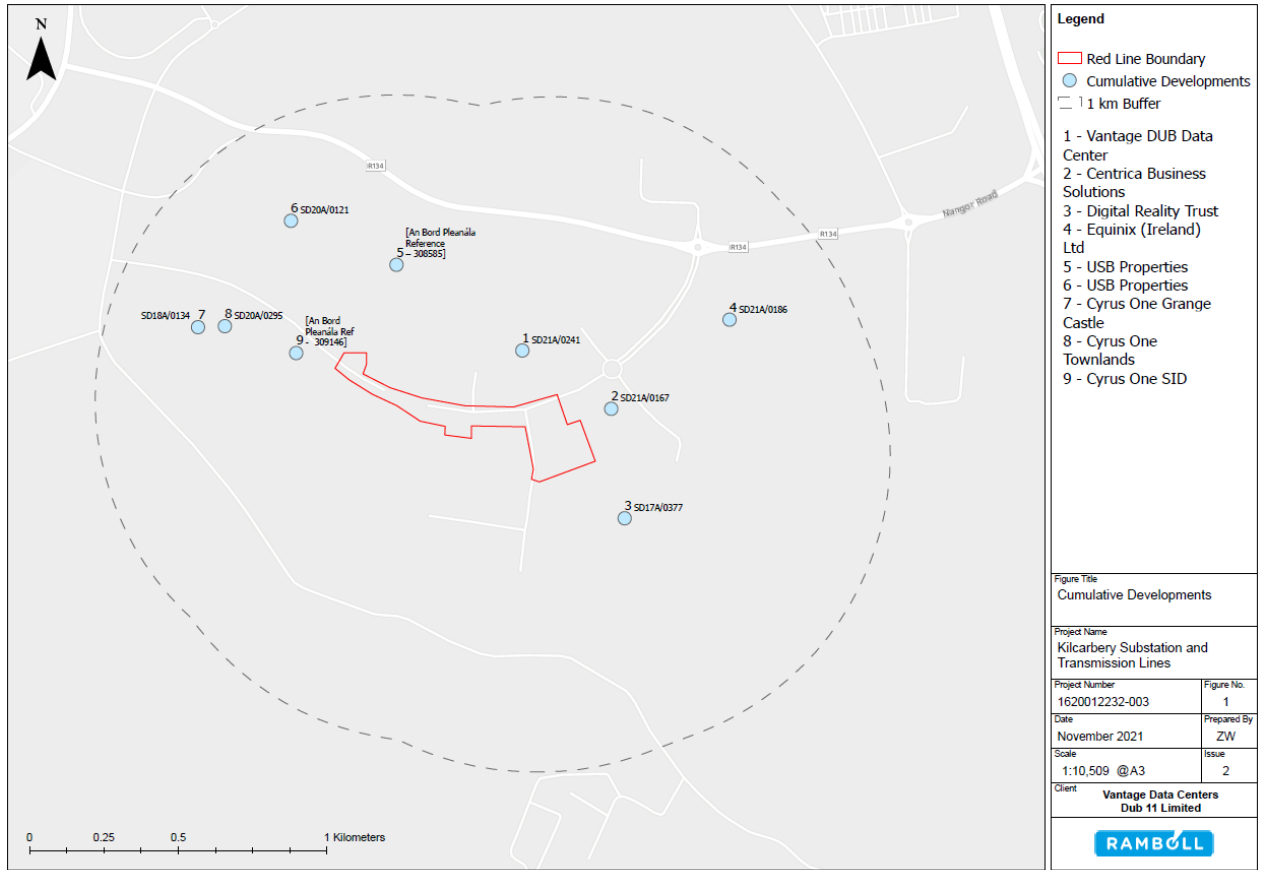


Figure 2.1: Location of Cumulative Developments

3. EXISTING SITE AND SURROUNDING CONTEXT

3.1 Site Location

The site is located at Irish grid reference O 03647 30493, within Profile Park, as presented in Figure 3.1.

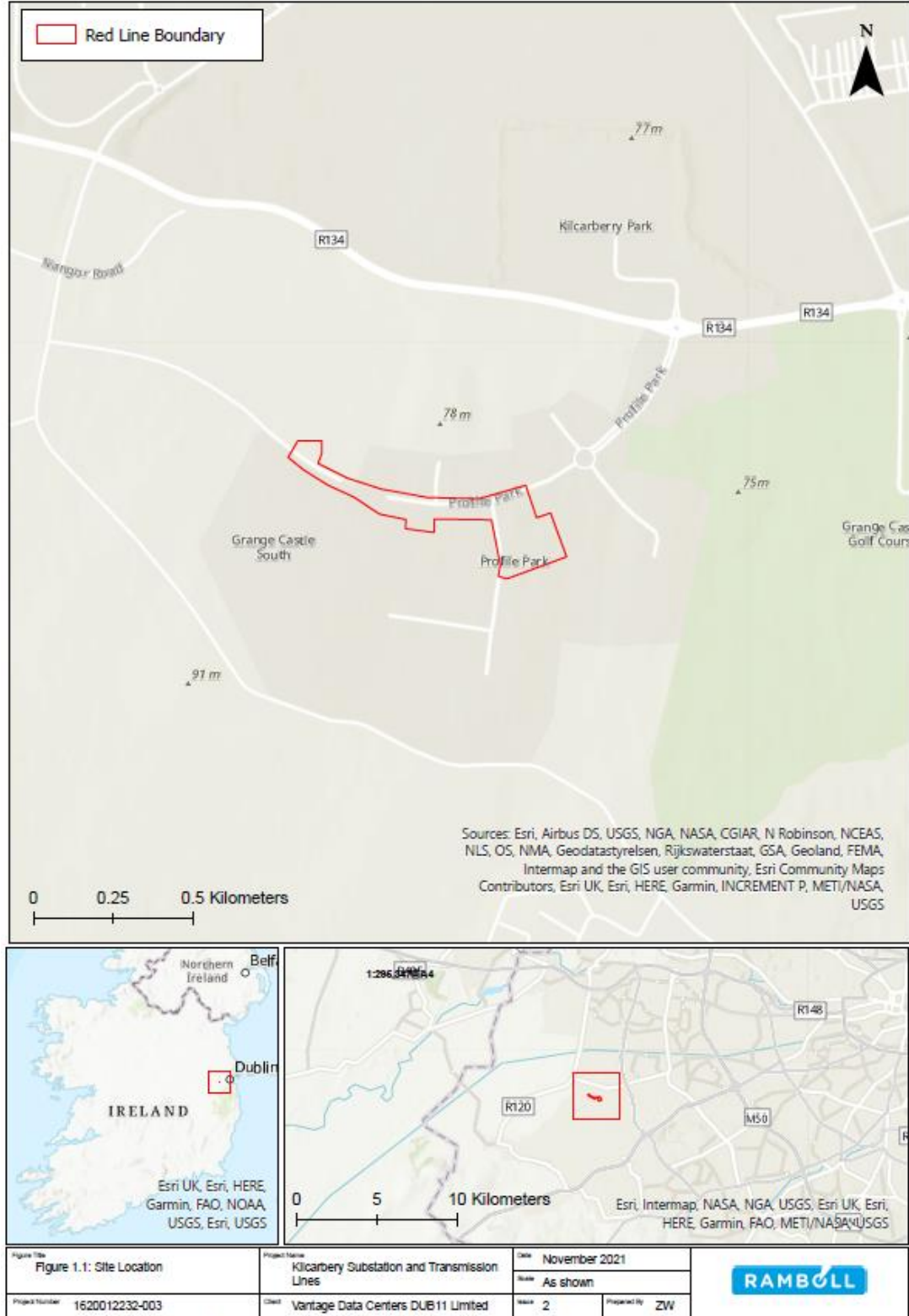


Figure 3-1: Site Location Plan

3.2 Site Description

The site boundaries are defined by:

- Falcon Avenue along the northern boundary, beyond which is undeveloped land, proposed to be developed into a Data Center by Vantage (under planning reference SD21A/0241, subject to an additional information request from SDCC);
- Agricultural fields to the east, beyond which is Grange Castle Golf Club;
- Barnakyle Substation to the southwest and Digital Reality Profile Park to the southeast, beyond which lies Casement Aerodrome; and
- A data centre development on agricultural fields to the northwest and Castlebaggot Substation.

The site is an irregular parcel of land, extending to approximately 3.19 ha in area and is predominately occupied by agricultural fields with areas of hardstanding comprising roads and paths associated with roads within Profile Park.

The site is accessed from one access/egress point from Falcon Avenue to the north, which leads to a roundabout on the R134 New Nangor Road.

Representative photographs of the site are shown in Figure 3.2.



View at the north-western corner of the Site facing east on Falcon



View of the Site facing



View of the Site facing southeast

Figure 3-2: Site Photographs

3.3 Environmental Considerations

3.3.1 Water Resources

The Baldonnel Stream runs approximately east to west approximately 150m north of the site. Further surface water features are present within the Grange Castle Golf Club situated approximately 300m east of the site.

3.3.2 Ecology

The Proposed Development does not lie within or directly adjacent to any statutory or non-statutory designated environmental sites. The Grand Canal is located approximately 2 km north of the site and is classified as a proposed Natural Heritage Area (NHA). No other ecologically

protected sites such as Special Protection Areas (SPA), Special Areas of Conservation (SAC), National Parks or Nature Reserves are located within 1 km of the site.

3.3.3 Below and Above Ground Heritage

There are no recorded archaeological sites listed on the Sites and Monuments Record (SMR) or Record of Monuments (RMP) anywhere within the site boundary. A scheme of test trenching in June 2021 revealed the remains of an oval/circular enclosure approximately 40m in diameter, as well as two linear ditch features likely to be former field boundaries on site. Other similar circular enclosures of probable medieval date are recorded or have been fully excavated in the study area and are generally considered as being included on the RMP.

3.3.4 Transport and Accessibility

The site benefits from good road network structure within Profile Park connecting to the local road network. The site is directly bordered to the north and west by Falcon Avenue. In terms of public transport, the closest railway station to the site is at Clondalkin/Fonthill approximately 3 km to the north-east from which frequent commuter services to/from Dublin city centre can be accessed. Citywest Campus Luas Tram Stop is approximately 4 km to the south-east of the site from which frequent tram services to Dublin city and beyond can be accessed.

