Appendix B: Stream Assessment Results

Methodology

Kick Sampling

2.1. The two-minute kick sampling method was employed to collect samples of macroinvertebrates for analysis. This involved placing a standard hand net of 500µm pore size in the drain, facing upstream and disturbing the bed in front of the net mouth. The kick method dislodges macroinvertebrates from the substrates and any submerged plant material.

2.2. As the substrate material in the drain was not suitable for kicking for long periods (silty/sandy), the sweep method was applied in this area. The resulting sample was transferred from the net to a plastic bucket, and species were identified in the field. Where this was not possible, photographs were taken and samples were returned into the stream.

2.3. Samples were then assessed. Where macroinvertebrates were removed, these were identified using stereoscopic microscopes and the appropriate keys.

Results

Stream Description

2.4. Stream (FW2): Approximately 1m wide, expanding to 2m in the northeast of the site, where it joins a culvert. Generally shallow with steep banks. The substrate appears to be a mixture of gravel and mud. Patches of vegetation within the stream channel are dominated by yellow iris (*Iris pseudoacorus*), watercress (*Rorippa nasturtium-aquaticum*) and duckweed (*Lemna* sp.).

2.5. The Baldonnell stream (FW2) is considered to be too narrow to support otter. Watercourses on site are consider to be an important water source for ecology at the site level.

Invertebrates identified

2.6. Three points were selected for kick sampling to encompass a variety of habitats. Sampling point 1 contained 50% vegetation. Sample point 2 was a shallower section of the stream with no vegetation. Sample point 3 contained dense iris vegetation.

Sampling Point	Species	Number	Relative abundance
1	Freshwater shrimp (*Gammarus* sp.)	100	100%

2	Freshwater shrimp Stone clingers (*Baetidae*) Sludge worm / Bloodworm (*Tubificidae* sp.) Caddisfly	30 20 1 3	55% 37% 2% 6%
3	Freshwater shrimp Stone clingers Sludge worm	50 30 1	62% 37% 1%

Appendix C

Appendix C– Habitat of Bat Species in Ireland

Table 1: General/Preferred Foraging and Commuting Habitats of Bat Species Returned by the Data Search

Species	Foraging and Commuting Habitat	Roosting Preferences
Common pipistrelle (*Pipistrellus pipistrellus*)	Shows a preference for deciduous woodland but a generalist using a wide range of habitats.	Maternity colonies are found mainly in buildings, usually roosting out of sight in crevices. Colonies may use a number of sites through the summer but are often loyal to the same sites for many years. Maternity colonies are extremely variable in terms of numbers, from 20 to over 1,000 bats. Males roost singly or in small groups in the summer, in buildings or trees. Bat boxes are used by both males and females but generally only males use them in the summer. These species do not use underground sites for hibernation but are sometimes found in the cracks and crevices of buildings in the winter.
Soprano pipistrelle (*Pipistrellus pygmaeus*)	Tends to select riparian habitats over other habitat types available.	
Nathusius' pipistrelle (*Pipistrelle nathusii*)	Riparian habitats, broadleaved and mixed woodland and parkland, occasionally found in farmland but always near water. Found over lakes and rivers.	The very few known Irish roosts are in buildings, with hibernation roosts in hollow trees and crevices in cliffs, walls and caves.
Leisler's bat (*Nyctalus leisleri*)	Recorded foraging in woodland edges, scrub or woodland-lined roads and over pasture. Also recorded over drainage canals, lakes and coniferous forests. Recorded as selecting parkland/amenity grasslands, deciduous woodland edge and river/canals but avoiding improved grassland.	Roosts in trees, bat boxes and buildings such as houses; for example around the gable end of lofts, under tiles, under soffit boards and in disused chimneys. Often uses a variety of sites in the summer. Hibernates in holes, buildings and sometimes in caves and tunnels.

Brown long-eared bat (*Plecotus auritus*)	Strongly associated with tree cover, prefers woodland with cluttered understory, including native species, particularly deciduous. Also forages in mixed woodland edge and among conifers. Use of hedgerows increase through the active season.	Maternity roosts found in the voids of large, old buildings and bat boxes in woodland. Usually roosts against wooden beams at the roof apex in attics or farm buildings. Bats often cluster at the highest part of the roof and require enough space for unobstructed, internal flight. Shows high roost fidelity. Common uses feeding perches and night roosts in porches or outbuildings separate from the main roost. Hibernate in underground sites, trees holes and buildings.
Whiskered bat (*Myotis mystacinus*)	Whiskered bats use mixed woodland, riparian vegetation, arable and rough grassland habitats although select the first two as core foraging habitats. One study found that whiskered bat selected pasture with hedgerows for foraging. A German study showed that whiskered bats favour areas near rivers and more open habitats with hedges and coppices.	Can roost in trees and a wide range of buildings in the summer. Hibernates in caves or other underground sites, where they can be found in the open or in cracks and crevices.
Natterer's bat (*Myotis nattereri*)	Preferred foraging habitat is semi-natural broad-leaved woodland, tree-lined river corridors and ponds, but also uses grassland. Avoids dense coniferous plantation. An autumn study revealed that the species use woodland and mixed agricultural areas.	Roost sites include tree holes and different types of buildings but has also been found in bridges. Usually roost in attics between late May and mid-July and often roosts have enough space for internal flights. This species also breeds in bat boxes. Timber-framed barns built between 12th and 19th centuries may be particularly important to this species, with roosts found in mortise joints in both summer and winter.

