Appendix 8.2

Value of Ecological Features

Appendix 8-2 Value of Ecological Features

The ecological features identified within the Site of the proposed development and the wider area are evaluated based on their value. The value of habitats is assessed based on their condition, size, rarity, conservation, and legal status. The value of fauna is assessed on its biodiversity value, legal status, and conservation status.

Biodiversity value is based on its national distribution, abundance or rarity, and associated trends. These values are detailed in **Table 8.1** below and are taken from the Guidelines for Assessment of Ecological Impacts of National Road Schemes published by the NRA (2009), now Transport Infrastructure Ireland (TII).

TABLE 8.1: DESCRIPTION OF VALUES FOR ECOLOGICAL RESOURCES BASED ON A GEOGRAPHIC HIERARCHY OF IMPORTANCE (SOURCE: NRA, 2009).

Level of Value	Examples of Criteria
International Importance	- European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. - Proposed Special Protection Area (pSPA). - Site that fulfils the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). - Features essential to maintaining the coherence of the Natura 2000 Network - Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. - Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). - World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). - Biosphere Reserve (UNESCO Man & The Biosphere Program). - Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). - Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). - Biogenetic Reserve under the Council of Europe. - European Diploma Site under the Council of Europe. - Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).
National Importance	- Site designated or proposed as a Natural Heritage Area (NHA). - Statutory Nature Reserve.

Level of Value	Examples of Criteria

	- Refuge for Fauna and Flora protected under the Wildlife Acts.
	- National Park.
	- Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park.
	- Resident or regularly occurring populations (assessed to be important at the national level) of the following:
	  o Species protected under the Wildlife Acts; and/or
	  o Species listed on the relevant Red Data list.
	- Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.

Regional/County (Co. Dublin) Importance	- Area of Special Amenity.
	- Area subject to a Tree Preservation Order.
	- Area of High Amenity, or equivalent, designated under the County Development Plan.
	- Resident or regularly occurring populations (assessed to be important at the County level) of the following:
	  o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  o Species protected under the Wildlife Acts; and/or
	  o Species listed on the relevant Red Data list.
	- Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.
	- County important populations of species; or viable areas of semi-natural habitats; or natural heritage features identified in the National or Local BAP; if this has been prepared.
	- Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.
	- Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

Local (works site and its vicinity) Importance	- Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared;
	- Resident or regularly occurring populations (assessed to be important at the Local level) of the following:
	  o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  o Species protected under the Wildlife Acts; and/or o
	  o Species listed on the relevant Red Data list.
	  o Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of

Level of Value	Examples of Criteria
	naturalness, or populations of species that are uncommon in the locality; - Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Less than local Importance	- Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that are of some importance in maintaining habitat links. - Common and widespread species.

Descriptive Terminology

In line with the EPA Guidelines (EPA, 2022), the following terms are defined when quantifying the quality of effects (**Table 8.2**).

TABLE 8.2: DEFINITION OF QUALITY OF EFFECTS.

Quality of Effects	Definition
Positive Effects	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
Negative/adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; damaging health or property or causing a nuisance).

These effects are assessed together to determine the magnitude of the impact on the status of a habitat or species population and on the integrity of the site that supports them. Professional expertise is then used to assign the impacts on the receptors to one of four classes of magnitude, detailed in **Table 8.3**.

TABLE 8.3: DEFINITION OF MAGNITUDE.

Magnitude	Definition
High	An irreversible or long-term impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population, or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	A medium to long-term impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population, or group, which if adverse, is unlikely to threaten its sustainability (or if beneficial, is likely to be sustainable but is unlikely to enhance its conservation status.

Low	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the normal range of annual variation.

Significance of impacts

The significance of an impact is a product of the value of the ecological feature and the magnitude of the impact on it, moderated by professional judgement.

In line with the EPA Guidelines (EPA, 2022), the following terms are defined when quantifying the significance of impacts (**Table 8.4**).

TABLE 8.4: DEFINITION OF SIGNIFICANCE OF EFFECTS.

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

Table 8.5 shows a matrix which is used for guidance in the assessment of significance, with impacts being considered to be of major, moderate, or minor significance, or negligible. Impacts can also either be assessed as positive or negative using the same matrix.

TABLE 8.5: SIGNIFICANCE OF IMPACTS MATRIX.

Value of feature	Magnitude of impact			
	High	Medium	Low	Negligible
International	Major	Major	Moderate	Neutral
National	Major	Moderate	Minor	Neutral
Regional / County	Moderate	Minor	Minor	Neutral
Local	Minor	Minor	Negligible	Neutral
Less than local	Negligible	Negligible	Negligible	Neutral

Appendix 8.3

Appropriate Assessment Screening Report

Appendix 8-3 Appropriate Assessment Screening Report

PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT ON MILLTOWN PARK AT SANDFORD ROAD

Appropriate Assessment Screening Report

Sandford Living Limited

Report no.: 002, Rev. 001
Date: 15/07/2025

Project name:	Proposed Large-Scale Residential Development on Milltown Park at Sandford Road	DNV Markets & Risk Block 71, The Plaza, Parkwest, Dublin
Report title:	Appropriate Assessment Screening Report	
Customer:	Sandford Living Limited,	
Customer contact:	Patricia Thornton	Tel: 01 565 4730
Date of issue:	15/07/2025	
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Applicable contract(s) governing the provision of this Report:

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Prepared by:	Verified by:	Approved by:
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1	15/07/2025	Final Report – First Issue	CBH	LG	SOD

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1. INTRODUCTION

a) Background

DNV was commissioned by Sandford Living Limited to carry out an Appropriate Assessment (AA) Screening Report (the "Report") in relation to a Proposed Large-scale Residential led mixed-use Development (the "Proposed Development") located at a ca. 4.26-hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7 (hereafter referred to as the "Site"). This Report contains information to enable the competent authority to undertake Stage 1 AA Screening in respect of the Proposed Development.

b) Quality Assurance and Competence

DNV Ireland is a multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All our consultants carry scientific or engineering qualifications and have a wealth of experience having undergone extensive training and continued professional development while working within the Environmental Consultancy sectors.

DNV as a company remains fully briefed in European and Irish environmental policy and legislation. DNV staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM). This Report was authored by DNV Senior Ecologist Ciara Barry-Hannon (CBH). The ecological surveys (bats, terrestrial flora and fauna) at the Site were coordinated by DNV Senior Ecologist Liam Gaffney (LG). DNV Ornithologist Brian McCloskey (BM) coordinated the bird surveys of the Site.

CBH is a Senior Ecologist with DNV and has a BSc. (Hons) in Wildlife Biology from Munster Technological University (formerly ITT). CBH has a wealth of experience in desktop research, literature review and reporting, as well as practical field and laboratory experience including experience in surveying habitats, plants, bats, birds, mammals, and invasive species. CBH is experienced in the preparation of Preliminary Ecological Appraisals (PEA), Ecological Impact Assessments (EcIA), and Stage I/Stage II Appropriate Assessment Reports, as-well as ornithology reports for renewable energy projects (wind and solar technology). Additionally, CBH has completed, and supported the preparations of several Biodiversity Chapters for Environmental Impact Assessment Reports (EIAR). CBH is also a Qualifying member of CIEEM.

LG is a Senior Ecologist with 6 years of experience in ecological consultancy. With a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management from University College Dublin LG is experienced in desktop research, literature scoping-review, and report writing, as well as practical field experience (e.g., Bat surveys, habitat surveys, invasive species surveys, wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). LG's MSc thesis was a literature scoping review on the ecosystem services provided by Irish bats. He has also completed best practice guidance courses on bat survey and mitigation techniques such as: 'Bat Ecology & Survey' and 'Bat Impacts and Mitigation' both held by the Chartered Institute of Ecology and Environmental Management (CIEEM). LG is experienced in compiling Biodiversity Chapters of EIARs, EcIAs, AA screening and Natura Impact Statements (NIS) reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. LG is also a Qualifying member of CIEEM with full membership application pending.

BMcC is an experienced Ornithologist with a BSc in Planning and Environmental management from the Technological University of Dublin (TUD) and over 12 years of bird survey experience, including three years of professional Ornithology work. BMcC is a longstanding and active member of Bird Watch Ireland and is also the author of several articles in UK birding publication Birdwatch Magazine. BMcC is highly experienced in all survey methodologies and with surveying all species groups of Irish birds and migrants, having provided a range of ornithology survey work for ecological consultancies, e.g., vantage points surveys of gulls, terns, raptors, waders and wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

c) Site Location

The Proposed Development Site is located of Sandford Road and Milltown Road (R117), Milltown, Co Dublin (**FIGURE 1**). The Site is currently comprised of a mix of buildings and green space with an overall developable area of 4.26Ha. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the Site including improvements to pedestrian facilities on an area of ca. 0.1Ha. Works associated with the Site's surface water drainage network will entail works through the junction of Milltown Road / Sandford Road and along a portion of Eglinton Road (R824) (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of ca. 0.32 Ha.

The Proposed Development Site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares. The Site is accessed to the north via the R117 and is surrounded to the north, east and west by residential lands. The southern boundary of the Site backs on to lands owned by the Jesuit order and zoned as Z15. The closest European sites to the Proposed Development are South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA which are located approximately 2.2km to the east of the Site.

d) Project Description

Sandford Living Limited intend to apply for permission for a large-scale residential-led mixed use develo4.26-hectare. 4.26 hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares. The development's surface water drainage network shall discharge from the Site via a proposed 300mm diameter pipe along Milltown Road through the junction of Milltown Road / Sandford Road prior to outfalling to the existing drainage network on Eglinton Road (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of c. 0.32 hectares. The development Site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares. The Site layout is shown in **FIGURE 2**.

The Proposed Development will principally consist of: the demolition of c. 4,847.5 sq m of existing structures on site including Milltown Park House (880 sq m); Milltown Park House Rear Extension (2,031 sq m); the Finlay Wing (622 sq m); the Archive (1,240 sq m); and the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m); the refurbishment and reuse of Tabor House (1,575 sq m) and the and the provision of a single storey glass entrance lobby to the front and side of the Chapel (51.9 sq m); and the provision of 6 No. 3 bedroom two storey courtyard houses and 566 No. apartment and duplex units (78 No. studios, 206 No. one bed units, 259 No. two bed units and 23 No. three bed units).

Block A1 will range in height from part 5 No. storeys to part 8 No. storeys and will comprise 89 No. apartments; Block A2 will range in height from part 6 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 127 No. apartments and duplex units; Block B will range in height from part 3 No. to part 7 No. storeys and will comprise 81 No. apartments; Block C will range in height from part 4 No. storeys to part 5 No. storeys (including part double height at ground floor level) and will comprise 152 No. apartments and duplex units; Block D will range in height from 3 No. storeys to 5 No. storeys and will comprise 30 No. apartments; Block E will be 2 No. storeys in height and will comprise 6 No. courtyard type houses with terraces at first floor level; and Block F will range in height from 5 No. storeys to part 7 No. storeys and will comprise 87 No. apartments.

The Proposed Development also includes the refurbishment of Tabor House (4 No. storeys including lower ground floor level) and the Chapel to provide cultural/community space (1,980 sq m comprising 1,732 sq m internal and 248 sq m external); the provision of retail floorspace in Block A2 (83 sq m); medical use (165 sq m) and resident's amenity space (235 sq m) in Block B; a café (160 sq m) and a creche (380 sqm) within Block F (380 sq m) with associated outdoor creche play area.

The Proposed Development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the Site) in addition to utilising and upgrading the existing access from Sandford Road as a secondary access principally for deliveries, emergencies and taxis; new pedestrian access points; pedestrian/bicycle connections through the Site; 318 No. car parking spaces (288 No. at basement level and 30 No. at surface level); set down area for deliveries; bicycle parking; 18 No. motorcycle spaces; bin storage; boundary treatments; private balconies and terraces facing all directions; external gantry access in sections of Blocks A1, A2 and C; hard and

soft landscaping including public open space and communal open space; sedum roofs; PV panels; substations; lighting; plant; lift cores and overruns; and all other associated site works above and below ground.

The proposed development has a gross floor space of c.49,705 sq m above ground level over a partial basement (under part of Block A1 and under Blocks A2, B and C) measuring c. 10,607 sq m, which includes parking spaces, bin storage, bike storage and plant.