3.3.5 Landscape Setting

The location of the site is within a range of land types which contributes to its fragmented character. The sites proximity to the urban area of Dublin gives the area an 'urban fringe' or 'transitional' character as you move from the urban to limestone farmland character type.

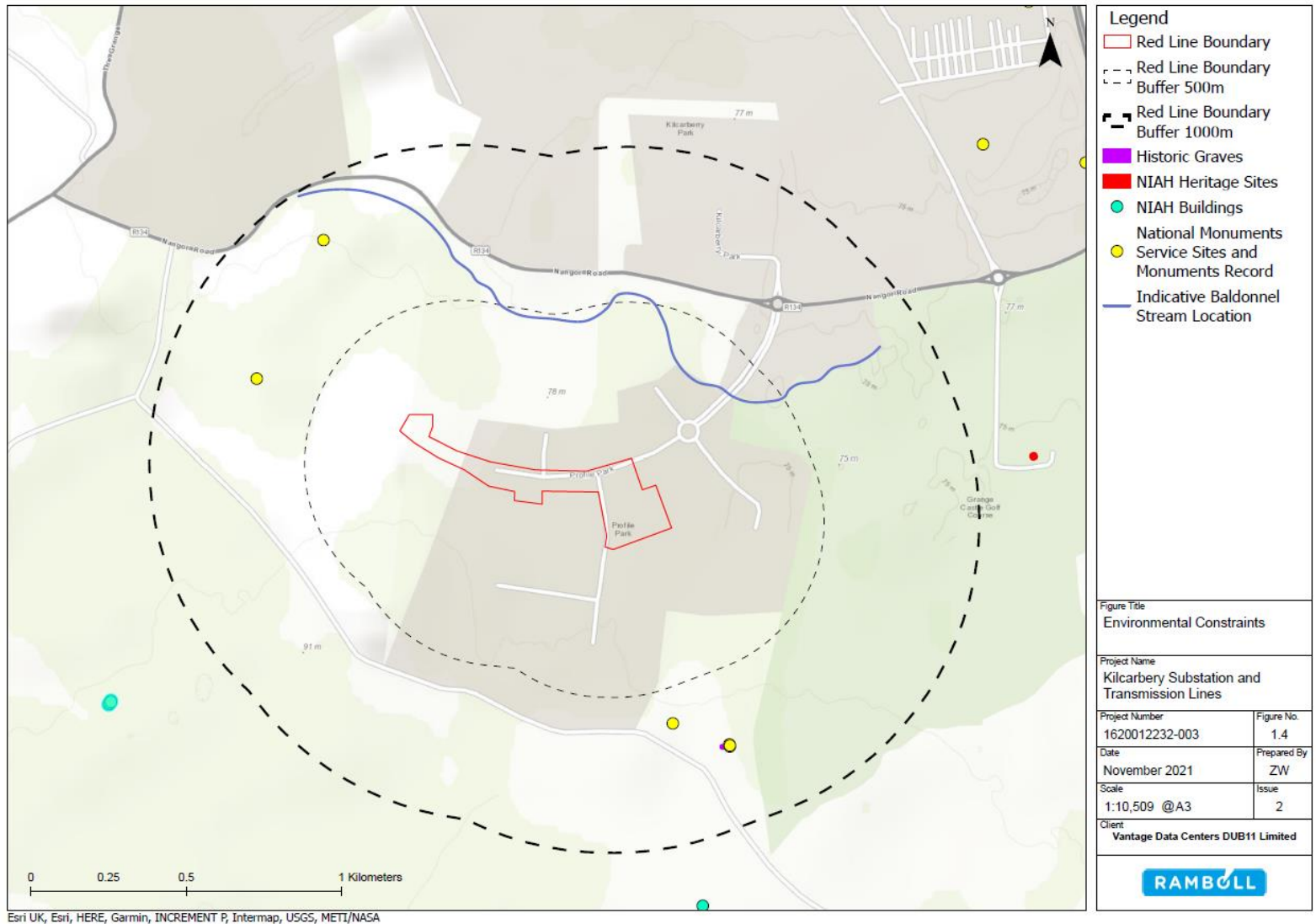


Figure 3-3: Surrounding Environmental Considerations

4. PLANNING CONSIDERATIONS

4.1 Policy Context and Designations

The proposed development constitutes a strategic infrastructure development (SID) application under Section 182A of the Planning & Development Act 2000 (as amended) as the development includes high voltage (110kv or more) electricity transmission lines and interconnectors. Therefore, the development provides the potential for significant effects on the environment and the Applicant has decided to undertake an EIAR on this basis.

For the application, it is necessary to consider the proposed development against relevant policies and guidance a national, regional, and local levels. At the national level, planning policy is contained within the National Planning Framework (NPF) and supported by the National Development Plan (NDP). Furthermore, the National Climate Action Plan for Ireland⁵ was published in November 2021 and is materially relevant to this EIAR.

At the regional level planning policy comprises the:

- Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (2019)⁶.

The local planning policy for the site comprises the:

- South Dublin County Council Development Plan 2016-2022 (2016)⁷.
- Draft South Dublin County Development Plan 2022-2028 (Ongoing)⁸

Under the South Dublin County Council Development Plan the site is classified under Objective EE: to provide for enterprise and employment uses.

In addition, a range of regional supplementary guidance documents are relevant to the determination of the application and have been considered in undertaking the EIA.

4.2 Planning History

There are no relevant historical planning applications at the site in the last 5 years. The site proposed for the associated new data center to the north of Falcon Avenue has an extant permission dated November 2020 under SD20A/0124 for the demolition of existing single storey dwelling and construction of a distribution warehouse building comprising warehousing with support offices, car parking, cycle parking, landscaping and boundary treatments, including all associated site development and services works.

However, this extant permission, will not be built out. Instead, the site is proposed to be developed into a data center by the Applicant under planning reference SD21A/0241 dated August 2021. The scheme proposed under SD21A/0241 comprises the demolition of the existing single-story dwelling and outbuilding, (approximately 206 sqm), erection of the two data centers along with associated emergency generators and flues with a gross floor area of approximately 40,589sqm, provision of 144 car parking spaces and 66 bicycle parking spaces provision, construction of a gas-powered generation plant, and realignment of the Baldonnell Stream. The application is currently subject to a further information (FI) request by SDCC. It is understood that in the instance that SD21A/0241

⁵ Government of Ireland, 2021. Climate Action Plan. Department of the Environment, Climate and Communications.

⁶ Eastern & Midland Regional Assembly, 2019. Regional Spatial & Economic Strategy 2019-2031 [online]. Available at: https://emra.ie/dubh/wp-content/uploads/2020/05/EMRA_RSES_1.4.5web.pdf [Accessed on 20/07/2021]

⁷ SDDC, 2016. South Dublin County Council Development Plan 2016-2022 [online]. Available at: <https://www.sdcc.ie/en/services/planning/development-plan/plan-2016-2022/> [Accessed on 28/06/2021].

⁸ South Dublin County Council, 2021. South Dublin County Development Plan 2022-2028 [online]. Available at: <https://consult.sdblincoco.ie/en> [Accessed 19/07/2021]

does not come forward the Applicant would not build out the extant permission and the site would remain vacant.

The proposed development described herein would support the power demand for the data center proposed under SD21/0241 which is considered cumulatively as part of this EIAR.

5. DESIGN EVOLUTION AND ALTERNATIVES

European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018^{9,10} requires that information provided by the developer in an EIAR shall include a description of the reasonable alternatives (for example in terms of development design, location, size and scale) studied by the Applicant¹¹, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects.

The design evolution has been informed by the Applicant's development objectives; policy considerations, site design considerations and environmental considerations.

The EIAR considers the following alternatives:

- The 'Do-Nothing' alternative;
- Alternative locations and uses; and
- Alternative design/layouts of the proposed development.

5.1 'Do Nothing' Scenario

The 'Do Nothing' scenario is a hypothetical alternative conventionally considered in EIA as a basis for comparing the development proposal under consideration. The 'Do-Nothing' scenario, in the sense that the site is left in its current state, is not considered to be a viable or reasonable alternative and is therefore not a realistic scenario when considering the following:

- The site consists of largely unused agricultural land and the site needs to be re-purposed;
- The site is located within Profile Park, on current agricultural land, which is designated in the SDCC Development Plan 2016-2022: Objective EE to provide for enterprise and employment uses. This gives the encouragement for development which seeks to provide alternative uses to those that have recently occupied the site;
- The site has been identified for strategic infrastructure development by EirGrid; and
- Furthermore, within the Development Plan, the proposed Kilcarbery substation would support RPO 10.19 through to RPO 10.23 to support Ireland's need for a secure and resilient supply of energy.

In the event that the proposed development at the site, or any other development, did not come forward, a number of negative effects and lost opportunities would result:

- Loss of investment in infrastructure at the site to support future development at Profile Park;
- Loss of opportunity to maximise the productive use of the site;
- Loss of opportunity for further economic and employment growth associated with the data center the proposed development would support; and
- Loss of opportunity to further establish Profile Park and the surrounding area as a data center hub.

5.2 Alternative Sites

No alternative sites were considered for the following reasons:

⁹ Government of Ireland, 2018. European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. S.I. No. 296/2018. ISB.

¹⁰ Later amended to: Government of Ireland, 2018. European Union (Planning and Development) (Environmental Impact Assessment) (Amendment) Regulations 2018. S.I. No. 646/2018. ISB.

¹¹ See Article 5(1)(d) of Directive. See Schedule 6(1)(d) to the Regulations.

- The site has been procured by the Applicant and the Applicant has received letters of consent from neighbouring landowners who have their land crossed by the transmission lines;
- EirGrid specified that the Applicants transformer compound must sit next to the EirGrid GIS substation that was identified for this site;
- The site sits within an area that allows it to be used by potential future customers (i.e. doesn't sit within the same land parcel as the adjacent data center development proposed by the Applicant under application reference SD21A/0241), and therefore other developments, most likely other future data centers, may be able to use the substation in the future;
- The site is located within an area identified in SDCC's Development Plan 2016-2022 as an area for enterprise and employment uses (as previously stated);
- There is a long-standing agreement for an EirGrid substation to be located on the site; and
- There is no evidence of site contamination on the site making it suitable for redevelopment.

