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VANTAGE DUBLIN DATA CENTER

VOLUME 2: LANDSCAPE, VISUAL AND BUILT HERITAGE IMPACT ASSESSMENT

RAMBOLL

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1 LANDSCAPE AND VISUAL

Introduction

- 1.1 This chapter of the EIAR reports on the likely significant Landscape and Visual effects to arise from the demolition and construction stage and the operation stage of the proposed development.
- 1.2 The chapter describes the Landscape policy context; the methods used to assess the potential impacts and likely effects; the baseline conditions at and surrounding the site; the likely landscape and visual effects taking into consideration embedded mitigation; the need for additional mitigation and enhancement; the significance of residual effects; and inter-project cumulative effects.
- 1.3 The chapter is supported by the following technical appendices in EIAR Volume 2:
 - Appendix 1.1: Figures 1-3;
 - Appendix 1.2: Viewpoint Photographs;
 - Appendix 1.3: Phase 1 (day one) and Phase 2 (year five) Viewpoint Photomontages;

Methodology

Approach

- 1.4 This LVIA forms part of an Environmental Impact Assessment Report (EIAR) that has been prepared to accompany the planning application for the Proposed Development by the Applicant. The LVIA is delivered in accordance with the principles outlined within the GLVIA¹.
- 1.5 The GLVIA states the need for an approach that is proportionate to the scale of the project being assessed and the nature of its likely effects. In accordance with the GLVIA and within this LVIA, 'impact' is defined as the action being taken, and the 'effect' is defined as the change resulting from that action. In accordance with the GLVIA guidance for non-EIA projects, this LVIA specifies the nature of the Proposed Development, describes the existing landscape and visual amenity in the area that may be affected, predicts the effects, and considers how those effects might be mitigated.
- 1.6 This LVIA has been prepared by a Chartered Member of the Landscape Institute. In carrying out this LVIA, an independent stance has been taken. As appropriate, the LVIA addresses both the positive and negative impacts of the Proposed Development in a way that can be relied upon by all parties concerned. The assessment has been informed by a combination of desk-top research, digital analysis and photography.
- 1.7 Representative viewpoint locations have been determined through desktop research and calculation of a Zone of Theoretical Visibility for the area surrounding the Site of up to 1.5km using a Digital Surface Model of up to 1.5m accuracy (see Figure 1, Appendix 1.1). The analysis determined 10 representative Viewpoint locations for agreement by the Planning Authority. On consideration, the Planning Authority requested an additional viewpoint from the N7 on approach to Dublin. Agreed Viewpoints 01 to 11 are shown in Figure 2, Appendix 1.1).

Viewpoints and Photography

- 1.8 Photography for all viewpoints was taken using a Full Frame Sensor camera with 50mm Fixed Focal Length Lens, to provide consistency between all viewpoints. An image captured in this way is representative to that seen by the human eye when viewed at a width of 39cm from a distance of 55 cm. Single frame photographs were taken with the levelled camera on a fixed from each viewpoint (see Appendix 1.2). The tripod height above ground, angle and coordinates were recorded for each image.
- 1.9 For viewpoint 01 to 10, a photomontage for the Proposed Development is provided to demonstrate location and scale of the Proposed Development. Photomontages are provided for both Phase 1 day one and Phase 2 year 5 to show the different phases of development and the different maturity of landscaping treatments around the boundary. Photomontages for Phase 2 day one are not provided due to the limited change in visual impact between day one and year five of operation.
- 1.10 Photomontages are produced using 3DS Max modelling software and placing the building accurately using the coordinates of the camera location (Appendix 1.3). The 3D building model is geo-located within the viewpoint image using digital terrain models with an elevation accuracy of within 1.5 m. Wireframe images were used to demonstrate how the building was aligned within the viewpoint photographs and are available as supporting evidence if required.

Consultation

- 1.11 Table 1.1 summarises the consultation that has been undertaken with respect to the landscape and visual assessment.

Table 1.1.1: Summary of Consultation

Consultee and Form/Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
SDCC Consultation Meetings 23 June and 19 July 2021	Accepted the proposed approach to the assessment of potential effects for landscape and visual contained herein.	The proposed development will be delivered in 2 phases and the assessment contained herein considers impacts for Phase 1 at day 1 of operation and Phase 2 at day 1 of operation and Year 5.
SDCC Additional Information Request ref SD21A/0241 dated 26 October 2021	As part of item 3 (G) of the request SDCC outlined that there were a number of inconsistencies within the photomontages. The Applicant was requested to provide the following: <ul style="list-style-type: none"> • Location of view 1 • Proposed views for view 4 and 8 • Details of locations for 7a and 7b It was also noted that the proposed development would take	The proposed views contained in EIAR Volume 2, Chapter 1, Appendix 1.3 are also provided for Phase 1 at day 1 and Phase 2 at year 5 of operation that incorporate the proposed landscaping and accurate tree heights that would be implemented early within construction of Phase 1.

¹ Landscape Institute, 2013. Guidelines for Landscape and Visual Impact Assessment (GLVIA3). Third Edition.

Table 11.1: Summary of Consultation

<p>place in a number of phases and SDCC requested that photomontages be provided which reflect the different phases. These were requested to include any boundary treatments and landscaping (including any interim landscaping)</p>	<p>A proposed view for VP-04 cannot be provided as there was no safe location to take a verified view from. This is due to the ditch present to the north of the road, the live carriageway, and private properties to the south of the road for which no access was available. As such, a replacement view (4a) is provided in EIA Volume 2, Chapter 1, Appendix 1.3 along with the proposed view of VP-08 (noting the building is not visible from this location).</p>
	<p>Further clarity is provided on the locations of VP-01, VP-07a and VP-07b within Figure 2 of EIA Volume 2, Chapter 1, Appendix 1.1</p>

Assessment Criteria

- 1.12 For each landscape character area (LCA) identified and representative viewpoint, the following has been determined:
- Nature of the receptor (sensitivity): The value, importance, and susceptibility of the receptor in relation to Proposed Development; and
 - Nature of impact (magnitude): The impact on the receptor arising as a result of the Proposed Development regarding probability, reversibility, spatial extent, and temporal aspects.
- 1.13 The criteria used for determining the sensitivity of landscape and visual receptors is described in Table 1.2. The descriptions are not intended to be exhaustive but provide a definition of the nature of the receptor for each level of sensitivity. Professional judgment is applied when determining the appropriate level of sensitivity for each receptor.

Table 1.2: Sensitivity of Receptor

Sensitivity		Receptor
	Landscape	Visual
Low	<p>High capacity to accommodate development of the same type, scale and appearance as the Proposed Development.</p> <p>An area of poor quality or condition.</p> <p>Is locally abundant and has few or no distinguishing or designated features.</p> <p>Locally valued for its character, features and sense of place.</p>	<p>A view that is characterised by features of the same type, scale and appearance as the Proposed Development.</p> <p>A view that has little visual amenity or interest, or of a townscape with poor condition.</p> <p>A view that is incidental or experienced at speed.</p> <p>A positive view experienced by people during leisure activities such as sports, walking, cycling.</p> <p>A view that has specific local value but is not recognised by designation in local planning or guidance.</p>
Medium	<p>Good to medium quality or condition, potentially including some designated features such as Tree Preservation Orders or Listed Buildings.</p>	<p>A positive view experienced in passing by large numbers of people in passing from transport corridors</p> <p>A view recognised by designation in local planning policy or guidance.</p>
High	<p>Value or character is recognised through national or local designation (within, or predominantly within a Conservation Area or Registered Park and Garden, or a high proportion of Listed Buildings, Ancient Woodland).</p> <p>Consistently of high quality and condition, offers strong scenic value.</p> <p>Little capacity to accommodate development of the same type, scale and appearance as the Proposed Development.</p>	<p>A positive/valued view experienced by residents, or large number of visitors/recreational users.</p> <p>Static views towards important local features, landmarks, or buildings.</p> <p>Views that are susceptible to changes of the type, scale and appearance as the proposed development.</p>
Very High	<p>Landscapes of very high international/national importance and rarity or value with no or very limited ability to accommodate change without substantial loss/gain (e.g. national parks, internationally acclaimed landscapes - UNESCO World Heritage Sites)</p>	<p>A view recognised by designation in national or international policy or guidance.</p> <p>A positive/valued view that is the primary reason for visiting the area by local, national and international users.</p> <p>Views that are very susceptible to changes of the type, scale and appearance as the proposed development.</p>

1.14 Table 1.3 provides a definition of the magnitude of impacts on landscape and visual receptors resulting from the Proposed Development. The definitions are not intended to be exhaustive and professional judgment is needed when determining the appropriate magnitude of impact, which may be neutral (a change may be apparent but has no overall positive or negative impact), positive or negative.

Table 1.3: Magnitude of Impact Criteria

Magnitude	Receptor	
	Landscape	Visual
No Change/Negligible	No perceptible change to the landscape character.	No perceptible change to the overall view.
Low	A small change resulting from the Proposed Development that may be incongruous in itself, whilst retaining the overall character and quality of the wider townscape area.	A change that is visible but would not be immediately apparent to the visual receptor or in key views.
Moderate	A notable change to the landscape area resulting from the Proposed Development that is incongruous with the surrounding character.	A change that is visible but is consistent with the nature and amenity of the existing view.
High	A notable change resulting from the Proposed Development that is incongruous with the surrounding character.	A notable change within a small proportion of overall view, or for limited durations.

1.15 The level of effect of the Proposed Development on each receptor, resulting from a combination of the sensitivity of the receptor and the magnitude of impact, is determined using the matrix in Table 1.4. Effects, other than Neutral, can be Negative or Positive.

Table 1.4: Scale of Effect

Magnitude	Sensitivity			
	Low	Medium	High	Very High
No change/Negligible	Imperceptible	Imperceptible	Not significant/ Slight	Moderate
Low	Imperceptible	Not significant/ Slight	Moderate	Significant
Moderate	Not significant/ Slight	Moderate	Significant	Very Significant
High	Moderate	Significant	Very Significant	Profound

1.16 Effects that are imperceptible to not significant/slight in scale are considered 'not significant'. Effects that are moderate and above are judged to be 'significant'.

Assumptions and Limitations

1.17 Photographs were undertaken in June and August 2021 with the majority of deciduous vegetation in leaf. The worst-case scenario for visual impacts is during the winter months, when the absence of leaves can open more distant views. The LVIA has taken this into account using professional judgement and experience from other projects to determine the extent of visibility and the impact on views during winter months.

Assessment Scope

1.18 This LVIA is intended to identify and assess the significance of effects for the impacts resulting from the Proposed Development on both the landscape, as an environmental resource in its own right, and on people's views and visual amenity. The semi-urban nature of the surrounding land requires both landscape and townscape elements to be included in the assessment.

1.19 As advised in EPA guidance², the LVIA has been prepared taking into account relevant local and national guidance, policy and legislation, and the Landscape Institute's 2013 Guidelines for Landscape and Visual Impact Assessment³ (GLVIA) that provides the definitions that have been used as described below.

1.20 Landscape is an area, as perceived by people, the character of which is the result of the action and interaction of natural and/or human factors. Townscape refers to areas where the built environment is dominant. Villages, towns and cities often make important contributions as elements in wider open landscapes, but townscape means the landscape within the built-up area, the character and composition of the built environment including the buildings, the relationships between them, the different types of urban open spaces, including green spaces, and the relationship between buildings and open spaces⁴. The way that villages, towns and cities change and develop over time contributes to their current form and character.

² Environmental Protection Agency, 2017, Draft Guidelines on the Information to be contained in the Environmental Impact Assessment Reports
³ Landscape Institute, 2013, Guidelines for Landscape and Visual Impact Assessment (GLVIA3), Third Edition.

⁴ Landscape Institute Technical Information Note (TIN) "Townscape Character Assessment" specifically for undertaking a character assessment for "townscape", LT TN 05/2017 [Ref 3.1].

1.21 Visual amenity is the overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual backdrop for the enjoyment of activities of the people living, working, recreating, visiting, or travelling through an area.

Spatial Scope

1.22 The Site is an irregular parcel of land located within Profile Park, a 40.5ha, private business park referred to on their website as '*rapidly becoming Ireland's Data Center Cluster*'. A derelict single-story residential dwelling and an associated building surrounded by established coniferous trees currently occupies the Site.

1.23 The Site's immediate boundaries are defined by:

- The New Nangor Road (R134) that runs along the northern perimeter with some fractured hedge planting running parallel to the road. An industrial park is beyond;
- A residential dwelling with agricultural fields is to the east, with established hedging and deciduous trees along the border. Beyond is Profile Park Road and Grange Castle Golf Club;
- Profile Park Road borders the Site to the south and provides the main access road via a roundabout junction, beyond is green fields, a data center development and the Casement Aerodrome; and
- Bolands Commercial Garage is to the west with established hedging and deciduous trees running along the boundary, a data center is currently under development on green fields beyond.

1.24 The Baldonnal stream runs through the Site in a southeast to northwest direction, flowing toward the northwest. The stream is culverted as it enters the Site under Profile Park Road and as it exits the beneath Bolands Garage.

1.25 The wider context of the Site is characterised by its location on the urban fringe with a mix of industrial, commercial, residential, and agricultural buildings and an associated fragmented mixture of uses.

1.26 Informed by baseline analysis and the nature of the Proposed Development and landscape context, the study area for this LVIA extended approximately 1.5 km from the Site to take account of the relatively flat topography of the surrounding area that creates an open landscape. Where appropriate, the site area has been extended to incorporate designated areas that have been identified in the Landscape Character Assessment as features of national importance. Descriptions of the landscape and visual baseline within the study area are provided below.

Temporal Scope

1.27 The assessment has considered impacts arising during the demolition and construction stage which would be expected to be temporary and short to medium-term (5-7 years) in nature.

1.28 Due to the two-stage phasing of the development, the assessment considers impacts at the following timings during operation:

- Phase 1 at day 1 of operation
- Phase 2 at day 1 of operation and year 5.

1.29 A description of the relevant landscape character areas and features of the Site are summarised below. Where the Proposed Development may be visible within specific views from the identified landscape character area, the visual baseline and description of visual impact is provided in the visual section of this LVIA.

⁵The Park (2021) About us www.profilepark.com/index.php/the-park/2doing_wp_cron=1626954910.5751659870147705078125 (Accessed 22 July 2021)

⁶Minogue and Associates with Aegis Archaeology, Michael Cregan and Geoscience Ltd (2015) *Landscape Character Assessment of South Dublin County*. Available at: [Landscape CHARACTER ASSESSMENT of South Dublin County \(southdublin.gov.ie\)](https://www.southdublin.gov.ie/landscapereview/assessments/landscape-character-assessment-of-south-dublin-county). Accessed 22 July 2021.

1.30 An existing landscape character assessment carried out by South Dublin County Council is in place for the study area⁶. The Site is within identified LCA2: Newcastle Lowlands. The study forms the basis of the landscape baseline and has been supplemented by desktop research to understand the features related to the site.

1.31 The landscape baseline is supplemented by the following figures presented in Appendix 1.1:

- Figure 1 – Zone of Theoretical Visibility: Phase 1 and Phase 2 Development
- Figure 2 – Viewpoint Location and Landscape Character Area.
- Figure 3 – National Inventory of Architectural Heritage Sites in Study Area

Regional Character Area

1.32 There is currently no national Landscape Character Assessment in Ireland, with County's responsible for identifying character types and areas within their administrative boundaries.

1.33 A Landscape Character Assessment was carried out on behalf of South Dublin County Council by Minogue and Associates with Aegis Archaeology, Michael Cregan and Geoscience Ltd in February 2015.

Regional Landscape Character Types

1.34 Within the SDCC character assessment, 10 Character Types are identified with the County boundary. The Site is located within the vicinity of four types, the descriptions are extracted below:

- **Urban:** Includes built land around historic settlements within the larger urban areas. Primarily composed of established nucleated villages and towns that have developed historically many of which saw significant improvements in the 19th century in terms of streetscapes. These are surrounded by residential development of various origins but primarily 20th century, with significant recent development in the past two decades.
 - **Limestone farmland:** Gently undulating low-lying (generally below 100 m) with limestone bedrock. Land use includes tillage and pasture. Generally dispersed settlement pattern.
 - **Canal:** manmade watercourses of historic importance. Embankments are a feature and frequently alignment is closely associated with the railway lines. Woodland and habitats associated with the canal are important ecological features. Offers and accessible recreational are for urban dwellers.
 - **Green spaces:** large parklands that contain a variety of habitats and recreational uses; some such as the Dodder Valley park are diverse and very important ecological corridors; other parks include more amenity and sports space. Others again are the former demesnes associated with estates.
- 1.35 The location of the site within a range of land types contributes to its fragmented character. Its proximity to the urban area of Dublin gives the area an 'urban fringe' or 'transitional' character as you move between the urban to limestone farmland character type.

Landscape Character Areas

1.36 Excluding the urban area of South Dublin, four Landscape Character Areas (LCAs) have been identified through the SDCC Landscape Character Assessment. The Site is located within LCA 2: Newcastle Lowlands, close to the urban area boundary (see Figure 2, Appendix 1.1).

1.37 The Newlands LCA is described as:

an important agricultural resource but vulnerable to urbanising pressures. In addition, its character as a rural landscape provides a distinct and important identity to this area of western Dublin. To conserve its sense of place requires measures protecting the integrity of the agricultural landscape by controls on urban expansion, ribbon development and other sources of erosion and fragmentation, and requires site planning guidance on the use of appropriate vernacular styles and treatments in new developments.⁷

- 1.38 In general, the SDCC landscape assessment identified the following key characteristics for the Newcastle Lowlands LCA:
- Low-lying and gently undulating agricultural lands over limestone.
 - Established communication corridors that include the grand canal and railway corridor that traverse east to west and two aerodromes at Weston and Baldonnel.
 - Agricultural land use primarily pasture and tillage.
 - Increasing influence of urban activities closer to the motorways, national roads and regional roads.
 - Long history of historic settlement and human activity with medieval landscape complex associated with Newcastle village and surrounds.
 - Number of demesnes associated with former country houses and institutions including reuse of older country houses at sites such as Peamount and Baldonnel Extent western boundary from N4 encompassing Grand Canal, south of Newcastle and extending eastwards to the R136.
- 1.39 The assessment identifies the following potential Landscape and Visual sensitivities relevant to this Site's context:
- Hard engineering and new infrastructure have not benefitted from planting schemes that would assimilate them more sympathetically into the surrounding landscape.
 - Within the generally flat landscape, vertical structures such as existing pylons can be seen across quite long distances.
 - The remaining rural character of this LCA fulfils both landscape ecological and economic functions and merits a considered approach.
- 1.40 The SDCC assessment reviewed Newlands LCA sensitivity to change (Visual and Character), its value (in terms of experiential qualities) and its capacity to accommodate development as extracted below:
- Landscape value: **Medium to High**
 - Landscape capacity: **Low**: Key characteristics of the landscape are vulnerable to change. There may be limited opportunity to accommodate development without changing landscape character. Great care would be needed in locating development.
 - Overall landscape sensitivity: **Medium**
- 1.41 The SDCC assessment identifies mitigation measures for development in the area, the points of relevance to the Proposed Development are extracted from the SDCC landscape assessment and provided below:
- Guidelines including those contained in the Urban Design Manual, Local Area Plan and, the County Development Plan provide relevant site planning advice and should be compiled with for new development and enhancing existing development where possible. Boundary treatments including screening through appropriate tree planting (of native provenance) would sympathetically absorb development into the ambient landscape.