		Hibernates in cracks and crevices in caves and mines. Other hibernations sites recorded are canal and railway tunnels, ice houses and tree cavities.
Daubenton's bat (*Myotis daubentonii*)	Preferred foraging habitat is over water; this species favours riverine habitats but is also known to forage in woodland.	Roosts are found in hollow trees, bridges or sometimes buildings generally close to water. Nursery roosts are not exclusively female – males make up 25% or more of the colony and large male-only colonies have also been recorded. Hibernation sites are usually underground including caves, mines and suitable tunnels where bats are found both in crevices and on open walls. They may also hibernate in tree cavities.
Lesser horseshoe bat (*Rhinolophus hipposideros*)	Preferred foraging habitats include broad-leaved woodland well connected by commuting routes such as hedge, woodland edge and riparian trees. This species has also been recorded in coniferous woodland. Probably reluctant to cross open space as recorded very low (less than 1m) in open habitats. This species can remain active during the hibernation periods.	Roost sites include attics, chimneys and boiler rooms of buildings, rural houses and out buildings in the summer, and cellars, tunnels, disused mines and caves for hibernation. Also found in industrial buildings. This species prefers to fly directly into roost sites and into their roosting position.

Bat Survey Results

SCOPE OF THE ASSESSMENT

1.1. The objectives of the bat survey were as follows:

- To identify how bats are utilising the site;
- To identify the species of bats utilising the site; and
- To identify if there are any roosts present within the site boundary, to determine the type of roost and its size.

1.2. The aims of the survey are:

- To provide the client with information on whether the proposed development site is utilised by bats;
- To identify if an application for a licence exclusion of bats for development purposes will be required;
- To assess the impacts (both positive and negative) on roosting, foraging and commuting bats; and
- To provide appropriate mitigation, recommendations and enhancement measures for bats (if required).

METHODOLOGY

Desk Study

1.3. A desk-based assessment was undertaken to collate available information on bats, to provide an indication of species likely to be present within the surrounding area. The results of which are detailed within **Table 2-8** and **Table 2-9** of the EcIA report to which this report is appended.

Dusk Transect Survey

1.4. Two transect surveys were undertaken on the 23rd June 2021 and the 15th July 2021 during acceptable weather conditions (see **Table 1**, below).

1.5. An appropriate transect route of the survey area were determined by an ecologist prior to the first transect. The transect was walked at a constant speed, starting approximately 15 minutes before sunset and finishing approximately 90 minutes after.

1.6. A bat pass is defined by the Bat Conservation Trust (BCT) as a sequence of greater than two echolocation calls made as a single bat flies past the microphone. A bat pass is an index of bat activity rather than a measure of number of individuals in a population.

1.7. Bat passes were recorded using an Echo Meter Touch 2 Pro handheld detector allowing for later sound analysis of calls were necessary. Where possible, bats within the survey area were identified to their species level. As well as the audible recording of bats within the area, any visual records during the transect surveys were mapped and their activity (commuting, foraging, etc) noted.

Static Survey

1.8. The survey area was assessed over a minimum of five consecutive nights during the surveys in June and July.

1.9. A static (Wildlife Acoustics Song Meter SM4 BAT FS) bat detector was deployed on site to record bat passes from 30 minutes before sunset to 15 mins before sunrise each night within the survey area.

Dusk Emergence Survey

1.10. Two dusk emergence surveys were undertaken on the 22nd June 2021 and 15th July 2021 during acceptable weather conditions (see **Table 1**, below).

1.11. Observations were made outside the derelict cottage and outbuilding from where it was considered bats might emerge. The dusk emergence survey commenced approximately 15 minutes before sunset, and lasted for approximately 90 minutes, the optimum time for bats to emerge from a roost, in order to record any bats that may emerge from the building.

Table 1: Timing and weather conditions for surveys

Date	Start time	Sunset	Finish time	Weather Conditions
22/06/2021	21.43	21.57	23.43	15°C, overcast, light wind, light rain approximately 1 hour after sunset
15/07/2021	21.30	21.45	23.30	20°C, clear, light wind, no rain

RESULTS

1.12. Transect and emergence survey data were analysed with Echo Meter and Kaleidoscope Pro software, using a combination of manual and automated identification. Static detector calls were analysed using Kaleidoscope Pro software using the same manual/automated combination.

1.13. A sample of 100 files assigned various automatic identifications by Echo Meter software was verified manually to test the software's accuracy on the dataset. These were chosen in a random/stratified manner (91 randomly, then nine more selected to represent automatic species identifications not in the random sample). The software identified 91% of files correctly, with 4% false negatives (i.e. missing a bat pass), 2% of passes assigned to the wrong species or group, and 3% false positives (identifying noise files as Natterer's or Leisler's bat passes).

1.14. A sample of 31 files (55% of June's remote dataset) identified automatically by Kaleidoscope Pro was also verified manually. This used 1 targeted and 30 random files, and achieved a 97% success rate. The single test failure was a false positive, which identified noise as a lesser horseshoe bat.

1.15. The results of manual verification show very high automatic ID accuracy. As false negatives outweighed false positives in the Echo Meter test, emergence and activity surveys may underestimate bat abundance by around 1%. In the Kaleidoscope Pro test, all possible false positives were sampled, and there were no false positives. Final numbers from the static survey are therefore likely to be accurate.