5.3 Alternative Land Uses

The proposed land use has been informed by prevailing local and regional policy (as previously stated) and there is a long-standing agreement for an EirGrid substation to be located on the site. Accordingly, no other land uses were considered outside of the proposed development.

5.4 Alternative Layouts, Designs and Design Evolution

Through the design and development process a series of concept options were explored and discussed by the Applicant's design team. These sought to define the most appropriate design response for the site.

As part of the initial design process, the design team carried out a 'test-fit' exercise to assess the layout of the transformer compound and substation (within the confines of the standard specification requirements of EirGrid) and the design of the grid route, including the cabling route and potential connection points. This exercise is displayed in Table 5.1-5.3.

Table 5.1 describes the evolution process of the standard EirGrid substation design for a 100kV 8 Bay substation with Table 5.2 outlining the layout evolution within the site boundary. Table 5.3 summarises the evolution of the proposed grid route and connection points to Barnakyle and Castlebaggot substations.

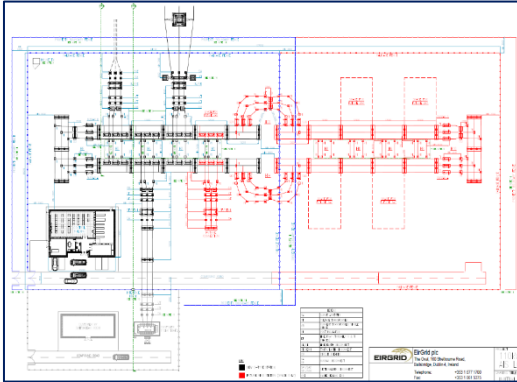
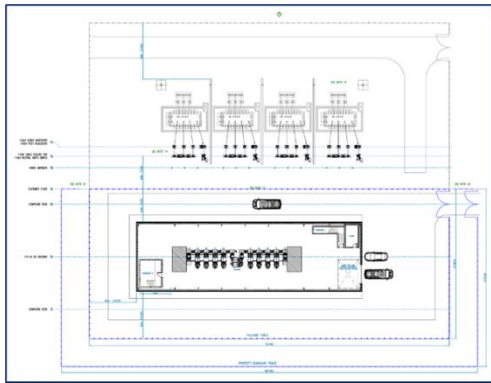

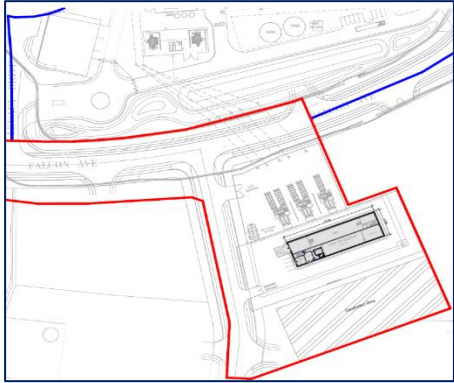

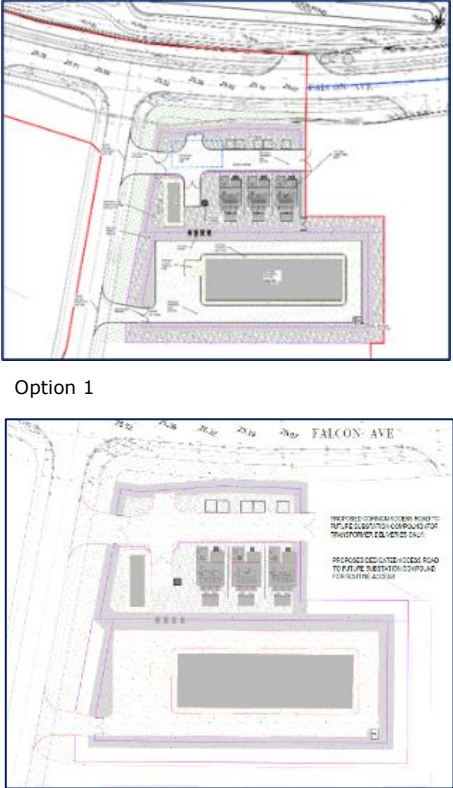
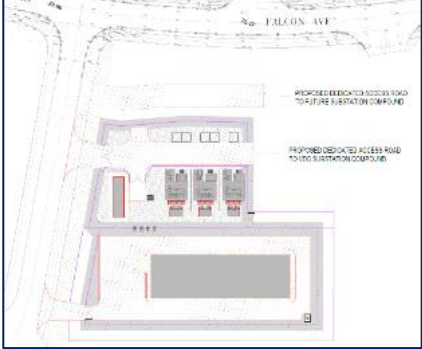
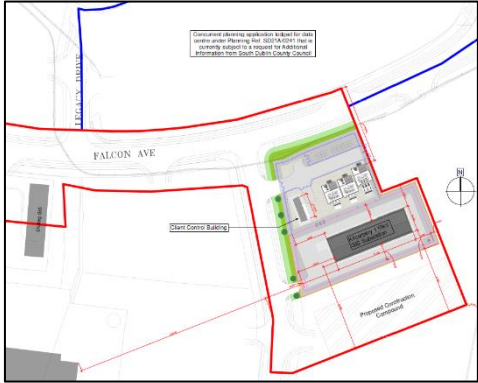
Table 5.1: Test-fit exercise for Standard EirGrid Design for a 110kV Eight-bay Substation			
Step	Layout	Description	Suitability
1 Standard EirGrid design for a 110kV eight-bay AIS (Air Insulated Switchgear) Substation		Air Insulated Switchgear (AIS) substations occupy a large area and have a significant visual impact as all equipment is visible to the public when compared to alternative GIS substations. They are generally constructed in rural locations, away from population centres and where land is less expensive.	These types of substations are more suited to wind and solar farm developments and as such, were deemed unsuitable for this development.
2 Standard EirGrid design for a 110kV eight-bay GIS (Gas Insulated Switchgear) Substation		GIS substations occupy a smaller footprint and are fully contained within industrial style buildings common to business parks etc.	Due to the smaller footprint and visual similarity to data halls found within data centre campuses this option was deemed suitable.

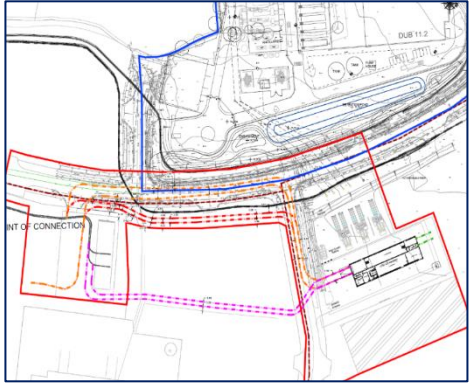
Table 5.2: Test-fit exercise for Substation		
Step	Layout	Design Evolution Explanation
1 Initial Concept Drawing		The initial concept drawing was based on the application of the EirGrid standard GIS layout (seen in Table 5.1) within the site boundary. The Applicants requirements were also incorporated in the transformer compound in the north of the site.

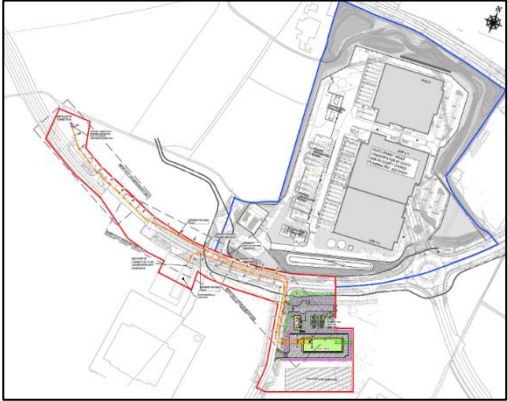
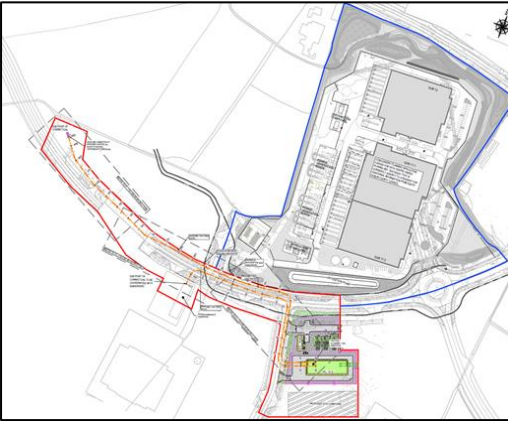
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<p>2 Refined Compound Layout</p>		<p>Design evolution through detailed design with the roadways between the transformer and EirGrid compounds removed as they did not align with the standard EirGrid requirements.</p>
<p>3 Further Refined Compound Layout</p>		<p>The layout continued to be refined with a common access roadway to the adjacent land to the east added and AIS equipment in the compound was removed due to spatial constraints.</p>
<p>4 Access Layout Refinements</p>	 <p>Option 1</p> <p>Option 2</p>	<p>Three discussion layouts were developed to reach agreement with adjacent landowners regarding access to adjacent sites. Option 3 was agreed as the preferred layout.</p>

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	 <p>Option 3</p>	
<p>5 Confirmed Compound Layout Plan</p>		<p>Based on the above agreement and final minor design revisions the layout was refined and confirmed for submission to ABP.</p>

<p>Table 5.3: Test-fit exercise for Grid Route</p>		
<p>Step</p>	<p>Layout</p>	<p>Design Evolution Explanation</p>
<p>1 Initial Three Options</p>		<p>The Applicant has obtained a Connection Agreement from EirGrid stating that they are to connect to Barnakyle and Castlebaggot Substations. Three options for the grid connection route were explored and are shown on this drawing in orange (Option 1), red (Option 2) and purple (Option 3).</p>

<p>2 Refinement of Options 1 and 2</p>		<p>Option 3 was discounted after an assessment of land ownership constraints. Options 1 & 2 were refined based on further information obtained from ground investigations, as built services information, and internal discussions within the design team. EirGrid also advised that a connection point to Castlebaggot Substation was required further to the west which caused an extension to the red line boundary.</p>
<p>3 Agreed Grid Route</p>		<p>Connection points to Castlebaggot and Barnakyle Substations were refined with EirGrid and the routing design was confirmed for submission to ABP.</p>

Due to the requirement for the GIS substation to be designed to EirGrid standard specifications there has been limited potential for significant design evolution at the site.

