On behalf of
Vantage Data Centers DUB11 Limited

Date
March 2022

Project Number
1620012232

VANTAGE DATA CENTER
ENVIRONMENTAL IMPACT ASSESSMENT REPORT NON-TECHNICAL SUMMARY

RAMBOLL

VANTAGE DATA CENTER
NON-TECHNICAL SUMMARY

Project No.	**1620012232**
Issue No.	**Final**
Date	**03/03/2022**
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Checked by	**Tom Smith**
Approved by	**Michael Elliott**

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Checked/Approved By:

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CONTENTS

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 an Additional Information response that is being made by Vantage Data Centers DUB11 Limited (the 'Applicant') following a request for Additional Information from SDCC in relation to the application (the 'application') made on the 31 August 2021 under Planning reference SD21A/0241. The application, and this AI response, seeks permission (also known as 'full permission') for the demolition of the abandoned single storey dwelling and associated outbuilding at the site and the construction of 2 no. two storey data centers, a Multifuel Generation Plant (MFGP), 137 car parking spaces and 66 cycle spaces, a series of landscaping and biodiversity improvements and associated ancillary development on land within the townlands of Ballybane and Kilbride within Profile Park, Clondalkin, Dublin 22.

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 full EIAR, together with the application and other supporting documents are available for viewing on the SDCC website:

https://www.sdcc.ie/en/services/planning/planning-applications/search-and-view/

[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.

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

Comments on the application should be forwarded to SDCC at:

South Dublin County Council

County Hall Tallaght,

Dublin 24,

D24 A3XC

Email: planningsubmissions@sdublincoco.ie

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 SDCC, 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

An EIA Scoping Opinion Request Report was prepared, and key aspects were discussed with SDCC at a pre-application meeting in June 2021, specifically around the traffic and transport assessment and landscape and visual impact assessment (LVIA). The viewpoints for the LVIA were agreed at this meeting. The EIA Scoping Report set out a description of the then emerging proposed development; the potential key environmental impacts and likely effects to be considered as part of the EIAR; as well as the proposed approach that would be adopted for the EIAR including the proposed scopes and assessment methodologies to predict the scale of effects and to assess the significance in each case. A formal EIA Scoping Opinion was not provided by SDCC. A second pre-application meeting with the Applicant and SDCC was held in July 2021.

Subsequently, the Applicant submitted a planning application for full planning permission for the proposed development in August 2021 (ref. SD21A/0241). As part of the statutory process associated with the determination of the full planning application, SDCC raised a number of queries in respect of the submitted application. On 26 October 2021 SDCC responded to the full planning application requesting additional information to be submitted ('request for additional information' (AI)). Accordingly, the design of the proposed development has evolved to respond to the items raised by SDCC as part of the AI Request. As such, the Applicant is now submitting a new EIAR for the proposed development.

The EIA has been undertaken on the basis of the EIA Scoping Report and comments provided through the pre application consultation process and the AI Request from SDCC.

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; and
- Major Accidents and Disasters.

2.5 Assessment Approach

The EIAR provides assessments of potential significant environmental effects during demolition and 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, along-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 Guidelines[3]) (Imperceptible, Not-Significant, Slight, Moderate, Significant, Very Significant and Profound), nature (positive, neutral, and negative) and significance in terms of EIA (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:

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

- 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 demolition and 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 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 9 cumulative schemes were identified for assessment during this process. The locations of these cumulative schemes are presented in Figure 2.1.

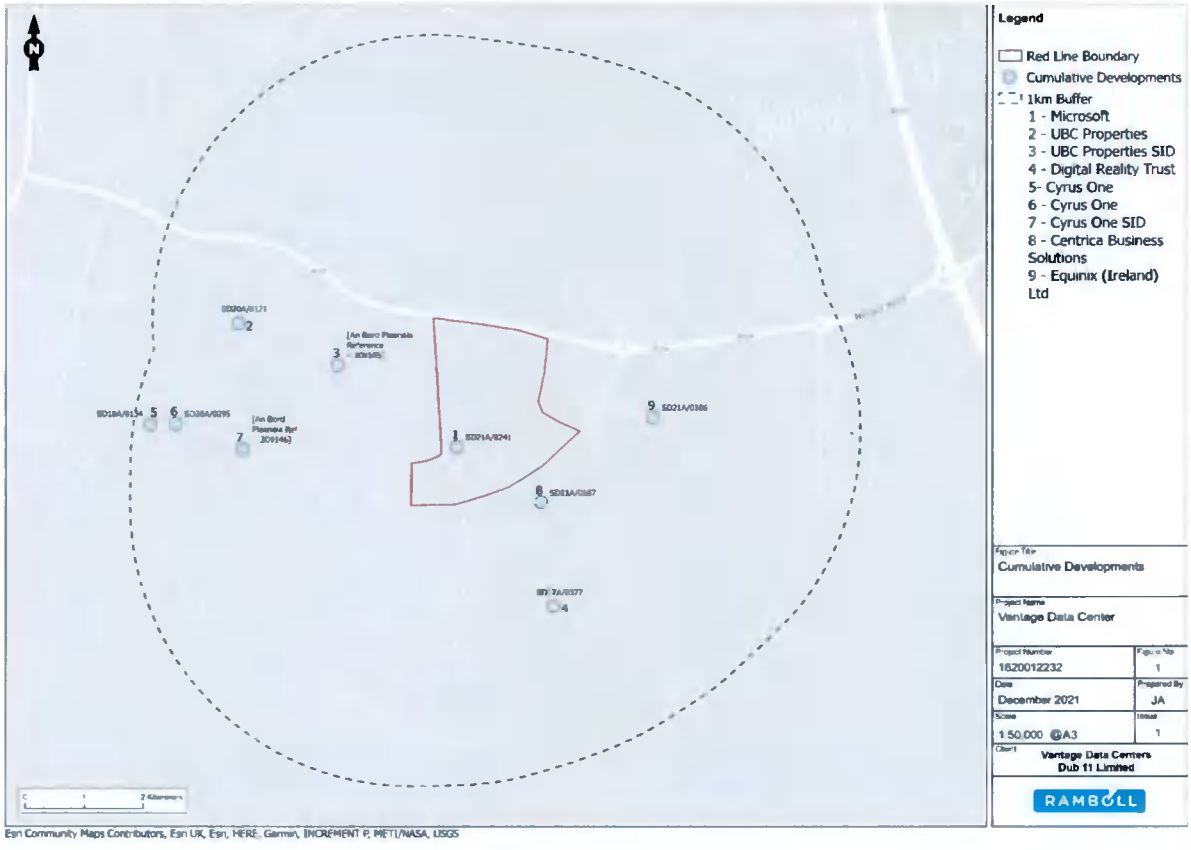


Figure 2.1: Location of Cumulative Developments

In addition, consideration was also given to the proposed permanent electrical connection for the site that would be located <50 m to the south-east of the site. This is likely to comprise a 110 kV (kilovolt) gas-insulated switchgear (GIS) substation and two underground circuit transmission lines and would be subject to a strategic infrastructure development (SID) application to An Bord Pleanála (ABP) in due course.

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

Both of these developments fall under the control of the Applicant and therefore their development programmes have been used to inform the defined existing and future baselines scenarios as discussed previously.

3. EXISTING SITE AND SURROUNDING CONTEXT

3.1 Site Location

The site is located at Irish grid reference O 03687 30780, within Profile Park, as presented in Figure 3.1.

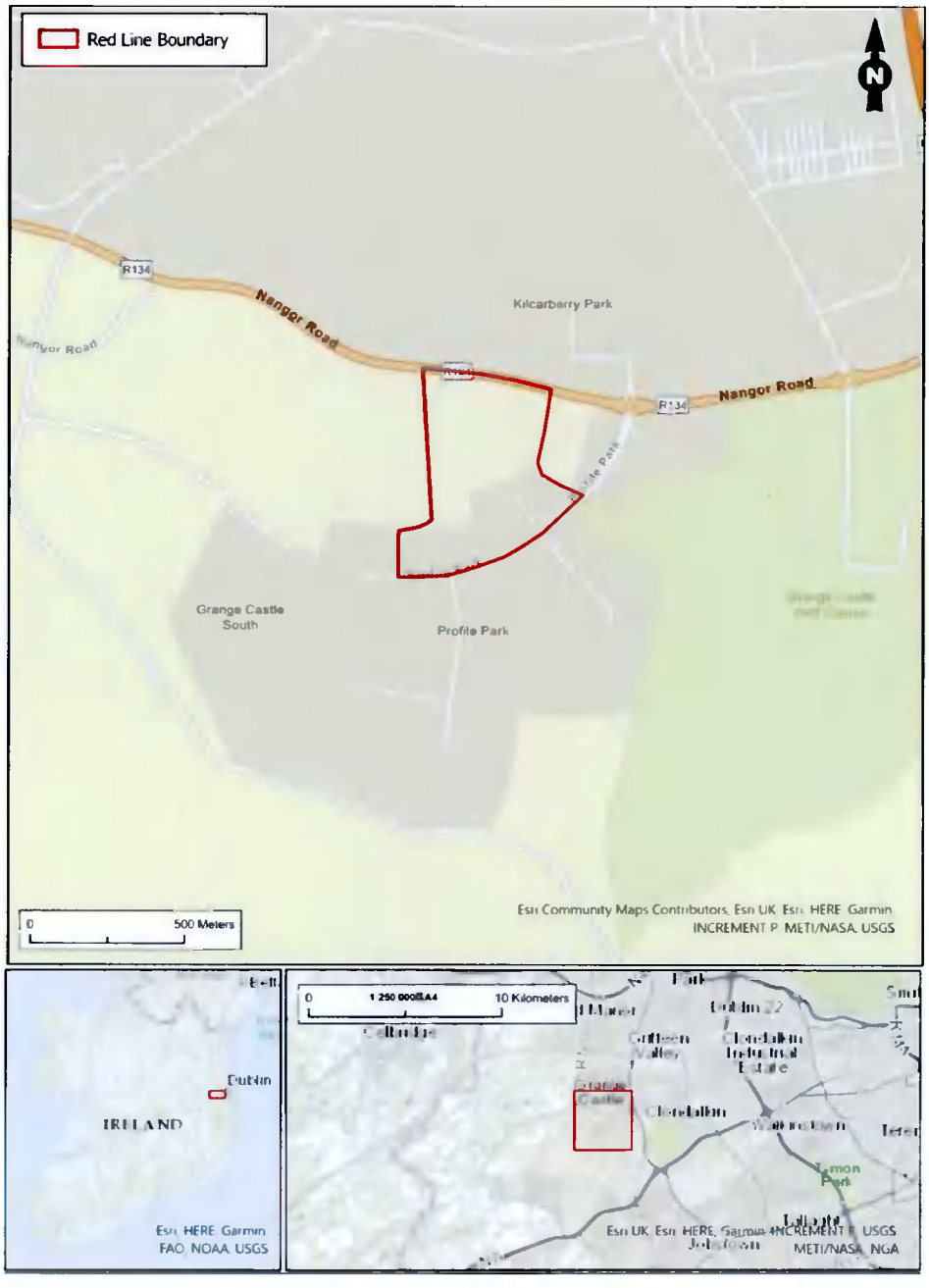


Figure 3.1: Site Location Plan

3.2 Site Description

The site boundaries are defined by:

- New Nangor Road (R134) to the north, beyond is an industrial park;
- Agricultural fields to the east, beyond which is Profile Park Road and Grange Castle Golf Club;
- Profile Park Road and roundabout to the south; and

- A data center development on agricultural fields and Bolands Car Garage to the west.