- Explore the potential to establish a linear park to enhance green infrastructure and appropriate recreational space from the Grand Canal to the foothills and uplands
- When the opportunity arises, planting and other landscape design measures, including planting with native hedgerows, and/or installing limestone walls, should be used in laybys, and at new developments such as the railway station.
- This LCA functions as the rural landscape that frames western Dublin and retaining both separate distances and its agricultural character is very important.

1.42 The landscape condition is described as variable across the LCA with landscape closer to the urban fringe and major transport corridors tending to be more fragmented in character.

1.43 The Dublin foothills and mountains form a backdrop to the Site and are located within the Athgoe and Saggard Hills and the Dodder and Glensmole Character Areas⁸. Due to the distance from the Site and the Proposed Development similarity in scale and form to surrounding structures in the immediate vicinity, it was judged that these character areas would experience Negligible/No change magnitude of impact and are therefore judged to not be appropriate for inclusion in this LVIA.

Relevance to Site Context

1.44 The Site is located within the Newcastle Lowlands LCA, close to the Urban LCA boundary. The Proposed Development is located in an area of fragmented in character due to its proximity to urban areas and major transport corridors.

1.45 The Site is generally flat in accordance with Limestone Farmland landscape character type and its surrounding environs. A topographical survey of the Site and local surrounds was carried out on 3 June 2021 and shows that elevation varies between 75mOD and 65mOD with a general rise in elevation southwards.

1.46 The Site has the character of a traditional field with remnants of hedgerow boundary typology. The surrounding environment is a mix of uses and land use types including established industrial/commercial buildings, newly built commercial buildings, residential and recreational and agricultural. The range of uses and building typology combines to create fragmented or 'transitional' landscape character.

1.47 The transitional and fragmented character of the Site is reflective of the urban fringe location and the SDCC Development Plan land allocations in the area⁹. The Site is located within land allocated to enterprise and employment, with surrounding areas allocated to a mix of uses including: open space and recreation; rural amenity and the development of agriculture; new and established.

1.48 Analysis of historical OS Maps show the expansion of the urban environment into the former agricultural field network. The Site is on the transitional edge of the LCA, within an area that is already currently influenced by surrounding activities. The combined developments contribute to an increasingly industrial and commercial area within the urban character type rather than a rural landscape.

1.49 There are no designations directly associated with the Site. The Grand Canal was proposed as a Natural Heritage Area (PNHA) in 1995 but this has not been confirmed as a NHA designation. The Grand Canal is located approximately 2km north of the Site. The canal is a man-made waterway linking the River

⁷ Minoogue and Associates with Aegis Archaeology, Michael Cregan and Geoscience Ltd (2015) *Landscape Character Assessment of South Dublin County*. Available at: [Landscape CHARACTER ASSESSMENT of South Dublin County](https://www.southdublin.ie/development/landscapes/landscape-character-assessment-of-south-dublin-county) (SouthDublinDevelopment.ie). Accessed 22 July 2021.

⁸ Minoogue and Associates with Aegis Archaeology, Michael Cregan and Geoscience Ltd (2015) *Landscape Character Assessment of South Dublin County*. Available at: [Landscape CHARACTER ASSESSMENT of South Dublin County](https://www.southdublin.ie/development/landscapes/landscape-character-assessment-of-south-dublin-county) (SouthDublinDevelopment.ie). Accessed 22 July 2021.

Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy¹⁰. The proposed designation comprises the canal channel and the banks on either side. A range of different habitats are found within the canal boundaries: hedgerow; tall herbs; calcareous grassland; reed fringe; open water; scrub and woodland¹¹.

1.50 The stretch of canal in proximity to the Site is noted to be of particularly high diversity in flora and reported evidence of Otter spraints found along the towpath, particularly where the canal passes over a river or stream¹². The ecological value of the canal is understood to be due to its diversity and provision of refuge for species threatened by modern farming¹³.

1.51 Within the context of the Site, the canal is judged to be a High sensitivity receptor due to its pNHA designation, its Green Infrastructure function and its prominent role in defining the character of the Newcastle Lowlands LCA. These features are judged to contribute to its High landscape value. Its susceptibility to change will vary depending on the development and location.

Architectural

1.52 There are no built heritage assets on the site, or in the immediate vicinity. Assessment of built heritage assets within the 1.5km study area include 27 buildings listed in the National Inventory of Architectural Heritage. An assessment of the impact of the Proposed Development on the heritage assets is undertaken in Chapter 2, Cultural Heritage. The listed buildings are assessed as landscape receptors that contribute to the character of the area. Due to the high number within the study area, they are collectively judged as having a high value but with low susceptibility due to their location in proximity to the urban fringe and high levels of commercial and industrial development. Overall, the buildings are assessed as Medium sensitivity receptors. Their distribution can be seen in Figure 3, Appendix 1.1. The buildings are grouped based on their orientation around the site. These groups are described below:

- To the north are a cluster of buildings associated with the Grand Canal including the 12th Lock Bridge and Mill Buildings. Listed sites include (1120454; 11204053; 1120458; 11204055; 1120453; 11204057). In closer proximity to the site is the ruins of the Grange Castle (11208012) that is a prominent landmark in the area. Due to their listed status these features are classified as of Medium sensitivity.
- To the east are a cluster of buildings associated with the Nangor Road, including the group of four early-twentieth century semi-detached houses (11209004; 11209005; 11209002; 11209003) and Kilarberry House (11209001), a Georgian house, described in the listing as 'set in the rural' setting. Due to their listed status these features are classified as of Medium sensitivity.
- To the south are a cluster of buildings associated with the Baldonnel Aerodrome (11208028; 11208025; 11208024; 11208027; 11208026; 11209093; 11209094) and Baldonnel House, a Victorian country house that is a demesne characteristic of the LCA. To the south west, is Castle Bagot House (11208010) that is described as 'dominating the low-lying agricultural land'¹⁴. Due to their listed status these features are classified as of Medium sensitivity.
- To the west of the Site are a cluster of four listed sites that include rural buildings and features. The area is a mix of rural and commercial in character with car yards and gym in the vicinity. From the road adjacent to the sites, the commercial buildings surrounding the site are visible.

¹⁰ National Parks & Wildlife Service (1995) *Site Synopsis: The Grand Canal*; 002104. Available at: https://www.dublincity.ie/sites/default/files/media/file-uploads/2018-10/O_Devaney_Gardens_EIS_-_Appendix_8.1_-_Site_Synopses.pdf Accessed 22 July 2021

¹¹ National Parks & Wildlife Service (1995) *Site Synopsis: The Grand Canal*; 002104. Available at: https://www.dublincity.ie/sites/default/files/media/file-uploads/2018-10/O_Devaney_Gardens_EIS_-_Appendix_8.1_-_Site_Synopses.pdf Accessed 22 July 2021

Listed features include: 1120815 (Milltown); 11208016 (Polly Hops), 11208006 (Milltown); 11208005 (Milltown gateway). Due to their listed status these features are classified as of Medium sensitivity.

The Site

1.53 The Baldonnel stream runs through the Site in a southeast to northwest direction, flowing toward the northwest. The stream continues to the Grand Canal, pNHA, approximately 2km north. The LCA assessment describes 'woodlands and habitats associated with the canal are important ecological features' and (as mentioned above) mitigation measures for development in the LCA look to explore potential to enhance green infrastructure linked to the Grand Canal. Scrub vegetation and trees border the stream from its entry to the Site where it is culverted under Profile Park Road. Scrub and tree vegetation follow its path until it curves in an easterly direction, where the banks are grassed until the stream exits the Site via a culverted channel at the western boundary.

1.54 In the north-west corner of the Site is a derelict residential building, with associated outbuildings and access to the New Nangor Road. Established coniferous trees border the north and west sides of the building. Beyond New Nangor Road is industrial and data center development.

1.55 Along the eastern boundary is a mix of hedging and scattered trees with a residential property and two agricultural buildings adjacent to the boundary. To the south is some scattered trees and the main access to the site via Profile Park Road that runs along the south boundary of the site. The western boundary is formed by established hedgerow trees leading to a small area of trees at the rear of the adjacent property that is a commercial garage (Bolands Care Centre/ Grange Castle Motor Company). Beyond the garage Site, is a 16.5ha data center development. The hedge and road boundaries enclose the Site.

1.56 The tree survey submitted with the Planning Application gives full detail on the location and quality of trees located on the Site. To summarise, the survey identified 59 trees with two tree lines and seven hedges within the Site.

1.57 The Site's proximity to the urban area and major transport corridors, accompanied by the prominent size and scale of development within this area, contribute to a commercial and industrial landscape character type within the LCA. The character of the Site is highly influenced by surrounding existing development including an assortment of infrastructure, commercial, industrial and recreational land uses.

1.58 Table 1.5 sets out the receptors that are located within the landscape and their judged sensitivity to development on the Site that will be used to assess the impact of the Proposed Development.

Table 1.5 Landscape Receptor Sensitivity

Receptor	Description	Sensitivity
Newcastle Lowlands Character	Key characteristics of the landscape are vulnerable to change. There may be limited opportunity to accommodate development	Medium

¹² Office of Public Works (1992) *Ecological Survey of the Grand Canal*. Available at: [Dromey et al. 1992_Grand Canal_PL1.pdf \(npws.ie\)](https://www.dublincity.ie/sites/default/files/media/file-uploads/2018-10/O_Devaney_Gardens_EIS_-_Appendix_8.1_-_Site_Synopses.pdf) Accessed 22 July 2021

¹⁴ National Inventory of Architectural Heritage (2021) Website Available at: <https://www.buildingsofireland.ie/> Accessed 22 July 2021

Table 1.5 Landscape Receptor Sensitivity

	without changing landscape character in some areas.	
The Grand Canal	A PNHA providing important biodiversity, green infrastructure and recreational functions within the landscape.	High
NIAH Listed buildings	27 listed buildings are located within 1.5km of the site including a range of type and condition. Collectively the buildings' sensitivity has been determined by their listed status within the landscape and the susceptibility to change.	Medium
Baldonnel Stream	Watercourse connected to a PNHA area (the Grand Canal) with its surrounding riparian vegetation providing refuge for flora and fauna from surrounding agricultural, commercial and urban land uses. The stream is culverted at its entry and exit to the Site and has also been degraded through removal of riparian habitat on the Site. The river has been impacted by a long history of human activity within the area.	Medium
Site Trees	59 trees have been identified within the Site, with a mix of class and age. No trees within the Site are of A class or protected, leading to their judgement to be of medium sensitivity.	Medium
Site hedgerows and associated trees	From analysis of historical records, hedgerows are likely to have been in their current position on the Site for over 100 years. The hedgerows provide a valuable landscape feature for visual amenity and for flora and fauna, and a valuable green infrastructure feature.	High

Visual Amenity

1.59 The relatively flat topography of the study area and surrounds, with intermittent mature vegetation as field boundaries, leave the potential for views of the Proposed Development from surrounding areas. To determine the locations for visual amenity assessment, A Zone of Theoretical Visibility (ZTV) was developed using a Digital Surface Model for up to 1.5km from the Site. The results of the ZTV are shown in Figure 1. Photographs from each of the 11 VP locations are provided in Appendix 1.2.

1.60 Due to the range of surrounding land uses, the study area contains four main types of receptors as set out below:

- **Residential receptors** located in the surrounding settlements of Oldcastle Park and the scattered dwellings along Baldonnel Road.
- **Recreational receptors** using the Grand Canal and adjacent Grange Castle Golf Club.
- **Employment receptors** including the adjacent Bolands Garage, Digital Realty Profile Park, Google PPL Data Center Campus, and businesses within the Grange Castle Business Park South and Kiltarbery Park.
- **Travel receptors** associated with all the existing roads including the New Nangor Road R134, Baldonnel Road, Profile Park Road and potentially views from the N7 Naas Road.

VP-01: The Grand Canal looking south east

1.61 The viewpoint location is representative of the view experience by people using the Grand Canal and surrounding green infrastructure.

1.62 The foreground is composed mixed predominantly native vegetation, including grasses, hedgerows with some small deciduous trees. Through gaps in the vegetation, a white rail can be seen, possibly part of a fence structure providing a boundary to the field beyond. The mid-ground is dominated by a large agricultural field with a single crop planted in faintly visible rows that horizontally cross the view. The far side of the field is bounded by a complete hedgerow that ranges in height from relatively low to the field line to rising several metres above forming clumps at irregular intervals. Along the hedgerow, trees emerge or are located to the rear. In the centre of the hedgerow, a grey water tower protrudes with established deciduous trees adjacent to the tower's right-hand side slightly obscuring the view of the structure. To the right of the view, a black metal fence structure is visible with excavation equipment and exposed ground visible behind.

1.63 In the far distance, beyond the hedgerow, trees and water tower, large industrial buildings with white, dark and light grey cladding are visible. The nearest building on the left-hand side, has a continuous stretch of glass windows partly obscured by the trees in the mid-ground. Cumulatively, the buildings are prominent in the centre of view, punctuating a tree line that runs along the centre to right of the view. The buildings have a mix of protruding roof structures, including large dark grey rectangular structures. Two crane structures are close to the commercial buildings indicating construction activities currently underway.

1.64 In the far-ground, the foothills of the Dublin Mountains are visible, gently undulating in the distance. A faint network of fields and hedgerow boundaries can be seen on the hills.

1.65 The Site and the elements within it are not visible from this view.

1.66 The receptors associated with this location and their sensitivity are summarised below:

- **Recreational** receptors: judged to be of **Medium** sensitivity due to:
 - the likelihood of being involved in recreational activities at a PNHA designated landscape feature.
 - limited susceptibility by the:
 - presence of already visible commercial buildings from the viewpoint; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-02: New Nangor Road at the roundabout junction with Baldonnel Road looking south east.

1.67 The viewpoint location is representative of the view experienced by people travelling east along New Nangor Road as they approach the Site by both car and foot on the pavement that runs adjacent to the road. The view is generally open with low-lying land and commercial buildings.

1.68 In the immediate foreground is a mix of tarmac and brick paving with some textured surfacing indicating a pedestrian crossing. The paved area is bordered by grasses with a visible far bank sloping down, indicating the course of the Baldonnel stream. A small area is bounded by wooden fencing. A low wall with regularly spaced pillars joined by metal railings runs along the New Nangor Road into the distance. Street lighting and road signage are visible adjacent to the road.

1.69 A relatively flat grassed area is adjacent to the far side of the wall with a small clump of scrub vegetation in the centre and right of the view, partially obscuring a large mound of exposed earth. A few scattered trees and large shrubs are visible in the left of view, with several grass mounds visible behind. Beyond these grassed mounds, glimpses of the Dublin Hills can be seen in the distance.

1.70 In the mid-ground view, behind the mound of exposed earth to the right, is a large commercial building currently under construction with two cranes visible. Five thin structures run vertically up the side of the building, protruding above the building roof line. To the left, part of a large dark grey, rectangular building can be seen adjacent to the new Nangor Road.

1.71 The receptors associated with this location and their sensitivity are summarised below:

- **Transport** receptors: Judged to be of **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-03: Baldonnel Road junction with Profile Park Road looking east

1.72 The viewpoint location is representative of the view experienced by people travelling by car or foot along Baldonnel Road. The view is enclosed with raised land and buildings following the Profile Park Road as it disappears to the right behind raised land.

1.73 A large pillar and gate structure is visible at the side of the road. Cycle lanes run either side of the road for the near part, merging with the pedestrian path along Profile Park Road. Road signage and roadside lighting punctuate the view along the road. On the left side of the road a large white commercial building with a row of windows on the second storey is visible and prominent rectangular, dark grey roof structures. In the centre distance is a grey industrial building with no visible windows or features.

1.74 The receptors associated with this location and their sensitivity are summarised below:

- **Transport** receptors: Judged to be of **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-04: Baldonnel Road near Newcastle Motors looking north east

1.75 The viewpoint location is representative of the view experienced by people travelling by car or foot along Baldonnel Road and those working or residing within this location. A standard photograph for the LVIA was not obtainable at this location as there was no safe area where a verified view could be taken. This is due to a ditch being present to the north of the road, the live carriageway, and private properties to the south of the road for which no access was available. As such a replacement view (4a in Appendix 1.3 and 1.4) has been provided.

1.76 The foreground of view is dominated by road verge grasses with established hedgerow.

1.77 There are no visible features through the vegetation at this time of year. During winter months with the loss of foliage, it is anticipated there would be greater visibility of features beyond the trees and hedgerow.

1.78 The receptors associated with this location and their sensitivity are summarised below:

- **Residential** receptors: judged to be **Medium** due to:

- Further commercial development fragmenting the rural character of views from their properties.

- **Transport** and **Employment** receptors: judged to be **Low** sensitivity due to:

- their experience of the view as a secondary activity as they travel or participate in employment.
- limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-05: Baldonnel Road near the entrance to the Casement Aerodrome looking north west

1.79 The viewpoint location is representative of the view experienced by people travelling by car or foot along Baldonnel Road and those working or residing within this location. The view foreground consists of medium to large boulders and small elements of waste including some building debris. To the rear of the boulders, a low brick wall is glimpsed through hedgerow vegetation with a closed gate providing access to the field beyond. In the mid ground, agricultural buildings of varying age form the field boundary, older buildings are overgrown with vegetation and scattered trees emerge from behind the buildings. The field forms the mid ground view to the right of the view and consists of long grass around the boundary and short grass areas away from the boundary. To the right of the view, to the rear of the field, a white commercial building is visible with protruding roof structures. In the centre of the mid view, a tree line is visible interspersed with lighting structures. In the mid ground, to the left of the large commercial buildings are visible a mix of dark grey and grey with some coloured shapes visible on one facade. In the far ground large commercial buildings with protruding structures interrupting the skyline are visible. A crane structure is visible protruding the skyline in the distance. The Site is not directly visible from this view.

1.80 The receptors associated with this location and their sensitivity are summarised below:

- **Residential** receptors: Judged to be **Medium** due to:
 - Further commercial development fragmenting the rural character of views from their properties.
- **Transport** and **Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-06: New Nangor Road to the north west corner of the Site looking south east

1.81 The location is representative of the view experienced by people travelling by car or foot along New Nangor Road and those working within this location.