The main area of evolution has been in the site access arrangements, and the layout of the site has been developed to allow segregated access for construction works and site maintenance workers to the Applicants transformer compound, and for EirGrid to the GIS substation. These individual access points are from the service road that connects to a single access road from Profile Park. A further access route has been incorporated within the transformer compound to provide access to land adjacent to the eastern boundary of the site.

6. PROPOSED DEVELOPMENT

6.1 Proposed Development Description

The Applicant is submitting a full planning application for the following:

"The proposed development primarily comprises the provision of two no. 110kV underground transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound along with associated and ancillary works and is described as follows:

- The proposed 110kV GIS Substation Compound is to be located on lands to the south of those that are subject of an application for 2 no. data centres under South Dublin County Council Reg. Ref. SD21A/0241 and to the south of Falcon Avenue within Profile Park, and within an overall landholding bound to the north by Falcon Avenue, Profile Park; to the west by Casement Road, Profile Park; and to the east and south by undeveloped lands; and partly by the Digital Reality complex to the south-east within Profile Park, Clondalkin, Dublin 22. The site of the proposed development has an area of c. 3.19 hectares.*
- The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,477sqm) (known as the Kilcarbery Substation), three transformers with associated ancillary equipment and enclosures, a single storey Client Control Building (with a gross floor area of 51.5sqm), lightning masts, car parking, associated underground services and roads within a 2.6m high fenced compound and all associated construction and ancillary works.*
- One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV Barnakyle Substation to the west. The proposed transmission line covers a distance of approximately 274m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass under the internal road network within Profile Park to where it will connect into the Barnakyle substation.*
- One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV underground Castlebaggot - Barnakyle circuit to the west within the Grange Castle South Business Park. The proposed transmission line covers a distance of approximately 492m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass both under, and to the north of the internal road network within Profile Park and Grange Castle Business Park South where it will connect into the Castlebaggot - Barnakyle circuit at a proposed new joint bay.*

The development includes the connections to the two substations (existing and proposed) as well as to the Castlebaggot - Barnakyle circuit, associated underground services, and all associated construction and ancillary works."

In summary, the proposed development would comprise the following:

- A client control building and three transformers;
- A two storey GIS substation building;
- A single circuit underground 100kV transmission line connection to Barnakyle Substation; and
- A single circuit underground 100kV transmission line connection to and Castlebaggot-Barnakyle circuit.

6.2 Site Arrangement

The northern part of the site would be occupied by the unmanned client control building, three oil-filled step-down 110/20 kV power transformers, MV switchgear and the pulling chambers for the MV circuit and connections to the data center buildings to the north.

The two storey GIS substation would be located in the southern part of the site and has been designed to meet EirGrid's standard specifications.

6.3 Land Use Distribution

The summary floorspace schedule for the proposed development is presented in Table 6.1.

Table 6.1: Floorspace Schedule	
Use	Gross External Area (GEA) m²
Client Control Building	57.8
Two Storey GIS Substation Building	836
Total	893.8

NON-TECHNICAL SUMMARY
 KILCABERY SUBSTATION AND TRANSMISSION LINES

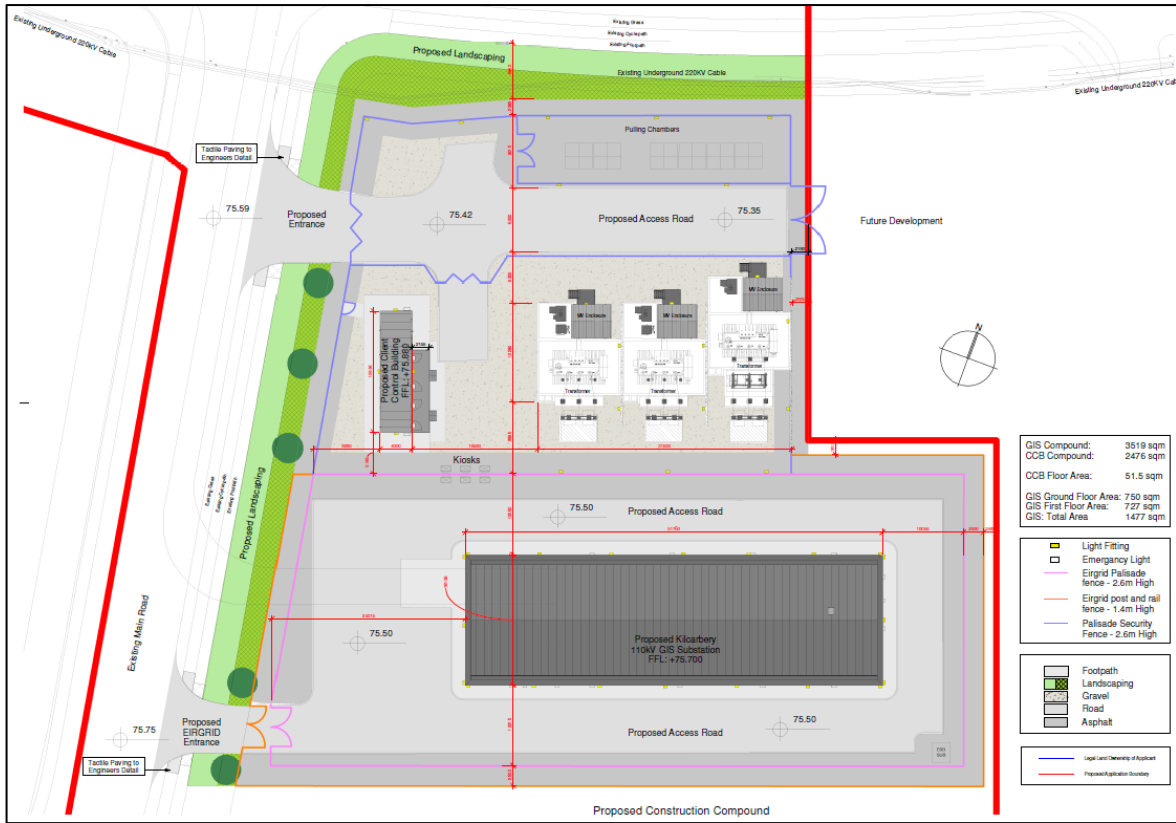


Figure 6-1: Proposed Compound Layout (Source KTA)

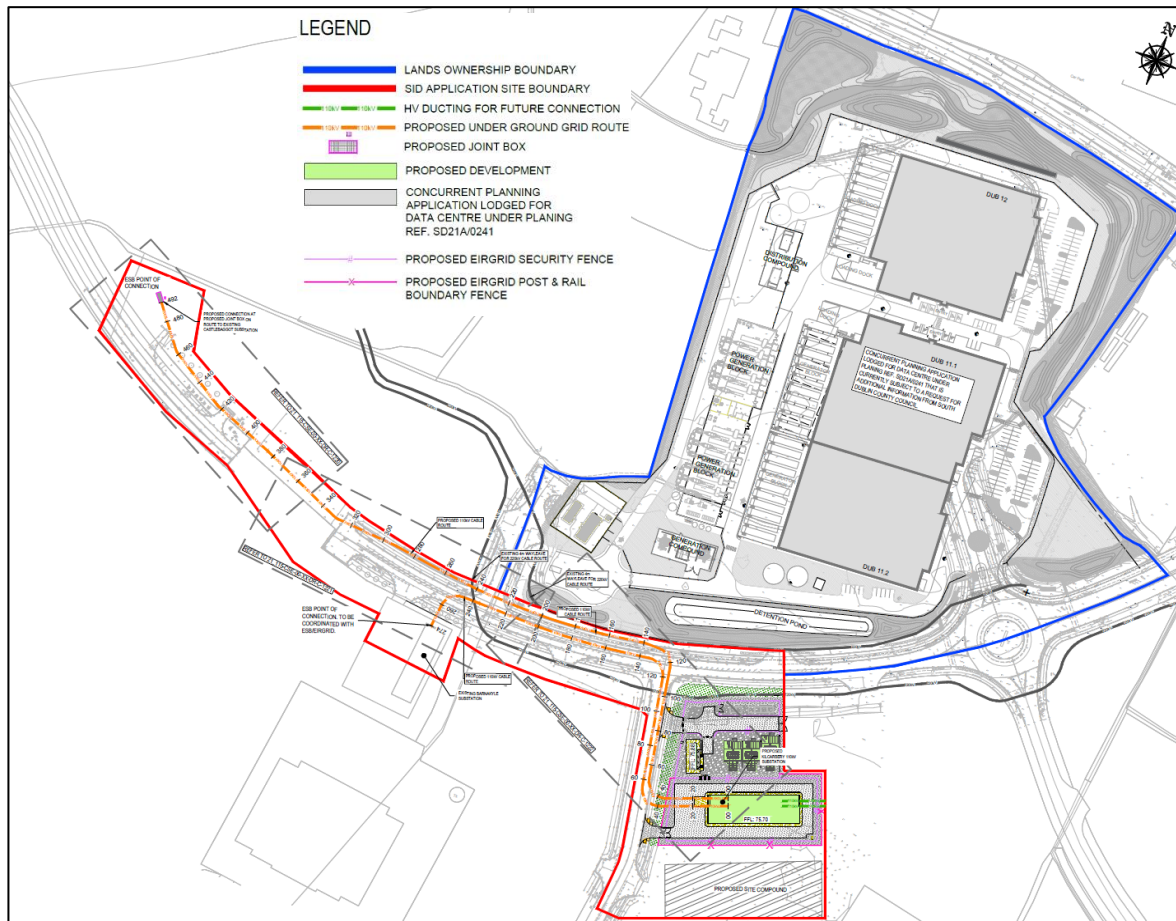


Figure 6-2: Proposed Overall Route Layout Plan (Source CSEA)

6.4 Built Form, Height and Massing

The scale and massing of the proposed development seeks to respond to its surrounding context, in particular the existing surrounding data centers and agricultural land.

The ground level of the site is approximately 75.70 m AOD.

The maximum overall height of the finished floor level (FFL) for the GIS substation is to be 75.70 m and 76.28 m for the proposed client control building.