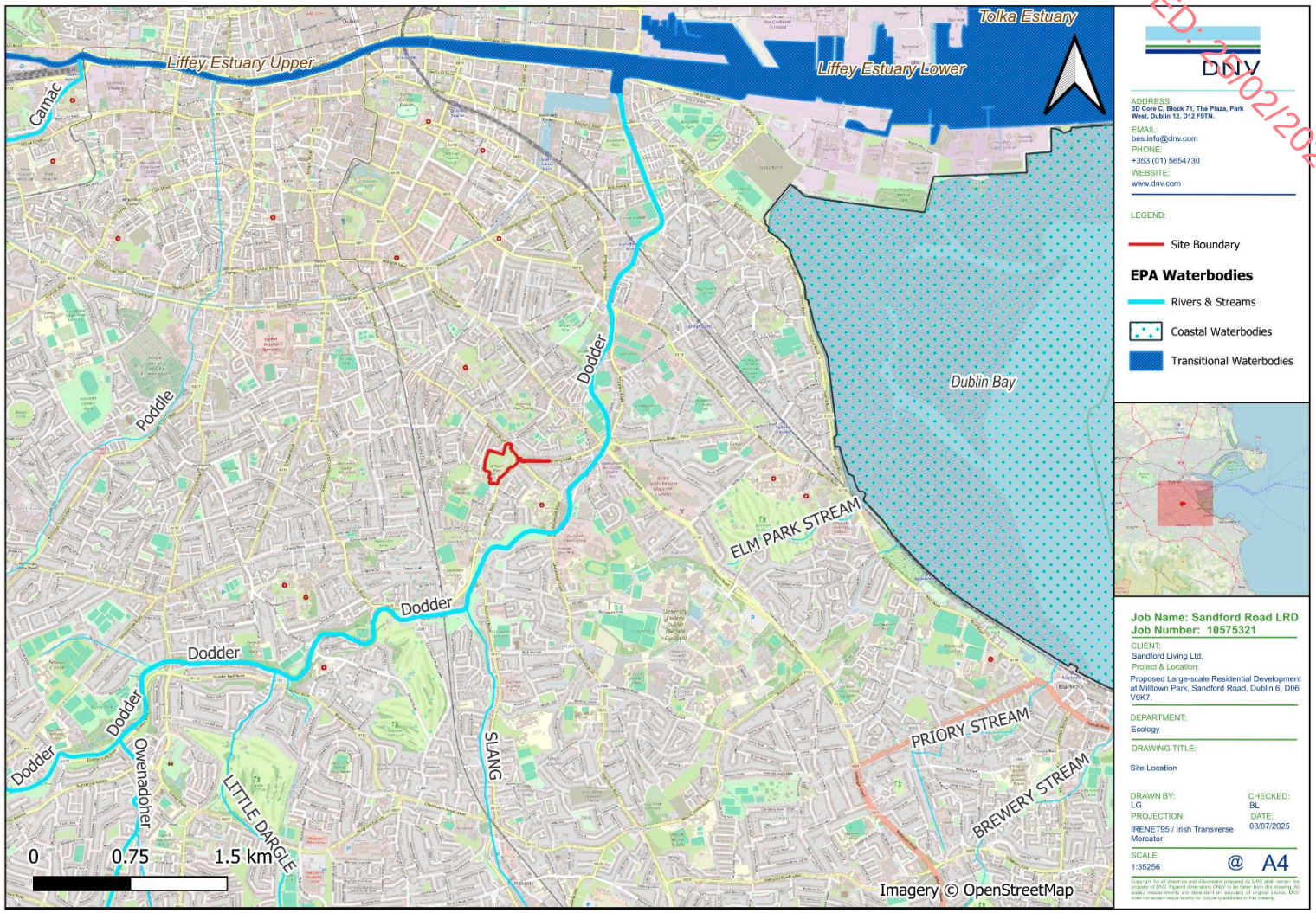

FIGURE 1. SITE LOCATION (QGIS, 2025)

FIGURE 2. PROPOSED SITE LAYOUT EXTRACTED FROM CAMEO & PARTNERS DRWG NO: C0111 L100

e) Relevant Aspects of the Proposed Development

Construction Phase Details

The following details are taken from the Preliminary Construction Management Plan (PCMP) prepared by DBFL Consulting Engineers (DBFL, 2025a) and the Infrastructure Drainage Report (IDR) (DBFL, 2025b).

The Proposed Development will be phased as per the following:

- Phase 1 – Site Set Up, Enabling Works and Demolitions.
- Phase 2 – Basement Box.
- Phase 3 – Block D, Block E, Block F and works at Tabor House and The Chapel.
- Block A1, Block A2, Block B and Block C.

For the duration of the proposed infrastructure works, typical working hours shall be 07:00 to 19:00 Monday to Friday (excluding bank holidays) and 09:00 to 13:00 Saturdays, subject to the restrictions imposed by the local authority. No working will be allowed on Sundays and Public Holidays. Subject to the agreement of the local authority, out of hours working may be required for water main connections, foul drainage connections etc.

Surface Water Drainage

The Site generally falls from south to north at a gradient of approx. 1:45, with surface gradients becoming flatter on approach to the existing site access off Sandford Road. An existing 225mm diameter surface water drain is located approximately 80m from the eastern corner of the Site, on Eglinton Road. The existing surface water drains on Site currently discharge to the existing combined sewer network along Sandford Road and Milltown Road, rather than the existing surface water drain in Eglinton Road/Dodder River. Rain waters across the green spaces that currently exist at the Site likely percolate to ground.

Surface water sewers from the Proposed Development will discharge at attenuated flows to the existing drainage network on Eglinton Road (approximately 195m from the Sandford Road / Eglinton Road junction where the public line increases to a 300mm diameter pipe). In order to achieve the required drainage invert levels on Site, approximately 160m of the existing drainage network along Eglinton Road will need to be replaced with a 300mm pipe running at a flatter gradient. The total length of the surface water outfall from the point it crosses the Site boundary at Milltown Road to the discharge point on Eglinton Road is approximately 300m. As noted in the DBFL IDR (DBFL, 2023b) enclosed separately, detailed topographic and GPR surveys were carried out along the proposed outfall route (Milltown Road, through the junction of Milltown Road/Sandford Road and Eglinton Road) to assess feasibility concerning the location of existing services.

Prior to surface water being discharged from the Site it will be attenuated and treated via a suite of Sustainable Drainage System (SuDS) measures at the Site. These will comprise:

- Green Roofing – The proposed build-up will be an extensive type with 100mm minimum construction depth and sedum planting.
- Surface water runoff from the roofs of duplex units located along the western boundary will be routed to the proposed surface water pipe network via porous aggregates beneath permeable paved driveways (providing an additional element of attenuation).
- Green Areas Over Podium –Soft landscaped podium areas will have typical soil depths of up to 300mm to facilitate grassed areas, plants, shrubs and trees i.e. similar to a deep intensive green roof build up.
- Surface water runoff from the majority of site's internal street network will be directed to the proposed pipe network via tree pits or other SuDS features such as swales or bioretention areas, with overflows to conventional road gullies.
- Surface water runoff from in curtilage parking spaces associated with duplex units located along the western boundary will be captured by permeable paving.

- Any incidental surface water runoff generated from the basement carpark would drain through a separate system beneath the basement slab (discharging to the proposed foul drainage network via a petrol interceptor).

Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control device (Hydrobrake or equivalent) and associated underground attenuation tanks (Stormtech Chambers or equivalent). Surface water discharge will also pass via a full retention fuel / oil separator (sized in accordance with permitted discharge rate from the Site).

Foul drainage

Two foul drainage discharge points are proposed for the Site (in the vicinity of the proposed access off Milltown Road and the existing access of Sandford Road), which will link in with existing infrastructure along Sandford Road which eventually flows to Ringsend Wastewater Treatment Plant (WwTP) for treatment.

3. LEGISLATIVE & POLICY CONTEXT

f) Legislative Background

The Habitats Directive (92/43/EEC) (as amended) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) (as amended) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). The Habitats Directive has been transposed into Irish law through Part XAB of the Planning and Development Act 2000, as amended and the EC (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011) (as amended).

SACs and SPAs are collectively known as Natura 2000 or European sites. It is the responsibility of each member state to designate SACs and SPAs. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the Qualifying Interests (QIs) of the sites; from these the conservation objectives of the site are derived.

An AA is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European sites. A screening for AA determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a European site, in view of its conservation objectives. The obligations in relation to Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Acts (as amended) and in particular Section 177U and Section 177V thereof.

This AA Screening has been undertaken to determine the potential of the Proposed Development to have likely significant effects on relevant European sites.

Consideration of Embedded Mitigation

With regard to the consideration of embedded mitigation in the Appropriate Assessment process the following is noted. In Case C 721/21 Eco Advocacy, the Court of Justice of the European Union held that, regarding the interpretation of Article 6(3) of Directive 92/43 (as amended), the Article must be interpreted as meaning that:

"In order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site".

As such, standardised embedded mitigation (such as the use of SuDS in large-scale residential developments), that are incorporated into the design of a proposal or project and which may result in the elimination of likely significant effects on European sites, but where the primary reason of the embedded mitigation is not to protect a European site, are permitted for consideration when screening for AA. This is consistent with the policy of Dublin

City Council (SI122) to *"To require the use of Sustainable Drainage Systems (SuDS) in all new developments, where appropriate, as set out in the Greater Dublin Strategic Drainage Study …".*

g) Policy Context

Dublin City Council Development Plan 2022 – 2028

Policies and objectives of the Dublin City Development Plan (DCDP) 2022-2028 that are of relevance to this Screening Report are outlined below. This assessment is in compliance with the Dublin City Council Development Plan 2022-2028.

Relevant policies include:

- **GI9:** "*To conserve, manage, protect and restore the favourable conservation condition of all qualifying interest/special conservation interests of all European sites designated, or proposed to be designated, under the EU Birds and Habitats Directives, as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (European / Natura 2000 sites).*"
- **GI10:** "*To adequately protect flora and fauna (under the EU Habitats and Birds Directives, the Wildlife Acts 1976–2021, the Fisheries Acts 1959-2006 and the Flora (Protection) Order 2015 S.I No. 356 of 2015), wherever they occur within Dublin City, or have been identified as supporting the favourable conservation condition of any European sites*."
- **GI13:** "*To ensure the protection, conservation and enhancement of all areas of ecological importance for protected species, and especially those listed in the EU Birds and Habitats Directives, including those identified as supporting the favourable conservation condition of any European sites, in accordance with development standards set out in this plan*."
- **GI14:** "*To maintain and strengthen the integrity of the city's ecological corridors and stepping stones which enable species to move through the city, by increasing their connectivity [to be shown in the proposed Green Infrastructure Strategy] under Article 10 of the EU Habitats Directive. Development proposals should not compromise their ecological functions and should realise opportunities to contribute to enhancing the nature conservation value of them by landscaping that provides complementary habitats. An Ecological Impact Assessment will be required for any Proposed Development likely to have a significant impact on habitats and species of interest on or adjacent an ecological corridor*."
- **GI30:** "*To conserve, maintain and restore freshwater and estuarine habitats which are of importance for species listed in the annexes of the EU Birds and Habitats Directives and to ensure connectivity of these in accordance with Article 10 of the EU Habitats Directive*."
- **SI22:** "*To require the use of Sustainable Drainage Systems (SuDS) in all new developments, where appropriate, as set out in the Greater Dublin Strategic Drainage Study (Vol 2: New Development)/ Greater Dublin Regional Code of Practice for Drainage Works and having regard to the guidance set out in Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas, Water Sensitive Urban Design Best Practice Interim Guidance Document (DHLGH, 2021). Sustainable Drainage Systems (SuDS) should incorporate nature-based solutions and be designed in accordance with the Dublin City Council Sustainable Drainage Design & Evaluation Guide (2021) which is summarised in Appendix 12. SuDS should protect and enhance water quality through treatment at source while enhancing biodiversity and amenity.*"

In addition, the DCDP 2022-2028 provides a suite of objectives to support plans aimed at enhancing and protecting biodiversity at a local and national level, such as the National Biodiversity Action Plan 2023-2030 and the Dublin City Biodiversity Action Plan 2021 – 2025. The biodiversity objectives also outline a number of measures to protect the City's biodiversity, through helping the management of the North Bull Island Nature Reserve, supporting measures to prevent invasive species introduction and spread, recognising and protecting important County Geological Sites and encouraging the use of the Dublin City Habitat Map Database (2020, and updates) to inform planning decisions.

National Biodiversity Action Plan 2023-2030

The National Biodiversity Plan (NBAP) 2023-2030, the fourth such plan for Ireland, captures the objectives, targets and actions for biodiversity that will be undertaken by a wide range of government, civil society and private sectors. Actions required to achieve the strategic objectives as well as the lead and key partners responsible for their implementation are set out for each of the objectives and their outcomes. This assessment has had regard to the objectives of the NBAP and how they relate to AA and the protection of designated sites, including Objective 2: *Meet Urgent Conservation and Restoration Needs*, and target outcome 2A: *The protection of existing designated areas and protected species is strengthened and conservation and restoration within the existing protected area network are enhanced.*

Dublin City Biodiversity Action Plan 2021-2025

Dublin City Biodiversity Action Plan (DCBAP) 2021 – 2025 is set out to protect and improve biodiversity through specific objectives. This assessment has had regard to these objectives and how they relate to AA and the protection of designated sites, in particular Objective 2 pf the DCBAP.

The objectives of the DCBAP are as follows:

- **Objective 1:** Ensure effective implementation of the Dublin City Biodiversity Action Plan.
- **Objective 2:** Protect designated sites for nature conservation in accordance with the Conservation Management objectives for Natura 2000 sites and proposed Natural Heritage Areas in Dublin City.
- **Objective 3:** Identify and protect sites that have conservation value for biodiversity using evidence-based research.
- **Objective 4:** Monitor and conserve legally protected species within Dublin City, particularly those listed in the annexes of the EU Birds and Habitats Directive using evidence-based research.
- **Objective 5:** Prepare and plan for the impacts of climate change on biodiversity.
- **Objective 6:** Implement measures for species with that have a local biodiversity value or impact local biodiversity.
- **Objective 7:** Prepare and disseminate information on guidance for development and site management for biodiversity conservation.
- **Objective 8:** Devise and implement habitat restoration initiatives across Dublin City.
- **Objective 9:** To use nature-based solutions to restore biodiversity and ecosystem services.
- **Objective 10:** Strengthen measures to control Invasive Alien Species (IAS), improve biosecurity and ecological status of catchments.
- **Objective 11:** Ensure that measures for biodiversity and nature-based solutions are incorporated into new building projects, retrofit and maintenance works.
- **Objective 12:** Promote net biodiversity gain and ensure there is no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure.
- **Objective 13:** Pilot initiatives for the creation of habitats using artificial habitat methods.
- **Objective 14:** Minimise and reduce soil degradation in the Dublin City Council administrative area.
- **Objective 15:** Ensure that measures for biodiversity and nature-based solutions are incorporated into new building projects, retrofit and maintenance works.
- **Objective 16:** Empower citizens to connect with and take positive action for biodiversity at a local and city-wide level.
- **Objective 17:** Strengthen collaboration for the conservation of biodiversity at a regional, national, and global level.

h) Stages of Appropriate Assessment

This AA Screening Report (the 'Screening Report') has been prepared by Enviroguide. It considers whether the Proposed Development is likely to have a significant effect on a European site and whether a Stage 2 AA is required.