The site covers an area of approximately 8.7 hectares (ha).

The site is currently predominantly vacant. The site comprises a vacant single storey residential dwelling and agricultural fields. The Baldonnel stream runs through the site in a south-east to north-west direction, flowing towards the north-west.

Representative photographs of the site are shown in Figure 3.2.

Figure 3.2: Site Photographs (left upper image looking north at residential dwelling onsite, left lower image looking north along Baldonnel Stream, centre looking south and right looking southeast at site boundaries)

3.3 Environmental Considerations

3.3.1 Water Resources

The nearest surface water feature is the Baldonnel stream, located within the site. The proposed development as amended under the AI response would be oriented to allow the alignment of the Baldonnel Stream to remain as existing, whilst also including measures to enhance the ecological value of the stream. This is discussed further in Section 6 – Proposed Development. The Grand Canal is located approximately 2 km directly north of the site and is classified as a proposed Natural Heritage Area (NHA).

3.3.2 Ecology

The Proposed Development does not lie within or directly adjacent to any statutory or non-statutory designated environmental sites. Within 15km of the site there are four Special Areas of Conservation (SACs) and three Special Protection Area's (SPA). Within 5km of the site there are two Proposed Natural Heritage Areas (pNHAs).

3.3.3 Below and Above Ground Heritage

There are no structures included in the statutory Register of Protected Structures or assets on the Record of Monuments and Places or the Register of Historic Monuments within the site. The closest statutory designated heritage asset is Grange Castle (RPS, RM) on the edge of the study area to the north.

3.3.4 Landscape Character

The surrounding landscape context is predominantly industrial to the north and west, agricultural to the south and west, with commercial and residential properties to the east and the Grange Castle Golf Club to the south-east.

3.3.5 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 by New Nangor Road and to the east by Profile Park road and roundabout to the south.

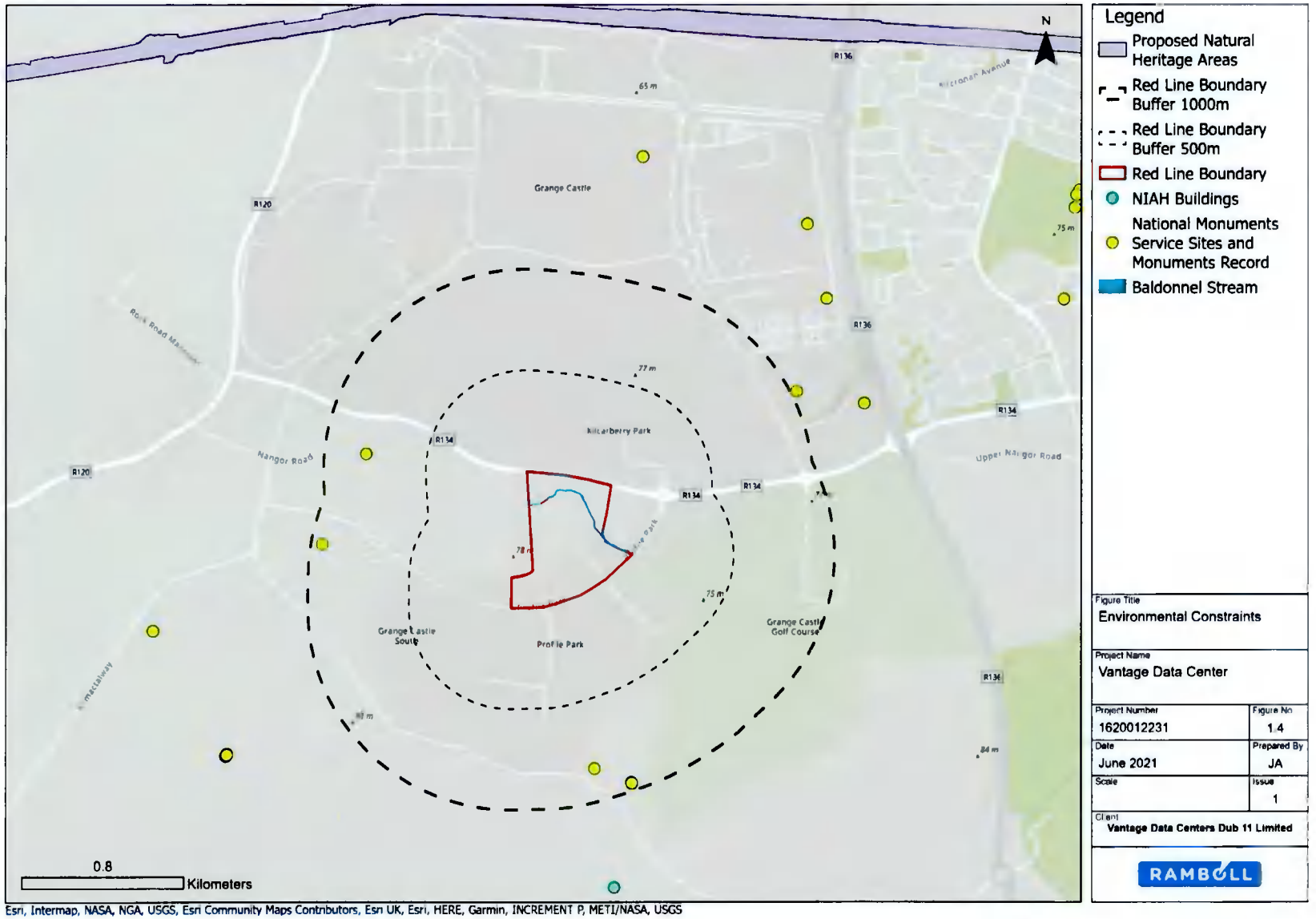


Figure 3.3: Surrounding Environmental Considerations

4. PLANNING CONSIDERATIONS

4.1 Policy Context and Designations

In respect of the EIA Regulations, the proposed development is not listed under Annex I of the EIA Directive and is below the 15 ha threshold under Part 2 of Schedule 5 of the Regulations. However, the scale and nature of the proposed development provides the potential for significant effects on the environment and an EIA has been undertaken 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 following; National Planning Framework (NPF)[5]; National Development Plan (NDP)[6]; National Spatial Strategy[7]; National Climate Action Plan[8].

At the regional level planning policy comprises the:

- Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (2019)[9].

The local planning policy for the site comprises the:

- South Dublin County Council Development Plan 2016-2022 (2016)[10]
- South Dublin County Council Corporate Plan 2020-2024[11].

Under the South Dublin county council development plan the site is classified under Objective EE: to provide for enterprise and employment uses.

In respect of emerging policy, SDCC commenced a review of the SDCC Development Plan 2016-2022 on the 31 of July 2020 and will create a new Development Plan for the period 2022 to 2028 over the next two years. The draft South Dunlin County Development Plan 2022-2028[12] is not a material consideration in terms of planning until adopted.

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

An extant permission (SD20A/0124) exists for the site, consented in November 2020, for the construction of a logistics and distribution warehouse.

[5] Government of Ireland, 2018. National Planning Framework (NPF) – Ireland 2040 Our Plan (February 2018) [online]. Available at: https://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf [Accessed on 28/06/2021].
[6] Government of Ireland, 2020. National Development Plan 2018-2027 (last updated 26 November 2020) [online]. Available at: https://www.gov.ie/pdf/?file=https://assets.gov.ie/37937/12baa8fe0dcb43a78122fb316dc51277.pdf#page=null [Accessed on 28/06/2021].
[7] Government of Ireland, 2002. National Spatial Strategy 2002-2020 [online]. Available at: https://www.gov.ie/en/publication/2e94f-national-spatial-strategy/ [Accessed on 28/06/2021].
[8] Government of Ireland, 2021. Climate Action Plan. Department of the Environment, Climate and Communications
[9] 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]
[10] 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].
[11] SDCC, 2020. South Dublin County Council Corporate Development Plan 2020-2024, [online]. Available at: corporate-plan-2020-24.pdf (sdcc.ie) [accessed on 30/11/2021]
[12] South Dublin County Council, 2021. South Dublin County Development Plan 2022-2028 [online]. Available at: https://consult.sdublincoco.ie/en [Accessed 19/07/2021]

5. DESIGN EVOLUTION AND ALTERNATIVES

European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018[13,14] 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 Applicant[15], 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. Furthermore, the provision of the proposed data center would support RPO 8.25 to promote Ireland as a sustainable international destination for ICT infrastructures (such as data centres).
- The previous landowners secured planning consent in November 2020 for the development of a distribution warehouse (SDCC planning reference: SD20A/0124; refer to Table 1.1 in Chapter 1: Introduction of this EIAR Volume for further information).
- The proposed development, consisting of two data center buildings, would sit within a cluster of data centres within Profile Park.
- The Profile Park area has excellent fibre connectivity; and
- The 'Do-Nothing' alternative does not meet any of the developers objectives for the site.

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 opportunity for further economic and employment growth;
- Loss of opportunity to maximise the productive use of the site;
- Loss of national and international data storage capacity and IT infrastructure;

[13] Government of Ireland, 2018. European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. S.I. No. 296/2018. ISB.
[14] Later amended to: Government of Ireland, 2018. European Union (Planning and Development) (Environmental Impact Assessment) (Amendment) Regulations 2018. S.I. No. 646/2018. ISB.
[15] See Article 5(1)(d) of Directive. See Schedule 6(1)(d) to the Regulations.

- Loss of opportunity to further establish Profile Park and the surrounding area as a data center hub; and
- Loss of opportunity to improve on-site biodiversity.

5.2 Alternative Sites

No alternative sites were considered for the following reasons:

- The Applicant owns the site;
- 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);
- The site would provide a key development opportunity to contribute to the regeneration of an underutilised site and with the land use identified in ROP 8.25 (as previously stated);
- The site sits within a wider area dominated by data centers which has good network provision, that suit the needs of the site and is thus an ideal location for the proposed development to be situated;
- Alternative sites in the Dublin area may lack adequate power provision and alternative sites in the west of Ireland may lack fibre connectivity;
- A new EirGrid substation is proposed to be constructed, located to the immediate south of the site;
- The proposal includes on-site power generation to ensure that the development would reinforce the grid and not lead to supply disruption in the surrounding area at peak demand;
- Dense hedgerows along the east and west boundaries creates a natural visual screen;
- There is no evidence of site contamination; and
- The level terrain is suitable for large floorplate buildings.