1.82 Prominent in the foreground is the commercial garage entrance and forecourt with parked vehicles and surrounding fencing approximately 2m high. To the rear of the forecourt, deciduous trees and shrub vegetation run adjacent to the fence structure and boundary to the Site. A telegraph pole is visible in the centre, with wires crossing the view.

1.83 Elements of the Site are visible to the left of the view, with scattered mature coniferous trees visible within the grassed field beyond the boundary fencing. A white commercial building is visible beyond the Site. Elevated ground can be seen in the far distance beyond the Site.

1.84 The receptors associated with this location and their sensitivity are summarised below:

- **Transport and Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-07: New Nangor Road to the north east corner of the Site looking south west

1.85 The location is representative of the view experienced by people travelling west by car or bicycle along New Nangor Road and those working within this location. The view is characteristic of a road running through an urban fringe/commercial area land type with dense vegetation foliage obscuring any views beyond. Two views are provided, 7 A and B, to give a representation of the visual impact from either side of the carriageway.

1.86 In view 7A, the view is taken from the path in close proximity to the Site. In the foreground, tall grasses border the road and form the road verge area. There is no pedestrian path on this part of the road. Telegraph poles run alongside the road at the rear of the grass verge. A taller pole support wire that runs horizontally across the view and road at height. Road signs are placed within the verge grasses.

The mid-ground view to the left of the road is predominantly shrub and small trees, with an established coniferous tree visible near the far end of this row of vegetation. Near this point, traffic lights with road markings for a crossing are visible.

1.87 View 7B represents the view from the footpath on New Nangor Road furthest from the Site boundary. In the foreground the road is dominant running across the view. In the mid-ground, the verge and gappy hedgerow is visible. Filtered by the hedgerows and scattered trees, large commercial buildings are visible in the midground view. A white-clad building is visible to the right of the view, with a dark grey building continuing from the mid to the left of the view rear with some lighter grey roof structures protruding slightly into the skyline.

1.88 From this location, the Site is potentially visible behind established deciduous trees during winter when foliage is reduced.

1.89 The receptors associated with this location and their sensitivity are summarised below:

- **Transport and Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-08: New Nangor Road and Profile Park Road roundabout junctions looking south west

1.90 The location is representative of the view experienced by people travelling by car or foot along New Nangor Road and those working within this location. The view is of a formal entrance to a business park with clipped hedging, maintained lawn, a mix of hard surfacing treatments and gate structures.

1.91 In the foreground is a pathway with light stone paving with adjacent lawn border. A pedestrian crossing in light grey paving traverses the darker grey fan-patterned cobbled paving that marks the entrance to Profile Park Road, Past the entrance paving is a large get structure, with the gates open. On the opposite side of the road, approximately 2m high black metal fencing runs along the road with shrub planting running along the fence border. Established deciduous trees are visible beyond the fence.

1.92 From this location, the Site is potentially visible behind established deciduous trees during winter when foliage is reduced.

1.93 The sensitivity of receptors associated with this representative viewpoint is judged to be Low due to their experience of the view as a secondary activity to travel and/or employment.

1.94 The receptors associated with this location and their sensitivity are summarised below:

- **Transport and Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-09: Profile Park Road roundabout at the Site entrance looking north west

1.95 The location is representative of the view experienced by people travelling by car or foot along Profile Park Road and those working within this location. The view is generally open with road infrastructure in greenfield setting.

1.96 In the foreground a grey-surfaced path runs adjacent to the road with low grassed bank raising to the left of the view, topped with a mix of longer vegetation screening views to the midground. To the right of the path a mown grass area runs between the road and path with a lighting structures adjacent to the road kerb as the road approaches the junction with a roundabout.

1.97 In the midground, a small hedgerow is visible as the path curves to the left as the road joins the roundabout junction. Lighting structures run along the midground view interrupting the skyline, indicating a road running horizontally across the view from the roundabout, although the road surface is not visible. A roundabout is visible to the right of the midground view, with a large sculpture located in the centre made up of cylinder shapes of different colours. Directional road signs are visible on the roundabout. In the midground, at the far-side of the roundabout a tarmac road runs directly away from the viewpoint towards the horizon line with lighting structures protruding vertical along the road alignment. Established trees and hedgerows run along the midground view forming a sporadic treeline across the view.

1.98 In the far distance, a large grey commercial building is visible with tall vertical structures interrupting the skyline. Through the gaps in the treeline hills can be seen in the centre of the view. Through gaps in the tree line to the left of the view a grey commercial building with roof structures is visible. A crane structure is protruding into the skyline for this area of the view. From this location, the Site is directly visible.

- 1.99 The receptors associated with this location and their sensitivity are summarised below:
- **Transport and Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.
 - **Recreational** receptors: judged to be of **Low** sensitivity due to:
 - the likelihood of being involved in recreational activities at the Castle Grange Golf Club.
 - limited susceptibility by the presence of industrial buildings and construction activities already present;

VP-10: Profile Park Road on the south west corner of the Site looking north east

- 1.100 The location is representative of the view experienced by people travelling along Profile Park Road and those working within this location. The view is generally open with road infrastructure in a greenfield setting.
- 1.101 In the foreground, a lighting pole is visible with road verge grass planting. A tarmac road, with grass centre area separating the lanes, runs across the view dominating the mid and foreground area of the view. At the far side of the road, a gravel road verge transitions into a grass field with scattered established trees.
- 1.102 In the far ground a continuous treeline runs along the horizon, with street lighting poles interrupting the sightline.
- 1.103 The Site is clearly visible from this location.
- 1.104 The receptors associated with this location and their sensitivity are summarised below:

- **Transport and Employment** receptors: judged to be **Low** sensitivity due to:
 - their experience of the view as a secondary activity as they travel or participate in employment.
 - limited susceptibility by the:
 - presence of industrial buildings and construction activities already present; and
 - ability to accommodate development of the type proposed without wholesale changes to the visual amenity.

VP-11: Profile Park Road on the south west corner of the Site looking north east

- 1.105 The view is dominated by a dual carriageway bridge structure with a pedestrian path and cycle lane. A fence runs along the left side of the bridge with regular light poles protruding from the fence structure at regular intervals. To the left a grass slipway verge with established deciduous trees forms the left mid-ground view.
- 1.106 In the far distance, road signage for a roundabout can be seen with traffic lights. A tree line runs across the far distance view with a mix of trees varying in height and distance.
- 1.107 The Site is not visible from this location.
- 1.108 The receptors associated with this location and their sensitivity are summarised below:

- **Transport and Employment** receptors: judged to be **Low** sensitivity due to their experience of the view as a secondary activity as they travel or participate in employment.

Assessment of Effects

Nature of the Change

- 1.109 This LVIA assesses the impacts arising as a result of the Proposed Development on the landscape and visual resource.
- 1.110 The detailed design rationale, evolution, and details of the layout, access, scale, appearance, and landscaping of the Proposed Development (upon which this LVIA is based) is provided within the Planning Application Design Statement and therefore are not repeated here. Elements of the Proposed Development, where relevant to a specific LCA or viewpoint, are described within the LVIA.
- 1.111 Relevant aspects of the proposed development design for the LVIA include, but are not limited to:
- Maximum development heights;
 - Location of the built mass within the Site;
 - Providing measures to protect and improve the ecology of Baldonnel Stream and retain its alignment;
 - Proposed flood meadows, woodland, scrub and hedgerows along the north area of the Site, providing SUDs, ecology, screening and amenity features;
 - Boundary hedgerows retained and protected west and east;
 - Implementation of a planting palette informed by native species;
 - Berms located along the north and south boundaries of the Site with woodland native tree planting providing screening and ecological functions;
 - Security fences (2.4m high) around the building with an additional lower fence proposed to the north boundary along the New Nangor Road;
 - Materiality of the building and associated structures including green walls along the north and south façades of DUB 11 and the south façade of DUB12; and
 - Multifuel Generation Plant (MFGP) with 30 m in height flues and switch room.
- 1.112 It is understood that it is unlikely that there would be visible plumes from flue gases emitted from the generators. Advice confirms that the exhaust gases are emitted at high temperature (between 360-420 degrees Celsius) with a nominal water vapour content of approximately 10% (in contrast to vapour plumes from cooling towers, which are emitted at relatively low temperature and with high water vapour content). With such high emission temperatures, the exhaust gases would disperse before the water vapour in the plume condenses such that the exhaust plumes won't be visible. On this basis, the gas generation plant is not considered separately but as part of the building footprint.
- 1.113 The LVIA will consider the potential impacts of the proposed development on landscape character and visual receptors, particularly:
- Landscape character areas, identified through a local landscape characterisation study within the study area of approximately 1 km from the site boundary;
 - Sensitive viewpoint locations within the study area, to include residents, pedestrians and vehicular users in the surrounding area (including those travelling along the Grand Canal Way or in the pursuit of outdoor recreation such as at Grange Castle Golf Course); and
 - Cumulative effects in conjunction with other consented schemes in the vicinity of the site.
- 1.114 As set out in Chapter 2 of the EIA, the LVIA will focus on the following periods:
- **Demolition and construction effects** of the Proposed Development as a whole in the Short term (lasting up to 3 years). This is because no significant delay (of more than 12 months) is anticipated between the development phases and therefore a phase-by-phase assessment is not appropriate and has not been undertaken.

- **Operation effects** have been assessed as long term to permanent (fifteen years to over sixty years) focussing on Phase 1, day one and Phase 2, day one and year five of Operation.
- **Operation cumulative effects** using the agreed cumulative schemes list provided in Volume 1, Chapter 2: EIA Process and Methodology.

Review of Proposed Development on landscape character

- 1.115 As described in Chapter 4, the Proposed Development consists of two data center buildings constructed across the site, broadly oriented north to south within the southern portion of the site. Both buildings are set at an approximate ground-level (+74m) with the roof steel platform level at a height of 14.23m above. The elevator and roof mechanical equipment would extend up to 21.55m above ground level. Combined the two buildings would include with 33 flues at 22.3m above ground floor level at 96.3m.
- 1.116 The Northern data center (DUB 11) would comprise of a two-storey data center of 24,667m² and include 22 double stacked standby emergency generators with associated flues, each 22.3m in height, located to the west of the building that is a single colour. The South facing wall of the building would be of a single colour with a green wall at the south east corner that is visible from the Profile Park Road entrance. The north façade of the building, facing the New Nangor Road, would be a mix of white, light and dark grey panelling with a large central area of glass frontage. Three areas of green walls are proposed along the frontage of the DUB 11 Building.
- 1.117 The Southern data center (DUB 12) would comprise of a two-story data center of 12,915 m² with 11 double stacked standby emergency generators and associated flues, each 22.3m in height, located along the west of the buildings. A green wall would form part of the southern elevation façade.
- 1.118 To facilitate the Proposed Development a MFGP would be constructed to the west of the data centers. The MFGP would consist of a northern plant, with a gross external area (GEA) of 1,784 m² (including mezzanine floor of 310 m²), and a southern plant with a GEA of 1,258 m² (including mezzanine floor of 187 m²). Flues for the MFGP would be 30 m in height (97.32 m AOD). Two single storey switch rooms of 60 m², would provide a medium voltage (MV) connection to the proposed development. Landscaping features are planned along the Site boundary to provide screening and mitigate the visual impacts of the building as well as biodiversity and green infrastructure benefits. This LVIA uses the landscaping details provided by architect as submitted with the Design Statement.
- 1.119 DUB11 would include green wall features on the north façade (where facing New Nangor Road) and south east corner where visible from the entrance on Profile Park Road. DUB 12 would include a green wall on the south façade where visible from Profile Park Road to soften the visual impact of the buildings from the adjacent roads.
- 1.120 Despite the landscape treatments around the boundary of the Site, the building would be visible within the level Newcastle Lowlands LCA from a range of locations as shown in the Zone of Theoretical Visibility in Appendix 1.1, Figure 1. Landscaping plans indicate combined tree and berm heights of up to 9.5m on completion of Phase 1 at day one, with the tallest building structure rising over 10m higher than the proposed screening on day one of operation. It is anticipated that tree heights would increase over time, increasing at a rate of approximately 30 cm per year, providing further screening and softening of the building within the landscape. The planting proposes a mix of native species potentially resulting in a decrease of screening during winter periods.
- 1.121 The Proposed Development landscape strategy is to integrate the Proposed Development with the existing landscape, creating a network of habitats that include large trees, woodland copse, planted berms, restored and new hedgerow features, stream habitat with riparian strips and wetland meadows. The existing alignment of the stream is retained and enhanced in areas with native riparian planting and wetland meadows. To accommodate the Proposed Development's higher FFL, a living willow wall is proposed to provide stabilisation of the riverbank and a 'soft' visual treatment to the Proposed Development.

1.122 Screening is provided primarily through the use of berms of varying heights ranging from 2m to 5m depending on location. Trees of between 4 and 5m would be planted from Phase 1, day one of operation. The planting palette is predominantly made up of native species with a mix of deciduous and coniferous species to provide screening throughout the year, albeit less within winter periods due to loss of foliage.

1.123 Plans indicate four berms along the Site boundary with New Nangor Road with a 1.5m high rigid mesh fence providing the boundary between the Site and the road. Berms would be at +77m AOD, 3m above the New Nangor Road boundary ground level (+74m) and 6m above the lowest point of the new wetland basin feature (+71m). The berms would be planted with woodland planting and a triple staggered line of native trees at 4.5m in height at Phase 1, day one of Operation.

1.124 The proposed landscape features in this area of the Site incorporate recommendations from the SDCC Landscape Character Assessment (see 6.1.1 above) to ensure boundary treatments include screening through native tree planting and enhance green infrastructure from the Grand Canal. The proposals represent an enhancement to the quality of the landscape features within the Site and introduce additional landscape features through the creation of wetland meadows, ponds, bioswales and new scrub and woodland areas.

1.125 Along the east boundary with new tree planting providing additional vegetation to the maintained boundary hedgerow. Along the south boundary either side of the access road, new berm ridges would be planted with a triple row of staggered woodland native trees with woodland mix on the slopes of the berms and amenity grass at the boundary edges. The existing hedgerow would be retained along the west boundary with additional native and wildflower meadow planting proposed to improve biodiversity. These boundary treatments would help to mitigate the impact of the building and increase the quality of existing landscape features within the Site.

1.126 Along the southern boundary of the site, existing trees would be maintained with additional tree planting that includes no.138, 4m high trees on berms to provide screening from Operation Phase 1, day one and woodland whip mix planted at densities of 1/m². Three new pond features would be located along the boundary with associated riparian planting. Proposed security fencing would be located to the rear of the landscape treatments, away from Profile Park Road.

1.127 Green walls have been incorporated into the building design façade along both north and south facades of DUB11, and south façade of DUB 12, where the buildings are visible from adjacent roads.

Demolition and Construction Stage

1.128 The indicative construction programme is set out in Chapter 5 of this EIAR, with peak construction during 2022.

1.129 During this period, a 2.4m perimeter site hoarding and access/egress gates would be place and maintained throughout the duration of the works screening activities within the site to the surrounding areas. During this period, there would be significant disruption to the onsite landscape features.

1.130 A range of plant equipment would be used during this stage including a crane and Heavy Good Vehicle deliveries that is likely to be visible from areas surrounding the Site. For the purpose of this EIAR, it is assumed that all construction traffic enters and exits the site via Falcon Avenue.

1.131 Building demolition is expected to be undertaken using excavators fitted with crushing attachments and where practically possible, machinery would be located as far as possible from or shielded from sensitive receptors, such as the residential property to the northeast of the site.

1.132 Landscaping works would commence at the earliest opportunity to allow planting to mature through the demolitions and construction works programme. All works would be confined within the protection barriers situated 5 m from the northern bank of the existing stream. A temporary construction access point would be established off the Nangor Road using the existing house access.

1.133 Appropriate material excavated during ground works would be re-used as part of earthworks and as temporary back-fill where necessary. It is proposed that some of the spoil generated would be reused under and as part of landscaped areas (including bunds) where suitable and/or in the formation level for the construction compound.

1.134 Landscaping associated with the data center facilities would be constructed upon substantial completion of construction works to minimise potential plant material loss. Topsoil would either be reused or imported to fill and shape landscaped areas.

1.135 The site is located within an area that has had successive recent developments of a similar scale to the Proposed Development. The adjacent Site is currently under development at the time of this LVIA. It is judged that this stage of the Proposed Development would be experienced within the landscape as a continuation of current experienced activity, limiting the magnitude of impacts and susceptibility of off-site landscape receptors to this stage.

1.136 Further mitigation measures are outlined in Chapter 5 of this EIAR to minimise the visual impacts during this stage.

1.137 Based on the landscape features identified in the Baseline Assessment, it is judged that the impact to the Landscape Character and off-site receptors would be imperceptible to slight negative magnitude of impact change based on the following assessment on the magnitude of impact:

- High Sensitivity receptors: For the Grand Canal and NIAH listed buildings, it is judged that they would experience a no change/negligible magnitude of impact due to their distance from the development and the current existence of similar activity. The scale of the effect on these landscape receptors is judged to be **slight negative** and **not significant** in terms of EIA.

1.138 The magnitude of impact to the onsite receptors during this stage is judged to be low due to their location within a business park area:

- The Baldonnel Stream is judged as a medium sensitivity landscape receptor. The magnitude of impact is mitigated by the measures described in Chapter 5 of this EIAR and is judged to be Low (Negative). The scale of effect on the stream during construction is judged as **not significant/slight negative** during this stage and considered **not significant** in terms of EIA.
- The Site trees are judged of Medium sensitivity with Low magnitude of impact during this stage due to mitigation measures described in Chapter 5 of this EIAR. The scale of effect on site trees is judged as **not significant/slight negative** during this stage and considered **not significant** in terms of EIA.
- The Site hedgerows and associated trees are judged of high sensitivity with no change/negligible magnitude of impact during this stage due to the mitigation measures described in Chapter 5 of this EIAR. The scale of effect is judged to be short term and **not significant/slight negative** and therefore **not significant** in terms of EIA.

1.139 The impact on the Newcastle Lowlands LCA is judged to be Negligible as the activity will a continuation of construction activity of a similar type and scale underway at in close proximity to the Site.

1.140 A summary of the assessment on Landscape character and receptors during the Demolition and Construction stage is provided in Table 1.6.

Table 1.6 Demolition and construction landscape impacts

Receptor	Sensitivity	Description of Impact	Magnitude	Scale	Significance
Newcastle Low-lands LCA	Medium	Increased development within urban fringe transition area	No change/ Negligible	Imperceptible	Not significant (Negative)
The Grand Canal	High	Disturbance of linked green infrastructure	No change/ Negligible	Not Significant/ Slight	Not significant (Negative)
NIAH Listed features	Medium	Disturbance and impacts on character amenity and tranquillity	No change/ Negligible	Imperceptible	Not significant (Negative)
Baldonnell Stream	Medium	Disturbance impacts on function and character value.	Low	Not Significant/ Slight	Not significant (Negative)
Site Trees	Medium	Removal and disturbance impacts on function and character value	Low	Not Significant/ Slight	Not significant (Negative)
Site hedgerows and associated trees	High	Disturbance and impacts on function and character value	No change/ Negligible	Not Significant/ Slight	Not Significant (Negative)

Operation

1.141 The operational impacts are considered for the different phases of development. Phase 1 impacts are considered for day one of DUB 11 operation. Phase 2 impacts are considered for DUB 11 and DUB 12 combined on both day one of operation and at the end of year five.