The AA process is a four-stage process. Each stage requires different considerations, assessments and tests to ultimately arrive at the relevant conclusion for each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages of an AA can be summarised as follows:

- **Stage 1: *Screening***. The Screening for AA considers whether a plan or project is directly connected to or necessary for the management of a European site, or whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.
- **Stage 2: *Natura Impact Statement (NIS).*** Where Stage 1 determines that significant effects are likely, uncertain or unknown, the preparation of a NIS is required. The NIS must include a scientific examination of evidence and data to classify potential impacts on any European site(s) in view of their conservation objectives in the absence of mitigation. The NIS will identify appropriate mitigation to remove the potential for likely significant adverse effects on any European site(s). If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European site(s) despite mitigation, it can only grant consent after proceeding through stages 3 and 4.
- **Stage 3: *Assessment of alternative solutions***. If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- **Stage 4: *Assessment where no alternative solutions exist and where adverse impacts remain***. The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European site, where no less damaging solution exists.

4. METHODOLOGY

i) Guidance

This AA Screening Report has been undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10;
- *Communication from the Commission on the precautionary principle* (European Commission, 2000);
- *Managing European sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019);
- *Assessment of plans and projects in relation to European sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC Brussels, 28.9.2021 C (European Commission, 2021);*
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021; and*
- *Amendments to section 42 of the Planning and Development Act 2000, as amended and associated Planning and Development Regulations 2001. Department of the Environment, Heritage and Local Government. (2021). Circular Letter: EUIPR 01/2021.*

j) Screening Steps

Screening for AA involves the following steps:

- Establish whether the plan or project is directly connected with or necessary for the management of a European site;
- Description of the plan or project and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the European site;
- Identification of European sites potentially affected;

- Identification and description of potential effects on the European site;
- Assessment of the likely significance of the effects identified on the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

It should be noted that any specific targeted ecological mitigation measures and/or measures intended or included exclusively for the purposes of avoiding adverse effects arising from the Proposed Development on any European site **have not been considered** as part of this Screening Report.

k) Desk Study

A desktop study was carried out in July 2025 to collate and review available information, datasets and documentation sources relevant for the completion of this Screening Report. The desktop study relied on the following sources:

- Information on the network of European sites, boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie;*
- Text summaries of the relevant European sites taken from the respective site synopses available at *www.npws.ie;*
- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC) at *www.maps.biodiversityireland.ie*;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at *www.gis.epa.ie;*
- Information on surface water, storm water and sewage infrastructure within and surround the site provided by the applicant and their design team.
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie;*
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland; and
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from the National Planning Application Database (DHLGH, 2025a) and the Department of Housing, Local Government and Heritage's (DHLGH) EIAR Online Portal (DHLGH, 2025b).

For a complete list of the specific documents consulted as part of this assessment, see *Section 5 References*.

l) Ecological surveys

A suite of ecological surveys have been conducted at the Site to date, with some still underway at time of writing (July 2025) and some to be conducted at a later date, as per best practice guidance which determines seasonal suitability for conducting ecological surveys. However, it is noted that none of the ongoing ecological surveys are relevant to QI/SCI designated habitats or species for any European Sites, and so the incomplete nature of these surveys will not impact this assessment. The aim of the 2025 surveys is to provide up to date data on the ecology present at the Site, to effectively 'ground-truth' the results of previous surveys, providing a comprehensive understanding of baseline ecology at the Site and to aid in the assessment of the potential impact the Proposed Development could place upon this, with all surveys forming part of the final EIAR being submitted for this LRD application.

For full details on the range of ecological surveys conducted at the Site, please refer to the EIAR Biodiversity Chapter that will accompany final application submission. Results of surveys where they are relevant to Appropriate Assessment are detailed in Section 0.

Bird Surveys

Of relevance to the Appropriate Assessment of the Proposed Development is the potential for bird species listed as Special Conservation Interests (SCI) species for nearby SPAs to utilise the Site during the breeding and/or non-breeding season. As such a suite of bird sureys have been conducted at the Site to date.

JBA Consulting carried out winter bird surveys at the Site between November 2020 and February 2021. Winter waterbird surveys were conducted at the Site by DNV (then known as Enviroguide Consulting) and were conducted for the duration of the 2022/23 winter survey season. Breeding bird surveys were also conducted at the Site in 2021, 2022, 2024 and are ongoing for 2025.

DNV's survey methodology follows the relevant breeding and non-breeding bird survey guidance published by the Bird Survey & Assessment Steering Group (2023*) 'Bird Survey Guidelines for assessing ecological impacts'*. Each survey consists of a combination of walked transects of the Site (being walked at a slow, ambling pace, stopping to scan priority habitat/features where appropriate) and vantage point observation from fixed points, as required. The flight-line survey component consists of vantage point observation by a surveyor using binoculars and identification guides where necessary to identify all target species in flight over the Site.

The flight-line surveys focus on those Species of Conservation Interest (SCI) species that are characterised as "poor" fliers and considered to be more at risk of collision (see Eirgrid, 2012, 2016). The most at-risk groups (classified as 'medium' and 'high' collision risk species) include wader species; waterfowl such as geese, swan and duck species; and some raptor species. Gulls such as Herring Gull are classed as 'low' collision risk species due to their superior manoeuvrability when flying (see Eirgrid, 2012, 2016), and therefore, are not classified as 'at-risk' species in terms of in-flight collisions with structures. All surveys were undertaken using:

- Opticron 8x42 binoculars (or equivalent).
- Opticron 20x Telescope (or equivalent).
- Agreed survey methodology.
- A4 map of survey area.

m) Identification of Relevant European Sites

The Zone of Influence (ZOI) for a project is the area over which ecological features may be affected by changes as a result of a development and associated activities. This is likely to extend beyond the development site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2024). Furthermore, ZOI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

"*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km).*"

Thus, to identify the European sites that potentially lie within the ZOI of the Proposed Development, a Source-Path-Receptor (S-P-R) method was adopted, as described in OPR PN01 (OPR, 2021).

The relevant European sites were identified based on the following:

- Identification of potential sources of effects based on the Proposed Development description and details, including changes to potentially suitable *ex-situ* habitats at the Site (i.e., habitats utilised by Species of Conservational Importance (SCI) bird species outside of their designated SPAs).
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (*www.npws.ie*) and the EPA website (*www.epa.ie*) to identify European sites which could potentially be affected by the Proposed Development; and
- Identification of potential pathways between the Site of the Proposed Development and any European sites within the ZOI of any of the identified sources of effects.
    - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any European sites.

- Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any European sites.
- Air and land connectivity assessed based on Proposed Development details and proximity to European sites.
- Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.

- Defining the likely ZOI based on the identified sources of effects and potential pathways between the Proposed Development and any European sites.

n) Assessment of Significant Effects

The conservation objectives of the European sites identified to lie within the ZOI were reviewed and assessed in order to establish whether the construction and operation of the Proposed Development is likely to have a significant effect on any of the QIs/SCIs and/or conservation objectives listed for those European sites.

The assessment framework is taken from the best practice guidelines issued by the European Commission, i.e., "*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*".

The potential for likely significant effects that may arise from the Proposed Development was considered through the use of key indicators, namely:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.
- Changes in water quality and resource.

In addition, information pertaining to the conservation objectives of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

o) Limitations

No limitations were encountered which would prevent robust conclusions from being drawn as to the potential impacts of the Proposed Development and therefore the likely significant effects on European sites, in view of each site's conservation objectives.

5. STAGE 1 SCREENING ASSESSMENT

p) Management of European sites

The Proposed Development at Milltown Park, Sandford Road, Dublin 6 is not directly connected with or necessary to the management of any European sites.

q) Existing Environment

Desk Study Results

5.1.1.1. Surface Water

The Site of the Proposed Development is located within the Liffey and Dublin Bay catchment and Dodder_SC_010 sub-catchment. There are no surface waterbodies within the Site. The closest waterbody to the Site is the River Dodder (EPA Code:09D01) approximately 250m to the south-east of the sewer works associated with the Proposed Development, along Eglinton Road, and ca.470m to the east of the main Site area. The Dodder flows in a north easterly direction and joins the River Liffey at Grand Canal Dock before flowing into Dublin Bay. The River Dodder has been assigned 'Moderate' water quality status (WFD, 2016-2021) and is classified as 'At Risk' of failing to achieve their Water Framework Directive status objectives by 2027. Similarly, the Lower Liffey Estuary which receives waters from the Dodder has been assigned 'Moderate' water quality status and is classified as 'At Risk' of failing to achieve their Water Framework Directive status objectives (WFD, 2016-2021) (EPA, 2025).

5.1.1.2. Geology and Hydrogeology

The Site of the Proposed Development is situated on the Dublin groundwater body (IE_EA_G_008), which is classified as having 'Good' status (WFD Status 2016-2021) and is currently 'Under Review'. The aquifer type in the area is a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones'. The bedrock units underlying the Site are classified as 'Dark limestone & shale (calp)' (GSI, 2025) while the quaternary sediments classified as 'Till derived from limestones' (GSI, 2025). The level of vulnerability to groundwater contamination from human activities at the Site is classed as 'Low' (EPA, 2025). The subsoil beneath the Site is 'Man-made' and the SIS National Soils database classified the soil beneath the Site as 'Urban' (EPA, 2025).

Relevant Field Survey Results

JBA Consulting carried out winter bird surveys at the Site between November 2020 and February 2021 (four visits on 30/11/2020, 17/12/2020, 07/01/2021 and 03/02/2021); and breeding bird surveys in April and May 2021 (15/04/2021 and 18/05/2021) (See Appendix I for full survey results).

The winter surveys recorded no SCI waterbird species utilising the Site. One Curlew (*Numenius arquata)* was recorded in flight on one occasion. The Curlew passed at 40-50m height over the site for a duration between 0-5 seconds and did not land within the Site.

Herring Gull (*Larus argentatus)* were recorded nesting on the roof of a building at the Site during the breeding bird surveys conducted by JBA in May 2021 and were noted to be nesting on a chimney of Tabor House during a Site visit in June 2025. Breeding herring gulls are a SCI for Ireland's Eye SPA, however, this breeding pair is unlikely to form part of the SPA assemblage considering the distance between the Site and the SPA (>14km), and the fact that this species widely use urban rooftops as a breeding resource.

The AA Screening Report (JBA, 2021) prepared by JBA Consulting for a previous planning submission (ABP-311302-21) concluded, based on their assessments and bird surveys, that the Site of the Proposed Development is not located within any known flight line for any of the SCI species listed for the relevant SPA's, nor is it being used as an *ex-situ* site.

In summary JBA concluded:

- No Light-bellied Brent Geese *Branta bernicla hrota* were observed flying over the Site during the winter surveys and it was not considered to be within the flight line of this species i.e., there is no risk for collision with the new development.

- The only SCI species of note observed flying over the Site during the winter was Curlew, where one individual was seen at one occasion, passing the Site at a height of 40-50m.
- The rate of total individuals per hour from the entire survey is 0.1 / hour. The height of the proposed tallest building for the previous development application (ABP-311302-21) was 31.6m (this will also be the case for the current planning application), and thus, below the flight line of the Curlew. Therefore, the proposed development was not considered to be within the main flight line of Curlew.
- Given that the Site was not used as a feeding site by Brent Geese, that no other SCI bird species were recorded foraging or nesting within the Site (other than Herring Gull as mentioned previously), and that the Site was not observed to be within a known flight line for any of the SCI species; likely significant effects on European sites specifically relating to SCI bird species are not anticipated.

Bird surveys were conducted by DNV during the winter months in 2022/23 to determine the usage of the Site by wintering waterbird species. These bird surveys confirmed those of JBA's surveys in 2021/22 and recorded no wintering waterbirds utilising the Site. Species such as Herring Gull and Common Gull (*Larus canus)* were recorded in flight over the Site; however, none were recorded landing within the Site. The Site is not within any known flight lines of sensitive wintering waterbird species and no significant movement of birds over the Site was observed. As such, repeat winter bird surveys were not considered necessary. Full survey results will be provided as Appendices with the final application submission.

Regarding breeding bird surveys; Bird surveys conducted over the summer months to date (summer 2024 and ongoing summer 2025 surveys), found several Amber-listed species were recorded on the Proposed Development Site. However, Swift (*Apus apus)* was the only Red-listed species recorded on Site during the breeding surveys to date. During both the breeding and Swift surveys carried out on Site to date (to July 2025), it was the considered opinion of both ornithologists present that Swifts were not using the buildings on this Site for nesting. In addition, Swift is not an SCI listed species for any nearby European protected sites. However, as a precautionary basis, impacts on these taxa will be avoided by scheduling site clearance works for the non-breeding season (October – February) as prescribed in the EIAR Biodiversity Chapter that will accompany the final application under separate cover.

Potential Sources of Impacts

The Proposed Development is not directly connected with or necessary to the management of European sites. However, the following elements of the Proposed Development were identified and assessed for their potential to cause likely significant effects on European sites.