5.3 Alternative Land Uses

The proposed land uses have been informed by prevailing local and regional policy. No other land uses were considered other than those proposed.

The site has an extant permission for a distribution warehouse (SDCC planning reference: SD20A/0124), however, due to reasons previously stated the Applicant does not propose to build out the extant permission.

5.4 Alternative Site, Height and Massing Layouts

Through the design and development process a series of concept options were explored and included consultation with SDCC. 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 capacity of the site. The proposed development design as presented in the August 2021 EIAR was the outcome of this exercise and formed the basis of the scheme applied for in August 2021. Numerous alternative layouts were considered by the Applicant and were ranked on feasibility using a Pass/Fail system against a 'business case' which needed to be achieved; the result of which are presented in Table 5.1.

For the 'business case' to be achieved the viability of each site depends on achieving a specific number of data modules. The complexity is further compounded by the need to include a MFGP to meet EirGrid's requirements proposed under the DCCOPP. The addition of on-site power generation to support the national utility capacity both reduces the space available for data centers within the site and raises the viability threshold for the number of data modules.

Table 5.1: Proposed Development Design Evolution

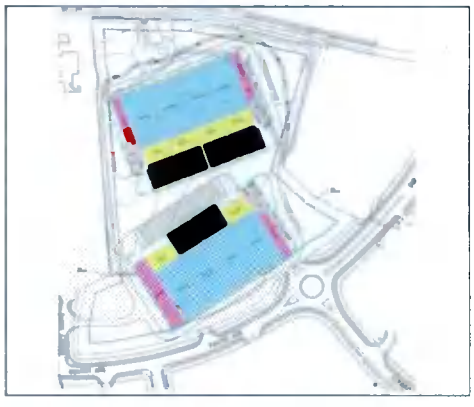
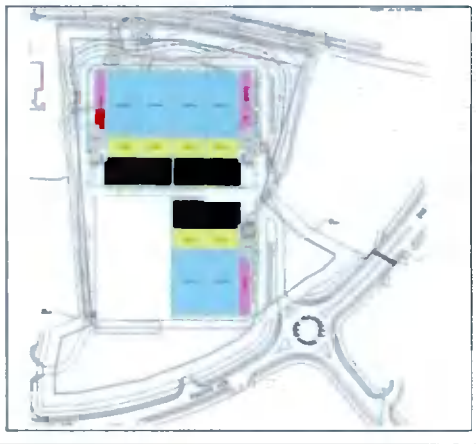
Concept Option	Concept Layout	Concept Test Fit Outcome	Concept Assessment Against Business Case
Pre-Application Design Alterations			
1 – Test Consented Scheme		The standard design superimposed on the consented warehouse scheme yields an 8-hall data center.	**Fail** – Not enough data space to meet business case.
2 – Maximum Site Coverage		Spatial exercise to see how many halls can fit on the site by building over the stream and using standard design.	**Fail -** Achieves 16 modules but without space for parking and onsite power plant as required by EirGrid.
3 – Maximum Including Power Plant		Spatial exercise to see how many halls can fit on the site using standard design and with space for a power plant.	**Pass** – Achieves 12 data modules to meet the business case with space for a power plant.

Table 5.1: Proposed Development Design Evolution

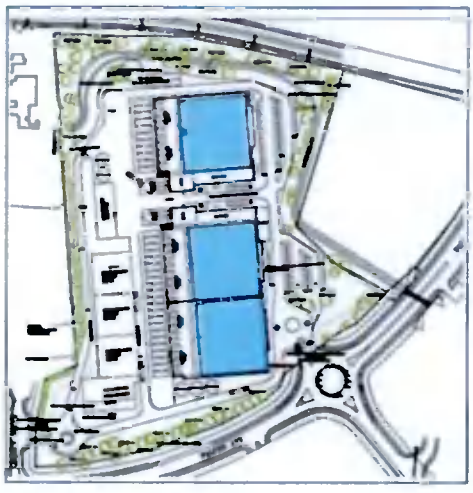
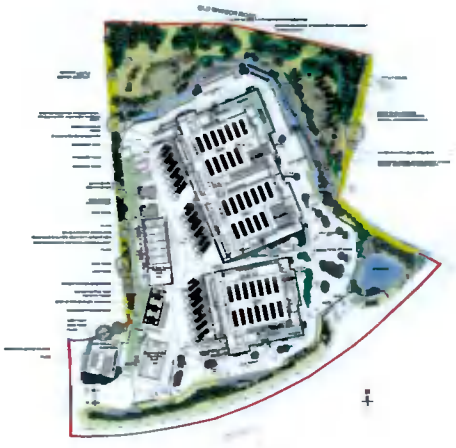
4 – Site Plan Development		Design Evolution using CAD and with power plant. Stream re-aligned. Plant placed away from sensitive receptors.	**Fail** – Meets the business case but concerns raised by SDCC in pre-app meeting, notably around watercourse and loss of biodiversity.
5 – Options to avoid stream diversion	Not feasible	Options tested to see if stream diversion can be avoided while still meeting the design brief.	**Fail** – At the time of the text fit exercise none of the options evaluated for retaining the current position of the watercourse achieved the business case for the site. It should be noted that the capital cost of the power plant means a minimum of 12 modules are essential. The only way to reduce the footprint enough to free space for the stream is to increase the number of storeys which conflicts with the general 20 m height limit in the Local Plan and creates visual impact issues.
6 – August 2021 Proposed Development		Intensive design work on landscaping and ecology aspects of the scheme to create a new watercourse that is longer, wider and richer than the existing. Stormwater management to reduce below ground attenuation and lower flood risk.	**Fail** – Concerns raised by SDCC around overdevelopment of the site, particularly the proposed stream realignment and a perceived lack of improvement to landscaping and biodiversity.

Table 5.1: Proposed Development Design Evolution			
Power Generation Concept (Evolution 1 to 6)	Main power supply for the proposed development would be from the EirGrid substation proposed to the south of Falcon Avenue. The proposed development included a gas-powered generation plant which would connect to the EirGrid in due course. A temporary power plant was proposed until the main EirGrid connection became available. In the event of a loss of power supply, diesel powered backup generators would be provided to maintain power supply.		
Alternative scheme presented as part of the Additional Information response			
7 – Revised Proposed Development		Redesign of the proposed development to: - Retain the Baldonnel stream to avoid realignment; - Shifted DUB11 and DUB12 south to reduce visual impact along the northern frontage; and - Incorporate a large number of natural solutions, SuDs and green infrastructure to increase stormwater attenuation and reduce flood risk.	**Pass** – Applicants preferred outcome to balance business drivers with biodiversity gains and long-term site improvement. This option avoids the stream diversion and will make significant improvement to landscaping and biodiversity. The design evolution deviates from the test fit carried out in Evolution 5 to avoid an extra storey whilst retaining the current stream alignment. This has been achieved by double stacking the generators, which leads to operational complexity and additional construction costs but meets the AI request to retain the current stream alignment.
Power Generation Concept (Evolution 7)	Power for the proposed development would be provided by a MFGP from approximately Q4 2023 to Q1 2025 until such time that the connection to the GNI Gas Connection becomes available. Initially, the MFGP would be powered using hydrotreated vegetable oil (HVO) until such time that the natural gas connection by GNI is available. As part of the greener gas supply, at some point in the future we understand the intention by GNI is that natural gas will be decarbonised and mixed with 20% hydrogen or biogas. The MFGP has the flexibility to operate using these different fuel types. Once the GNI gas supply is operational, HVO would be used as the primary back-up fuel for the MFGP. Once operational the EirGrid GIS substation would power DUB11and DUB12. In the event of a power outage to DUB11 and DUB12, emergency back-up generators would be powered by diesel.		

The design process has been an iterative one, responding to the numerous opportunities and constraints on site and in the surrounding area, as the design team has sought to respond and address issues raised at the different stages of consultation. The feedback received from these consultations were considered as appropriate during the design evolution.

6. PROPOSED DEVELOPMENT

6.1 Proposed Development Description

A planning application was submitted by the Applicant in August 2021 under application reference SD21A/0241. On 26 October 2021 SDCC responded to the planning application requesting additional information (AI) to be submitted. As such, the Applicant is now submitting an Additional Information response, that this Non Technical Summary of the EIAR forms part of.

The Applicant is seeking full planning permission for the following:

"The development applied for consists of the demolition of the abandoned single storey dwelling and associated outbuilding (206sqm); and the construction of 2 no. two storey data centers with plant at roof level of each facility and associated ancillary development that will have a gross floor area of 40,589sqm that will consist of the following:

- *1 no. two storey data center (Building 11) that will be located to the south of the site and will have a gross floor area of 24,667sqm. It will include 22 no. emergency generators located at ground floor level within a compound to the western side of the data center with associated flues that will be 22.3m in height;*
- *1 no. two storey data center (Building 12) that will be located to the north of the site, and to the immediate north of Building 11 and will have a gross floor area of 12,915sqm. It will include 11 no. emergency generators located at ground floor level within a compound to the western side of the data center with associated flues that will be 22.3m in height;*
- *Each of the two data centers will includes data storage rooms, associated electrical and mechanical plant rooms, loading bays, maintenance and storage spaces, office administration areas, and plant including PV panels at roof level as well as a separate house generator for each facility that will provide emergency power to the admin and ancillary spaces. Each generator will include a diesel tank and there will be a refuelling area to serve the proposed emergency generators;*
- *The overall height of each data center apart from the flues and plant at roof level is c. 14.23m above the finished floor level;*
- *Construction of internal road network and circulation areas, with main entrance off Falcon Avenue to the south, as well as a secondary vehicular access off Legacy Drive to the south-west, both from within Profile Park; footpaths, provision of 144 no. car parking spaces, and 66 no. cycle parking spaces;*
- *Single storey step-up substation (38sqm) as well as 2 no. single storey switch substations (121sqm);*
- *AGI Gas Regulator compound that include 3 no. single storey buildings (134sqm);*
- *Construction of a gas powered generation plant in the form of a 13m high single storey building with a gross floor area of 2,714sqm that will contain 10 gas generators with associated flues that will be 25m in height, and grouped in pairs and threes. The Gas Plant will be located to the west of Building 11;*
- *Ancillary site development works, that will include reorientation of the Baldonnel Stream, biodiversity management initiatives, attenuation ponds and the installation and connection to the underground foul and storm water drainage network, and installation of utility ducts and cables, that will include the drilling and laying of ducts and cables under the internal road network within Profile Park. Other ancillary site development works will include hard and soft landscaping, lighting, fencing, signage, services road, entrance gates, sprinkler tanks and pump room; and*
- *A temporary gas powered generation plant within a fenced yard containing 21 no. generator units in containers, each with associated flues (each 25m high), 12 transformers and 10 containers of controls to be located to the west of, and associated with the first phase of Building 11, and will be required for a period of up to 2 years if connection to the national*

grid is delayed. This temporary plant will not be built if the connection to the national grid is in place prior to the operation of Building 11.