1.142 Phase 1 would see the development of DUB11, the associated MFGP buildings and all surrounding landscape features. The building would be a new feature within the landscape, similar in size and visual appearance to surrounding developments. The size, scale and operation of the building are consistent with surrounding land uses and therefore it is anticipated that the Proposed Development would not be out of context. The noise and emissions from the building are covered in Chapters 8 and 9 of this EIAR. Due to the location of the Proposed Development within a commercial and industrial area. The LVIA focuses on the effects on the surrounding landscape features (on and offsite) that contribute to the overall character within this part of the Newcastle Lowlands Character Area.

1.143 At Phase 1, day one, it is judged that the landscape features around the boundaries of the site would have gaps due to the early stages of planting. However, the landscape strategy seeks to retain, enhance existing landscape features and introduce new features that include ponds and wetland meadows into the site that are judged to have a low positive magnitude of impact due to the landscape strategy for the Proposed Development. As features of medium sensitivity, the stream and trees are judged to experience a **not significant/slight positive** effect, with the high sensitivity hedgerows with trees, experiencing a **moderate positive** effect in the short term that would be **significant** in terms of EIA.

1.144 The medium sensitivity NIAH listed buildings are judged to experience a no change/negligible negative magnitude impact in the short-term due to the distance from the development and surrounding buildings of similar size and form. At Phase 1, day one, the Proposed Development is judged to have a no change/negligible negative magnitude of impact on the features with imperceptible effect, which is not significant.

1.145 The surrounding high sensitivity feature of the Grand Canal is judged to experience no change/negligible negative magnitude impact in the short-term due to the distance of the development from the landscape feature. At Phase 1, day one, the Proposed Development is judged to have a no change/negligible negative magnitude of impact on the features with a **not significant/slight negative** effect, which is **not significant** in terms of EIA.

1.146 The overall impact on the Newcastle Lowlands Character of the Proposed Development is judged to be **low negative** magnitude of impact as the Proposed Development is a small change within keeping with the surrounding character of this transitional location. As a medium sensitivity landscape, it is judged the effect on the Character Area is **not significant/slight** and **not significant** in terms of EIA.

1.147 At Phase 2, day one, it is anticipated that the landscaping features on the site would have become established with more mature tree growth providing enhanced landscape value allowing the additional buildings (DUB 12 and associated buildings) to be accommodated within the site without an increased magnitude of impact from the Proposed Development. For the specific site features, the Proposed Development is judged to have a negligible negative magnitude of impact with a **imperceptible negative** effect that is **not significant** in EIA terms on medium sensitivity receptors of the stream and site trees. The Proposed Development is judged to be a **slight negative** effect that is **not significant** in terms of EIA for Site Hedgerows and associated trees that are judged as high sensitivity receptors.

1.148 The surrounding medium sensitivity NIAH listed buildings are judged to experience a no change/negligible negative magnitude impact due to the establishment of the boundary landscape features offsetting any negative impacts from the additional buildings of DUB12 on the site, with a **imperceptible negative** effect, which is **not significant** in terms of EIA.

1.149 The surrounding high sensitivity Grand Canal is judged to experience a no change/negligible negative magnitude impact due to the establishment of the boundary landscape features offsetting any negative impacts from the additional buildings of DUB12 on the site, with a **not significant/slight negative** effect, which is **not significant** in terms of EIA.

1.150 The overall impact on the Newcastle Lowlands Character of the Proposed Development is judged to be no change/negligible negative magnitude impact due to the establishment of the boundary landscape features offsetting negative impacts from the additional buildings of DUB12 on the site with an **imperceptible negative** significance of effect, which is **not significant** in terms of EIA.

1.151 At Phase 2, year five, if landscape features and planting specification is delivered to a high standard and are well maintained, it is anticipated that vegetation and tree growth in the medium term (5-10 years), calculated at 30 cm per year would provide an additional 1.5 m screening height at year five of operation, reducing the impact of the buildings on the surrounding landscape (refer to Appendix 1.3 for photomontages of Phase 2, year 5 landscaping heights at locations on the Site boundary). The planting planned with the Proposed Development is expected to strengthen the Site's historical hedgerows and established trees and contribute to improved condition and landscape value, in addition to supporting connected green infrastructure across the site. The boundary treatments may also provide new landscape amenity value to the broader commercial and industrial development area.

1.152 It is judged that at Phase 2, year five, the landscape treatments of the Proposed Development would create a low positive magnitude of impact on the site's landscape receptors. As features of medium sensitivity, the stream and site trees are judged to have a **not significant/slight positive** effect

that is **not significant** in EIA terms. For the high sensitivity features, the site hedgerows and associated trees are judged to have **moderate positive** effect that is **significant** in EIA terms.

1.153 The Proposed Development is judged to have a no change/negligible positive magnitude of impact on the offsite landscape feature of the Grand Canal due to contribution to a connected green infrastructure to the feature. The effect is judged as **not significant/slight positive** and is **not significant** in EIA terms.

1.154 The Proposed Development is judged to have a no change/negligible negative magnitude impact on the and NIAH listed buildings due to the contribution to an increased commercial character within their vicinity. The effect is judged as **imperceptible** and is **not significant** in EIA terms.

1.155 At Phase 2, year five, it is judged that the Proposed Development would have a low negative magnitude of impact on the Newcastle Lowlands Character area due to the presence of a large commercial building within this part of the area that is already fragmented, and further strengthening its commercial/industrial character within this transition area between urban and lowlands areas. The effect is judged as **not significant/slight negative** and is **not significant** in EIA terms.

1.156 A summary of the operation effects on the landscape receptors at Phase 1, day one and Phase 2, day one and year five are provided in Table 1.7.

Table 1.7 Operation landscape impacts					
Landscape Receptor	Sensitivity	Description of impact	Magnitude	Scale	Significance
Newcastle Lowlands Character Area	Medium	Phase 1 Day one: Additional data centre development within a business park on the urban fringe	Low	Not significant/Slight	Not significant (Negative)
		Phase 2 Day one: Increase in building footprint with established boundary landscape features Year five: Established, increased landscaping landscape on site boundary and biodiversity in the area mitigating impact of the development	No change/Negligible Low	Imperceptible Not significant/Slight	Not significant (Negative) Not significant (Negative)
The Grand Canal	High	Phase 1 Day one: impact of building on lowland character area setting of feature and linked blue and green infrastructure Phase 2 Day one: Impact of additional buildings on lowland character setting of feature Year five: increase in site boundary vegetation and	No change/Negligible No change/Negligible	Not significant/Slight Not significant/Slight	Not significant (Negative) Not significant (Positive)

Table 1.7 Operation landscape impacts

			establishment of new feature			
NIAH Listed features	Medium	Phase 1 Day one: impact of building on lowland character setting of features Phase 2 Day one: impact of building on lowland character setting of features Year five: impact of building on lowland character setting of features	No change/Negligible No change/Negligible No change/Negligible	Imperceptible Imperceptible	Not significant (Negative) Not significant (Negative)	
Site hedgerows and associated trees	High	Phase 1 Day one: increase planting associated with hedgerows strengthening landscape feature Phase 2 Day one: additional building footprint on the Site Year five: additional planting is established strengthening landscape feature	Low	Moderate	Significant (Positive)	
Baldonnel Stream / Site Trees	Medium	Phase 1 Day one: Enhanced stream with new wetland features and planting established Phase 2 Day one: Enhanced stream with established wetland features and planting with additional building footprint on the Site Year five: continued establishment of wetland and landscaping features	Low Low	Not significant/Slight Moderate	Not significant (Positive) Significant (Positive)	

Visual

1.157 As discussed in the methodology above, the visual impacts and effects have been assessed against the baseline using the architectural drawings and landscape plans provided alongside photomontages of the operational building at Phase 1, day one and Phase 2, year five (Appendix 1.3) that provide an indicative understanding of the Proposed Development phases and how the landscaping will mature. The photomontages have been provided by the architect and are used as an indicative position of the Proposed Development in the landscape. Redlines are used in Appendix 1.3 to make clear the approximate height of the building and MFGP flues within views from viewpoints that are at greater distances or to demonstrate where the development is not visible (VP1, 2, 3, 4, 5, 7, 8). Efforts have been made to show accurate vegetation heights for the boundary treatments, however it should be noted these are estimates based on best information at the time of the assessment.

1.158 Photomontages for Phase 2, day one have not been included due to the limited change in landscaping at the scale of the images provided (an additional 1.5m in tree height over the five-year period). Construction and Demolition impacts and effects are not reviewed separately due to the ongoing construction and development within the Proposed Development study area. It is anticipated that the continuation of activity would result in a negligible/no change magnitude of impact across viewpoints and receptors resulting in imperceptible neutral impact that is **not significant** in terms of EIA.

VP-01: The Grand Canal looking south east

1.159 The viewpoint location is representative of people using the footpath along the Grand Canal PNHA looking south east across arable fields towards the Grange and Profile Park enterprise development areas.

1.160 The proposed structures are of similar height to the surrounding buildings within the area with the flue structures potentially visible from this location. The visual impact is judged as a Low Negative magnitude impact due to the surrounding similar structures in the location. The Recreation visual receptors are judged to be of medium sensitivity.

1.161 Due to the distance of the Proposed Development from this location, and the similar scale and form of existing buildings within the view from this location, it is judged that the scale of effect would not change in magnitude between Phases of the Proposed Development. A redline indicates the outlines of the Proposed Development in Appendix 1.3.

1.162 At Phase 1, day one the Proposed Development is judged to be a Low magnitude of impact on Medium sensitivity receptors. Accordingly, the Proposed Development is judged to have a **not significant/slight negative** scale of effect that is **not significant** in terms of EIA.

1.163 At Phase 2, day one and year 5 the Proposed Development is judged to be a negligible magnitude of impact on medium sensitivity receptors due to the small addition of this phase to the view from this location and judged as an **imperceptible negative** scale of effect that is **not significant** in terms of EIA.

VP-02: New Nangor Road at the roundabout junction with Baldonnel Road looking south east

1.164 The viewpoint location is representative of people travelling east along the New Nangor Road, or south along Baldonnel Road.

1.165 At Phase 1, day one, the DUB11 Proposed Development would be visible in the distance. The approved development under construction would dominate the fore and mid ground view from this location and would screen the Proposed Development from view. A redline indicates the outline of the Proposed Development in Appendix 1.3.

1.166 Due to the distance of the Proposed Development and its position to the rear of similar structures and development underway in the foreground, it is judged that the magnitude of impact would be **no**

change/negligible negative. The travel receptors in this location experience the view as a secondary activity as they pass through an industrial/commercial area and are judged to be low sensitivity.

1.167 The scale of effect at VP-02 from Phase 1, day one of the Proposed Development is judged to be **imperceptible negative** and **not significant** in terms of EIA.

1.168 At Phase 2, day one the DUB 12 Proposed Development would not be visible from this location due to the approved development in the mid to foreground of the view from this location. Therefore, the impact of the Proposed Development at Phase 2, day one and year five are judged to be **no change/negligible negative** magnitude of impact with an **imperceptible** scale of effect that is **not significant** in terms of EIA.

VP-03: Baldonnel Road junction with Profile Park Road looking east

1.169 The viewpoint location is representative of people travelling along Baldonnel Road or east along Profile Park Road.

1.170 Proposed Development would be visible at Phase 1, day one as DUB11 and the MFGP flue structures would be partially visible from this location, through gaps between other commercial buildings of similar size and materiality. A redline indicates the outline of the Proposed Development that is not visible in Appendix 1.3.

1.171 Within this setting, the building would not look out of context with its surroundings and is relatively small in size at this distance in the context of the large commercial buildings in the foreground. The magnitude of impact at this location is judged to be Low. Transport and employment receptors would experience the view as a secondary activity and are judged to be of low sensitivity to the Proposed Development.

1.172 The scale of effect at VP-03 from Phase 1, day one of the Proposed Development is judged to be **imperceptible negative** and **not significant** in terms of EIA.

1.173 At Phase 2, day one the DUB 12 Proposed Development would not be visible from this location due to existing buildings and structures in the mid to foreground of the view from this location. Therefore, the impact of the Proposed Development at Phase 2, day one and year five are judged to be **no change/negligible** magnitude of impact on Low sensitivity visual receptors with an **imperceptible negative** scale of effect that is **not significant** in EIA terms.

VP-04: Baldonnel Road near Newcastle Motors looking north east

1.174 The viewpoint location is representative of a small number of people living and working at this point of Baldonnel Road. It is also representative of travel receptors moving along the road.

1.175 Although an acceptable image was not available from this location due to a resident refusing to allow photography to take place within the vicinity of their property and it not being safe to take images from the ditched verge or live carriageway, the distance from the Site and the dense foliage during summer results in the proposed structures not being visible from this location. However, views of the Proposed Development may be possible during winter when foliage is less dense. The distance from the Site, and the similar surrounding developments in close vicinity to the building are judged to be a Low negative magnitude of impact. A redline indicates the outline of the Proposed Development in the representative image viewpoint 4A in Appendix 1.3.

1.176 The employment and travel receptors are judged to be low sensitivity due to their distance from the Site and involvement in primary activities not dependent on the view. Residents are judged to be of Medium sensitivity due to reduced susceptibility from similar developments in terms of scale and materiality that are closer in proximity than the Proposed Development.

1.177 The assessment uses the highest sensitivity of receptor of Medium. Due to the inability to take an image from this location, an alternative image from further along the road (marked as Image E, View 4a, Appendix 1.2) to give an indication of the scale and extent of the building from a similar distance from the Proposed Development.

1.178 Based on desk-based analyse and the use of an alternative image in close location to the proposed VP-04, a judgement is made of a low negative magnitude of impact due to the distance of the Proposed Development and its similarity in size and scale to existing structures within view from this location. The scale of effect at VP-04 for Phase 1, day one of the Proposed Development is judged to be **not significant/slight negative** and **not significant** in terms of EIA.

1.179 At Phase 2, day one the additional building is judged to be offset by the boundary treatments and it is not anticipated that the building would increase the overall mass of the Proposed Development within the view from this location. The magnitude of impact is judged to be Low negative, with a **not significant/slight negative** scale of effect that is **not significant** in terms of EIA

1.180 At Phase 2, year five, the magnitude of impact is judged to reduce to **no change negligible**, resulting in a **imperceptible** scale of effect and **not significant** in EIA terms.

VP-05: Baldonnell Road near the entrance to the Casement Aerodrome looking north

1.181 The viewpoint location is representative of people working or living in the vicinity or travelling along Baldonnell Road.

1.182 At Phase 1, day one, the proposed structures DUB 11 are visible from this location in the midground of the view. The building and protruding roof structures are visible rising up beyond the treeline. The light colour of the building structures and flue structures enable some blending into the landscape. A redline indicates the outline of the Proposed Development in Appendix 1.3.

1.183 Buildings of similar scale and materiality are also present in the view reducing the susceptibility of visual receptors within this location to the addition of the Proposed Development to the skyline. The Proposed Development would continue the midground pattern of commercial building structures across the landscape.

1.184 The distance from the Site, and the similar surrounding developments in close vicinity to the building are judged to have a Low negative magnitude of impact on visual amenity. The employment and travel receptors anticipated at this location are judged to be Low sensitivity due to their distance and involvement in primary activities not dependent on the view. Residents are judged of medium sensitivity in this location.

1.185 At Phase 1, day one, assessing the highest sensitivity of receptor of medium, the impact is judged to be a **not significant/slight negative** scale of effect. Accordingly, the Proposed Development is **not** anticipated to have a **significant** effect on VP-05 in terms of EIA.

1.186 At Phase 2, day one and year five, the addition of DUB 12 increases the mass and visual proximity of the Proposed Development within the mid-ground of the view from this location. A redline indicates the outline of the Proposed Development in Appendix 1.3m.

1.187 Although more prominent than during Phase 1, the magnitude of impact is still judged to be low negative as an overall small change that is consistent with the existing view with a **not significant/slight negative** scale of effect. Accordingly, the Proposed Development is effect is judged **not significant** effect on VP-05 in terms of EIA.

VP-06: New Nangor Road to the north west corner of the Site looking south east

1.188 The viewpoint location is representative of the view of people working within the area or travelling east along New Nangor Road.

1.189 From this location, at Phase 1, day one of the Proposed Development the building is not visible due to the landscaping on the boundary and the location of the DUB11 within the site. A redline indicates the outline of the Proposed Development in Appendix 1.3.

1.190 The berms along New Nangor Road would be +3m above the road level and planted with trees of between 4 and 5m height. The landscaping would provide screening of the Proposed Development from this location and the Appendix 1.3 provides a red line to indicate the position of DUB11 within the site at this viewpoint. In winter months, the vegetation may be reduced allowing elements of the Proposed Development to be visible. Longer distance views are replaced with an enclosed view composed of grasses and deciduous trees.

1.191 Employment and travel receptors are judged to be of Low sensitivity due to the location within a business park and proximity of buildings of a similar scale and appearance. The commercial character of the foreground also reduces susceptibility of receptors to the visual impact of the Proposed Development.

1.192 At Phase 1, day one, the magnitude of impact is judged to be no change/negligible assessing with low sensitivity visual receptors associated with this viewpoint, the scale of effect is judged to be a **imperceptible negative** scale of effect and is **not significant** in terms of EIA at Phase 1 day one.

1.193 From this viewpoint location, Phase 2 of the development is not visible and does not change the overall magnitude of impact from the Proposed Development. At Phase 2, day one and year 5, the photomontages demonstrate the increased maturity of the landscaping features with increasing height of trees that would be a minimum increase in height of approximately +1.5m height calculated at 30cm average growth per year. It is judged that the magnitude of impact would be no change/negligible. The scale of effect is judged to be an **imperceptible** at Phase 2, day one and year 5 and is **not significant** in terms of EIA.

VP-07: New Nangor Road to the north east corner of the Site looking south west

1.194 The viewpoint location is representative of the view experienced by people travelling along New Nangor Road in a west direction and people involved in employment activities. Photomontages using images from both footpaths adjacent to the road are shown in Appendix 1.3 as View 7A and 7B).

1.195 From this location, Phase 2 of the Proposed Development would not be visible from either 7A or 7B due to the position of DUB11 within the view and the landscaping along the boundary. A redline indicates the outline of the Proposed Development in Appendix 1.3.

1.196 The berms would rise up to a maximum of +3m above the road level with trees of a minimum of 4m planted in a triple staggered row along the ridge of the berms.