- **Construction Phase** (Estimated duration: 34/35 months)
  - Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies.
  - Surface water run-off containing silt, sediments and/or other pollutants into the surface water drainage network.
  - Surface water run-off containing silt, sediments and/or other pollutants into the local groundwater.
  - Increased noise, dust, vibrations and/or human presence as a result of construction activity.
  - Increased dust and air emissions from construction traffic.
- **Operational Phase**
  - Surface water run-off containing silt, sediments and/or other pollutants into the surface water drainage network.
  - Foul water from the Proposed Development.
  - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.
  - Increased lighting in the vicinity emitted from the Proposed Development.
  - Increased human presence in the vicinity as a result of the Proposed Development.

Potential Pathways to European Sites

For the above listed potential sources of effects to have the potential to cause likely significant effects on any European site, a pathway between the source of potential effects (i.e., the Site of the Proposed Development) and the receptor is required. Potential impact pathways are discussed in the following sections in the context of the identified likely impact sources as identified in Section 0.

5.1.1.3. Direct Impacts

Hydrological

There are no surface waterbodies located within or directly adjacent to the Site of the Proposed Development. The closest waterbody to the Site is the River Dodder (EPA Code:09D01) approximately 250m to the south-east of the sewer works associated with the Proposed Development, along Eglinton Road, and ca.470m to the east of the main Site area.

Stormwater generated at the Site during the Construction and Operational Phases of the Proposed Development will discharge to the existing surface water system which in turn discharges to the River Dodder, and eventually Dublin Bay via the Liffey. A weak hydrological pathway therefore exists between the Site and European sites via the River Dodder. These include South Dublin Bay SAC (000210), North Dublin Bay SAC (000206), Rockabill to Dalkey Island SAC (003000), South Dublin Bay and River Tolka Estuary SPA (004024), North Bull Island SPA (004006), and the North-west Irish Sea SPA (004236). Potential surface water emissions during both the Construction and Operational Phases of the Proposed Development could enter the River Dodder, subsequently reaching these European sites. This pathway is therefore **assessed further in this Report.**

Hydrogeological

During groundworks and other construction activities at the Site, the ground will be exposed, and any potential accidental discharges could potentially migrate vertically downward to the underlying bedrock aquifer. The closest Sites located within the same groundwater body as the Proposed Development are Dublin Bay sites, and Rye Water Valley/Carton SAC (001398) although this SAC is upstream of the River Liffey.

Given the topography of the groundwater body and the WFD catchments, which generally discharge towards the east coast and are intercepted by a series of rivers, any such discharges from the Site are likely to flow eastwards towards the Dodder River rather than migrating laterally to the west.

Given that the Site is located at a distance from the European sites within Dublin Bay and is itself located in an area of predominantly low aquifer vulnerability, likely significant negative effects on the European sites within Dublin Bay are not anticipated; either from the Proposed Development on its own or in combination with other projects.

Therefore, due to the Site's location and the interception of groundwater flows by the River Dodder, there is no significant hydrogeological pathway linking the groundwater at the Site to the Rye Water Valley/Carton SAC, Dublin Bay sites, or any other European site and this pathway **will not be considered further in this Report**.

Air and Land

The Construction Phase of the Proposed Development could introduce dust and noise disturbance impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the Construction and Operational Phases.

As discussed in the following sections in more detail, the likely ZOI via air and land pathways is considered to be limited to surrounding areas within a maximum of approx. 400m from the Site boundary for any noise and dust sources, depending on prevailing weather conditions. Additionally, light spill and disturbance from human activity are considered to be limited to areas within the Site and habitats immediately adjacent to the Site's boundaries.

According to Institute of Air Quality Management (IAQM) *Guidance on the Assessment of Mineral Dust Impacts for Planning.* (IAQM, 2016), experience of the Working Group together with published studies and anecdotal evidence on the change in both airborne concentrations and the rate of deposition with distance, suggests that dust impacts will occur mainly within 400m of the operation, even at the dustiest of mineral sites. Adverse dust impacts from sand and gravel sites are uncommon beyond 250m and beyond 400m from hard rock quarries measured from the nearest dust generating activities. IAQM (2016) note that is commonly accepted that the greatest impacts will be within 100m of a source, and this can include both large (>30 µm) and small dust particles. The greatest potential for high rates of dust deposition and elevated particulate matter (PM10) concentrations occurs within this 100m distance.

IAQM note that their 2016 guidance applies to the operational phases of minerals developments e.g., quarries. Whilst these share some common features with construction activities, minerals sites can be on a significantly larger scale. The IAQM's 2014 *Guidance on the assessment of dust from Demolition and Construction* (Holman *et al.*, 2014) deals with construction dust assessment specifically and does not provide specific dust impact distances

as such but assesses sensitivity to dust impacts at <20m and <50m ranges for ecological features; impact zones far smaller than that of mineral sites detailed in IAQM (2016).

There are no European sites located within the noise and dust ZOI of the Proposed Development and the Site is not used for *ex-situ* foraging/ roosting habitat by QIs and/or SCIs of Dublin Bay SPAs and SACs. It is therefore concluded that there is no significant air/ land pathway linking the Proposed Development to any European sites and this pathway **will not be considered further in this Report.**

5.1.1.4. Indirect Impacts

Foul Water to Ringsend WwTP

During the Operational Phase, the Proposed Development will be served by Ringsend Wastewater Treatment Plant (WwTP). It is noted that there is a weak indirect hydrological pathway between the Site and European sites in Dublin Bay via this sewerage network, which will eventually be processed and discharge to Dublin Bay and the corresponding European sites of South Dublin Bay SAC (000210), North Dublin Bay SAC (000206), Rockabill to Dalkey Island SAC (003000), South Dublin Bay and River Tolka Estuary SPA (004024), North Bull Island SPA (004006), and North-west Irish Sea Marine SPA (004232).

As such the hydrological pathway provided by Operational Phase foul water treatment at Ringsend WwTP **is assessed further in this Report.**

Flightpaths & Collision Risk

Flightpath and collision risk were assessed given the proximity of the Site to nearby Special Protection Areas (SPAs). Tall structures such as buildings and electrical pylons can lead to fatal collisions with commuting bird species, particularly large and/or fast-flying waterbird species, such as large ducks, geese, swans and waders, and those with low manoeuvrability (Jenkins *et al*., 2010).

As stated previously in this Report, the Site supports limited suitable habitat for species designated as SCI Species for nearby SPAs. In-flight collisions between SCI species and the Proposed Development are not deemed to pose a source of likely significant effects to the conservation objectives of the relevant SPAs, as detailed in the following sections.

Building Height

The Proposed Development entails a max height of 8 storeys in height (See Figure 3). Birds that commute across the city or in order to reach feeding grounds at various locations would tend to fly above this height and once the proposed structures are made of visible materials i.e., not entirely comprised of reflective materials such as glass, the birds flying in the vicinity of the buildings will simply fly around or over them.

With respect to SCI species listed for the SPAs assessed in this Report, which regularly use or travel over inland areas in Dublin (i.e., geese, gull species, duck species and a number of waders), these species navigate the urban environment with built structures daily. To put some context on some of their avoidance capabilities, in a different setting and for use in collision risk modelling for onshore wind turbines, an avoidance rate of 99.5% is applied for large gull species and an avoidance rate of 99.2% is applied for small gull species (Furness, 2019), which essentially means that 99.5% and 99.2% of gull flights, respectively, will avoid collision with a moving turbine. For curlew the avoidance rate applied is 98% (SNH, 2018). The risk of collision is even less with a static, clearly detectable building.

Building Appearance

The overall façades of the proposed structures are well broken up, with areas of glazing dispersed across a varied material composition (See Figure 3). The opaque materials proposed, such as coloured brick and metal cladding, provide important visible cues as to the presence and extent of the proposed structures to any commuting/foraging bird species should they be in the vicinity of the Site. The overall visual heterogeneity of the building façades will be sufficient to further ensure that the risk of bird collisions as a result of the Proposed Development is extremely low. These architectural design features are part of the overall design of the Proposed Development and are not included as specific mitigation measures to prevent collisions, however, they will contribute to the overall effect in this regard.

The Site is not within any known flight lines of sensitive wintering waterbird species and no significant movement of birds over the Site has been observed during the suite of bird surveys carried out at the Site to date.

As such, based on the insignificant heights of the proposed structures, their physical appearance, and the lack of significant flyover activity recorded during the bird surveys of the Site to date, it is deemed that SCI bird species do not have the potential to be significantly affected by the Proposed Development through in-flight collisions or flight-path obstructions. While the presence of the Proposed Development might alter flight patterns of bird species slightly to avoid the proposed building structures, the risk of collision is deemed to be extremely low. This impact would not result in any population level effect, or change in distribution, of any species, including any SCI species for SPAs within the ZOI of the Proposed Development. It is therefore concluded that there is no significant air/ land pathway linking the Proposed Development to any European sites, via bird – building collisions and flight path obstruction, and this pathway **will not be considered further in this Report.**

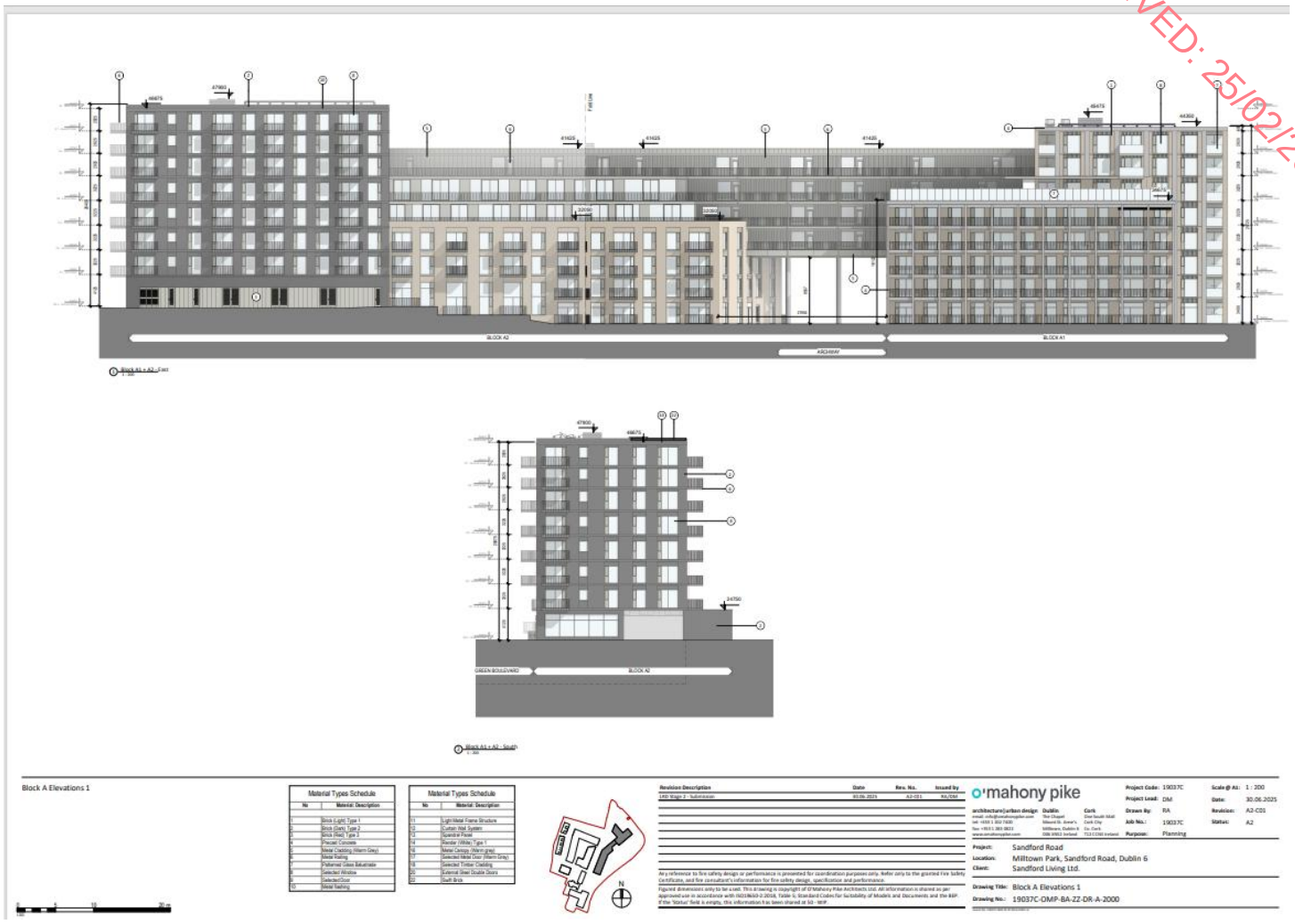

FIGURE 3. EXAMPLE OF THE PROPOSED NORTHERN BUILDING ELEVATIONS OF BLOCK A, SHOWING THE MIXED FAÇADE COMPOSITION AND INTERSPERSED AREAS OF GLAZING (OMP DRWG: 19037B-OMP-BA-ZZ-DR-A-2000).

Relevant European sites

A European site will only be at risk from likely significant effects where a S-P-R link of note exists between the Proposed Development Site and the European site. All of the European sites considered under the S-P-R method are listed in (Table 1).