The development will be accessed from Falcon Avenue and Legacy Drive from within the Profile Park Business Park that contains an access from the New Nangor Road (R134).

The Significant Further Information / Revised Plans includes a revised site plan that has modified the location of Buildings 11 and 12 within the site that enables the stream to remain in its current alignment within an enhanced riparian strip; amendment to the gross floor area of the entire development to 41,105sqm; revised EIAR that includes new photomontages; revised car parking layout; additional SUDS measures, attenuation and green infrastructure; as well as revised landscaping. It also includes a modification to the nature and use of the Gas Plant to a Multi-Fuel Generation Plant, which includes breaking it into two components and increasing its 11 no. flues to being 30m in height; and that its primary purpose is now to reinforce the national grid.

In summary, the proposed development, as amended under the AI response, would comprise the following:

- Demolition of the existing single-storey dwelling and outbuilding, approximately 206 m^2;
- Erection of the two data centers along with associated emergency generators and flues with a gross floor area of approximately 41,105 m^2;
- Provision of 137 car parking spaces and 66 bicycle parking spaces provision; and
- Construction of a Multifuel Generation Plant (MFGP) with underground fuel storage beneath each block.

6.2 Site Arrangement

The two data centers would be constructed across the site, broadly orientated north to south, within the southern portion of the site to reduce the visual bulk of the data center from New Nangor Road. The data centers would be screened by proposed extensive berms and planting and landscaping to the north of the Baldonnel Stream.

The proposed data storage facilities are arranged into two data centers: the larger northern data center (DUB11) and the southern data center (DUB12).

New pedestrian and vehicle routes would be provided within the site. The proposed development would include the construction of an internal road network and circulation areas, dedicated pedestrian footpaths, provision of 137 car parking spaces (14 of which would be dedicated to electric vehicle (EV) charging and 7 for disabled parking) and 66 bicycle parking spaces in double-stacked covered racks.

The two main entrances for the site would be from Falcon Avenue in Profile Park for staff, pedestrians and cyclists; and from Legacy Drive in Profile Park for HGVs, maintenance vehicles and construction access. Entry gates would be separated to provide safe division from pedestrian, cycle and car access from large heavy-duty vehicles (HGV) and construction traffic during the phased development and ongoing maintenance of the data centers.

6.4 Land Use Distribution

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

Uses	**Gross External Area (GIA) m²**
North Data Center DUB11 (including ancillary floorspace e.g. offices but excluding plant/substation)	24,667
South Data Center DUB12 (including ancillary floorspace e.g. offices but excluding plant/substation)	12,915
Multifuel Generation Plant North Building (including mezzanine of 310 m²)	1,784
Multifuel Generation Plant South Building (including mezzanine of 187 m²)	1,258
Switch Rooms (4 no. in 2 blocks)	252
Step-up Substation	95
AGI Gas Regulator	134
Total	**41,105**

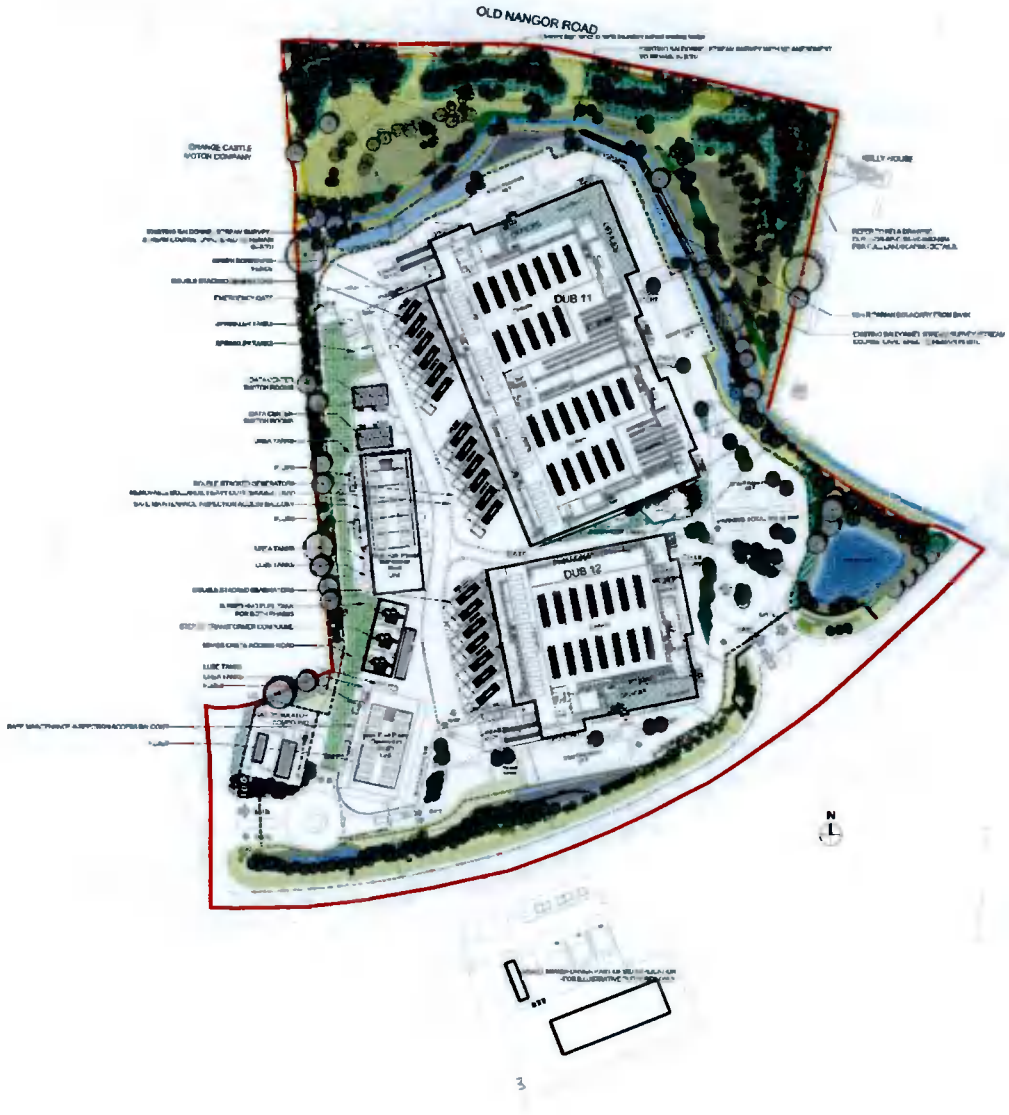


Figure 6.1: Masterplan (Source Burns & McDonnell)

6.5 Built Form, Height and Massing

The scale and massing of the proposed development seeks to respond to its surrounding context, in particular existing surrounding data centers, agricultural land, the Baldonnel Stream, whilst maximising the sites potential for data center usage and employment generation.

The topography of the site ranges from approximately 71.47 m AOD in the north to approximately 76.11 m AOD in the south.

The maximum overall height of each data center building, excluding the flues and plant at roof level is 15.70 m above finished floor level (FFL). Flues which are grouped in stacks of three and four flues would be 22.3 m in height (95.95m AOD) from ground level associated with the data center emergency generators and 30 m in height (102.32 mAOD) associated with the MFGP.

The proposed development's building heights are summarised in Table 6.3.

Table 6.3: Maximum Plot Heights

Proposed Development Component	Height Above Ground Level (m)	Maximum Height (m AOD)
DUB11 Parapet/Stair Tower	14.23/21.55	95.40
DUB12 Parapet/Stair Tower	14.23/21.55	95.40
Genset Flues (within each data center building)	22.30	95.95
Multifuel Generation Plant (excluding plant at roof level)	18.00	92.00
Multifuel Generation Plant Flue Height	30.00	102.32
Switch Rooms	4.80	78.80
Gas Regulator	3.69	77.69
Step-up Substation	4.22/5.50	79.50

6.6 Material Palette and Façade Detailing

For the proposed development, different options have been selected in respect of materiality, architectural style and detailing, to be implemented through design codes.

The northern and southern data centers would predominately comprise sandwich panels in white, light grey and dark grey, consistent with the surrounding data centers with some areas of green walls. The approach to materials is to use good quality materials in a restrained way with a limited palette of colours and finishes. The same approach has been taken on the MFGP.

Additional materials would include:

- Clear glass;
- Fritted glass;
- Mesh metal grating; and
- Steel panel.

The northern and southern elevations of DUB11 and the southern elevation of DUB12 will incorporate green walls. Living green walls would be introduced at ground level to increase biodiversity and soften the building at street level.

6.7 Public Realm and Open Space

The landscape strategy would ensure an enhanced, higher quality biodiverse environment is created, with particular regard to improving the biodiversity of the Baldonnel stream. As this site is not accessible to the public, landscaping would focus on creating areas for biodiversity to thrive and would not provide any public realm or open space.

6.8 Landscape and Biodiversity Enhancement

The key considerations of the landscape masterplan are to provide sufficient measures to protect and enhance the existing landscape, the ecology of the Baldonnel Stream and retain its current alignment. The landscape masterplan would provide areas of soft landscaping and enhanced biodiversity, retain existing perimeter landscaping and trees wherever possible, integrate a SuDS strategy to slow out fall rates and manage storm water at source, and provide ecological enhancement areas.

Eighteen trees are to be retained as part of the proposed development which predominantly relate to those trees along the western and eastern perimeter of the site boundary. However, substantial new planting of berm and woodland would be provided in the landscaping scheme with 1,194 new trees proposed to be planted and 3,389 transplanted as saplings. The landscape masterplan would also incorporate native hedgerow, meadow, wetland meadow, wildflower meadow, riparian planting, stream improvements, and green walls.

6.9 Access and Egress

The application site would be accessed via two entry points on Falcon Avenue. Heavy duty vehicles (HGV), maintenance and construction vehicles would access the site via Profile Park Road from the west. Cars would access the site via Falcon Avenue from the south, through the main gate. The main gate is located within the centre of the east access point, splitting the entrance and exit lanes and barriers are currently used to control entry to the application site.

Internal roads are proposed to be constructed to provide access to the data centers and to allow vehicles to access the proposed parking to the east of the buildings. These would be designed to accommodate the largest expected vehicle to access the application site.

Pedestrian and cycle access to the site would be via the controlled pedestrian and cyclist entry gate on Falcon Avenue.

The internal roads would provide emergency vehicle access around the Data Center buildings and provide service access to the service areas and MFGP. Perimeter access roads would be provided around all the buildings for emergency access and to accommodate crane access for the replacement of rooftop plant.

6.10 Parking

Car parking for the proposed development is provided by a total of 137 parking spaces which provides parking for site staff and visitors. Of these, 14 would be electric vehicle charging points, 7 would be disabled parking provision and 4 would be delivery vehicle spaces. There would be 66 double-stacked spaces for covered cycle storage.