1.197 It is anticipated that receptors travelling along New Nangor Road in proximity to the Site boundary may have glimpses of the Proposed Development (Phase 1 and 2) filtered by the established and proposed vegetation. In winter months, loss of foliage may result in less effective screening and greater visual impact of the Proposed Development.

1.198 Receptors approaching along the road from east and west would view the landscaping treatments along the boundary and any views of the Proposed Development are judged to be slight glimpses filtered by existing and proposed vegetation on the site boundary as shown in Appendix 1.3 Viewpoint 7, views 7A and 7B.

- 1.199 It is judged that the magnitude of impact of the building is **Low negative** due to the potential of the building to be glimpsed at times during the year or at points along the road. The enhanced boundary treatments would help to offset negative impacts of the Proposed Development within the view and reduce the angles from which the building is visible. The travel and employment receptors associated with this location are judged to **Low** sensitivity due to the experience of the view as a secondary activity and the surrounding commercial developments.
- 1.200 At Phase 1 day one, the Proposed Development's scale of effect on this viewpoint is judged to be **imperceptible negative**. Accordingly, the effect of the Proposed Development is **not significant** on VP-07 (A and B) in terms of EIA.
- 1.201 At Phase 2, day one, it is anticipated that the landscape features along the north boundary of the site would be established and further increase screening of the Proposed Development with a minimum tree height of 4m along the ridge of the berm. DUB12 is not visible from this location. It is anticipated that the scale of effect would remain the same as Phase 1, day one and is judged to be **imperceptible negative**. Accordingly, the Proposed Development is **not** anticipated to have a **significant** effect on V-07 in terms of EIA.
- 1.202 At Phase 2, year five, it is anticipated that the landscape features would be well established with an increase of tree height of a minimum of +1.5m and provide increased screening of the Proposed Development. It is anticipated that the maturing landscape features that enhance the existing hedgerows and Baldonnel stream providing visual amenity benefits that would help to offset negative impacts from the Proposed Development. It is judged that the magnitude of impact would reduce to **no change/negligible negative** due to visual amenity benefits from the landscape strategy if implemented and well maintained. Therefore, the scale of effect is judged to be **imperceptible** at VP-07 (A and B) and is **not significant** in terms of EIA.

VP-08: New Nangor Road and Profile Park Road roundabout junctions looking south west

- 1.203 The viewpoint location is representative of the view experienced by people involved in travelling or employment activities along New Nangor Road and Profile Park Road. The Proposed Development, Phase 1 or Phase 2, is not visible from this location and therefore the magnitude of impact is judged to be **no change/negligible neutral**. A redline indicates the outline of the Proposed Development in Appendix 1.3.
- 1.204 The travel and employment receptors are judged to be of **Low** sensitivity due to their experience of the view as a secondary activity.
- 1.205 The Proposed Development is judged to have an **imperceptible neutral** scale of effect at this location for Phase 1 day one, Phase 2 day one and year five that is **not significant** effect on VP-08 in terms of EIA.

VP-09: Profile Park Road roundabout at the site entrance looking north west

- 1.206 The viewpoint location is representative of the view experienced by people involved in travelling or employment activities along Profile Park Road and within the Business Park.
- 1.207 At Phase 1, day one of operation, the south and east sides of the building DUB11 is visible with large areas of mixed white panelling with perforated metal on the south east corner. Grey roof structures are visible with five vertical lighting column structures extending above the roofline. The MFGP buildings are visible to the left of the mid ground view, screened in part by the tree planting on berm features. On the south east corner of the building a green wall is visible from this location.
- 1.208 Within the context of the surrounding activity and the Profile Park enterprise setting, the visual magnitude of impact is judged to be **moderate negative** due to the scale of the building from this

viewpoint. Some screening is provided by berms of a minimum height of +2m with ridge tree planting of heights of a minimum of +4m. Due to the receptors experience of the view as a secondary activity while located within the vicinity of a business park, their sensitivity is judged as Low within this context.

- 1.209 At Phase one, day one, the Proposed Development is judged to have a **not significant/slight negative** scale of effect that is judged **not significant** on VP-09 in terms of EIA.
- 1.210 At Phase 2, day one DUB 12 slightly increases the mass of the Proposed Development within the midground view in terms of height, however the positions of DUB12 screens the MFGP building that was previously visible, leading to a similar scale of development with the view. The DUB12 building is consistent in materiality and scale to DUB 11, blending with the Phase 1 development. The magnitude of impact is similar in scale to the visual impact of the Phase 1 Proposed Development and is judged to be **moderate negative** on low sensitivity receptors. At Phase 2, day one, the Proposed Development is judged to have a **not significant/slight negative** scale of effect, that is judged **not significant** on VP-09 in EIA terms.
- At Phase 2, year 5 the maturing landscape features are shown in Appendix 1.3. The maturing trees form a continuous tree line across the view that creates a new visual feature. The treeline does soften the visual impact of the building, however the scale of the Proposed Development would result in a magnitude of impact of moderate negative on the low sensitivity receptors identified in this location. The scale of effect is judged as **not significant/slight negative** and **not significant** in terms of EIA.

VP-10: Profile Park Road on the south west corner of the site looking north east

- 1.211 The viewpoint location is representative of the view experienced by people involved in travelling or employment activities along Profile Park Road and within the Business Park. At Phase 1, day one, the berms with tree planting along the boundary provide some screening of the Proposed Development with receptors experiencing filtered views through the vegetation. Elements of the Proposed Development including the white and grey facade on the south and west elevations and grey roof structures would be visible with filtered views of the security fencing. From this viewpoint the building is a relatively small component of the midground view.
- 1.212 From this location, at Phase 1, day one, the Proposed Development is judged to have a low negative magnitude of impact on visual receptors in this location as a notable change but within a small proportion of the view, or for limited durations. Receptors associated with this Viewpoint are judged to be of low sensitivity with the scale of effect as **imperceptible negative** and not significant in terms of EIA.
- 1.213 At Phase 2, day one, the DUB 12 building roof structures and part of the south and west facade are visible from the road. Screening from the berms and tree planting reduces the magnitude of impact of the Proposed Development. It is judged that the magnitude of impact is **moderate negative** due to the scale of the building and proximity of the viewpoint. The low sensitivity of receptors in this location result in a **not significant/slight negative** scale of effect that is **not significant** in terms of EIA.
- 1.214 At Phase 2, year five increased screening from tree growth of a minimum of +1.5m along the boundary berms would further mitigate the visual impact of the building. The flue structures on the western elevation of the Proposed Development are visible and punctuate the skyline. Small elements of the higher elements of the southern elevation, including grey roof structure are visible above the now well-established treeline. The magnitude of impact is expected to reduce to **low negative** on low sensitivity receptors reducing the scale of effect to **imperceptible negative** and **not significant** in terms of EIA.

VP-11: N7 looking north toward the Site

- 1.215 The viewpoint location is representative of the view of people travelling east along the N7 on the approach to Dublin.
- 1.216 The Proposed Development, Phase 1 and/or Phase 2 are not visible from this location and therefore the magnitude of impact is judged to be **no change/negligible neutral**. The travel and employment receptors are judged to be of low sensitivity due to their experience of the view as a secondary activity.
- 1.217 The Proposed Development is judged to have an **imperceptible neutral** scale of effect at this location for Phase 1, day one, Phase 2, day one and year five of Operation. Accordingly, the proposed development is effect is **not significant** effect on VP-11 in EIA terms.

Assessment of Residual Effects

Additional Mitigation

1.218 No additional mitigation measures are proposed.

Enhancement Measures

1.219 No additional enhancement measures are proposed

Demolition and Construction Stage

1.220 The residual demolition and construction effects remain as reported in the assessment of effects section:

- Temporary to short-term **not significant/slight negative** effects that are **not significant** in EIA terms from impacts on landscape character through disturbance to features offsite and onsite.
- Temporary to short-term **imperceptible negative** effects on visual amenity at VP1-11 surrounding the site that are **not significant** in EIA terms.

Operation Stage

1.221 The residual operation stage effects at year 5 remain as reported in the assessment of effects section:

- Permanent, **not significant/slight negative** effects on the landscape character and associated features that are **not significant** in EIA terms.
- Permanent, **moderate positive** effects that are considered **significant** in EIA terms on the site hedgerows and associated trees due to the additional planting and landscape features planned along the boundaries of the site.
- Permanent, **imperceptible negative and neutral to not significant/slight negative** effects on the visual amenity experienced by receptors at locations VP1-11 around the site that are considered **not significant** in EIA terms.

Summary of Residual Effects

1.222 Table 1.8 provides a tabulated summary of the outcomes of the assessment of the proposed development at Phase 2, year five. Where **significant positive** effects are likely these are highlighted in bold green and where **significant negative** effects are predicted these are highlighted in bold red.

Table 1.8: Summary of Residual Effects

Receptor	Description of Residual Effect	Additional Mitigation	Scale and Significance of Residual Effect **	Nature of Residual Effect*				
				+	D	P	R	St
				-	D	T	R	St
Demolition and Construction								
Landscape								
Newcastle Lowlands Character Area	Increased construction activity within allocated business park area. Similar	None required	Imperceptible	-	D	T	R	St

Table 1.8: Summary of Residual Effects

	in size and scale to existing activity						
Site Hedgerows and associated trees	Disturbance and impacts on function and character value	None required	Not significant/ Slight	-	D	T	R
Baldonnell Stream	Disturbance and impacts on function and character value	None required	Not significant/ Slight	-	D	T	R
The Grand Canal	Disturbance of linked green infrastructure	None required	Not significant/ Slight	-	I	T	R
NIAH Listed Features	Disturbance and impacts on character amenity and tranquillity	None required	Imperceptible	-	I	T	R
Site trees	Removal and disturbance impact on function and character value	None required	Not significant/ Slight	-	D	T	R
Visual							
VP1-11	Contribution to ongoing construction within area	None required	Imperceptible	+/-	I	T	R
							St

Operation

Landscape (at Phase 2 year 5 of operation)

Newcastle Lowlands Character Area	Additional data centre development within a business park on the urban fringe with boundary treatments that contribute to biodiversity and green infrastructure	None required	Not significant/ Slight	-	D	P	R	Lt
The Grand Canal	Improved green infrastructure linked to sight	None required	Not significant/ Slight	+	I	P	R	Lt
NIAH Listed features	Increased data centre development mitigated by	None required	Imperceptible	-	I	P	R	Lt

Table 1.8: Summary of Residual Effects

	increase in landscaping	None required	Moderate	+	D	P	R	Lt
Site hedgerows and trees	Increase in planting and strengthening of traditional landscape feature	None required	Moderate	+	D	P	R	Lt
Baldonnel Stream	Disturbance and impacts on function and character value	None required	Not significant/Slight	+	D	P	R	Lt
Site trees	Removal and disturbance impact on function and character value	None required	Not significant/Slight	+	D	P	R	Lt
Visual								
VP 8, 11	Not visible	None required	Imperceptible	+/-	I	P	R	Lt
VP 1, 2, 3, 4, 6, 7 and 10	Slight increase in data centre development within business park area	None required	Imperceptible	-	I	P	R	Lt
VP 5 and 9	New large building within business park	None required	Not significant/Slight	-	I	P	R	Lt
Notes:								
* - = Negative/ + = Positive / +/- = Neutral; R = Reversible, IR = Irreversible; D = Direct, ID = Indirect; L= Likely, U = Unlikely; M = Momentary, B = Brief, T= Temporary, St = Short-term, Mt = Medium-term, Lt = Long-term, P = Permanent								
** Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, Profound								

Cumulative Effects

Intra-Project Effects

1.223 As explained in Volume 1 Chapter 2: EIA Process and Methodology, intra-project cumulative effects are discussed in Volume 1 Chapter 16: Cumulative Effects.

Inter-Project Effects

1.224 Within the context of this LVIA, the likely landscape and visual effects arising from the cumulative developments summarised in Chapter 2: Table 2.3 are assessed. The location of cumulative developments is shown in Volume 2, Figure 2.1. Within the vicinity of the Proposed Development eight further developments are to be considered, six with planning permission granted and in various stages of development.

Demolition and Construction Cumulative Effects Landscape

1.225 The Proposed Development is within an area that has undergone a period of change as it has transitioned from an agricultural to an industrial and commercial area on the fringe of urban development. During this LVIA assessment period, the AWS development to the west of the site (Application SD20A/0121) has been underway with two cranes visible within the Newcastle Lowlands character area.

1.226 The Proposed Development would reach peak construction in 2022, which would coincide with construction activities planned at:

- UBC Properties (SD20A/0121 and SD20A/0121) to the east;
- Microsoft (SD20A/0283) to the North is scheduled to complete construction in early 2023 with the potential for construction effects of both developments to occur for a short period;
- The sites permanent electrical connection to the south of the site;
- Centrica Business Solutions (SD21A/0167) to the south east;
- Cyrus One (SD18A/0134 and SD20A/0295) to the west.

1.227 It is unclear from the information available if the Data Reality Trust (SD17A/0377) to the south would be undertaking any construction activities during 2023.

1.228 A recent planning application has been submitted for Plot 100 on the Profile Park area, 200m east of the development by Equinox (Ireland) Ltd. The application includes the construction of a 3-storey data centre.

1.229 As assessed above, the Proposed Development combined construction activities are judged to have a low impact on the Newcastle Lowlands LCA, with a not significant/slight negative effect. Combined with other construction activities in the area, it is not anticipated that the magnitude of impact would increase to moderate due to the previous period of construction and industrial character of this area within the LCA. The High sensitivity receptor (the Grand Canal) is sufficient distance from the construction area that the increased construction activities are unlikely to impact amenity, levels of tranquillity and value. In addition, the temporary to short-term effects from cumulative construction activities is considered insufficient to increase the magnitude of impact to moderate. Within this rapidly developing urban fringe character type, it is judged that the cumulative impact of the Proposed Development remains **not significant/slight negative** and is **not significant** in EIA terms.

Visual

1.230 Due to the ongoing nature of construction within the vicinity of the Proposed Development, it is judged that the magnitude of impact on visual amenity due to cumulative construction activities is unlikely to increase.

1.231 Medium sensitivity receptors (residential and recreational) are located at sufficient distance (VPs 01; 04; 05) from the Proposed Development that cumulative impacts are judged unlikely to result in an increase in magnitude impact or scale of effects experienced.

1.232 From VP locations 01, 02, 03, 04, 05, 11 it is anticipated that the Proposed Development demolition and construction activities would be screened by other developments (established) or underway and therefore would not have a cumulative impact on visual receptors.

1.233 At the closest VP locations, (06, 07, 08, 09, 10) construction impacts would be mitigated by site hoarding features and retained vegetation. At this proximity, cumulative impacts are unlikely to be experienced by the low sensitivity receptors associated with these VP locations (transport and employment).

1.234 It is judged that cumulative demolition and construction activities are unlikely to increase the magnitude of impact on visual amenity and therefore **no significant effects** are identified.

Operation Cumulative Effects

Landscape

1.235 The Proposed Development is judged to have a Low (Negative) magnitude of impact on the landscape character with a **not significant/slight negative** scale of effect in the short term that transitions to an **imperceptible negative** scale of effect over the medium to long term as boundary treatments become established and provide amenity, green infrastructure and biodiversity value, mitigating the impact of the Proposed Development.

1.236 On completion, it is considered unlikely that the Proposed Development would contribute to cumulative effects due to its position within the business park that consists of buildings that are of similar size and form. Within the Newcastle Lowlands LCA, the Proposed Development would be screened by other buildings to the north and west and would not contribute to a 'massing' or clumping in the landscape as would be positioned to the rear of other large building structures. To the south, the Proposed Development would be to the fore of other large structures and would merge/screen these from view, again not contributing to an increase in scale of industrial development within this area of the Newcastle Lowlands LCA. High sensitivity landscape receptors (Grand Canal and NIAH listed buildings) are sufficient distance that the Proposed Development and within the visual envelope of the established business park, that it is unlikely to contribute to cumulative development effects. In addition, the Proposed Development's landscape strategy and boundary treatments are expected to help assimilate the Proposed Development more sympathetically within the landscape.

Visual

1.237 On completion, glimpses of the Proposed Development would be visible from a number of the VPs selected to represent surrounding visual receptors. The Proposed Development would not be visible to the north due to the extensive existing industrial/commercial development in the Grange Castle Business Park. From the east, the Proposed development is well screened by the existing vegetation (see VP 07 & 08 images) although this may be less effective during winter when foliage is less.

1.238 During operation, planned boundary are anticipated to increase, providing further screening of the Proposed Development. To the south, the Proposed Development would be to the fore of other large structures and would merge with, and screen these from view, rather than increasing the scale of development within the Newcastle Lowlands LCA. The cumulative developments to the west would reduce the amount of the Proposed Development visible from VP-02, VP-03 and would not contribute to a 'massing' or clumping in the landscape as would be behind other large building structures. The Proposed Development's landscape and boundary treatments would help soften the visual impact by introducing a new treeline within the area that would strengthen over time if maintained.

1.239 Medium sensitivity receptors (residential and recreational) are located at sufficient distance (VPs 01; 04; 05) from the Proposed Development that cumulative impacts are judged unlikely to result in an increase in magnitude of impact or scale of effects experienced.

1.240 From VP locations 01, 02, 03, 04, 05, 11 it is anticipated that the Proposed Development operational activities would be screened by other developments (established) or underway, or are not visible, and therefore would not have a cumulative impact on visual receptors.

1.241 At the closest VP locations, (06, 07, 08, 09, 10) operational impacts would be mitigated by site boundary treatments including increased planting, berms and new wetland features. At this proximity, cumulative impacts are unlikely to be experienced by the low sensitivity receptors associated with these VP locations (transport and employment) due to the surrounding industrial and commercial character of the immediate area.

1.242 It is judged that operation cumulative effects are unlikely to increase the magnitude of impact on visual amenity at the VP locations and therefore **no significant effects** are identified.

1.243 Table 1.9 provides a summary of the likely cumulative effects resulting from the proposed development and the cumulative developments.

Table 1.9 Inter-Project Cumulative Effects

Cumulative Development	Demolition and Construction		Operation	
	Cumulative Effects Likely?	Reason	Cumulative Effects Likely?	Reason
Landscape	No	Impacts and effects experienced would not be out of context with previous activity and distance of high sensitivity landscape receptors mean that impacts to character, amenity or value are unlikely.	No	The scale and type of building is appropriate within the context of the business park area of the LCA. High sensitivity receptors are sufficient distance from the area that the cumulative developments are unlikely to increase landscape impacts or scale of effects.
Visual	No	Impacts and effects experienced would not be out of context with previous activity those associated with an industrial/commercial urban fringe. Distance of medium sensitivity visual receptors mean that an increase in magnitude of impacts is unlikely.	No	The scale and type of building is appropriate within the context of the business park area of the LCA and receptors would have the ability to accommodate the development of the type proposed without changes to visual amenity.