TABLE 1. EUROPEAN SITES CONSIDERED WITH THE SOURCE-PATHWAY-RECEPTOR (S-P-R) METHOD TO ESTABLISH NOTABLE PATHWAYS BETWEEN THE PROPOSED DEVELOPMENT AND ANY RELEVANT EUROPEAN SITES. THOSE SITES WITH NOTABLE S-P-R LINKS ARE HIGHLIGHTED IN GREEN (IF ANY). QIS ARE TAKEN FROM THE RELEVANT CONSERVATION OBJECTIVES DOCUMENTS (AS REFERENCED) AND/OR THE STANDARD DATA FORMS (EEA, 2025)[1]

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Distance to Site	Source Pathway-Receptor
Special Areas of Conservation (SAC)			
South Dublin Bay SAC (000210)	**Conservation Objectives Version 1.0 (NPWS, 2013a)** - Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - *Salicornia* and other annuals colonising mud and sand [1310] - Embryonic shifting dunes [2110]	2.2 km east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.
North Dublin Bay SAC (000206)	**Conservation Objectives Version 1.0 (NPWS, 2013b)** - Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - *Salicornia* and other annuals colonising mud and sand [1310] - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] - Humid dune slacks [2190] - *Petalophyllum ralfsii* (Petalwort) [1395] **Standard Data Capture Form (EEA, 2025)** - Spartina Swards (*Spartinion maritimae)[1320]* - Embryonic shifting dunes [2110]	6 km north-east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.
Rockabill to Dalkey Island SAC (003000)	**Conservation Objectives Version 1.0 (NPWS, 2013)** - Reefs [1170] - Common Harbour Porpoise (Phocoena phocoena)*[1351]* **Standard Data Capture Form (EEA, 2025)** - Grey Seal (*Halichoerus grypus)[*1364] - Common Seal (*Phoca vitulina*)[1365] - Bottlenose Dolphin (*Tursiops truncatus*)[1349]	9.9 km east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.

[1] Where applicable, the full species list included in this table is as per the latest updated information as indicated, so either the Site Specific Conservation Objectives (SSCO) document for the site, or the latest Standard Data Forms (SDF) (EEA, 2025).

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Distance to Site	Source Pathway-Receptor
Rye Water Valley/Carton SAC (001398)	**As per NPWS (2021):** Petrifying springs with tufa formation (*Cratoneurion*) [7220] *Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]	16.9km west of the Site.	Same groundwater body but screened out due to distance and interception by hydrological pathways.
Special Protected Area (SPA)			
South Dublin Bay and River Tolka Estuary SPA (004024)	**Conservation Objectives Version 1.0 (NPWS, 2015b)** - 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] - Wetland and Waterbirds [A999]	2.2 km east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.
North Bull Island SPA (004006)	**Conservation Objectives Version 1.0 (NPWS, 2015a)** - Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Shelduck (*Tadorna tadorna*) [A048] - Teal (*Anas crecca*) [A052] - Pintail (*Anas acuta*) [A054] - Shoveler (*Anas clypeata*) [A056] - Oystercatcher (*Haematopus ostralegus*) [A130] - Golden Plover (*Pluvialis apricaria*) [A140] - Grey Plover (*Pluvialis squatarola*) [A141] - Knot (*Calidris canutus*) [A143] - Sanderling (*Calidris alba*) [A144] - Dunlin (*Calidris alpina*) [A149] - Black-tailed Godwit (*Limosa limosa*) [A156] - Bar-tailed Godwit (*Limosa lapponica*) [A157] - Curlew (*Numenius arquata*) [A160] - Redshank (*Tringa totanus*) [A162] - Turnstone (*Arenaria interpres*) [A169] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Wetland and Waterbirds [A999]	6 km north-east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.
North-West Irish Sea SPA (004236)	**As per NPWS (2023):** Red-throated Diver (*Gavia stellata*) [A001] Great Northern Diver (*Gavia immer*) [A003] Fulmar (*Fulmarus glacialis*) [A009] Manx Shearwater (*Puffinus puffinus*) [A013]	6 km north-east	Direct hydrological pathway and indirect hydrological pathway via Ringsend WwTP.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Distance to Site	Source Receptor Pathway-
	Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Common Scoter (*Melanitta nigra*) [A065] Little Gull (*Larus minutus*) [A177] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Great Black-backed Gull (*Larus marinus*) [A187] Kittiwake (*Rissa tridactyla*) [A188] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Little Tern (*Sterna albifrons*) [A195] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200] Puffin (*Fratercula arctica*) [A204]		

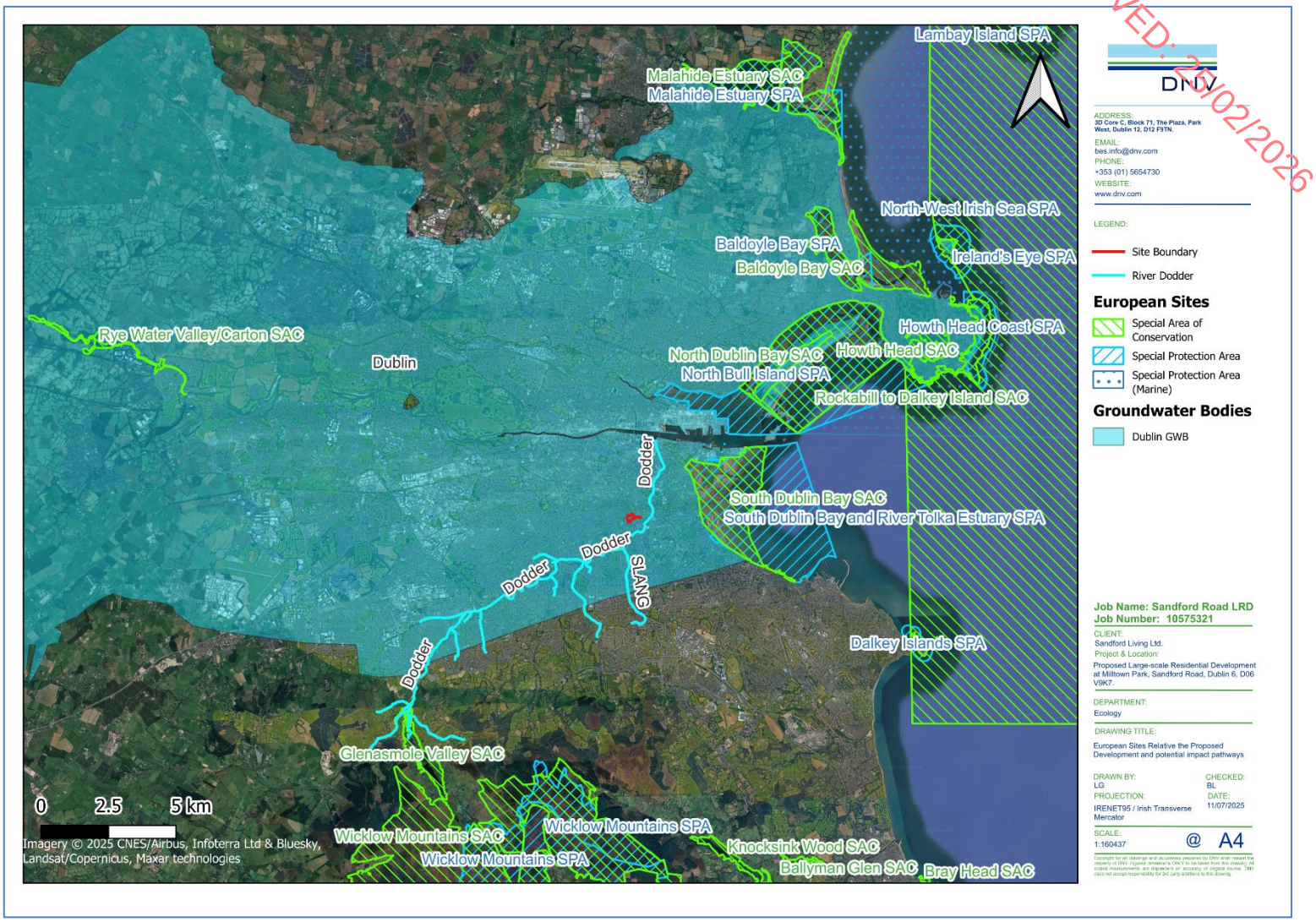

FIGURE 4. EUROPEAN SITES RELATIVE TO THE PROPOSED DEVELOPMENT AND POTENTIAL IMPACT PATHWAYS (QGIS, 2025).

r) Assessment of Likely Significant Effects

The following sections discuss the potential for likely significant effects on the relevant European site(s), taking into consideration the QIs, SCIs and SSCOs, and assesses whether the Proposed Development has the capacity to adversely affect the integrity of these European sites. Furthermore, due consideration shall be given to species not formally identified but which may be present within the relevant European sites and adversely effected by the Proposed Development, provided that those potential impacts are likely to affect the conservation objectives of the designated site. The potential for likely significant effects that may arise from the Proposed Development was considered through the use of key indicators as detailed in Section .

Habitat Loss and Alteration

The Proposed Development is not located within any European site and therefore there will be no direct loss or alteration of QI habitats as a result of the Proposed Development.

The initial assessment of the quality and composition of the habitats present at the Site (hardstanding, rank grassland and woodland habitats), along with the results of the bird surveys conducted over 2021/2022 winter by JBA Consulting and 2022/23 winter by DNV, confirms that it is unsuitable as an *ex-situ* feeding/roosting resource for the SCI species listed for the relevant SPAs (See 0 for details of these survey results).

Herring Gull were recorded nesting on the roof of a building at the Site during the breeding bird surveys conducted by JBA in May 2021 and by DNV in June 2025. Breeding herring gulls are a SCI for Ireland's Eye SPA, however, this breeding pair is unlikely to form part of the SPA assemblage considering the distance between the Site and the SPA (>14km), and the fact that this species widely use urban rooftops as a breeding resource.

As such the potential for likely significant effects in this regard is screened out at this stage.

Habitat / Species Fragmentation

Habitat fragmentation has been defined as the 'reduction and isolation of patches of natural environment' (Hall *et al*., 1997 cited in Franklin *et al*., 2002) usually due to an external disturbance such that an alteration of the spatial composition of a habitat occurs that alters the habitat and 'create[s] isolated or tenuously connected patches of the original habitat' (Wiens, 1989 cited in Franklin *et al*., 2002). This results in spatial separation of habitat units which had previously been in a state of greater continuity.

As there will be no habitat loss within any European sites, it is not considered that direct habitat fragmentation will arise as a result of the Proposed Development. In addition, for the reasons outlined in section 0, there will be no fragmentation of QI habitat or potential *ex-situ* habitat in the vicinity of the Site. **As such the potential for likely significant effects in this regard is screened out at this stage.**

Disturbance and / or Displacement of Species

The Proposed Development is not considered to have the capacity to cause any likely significant effects in terms of disturbance or displacement of any species within any European site. However, it is noted that the Proposed Development, whose surface waters will discharge to the River Dodder, is known to support populations of the Eurasian otter (*Lutra lutra*), a species listed under Annex IV of the EU Habitats Directive. However, the River Dodder is not designated as a European site i.e., it is not part of the Natura 2000 network and is not classified as a Special Area of Conservation (SAC) or Special Protection Area (SPA).

The Development is set back from the river (>250m) with an intervening urban/vegetative buffer, and does not involve any direct works within or adjacent to the riparian corridor. As such, there will be no direct disturbance to otter habitat.

During both the construction and operational phases, standard best practice measures will be implemented to manage surface water and prevent pollution. These measures will ensure that no silt, hydrocarbons, or other contaminants enter the watercourse, thereby avoiding any potential impact on water quality or otter foraging and commuting routes.

Furthermore, significant water quality impacts arising from the Proposed Development are ruled out in Section 0 below. Accounting for this, and, given the absence of direct interaction with the river, the non-designated status of the River Dodder, and the application of best practice construction and operational controls, it is concluded that the Proposed Development will not result in any adverse effects on otters or their habitat.

Therefore, the Proposed Development does not have the capacity to cause any likely significant effects in terms of disturbance or displacement of any species within any European site (see Section 0).

Changes in Population Density

The Proposed Development does not have the capacity to cause any significant changes in the population density of any species within any European site.

Changes in Water Quality and Resource

As detailed in the following Sections, hydrological connections exist linking the Proposed Development to the relevant European sites in Dublin Bay; via the receiving surface water network discharging to the River Dodder and operational foul waters which will be directed to Ringsend WwTP for treatment prior to discharge into the bay.

5.1.1.5. Construction Phase: Surface Water

Stormwater generated at the Site during the Construction phase will discharge to the existing surface water system which in turn discharges to the River Dodder, and eventually Dublin Bay via the Liffey.

As a result, there is potential for surface waters arising from the Development to cause impacts on receiving waters within protected areas, during both the Construction and Operational phase of the Proposed Development. However, It is considered that, in the unlikely event silt-laden stormwater from construction activities or hydrocarbon-contaminated water from a localised vehicle leak enters the public stormwater sewer untreated, the environmental impact would be minimal. Suspended solids are expected to naturally settle within the drainage system, while hydrocarbons would dilute to background levels before reaching any open water, due to the distance to receiving water bodies. This outcome would remain within the water quality objectives set out in S.I. No. 272 of 2009, S.I. No. 386 of 2015, and S.I. No. 77 of 2019.

Similarly, during the operational phase, any minor hydrocarbon leak from a vehicle would involve a low volume of contaminants. Combined with the attenuation capacity of the public stormwater system, this would result in hydrocarbons diluting to background levels, with no likely exceedance of the relevant water quality standards.

Furthermore, the cumulative impact of surface water runoff from the proposed development, in combination with other potential developments, is not expected to be significant. Even under a worst-case scenario involving a 70-litre petrol leak during operation, the design's attenuation measures ensure compliance with the applicable water quality objectives.