Transect Survey Results

Table 2: Bat Passes Recorded During Transect Surveys

Species	23/06/2021	15/07/2021
Common Pipistrelle *(Pipistrellus pipistrellus)*	0	3
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	0	16
Leisler's Bat (*Nyctalus leisleri*)	0	10
Unidentified Pipistrelle Species	0	0

Total Passes	0	29

1.16. No true bat passes were recorded during the June transect survey.

1.17. Small numbers of Leisler's Bat and Pipistrelle Species were recorded during the July transect survey.

Static Survey Results

1.18. No true bat passes were recorded during the June static detector survey (14th June – 23rd June 2021).

1.19. The static detector was not collected following the July due to resourcing issues relating to COVID.

Emergence Survey Results

Table 3: Bat Passes Recorded During Emergence Surveys

Species	June	July
Common Pipistrelle *(Pipistrellus pipistrellus)*	80	1
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	28	0
Leisler's Bat (*Nyctalus leisleri*)	3	6
Total Passes	**111**	**7**

1.20. The emergence surveys did not reveal any bats emerging from the cottage or the outbuilding.

1.21. During the June emergence surveys a small number of pipistrelle species were observed foraging between the treelines adjacent to the derelict cottage and outbuilding.

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Technical Appendix 11.2: Appropriate Assessment Screening Report

Appropriate Assessment Screening

Profile Park Data Centre

13/12/2021

Disclaimer

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Contents

1. EXECUTIVE SUMMARY

1.1. A Stage 1 Appropriate Assessment has been undertaken for a proposed new data center, located off the Nangor Road, Profile Park, Clondalkin, Dublin. The aim of the Appropriate Assessment Screening is to assess the potential for connectivity between the Proposed Development and any Natura 2000 site within a 15km radius of the Application Site.

1.2. Within the 15km zone of influence surrounding the Site there are seven Natura 2000 designated sites, comprising four Special Areas of Conservation (SACs) and three Special Protection Areas (SPAs).

1.3. To provide a current baseline for the Application Site, an ecological site visit was undertaken in June 2021 by Ashleen Blom BSc (Hons) MSc. During this site visit habitats were assessed for their potential to support protected/notable species. No evidence of any qualifying species was observed within or adjacent to the Application Site during the site visit and habitats on site are considered to be sub-optimal.

1.4. Connectivity (potential pathways for impact) exists between the Application Site and one designated site, namely, South Dublin Bay and River Tolka Estuary SPA through the Baldonnel stream.

1.5. The Proposed Development includes measures to enhance the quality of the Baldonnel stream. Given the distance (approximately 30km downstream) and dilution factors, it is not anticipated that the Proposed Development will cause any impact to the designated site or its qualifying features.

1.6. It is therefore considered that the next stage of the Appropriate Assessment is not required and that the development **will not result in any significant effects for any Natura 2000 site**.

2. INTRODUCTION

Background

2.1. Neo Environmental Ltd has been appointed by Ramboll on behalf of Vantage Data Centers Dub 11 Limited (the "Applicant") to undertake an Appropriate Assessment (AA) Screening to inform a planning application for a proposed data centre (the "Proposed Development") located on lands within Profile Park, Clondalkin, Dublin (the "Application Site").

2.2. The aim of this screening document is to determine whether a Natura Impact Statement (NIS) is required for the Proposed Development.

Development Description

2.1. The development will consist of the demolition of the abandoned single storey dwelling and associated buildings (206 sqm), and the construction of 2 no. two storey data centers with plant at roof level of each facility and associated ancillary development that will have a gross floor area of 41,105sqm. The proposed development will include a range of SuDs features and enhancements to the Baldonnel Stream.

Site Description

2.2. The site currently comprises a small single story former residential dwelling with one outbuilding/shed and associated garden, with unmanaged agricultural grassland, treelines and the Baldonnel stream. The site is situated in southwest Dublin and is situated within an industrial area, to the west of Grange Castle golf Course.

Statement of Authority

2.3. The assessment has been conducted by an ecologist registered with the Chartered Institute of Ecology and Environmental Management (CIEEM). All work has been carried out in line with the relevant professional guidance, namely CIEEM's Guidelines for Report Writing[1] and the Environment, Heritage and Local Government Guidance on Appropriate Assessments[2].

2.4. Dara Dunlop is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with circa 3 years' experience in the ecology sector. This includes working for an ecological consultancy, undertaking a range of protected species surveys and

[1] CIEEM (2017) Guidelines for Ecological Report Writing. Available at www.cieem.net

[2] Environment, Heritage and Local Government (2009) Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities. Available at www.npws.ie

extended phase 1 habitat surveys for residential schemes and land management of designated sites. Dara has co-authored a number of reports for various developments including Ecological Impact Assessments and Protected Species Reports.

2.5. Ashleen Blom BSc (Hons) MSc is a senior ecologist with 5 years' professional experience in ecological consultancy. She has worked as part of multidisciplinary and dedicated ecology teams contributing towards projects in education, commercial, defence, energy, residential, and infrastructure sectors in Northern Ireland and the Republic of Ireland. She has contributed towards large multidisciplinary and small-scale private developments. Ashleen has experience in completing a range of surveys and ecological assessments including Ecological Impacts Assessments Phase 1 and Fossitt habitat surveys, Natura Impact Assessments (Habitat Regulation Assessments) and a variety of protected species surveys including bat, otter, smooth newt and badger. She has experience classifying Potential Roosting Features for bats in trees and structures and classifying habitats for their potential to support foraging and commuting bats. Ashleen has experience in completing invasive species surveys including invasive aquatic species.