Summary of Assessment

Background

1.244 This chapter has detailed the potential Landscape and Visual impacts due to the construction and operation stages of the proposed development. The assessment of construction and operation stages has been undertaken taking into account the relevant national and local guidance and regulations.

1.245 Baseline assessment has been made using publicly available information and site investigation assessing visual amenity. The baseline assessment indicates that:

- the site is located within an area allocated for strategic employment development by the Regional and Local Authority.
- the proposed development is located within a Data Center Park on the urban fringe of Ireland's capital city, confirming that the location is consistent with the approach set out in the National Framework for this type and scale of development.
- the site is within an area of the Landscape Character Assessment (LCA) that is on the transition between land character types: urban and limestone farmland. It is an area allocated to enterprise and employment development with developments of similar scale and type surrounding it. Within

the context of the LCA, this is an area that has already undergone transitional change from agriculture to industrial and commercial land use.

- The boundary treatments take into account the LCA development mitigation advice to establish 'a linear park to enhance green infrastructure' and 'planting and other landscape design measures including planting with native hedgerows'. The proposed landscaping also meets the SDCC Development Plan Green Infrastructure Objectives: G2 Objective 1,2,5,9 and G3 Objective 1, 5, and G6 Objective 1.
- The maintenance and restoration of the hedgerows also meet SDCC requirements under HCL15 Objective 3 and Section 11.5.5 Landscape, of the Variation 2.

1.246 Taking into account national and local policy, it is judged that the Proposed Development does meet the criteria for the 'limited opportunity' to accommodate development within the LCA.

Demolition and Construction Effects

1.247 Within the LCA context, the assessment judged the Proposed Development to have an **imperceptible negative** effect on the Newcastle Lowlands LCA that is **not significant** in EIA terms during the demolition and construction stage and in the short term.

1.248 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.

1.249 The embedded mitigation measures within the CEMP and set out in Chapter 5, 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 EIA terms.

1.250 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.

1.251 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.**

Operation Effects

1.252 Over the long term to permanent duration of operation, the proposed boundary treatments are judged to have an overall **moderate 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** in EIA terms. It is anticipated that 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 improvement in the quality of the site's established landscape features and the introduction of new features that include wetland meadows, ponds, increased native tree planting and enhanced hedgerows forming a green infrastructure corridor across the Site.

1.253 The overall impact on the Newcastle Lowlands Character area is judged to be not significant/slight negative at Phase 2 year 5 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.

1.254 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.

1.255 During Operation, the Proposed Development is judged to have the following effects on Visual amenity at selected viewpoint locations at Phase 2, year 5:

- **Imperceptible negative** effects at 7 locations (VP 1, 2, 3, 4, 6, 7 and 10);
- **Not Significant/Slight negative** effects 2 locations (VP 5 and 9); and
- **Imperceptible neutral** effects at 2 locations (VP 8 and 11).

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

1.257 Overall, it is judged that the Proposed Development is an addition that is in context to the current and anticipated future commercial/industrial landscape character type of this transitional area, with no significant negative landscape or visual impacts during operation.

Cumulative Effect

1.258 It is considered that cumulative demolition and construction activities are unlikely to increase the magnitude of impact on visual amenity and therefore **no significant effects** are identified in terms of EIA.

1.259 It is considered that operation cumulative effects are unlikely to increase the magnitude of impact on visual amenity at the VP locations and therefore **no significant effects** are identified in terms of EIA.

2 CULTURAL HERITAGE

Introduction

- 2.1 This chapter of the EIA reports on the likely significant cultural heritage effects that are predicted to arise from the demolition and construction stage and the operation stage of the proposed development.
- 2.2 The chapter describes the cultural heritage policy context; the methods used to assess the potential impacts and likely effects; the baseline conditions at and surrounding the site; the likely cultural heritage effects taking into consideration embedded mitigation; the need for additional mitigation and enhancement; the significance of residual effects; and inter-project cumulative effects.
- 2.3 The chapter is supported by the following technical appendices in EIA Volume 2:
 - Appendix 2.1: Legislation and planning policy
 - Appendix 2.2: Gazetteers of archaeology and architectural heritage in the 1km study area
 - Appendix 2.3: Archaeological Consultancy Services Unit, 2020, Geophysical Survey of a Site at Profile Park, Ballybane and Kilbride, Co. Dublin
 - Appendix 2.4: Report on the Archaeological Assessment at Profile Park, Ballybane & Kilbride, Co. Dublin (Excavation Licence No.: 21E0061), Archaeological Consultancy Services Unit, March 2021

Methodology

- 2.4 The assessment has been informed by the following legislation, policies, and published guidance:
 - National Legislation and Policy:
 - National Monuments Acts 1930-2014.
 - Heritage Act 1995.
 - Architectural Heritage (National Inventory) and Historic Monuments Act 2000.
 - The Planning and Development Act 2000 as amended.
 - Planning and Development Regulations 2001-2019 (as amended).
 - National Planning Framework 2018.
 - Regional Policy:
 - Eastern and Midland Regional Assembly, 2019 Regional Spatial and Economic Strategy 2019-2031.
 - Local Policy:
 - South Dublin County Council Development Plan 2016-2022.
 - National guidance and industry standards:
 - Department of Arts, Heritage, Gaeltacht and the Islands, 1999, Frameworks and Principles for the Protection of the Archaeological Heritage.
 - EPA, 2017 Guidelines on The Information to be Contained in Environmental Impact Statements, (Draft).
 - Office of the Planning Regulator, January 2021, Archaeology in the planning process, Planning Leaflet 13.
 - Office of the Planning Regulator, January 2021, A guide to Architectural Heritage, Planning Leaflet 12.

Assessment Scope

- 2.5 Chapter 2: EIA Process and Methodology explains the assessment methodology used throughout this EIA. The assessment in this chapter is a qualitative one, and the evaluation of significance and effects is ultimately a matter of professional judgement.

Technical Scope

- 2.6 The technical scope of the assessment has considered the following:
 - Disturbance or removal of on-site terrestrial-based archaeological deposits during construction.
 - Effects on historic landscape character as a result of the development land take and removal of existing site features.
 - Effects on cultural heritage assets as a result of the construction processes, e.g. visual presence, noise, vibration, potential damage to trees or structures.
 - Effects on cultural heritage assets as a result of the presence of the new built form, its siting, scale, extent, appearance and character, and the new road layout, access, and patterns of circulation

Spatial Scope

- 2.7 The study area for this assessment covers an area of 1 km radius from the site boundary (see Figure 2.1). The study area is sufficiently large to allow a judgement to be made of the likely archaeological potential of the site, based on the evidence in the surrounding area, and to allow an assessment of effects on structures and monuments because of changes to historic or landscape character or visual changes.

Temporal Scope

- 2.8 The assessment has considered impacts arising during the demolition and construction stage, which would be expected to be temporary and short term (1-7 years) in nature, and from the operation stage which would be expected to be permanent and long-term in nature (i.e. more than 20 years).

Baseline Characterisation Method

Desk Study

- 2.9 This chapter assesses the cultural heritage resources of the site and its environs as they are identified through statutory designation and inventory, the national or local archaeological record, documentary sources or other studies. In order to establish baseline cultural heritage conditions in the study area, the relevant data was reviewed and assessed. Data was obtained from the following sources:
 - Sites and Monuments Record (SMR), including the Register of Historic Monuments (RM) and the Record of Monuments and Places (RMP).
 - National Inventory of Architectural Heritage (NIAH).
 - Record of Protected Structures (RPS, South Dublin County Council).

- Cartographic and published sources¹.

Field Study

2.10 Field study/data collection was not required at the site as the data provided by other sources was deemed to be adequate and representative of the site conditions. The present appearance of the site and the surrounding area can be seen in the photographs in EIAR Volume 1, Chapter 1: Introduction; and Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA).

Assessment Method Methodology

Demolition and Construction Stage

2.11 This chapter first assesses the components, qualities and level of importance or value of all monuments and sites identified within the chosen study area, and the contribution to their significance made by the surrounding land. The contribution of the surroundings in which an asset is experienced and the range of historic, functional, or visual relationships, as evident in both physical attributes and perceptual values, to the significance of any single asset or group of assets will depend on the nature of the asset and its past and present setting. The importance of the setting of an asset, or of particular views or vistas (both deliberately designed, and the result of incidental or fortuitous changes over time), to its significance, and to how it is understood and appreciated, can therefore vary greatly.

2.12 The assessment of value, coupled with reference to national and local legislation, relevant policy statements and best professional practice, allows a judgement to be made of the significance of the asset and its sensitivity as a receptor. The focus is the inherent value and importance of the historic site itself, which is clearly separated in the assessment from any public amenity value particular sites may have, or potential contribution to tourism or other interests.

2.13 The judgement of the magnitude of change likely to occur in the demolition and construction stage is based on available information on the attributes of the proposed development: for example, immediate changes such as ground disturbance for site preparation and construction, the land take for development and removal of existing structures, routes, or trees; and changes to drainage and landform.

Operation Stage

2.14 The baseline study and assessment of significance are as above for the demolition and construction stage.

2.15 The judgement of the magnitude of change likely to occur in the operation stage is based on available information on the attributes of the proposed development: for example, the addition of new structures and transport networks; and changes to the character of views of, from or across heritage features, or to perceptions of their priority in the landscape. The assessment refers where necessary to the zone of theoretical visibility (ZTV), viewpoint photographs and wireframe visualisations in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA).

Cumulative Stage

2.16 For the purposes of assessing the cumulative effects, consideration has been given to all cumulative schemes that have the potential to result in a significant cumulative effect alongside the proposed development. Full details of all the cumulative schemes are given in Chapter 2: EIA Process and Methodology. The baseline and assessment of significance, and the judgement of the magnitude of change stages are as above for the demolition and construction and operation stages. Only receptors for which

the proposed development is predicted to result in a significant residual effect alone are included in this part of the assessment.

Assessment Criteria

2.17 The criteria used to assess whether an effect is significant or not, are given in the EPA Guidelines 2017, and are set out in Table 2.1 in Chapter 2: EIA Process and Methodology. The significance of effects is determined by considering the sensitivity of the receptor, the magnitude of impact and scale of the effect. In assessing the significance of an effect, consideration has been given to the quality, duration, probability and type of the effect, and its geographical extent, and the application of professional judgement. There is some flexibility based on professional judgement to take account of any particular value a heritage asset or receptor may have because of its use or presentation for public amenity and tourism or education.

2.18 Based on professional judgement, effects of moderate significance and above are considered significant in EIA terms.

Assumptions and Limitations

2.19 Professional judgement is an important consideration in the determination of the overall cultural heritage effects and, even with qualified and experienced professionals, there can be differences in the judgements made. No site walkover has been undertaken to inform this assessment.

Baseline Conditions

Existing Baseline

Geology

2.20 The site geology consists of fine loamy drift of the Straffan and Elton associations overlying dark limestone and shale of the Lucan Formation².

The Archaeological Resource

2.21 The evidence is presented in chronological order in broadly accepted chronological periods such as Palaeolithic-Neolithic. All assets included in the SMR data are shown on Figure 2.1, and on an aerial photograph illustrating the current and emerging character of the study area in Figure 2.2, each with a reference number, and the relevant entries in the SMR and NIAH are included in the gazetteers in Appendix 2.2. A total of 24 monuments and sites are listed in the SMR data for the site and 1 km radius study area, none of which fall 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 (RPS, RM) on the edge of the study area to the north.

Prehistoric

2.22 There are no records for the Mesolithic or the Neolithic periods in the study area.

2.23 The Early Bronze Age is represented in the study area with the discovery in 2000 and subsequent investigation of a ring barrow monument in the townland of Kilmahuddrick c.1km north east of the site (TOR10, DU017-080). The barrow was sited in a slightly elevated position and comprised a ditch enclosing an internal area of 13 metres. A cist-like structure was revealed along with fragments of a human skull,

² Irish National Solis Map viewed at <https://www.gsi.ie/en-ie/Pages/default.aspx>

¹ These were online resources: OS Ireland National Townland and Historical Map Viewer (<https://geoarchive.maps.arcgis.com/apps/webappviewer/index.html?id=94ef898f708b47f19a8d8b7088a100c4>), NIAH (<http://www.buildingsofireland.ie/Resources/>), and historic maps of Dublin www.dublinhistoricmaps.ie

with some cremated bone, pottery and a bead found within the interior of the enclosing ditch. Some 100 metres to the south of this barrow site, topsoil-stripping in 2000 revealed the remains of a small fulacht fiadh (TOR11, DU017-084) consisting of a small trough, a spread of heat-cracked stone and a linear gully feature to the south-west of the trough. No dateable artefacts were recovered for this site, but they can range in date from 1500-500BC (Mid-Late Bronze Age).

2.24 There are no further prehistoric sites recorded in the study area.

Early Medieval Period (AD400 – 1100)

2.25 There are two concentric enclosure sites, of probable early medieval origin, recorded as cropmark features on aerial photographs to the west of the site. The outline of one at Ballybane townland (TOR14, DU021-108) is discernible on Figure 2.2, while another recorded enclosure (TOR15, DU021-109) is no longer present due to the recent construction of the industrial units. Neither site is indicated on any edition of the Ordnance Survey maps (see Figures 2.3a & 2.3b).

Medieval Period (1100–1600)

2.26 The majority of the sites recorded in the study area relate to the medieval period. The placename Kilbride is first recorded in 1295, and there are records of the linked estates of Kilbride and Nangor into the early 17th century (see Appendix 2.3). The townland names Ballybane and Kilbride are first recorded in the early 14th century.

2.27 On the south-west edge of the study area are the ruins of the medieval church, the ecclesiastical enclosure, and related features at Kilmactalway (TOR1-4, DU021-003001-003004, RPS 182, RM). The walls of the church survive to eaves level within the walled enclosure in woodland and there are a number of gravestones extant³. The ruined church and churchyard at Kilbride (TOR6-8, DU021-005001-005003, RPS 184, RM) survives within an enclosure bounded by low stone walls raised above the fields of the modern farm and is overlooked by the buildings at Casement Aerodrome across the road. There are numerous grave-markers, the most recent dating to the 1930s. Both ecclesiastical enclosure and church sites are recommended for inclusion in the revised RMP.

2.28 There are several examples in the study area of late medieval fortified tower houses, constructed in the 15th and 16th centuries on the edge of the Pale and close to one of the main routes that led from Dublin to the south west.

2.29 On the north edge of the study area, Grange Castle (TOR12 & 16, DU017-034, RPS132, RM) is the ruins of a three-storey tower house that was constructed around 1580. The tower preserves a vaulted basement, a projecting turret with spiral stair, and a garderobe on the south side. The complex was approached from the north on a causeway over a boundary ditch and related features included a stone-lined fishpond. The building was remodelled in c.1750, with the addition of a two-storey house to the west side, with two full height buttresses, and the windows of the earlier range were widened. A courtyard of ancillary and farm buildings was gradually added to the north, and an additional range to the east of the house, which was served by a hearth and a brick chimney attached to the walls of the three-storey tower. The house remained in occupation until the 1980s and then deteriorated to a roofless ruin. The NIAH rating is of regional value for the archaeological, architectural, and historical special interest and the structure is recommended for inclusion in the revised RMP. The ruins have recently been stabilised and restored, and the castle now forms the centrepiece of a new public park within the Grange Castle Business Park.

2.30 The former locations of two other tower houses are recorded to the east of the site at Nangor Castle (TOR13, DU017-037) which was in existence by the 1530s and may have been incorporated into a later 19th century house, since demolished, and at Kilbride to the south (TOR5, DU021-004). The castle site at Nangor is associated with a medieval field system (TOR9, DU017-082) and excavations prior to

development uncovered evidence of earthworks and other boundaries, and material of early medieval to 12th and 13th century date. Both sites are recommended for inclusion in the revised RMP.

Post-medieval Period (1600–1900)

2.31 The pastoral farming landscape of the study area is shown on the map of Dublin County published by John Rocque in 1760⁴, crossed by the line of the Grand Canal to the north of Grange Castle. The largest holding shown is at Nangor, where the house and group of ancillary buildings are shown alongside an area of woodland and enclosed gardens, approached by an avenue from the south. The dispersed farms and other holdings include to the west a small holding named Ballybawn and further unnamed dwellings on the road. The churches at Kilbride and Kilmactalway are both noted as in ruins, the latter set within a larger building group. At Kilbride the main holding appears to have shifted to the east of the old castle location.

2.32 New gentry scale houses in a classical idiom were constructed at the beginning of the 19th century. Kilcarberry House (TOR17, RPS) is a small country house of c.1810, with a formal front facing south. It has a distinctive porch, and some ancillary buildings survive. It has a NIAH rating of regional value for its architectural, artistic, and technical special interest. The inventory entry notes the rural landscape setting, however, since 1998 the house and ancillary structures have been within the Grange Castle Golf Club, forming part of the car park and maintenance area.

2.33 To the west, north of the old church enclosure at Kilmactalway, Castle Bagot House is a tall three-storey country house constructed in 1800, with a full height canted bay to the front elevation facing south-east. The former designed landscape setting has largely reverted to agriculture, though some woodland boundaries remain and there is a larger area of woodland either side of the approach drive leading from the entrance from the north, which is marked by the gate piers with curved flanking walls. The house has a NIAH rating of regional value for its architectural, artistic, and historical special interest. It is in use as a children's nursery and is part of an expanded building group.

2.34 The Ordnance Survey first edition 6" map (Figure 2.3a) surveyed in 1836, shows the site area as part of an irregular group of fields defined to the south by the boundaries of Kilbride and Clondalkin parishes and crossed by the Baldonnel stream. Much of the western part of the study area is part of the large area of designed landscape at Castle Bagot House, which incorporates the old church at Kilmactalway and surrounding buildings, with an area of parkland to the north of the house and woodland plantations around the boundaries. The road layout around the park appears to have been amended from that shown on the mid-18th century map, and a further addition is the new straight road at Kilcarberry House. Of the older estates, the building group at Nangor Castle is the most extensive, with an area identified as parkland and a number of enclosed gardens to the west of the house. Grange Castle to the north is shown as a single long range within orchards, with some smaller structures forming a courtyard on the access from the north. The detailed 25" map published in 1908 shows no change to the arrangement of the site, but there are two new unnamed buildings within an enclosure shown on the other side of the road, and the straight boundary and watercourse leading north to the road, which now forms the east site boundary, was in existence. At Kilbride the old castle location is part of the farm buildings of the new Kilbride House to the west.