Foul drainage during construction from staff welfare facilities will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

Therefore, given the physical intervening distance and the nature of the hydrological pathway as discussed above (i.e., the local receiving sewer infrastructure and River Dodder), it can be concluded that there will be no likely significant effects on the water quality of any of the European sites within Dublin Bay during the Construction phase of the Proposed Development. **As such the potential for likely significant effects in this regard is screened out at this stage.**

5.1.1.6. Operational Phase Surface Water

The potential for Operational Phase surface water discharges to lead to likely significant effects at downstream European sites (i.e., South Dublin Bay SAC, North Dublin Bay SAC, Rockabill to Dalkey Island SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-West Irish Sea SPA) is deemed to be negligible based on the physical intervening distance between the Site and Dublin Bay and the suite of SuDS measures that have been included in the project design as per best practice and local policy requirements (see Section 0). As noted in Section 0, the Court of Justice of the European Union has confirmed that standardised embedded mitigation measures (in this case SuDS in large-scale residential developments), that are incorporated into the design of a project and which may result in a reduction of effects on European sites, but where the primary reason of said embedded mitigation is not to protect a European site, may be taken into account when screening for AA.

Irrespective of SuDS, likely significant effects at downstream European sites due to Operational Phase surface water run-off are deemed to be unlikely considering the relatively low volume of any surface water run-off or discharge events that would occur from the Proposed Development Site during its operational lifetime, relative to the receiving surface water and marine environment in Dublin Bay, and given the level of mixing, dilution and dispersion of any surface water run-off/discharges from the Site that would occur within the receiving waters of Dublin Bay and the Irish Sea.

Furthermore, the HRA (AWN, 2025) states that in a worst-case scenario where SuDS are not considered in the design, there will be no perceptible risk to any European sites given the distance from the Site to Dublin Bay protected areas (a minimum of 2.2 km) and that the potential contaminant loading will be attenuated, diluted and dispersed near source area. **As such the potential for likely significant effects in this regard is screened out at this stage.**

5.1.1.7. Foul waters from Ringsend WWTP

The Proposed Development will be served by separate foul water and surface water sewers during its Operational Phase. It is noted that there is a weak hydrological connection between the Site and European sites in Dublin Bay via this sewerage network, which will eventually be processed and treated at Ringsend WwTP prior to discharge to Dublin Bay.

The potential for foul water generated at the Site of the Proposed Development to reach Dublin Bay and result in significant effects to European Sites is deemed negligible due to the following:

- The ongoing upgrade works to Ringsend WwTP which will increase the capacity of the facility from 1.6 million PE to 2.4 million Population Equivalent PE (see section 0 for further details).
- The increase of the population equivalent (PE) load at the facility as a result of the Proposed Development, assuming each PE unit was not previously supported by the WwTP, is considered to be an insignificant increase in terms of the overall scale of the facility. The increased load does not have the capacity to alter the effluent released from the WwTP to such an extent as to result in likely significant effects on European sites in Dublin Bay. The potential for in-combination effects relating to foul water treatment at Ringsend WwTP is discussed in Section 0.
- It is considered that significant effects on marine biodiversity and the European Sites within Dublin Bay from the current operation of Ringsend WwTP are unlikely (see section 0 for further details).

It is therefore deemed that there is no potential for likely significant effects in the relevant Dublin Bay European sites to occur, as a result of foul waters generated at the Site during its operational lifetime. **As such the potential for likely significant effects in this regard is screened out at this stage.**

s) Potential for In-combination Effects

Existing Planning Permissions

A search of planning applications located within 500m of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Dublin City Council's Planning Application Map. This distance was deemed appropriate based on the location of the Site of the Proposed Development and the types of other developments present in the area. Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable. The search determined there were numerous small scale planning applications in the area for modifications to existing premises including extensions and development of new windows. The larger, more recent applications are detailed in Table 2.

It is noted that the below listed planning applications were all accompanied by the relevant environmental assessments or conditions that detail the potential impacts and the mitigation measures required to ensure the developments do not have a significant effect on European sites, alone or in-combination with other developments. In addition, DCC granted permission for the above planning applications following evaluations of the potential ecological and environmental impacts of each application.

On examination of the below, it is considered that there is no potential for the Proposed Development to act in-combination with other developments in the vicinity that could cause likely significant effects on the above European sites.

TABLE 2. ASSESSMENT OF POTENTIAL IN-COMBINATION EFFECTS OF THE PROPOSED DEVELOPMENT AND OTHER DEVELOPMENTS PENDING OR GRANTED PERMISSION IN THE LAST 5 YEARS (2017-2022) WITHIN 500M OF THE SITE.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
Reference: 3886/21 **Granted:** 04/03/2022	Permission for development of an Integrated Care Facility on the existing Healthcare Campus at Clonskeagh Hospital, Clonskeagh Road, Dublin 6. The development will consist of: 1. The construction of a 402 sq metre single storey modular type building, ramps, hard standings and associated works. 2. The reconfiguration of existing parking and provision of 4 additional parking spaces to serve the facility. 3. All associated drainage, site development and landscaping works.	Ca.150m south	The Planner's Report for this development, dated 25/01/2022, concluded that AA was not required due to the nature and scale of the development and the distance from any European site. No potential for in-combination effects.
Reference: 3116/22 **Granted:** 18th May 2022	Planning permission for the development will consist of the construction of a two-storey archive storage and office building with c.765 sq. m of combined floorspace provided including the following: (i) a reception area, an oratory, an archive storage room, research reading room, offices, storage rooms, staff canteen, toilets, shower, passenger lift, audio room and ancillary space; (ii) rooflights, photovoltaic panels and lift over-run at roof level; (iii) 9 No. parallel car parking bays along the existing roadway with the existing fence relocated to the site boundary and 15 No. new cycle parking spaces; (iv) residual car parking, hard and soft landscaping, heat pump and all associated site development works.	Ca. 23m south, directly on the opposite side of road leading to Cherryfield Avenue Upper.	The Planner's Report for this development, dated 20/05/2022, concluded that AA was not required due to the nature and scale of the development and the distance from any European site. No potential for in-combination effects.
Reference: 4115/21 **Decision:** Refused/ under appeal ABP-313048-22	The proposed development will consist of the following: Demolition of the existing buildings on site, with a total combined gross floor area (GFA) of 1,739 sq.m; Construction of a Build-to-Rent (BTR) residential development, comprising 97 No. BTR apartments with a mix of 48 No. 1 bed units and 49 No. 2 bed units in 3 No. blocks of part 3, part 4, part 5 and part 6 storeys in height, over basement level, including resident support and amenity facilities. The total GFA, including the basement level, of the proposed development is 9,216 sq. m; Block A, fronting Milltown Road, comprises 23 no. BTR units including 9 No. 1 bed units and 14 No. 2 bed units in a part 3, part 4 and part 5 storey building, over a basement level. Block A and Block B will be connected by a bridge link from first to fourth-floor levels. Resident support and amenity facilities are proposed at ground floor and basement level of Block A. Balconies are proposed on the north, east and south	Ca. 145m south	An AA Screening Report was prepared as part the application by DNV (then known as Enviroguide Consulting) and concluded no likely significant effects to European Sites were likely to occur. No potential for in-combination effects.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
	elevations; Block B adjoins Block A to the east and Block C to the west, comprises 34 No. BTR units including 14 No. 1 bed units and 20 No. 2 bed units, in a part 4, part 5 and part 6 storey building, over a basement level. Balconies are proposed on the north and south elevations, and terraces are proposed on the south elevation; Block C adjoins Block B to the east, comprising 40 No. BTR units including 25 No. 1 bed units and 15 No. 2 bed units, in a part 4, part 5 and part 6 storey building, over a basement level. Balconies are proposed on the north and south elevations, and terraces are proposed on the south and west elevations; The development includes ancillary resident support and amenity facilities for the BTR residential units with a total floor area of 302 sq. m, including a co-working area, meeting room, coffee dock, lounge and concierge at ground floor level and a gym, shared kitchen, media room and parcel store at basement level; The proposal includes communal open space and public open space, including improvements to the public realm and a shared space with an entrance plaza / set down area on the existing access road from Milltown Road; The basement level contains 47 No. car parking spaces, 2 No. motorcycle spaces and 150 No. cycle spaces. The basement level also includes bin storage, cores and plant rooms; The proposal includes 54 No. cycle parking spaces (including 4 No. cargo spaces) at surface level, a turning point, a new vehicular access to the basement level from Milltown Road, and associated improvements to Milltown Road (which includes alterations to the existing footpaths / public road, with relocation of the existing pedestrian crossing and bus stop, which are external to the planning application site boundary and subject to agreement with the Planning Authority); The proposal includes an ESB substation and associated set down area, landscaping, boundary treatment, lighting, PV panels, site services and all associated site works.		
Reference: 3930/21 **Granted:** 14th May 2022	Planning permission for the following development:-Demolition of 283 sq. m of existing commercial buildings,-Erection of six, two-storey (plus attic) townhouses,-8 car parking spaces, and all associated site works (including drainage).	Ca. 42m west/northwest	The Planner's Report for this development, dated 09/05/2022, concluded that AA was not required due to the nature and scale of the development and the distance from any European site. No potential for in-combination effects.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
Reference: 4578/22 **Granted:** 27th January 2023 Third Party Appeal to An Bord Pleanála Submitted on 22nd March 2023 (ABP-315883-23). Decision Due on 27th June 2023.	Planning permission for a Build to Rent residential development on lands at 'Dunelm', Rydalmount, Milltown Road, Dublin 6. The site is located to the east of the Green Luas line, to the south of residential dwellings at No's 1 and 2 Rydalmount and east of the residential dwelling known as 'Kadiv' at Rydalmount, Milltown Road. The proposed Build to Rent residential development will consist of the following: • Demolition of the existing building (comprising the residential dwelling known as 'Dunelm') and structures on site; • Construction of a Build-to-Rent (BTR) residential development, comprising 63 No. BTR apartments with a mix of 5 No. studio units, 27 No. 1 bed units, 30 No. 2 bed units and 1 No. 3 bed unit in two No. blocks (Block A and Block B), including resident support and amenity facilities; • Block A, to the south of the site, comprises 55 No. BTR units, including 1 No. studio, 27 No. 1 bed units, 26 No. 2 bed units and 1 No. 3 bed units, in a part 4 to part 6 storey, over lower ground floor and basement level building (maximum of eight levels to Milltown Road). Resident support and amenity facilities are proposed at basement, ground and fifth-floor level. Balconies are proposed on the northwest, southwest, southeast and northwest elevations; • Block B, to the northwest of the site, comprises 8 No. BTR units, including 4 No. studio units and 4 No. 2 bed units, in a 4-storey building. Balconies are proposed on the south, east and north elevations. Block A and Block B will be connected by a bridge link at first to third-floor level; • The development includes ancillary resident support and amenity facilities for the BTR residential units, with a total floor area of 252.5 sq. m, including a large item storage area and a bike and bin store at basement level, concierge/management area and foyer area at ground floor level and lounge/ residential function room at a fifth-floor level all within Block A and a pavilion communal amenity building to the north of Block A; • The proposal includes communal open space at ground level and a communal roof terrace at fifth-floor level of Block A; • The basement level (Block A) contains 10 No. car parking spaces, 1 No. motorcycle space, 6 No. e-scooter spaces and 98 No. cycle spaces (including 2 No. cargo spaces). The basement level also includes bin storage, a storage room for apartments and cores. A generator room, sprinkler tank room and water storage tank room are proposed at lower ground floor level; • The proposal includes 32 No. cycle parking spaces and 2 No. car parking spaces at surface level, accessed from the existing access road and new vehicular access to the basement level from Milltown Road;	Ca. 907m southwest	An AA Screening Report was prepared as part the application by DNV (then known as Enviroguide Consulting) and concluded no likely significant effects to European Sites were likely to occur. No potential for in-combination effects.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
	• The proposal includes associated public realm works to Milltown Road, including alterations to the existing footpaths/ public road, a new signalised junction incorporating advanced cycle stacking lanes in the westbound direction, set back of the existing road median, provision of a new signalised pedestrian crossing of Milltown Road, provision of an uncontrolled pedestrian crossing of the development access junction and associated signals, tactile paving and road markings; • The proposal includes an ESB substation and associated set down area, landscaping, boundary treatment, PV panels, green roofs and a plant enclosure at roof level, site services and all associated site works necessary to facilitate the development.		
Reference: WEB2190/24 **Granted:** 01st August 2024 Third Party Appeal to An Bord Pleanála Submitted on 30th August 2024(ABP-320695-24). Decision Due on 01st January 2025 (still pending as of June 2025).	Permission is being sought for: -Demolition of 169 sq.m of existing commercial buildings. -Erection of 6 two-storey (plus attic) townhouses (as previously approved). -6 car parking spaces and associated site works (including drainage).		The Planner's Report for this development, dated 06/08/2024, stated: that no screening exercise for Appropriate Assessment has been carried out by the Applicant, in accordance with the requirements of Article 6 (3) of the EU Habitats Directive (92/43/EEC). Having regard to the nature and scale of the proposed works, the Planning Authority can conclude that no appropriate assessment issues arise. The proposed development would not be likely to have a significant effect individually or in combination with other plans or projects on any European site within the 15km zone of influence. Concluding: It is the opinion that the application for planning permission for the proposed

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
			development does not require an Appropriate Assessment. As a result, no potential for in-combination effects are foreseen.
Reference: WEB2190/24 **Granted:** 21st January 2025	Damon McCaul (Headmaster) intends to apply for permission for development at Gonzaga College, Sandford Road, Dublin 6, D06 KF95. The development will consist of the internal reconfiguration and full renovation of an existing 2 storey science block (c. 830 sq m) and the construction of a new 3 storey extension with a rooftop observatory (c. 1,431 sq m) all accommodating a new Science, Technology, Engineering, Arts, and Mathematics (STEAM) facility, located to the north-east of the college. The extension will connect to the existing 2 storey science building to the south via a double-height atrium and to the existing Sandford Grove House (educational use) to the west via a new glazed walkway at second floor level. The development will also include: the removal of an external fire escape and associated minor works to the eastern facade of Sandford Grove House; works to the hard standing areas to the north and north-west of the college to provide a reconfigured and landscaped car parking area for 13 no. staff parking spaces (incl. 1 no. accessible space and 3 no. electric charging point), bus set-down spaces and bicycle parking; and the provision of a new ESB substation and switch-room (c. 25 sq m) located to the west of the college. The development will also comprise hard and soft landscaping; piped infrastructure and ducting; drainage infrastructure; green roofs; changes in levels and all associated site development and excavation works above and below ground.	Ca.240m south-east	The Planner's Report for this development, dated 21/11/2024, concluded that AA was not required due to the nature and scale of the development and the distance from any European site. No potential for in-combination effects.