3. LEGISLATION & GUIDEANCE

REQUIREMENT FOR APPROPRIATE ASSESSMENT

3.1. The requirement for Appropriate Assessment of plans or projects originates from Article 6 (3) and (4) of European Union (EU) Habitats Directive. This is implemented in Ireland through the European Communities (Natural Habitats) Regulations of 1997, and the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 (as amended) and in particular, in relation to the planning consent process, in Part XAB of the Planning and Development Act 2000 – 2015 (as amended) where Section 177U sets out the requirements for Screening for AA.

3.2. This Appropriate Assessment Screening Report has been prepared in accordance with the above and the European Commission Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission 2002), the European Commission Guidance Managing Natura 2000 Sites (European Commission 2000) and with reference to the Department of the Environment and Heritage and Local Government guidance on Appropriate Assessment of plans and projects in Ireland (DEHLG 2009) and Natura 2000 (European Commission 2010).

3.3. The EU Habitats Directive (92/43/EEC) provides the framework for legal protection for habitats and species of European importance. The directive provides the legislative means to establish a network of sites (known as the Natura 2000 network) throughout the EU with the objective of conserving habitats and species deemed to be of International Importance. These sites include Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive (formally known as the Conservation of Wild Birds Directive 79/409/EEC).

3.4. The wording of Article 6 (3) of the Directive is as follows:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

3.5. The relevant wording of Section 177U (4) of the Planning and Development Act is as follows:

"The competent authority shall determine that an appropriate assessment of a [...] proposed development [...] is required if it cannot be excluded on the basis of objective information, that

the [...] proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site. As outlined in the European Commission document 'Assessment of plans and projects significantly affecting Natura 2000 sites', any project that is not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect upon it, either individually or cumulatively will be subject to Appropriate Assessment.

Where significant effects are uncertain or unknown at the screening stage an AA will be required, due to the need to apply the precautionary principle. Conversely, if a project will have impacts on a site, but these impacts will clearly not affect or undermine those conservation objectives, it is not considered that it will have a significant effect on the site concerned.

As part of the assessment consideration is afforded to 'in combination' effects with other plans or projects on the integrity of Natura 2000 sites. Where adverse impacts are identified, mitigation measures can be proposed that would avoid reduce or remedy any such negative impacts and the plan or project should then be amended accordingly, thereby avoiding the need to proceed to Stage 3 'Alternative Solutions'.

3.6. If the assessment cannot exclude significant impacts either alone or in combination with other plans or projects, then the process must proceed to Stage 2.

3.7. The following legislation was used to inform the Article 6 assessments within this report:

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, 1992[3];
- Council Directive 2009/147/EC on the Conservation of Wild Birds, 2009[4];
- The Planning and Development Acts 2000 (as amended)[5].
- NPWS, The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments, Unpublished Report, 2013[6].

GUIDANCE

3.8. The following guidance has been compiled and reviewed to inform the Article 6 assessments within this report:

[3] European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC. Available at: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf
[4] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043
[5] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147
[6] Available at: http://www.irishstatutebook.ie/eli/2017/act/20/enacted/en/html

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, 2009 (as amended)[7];
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10[8] & PSSP 2/10, 2008[9];
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, 2001[10];
- CIEEM, Guidelines for Ecological Report Writing, 2017[11].

[7] Available at: https://www.npws.ie/sites/default/files/publications/pdf/Article_17_Print_Vol_3_report_species_v1_1_0.pdf
[8] Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf
[9] Available at: https://www.npws.ie/sites/default/files/general/Circular%20NPW1-10%20%26%20PSSP2-10%20Final.pdf
[10] Available at: https://www.npws.ie/sites/default/files/general/circular-npws-02-08.pdf
[11] CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.

4. ASSESSMENT METHODOLOGY

STAGES OF APPROPRIATE ASSESSMENT

4.1. The Appropriate Assessment process comprises of four stages in order to identify whether proposals have the potential to impact significantly upon Natura 2000 designations. The stages are as follows:

- **Stage 1 Screening:** To determine the likelihood of significant impacts.
- **Stage 2 Natura Impact Statement:** To assess the impact of proposals on the integrity of the Natura 2000 site, considering the conservation objectives of the site and its ecological structure and function.
- **Stage 3 Assessment of alternatives:** Where significant impacts are anticipated despite mitigation measures, the proposal should progress to Stage 3 or no longer proceed.
- **Stage 4 Assessment where no alternative exists and where adverse impacts remain:** The final stage involves examining whether there are imperative reasons of overriding public interest for allowing the proposal to adversely impact upon a Natura 2000 site.

Source – Pathway - Receptor Model

4.2. The 'source-pathway-receptor' conceptual model is a tool used for environmental assessment. In order for an effect to occur, all elements of this model must be linked. The removal or absence of one of the elements of the model results in there being no likelihood for the effect in question to occur. For example:

- Source(s), e.g. blasting;
- Pathway(s) e.g. vibration and noise; and,
- Receptor(s) e.g. disturbance of nesting birds.

4.3. For an AA or NIS, this model is focused solely on the selection features of Natura 2000 sites as defined by National Parks and Wildlife Services (NPWS), and referenced within this report.