Car and cycle parking would be provided along the northern, eastern and southern sides of the data centers. All employee spaces would be provided within a secure car park that would not be accessible to the general public. Visitor spaces would be located within this car park.

6.11 Waste Management

Deliveries of equipment to site may generate limited quantities of rubbish, which for the most part would be packaging material. This rubbish would be managed on site.

The buildings primary waste stream would come from the toilets, which is calculated at 45 staff per building phase, which equates to a total of 135 permanent staff once completed.

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

6.12 Plant and Ventilation

Heating to the office areas would be provided by heat pumps that would recover heat from the data module cooling system. This would allow the heat pump system to operate at higher efficiencies compared to air cooled systems operating at standard ambient conditions.

The data storage modules would be cooled with air handling units that are provided with chilled water via roof mounted free cooling magnetic bearing chillers. Cooling to the office and ancillary areas would be provided by roof mounted air-cooled free cooling chillers. The free cooling chillers would utilize compressor free cooling when the ambient conditions are satisfactory, thus maximizing system efficiency.

6.13 Operational Management Controls

Once 'live' the proposed data center would operate 24 hours a day.

When operational approximately 45 full time equivalent staff members would be onsite in each data center building providing a total staffing level of 135 people. Additional to this would be the ad-hoc attendance of maintenance contractors and visitors. It is anticipated that the data centers would be in operation on a shift basis with reduced numbers presented during night shifts.

The proposed development would require suitable external illumination to ensure a safe environment for site users. Internal lighting with occupancy and daylight controls would be required for office and ancillary areas.

Access points to the site are gated, lit and covered by security cameras. Security staff would be responsible for ensuring that security procedures are implemented on the site and would maintain a record of all visitors to the site. Additionally, a 2.4m high security fence would be constructed around the perimeter of the Proposed Development.

The building would include fire protection, sprinklers and smoke detection systems to provide early warning of any combustion events. A dedicated fire water ring main would be installed as part of the Proposed Development to provide supply to fire hydrants in the event of the fire.

Design measures have been incorporated in respect of emergency and disaster management.

7. DEMOLITION AND CONSTRUCTION WORKS

7.1 Overview

Based on the assumption that planning consent is secured in Quarter 1/2 (Q1/Q2) 2022, the demolition and construction works would commence in Quarter 2 (Q2) 2022. The works are anticipated to be undertaken over a 30-month period, with a completion targeted of Q4 2024.

Due to the size of the proposed development, it would be completed in two phases.

7.2 Construction Environmental Management Plan

The framework presented in EIAR Volume 1 Chapter 5: Demolition and 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 Traffic Management Plan (CTMP) and a Site Waste Management Plan (SWMP) and would be submitted for review and approval by SDCC 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 SDCC 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, SDCC 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 SDCC 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 SDCC (and vice versa) as soon as practicable.

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

7.5 Working Hours

Working hours would be agreed with SDCC, but are expected to be:

- 07:00 to 19:00 hours Monday to Friday;
- 08:00 to 13:00 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 SDCC and other relevant parties.

7.6 Potential Demolition and Construction Environmental Effects

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

- Population and Health;
- Transport and Accessibility;
- Air Quality;
- Noise and Vibration;
- Water Resources and Flood Risk;
- Ecology;
- Ground Conditions;
- Climate Change;
- Waste;
- Material Assets;
- Landscape and Visual; and
- Cultural Heritage.

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 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 Demolition and Construction Effects

The demolition and construction stage of the proposed development would create employment opportunities and levels of employment for the demolition and construction stage are estimated to be in the region of 200 direct workforce jobs, with approximately 100 additional jobs during the peak construction period.

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. The extent of these benefits will be determined by the level of local procurement. The overall effect would be not significant to slight positive in nature and not significant in terms of EIA.

The potential for an increase in the temporary population of the area as a result of workers from outside the wider Dublin area choosing to reside in the immediate and wider local area, may place additional demands on local services (most notably health care facilities). Alternatively, it could result in additional trade for local accommodation and services.

There would also be air quality and noise impacts from demolition and construction activities in terms of dust impacts, on-site vehicle emissions and associated traffic. The health effects associated with these impacts would be not significant to slight, negative in nature and not significant in terms of EIA.

Overall, it is considered that the demolition of the existing site and construction of the proposed development **would not give rise to significant effects** on population and human health.

8.1.2 Operation Stage Effects

The proposed development is anticipated to employ approximately 45 full time equivalent staff members on-site at each data center building providing a total staffing level of 135. Additional to this would be the ad-hoc attendance of maintenance contractors and visitors. The resulting effect would be not significant to slight, positive in nature and not significant in terms of EIA. The air quality effects during operation from the MFGP and emergency generators are considered to be not significant to slight, negative, and not significant in terms of EIA.

There would be noise impacts during operation of the proposed development from the plant and servicing, however the predicted operational noise rating levels meet the required limits and would be non-significant to slight, negative in nature and not significant in terms of EIA.

Vulnerable groups in society could be affected most by the increase in traffic levels. Those such as young children and the elderly may experience negative health impacts. However, the impact magnitude of traffic and transport effects on human health is considered to be low due to there being no significant effects reported in the transport assessment. The overall impact from transport and accessibility is assessed as non-significant to slight, negative in nature and not significant in terms of EIA.

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

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 future employees to walk, cycle or use public transport and complete their journeys by alternatives to the private vehicle.

8.2.1 Demolition and Construction Effects

Demolition and construction traffic for the proposed development will be around 51% of that for the adjacent approved scheme (SD20A/0121), and that is considered a relevant and appropriate 'benchmark' for the proposed development.

The peak demolition and construction period would be in 2022 when there would be a maximum of 220 demolition and construction vehicle movements per day.

In accordance with the IEMA Guidelines, the assessment has focused on Profile Park and the application site accesses, where a potential increase in traffic of greater than 30 % has been identified.

There would be some increase in demolition and construction traffic during the 30-month programme of works. However, the effects of the demolition and construction traffic on the sensitive receptors would be short term as follows:

- Slight negative and not significant in terms of EIA for Pedestrian Severance, Delay, Amenity, Fear and Intimidation;
- Slight negative and not significant in terms of EIA for Driver Delay;
- Slight negative and not significant in terms of EIA for Accidents and Safety.

With the implementation and use of a construction management plan the demolition and construction stage would result in slight negative effects on transport and identified receptors, and as such **would not give rise to significant effects** in terms of EIA.

8.2.2 Operation Stage Effects

The proposed development will be fully operational in 2024 and is anticipated to generate 164 two-way vehicle trips daily. The operation of the MFGP up to approximately Q1 2025 using HVO as the fuel source would require an additional short term 54 HGV a day.

There would be in an increase in traffic resulting from the operation of the proposed development, specifically on Profile Park. The effects of the operation stage would be long term to permanent during the operation of the proposed development and include the following:

- Slight negative and not significant in terms of EIA for Pedestrian Severance, Delay, Amenity, Fear and Intimidation;
- Slight negative and not significant in terms of EIA for Driver Delay;
- Slight negative and not significant in terms of EIA for Accidents and Safety.

No additional mitigation would be required for the operation stage.

Overall, it is considered that the operational proposed development would result in slight negative effects on transport and identified receptors, and as such **would not give rise to significant effects** in terms of EIA.

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 demolition and construction activities, and nitrogen dioxide also known as NO2, typically generated by road traffic and combustion engines.

8.3.1 Demolition and Construction Effects

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

The predicted annual average demolition and construction traffic flows are not expected to exceed the Institute of Air Quality Management (IAQM) guidance threshold such as to require formal assessment. Traffic flows would be controlled through the implementation of the CEMP.

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 result in temporary negative, but not significant, effects at existing off-site receptors.

Overall, the demolition of existing buildings on the site and construction of the proposed development would result in an imperceptible effect on air quality and identified receptors, and as such **would not give rise to significant negative effects** on air quality in terms of EIA.

8.3.2 Operation Stage Effects

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

The potential impact to air quality during the operation stage of the proposed development is a breach of the ambient air quality standards because of air emissions from the proposed development of the MFGP and emergency engines. The modelled predicted concentrations are below the relevant objectives at all existing receptor locations for the operation stages.

It is considered that the operation of the proposed development Phase 1 with the MFGP, expected to be operational from approximately Q4 2023 to Q1 2025 using HVO as the fuel source, would result in a temporary to short term Negative, Imperceptible effect i.e. not significant in terms of EIA on air quality and identified receptors. The operation of Phase 2 with the MFGP running on natural gas, would result in a Negative, Imperceptible effect i.e. not significant in terms of EIA on air quality and identified receptors. The operation of the proposed development emergency generators would result in an imperceptible effect on air quality and identified receptor that is not significant in terms of EIA. Overall, the operation stage of the proposed development **would not give rise to significant negative effects** on air quality in terms of EIA