Relevant Policies and Plans

The local policies and plans detailed in Section g) were reviewed and considered for possible in-combination effects with the Proposed Development. It is not expected that these plans and policies would result in any likely significant in-combination effects with the Proposed Development. Each of these plans has also undergone AA, and where potential for likely significant effects has been identified (e.g., in the case of the Dublin City Development Plan (DCDP) 2022-2028), an NIS has been prepared which identifies appropriate mitigation. The Dublin City Development Plan (DCDP) 2022-2028 has directly addressed the protection of European sites and biodiversity through specific objectives. The above listed plans are not being relied upon to rule out potential significant effects on European sites.

On examination of the above it is considered that there are **no means** for the Proposed Development to act in-combination with any policies or plans that would cause any likely significant effects on any European sites.

Operation of Ringsend WWTP

This section addresses in more detail the general issue of potential in-combination effects with Ringsend WwTP arising from the Operational Phase of the Proposed Development and other Developments, including future developments.

In summary, the impact of the Proposed Development and any future development has already been appropriately considered and assessed as part of the application process for the existing planning permissions pertaining to Ringsend WwTP.

The 2012 Ringsend WwTP application for planning permission (Ref. PL.29N.YA0010) was for a PE of 2.4 million and was predicated on the findings of the 2005 GDSDS. The GDSDS set out the drainage requirements for the Greater Dublin Area (GDA) up to 2031. The GDSDS relied on the Regional Planning Guidelines (RPGs) and the National Spatial Strategy (NSS) in order to estimate the future projected population increases for the GDA. The studies indicated a predicted growth in population from 1.2 million in 2002 to just over 2 million in 2031 for the GDA region.

In June 2018 Uisce Éireann (then Irish Water) applied for and subsequently received planning permission in 2019 for upgrade works to the Ringsend WwTP facility. The first phase of upgrade works to Ringsend WWTP was completed in December 2021, which increased the capacity of the plant by 400,000 P.E. Uisce Éireann completed construction of the infrastructure to treat the wastewater for a population equivalent of 2.1 million at the end of 2023. Following a period of testing and commissioning the upgraded assets are operational. These works, together with the continued future works permitted will ultimately increase the capacity of the facility from 1.6 million P.E. to 2.4 million PE by the end of 2025 (Irish Water website: *https://www.water.ie/projects/local-projects/ringsend/*). This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including biochemical oxygen demand (BOD), suspended soils, ammonia, dissolved inorganic nitrogen (DIN) and molybdate reactive phosphate (MRP).

Therefore, both the initially permitted 2012 upgrade and the permitted 2019 revised upgrade (Ref. ABP-301798-18) for Ringsend WwTP take account of population growth up to 2.4 million PE. Both applications were subject to EIA, and therefore an EIAR, and accompanied by an AA screening report and NIS. The EIAR contains sections relating to Marine Biodiversity and Terrestrial Biodiversity, and each contains a section on the 'do-nothing scenario'. These review the effects of the WwTP on biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this Report.

The EIAR acknowledges that under the do-nothing scenario "*the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WWTP*", which could result in a decline in biodiversity and the deterioration of the biological status of Dublin Bay (Irish Water, 2018). Nevertheless, these negative impacts of nutrient over-enrichment are considered "*unlikely*" (Irish Water, 2018). This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "*although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area*." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "*unlikely*" to occur (Irish Water, 2018). What is important in the context of this AA Screening Report is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WwTP will "*continue at the same levels*

and the impact of these loadings should maintain the same level of effects on marine biodiversity" and that "*if the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay*."

Therefore, it can be concluded that likely significant effects on marine biodiversity and the European sites within Dublin Bay from the *current* operation of Ringsend WwTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant in-combination effects on European sites in this regard **are not deemed likely to arise,** and therefore likely significant effects involving foul waters produced by the Proposed Development also do not have the potential to occur.

TABLE 3. SUMMARY OF SCREENING FOR LIKELY SIGNIFICANT EFFECTS ON EUROPEAN SITES THAT MAINTAIN A S-P-R PATHWAY TO THE PROPOSED DEVELOPMENT .

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or Resource	In-combination effects	Stage 2 AA Required
SAC's							
South Dublin Bay SAC (000210)	No	No	No	No	No	No	No
North Dublin Bay SAC (000206)	No	No	No	No	No	No	No
Rockabill to Dalkey Island SAC (003000)	No	No	No	No	No	No	No
SPA's							
North Bull Island SPA (004006)	No	No	No	No	No	No	No
South Dublin Bay and River Tolka Estuary SPA (004024)	No	No	No	No	No	No	No
North-west Irish Sea Marine SPA (004232)	No	No	No	No	No	No	No

6. APPROPRIATE ASSESSMENT SCREENING CONCLUSION

The Proposed Development at Lands at Milltown Park, Sandford Road, Dublin 6, D06 V9K7 has been assessed taking into account:

- The nature, size and location of the Proposed Development and possible impacts arising from the Construction and/or Operational Phase.
- The qualifying interests and conservation objectives of the European sites.
- The potential for in-combination effects arising from other plans and projects.

In conclusion, upon the examination, analysis and evaluation of the relevant information, and applying the precautionary principle, it is concluded by the authors of this Report that, on the basis of objective information, **the possibility may be excluded** that the Proposed Development will have a likely significant effect on any of the European sites identified in this AA Screening as maintaining a S-P-R pathway with the Proposed Development. These Sites are listed below:

- **South Dublin Bay SAC (000210)**.
- **North Dublin Bay SAC (000206)**.
- **Rockabill to Dalkey Island SAC (003000)**.
- **South Dublin Bay and River Tolka Estuary SPA (004024)**.
- **North Bull Island SPA (004006)**.

In carrying out this AA screening, specific targeted mitigation measures included for the primary reason of protecting a European site have not been taken into account.

On the basis of the screening exercise carried out above, it can be concluded, on the basis of the best scientific knowledge available, that the likelihood of any significant effects on any European sites, whether arising from the project itself or in combination with other plans and projects, can be excluded. Thus, there is no requirement to proceed to Stage 2 of the AA process; and the preparation of a NIS is not required.

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Appendix 8.4

Bat Survey Metadata – Transect Surveys (2024 and 2025)

Appendix 8-4 Bat Survey Metadata – Transect Surveys (2024 and 2025)

FULL BAT SURVEY METADATA FOR ACTIVITY TRANSECTS CARRIED OUT ON SITE IN JUNE, JULY, AND AUGUST 2024 (ANALYSIS CARRIED OUT USING ELEKON BATEXPLORER 2.1.11.2 SOFTWARE)

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370011	24/06/2024 22:25	*Common pipistrelle*	21	44.3	54.1	43.2	5	205	61	53.31934	-6.2436
7370014	24/06/2024 22:26	*Common pipistrelle*	47	46.2	67.3	45.4	6	94	61	53.31916	-6.24376
7370013	24/06/2024 22:26	*Common pipistrelle*	22	47.6	63.9	46.9	6	212	61	53.31921	-6.2437
7370012	24/06/2024 22:26	*Common pipistrelle*	7	46.9	55.7	46.2	5	172	61	53.31927	-6.24368
7370016	24/06/2024 22:27	*Common pipistrelle*	17	47.8	72.9	46.8	6	86	61	53.31916	-6.24386
7370019	24/06/2024 22:27	*Common pipistrelle*	32	43.1	56.3	42.3	6	94	61	53.31917	-6.24384
7370018	24/06/2024 22:27	*Common pipistrelle*	11	48.2	68.1	47.2	5	100	61	53.31917	-6.24388
7370017	24/06/2024 22:27	*Common pipistrelle*	17	47	55.9	45.9	6	95	61	53.31916	-6.24389
7370015	24/06/2024 22:27	*Common pipistrelle*	6	46.8	58.4	45.9	5	148	61	53.31916	-6.24382
7370021	24/06/2024 22:32	*Common pipistrelle*	8	41.5	44.5	40.6	6.3	432	64	53.31911	-6.2437
7370023	24/06/2024 22:35	*Leisler's bat*	5	21.6	22.3	20.4	14.7	851	62	53.31859	-6.24326
7370028	24/06/2024 22:36	*Leisler's bat*	6	25.3	30.6	23.7	9.8	242	62	53.31857	-6.24328
7370027	24/06/2024 22:36	*Soprano pipistrelle*	31	53	57.2	52	5	85	62	53.31857	-6.24327
7370026	24/06/2024 22:36	*Leisler's bat*	5	22.8	23.9	21.6	12.2	444	62	53.31858	-6.24326
7370025	24/06/2024 22:36	*Leisler's bat*	14	22.6	23.8	21.6	15	359	62	53.31859	-6.24325
7370024	24/06/2024 22:36	*Leisler's bat*	8	24	26.3	22.9	10	235	62	53.31859	-6.24326
7370029	24/06/2024 22:37	*Leisler's bat*	3	22.8	24.1	22.1	11.2	365	61	53.31858	-6.24326
7370033	24/06/2024 22:38	*Leisler's bat*	2	21.8	22.9	21	14.9	0	62	53.31859	-6.24325
7370032	24/06/2024 22:38	*Leisler's bat*	44	23.8	28.1	22.5	12	260	62	53.31858	-6.24325
7370031	24/06/2024 22:38	*Leisler's bat*	13	23.5	24.8	22.5	12	275	62	53.31858	-6.24325
7370030	24/06/2024 22:38	*Common pipistrelle*	14	46.2	49.2	45.1	7	255	62	53.31859	-6.24326
7370035	24/06/2024 22:39	*Leisler's bat*	3	22.4	23.8	21.8	11	409	62	53.31858	-6.24328
7370034	24/06/2024 22:39	*Leisler's bat*	1	21.4	22.9	20.6	16	0	62	53.31859	-6.24326

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370039	24/06/2024 22:40	*Leisler's bat*	5	22	22.5	21.3	15.7	428	62	53.31859	-6.24326
7370038	24/06/2024 22:40	*Leisler's bat*	6	23.3	25.3	22.5	12	342	62	53.31859	-6.24325
7370037	24/06/2024 22:40	*Leisler's bat*	5	22	23.3	21.6	11.2	351	62	53.31858	-6.24326
7370036	24/06/2024 22:40	*Leisler's bat*	6	23.7	25.3	22.7	9.5	324	62	53.31859	-6.24326
7370044	24/06/2024 22:41	*Leisler's bat*	4	22.3	24.1	21.5	12.1	547	62	53.31859	-6.24327
7370043	24/06/2024 22:41	*Leisler's bat*	5	21.8	22.4	20.9	18	472	62	53.31859	-6.24325
7370042	24/06/2024 22:41	*Leisler's bat*	4	22	22.5	21.1	15.7	440	62	53.31859	-6.24324
7370041	24/06/2024 22:41	*Leisler's bat*	3	22.4	23.8	21.3	11.6	287	62	53.3186	-6.24323
7370040	24/06/2024 22:41	*Leisler's bat*	1	22.1	23.3	21.4	17.6	0	62	53.3186	-6.24323
7370048	24/06/2024 22:42	*Leisler's bat*	7	25.4	27.3	24.3	8.5	242	63	53.31859	-6.24323
7370047	24/06/2024 22:42	*Leisler's bat*	22	27.1	45.8	25.1	10	130	62	53.31858	-6.24323
7370046	24/06/2024 22:42	*Leisler's bat*	20	27.1	41.4	24.9	10	214	62	53.31858	-6.24326
7370045	24/06/2024 22:42	*Leisler's bat*	4	23.6	25.6	21.9	13.5	370	62	53.31858	-6.24327
7370053	24/06/2024 22:43	*Leisler's bat*	22	27.3	40.6	24.9	6	120	62	53.3185	-6.24332
7370052	24/06/2024 22:43	*Common pipistrelle*	7	49.2	59.6	48.4	4	187	62	53.31854	-6.24327
7370051	24/06/2024 22:43	*Leisler's bat*	3	25.8	29.9	24.5	7.1	210	62	53.31859	-6.24328
7370050	24/06/2024 22:43	*Common pipistrelle*	15	49	59.1	48.2	3	90	62	53.3186	-6.24328
7370049	24/06/2024 22:43	*Common pipistrelle*	7	49.1	54.2	48.1	2.9	147	62	53.31859	-6.24328
7370060	24/06/2024 22:44	*Common pipistrelle*	26	49.1	60	48.1	3	80	63	53.31831	-6.24353
7370059	24/06/2024 22:44	*Common pipistrelle*	42	48.9	63.2	48	3	80	62	53.31832	-6.24352
7370058	24/06/2024 22:44	*Common pipistrelle*	13	49	57.4	48	3	417	62	53.31832	-6.24352
7370057	24/06/2024 22:44	*Common pipistrelle*	52	49.5	63.9	48.4	3	80	62	53.31831	-6.24348
7370056	24/06/2024 22:44	*Common pipistrelle*	20	49	61.4	48.3	3	80	62	53.31835	-6.24344
7370055	24/06/2024 22:44	*Common pipistrelle*	9	49	58.4	48	3	80	62	53.31838	-6.2434
7370054	24/06/2024 22:44	*Common pipistrelle*	10	48.9	59.7	47.7	3	141	62	53.3184	-6.24338
7370064	24/06/2024 22:45	*Common pipistrelle*	25	49.3	69.5	48.1	4	80	63	53.31833	-6.24366