4.4. The Proposed Development may have the potential to result in a number of impacts, which could potentially affect the selection features of Natura 2000 sites. The analysis of these effects, using scientific knowledge and professional judgement, leads to the identification of a "zone of influence" for each effect (i.e. the distance at which the impact of the Proposed

Development could have potential effects, using professional judgement and published guidance).

STUDY ZONE IDENTIFICATION

4.5. The 'Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities'[12] states that the AA Screening should include the following:

"Any Natura 2000 sites within or adjacent to the plan or project area.

Any Natura 2000 sites within the likely zone of impact of the plan or project.

A distance of 15km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et. al., 2006). For projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects.

Natura 2000 sites that are more than 15km from the plan or project area depending on the likely impacts of the plan or project, and the sensitivities of the ecological receptors, bearing in mind the precautionary principle. In the case of sites with water dependent habitats or species, and a plan or project that could affect water quality or quantity, for example, it may be necessary to consider the full extent of the upstream and/or downstream catchment."

4.6. It is considered that the Zone of Influence (ZOI) in connection with the Natura 2000 designated sites and their qualifying features will extend to a 15km radius. While this would be greater were the Proposed Development to have any hydrological influence beyond 15km, no such influence has been identified.

DESK STUDY

4.7. Sources of material that were consulted as part of the desk study for the purposes of the assessment are as follows:

- National Parks & Wildlife Service (NPWS) natural heritage database for Natura 2000 sites within the 15km ZOI of the Application Site[13];

[12] Department for Environment, Heritage and Local Government (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities.
Available at: http://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

[13] Environment, Heritage and Local Government (2009) Appropriate Assessment of Plan and Projects in Ireland. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

- NPWS site synopses, Natura 2000 Data Form and conservation objectives relating to each site and aerial images.

IMPACT ASSESSMENT PROCESS

4.8. The assessment process involves:

- Identifying and characterising Natura 2000 sites identified within the Zone of Influence surrounding the Application Site, and their qualifying features, and addressing whether any of these designated sites have any connectivity with the Proposed Development. If any site is found to have no connectivity then these designated sites will be 'scoped out' or not considered further;
- Assessing whether there will be any significant impacts to any of the Natura 2000 site, in regard to changes that result from the construction, operation and decommissioning phases of a project. Qualifying features of a Natura 2000 site that lie outside of the ZOI and not subject to any impacts from the Proposed Development then these will be 'scoped out' or not considered further;
- Identifying any significant impacts on the integrity of the Natura 2000 site from the development and 'in combination' with any other development within 5km;
- Identifying the need for the Appropriate Assessment process to move to Stage 2: 'Natura Impact Statement or, if there are no impacts from the development, that the development may proceed.

5. BASELINE

5.1. In accordance with National Parks & Wildlife Service (NPWS) guidance, this stage of the AA has identified all Natura 2000 sites located within 15km of the development boundary. The potential effects associated with the Proposed Development have been identified. Those Natura 2000 sites which will not be significantly affected will be ruled out of any further assessment.

5.2. Effects can depend more on the nature of impacts, sensitivity of receptors and causal linkage, rather than actual distances. The assessment below considers connectivity, either ecological, ornithological or hydrological, that may exist between the Proposed Development and the designated sites.

ECOLOGICAL SITE VISIT

5.1. A habitat survey was undertaken which identified the following habitats

- Improved agricultural grassland (GA1);
- Amenity grassland (improved) (GA2);
- Dry meadows and grassy verges (GS2);
- Hedgerows (WL1);
- Treelines (WL2);
- Depositing/lowland rivers (FW2) (Baldonnel Stream);
- Recolonising bare ground (ED3); and
- Buildings and artificial surfaces (BL3).

No evidence of protected species was noted on site during this survey. Bat surveys were also carried out on site with common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelles *Pipistrellus pygmaeus* and Leisler's bat *Nyctalus leisleri*, noted in flight on site. No roosts bats were identified.

An invertebrate survey of the Baldonnel stream was also completed on site which showed that the stream is dominated by freshwater shrimp *Gemmerus* sp. and stone clingers *Baetidae*sp..

IDENTIFICATION OF NATURA 2000 SITES

5.2. There are seven Natura 2000 designated sites located within 15km of the Application Site, comprising four Special Areas of Conservation (SACs), and three Special Protection Areas (SPAs). The qualifying features of each have been outlined within **Table 5-1** below.

5.3. **Figure 1, Appendix A** of this report details the location of these sites in relation to the Application Site.

Table 5-1: Natura 2000 sites within 15km

Site Code	Site Name	Qualifying Features	Distance (km), Direction	Potential Connectivity with the Proposed Development Site
SAC				
001398	Rye Water Valley/Carton	Petrifying springs with tufa formation (*Cratoneurion*) [7220] *Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]	5.71km northwest	No connection
001209	Glenasmole Valley SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Petrifying springs with tufa formation (*Cratoneurion*) [7220]	7.91km southeast	No connection
002122	Wicklow Mountains SAC	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110]	9.62km southeast	No connection

		Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with *Erica tetralix* [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] *Calaminarian* grasslands of the *Violetalia calaminariae* [6130] Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] Blanket bogs (* if active bog) [7130] Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] *Lutra lutra* (Otter) [1355]		
000397	Red Bog, Kildare SAC	Transition mires and quaking bogs [7140]	14.04km southwest	No connection
SPA				
004040	Wicklow Mountains SPA	Merlin (*Falco columbarius*) [A098] Peregrine (*Falco peregrinus*) [A103]	12.74km southeast	No connection
004024	South Dublin Bay and River	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	14.90km northeast	Hydrological connection through the River Liffey,

	Tolka Estuary SPA	Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]		approximately 29 km downstream
004063	Poulaphouca Reservoir SPA	Greylag Goose (*Anser anser*) [A043] Lesser Black-backed Gull (*Larus fuscus*) [A183]	14.98km southwest	No connection

5.4. As shown in **Table 5-1**, the Application Site only has connection with South Dublin Bay and River Tolka Estuary SPA, which lies approximately 30km downstream from the Application Site. No other SPA or SAC has connectivity and are therefore not considered within this report.