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

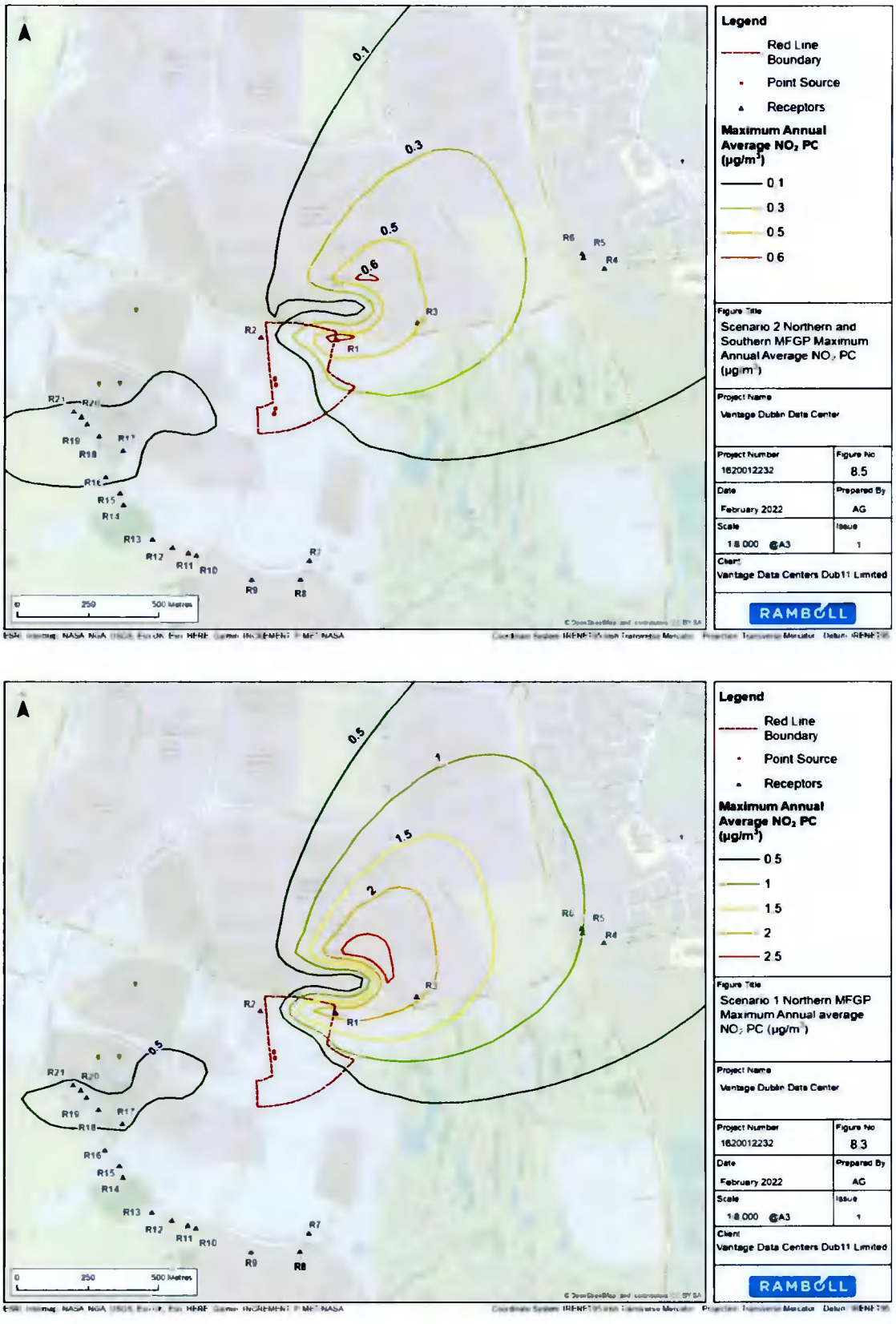


Figure 8.1: Phase 1 and Phase 2 Maximum Annual Average NO^2 PC (µg/m³).

8.4 Noise and Vibration

8.4.1 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 demolition and construction, and operation effects associated with the proposed development.

8.4.2 Demolition and Construction Effects

Assessment of noise and vibration during the demolition and construction phase has undertaken, using representative data for the various phases of the works. The assessment considered demolition, enabling works, substructure and superstructure construction, internal fit-out and external works.

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 demolition and 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 demolition and construction stages would result in direct temporary to short term slight negative effects for the identified receptors, and as such **would not give rise to significant effects.**

8.4.3 Operation Stage Effects

An overview of modelled noise emissions during Phase 1 and Phase 2 can be seen in Figure 8-3 under normal operation and using emergency generators.

The proposed development will be designed to achieve the noise emission limits as stipulated by SDCC, 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.

Overall, it is considered that the operation stage would result in a direct permanent long-term slight negative effect, and as such **would not give rise to significant effects** from noise and vibration.

During emergency conditions, there would be a direct, brief, slight negative noise and vibration effect, **which is not significant** in terms of EIA.

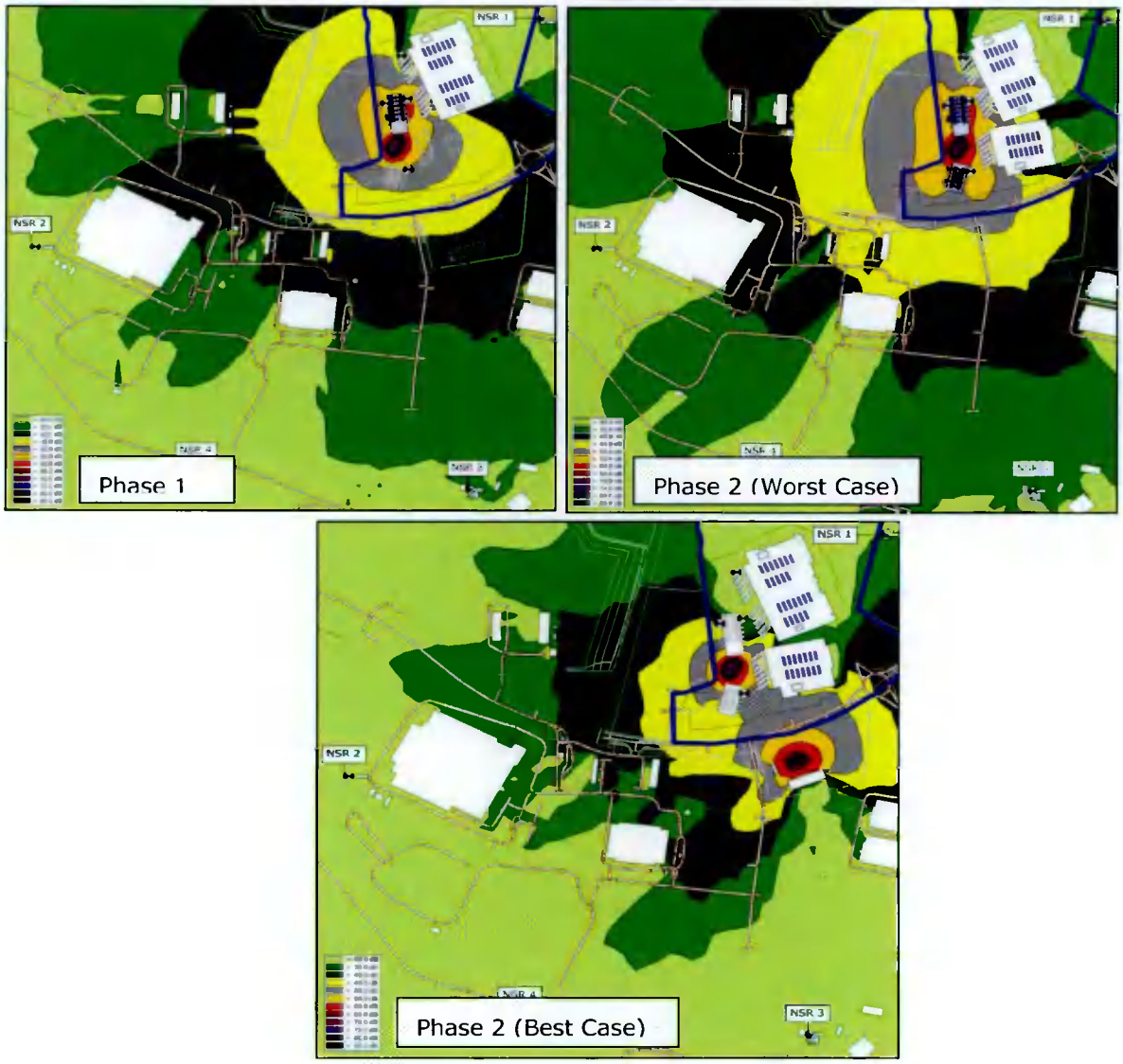


Figure 8.2: Overview of modelled noise emissions during normal operation.

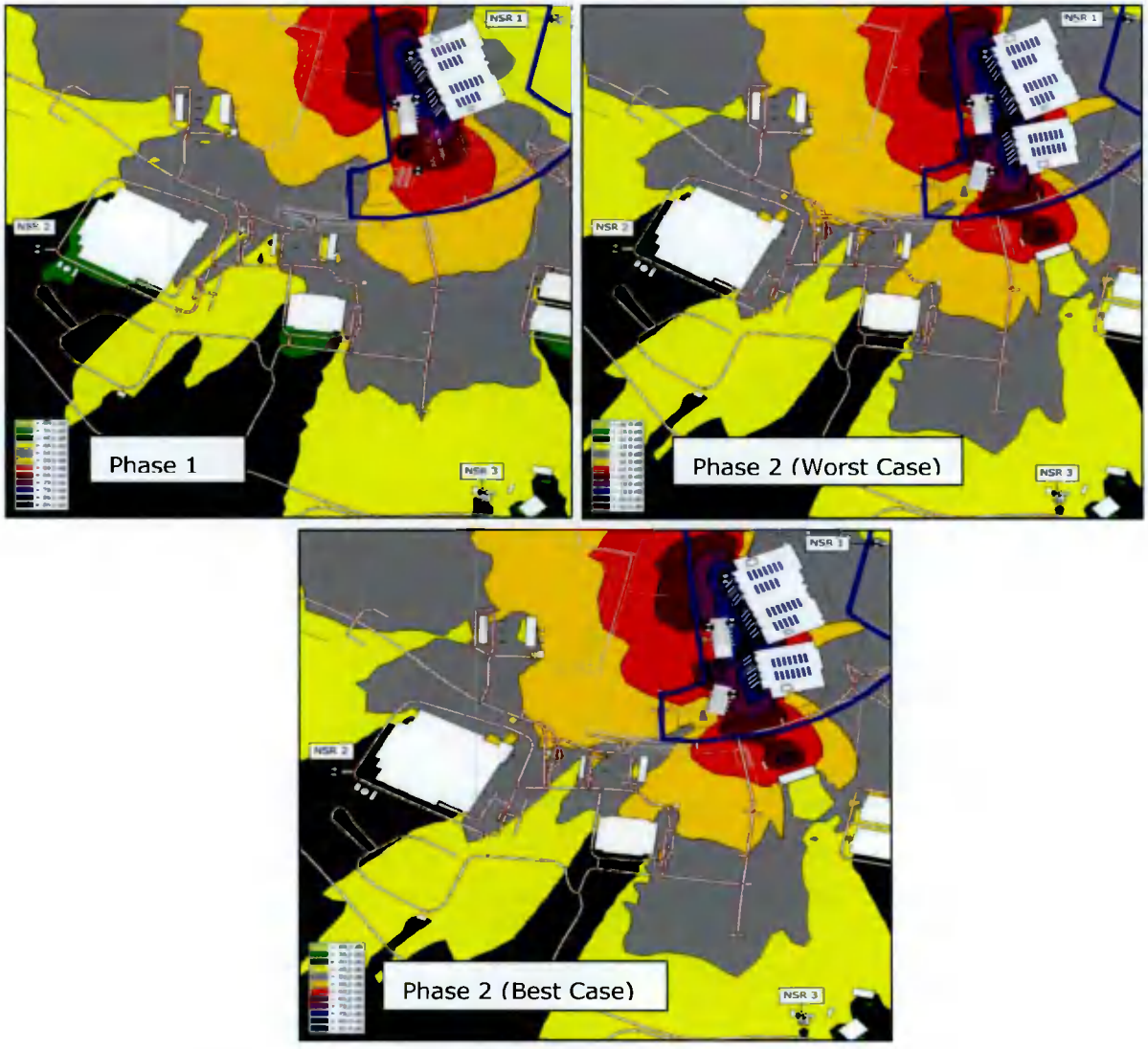


Figure 8.3: Overview of modelled emergency noise emissions.

8.5 Water Resources and Flood Risk

The subject site is greenfield, historically used for agricultural use, and there is no evidence of standing groundwater at the site.

The Baldonnel Stream flows through the site, entering the site in the southeast before meandering to the north and then leaving the site via a twin-pipe culvert to the west. Areas of the site in close proximity to the Baldonnel Stream are shown to be in an area of low fluvial flooding probability.