The proposed development’s building heights are summarised in Table 6.3

Table 6.3: Maximum Heights		
Proposed Development Component	Height Above Ground Level (m)	Maximum Height (m AOD)
GIS Substation	15.0	90.70
Client Control Building	4.2	80.08

6.5 Material Palette and Façade Detailing

Both the client control building and GIS substation will predominately comprise powder coated profiled metal cladding panels and all service/escape doors would be finished to match the cladding. The approach to materials is to use good quality materials in a restrained way with a limited palette of colours and finishes.

6.6 Landscaping

The proposed landscaping design has been driven by the standard specification requirements of EirGrid.

A section of landscaping will be located to the south of Falcon Avenue, directly north of the pulling chambers on site. Another section of landscaping will be situated to the west of the proposed client control building, along the unnamed service road. The landscaping is anticipated to comprise amenity grass at existing ground level and a small number of trees.

The proposed development is anticipated to retain the existing grass, cycle path and footpath which runs along the west of the main road.

6.7 Access and Egress

During construction and operation, the traffic accessing the site will approach and access through an entrance to be constructed off the unnamed service road to the west of the site. A maximum speed limit of 10km/hour will be in place on the access road.

The proposed development is an un-manned facility with very few vehicle trips anticipated during the operation stage of the proposed development; vehicle trips would only consist of weekly site visits by two vehicles only for maintenance. Access gates to the site will be unmanned and from segregated access points for each part of the site from the unnamed service road.

The internal roads and maintenance areas would provide access for maintenance and emergency vehicles to both parts of the site.

6.8 Servicing and Deliveries

The proposed development is an un-manned facility that would be subject to maintenance inspections on a weekly basis by two staff. The visit would consist of two vehicles only and would access the substation through an entrance to be constructed off the unnamed road adjacent to the development.

6.9 Waste Management

The proposed development is an un-manned facility that would be subject to maintenance inspections on a weekly basis by two staff. As such the primary waste stream would come from use of toilets within the GIS substation. Other operational waste generation would be associated with maintenance activities. The waste materials generated on site will be removed by the operatives

Refer to EIAR Volume 1, Chapter 15: Waste, for further information regarding waste generation volumes.

6.10 Utilities

The proposed 110 kV GIS substation, 110 kV cable circuits and 49 kVA cable installation are designed to support power demand for the proposed data center to the north of the application site. Further to this, the 49 kVA cable installation is intended to provide a house power supply to the proposed GIS substation.

Water will be required for the welfare facilities at the GIS substation. It is understood that sufficient water and wastewater capacity is available to serve the proposed development. Domestic effluent arising from the welfare facilities at the GIS substation will be collected in a newly constructed foul drainage network within the site. The proposed foul water drainage network will collect domestic foul water from the buildings within the substation compound and will. The transformer bund is also connected into the foul water network on the site. The connect to the existing drainage network via the foul manhole in Falcon Avenue.

The proposed surface water is designed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS). The surface water proposals include measures to attenuate and provide extensive treatment of surface water prior to discharge from the site. The measures include silt traps, separation filters and oil separators to ensure the highest quality of surface water discharge in both the construction and operation phase of the proposed development.

Detailed information regarding water and drainage facilities can be found within the engineering report, which accompanies the planning application submission.

6.11 Operational Management Controls

Once 'live' the proposed development would operate 24 hours a day and would be an unmanned facility.

The only operational staff on site would be those associated with maintenance inspections on a weekly basis. These inspections would be conducted by two staff members.

A 2.6m high security fence will be constructed around the perimeter of the site. The lighting design (both security and environmental lighting) has been assessed and optimised for the site, to ensure no obtrusive glare, light spillage or other light nuisance on neighbouring business users.

A dedicated fire water ring main would be installed as part of the data center to the north of the site. This fire water ring main will be extended to the GIS Substation, if required, to provide firefighting water to hydrants in the event of a fire.

7. CONSTRUCTION WORKS

7.1 Overview

Based on the assumption that planning consent is secured in Quarter 2/3 (Q2/Q3) 2022, the construction works would commence in Q3 2022. The works are anticipated to be undertaken over an 8 to 10 month period (excluding commissioning), with a completion targeted of Q2/Q3 2023.

For the purposes of the EIAR, it is assumed that 2022 would be the peak year for the construction works as this would include the majority of the ground and civil works and would result in: the noisiest works; majority of waste generation (such as from site clearance and levelling works) and import associated with cut and fill; and associated heavy good vehicles (HGV) trips.

7.2 Construction Environmental Management Plan

The framework presented in EIAR Volume 1 Chapter 5: Construction Description would form the basis for a Construction Environmental Management Plan (CEMP) and has been developed in accordance with standard best practice, regulatory requirements. The CEMP would include a Construction Management Plan (CMP) and a Site Waste Management Plan (SWMP) and would be submitted for review and approval by the relevant authority prior to commencement of works on-site. It would include the following:

- A commitment to environmental protection (all consultants and trade contractors would be invited to declare their support for this at tender stage);
- Documentation of measures to comply with environmental aspects of any planning conditions;
- Detailed control measures and activities to be undertaken to minimise likely environmental impacts, as well as associated roles and responsibilities;
- Target criteria for environmental issues, where practical, such as water and energy consumption;
- Any requirements for monitoring and record keeping;
- A dedicated point of contact during normal working hours and in emergencies with responsibility to deal with environmental issues if they arise; and
- A review and monitoring regime of on-site performance against the CEMP provisions by the project team and regular environmental audits of its implementation.

7.3 Community Liaison

The Applicant would be expected to nominate a manager who would act as the Project Environmental Manager (PEM) (or equivalent), who would be named at all site entrances, with a contact telephone number.

The PEM would have primary responsibility for dealing with the relevant authority and other stakeholders on environmental matters, and all key stakeholders would be notified whenever a change of responsibility occurs for the PEM role. The PEM would keep neighbours, the relevant authority and other relevant parties informed of the nature of the on-going works, their duration and programme to establish and maintain good relationships with them.

It is anticipated that regular meetings would take place between the PEM and the relevant authority to review progress and to agree any necessary actions. The PEM would also deal with enquiries from the general public, including any complaints. Any complaints would be logged and reported to the relevant individual within the relevant authority (and vice versa) as soon as practicable.

The PEM would coordinate responses to queries and address issues in a timely and satisfactory manner.

7.4 Working Hours

Working hours would be agreed with the relevant authority, but are expected to be:

- 08:00 to 19:00 hours Monday to Friday;
- 08:00 to 14:00 hours Saturday; and
- No working on Sundays or Bank Holidays.

All work which is intended outside of these hours, excluding emergencies, would be subject to prior agreement, and / or reasonable notice to the relevant authority and other relevant parties.

7.5 Potential Construction Environmental Effects

The main sources of potential environmental effects during construction of the proposed development have been identified as:

- Population and Health;
- Transport;
- Air Quality;
- Noise and Vibration;
- Water Resources;
- Ecology;
- Ground Conditions (Soil Contamination);
- Climate Change;
- Waste; and
- Landscape and Visual.

The evolving massing of the proposed development would also be a source of environmental effect, but, in all cases, it would be less than the effect associated with the operation stage of development. Potential impacts have been identified and standard best practice mitigation measures have been incorporated into the development proposals to avoid the likelihood for significant environmental effects.

8. LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS OF PROPOSED DEVELOPMENT

8.1 Population and Health

In 2016, the total resident population of South Dublin County was 278,767. The total population of the Clondalkin Village SA population was 257.

From a baseline assessment of publicly available data, Clondalkin Village was assessed as having a lower-than-average younger population (0-19) and a significantly higher elderly population when compared with Clondalkin Village SA and South Dublin County. Additionally, when compared with Clondalkin Village ED and South Dublin County, Clondalkin Village has a lower percentage of residents rating their health as good.

The highest proportion of employment in Clondalkin Village SA is within the agriculture, forestry and fishing sector and the building and construction industry.

8.1.1 Construction Effects

The construction stage of the proposed development would create employment opportunities; however, levels of employment for the construction stage are estimated to be in the region of 30 direct workforce jobs.

Construction jobs often have a related multiplier effect, creating additional indirect employment in the area and increasing spending by local construction workers. Additionally, the procurement of goods and services may have the potential to create additional short-term employment opportunities, which in turn may potentially increase people's incomes and have a positive impact on their health. Most of the procurement would be spread across the national economy due to the nature of the goods; this combined with the temporary nature of the construction stage would limit any health benefits.

There would be air quality and noise impacts from the construction stage activities in terms of dust impacts, on-site vehicle emissions and associated traffic. The impact magnitude effects on human health is considered to be low due to the implementation of the CEMP.

Vulnerable groups in society will be affected by the small increase in traffic levels during construction. Cyclists and pedestrians using the local road network may experience increased fear of accidents and injuries. Any increase in traffic also increases the risk of accidents resulting in injuries and potentially death of road users, especially for more vulnerable road users, such as the young and the elderly. The impact magnitude of traffic and transport effects on human health is considered to be low due to no significant effects being reported in the transport chapter.

Overall, it is considered that the construction of the proposed development would result in a negative effect on population and human health receptors but would **not give rise to significant effects** on population and human health in EIA terms.

8.1.2 Operation Stage Effects

The size, scale and operation of the proposed development is consistent with surrounding land uses of the Profile Park area and would not be out of context with the commercial, urban fringe character of the landscape.

Residents may experience feelings of decreased quality of life which can cause anxiety and concern as well as decreased wellbeing; however, as the current immediate visual environment is composed of developments of similar character and of a larger scale to that of the proposed development, it is judged that nearby residents would be considered to be less susceptible to changes in visual amenity.

Overall, it is considered that the operational development would result in a negative effect on population and human health receptors but would **not give rise to significant effects** in EIA terms.

8.2 Transport and Accessibility

The pedestrian and cycle environment in the site vicinity is of a high standard, with wide, well-lit lengths of dedicated and segregated off-road cycle and pedestrian routes which would allow for construction staff to walk, cycle or use public transport and complete their journeys by alternatives to the private vehicle.

8.2.1 Construction Effects

The peak construction period would be in 2022 with a maximum of 140 construction vehicle movements per day.

In accordance with IEMA Guidelines projected changes in traffic flows of less than 10% create no discernible environmental effect.

With the implementation and use of a CMP, the construction stage would result in a non-significant effect on Transport and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.2.2 Operation Stage Effects

The proposed development will be fully operational in 2023 and is anticipated to generate two weekly two-way vehicle trips.