5.5. The Baldonnel stream is present on site, and is the source of any hydrological connectivity to any designated site. This stream is a tributary of the Griffeen River and has been heavily modified downstream to allow for the construction of the new Nagor Road. The Baldonnel stream enters a culvert at the western boundary of the site.

5.6. This stream then joins the River Griffen and discharges into the River Liffey approximately 7km downstream before entering Dublin bat a further 22km downstream.

5.7. On the EPA Map Viewer[14], the Water Framework Directive (WFD) (2000/60/EC) status 2010-2015 the Griffeen river has a Water Framework Directive (WFD) status of 'good' and a WFD risk status of 'at risk'. Approximately 2.8km north of where the Baldonnel stream joins the Griffeen River the Q-values for the Griffeen River are 3 (poor).

5.8. Given that no connectivity (potential pathway for impact) exists between the Application Site and the other Natura 2000 designated sites, these sites have been scoped out of the impact assessment. No impacts upon these sites will result from the Proposed Development.

5.9. The only internationally designated site with connectivity to the Application site is South Dublin Bay and River Tolka Estuary SPA, which is designated as it supports assemblages of wetland and waterbirds. Habitats on site are not suitable to support any of this SPAs qualifying features, and is discussed below.

[14] Available from : https://gis.epa.ie/EPAMaps/Water

6. ASSESSMENT OF LIKELY EFFECTS

IMPACT ASSESSMENT

6.1. This section discusses and evaluates the likely impacts of the Proposed Development affecting the Natura 2000 sites within the Zone of Influence (ZOI) of the Application Site (i.e. where there is some ecological, ornithological or hydrological connection between the Application Site and the Natura 2000 site).

6.2. As outlined within **Table 5-1** above, the Application Site has hydrological connectivity with the South Dublin Bay and River Tolka Estuary SPA, offering a pathway for impacts through the movement of contaminated waters.

6.3. Aquatic systems and the species/habitats which are dependent on these systems are sensitive to pollution and contamination of surface waters. Pollution can result from any of the following entering a body of surface or groundwater:

- Poisonous, noxious or polluting matter;
- Waste matter (including silt, cement, concrete, oil, petroleum spirit, chemicals, solvents, sewage and other polluting matter);
- Other harmful activities detrimentally affecting the status of a waterbody.

6.4. **Table 6-1** below details common water pollutants and their effect on the aquatic environment and standard Best Practice Pollution Measures. (This table has been extracted from Ciria guidance[15]).

Table 6-1: Common water pollutants and their effects on the aquatic environment and standard prevention measures

Common Water Pollutants	Adverse Effect on Aquatic Environment	Standard Best Practice Pollution Prevention Measures

[15] Ciria (2015) Environmental Good Practice on Site guide, fourth edition

Silt	Reduces water quality, clogs fish gills, covers aquatic plants, impacts aquatic invertebrates, leads to a reduction in prey for species and leads to degradation of habitat	<u>Pollution Prevention</u> Hydrocarbons, greases and hydraulic fluids will be stored in a secure compound area; All plant machinery will be properly serviced and maintained thereby reducing risk of spillage or leakage; All waste produced from construction will be collected in skips with the construction site kept tidy at all times; Excavated soil will be stored on site or removed by a licensed waste disposal unit; All materials and substances used for construction will be stored in a secure compound and all chemicals to be stored in secure containers to avoid potential contamination; Location of spill kit to be known by all construction workers and implemented in the event of spillage or leakage. <u>Waste Management</u> Skips are to be used for site waste/debris at all times and collected regularly or when full; All hydrocarbons and fluids are to be collected in leak-proof containers and removed from site for disposal or recycling;
Bentonite (very fine silt)	Reduces water quality, clogs fish gills, covers aquatic plants, impacts aquatic invertebrates, leads to a reduction in prey for species and leads to degradation of habitat	
Cement or concrete wash water (highly alkaline)	Changes the chemical balance, is toxic to fish and other wildlife. This can lead to direct impacts for aquatic species (including otter), or indirect through loss of prey resources	
Detergent	Removes dissolved oxygen, can be toxic to fish and other wildlife present within the aquatic environment	

Hydrocarbons (e.g. oil, diesel)	Suffocates aquatic life, damaging to the wildlife (e.g. birds), and to water supplies including industrial abstractions	All waste from construction is to be stored within the site confines and removed to a permitted waste facility. <u>Environmental Monitoring</u> Contractor to nominate member of staff as the environmental officer with the responsibility to ensure best practice measures are implemented and adhered to, with any incidents or non-compliance issues being reported to project team.
Sewage	Reduces water quality, is toxic to aquatic wildlife, and damages water supplies	

South Dublin Bay and River Tolka Estuary SPA

6.5. As described within Table 5, The South Dublin Bay and River Tolka Estuary SPA is designated for its importance for the following Annex II species:

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046];
- Oystercatcher (*Haematopus ostralegus)* [A130];
- Ringed Plover (*Charadrius hiaticula*) [A137];
- Grey Plover (*Pluvialis squatarola*) [A141];
- Knot (*Calidris canutus*) [A143];
- Sanderling (*Calidris alba*) [A144];
- Dunlin (*Calidris alpina*) [A149];
- Bar-tailed Godwit (*Limosa lapponica*) [A157];
- Redshank (*Tringa totanus*) [A162];
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179];
- Roseate Tern (*Sterna dougallii*) [A192];
- Common Tern (*Sterna hirundo)* [A193];

- Arctic Tern (*Sterna paradisaea*) [A194]; and
- Wetland and Waterbirds [A999].

Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA

6.6. The main conservation objective[16] of the South Dublin Bay and River Tolka Estuary SPA is to restore the favourable conservation status of habitats and species of community interest. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Character of the South Dublin Bay and River Tolka Estuary SPA

6.7. Table 6-2 below, identifies the percentage of the extent of various habitat types within the South Dublin Bay and River Tolka Estuary SPA.

Table 6-2: Habitats within South Dublin Bay and River Tolka Estuary SPA

Code	Habitats River Boyne and Blackwater SAC	Extent (%)
N01	Marine areas and sea inlets	40
N02	Tidal rivers, estuaries, mud flats, sand flats, lagoons (including saltwork basins)	58
N04	Coastal sand dunes, Sand beaches, Machair	1
N05	Shingle, Sea cliffs, Islets	1

Assessment of Likely Impacts Affecting South Dublin Bay and River Tolka Estuary SPA

6.8. The South Dublin Bay and River Tolka Estuary SPA is located approximately 15km northeast but connectivity is approximately 29km downstream of the Application Site, and has been designated for a number of important Annex II species of the E.U. Habitats Directive, as detailed within Table 5-1 above. The Application Site and the designated sites do not share any similar habitats, as demonstrated by comparing Section 5-1 and Table 6-2.

6.9. As a design measure a buffer has been included around the Baldonnel Stream to reduce the potential for contaminants from the Application Site to enter the aquatic system.

[16] NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

6.10. A Construction Environmental Management Plan (CEMP), as outlined in Chapter 5, has been produced in support of this application. This report outlines design and best practice measures for protecting the local environment, including terrestrial and aquatic habitats. These measures will significantly reduce the potential for contaminated surface waters entering the aquatic environment.

6.11. Given the large distance between the Application Site and the SPA, the dilution factor will result in a **negligible** impact upon the SPA and its qualifying species.

6.12. The potential occurrence of contaminates (see **Table 6-1** above) and their capability of affecting water quality have been considered during the various phases of the Proposed Development.

6.13. There will be no significant contamination of water in the absence of mitigation. Notwithstanding this, during the construction phase, standard best practice measures will be adhered to.

6.14. Therefore, **no significant effects** are predicted on qualifying species of South Dublin Bay and River Tolka Estuary SPA

SUMMARY OF POTENTIAL IMPACTS ON NATURA SITES WITHIN 15KM

6.15. Potential impacts from the Proposed Development **will not be significant** or have a detrimental effect on the qualifying features of the Natura 2000 designated sites outlined within this report. The Proposed Development **will not significantly affect** any Natura 2000 designated site.

7. CUMULATIVE IMPACTS

7.1. As well as singular effects, cumulative effects need to be considered. Article 6 of the EU Habitats Directive and Regulation 15 of the European Communities (Natural Habitats) Regulations state that any plan or project that may (either alone or in combination with other plans or projects) significantly affect a Natura 2000 site should be the subject of an Appropriate Assessment.

7.2. Cumulative impacts can cause problems when proposals have a small impact on Natura 2000 sites. If other proposals have a small impact, the combined result can have a significant impact on the Natura site.

Table 2-11: Key Developments within 3km of the Proposed Development

Planning Reference	Project Type	Distance and Direction	Planning Status	Date Granted
SD21A/0167	Construction of a gas fired power plant with an electrical output of up to 125MW with associated balance of plant, equipment and buildings	<50m southeast	Additional Information Requested	19/08/2021
SD20A/0121	Construction of 3 two storey data centres with mezzanine floors at each level of each facility and associated ancillary development that will have a gross floor area of 80,269sq.m on an overall site of 16.5hectares.	150m west	Granted	29/07/2020
SD21A/0186	Construction of a 3 storey (part 4 storey) data centre known as 'DB8' to include data halls, electrical/plant rooms including internal generators, offices, lobbies, ancillary staff areas including break rooms and toilets, stores, stair/lift cores throughout and	200m east	Additional Information Requested	30/08/2021

	photovoltaic panels at roof level.			
SD21A/0186	Construction of a 3 storey (part 4 storey) data centre known as 'DB8' to include data halls, electrical/plant rooms including internal generators, offices, lobbies, ancillary staff areas including break rooms and toilets, stores, stair/lift cores throughout and photovoltaic panels at roof level	250m east	Additional Information Requested	30/08/2021
SD20A/0295	Amendments and modifications to the permitted data centre development granted under Reg. Ref. SD18A/0134 - ABP Ref. ABP-302813-18 and the temporary substation permission granted under SD19A/0300 , Demolition of the existing single storey house of 'Erganagh' and the construction of a two storey data centre and delivery bays with associated three storey office block and services that will have a gross floor area of 35,426sq.m on an overall site of 9.2 hectares.	430m west	Granted	16/03/2021
SD14A/0023 and SD14A/0284	Construction of a two storey data storage facility (30,361sq.m.),	200m south west	Granted	23/02/2015
SD16A/0087	Site enabling works including demolition of existing vacant house and outbuildings (total floor area c.241sq.m), diversion of Baldonnel stream,	30m north	Granted	09/05/2016