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.

8.5.1 Demolition and Construction Effects

During demolition and 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 demolition and construction site and from stockpiles, polluting substances (e.g. fuels and chemicals) from accidental spillages and other wastes during general demolition and construction activity;
- Change in surface water quality and hydrodynamic status (as a result of the proposed works in the Baldonnel Stream floodplain);
- Disruption of Groundwater during construction excavations;
- Changes to Fluvial Flood Risk; and
- Water Supply and Foul Drainage during construction.

Overall, and considering the embedded mitigation (primarily through the CEMP), it is considered that the demolition and construction of the proposed development **would not give rise to significant effects** 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:

- Increased flood risk from the Baldonnel Stream;
- 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 improve the landscaping and habitat setting of the Baldonnel Stream, and to provide a proposed increase in floodplain capacity. This would result in improvements in terms of flood risk, and such improvements would be supplemented by the proposed management of surface water runoff (reduction to a greenfield rate taking account of climate change) and raising of FFLs, such that it is considered that the operation stage of development would result in a Moderate Positive effect on flood risk at the site and for downstream receptors, and as such **would be expected to give rise to significant positive effects.**

8.6 Ecology

There are four Special Areas of Conservation (SACs) and three Special Protection Areas (SPA) located within 15km of the site boundary. Within 5km of the site boundary there are two proposed

Natural Heritage Areas (pNHAs). The site has a hydrological connection with South Dublin Bay and the River Tolka Estuary SPA via the Baldonnel stream and the River Liffey.

Eight 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 treeline (WL2). The lands directly under and adjacent to the proposed development are considered to be of low ecological value.

An assessment of invertebrates was completed on the section of the Baldonnel stream within the site. No notable species were identified during this stream assessment. Invertebrate biodiversity was considered to be low.

Bat surveys did not reveal any bats emerging from or entering the cottage or the outbuilding. Low levels of commuting/foraging bat use of the site by three common Irish species were recorded overall.

8.6.1 Demolition and Construction Effects

During demolition and construction works, there may be disturbance of protected species or breeding birds, loss of habitats, habitat damage though 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 and not significant.

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

8.6.2 Operation Stage Effects

During the operation stage, pollution to aquatic habitats and disturbance of bats through lighting are expected. However, the residual effects would be expected to be imperceptible for the local bat population, and imperceptible and neutral for the only designated site affected (South Dublin Bay and the River Tolka Estuary SPA).

The proposed landscape masterplan includes a range of landscape enhancements including those to the Baldonnel Stream, the planting of a wetland wildflower mix, wildflower meadow mix, berms, green walls and woodland on site. Substantial enhancements are proposed for the wildlife and the stream, leading to positive effects for habitat interest and for species groups including birds and those associated with the stream.

Overall, it is considered that the operation stage would result in a slight positive effect on ecology and identified receptors. It would therefore **not give rise to significant effects** on ecology in terms of EIA.

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 with the Baldonnel Stream running through the site.

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 Demolition and Construction Effects

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

The activities that could affect the ground, are:

- Excavation and construction of a series of underground fuel storage tanks;
- Formation of landscape bunds and SuDS/wetland features to the north of the stream;
- Re-use of excavated material within construction works where possible in order to minimise off-site material movements, including excavated soils, roads and demolition materials;
- Excavations for foundations, drainage works or services (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 demolition and construction stage for plant and vehicles; and
- Vehicles moving across soils within the site.

With consideration of the embedded mitigation measures predicted impacts on human health and the geological and hydrogeological environment would be unlikely to occur during the demolition and construction stage. Effects would be temporary to short-term, imperceptible to imperceptible/not significant negative.

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 the embedded mitigation measures predicted impacts on the hydrogeological environment from accidental spills and leaks would be unlikely to occur during the demolition and construction stage. Effects would be imperceptible/not significant negative.

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

8.7.2 Operation Stage Effects

During the operational stage there is a potential for leaks and spillages from the fuel storage (bulk storage and local storage at the back-up generators) to occur on-site.

There is also the potential for leaks and spillages from vehicles along access roads, loading bays and 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 the embedded mitigation measures predicted impacts on the hydrogeological environment would be unlikely to occur during the operation stage. Effects would be permanent, imperceptible to imperceptible/not significant negative.

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 no planned infiltration into the ground.

With consideration of the embedded mitigation measures predicted impacts on human health and the geological and hydrogeological environment would be unlikely to occur during the operation stage. Effects would be permanent, imperceptible/not significant negative.

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

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 Demolition and 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 range from imperceptible to not significant, negative in nature and **would not give rise to significant effects in terms of EIA.**

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 imperceptible to imperceptible to not significant, negative in nature and **would not give rise to significant effects in terms of EIA.**

A high-level greenhouse gas (GHG) emissions assessment has estimated the demolition and construction of the proposed development would result in approximately 209,804 tonnes CO2e over the course of the demolition and 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, implementation a CEMP with best practice measures would contribute to reducing GHG emissions associated with the demolition and 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 the nature of the proposed development and embedded mitigation measures, a medium effect was considered for the flooding of the Baldonnel stream, and the overwhelming of drainage assets, causing secondary flooding. However, with the consideration of additional mitigation, i.e. the implementation of a Flood Risk Mitigation Plan, the residual effects are predicted to be of low or medium magnitude. This effect is therefore considered to be imperceptible to not significant, negative in nature and **would not give rise to significant effects** in terms of EIA**.**

Considering embedded mitigation measures, all other effects have been of low magnitude and are therefore considered to range from imperceptible to not significant to slight to moderate, negative in nature and **would not give rise to significant effects** in terms of EIA.

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 imperceptible to not significant, negative in nature and **would not give rise to significant effects** in terms of EIA.

The GHG assessment has estimated the completed development would result in between 6,757,028 and 152,210,999 tonnes CO2e during the operation stage of the proposed development. This would contribute between 0.35 and 8.3 % of Ireland's carbon budget for 2021 to 2035, with the range representing the anticipated normal operation of the site with power from the EirGrid substation south of Falcon Avenue (0.35%) up to the use of the MFGP 24/7 in the worst case in response to requirements from EirGrid (8.3%).

As outlined IEMA best practice guidance states all GHG emissions contribute towards climate change and are **significant.**

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 Demolition and Construction Effects

During the demolition and construction stage, waste would be produced from the demolition of the single storey dwelling on-site, and the construction of the data centers and accommodating facilities.

It is anticipated that the proposed development would generate approximately 44,500 tonnes of construction and demolition (C&D) waste in addition to operational waste.

Mitigation measures such as segregating of waste, using appropriate storage, and implementing a Site Waste Management Plan (SWMP) (and CEMP) would reduce likely negative impacts and maximise the reuse and recycling and/or recovery of waste. Therefore, the reduction in capacity of waste management facilities, due to the estimated waste arisings from the proposed development, would only be approximately 0.12 % and the reduction in landfill capacity would be approximately 0.05 %.

In addition, it is expected that 99.5 % of the C&D waste and over 90 % of operational waste would be diverted from landfill. This represents a minimal reduction in capacity of waste infrastructure in the region (less than 1 %) and therefore, the sensitivity is Low. As the diversion from landfill is over 90 %, the magnitude of impact is negligible and the effect on the waste management infrastructure and landfill sites is likely to be imperceptible or slight.

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

8.9.2 Operation Stage Effects

During the operation stage, waste would be managed in accordance with relevant national and regional legislation such as the Waste Framework Directive. Waste collection vehicles would service the development regularly to ensure the resources are dedicated to ensuring efficient waste management practices.

Additionally, hazardous waste may be generated from batteries, contaminated chemical drums and other packaging. If the packaging contains residues of or if it is contaminated by dangerous substances, it may be classified as a hazardous waste (depending on the volume and concentration of contaminants).

Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste efficiently from this type of development. Waste which is not suitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables which is typically exported for conversion into recycled products (e.g. paper mills and glass recycling).

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

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 power requirements for the proposed development will be provided via a connection to an EirGrid ESB substation that will be constructed and will be subject to a separate SID application.

Whilst the connection to the EirGrid is implemented the plant is proposed to be powered using a MFGP which will initially be powered using HVO and latterly natural gas. Emergency backup generators are also present within each data center in case of an EirGrid network failure and underground HVO fuel storage is present beneath the MFGP to provide back-up in the event of GNI network failure. The Baldonnel Stream runs through the site and surface water sewers are present in Falcon Avenue.

The proposed surface water measures incorporate SuDs and are aimed at improving the general surface water management of the site, by introducing interceptors, attenuation measures and by restricting the ultimate discharge to the existing surface water sewers and to the Baldonnel Stream.

Foul water will be discharged via gravity sewer into the existing connection Falcon Avenue.

Water supply will be from a network connection located in Falcon Avenue.

A telecommunications network will be installed at the site which will serve all of the data centers and will be connected to the regional network by the statutory network operator.

8.10.1 Demolition and Construction Effects

During the demolition and construction stage demand on the networks outlined above will be predominantly for minor temporary connections for welfare facilities and plant and or will be provided by mobile connections.

The permanent connections to the wider network in Profile Park will be undertaken in consultation with statutory undertakers to ensure there is no impact on the network when connections are made.

Overall, it is considered that the demolition and construction stages of the proposed development would result in a temporary to short term, imperceptible effect on material assets and identified receptors, and as such **would not give rise to significant effects** in terms of EIA.

8.10.2 Operation Stage Effects

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

Power and electrical demand is managed though the site phasing and will originate from the MFGP for Phase 1 which will operate from approximately Q4 2023 to Q1 2025. In Phase 2 power to the site will be provided through the permanent connection to the EirGrid substation. During the operation stage the MFGP will operate as a peaking power unit responding to network constraints and providing resilience to the network. As such effects on electrical supply and power are considered to be Permanent, Slight and Positive i.e. Not Significant in terms of EIA. If the MFGP were required to provide power to the grid on a 24/7 basis under DCCOPP the effects on power supply could be Significant and Positive.

Surface water from the proposed development has been designed in accordance with the Greater Dublin Strategic Drainage Strategy with restricted discharge at greenfield run off rates to the existing surface water network and to the Baldonnel Stream. The network incorporates pollution presentation measures.

Effects on gas supply, surface and foul water infrastructure, water supply and telecommunications during operation are considered to be Permanent, Imperceptible, and Neutral i.e., Not Significant in terms of EIA.

Overall, in relation to material assets it is considered that the operation of the proposed development **would not give rise to significant effects** in terms of EIA.

8.11 Landscape and Visual

The site is located within the Newcastle Lowlands landscape character area (LCA), close to the Urban LCA boundary. The proposed development is located in an area of fragmented character due to its proximity to urban areas and major transport corridors that has already undergone transitional change from agriculture to industrial and commercial land use.

The site is located within an area allocated for strategic employment development by the Regional and Local Authority.

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 included the Grand Canal (a pNHA), 27 listed NIAH buildings, Baldonnel Stream, 5site trees, and hedgerows.