2.35 Baldonnel Aerodrome, at the south edge of the study area, was established in 1917, and opened in May 1918 as a base for the Royal Flying Corps. Several of the four aircraft hangars of the original aerodrome remain in use, including a flight shed (TOR22) and a general service hangar (TOR24). A further early hangar at the south of the group falls just outside the study area. The aerodrome reopened in 1922 as Air Service HQ for the Air Corps of the Irish Defence Forces. In 1928 it was the start base for the first successful east to west flight across the Atlantic, which is commemorated in a plaque on the flight shed. The layout of the base is depicted on the OS map published in 1937 (Figure 2.3b). Additional buildings were added to the Air Corps base from the 1930s. At the north edge of the building group is the officers' mess of 1932 (TOR19, RPS188), with pavilions either side of the central entrance. The 1937 sports hall

³ See <https://historicgraves.com>

⁴ See <http://www.dublinfohistoricmaps.ie>

(TOR23), is of pre-cast concrete and shows the influence of European Modernism on aviation buildings. The art deco administration building (TOR20, RPS189) was constructed in 1938, its long façade facing north overlooking the parade ground and entrance to the base. A new all-concrete church was constructed in 1946 (TOR21, RPS190). All these buildings have a NIAH rating of regional value across the range of architectural, artistic, and technical special interest, with recognition of the additional social interest of the church and the cultural interest of the connection of the 1917 flight shed with the 1928 transatlantic flight. The base was provided with new concrete runways in the mid-1950s and was renamed Casement Aerodrome in 1965. It remains an operational military airfield.

2.36 The map regression (Figures 2.3a and 2.3b) illustrates that the principal site boundaries to the west and north remain as first mapped in the mid-19th century. The east site boundary is an addition that was in existence by 1908. The line of the old field boundaries defining the townlands of Ballybane, Kilbride and Augierstown and Ballybane can still be traced through the site, to the north of Profile Park Road. The structure of the wider area is dominated by the new road layout and buildings of the business park. Very little historic influence remains legible in the present landscape of the site and study area.

Previous Archaeological Investigations

2.37 There was an excavation adjacent to the eastern site boundary in 2012 (ref. 12E0067) but no archaeology was revealed. More recent excavations to the west of the site as part of the Grange Castle South Data Centre application and development work identified what had been shown on aerial photographs as two large enclosures (TOR14 & 15).

2.38 A geophysical survey was conducted by Archaeological Consultancy Services Unit Ltd (ACSU) in 2020 under licence 20R0080 and the results are presented in support of this assessment at Appendix 2.3. A larger survey area was undertaken that extended south of the site boundary. Fields numbered 1-6 on Figures 6 and 8 respectively in the report at Appendix 2.3 are focused upon the site (fields 1 and 2 are sited in the north, field 3 is the largest field parcel of the site, field 4 is immediately south up to the road and fields 5 and 6 are in the south eastern corner). The survey revealed a high degree of modern disturbance in the data retrieved in fields 1 and 2, probably as a consequence of the existing dwelling in the north-west corner of the site and varying degrees of modern ground disturbance, tree throws or natural geological variations. Field 3 revealed possible historic field divisions/boundaries or drainage gully in the south-western portion of the field, with other possible cut features of undetermined nature across the central portion of the field but no clear archaeological site or features. Field 4 may have small isolated positive cut features of archaeological origin, but this conclusion must be tempered with the recent works to Profile Park and the adjacent alignment of the road, which was clearly revealed in the results of disturbance seen in fields 5 and 6.

2.39 Even though not part of the site, this survey revealed a previously unidentified archaeological site in field 7 to the south of the existing road forming the site boundary. A large sub-circular enclosure (c.30m in diameter), with an area of probable contemporary medieval field systems along with a second possible curvilinear feature were revealed along the eastern portion of field 7. These features are likely to be further evidence of the early medieval activity seen to the west of the site (TOR14 & 15). Field 8 was the final field surveyed and was sited within the zone of archaeological potential associated with the former castle at Kilbride (TOR5, DU021-004).

2.40 A scheme of archaeological test trenching was carried out across the site in March 2021 by ACSU under licence 21E0061 and the results are presented at Appendix 2.4 of this volume. A total of 30 trenches were excavated across the site, totalling 1,928m of linear trenches and primarily targeting anomalies revealed in the geophysical survey (see above). In general, the average thickness of topsoil measured 0.3-0.45metres and consisted of dark brown sandy clay exposing a greyish-yellow boulder clay natural. A plough furrow was exposed in trench 12 but the excavation failed to reveal any features or deposits of archaeological significance and no artefacts were recovered.

Future Baseline

2.41 The future baseline of the site and study area will be the continued construction of phases of the business parks across the area defined by the South Dublin County Council Development Plan 2016-22 under use zoning Objective EE.

Assessment of Significance

Archaeology

2.42 There are no recorded archaeological sites listed on the SMR or RMP anywhere within the site boundary. The geophysical survey undertaken across the site by ACSU in 2020 failed to reveal any clear probable or possible archaeological anomalies pertaining to previous activity. Certain anomalies pertain to previous and existing field boundaries and drainage ditch features in the main/largest field parcel of the site some of which are traceable on the historic Ordnance Survey maps (Figures 2.3a & 2.3b). The townland boundary between Ballybane and Kilbride are discernible as a cropmark feature comparable with the irregular curvilinear boundary and ditch alignment on the 1836 OS map (Figure 2.3a). However, the subsequent test trenching exercise to evaluate the archaeological resource and determine its likely significance, failed to reveal any archaeological finds, features or deposits. The on-site archaeological resource is therefore considered to be negligible.

2.43 The aforementioned geophysical survey did reveal a previously unknown and unrecorded probable early Medieval enclosure to the south of the road that now forms the southern site boundary. This is further evidence of the utilisation of this landscape during this period, as evidenced in the enclosure sites recorded to the west (TOR14 & 15), as well as the late medieval castle site at Kilbride to the south (TOR5) and Nangor Castle and associated field systems to the north east (TOR13 & 9 respectively). Collectively, and taking into consideration the close proximity of the most recent enclosure site revealed by the geophysical survey, the study area possesses an archaeological resource of local value, predominantly focused on the early-late Medieval periods with little in the way of prehistoric activity.

Built Heritage

2.44 The site is not part of an area of intact historic landscape and there are no on-site standing buildings of heritage interest. The townland boundaries representing pre-17th century land divisions between Ballybane and Kilbride noted above survive as cropmarks and lines of vegetation across the site (see viewpoint photographs 9 and 10, Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA)).

2.45 The church ruins and related features at Kilmactalway (TOR1-4) are included in the RPS and RM and are recommended for inclusion in the revised RMP for the range of interest of the standing structures and the archaeological potential of the enclosure. The site is within a wooded setting in an area of intact small scale field patterns that was formerly part of the 19th century parkland setting of Castle Bagot House immediately to the north.

2.46 The church ruins and related features at Kilbride (TOR6-8) are included in the RPS and RM and are recommended for inclusion in the revised RMP for the range of interest of the standing structures and the archaeological potential of the enclosure. The site is also in close proximity to the former castle site. The church and enclosure are in an open setting of fields immediately to the south of Grange Castle Golf Course, visible from the Baldonnel Road to the south, and is overlooked by the buildings of the aerodrome. The buildings at Grange Castle Business Park South are visible across the fields to the north.

2.47 Grange Castle (TOR12 & 16), at the north edge of the study area, is designated for its archaeological, architectural, and historic interest and is a locally important landmark. The surrounding landscape setting preserves a range of related features, including the original access to the north, the related field and property boundaries and the alignments of demolished ancillary buildings, and is important to perceptions of the castle. The significant views towards the castle are from the south and east and from the north. The wider setting of the ruins within the business park creates a dramatic juxtaposition of old and new and the business park buildings prevent longer distance views. The building is included in the RPS and

RM and is recommended for inclusion in the revised RMP. The range of interests are of regional importance; the visual qualities of the recently restored structure and its public profile as part of the park, including the planned limited access to the interior of the monument, are an additional value.

2.48 The closest built heritage asset to the site is Kilcarrberry House approximately 620m to the east (TOR17). The formal early 19th century house is included in the RPS because of its special architectural and historic interest. It retains its visual qualities and character although the setting is now dominated by the surrounding golf course.

2.49 Castle Bagot House (TOR18), approximately 660m to the west of the site, is included in the RPS for its special architectural and historic interest. Some elements of the associated designed landscape survive, in the fragmentary woodland boundary plantations and the larger area of woodland on the drive and the gate piers and entrance feature on Baldonnel Road. The character of the setting close to the house is affected by the additional buildings for its use as a children's nursery and crèche.

2.50 The identified structures of heritage interest at Casement Aerodrome (TOR19-24) are part of the large group of buildings at the base on the north edge of the runways. They include several hangars that survive from the original establishment of the aerodrome during WWI and a range of Air Corps buildings dating from the early 1930s to the mid-1940s. All have been altered for their continued use as part of the operational military airbase. The officers' mess, administration building, and the church are included in the RPS for their special architectural and historic interest.

2.51 All of these structures are of regional value. The recently restored Grange Castle has an additional cultural and social value as the focus of the new public park created at the centre of the Grange Castle Business Park.

Sensitive Receptors

2.52 The receptors identified as sensitive to the proposed development and which have been 'scoped-in' to the assessment are summarised in Table 2.2.

Table 2.2: Summary of Sensitive Receptors

Receptor
Archaeology – on site
Archaeology – study area
Kilmactalway church and related features (TOR1-4)
Kilbride church and related features (TOR6-8)
Grange Castle (TOR12 and 16)
Kilcarrberry House (TOR17)
Castle Bagot House (TOR18)
Buildings at Casement Aerodrome (TOR19-24)

Assessment of Effects

Demolition and Construction Effects

Archaeology

2.53 The proposed development will involve groundworks, which will inevitably have an impact on below ground archaeological remains where they are yet unknown and unrecorded. The risk of impacts would come from the possible damage to any below ground sites / features / localised findspots. There would be no direct construction effects on any archaeological sites recorded within the SMR or RMP for the site. The recent geophysical survey revealed no probable or possible sites/features of likely archaeological origin

and this has been borne out by the negative results from the test trenching exercise undertaken across the site area in March 2021 (see Appendix 2.4). The northern and southern portions of the site revealed a high degree of modern disturbance while the south eastern field parcels show probable reprofiling or the presence of dumped deposits/disturbance likely to be a result of the extensive work creating the access roads and site clearance for Profile Park. There was no clear identification of features comparable to other sites in the vicinity, namely the distinctive curvilinear enclosures of early Medieval date. The demolition and construction stage would result in a neutral effect of imperceptible significance. This would be permanent and irreversible and would not be significant in terms of EIA.

Built Heritage

2.54 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 a distance away from the protected structures in the study area and 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. The ongoing construction of the business parks is also an established aspect of the character of the study area. The demolition and construction stage would not result in any change to the buildings of heritage interest in the study area or the character of their setting and no effects are predicted. The vacant residential property that would be demolished is not considered to have any heritage value.

Operation Effects

2.55 This section of the assessment refers where relevant to the ZTV and viewpoint photographs and wireframe visualisations shown in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA). The methodology for the production of these images, and any limitations, are explained in that chapter.

Archaeology

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

Built Heritage

2.57 Kilmactalway church and related features (TOR1-4) are at the edge of the study area, at nearly 1km distance from the site and within a wooded setting. There is no historic connection to the site and the monument is physically and visually separated from it by the intervening woodland associated with Castle Bagot House and the large-scale structures at Grange Castle Business Park South. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA) predicts no visibility of the proposed development across this area. There would be no change to the monument or its setting as a result of the proposed development. The operation stage would not result in any impact and the effects would be neutral in nature and not significant in terms of EIA.

2.58 Kilbride church and related features (TOR6-8) are within the open agricultural setting of the adjacent farm and Kilbride House. The existing and emerging character of the wider setting is mixed, with the influence of the aerodrome to the south of Baldonnel Road, the adjacent golf course, and the visible new buildings of the business parks to the north. There is no historic connection to the site and the monument is physically and visually separated from it by the intervening development. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA), predicts some visibility of elements of the proposed development across some of the open land around the monument, and within the graveyard enclosure. The change to the character of the setting of the monument through the addition to the existing visibility of the business park development to the north would result in a negative effect of slight significance. This would be permanent and irreversible and would not be significant.

2.59 Grange Castle (TOR12 & 16) to the north on the edge of the 1km study area is physically and visually separate from the site by the buildings of Grange Castle Business Park north of R134 New Nangor Road. The recently restored tower house is seen within the new landscape setting defined by the main roads of the business park and has no historic or present relationship to the site area. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA) predicts some very small areas of visibility of

some elements of the proposed development at approximately 1km distance to the south from the edge of the open land to the west of the monument. Views from the areas close to the castle and the new park are prevented by the vegetation along the retained field boundaries and the business park buildings to the south. There would be no change to the monument or to the character of its setting as a result of the proposed development. The operation stage would not result in any impact and the effect would be neutral in nature and not significant in terms of EIA.

2.60 Kilarberry House (TOR17) is part of Grange Castle Golf Course. The principal visual relationship is to the former landscape setting to the south, and the house is physically and visually separate from the site. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA) predicts some areas of visibility of the proposed development across the surrounding golf course. These views are likely to be very localised because of the tree cover, are not on the principal south-facing orientation of the house and would not affect appreciation of its visual qualities or relationship to the wider landscape. There would be no change to the appreciation of the architectural qualities of the building or to the character of its setting as a result of the proposed development. The operation stage would not result in any impact and the effect would be neutral in nature and not significant in terms of EIA.

2.61 Castle Bagnet House (TOR18) is within an enclosed setting that preserves some elements of the former designed landscape, which include the woodland at the entrance drive to the north and along the east boundary. The developing business park to the north side of Baldonnel Road is an established feature of the character of the surrounding area and there is no physical or visual connection to the site to the north east. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA) predicts no visibility of the proposed development across this area. There would be no change to the building or its setting as a result of the proposed development. The operation stage would not result in any impact and the effect would be neutral in nature and not significant in terms of EIA.

2.62 The buildings of heritage interest at Casement Aerodrome (TOR19-24) are all part of the operational military aerodrome. The functional relationship is to the runways to the south and between and within the group of buildings, which is locally visually prominent on Baldonnel Road. There is no physical or visual relationship to the site area. The ZTV in Volume 2, Chapter 1: Landscape and Visual Impact Assessment (LVIA) predicts no visibility of the proposed development in the spaces around the aerodrome buildings, and any small additional areas of visibility across the open areas to the south and west of the main building group would be experienced in the context of the operation airfield, and the existing glimpses of the edge of the business parks to the north. There would be no change to the buildings or their setting as a result of the proposed development. The operation stage would not result in any impact and the effect would be neutral in nature and not significant in terms of EIA.

Assessment of Residual Effects Additional Mitigation

Demolition and Construction Stage

Archaeology

2.63 No significant effects are predicted on the archaeological resource during the demolition and construction stage. Consequently, no additional mitigation is required.

Built Heritage

2.64 No significant effects are predicted on built heritage during the demolition and construction stage. Consequently, no additional mitigation is required.

Operation Stage

Archaeology

2.65 No significant effects are predicted on the archaeological resource during the operation and no additional mitigation is required.

Built Heritage

2.66 No significant effects are predicted on built heritage during the operation stage. Consequently, no additional mitigation is required.

“Do nothing” Scenario

2.67 In the absence of the proposed development the site would remain in its current transitional condition. As the area has a specific zoning for enterprise and employment related development it is probable that any future development would be of a similar type and scale.

Enhancement Measures

2.68 No enhancement measures are proposed in respect of cultural heritage.

Demolition and Construction Residual Effects

Archaeology

2.69 As no additional mitigation is deemed necessary or is required, the residual demolition and construction effects remain as reported in the assessment of effects section.

Built Heritage

2.70 As no additional mitigation would be required, the residual demolition and construction effects remain as reported in the assessment of effects section.

Operation Residual Effects

2.71 As no additional mitigation would be required for either archaeology or built heritage, the residual operation effects remain as reported in the assessment of effects section.

Summary of Residual Effects

2.72 Table 2.3 provides a tabulated summary of the outcomes of the cultural heritage assessment of the proposed development. Where **significant positive** effects are likely these are highlighted in bold green and where **significant negative** effects are predicted these are highlighted in bold red.

Table 2.3: Summary of Residual Cultural Heritage Effects

Receptor	Description of Residual Effect	Additional Mitigation	Scale and Significance of Residual Effect	Nature of Residual Effect*					
				+	L	D	P	R	St
Demolition and Construction									
On site archaeology	None identified	None required	Imperceptible	+/-	U	D	P	IR	Lt
Built heritage	None identified	None required	Imperceptible	+/-	U	D	T	IR	T to St
Operation									
Archaeology	None identified	None required	Imperceptible	+/-	U	D	P	IR	Lt
Built heritage (TOR6-8)	Change to visual qualities of setting	None required	Slight	-	L	D	P	IR	Lt
Built heritage (TOR1-4, 12, 16, 17-24)	None identified	None required	Imperceptible	+/-	U	D	P	IR	Lt

Notes:
 * - = Negative/ + = Positive / +/- = Neutral; R = Reversible, IR = Irreversible; D = Direct, ID = Indirect; L= Likely, U = Unlikely; M = Momentary, B = Brief, T= Temporary, St = Short-term, Mt = Medium-term, Lt = Long-term, P = Permanent.
 ** Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, Profound.

Cumulative Effects

Intra-Project Effects

2.73 As explained in Volume 1, Chapter 2: EIA Process and Methodology, intra-project cumulative effects are discussed in Volume 1, Chapter 16: Intra Cumulative Effects.

Inter-Project Effects

2.74 No significant effects are predicted on the archaeological resource as a result of the proposed development alone in either the demolition and construction or the operation stage. There is therefore no potential for inter-project effects with the cumulative schemes to occur.

2.75 No significant effects are predicted on built heritage as a result of the proposed development alone in either the demolition and construction or the operation stage. There is therefore no potential for inter-project effects with the cumulative schemes to occur. Built heritage is not considered further in this section of the assessment.

2.76 Table 2.4 provides a summary of the likely cumulative effects on archaeology resulting from the demolition and construction stage of the proposed development and the cumulative developments.

Table 2.4: Inter-Project Cumulative Effects

Cumulative Schemes	Demolition and Construction	
	Cumulative Effects Likely?	Reason
Microsoft - Grange Castle Business Park, Nangor Road, Clondalkin, Dublin 22 [SD20A/0283]	No	No significant effects are predicted on the archaeological resource as a result of the proposed development.
UBC Properties - Townlands within Grange Castle South Business Park, Baldonnel, Dublin 22 [SD20A/0121]		
UBC Properties -Grange Castle South Business Park, Dublin 22 [An Bord Pleanála Reference – 308585]		
Digital Reality Trust - Profile Park, Baldonnel, Dublin 22, D22 TY06 [SD17A/0377]		
Cyrus One - Grange Castle Business Park, Clondalkin, Dublin 2 [SD18A/0134]		
Cyrus One Townlands within Grange Castle South Business Park, Baldonnel, Dublin 22 [SD20A/0295]		
Cyrus One - Grange Castle South Business Park, Baldonnel, Dublin 22 [An Bord Pleanála Ref - 309146]		
Centrica Business Solutions - Pro-file Park, Baldonnel, Dublin 22 [SD21A/0167]		
Equinix (Ireland) Ltd – Plot 100, Profile Park, Nangor Road, Clondalkin, Dublin 22 [SD21A/0186]		

Table 2.4: Inter-Project Cumulative Effects

Cumulative Schemes	Demolition and Construction	
	Cumulative Effects Likely?	Reason
Site proposed electrical connection and substation to EirGrid to the south	Yes	Geophysical survey in this area has identified a probable early medieval sub circular enclosure in the proposed field parcel. Once the required site investigations of the enclosure are complete, the resource will have been appropriately dealt with in line with local/national policy and best practice guidance.