	provision of below ground attenuation and associated landscape works on a site of c.9.4ha			
SD13A/0265	Construction of a single data centre with plant at roof level (total gross floor area 35,000 sq.m. as the approved SD13A/0143	370m north	Granted	24/03/2014
SD13A/0015	Construction of a single storey data centre with plant at roof level (total gross floor area 15,825sq.m.)	850m north west	Granted	21/03/2013
SD20A/0058	Demolition of the existing single storey house of 'Little Acre' and its associated garage and other buildings; Construction of a gas powered Power Plant with all its associated elements; the part single and part two storey property of Bulmer and an agricultural building to the east of the overall site will not be demolished; The Power Plant compound of 14,475sq.m will	1.4km west	Granted	17/12/2020
SHD3ABP-305267-19	1034 residential units comprising of (578 houses: 449 3-bed & 129 4-bed), 456 apartments: 142 1-bed, 224 2-bed, 90 3-bed), 2 childcare facilities (1 temporary, 1 permanent), 1 retail unit, 1 community facility and all associated site works.	1km east	Granted	04/08/2021
SD19A/0264	Warehouse with ancillary three storey office and staff facilities and associated development. The warehouse will have a	2.5km southwest	Granted	10/10/2019

	parapet height of 17 metres with a gross floor area of 14,649sq.m including a warehouse area (13,494sq.m), ancillary office areas (1099sq.m) and staff facilities (56sq.m); provision of a new vehicular access/egress onto the Jordanstown Road; internal roadways; pedestrian access; 152 ancillary car parking spaces; bicycle parking; HGV yard including 26 HGV parking stands and 18 loading docks; hard and soft landscaping			
SD20A/0258	Demolition of the existing dwelling (252sq.m) and associated domestic garage (49sq.m) and shed (12sq.m) located towards the north-west of the site and the construction of 3 warehouses with ancillary office and staff facilities and associated development	3km south	Granted	10/50/2021
SD20A/0319	Amend permitted logistics/warehouse units C and D and incorporate other amendments, providing for a resultant; Unit C, 7,937sq.m including 757sq.m ancillary office space (permitted 11,492sq.m total); Unit D, 12,050sq.m including 911sq.m ancillary office space (permitted 7, 856sqm total); Overall increase of 639sq.m for Units C and D; provision of maintenance ramp to swale; resultant amendments to site layout,	3km south	Granted	15/03/2021

	minor revisions to flood mitigation strategy.			
SD18A/0180	Provision of a new 100,000m3 covered reservoir approximately 31,520sq.m	4.3km south	Granted	16/07/2018
SD15A/0388	Residential development consisting of 218 3 and 4 bed 2 storey houses and a creche of (246sq.m) to be built on a site of circa of 8.16ha which will form Phase 1 of development of the Boherboy Neighbourhood within the Fortunestown Local Area Plan (2012)	4.3km south east	Granted	15/07/2016

7.1. As the Proposed Development is situated within an industrial area, the majority of planning applications are for similar developments. Beyond 1km of the Application site, many sites to the north and east are residential in nature, with industrial and military areas also noted to the south.

7.2. It has been concluded, that with measures included in Proposed Development and the implementation of best practice measures, that it is likely that there will be **no significant cumulative** effects to designated sites or any other ecological feature in combination with any other development.

8. CONCLUSION

8.1. According to NPWS (2009), the Appropriate Assessment Stage 1: Screening exercise can result in one of three conditions:

- An Appropriate Assessment is not required i.e., where the plan/proposal is associated with the management of the site;
- There is no potential for significant effects i.e., Appropriate Assessment is not required;

- Significant effects are certain, likely or uncertain i.e., the project must either proceed to Stage 2: Appropriate Assessment or be rejected.

8.2. The Proposed Development was screened for likely significant adverse effects upon any designated sites within its Zone of Influence. Within 15km of the Application Site there are seven designated sites, comprising four Special Areas of Conservation (SACs) and three Special Protection Areas (SPAs).

8.3. It was found that only one site is connected to the Proposed Development site. South Dublin Bay and River Tolka Estuary SPA and is approximately 30km downstream from the Application Site, the distance and dilution factor will negate any negative impact from the Proposed Development.

8.4. No evidence of any qualifying species or habitat associated with South Dublin Bay and River Tolka Estuary SPA was observed within the Application Site boundary.

8.5. It has been concluded that the Proposed Development will not lead to significant adverse impacts upon any Natura 2000 sites. Thus, no likely significant effect upon a Natura 2000 site is foreseen as a result of the proposals, either alone or in combination with any other development.

8.6. This screening report, based on the best available scientific information, finds that there is no reasonable scientific doubt that the development does not pose any risk of significant adverse effects on Natura 2000 sites, and that the development does not require progression to a Stage 2 Appropriate Assessment. It is considered that the next stage of the Appropriate Assessments is not required.

9. APPENDICES

Appendix A

- Figure 1: Natura 2000 Designated Sites