8.11.1 Demolition and Construction Effects

Within the context of the LCA it is considered that the proposed development would result in a slight negative effect that is not significant in terms of EIA.

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

- disturbance to blue and green infrastructure associated with the Grand Canal pNHA;
- Disturbance to the onsite landscape features that include historic hedgerows, trees and the Baldonnel stream and impacts that may affect the features quality including compaction and pollution;
- disturbance on the setting and amenity of NIAH listed 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 Landscape Character Area.

The embedded mitigation measures within the CEMP including erection of 2.4m hoarding around the site and early establishment of boundary landscape features, result in the effects being short term, temporary and slight negative that are not significant in terms of EIA.

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 demolition of existing site and construction of the proposed development would result in temporary to short-term slight negative effect on the landscape and visual amenity of the area and identified receptors and **would not give rise to significant effects** in terms of EIA.

8.11.1 Operation Stage Effects

During operation, the proposed boundary treatments are judged to have an overall medium positive effect at year 5 on the Site's hedgerows and trees that are an important landscape feature within the Newcastle Lowlands LCA that is Significant. The landscape strategy and boundary treatments would contribute to local amenity value, biodiversity and green infrastructure. The positive effects are due to the additional vegetation and improvements in the quality of the sites established landscape features and the introduction of new features that include wetland meadow, ponds, increased native tree planting and enhanced hedgerows forming a green infrastructure corridor across the site.

The overall impact on the Newcastle Lowlands Character area is judged to be imperceptible negative due to the additional large scale commercial buildings within this area of level topography. The impacts on the area are reduced by the strengthening of the site's landscape features that contribute to overall character and would help assimilate the Proposed Development within the character area. The effects are not significant in EIA terms

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 considered to result in:

- Imperceptible negative effects at 7 locations (VP 1, 2, 3, 4, 6, 7, and 10);
- Slight negative effects 3 locations (VP 5 and 9); and
- Imperceptible neutral effects at 2 locations (VP 8 and 11).

A location plan of these views is shown in Figure 8.4 with photomontages of these shown in Figure 8.5 to 8.27.

Due to the context of the site and the similar scale and type of buildings in close vicinity, it is considered **that the visual effects of the proposed development are not significant** in terms of EIA. The boundary treatments are expected to minimise the visual impact of the building increasingly over time, helping to mitigate any cumulative developments impacts.

Figure 8.4: Viewpoint Location Plan

Figure 8.5: Phase 1, Day 1: Viewpoint 1 - The Grand Canal looking south east.

Figure 8.6: Phase 2, Year 5: Viewpoint 1 - The Grand Canal looking south east.

Figure 8.7: Phase 1, Day 1: Viewpoint 2 - New Nangor Road at the roundabout junction with Baldonnel Road looking south east.

Figure 8.8: Phase 2, Year 5: Viewpoint 2 - New Nangor Road at the roundabout junction with Baldonnel Road looking south east.

Figure 8.9: Phase 1, Day 1: Viewpoint 3 - Baldonnel Road Junction with Profile Park looking east.

Figure 8.10: Phase 2, Year 5: Viewpoint 3 - Baldonnel Road Junction with Profile Park looking east.

Figure 8.11: Phase 1, Day 1: Viewpoint 4A - Baldonnel Road near Newcastle Motors looking north east

Figure 8.12: Phase 2, Year 5: Viewpoint 4A - Baldonnel Road near Newcastle Motors looking north east

Figure 8.13: Phase 1, Day 1: Viewpoint 5 - Baldonnel Road near the entrance to the Casement Aerodrome looking northwest

Figure 8.14: Phase 2, Year 5: Viewpoint 5 - Baldonnel Road near the entrance to the Casement Aerodrome looking northwest

Figure 8.15: Phase 1, Day 1: Viewpoint 6 - New Nangor Road to the north west corner of the Site looking south east

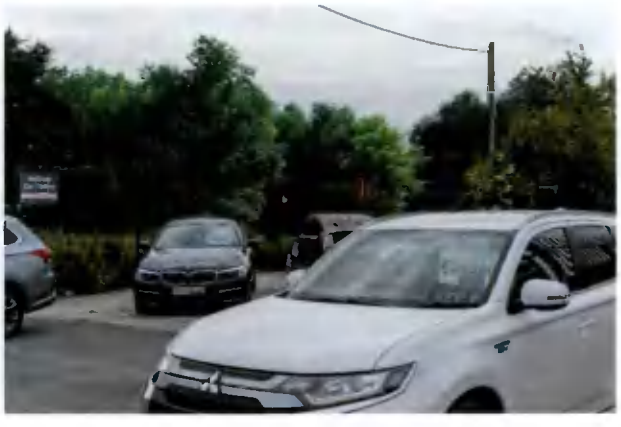


Figure 8.16: Phase 2, Year 5: Viewpoint 6 - New Nangor Road to the north west corner of the Site looking south east

Figure 8.17: Phase 1, Day 1: Viewpoint 7a - New Nangor Road to the north east corner of the Site looking south west

Figure 8.18: Phase 2, Year 5: Viewpoint 7a - New Nangor Road to the north east corner of the Site looking south west

Figure 8.19: Phase 1, Day 1: Viewpoint 7b – New Nagar Road, looking across the road into the site

Figure 8.20: Phase 2, Year 5: Viewpoint 7b – New Nagar Road, looking across the road into the site

Figure 8.21: Phase 1, Day 1: Viewpoint 8 - New Nangor Road and Profile Park Road roundabout junctions looking south west

Figure 8.22: Phase 2, Year 5: Viewpoint 8 - New Nangor Road and Profile Park Road roundabout junctions looking south west

Figure 8.23: Phase 1, Day 1: Viewpoint 9 - Profile Park Road roundabout at the Site entrance looking north west

Figure 8.24: Phase 2, Year 5: Viewpoint 9 - Profile Park Road roundabout at the Site entrance looking north west

Figure 8.25: Phase 1, Day 1: Viewpoint 10 - Profile Park Road on the south west corner of the Site looking north east

Figure 8.26: Phase 2, Year 5: Viewpoint 10 - Profile Park Road on the south west corner of the Site looking north east

Figure 8.27: Phase 1, Day 1 and Phase 2, Year 5: Viewpoint 11 - Profile Park Road on the south west corner of the Site looking north east

8.12 Cultural Heritage

A total of 24 monuments and sites are listed within a 1 km radius of the site, presented in Figure 8.28. None of the listed sites fall within the site boundary and there are no recorded archaeological sites or finds within the site boundary. There are no structures included in the statutory Register of Protected Structures or assets on the Record of Monuments and Places or the Register of Historic Monuments within the site. The closest statutory designated heritage asset is Grange Castle, on the edge of the study area to the north.

Figure 8.28: Location of heritage assets within the 1km radius study area.

The site is not part of an area of intact historic landscape and there are no on-site standing buildings of heritage interest.

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 edge 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.

8.12.1 Demolition and Construction Effects

The proposed development will involve groundworks, including for the underground fuel storage tanks, which will have an impact on below ground archaeological remains. The risk of impacts would come from the possible damage to any below ground sites / features / localised findspots.

A geophysical survey of the site revealed no probable or possible sites/features of likely archaeological origin. Additionally, archaeological test trenching found no evidence of evidence of any features or deposits of archaeological significance and no artifacts were recovered.

Overall, the demolition and construction stage would result in a neutral imperceptible effect for archaeology and as such, would not give rise to significant effects.

There would be no direct construction effects on any of the identified built heritage features in the study area during the demolition and construction stage. The site is at a distance away from the

protected structures within the study area which means that the visual presence of construction activity, including cranes and the related noise and vibration, would not be perceptible from any of the assets or their setting.

Additionally, the ongoing construction of the business parks is also an established aspect of the character of the study area, and the vacant residential property that will be demolished is not considered to have any heritage value.

Overall, the demolition and construction stage would not result in any change to the built heritage in the study area or the character of their setting and no effects are predicted.

Overall, it is considered that the demolition and construction stages of the proposed development would result in an imperceptible effect on heritage assets and identified receptors, and as such **would not give rise to significant effects** in terms of EIA.

8.12.2 Operation Stage Effects

In regard to archaeology, no significant effects are predicted on the archaeological resource on site during the operation stage.

For built heritage, there would be no change to Kilmactalway church, Grange Castle, Kilcarberry House, Castle Bagot House or the buildings of heritage interest at Casement Aerodrome, or their setting as a result of the proposed development, and therefore the operation stage would not result in any impacts, and the effects would be neutral in nature and not significant in terms of EIA.

The change to the character of the setting of Kilbridge church and related features through additional structures to the existing visibility of the business park development to the north would result in in a negative effect of slight significance. This would be permanent, slight, irreversible and not significant in terms of EIA.

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

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 demolition and construction works and also once the proposed development is operational, were considered.

9.1.1 Demolition and Construction

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

9.1.2 Operation

Effect interactions are likely to arise during operation in relation to off-site human health effects, associated with air quality, noise, transport and climate change. These effects are considered in their own right a part of the EIAR and also in the context of their associated human health effects as part of the population and human health assessment as discussed in Section 8.1. Due to the need to ensure these effects are reported within their own right and are not double counted they have not been considered here from an intra-cumulative effects' perspective (as they are already considered from an intra-cumulative in the discussion in Section 8.1 on population and human health).

Whilst effects have been identified in relation to buildings and infrastructure associated with higher temperatures leading to increased lightning strikes resulting in damage to infrastructure or power loss, and with increased resilience in the power network due to the MFGP, these are not considered to have interactions.

No further 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.

Where there are potential overlaps of the demolition and construction stages of the proposed development with cumulative schemes, significant cumulative effects from air quality and noise emissions generated are unlikely to occur as each scheme is anticipated to employ similar environmental management plans and best practice measures such that the individual demolition and construction stage effects are not considered to be significant, alone or in-combination.

The proposed development and cumulative schemes are anticipated to operate within air quality standards and design noise emission limits such that the individual operation stage effects are not considered to be significant, alone or in-combination.

In summary, no significant negative inter-project cumulative effects have been identified during the demolition and 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, consultation with SDCC and the SDCC AI Request.

The proposed development would deliver a high-quality data center scheme maximising the productive use of the site and delivering landscape and biodiversity improvements to further establish Profile Park and the surrounding area as a data center hub, thereby enhancing the national data storage capacity and infrastructure.

The following significant negative environmental effects have been identified during the demolition and construction stage:

- Greenhouse gas emissions (GHG) during demolition and construction.

The following significant positive environmental effects have been identified during the operation stage:

- Reductions in fluvial and surface water flood risk as a result of changes to the surface water runoff regime of the site and reduced risk of flooding from the Baldonnel stream; and
- Landscape improvements in site hedgerows and trees as a result of an increase in planting and the strengthening of traditional landscape features.

The following significant negative environmental effects have been identified during the operation stage:

- Greenhouse gas emissions (GHG) during operation.

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.