In accordance with IEMA Guidelines projected changes in traffic flows of less than 10% create no discernible environmental effect.

Overall, it is considered that the operational proposed development would result in a non-significant effect on Transport and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.3 Air Quality

The main air pollutants of concern are dust and particulate matter with an aerodynamic diameter of less than 10 microgram, also known as PM10, typically generated during construction activities, and nitrogen dioxide also known as NO₂, typically generated by road traffic and combustion engines.

8.3.1 Construction Effects

During the construction works, there is the potential for vehicle emissions and dust emissions to arise at existing off-site human health receptors, as well as a loss of amenity at nearby existing residential and commercial properties.

The predicted annual average construction traffic flows are not expected to exceed the IAQM guidance threshold such as to require formal assessment. In addition, traffic flows would be controlled through the implementation of the Construction Environmental Management Plan (CEMP). The effects of construction related traffic emissions would be temporary and not of a scale that would give rise to significant effects.

Based on criteria set out in the IAQM guidance, the construction works would present a medium risk of negative effects from dust impacts in the absence of appropriate mitigation. With the implementation of suitable mitigation measures, already incorporated within the proposed development's CEMP, it is anticipated that dust effects could be mitigated to at worst result in temporary negative, but not significant, effects at existing off-site receptors.

Overall, construction activities associated with the proposed development would result in an imperceptible negative effect on air quality and identified receptors, and as such would **not give rise to significant effects** on air quality.

8.3.2 Operation Stage Effects

The predicted annual average operation traffic flows are not expected to exceed the IAQM guidance threshold such as to require formal assessment.

It is likely that the proposed development backup generator would only operate for a short period, with a maximum of 1-hour testing done annually to confirm its functionality. Given the short period of operation and its slightly elevated exhaust, it is unlikely that any emissions associated with the backup generator will cause an impact on air quality and cause an exceedance of the ambient AQS. No significant air quality effects are predicted with the use of the back-up generator.

Overall, the operations of the proposed development would result in a long-term, negative effect on air quality and identified receptors, and would **not give rise to significant effects** on air quality.

8.4 Noise and Vibration

The existing baseline noise climate is generally dominated by road traffic noise and noise from fixed plant installations associated with other industrial activity in the nearby vicinity. Attended and unattended noise monitoring surveys were undertaken to establish the existing noise climate across the site with the results used to assess construction, and operation effects associated with the proposed development.

8.4.1 Construction Effects

An assessment of noise and vibration during the construction phase has been undertaken. An assessment of construction traffic noise has also been undertaken to calculate the number of HGV movements permissible per hour, along with consideration of the distance at which perceptible levels of vibration may occur from construction activities.

With the adoption of a CEMP and best available techniques (BAT) implemented as part of the construction stage embedded mitigation, it is considered that the noise and vibration impacts can be controlled sufficiently to achieve acceptable levels at the surrounding sensitive receptors.

Overall, it is considered that the construction stages would result in temporary to short term, negative effects for the identified receptors but would **not give rise to significant effects** in EIA terms.

8.4.2 Operation Stage Effects

The proposed development will be designed to achieve the noise emission limits as stipulated by the relevant authority, which requires that the rating noise level does not exceed the representative background noise level. On the basis of the proposed design, noise emissions are predicted to meet the prescribed limits at the nearest noise sensitive receptors. During emergency conditions, there would be direct, temporary, negative (not significant) noise effects.

Overall, it is considered that the operation stage would result in a direct, long-term to permanent slight negative effect, which would **not give rise to significant effects** in EIA terms.



Figure 8-1: Overview of modelled noise emissions during normal operation

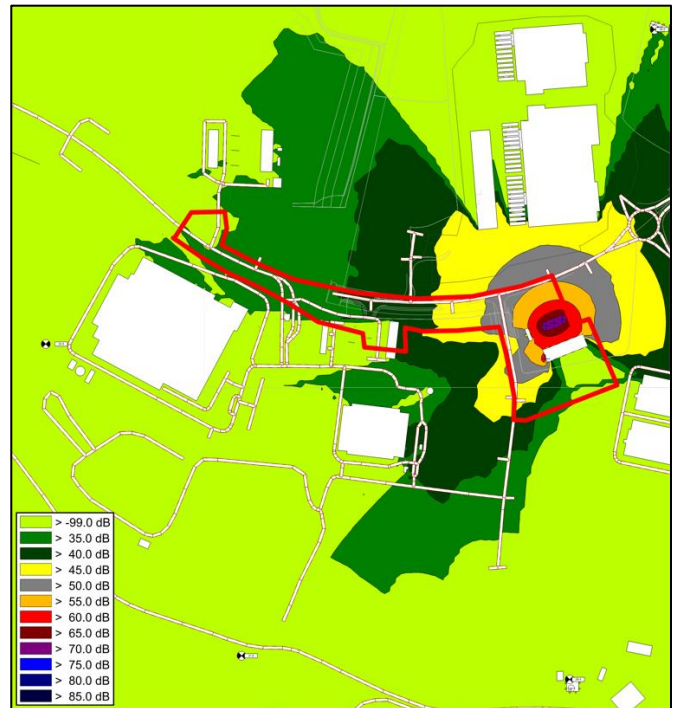


Figure 8-2: Overview of modelled emergency noise emissions

8.5 Water Resources and Flood Risk

The subject site is greenfield, historically used for agricultural use. There is no evidence of pluvial drainage entering the site and the Flood Risk Assessment states that there is no evidence of groundwater flooding.

Through using flood mapping data, areas of the site are shown to be in areas of Low fluvial flooding probability. Low Probability flood events are indicated to have a 1 in a 1000 Annual Exceedance Probability (AEP) i.e. they have a 0.1% chance of being exceeded in any year. The southwest of the site is shown to be within an area of Medium fluvial flood probability (indicated to have a 1 in a 100 AEP, i.e. they have a 1% chance of being exceeded in any year). However, mapping suggests there is no direct topographical route from this area to the main area where the substation would be built.

The bedrock aquifers underlying the site (Dinantian Limestones) are classified as Locally Important. The site is not situated with a Groundwater Drinking Water Protection Area or Groundwater SPA and there are no wells or springs within 1km of the site with the closest being approximately 3km southeast and east of the site.

The proposed development is not deemed to have any significant risk of flooding and is classified as Zone C (where the probability of flooding from rivers and the sea is low). The proposed substation development falls under strategic infrastructure, for which the guidelines state that the development is appropriate within Flood Zone C. The site is therefore suitable for planning.

8.5.1 Construction Effects

During construction works, there is the potential for the following impacts on water resources and flood risk:

- Contamination of surface water as a result of silt-laden runoff across the construction site and from stockpiles, polluting substances (e.g. fuels and chemicals) from accidental spillages and other wastes during general construction activity;
- Disruption of groundwater during construction excavations;
- Changes to flood risk; and
- Water supply and foul drainage during construction.

Overall, and considering embedded mitigation (primarily through the CEMP), it is considered that the construction of the proposed development would **not give rise to significant effects** in EIA terms on water resources and flood risk.

8.5.2 Operation Stage Effects

The following potential impacts on water resources and flood risk could arise during the operation stage of the proposed development:

- Surface Water Flood Risk: Increased surface water runoff volumes leading to flood risks off-site;
- Disruption of Groundwater: Potential to alter local groundwater flow paths and levels;
- Water Demand: Increase in water demand from the site to supply the new occupants of the proposed development; and
- Foul Sewer Capacity: Increase in discharge volumes of effluent to foul sewer.

The proposed development includes measures to manage surface water runoff (a reduction to a greenfield rate whilst also taking account of climate change) which would result in improvements in terms of flood risk as the current rates of runoff would be expected to increase with climate change, although the scale of such benefit is likely to be negligible.

Overall, whilst the operational phase could have a potential for a imperceptible negative effect on local groundwater flow paths and levels, effects on water supply and foul drainage capacity during operation would be imperceptible and neutral and, when considered against the potential benefit in terms of climate change accommodation within drainage designs, the operational phase would **not give rise to significant effects** on water resources and flood risk in EIA terms.

8.6 Ecology

The desk-based assessment identified six Special Areas of Conservation (SACs) and four Special Protection Areas (SPA) within 15km, or with a potential hydrological connection. Within 5km of the site boundary there are two proposed Natural Heritage Areas (pNHAs).

Four habitat types were identified within the site during a Fossitt habitat survey undertaken in June 2021. The main habitat types recorded within the site are Improved Grassland (GA1), and Buildings and Artificial Surfaces (BL3). The lands directly under and adjacent to the proposed development are considered to be of low ecological value.

Bat surveys revealed low levels of commuting/foraging bat use of the site by common Irish species.

8.6.1 Construction Effects

During construction works, there may be disturbance of protected species or breeding birds, loss of habitats, habitat damage through air- or water-borne pollutants, accidental trapping of mammals in excavations, and habitat fragmentation and loss of commuting routes for wild mammals. These have the potential to lead to effects on protected species populations and one internationally designated site. However, considering the importance and sensitivity of these designated sites, habitats and species, and embedded mitigation measures designed into the proposed development, these effects are considered to be imperceptible/not significant.

Overall, it is considered that construction of the proposed development would result in a negative but imperceptible effect on ecology and identified receptors, and as such would **not give rise to significant effects on** in EIA terms.

8.6.2 Operation Stage Effects

During the operation stage, no significant impacts to local ecology are expected. The residual effects would be expected to be negative imperceptible for the local bat and bird populations and terrestrial habitats, and imperceptible and neutral for designated sites.

Overall, it is considered that the operation stage would result in a negative but imperceptible effect on ecology and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.7 Ground Conditions

The subject site is greenfield, historically used for agricultural use. There is no evidence of any historical waste disposal or source of contamination within the site itself.

The site is underlain by the Lucan formation comprising dark grey to black limestone and shale from the Carboniferous Age. The site is also underlain by a locally important aquifer.

Very low levels of soil contamination and groundwater contamination were recorded during a ground investigation undertaken to support the application.

Overall, the results of the baseline assessment identified no significant sources of ground contamination in either the soil or the water environment.

8.7.1 Construction Effects

The proposed development will involve groundworks, which would have an interaction with the on-site soils and water environment.