Demolition and Construction Cumulative Effects

2.77 The proposal gives rise to a neutral effect of imperceptible significance to the archaeological resource within the site. No further investigations/mitigation are therefore necessary prior to construction. There is the potential for a negative cumulative effect on the identified sub-circular enclosure identified by geophysical survey in the field to the south earmarked for the required electricity connection to the EirGrid and substation. However, a similar approach in terms of archaeological evaluation and preservation by record would be applied in order to inform and duly mitigate potential effects. These works would add to the meagre knowledge of the archaeological resource in the immediate vicinity of the site and may add a further early medieval habitation site to the ones recorded in the study area.

Operation Cumulative Effects

2.78 Once the required site investigations of the enclosure in the field parcel earmarked for the substation and electricity connection to EirGrid are complete, the resource will have been appropriately dealt with in line with local/national policy and best practice guidance. The overall knowledge gained would result in a beneficial effect of slight significance.

Summary of Assessment Background

2.79 This chapter has detailed the potential cultural heritage effects of the demolition and construction and operation stages of the proposed development. The assessment has been undertaken considering the relevant national and local guidance and regulations.

2.80 A 1km study area from the site boundary has been used for this assessment. All recorded archaeological and architectural built heritage features of interest, identified in the national and local record, have been assessed in the chapter. These included all features in the Sites and Monuments Record (SMR), including the Register of Historic Monuments (RM) and the Record of Monuments and Places (RMP), the National Inventory of Architectural Heritage (NIAH) and the Record of Protected Structures (RPS) maintained by South Dublin County Council. A total of 24 sites are identified within the study area. These are shown on Figures 2.1 and 2.2.

2.81 The site contains no recorded archaeological sites, finds or monuments. The study area gives a general background to potential as well as useful information on archaeological sites uncovered as a consequence of pre-development site investigations. The Early Bronze Age is represented in the study area with the discovery and subsequent investigation of a ring barrow monument in the townland of Kilmahudrick c.1km north-east of the site (TOR10, DU017-080). Some 100 metres to the south of this barrow site,

topsoil-stripping in 2000 revealed the remains of a small fulacht fiadh (TOR11, DU017-084) consisting of a small trough, a spread of heat-cracked stone and a linear gully feature to the south-west of the trough. No dateable artefacts were recovered for this site, but they can range in date from 1500-500BC (Mid-Late Bronze Age).

2.82 There are two concentric enclosure sites, of probable early medieval origin, recorded as cropmark features on aerial photographs to the west of the site. The outline of one at Ballybane townland (TOR14, DU021-108) is discernible on Figure 2.2, while another recorded enclosure (TOR15, DU021-109) is no longer present due to the construction of industrial units at this location.

2.83 A geophysical survey was conducted by Archaeological Consultancy Services Unit Ltd (ACSU) in 2020 under licence 20R0080 and the results are presented in support of this assessment at Appendix 2.3. No previously unrecorded probable archaeological sites were identified across the site in this survey other than historic agricultural evidence and possible field boundaries/drainage ditch gully features. The survey revealed a large sub-circular enclosure (c.30m in diameter), with an area of probable contemporary medieval field systems along with a second possible curvilinear feature in the field south of the road forming the site boundary. A scheme of test trenching was undertaken in March 2021 by ACSU but the 30 trenches investigated across the site failed to reveal any archaeological finds, features or deposits.

2.84 The baseline evidence for the recorded prehistoric archaeological sites or chance finds in the study area is meagre. Some early medieval concentric enclosure sites have been identified but nothing is present on the recent geophysical survey or on the RMP mapping for the site.

2.85 The built heritage in the study area includes the sites of two medieval churches; at Kilmactalway and at Kilbride (TOR1-4 & TOR6-8). Both sites preserve the ruins of the medieval church, the related ecclesiastical enclosure, and a range of other features. At the north edge of the study area is the tower house at Grange Castle (TOR12 & 16), which was first built in around 1580, and was converted into a house in the mid-18th century. The building was ruinous from the 1980s and has recently been restored as the centrepiece of the new public park at Grange Castle Business Park. There are two examples of early 19th century country houses in the study area. The small formal house at Kicarberry House (TOR17) is now within the Grange Castle Golf Course. Castle Bagnet House to the south west of the site (TOR18) retains some elements of the early 19th century designed landscape setting. At the south 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 built through the 1930s to 1946 (TOR19-24).

Demolition and Construction Effects

2.86 The proposed development will involve groundworks, which will inevitably have an impact on below ground archaeological remains where they are yet unknown and unrecorded. The risk of impacts would come from the possible damage to any below ground sites / features / localised findspots. There would be no direct construction effects on any archaeological sites recorded within the SMR or RMP for the site. The geophysical survey revealed no probable or possible sites/features of likely archaeological origin and this has been borne out by the negative results from the test trenching exercise undertaken across the site area in March 2021 (see Appendix 2.4). The northern and southern portions of the site revealed a high degree of modern disturbance, while the south eastern field parcels show probable reprofiling or the presence of dumped deposits/disturbance that is likely to be a result of the extensive work creating the access roads and site clearance for Profile Park. There was no clear identification of features comparable to other sites in the vicinity, namely the distinctive curvilinear enclosures of early medieval date. The demolition and construction stage would result in a neutral effect of imperceptible significance. This would be permanent and irreversible and would not be significant in terms of EIA.

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

- 2.88 Overall, it is considered that the demolition of the existing site and construction of the proposed development would result in a neutral effect on cultural heritage and identified receptors, which would not be significant.

Operation Effects

- 2.89 No effects are predicted on the currently meagre archaeological resource during the operation stage.
- 2.90 A negative effect of slight significance is predicted to Kilbride church and related features (TOR6-8). This would be permanent and irreversible and would not be significant. Neutral effects are predicted on all other built heritage assets during the operation stage.
- 2.91 Overall, it is considered that the operation stage of development would result in neutral effects on cultural heritage and identified receptors.

Cumulative Effects

- 2.92 No significant effects are predicted on the archaeological resource as a result of the proposed development alone in either the demolition and construction or the operation stage. The closest cumulative scheme to the proposed development is the electrical connection to EirGrid and substation in the field to the south. Geophysical survey has identified the location of a probable early Medieval enclosure that will require further investigation and potentially preservation by record. The overall knowledge gained by the investigation of this site and its addition to other contemporary monuments from this period would result in a positive effect of slight significance.
- 2.93 No significant effects are predicted on built heritage as a result of the proposed development alone in either the demolition and construction or the operation stage so there is no potential for cumulative effects.
- 2.94 Overall, it is considered that the operation stage of development in combination with the one cumulative scheme with the most relevant association to the south, the substation and electricity connection to EirGrid, would result in a positive cumulative effect on cultural heritage of slight significance and would not give rise to a significant effect.

GLOSSARY OF TERMS

Applicant	Vantage Data Centers DUB11 Limited
Application	Means the full planning application, for the proposed development on the site.
Baseline Studies	Studies of existing environmental conditions which are designed to establish the baseline conditions against which any future changes can be measured or predicted.
Operational Phase	A development scheme which has been build out and is operational.
Cumulative Effects	Effects that result from incremental changes caused by other past, present or reasonably foreseeable actions.
Cumulative Schemes	Developments that have received a resolution to grant planning permission or have a signed legal agreement in place. They are likely to be delivered concurrently with the Proposed Development assessed in the EIA.
Desk Study	A non-intrusive study and review of all available information pertaining to a site, including historical records, collated and monitored data, and consultation with relevant stakeholders.
EIA Scoping	An initial stage in determining the nature and potential scale of the environmental impacts arising from a proposed development, and assessing what further studies are required to establish their significance.
EIA Scoping Opinion	A written statement of the opinion of the relevant planning authority as to the information to be provided in the Environmental Statement.
EIA Screening	An initial stage in which the need for EIA is considered in respect of a development. Some developments are automatically subject to EIA by means of their inevitable size, nature and effects (Schedule 1 developments). Other projects are made subject to EIA because it is anticipated that they are likely to have significant environmental effects (Schedule 2 developments).
Environmental Impact Assessment	A process by which information about the environmental effects of a development is collected and taken into account by the relevant decision-making body before a decision is given on whether the development should go ahead.

Environmental Statement	A statement that includes such information that is reasonably required to assess the environmental effects of a development.
Mitigation	Any process, activity of thing designed to avoid, reduce or remedy adverse environmental effects likely to be caused by a development project.
Mitigation Measure	Measure aiming at reducing an adverse environmental effect.
National Planning Policy Framework	Came into force on 27 March 2012 and was revised in July 2018, with minor revisions made in February and June 2019. It sets out the Government's economic, environmental and social planning policies for England and summarises, in a single document, all previous national planning policy advice (Planning Policy Statements and Planning Policy Guidance notes).
Non-Technical Summary	A summary of the Environmental Statement in 'non-technical language'.
Ordnance Datum	Land levels are measured relative to the average sea level at Newlyn, Cornwall. This average level is referred to as 'Ordnance Datum'.
Overshadowing	Overshadowing occurs when a structure blocks out sunlight from neighbouring properties on the northern side of that structure. It can affect the amount of daylight let into neighbouring properties when the shadow cast falls across windows or glazed doors.
Receptor (Sensitive)	A component of the natural, created, or built environment such as human being, water, air, a building, or a plant that is affected by an impact.
Residual Effects	Those effects of a development that cannot be mitigated following implementation of mitigation proposals.
Study Area	Defined impact assessment area surrounding the site relative to the technical topic in question and determined based professional judgement.
Sustainable Development	Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

ABBREVIATIONS

EIA	Environmental Impact Assessment
LVIA	Landscape and Visual Impact Assessment
EPA	Environmental Protection Agency
GLVIA	Guidelines for Landscape and Visual Assessment
EIAR	Environmental Impact Assessment Report
MW	Megawatt
NLS	National Landscape Strategy
NPF	National Planning Framework
NDP	National Development Plan
NDO	National Policy Objectives
SUDS	Sustainable Drainage Systems
LACCA	Landscape Classification Character Assessment
HLCA	Historic Landscape Character Assessment
GI	Green Infrastructure
HCL	Heritage Conservation and Landscape Objective
BMP	Biodiversity Management Plan
LCA	Landscape Character Area
SDCC	South Dublin County Council
NHA	National Heritage Area
NIAH	National Inventory of Architectural Heritage
ZTV	Zone of Theoretical Visibility
VP	Viewpoint
SMR	Sites and Monuments Record
RM	Register of Historic Monuments
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
ACSU	Archaeological Consultancy Services Unit Ltd
NMS	National Monuments Service




Volume 2: Technical Appendices

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Zone of Theoretical Visibility

-  Proposed Data Center Site
-  DUB 11
-  DUB 12
-  Multi-Fuel Generation Plant
-  Observer Points
-  Existing Buildings
-  Visibility

Notes: Visibility is calculated at heights above a Digital Surface Model that is a 3D representation of the surface including all objects including buildings and vegetation. Therefore visibility will be calculated from the top of buildings and trees. Building areas have been overlaid to account for this effect.

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Figure 1

Scale at A3: 1:12,500
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Landscape Character Areas and Viewpoint Locations



- ▭ Proposed Data Center Site
- ▭ DUB 11
- ▭ DUB 12
- ▭ Multi-Fuel Generation Plant
- ▭ Grand Canal pNHAs
- ▭ Newcastle Lowlands
- ▭ Viewpoint
- ▭ Urban South Dublin

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Figure 2

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Maxar Microsoft

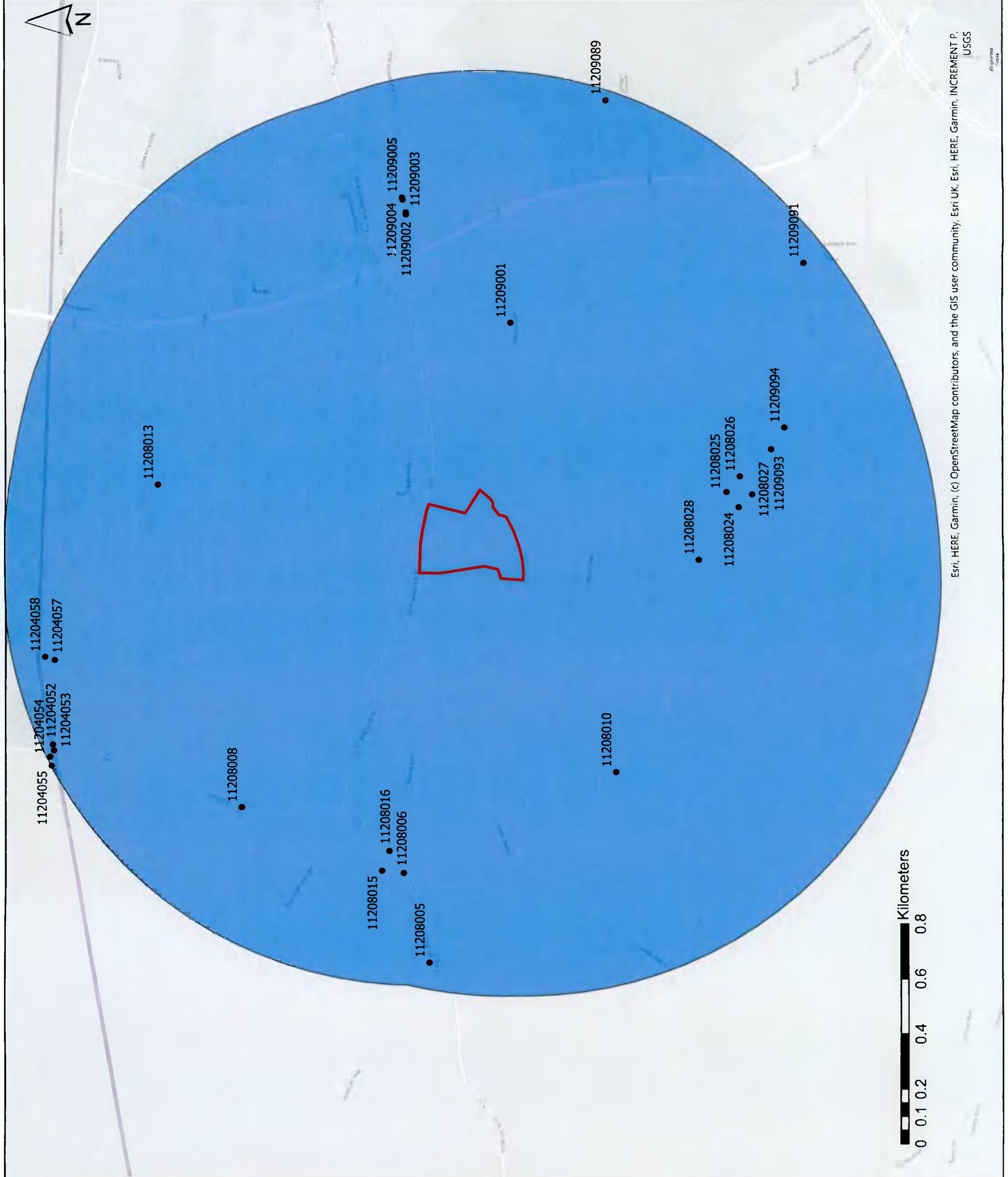
1 Visualisation image details

Viewpoint	Camera details	Date / Time	Direction	Coordinates
1	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-100 sec at f - 11	28 June 2021 09:01	134°	53°19'43.0428 N 6°28'37.1496 W Google map: 53.328623,-6.476986 Elevation 72.7m (camera height included: 1.7m above ground level)
2	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-200 sec at f - 11	28 June 2021 10:18	134°	53°19'14.755- N 6°27'22.298- W Google map: 53.3207653,-6.4561939 Elevation 70.7m (camera height included: 1.7m above ground level)
3	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-160 sec at f - 11	28 June 2021 10:49	78°	53°19'3.695- N 6°27'27.07- W Google map: 53.3176931,-6.4575194 Elevation 72.7m (camera height included: 1.7m above ground level)
4	<i>No information - not able to take full photograph at location</i>			
4a	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-15 sec at f - 11	28 June 2021 11:06	0°	53°18'38.114- N 6°26'40.052- W Google map: 53.3105872,-6.4444589 Elevation 72.7m (camera height included: 1.7m above ground level)
5	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-40 sec at f - 11	18 August 2021 15:02	335°	53°18'36.526- N 6°26'32.207- W Google map: 53.3101461,-6.4422796999999 Elevation 72.7m (camera height included: 1.7m above ground level)
6	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm / 1-230 sec at f-11	28 June 2021 12:11	140°	53°19'6.757 - N 6°26'46.591- W Google map: 53.3185436,-6.4462753 Elevation 74.7m (camera height included: 1.7m above ground level)
7a	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-60 sec at f - 11	28 June 2021 12:46	250°	53°19'5.295- N 6°26'30.846- W Google map: 53.3181375,-6.4419017 Elevation 77.7m (camera height included: 1.7m above ground level)

7b	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-50 sec at f - 11	18 August 2021 14:50	195°	53°19'6.722 - N 6°26'37.303 - W Google map: 53.3185339,-6.4436953 Elevation 77.7m (camera height included: 1.7m above ground level)
8	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-100 sec at f - 11	28 June 2021 12:58	249°	53°19'4.096 - N 6°26'23.184 - W Google map: 53.3178044,-6.4397733 Elevation 77.7m (camera height included: 1.7m above ground level)
9	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-250 sec at f - 11	28 June 2021 13:56	305°	53°18'54.5029 - N 6°26'30.4993 - W Google map: 53.3151397,-6.4418054 Elevation 76.7m (camera height included: 1.7m above ground level)
10	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-160 sec at f - 11	28 June 2021 14:19	330°	53°18'53.7378" N 6°26'48.4855" W Google map: 53.3149272,-6.4468014999999999 Elevation 77.7m (camera height included: 1.7m above ground level)
11	Sony-ILCE-1-Lens_Sigma-Art-018_Focal-Length50 mm_1-160 sec at f - 11	28 June 2021 15:09	310°	53°18'08.7036" N 6°25'04.3221" W Google map: 53.3024177,-6.4178672 Elevation 96.7m (camera height included: 1.7m above ground level)

National Inventory of Architectural Heritage sites in study area

- NIAH sites with reference number
- site boundary
- LVIA Study Area 1500



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Esri UK, Esri, HERE, Garmin, INCREMENT P, USGS

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Figure 3

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