The activities that could affect the ground, are:

- Re-use of excavated material within construction works and landscaping where possible in order to minimise off-site material movements, including excavated soils and roads
- Excavations for foundations, drainage works or services and transmission cable routes (standard open trenching techniques would be used for excavations) and any dewatering of excavations (if required);
- Movement of plant and machinery within the proposed development and to/from the compound;
- Wheel washing facilities would be provided during the construction stage for plant and vehicles; and
- Vehicles moving across soils within the site.

With consideration of embedded mitigation measures, predicted impacts on human health and the geological and hydrogeological environment would be unlikely to occur during the construction stage. As such, effects would be temporary, imperceptible, and would not give rise to significant effects in EIA terms.

Further to this, and during the construction, there is a risk of accidental pollution incidences from the following sources:

- spillage or leakage of temporary oils and fuels stored on-site;
- spillage or leakage of oils and fuels from construction machinery or site vehicles;
- spillage of oil or fuel from refuelling machinery on site; and
- run-off from concrete and cement during pad foundation construction.

With consideration of embedded mitigation measures, predicted impacts on the hydrogeological environment from accidental spills and leaks would be unlikely to occur during the construction stage.

Overall, it is considered that the construction of the proposed development would result in a temporary and imperceptible to imperceptible/ not significant effects on the ground conditions and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.7.2 Operation Stage Effects

During the operational stage there is a potential for leaks and spillages from small scale fuel and chemical storage to occur on-site. In addition, there is a potential for leaks and spillages from vehicles along access roads in parking areas. Any accidental spillages and leaks of oil, petrol or diesel could cause soil/groundwater contamination if the spillages and leaks are unmitigated.

With consideration of embedded mitigation measures, predicted impacts on the hydrogeological environment would be unlikely to occur during the operation stage. Effects would be permanent, imperceptible, and not significant in EIA terms.

Reasonably foreseeable activities or factors during the operational stage which could affect or be affected by the ground are as follows:

- Periodic maintenance which could involve small scale excavations;
- Areas of soft landscaping and planting; and
- Drainage and storm water attenuation with infiltration to ground solely in areas underlain by a stone surface in the client control area.

With consideration of embedded mitigation measures, predicted impacts on human health and the geological and hydrogeological environment would be unlikely to occur during the operation stage.

Overall, it is considered that the operation of the proposed development would result in an imperceptible to imperceptible/ not significant effect on the ground conditions and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.8 Climate Change

It is expected that general climate trends for Ireland, including extreme weather events (e.g., increased wind speeds, drought, intensity of precipitation events) will continue to occur irrespective of whether the development is built or not.

8.8.1 Construction Effects

The climate change resilience assessment (CCR) assessment has reviewed the potential vulnerability of the proposed development to extreme weather and projected climate change. Considering embedded mitigation measures, all effects have been of low or medium magnitude and therefore the effects are considered to be negative in nature and range from imperceptible to not significant, as such would **not give rise to significant effects** in EIA terms.

Professional judgement has been used to assess whether projected climate change could increase the magnitude of the effects as identified by the disciplines, change the sensitivity of the receptors, or reduce the effectiveness of embedded mitigation measures. Overall, the effects are considered to be negative in nature, and range from imperceptible to not significant, and as such would **not give rise to significant effects** in EIA terms.

The high-level GHG emissions assessment has estimated the construction of the proposed development would result in approximately 15,101 tCO₂e over the course of the construction stage based on information available at the time of the assessment.

IEMA best practice guidance states all GHG emissions contribute towards climate change and are significant. However, IEMA guidance also states that it is down to the practitioner's professional

judgement on how best to contextualise a project's GHG emissions impact. Therefore, as the emissions from the proposed development are very low in comparison to the carbon budgets, it has been considered that the overall effects would **not give rise to significant effects** in EIA terms. However, the implementation of a CEMP with best practice measures would contribute to reducing GHG emissions associated with the construction stage of the proposed development.

8.8.2 Operation Stage Effects

The CCR assessment has reviewed the potential vulnerability of the proposed development to extreme weather and projected climate change. Considering embedded mitigation measures, all effects have been of low or medium magnitude and therefore the effects are considered to be negative in nature, and range from imperceptible to slight/moderate, and as such would **not give rise to significant effects** in EIA terms.

Professional judgement has been used to assess whether projected climate change could increase the magnitude of the effects as identified by the disciplines, change the sensitivity of the receptors, or reduce the effectiveness of embedded mitigation measures. Overall, the effects are considered to be negative in nature and range from imperceptible to not significant, and as such would **not give rise to significant effects** in EIA terms.

The GHG assessment has estimated the proposed development would result in approximately 2,137 tCO₂e during the operation stage. The completed development is expected to contribute 0.005% to the Ireland's carbon budget (295 Mt CO₂e) to the 2021 to 2025 carbon budget, 0.00009% to the 2026 to 2030 carbon budget, and 0.0001% to the 2031-2035 carbon budget. Therefore, the proposed development's GHG emissions would be minor in comparison to the Ireland Carbon Budgets and consequently would **not give rise to significant effects** in EIA terms.

8.9 Waste

The local authority responsible for setting and administrating waste management activities in the site area is SDCC.

There are numerous waste management infrastructure facilities and landfill sites within the Eastern Midlands Region (EMR). Many of the facilities/sites are indicated to have sufficient capacity to support future influxes of C&D and operational waste.

Facilities within the EMR include authorised soil and stone acceptance facilities, licensed Soil Recovery Facilities (SRF), inert landfill facilities, non-hazardous municipal landfill sites, and a number of materials recover facilities and waste transfer stations.

Waste licence facilities in the EMR are of the scale required by the current markets.

There is no dedicated 'hazardous waste to energy' or landfill treatment capacity in Ireland.

8.9.1 Construction Effects

It is anticipated that the proposed development would generate approximately 4,370 tonnes of C&D waste and of this volume only 12.5 tonnes would be disposed to landfill. This would have a negligible impact on the capacity in the waste management facilities and landfill sites.

Networks of waste collection, treatment, recovery, and disposal infrastructure are in place in the region to manage waste efficiently from this type of development.

Overall, it is considered, with embedded mitigation in place, that waste generated from construction stage activities would result in a negative, direct, and imperceptible/not significant effect, and as such would **not give rise to significant effects** in EIA terms on waste management facilities and landfill sites.

8.9.2 Operation Stage Effects

During the operation stage, the nature of the proposed development means that the generation of waste materials is unavoidable. Small quantities of waste will be generated from the proposed substation site with no waste generated from the operation of the transmission and cable lines.

Waste would be managed in accordance with relevant national and regional legislation such as the Waste Framework Directive. The waste materials generated on site will be removed by the operatives.

Overall, the effect from operation waste generation on the waste management infrastructure and landfill sites is considered to be negative, direct, imperceptible/not significant, and as such would **not give rise to significant effects** in EIA terms.

8.10 Material Assets

The site lies in the north of the Profile Park and the study area is considered to comprise the surrounding utility network with Profile Park and the wider area.

The main power supply to the Business Park is from the ESB EirGrid. This power network is known to be constrained in terms of providing electrical grid power to the area.

The Business Park is served by the Gas Networks Ireland network, which is a natural gas network. It is understood the network is not constrained. A gas connection is not required for the proposed development.

A new surface water drainage network is to be designed and installed to serve the proposed development which has been designed in accordance with the Greater Dublin Strategic Drainage Strategy. The drainage system serving the site will be connected to the permitted manholes which are located in Falcon Avenue, via an underground attenuation tank. Asphalt/tarmac strips for earthing purposes under the proposed lightning masts and along fence lines will discharge to ground via the adjacent stone fill and gravel areas.

Domestic effluent arising from the welfare facilities at the GIS substation will be collected in a newly constructed foul drainage network within the site and discharged to the foul drainage network within Profile Park. Rainfall which passes through the transformers would also be collected in the foul water network, which passes through a treatment unit before connecting to the main foul water network. Foul drainage is ultimately treated at the Dublin City Wastewater Treatment plant at Ringsend.

Potable water will be required for the welfare facilities at the GIS substation. It is understood that there is suitable capacity in the network to supply to proposed development.

The telecommunications network used at the main data center to the north of the application site will be extended to the site. The connection to the regional network would be implemented by the statutory network operator.

8.10.1 Construction Effects

During the construction stage, demand on the networks outlined above will be predominantly for minor temporary connections for welfare facilities.

Overall, effects during construction are considered to be temporary to short-term, imperceptible, and neutral in nature, and as such would **not give rise to significant effects** in EIA terms.

8.10.2 Operation Stage Effects

The baseline assessment identified that there are adequate facilities in regard to surface water, foul water, potable water supply and telecommunications for the operation stage of the proposed development.

During operation, the proposed development is intended to provide power to the network, rather than using the significant power from the network itself.

Overall, effects during operation are considered to be permanent, imperceptible, and neutral in nature, and as such would **not give rise to significant effects** in EIA terms.

8.11 Landscape and Visual

The proposed development is located within a Data Center Park on the urban fringe of Ireland's capital city.

The site is within an area of the Landscape Character Assessment (LCA) that is on the transition between land character types: urban and limestone farmland. It is an area allocated to enterprise and employment development with developments of similar scale and type surrounding it. Within the context of the LCA, this is an area that has already undergone transitional change from agriculture to industrial and commercial land use.

Due to the range of surrounding land uses, the study area contains four main types of receptors (residential, recreational, employment and travel). The receptors assessed in the assessment include The Grand Canal, Baldonnel Stream, Newcastle Lowlands Character Area, and the Site itself.

To assess the visual impact of the proposed development, the assessment looked at 9 different viewpoints.

8.11.1 Construction Effects

Within the LCA context, the assessment judged the Proposed Development to have an imperceptible negative effect on the Newcastle Lowlands LCA during the construction stage and in the short term.

The activities that could affect the landscape and visual amenity are:

- disturbance on the setting and amenity features within the area of the Site;
- noise and traffic impacts on visual amenity;
- visibility of construction activities and plant machinery within the Newcastle Lowlands LCA.

The embedded mitigation measures within the CEMP and set out in Chapter 5, including erection of hoarding around the site and early establishment of boundary landscape features, result in the effects being temporary to short term and imperceptible to slight negative.

The ongoing construction within the business park area on structures of similar scale and nature, also reduces the susceptibility of landscape and visual receptors to construction activities within the business park location.

Overall, it is considered that the construction of the proposed development would result in a temporary to short-term, imperceptible to not significant/slight, negative effect on the landscape and visual amenity of the area and identified receptors, and as such would **not give rise to significant effects** in EIA terms.

8.11.1 Operation Stage Effects

Over the long term to permanent duration of operation, the proposed development is judged to have an imperceptible to not significant/ slight effect that is not significant at year 5 on the Newcastle Lowlands LCA due to the relatively small scale of the structures and in the context of similar buildings of larger scale and materiality.

A combination of photography and visualisations from a range of locations and contexts, alongside desk-top analysis and professional judgement has enabled a comprehensive understanding of how the proposed development would affect the landscape character and impact on local views.

During operation, the proposed development is judged to have the following effects on Visual amenity at selected viewpoint locations:

- **Imperceptible neutral** effects at 3 locations (VP 01, 02 and 03);
- **Imperceptible negative** effects at 3 locations (VP 04, 05 and 07); and
- **Not significant/ slight negative** effects at 3 locations (VP 06, 08 and 09).

Due to the context of the site and the similar scale and type of buildings in close vicinity, it is judged that the Visual effects of the proposed development are not significant.

Overall, it is judged that the proposed developed is similar in context to the current and anticipated future commercial/industrial landscape character type of this transitional area, and as such would **not give rise to significant effects** in EIA terms.

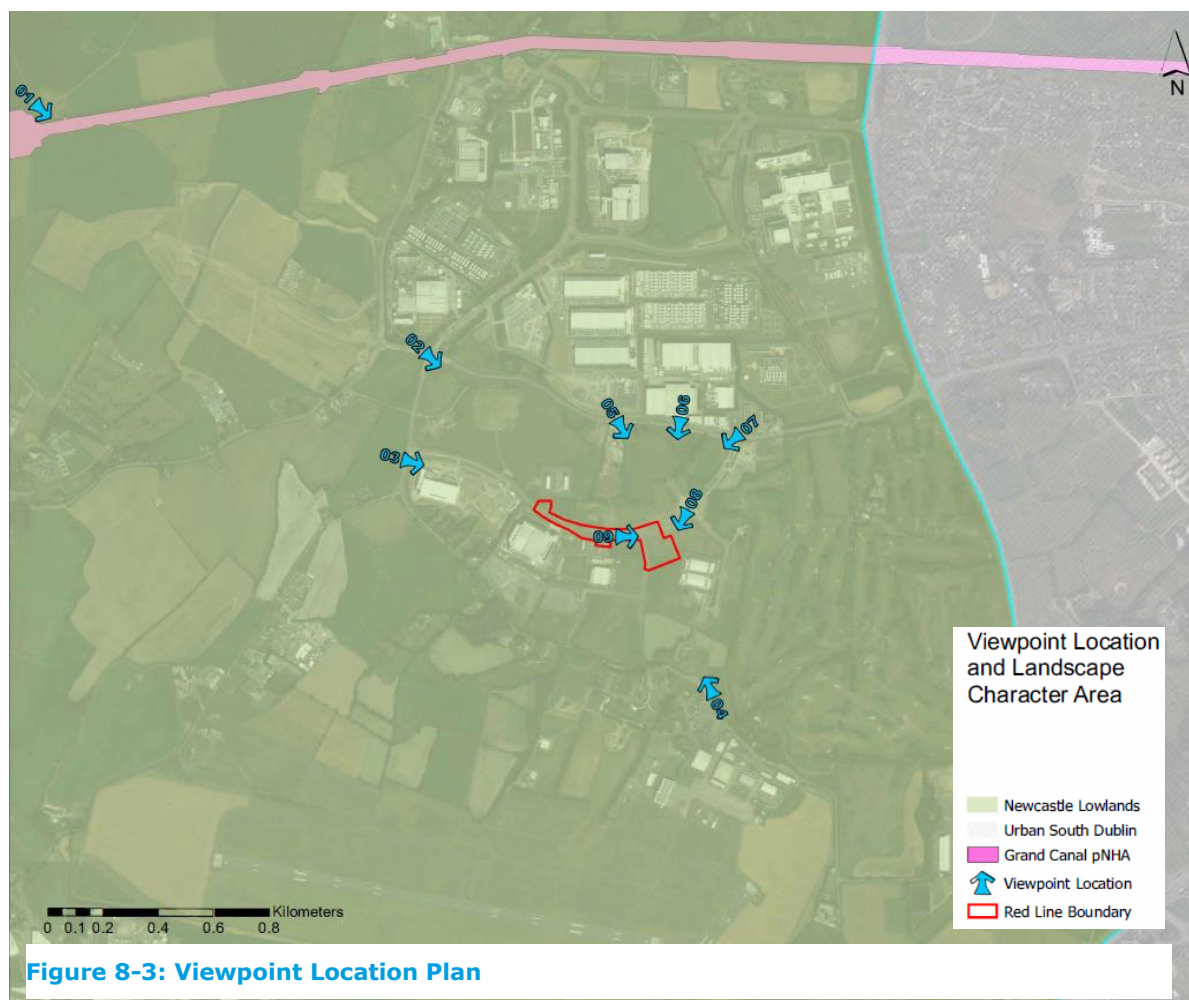




Figure 8-4: Viewpoint 1 – The Grand Canal looking south east.



Figure 8-5: Viewpoint 2 - New Nangor Road at the roundabout junction with Baldonnel Road looking south east.



Figure 8-6: Viewpoint 3 – Baldonnel Road junction with Profile Park Road looking east.



Figure 8-7: Viewpoint 4 – Baldonnel Road near the entrance to the Casement Aerodrome looking north west.



Figure 8-8: Viewpoint 5 – New Nangor Road to the north west of the Site looking south east.



Figure 8-9: Viewpoint 6 – New Nangor Road looking south towards the Site



Figure 8-10: Viewpoint 7 – New Nangor Road and Profile Park Road roundabout junctions looking south west.



Figure 8-11: Viewpoint 8 - Profile Park Road roundabout on the north east corner of the Site looking south west.



Figure 8-12: Viewpoint 9 – Profile Park Road looking south east across the Site.

8.12 Cultural Heritage

A total of 22 monuments and sites are listed within a 1 km radius of the site, presented in Figure 8-13. There are no structures included in the statutory Register of Protected Structures or assets on the Record of Monuments and Places (RMP) or the Register of Historic Monuments within the site.

There are three concentric enclosure sites of probable early medieval origin, recorded as cropmark features on aerial photographs to the west of the site. Results of a geophysical survey revealed a large sub-circular enclosure (approximately 30m in diameter), with an area of probable contemporary medieval field systems along with a second possible curvilinear feature in the field south of the road forming the site boundary. A scheme of test trenching in 2021 revealed the identified enclosure approximately 40m in diameter as well as linear boundary ditches.

Other similar circular enclosures of probable medieval date are recorded or have been fully excavated in the study area and are considered as being significant enough to be included on the RMP. The on-site archaeological resource is therefore considered to be of local value and low significance

The built heritage in the study area includes the sites of two medieval churches and two examples of early 19th century country houses. At the north of the study area is the tower house at Grange Castle, which was first built in around 1580, and was converted into a house in the mid-18th century. At the southern edge of the study area, the group of older buildings at Casement Aerodrome includes several examples of the early hangars constructed when the base was established in 1917 and a range of additional buildings through the 1930s to 1946.



Figure 8-13: Location of heritage assets within the 1km radius study area.

8.12.1 Construction Effects

The proposed development will involve groundworks which will inevitably have an impact on known and unknown below ground archaeological remains. The risk of impacts would come from the damage to the below ground site/features/localised findspots that were revealed by the trenching.

A direct construction effect would occur on the oval/circular enclosure and associated linear ditches as documented in the site investigations. As such it is recommended and necessary to undertake an archaeological excavation of an area measuring 50m by 50m in order to preserve by record the identified oval/circular enclosure in advance of construction works commencing.

The predicted significant effect on the archaeology resource can be wholly mitigated through the aforementioned scheme of excavation and preservation by record. The Applicants commitment to undertake this work prior to construction will result in a moderate positive effect which would be **significant** in EIA terms.

Neutral effects are predicted on built heritage during the construction stage.

Overall, it is considered that the construction of the proposed development would result in a positive effect on cultural heritage and identified receptors, which would **be significant** in EIA terms.

8.12.2 Operation Stage Effects

No significant effects are predicted on the archaeological resource on site during the operation stage.

Neutral effects are predicted on built heritage during the operation stage, with the exception of the Kilbride church and related features which would have slight negative impacts. However, the effects on Kilbride Church and related features would not be significant.

Overall, it is considered that the operation stage of development would result in neutral to negative effects on cultural heritage and identified receptors, however they would **not give rise to significant effects** in EIA terms.

9. CUMULATIVE EFFECTS

9.1 Intra-Project Cumulative Effects

Intra-project cumulative effects from the proposed development itself on surrounding sensitive receptors and on-site receptors during the construction works and also once the proposed development is operational, were considered.

9.1.1 Construction

No effect interactions are likely to arise during the construction period.

9.1.2 Operation

No effect interactions are likely to arise during operation.

9.2 Inter-Project Cumulative Effects

Inter-project cumulative effects generated from the proposed development together with other planned or likely foreseeable developments were considered.

Consistent with the effects of the proposed development, the cumulative schemes identified are associated with the transitional change in the area from agriculture to industrial and commercial land use through development of ICT facilities and data centers.

No significant negative inter-project cumulative effects have been identified during the construction and operation stages of the proposed development for the environmental topics assessed.

10. SUMMARY

The proposed development has evolved through a detailed understanding of the site, its emerging surrounding context, the aspirations of local and regional policy, and consultation with the relevant authority.

The proposed development would deliver a 110kV GIS Substation, 3 no. transformer bays, a client control building and associated compounds, site infrastructure and underground cable transmission lines to support the power demand for the Data Center site to the north.

The following significant positive environmental effects have been identified:

- Archaeological knowledge gained from excavation of the oval/circular enclosure that is present beneath the site.

No other significant environmental effects (either positive or negative) have been identified.

Identified additional mitigation measures would be secured by means of appropriately worded planning conditions.