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370063	24/06/2024 22:45	*Common pipistrelle*	11	48.8	81.6	47.9	3	196	63	53.31832	-6.24367
7370062	24/06/2024 22:45	*Common pipistrelle*	7	48.7	67.4	47.7	4	226	63	53.3183	-6.24363
7370061	24/06/2024 22:45	*Common pipistrelle*	25	48.1	68.9	47.2	4	94	63	53.31833	-6.24355
7370068	24/06/2024 22:46	*Common pipistrelle*	3	49.6	60.8	48.3	3	243	63	53.31829	-6.24366
7370067	24/06/2024 22:46	*Common pipistrelle*	10	48.9	87.6	47.7	4	186	63	53.31835	-6.24364
7370066	24/06/2024 22:46	*Common pipistrelle*	25	23.9	25.6	22.8	10	220	63	53.3184	-6.24363
7370065	24/06/2024 22:46	*Common pipistrelle*	11	49.2	113.4	48.2	4	80	63	53.31831	-6.24366
7370070	24/06/2024 22:47	*Leisler's bat*	5	22.7	23.4	21.5	12	427	63	53.31817	-6.24386
7370069	24/06/2024 22:47	*Leisler's bat*	3	89.6	92.8	86.8	7.2	477	63	53.31818	-6.24385
7370072	24/06/2024 22:48	*Leisler's bat*	5	22	23.1	20.6	13.3	353	63	53.31817	-6.24385
7370071	24/06/2024 22:48	*Leisler's bat*	4	23.1	23.9	22.5	8.3	494	63	53.31814	-6.24388
7370074	24/06/2024 22:49	*Leisler's bat*	7	24.9	26.6	23.3	12	248	63	53.31812	-6.24393
7370073	24/06/2024 22:49	*Leisler's bat*	8	23.4	26	22.2	10	386	63	53.31814	-6.24393
7370075	24/06/2024 22:50	*Leisler's bat*	7	23	24.9	22.1	11.5	225	63	53.31811	-6.24389
7370078	24/06/2024 23:06	*Common pipistrelle*	22	46.9	55	45.6	6	170	63	53.31753	-6.24501
7370081	24/06/2024 23:09	*Common pipistrelle*	39	47.1	67.9	46.4	6	100	63	53.31789	-6.24463
7370080	24/06/2024 23:09	*Common pipistrelle*	5	46.6	52.5	45.8	4	141	63	53.31787	-6.24456
7370088	24/06/2024 23:10	*Common pipistrelle*	25	49.7	103.7	47.6	5	90	63	53.31794	-6.24484
7370087	24/06/2024 23:10	*Common pipistrelle*	25	47.2	78.5	46.6	5	94	63	53.31795	-6.24484
7370086	24/06/2024 23:10	*Common pipistrelle*	17	49.3	96.5	45.7	3	80	63	53.31795	-6.24485
7370085	24/06/2024 23:10	*Common pipistrelle*	8	46.8	61.2	46.3	4	883	63	53.31795	-6.24486
7370084	24/06/2024 23:10	*Common pipistrelle*	5	47.7	58.2	46.5	3.8	226	63	53.31794	-6.24482
7370083	24/06/2024 23:10	*Common pipistrelle*	9	46.8	56.3	45.9	5	355	63	53.31791	-6.24474
7370082	24/06/2024 23:10	*Common pipistrelle*	7	47.4	51.1	45.6	4.7	577	63	53.31791	-6.24472
7370092	24/06/2024 23:11	*Common pipistrelle*	11	47.4	58.3	46.4	6	100	63	53.31798	-6.24483
7370091	24/06/2024 23:11	*Common pipistrelle*	12	46.7	75.1	46	5	200	63	53.31795	-6.24483

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370090	24/06/2024 23:11	*Common pipistrelle*	33	46.8	76.4	46.1	5	96	63	53.31795	-6.24483
7370089	24/06/2024 23:11	*Common pipistrelle*	38	46.8	79.2	46.2	6	100	63	53.31795	-6.24484
7370094	24/06/2024 23:12	*Common pipistrelle*	11	47.7	65.9	46.9	4	100	63	53.31806	-6.24484
7370093	24/06/2024 23:12	*Common pipistrelle*	12	47.1	60.9	46.2	5	365	63	53.318	-6.24483
7370096	24/06/2024 23:20	*Common pipistrelle*	22	49.3	81	48.7	6	94	64	53.31837	-6.24473
7370095	24/06/2024 23:20	*Common pipistrelle*	16	49	56.6	48.3	5	90	64	53.31837	-6.24473
7370100	25/06/2024 00:33	*Leisler's bat*	4	22.9	23.4	21.9	12.9	321	68	53.31887	-6.24478
7370102	25/06/2024 00:36	*Soprano pipistrelle*	10	47	48.3	46.1	7	358	68	53.31883	-6.24475
50510072	25/07/2024 21:52	*Leisler's bat*	4	23.3	24.5	22.6	10.3	543	NaN	53.31838	-6.2441
50510073	25/07/2024 21:52	*Leisler's bat*	26	22.9	24.1	21.6	12	235	NaN	53.31838	-6.24411
50510074	25/07/2024 21:52	*Leisler's bat*	7	21.4	21.9	20.5	14	363	NaN	53.31838	-6.24412
50510118	25/07/2024 22:12	*Leisler's bat*	4	22.1	22.4	21.4	16.7	429	NaN	53.31857	-6.24329
50510137	25/07/2024 22:24	*Leisler's bat*	4	22.5	23.5	21.8	10	401	NaN	53.31811	-6.24386
50510138	25/07/2024 22:24	*Leisler's bat*	1	25	30.8	23.5	7.9	0	NaN	53.31812	-6.24385
50510139	25/07/2024 22:25	*Leisler's bat*	5	23.1	24.8	22.3	9.8	387	NaN	53.31814	-6.24387
50510140	25/07/2024 22:25	*Leisler's bat*	6	26.9	35.3	25	6.7	370	NaN	53.31813	-6.24388
50510184	25/07/2024 22:51	*Leisler's bat*	5	28	35.2	20.8	6.4	805	NaN	53.3185	-6.24468
50510209	25/07/2024 23:18	*Leisler's bat*	1	22	22.3	21	17.7	0	NaN	53.31808	-6.24604
50510210	25/07/2024 23:19	*Soprano pipistrelle*	9	57.1	68.4	56.4	4	316	NaN	53.31804	-6.24596
7370000	30/08/2024 20:18	*Leisler's bat*	1	21	21.4	20.3	6.4	0	63		
7370001	30/08/2024 20:19	*Leisler's bat*	0	0	0	0	0	0	62		
7370002	30/08/2024 20:19	*Leisler's bat*	2	21	21	20.3	6.9	0	61		
7370003	30/08/2024 20:20	*Leisler's bat*	2	21.9	23.1	21.4	10.4	676	61		
7370004	30/08/2024 20:20	*Leisler's bat*	6	23.3	25.2	21.8	13.2	504	60	53.31813	-6.24367
7370005	30/08/2024 20:20	*Leisler's bat*	6	23.2	23.9	22.3	12.4	399	60	53.31825	-6.24388
7370006	30/08/2024 20:20	*Leisler's bat*	1	22.1	23.6	21.8	18.1	0	60	53.31826	-6.24387

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370007	30/08/2024 20:21	*Leisler's bat*	3	23.5	25.6	22	13.9	319	59	53.31889	-6.24328
7370008	30/08/2024 20:21	*Leisler's bat*	3	21	21.8	20.1	16.8	379	59	53.31874	-6.24338
7370009	30/08/2024 20:22	*Leisler's bat*	4	23	23.9	20.1	14.2	925	59	53.31879	-6.24361
7370010	30/08/2024 20:22	*Leisler's bat*	7	23	24.7	22.3	14	336	59	53.31877	-6.24391
7370011	30/08/2024 20:22	*Leisler's bat*	8	22.9	24	22	14	250	59	53.31877	-6.24394
7370012	30/08/2024 20:22	*Leisler's bat*	4	22.1	23.2	20.5	14	444	59	53.31878	-6.24395
7370013	30/08/2024 20:22	*Leisler's bat*	1	22.5	23.6	21.8	14.4	0	58	53.31883	-6.24424
7370014	30/08/2024 20:22	*Leisler's bat*	3	21.8	22.5	19.9	16	602	58	53.31884	-6.24428
7370018	30/08/2024 20:27	*Leisler's bat*	3	21.6	21.9	20.6	17.6	703	59	53.31887	-6.24451
7370021	30/08/2024 20:35	*Leisler's bat*	6	21	21.8	20.3	17.4	349	60	53.31838	-6.24544
7370022	30/08/2024 20:37	*Leisler's bat*	1	20.6	21.4	20.3	17.6	0	61	53.31839	-6.24542
7370023	30/08/2024 21:08	*Common pipistrelle*	2	48.4	52.9	47.3	2.1	0	69	53.31849	-6.24596
7370025	30/08/2024 21:14	*Common pipistrelle*	12	43.8	52.4	42.8	5	110	68	53.31888	-6.24564
7370026	30/08/2024 21:18	*Soprano pipistrelle*	18	56.5	58.1	55.2	6	180	68	53.31888	-6.24566
7370029	30/08/2024 21:23	*Soprano pipistrelle*	17	57.7	61.2	57.1	4	90	68	53.31891	-6.24506
7370050	30/08/2024 21:44	*Leisler's bat*	1	23.6	27.8	18	3.7	0	68	53.31803	-6.24464
7370051	30/08/2024 21:46	*Common pipistrelle*	18	50.5	63.2	47.9	4	430	69	53.31749	-6.24489
7370052	30/08/2024 21:46	*Common pipistrelle*	12	46.7	49.4	45.6	5	298	69	53.31749	-6.24489
7370053	30/08/2024 21:47	*Common pipistrelle*	6	47.9	53	47.3	5.1	174	70	53.31748	-6.24493
7370054	30/08/2024 21:47	*Common pipistrelle*	13	47.9	52.8	46.7	7	339	70	53.31749	-6.24493
7370055	30/08/2024 21:51	*Common pipistrelle*	9	49.1	53.4	47.8	6	325	70	53.31756	-6.24498
7370056	30/08/2024 21:51	*Common pipistrelle*	22	50	62.7	47.8	4	100	70	53.31754	-6.24498
7370057	30/08/2024 21:52	*Common pipistrelle*	12	48.6	56.8	47	6	280	71	53.31749	-6.24501
7370058	30/08/2024 21:53	*Common pipistrelle*	2	46.9	51.4	46.5	4.3	0	71	53.31748	-6.24502
7370059	30/08/2024 21:53	*Common pipistrelle*	9	47.1	50	46.3	6.7	252	71	53.31749	-6.24502
7370060	30/08/2024 21:53	*Common pipistrelle*	9	47.6	58.4	46.5	8	308	71	53.31748	-6.24502

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
7370061	30/08/2024 21:53	*Common pipistrelle*	7	46.8	51.1	46.1	6	372	71	53.31751	-6.24505
7370062	30/08/2024 22:03	*Leisler's bat*	2	22.3	23.3	21.8	10.1	257	70	53.31829	-6.24368
7370063	30/08/2024 22:15	*Common pipistrelle*	26	49.8	58.9	49	3	90	69	53.31914	-6.24389
7370064	30/08/2024 22:19	*Soprano pipistrelle*	10	56.4	66.7	55.1	5	236	69	53.31909	-6.2439
7370065	30/08/2024 22:22	*Common pipistrelle*	2	48.6	60.2	47.8	4.5	402	70	53.31912	-6.24389
7370067	30/08/2024 22:34	*Soprano pipistrelle*	15	52.6	54.5	51.6	6	280	68	53.31892	-6.24449
7370068	30/08/2024 22:40	*Leisler's bat*	3	22.3	23.3	21.9	14.4	872	69	53.31887	-6.24449
7370069	30/08/2024 22:41	*Common pipistrelle*	8	46.8	52	46.2	5	315	69	53.31886	-6.24452

FULL SURVEY METADATA FOR ACTIVITY TRANSECTS CARRIED OUT ON SITE IN JUNE, JULY, AND AUGUST 2025 (ANALYSIS CARRIED OUT USING ELEKON BATEXPLORER 2.1.11.2 SOFTWARE)

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
03750003	11/06/2025 22:31	*Common pipistrelle*	16	48	85.6	47.4	4	100	64	53.31776	-6.24546
03750005	11/06/2025 22:39	*Leisler's bat*	5	23.6	26.5	22.5	12	429	64	53.31839	-6.24539
03750006	11/06/2025 22:39	*Leisler's bat*	15	23	25	22	12	240	64	53.31839	-6.24539
03750008	11/06/2025 22:47	*Common pipistrelle*	14	44.2	55.9	43.4	6	100	66	53.31881	-6.24477
03750010	11/06/2025 22:50	*Leisler's bat*	7	23.9	28.4	22.9	10	278	66	53.31879	-6.24433
03750012	11/06/2025 22:50	*Leisler's bat*	5	26.3	35.9	21.6	6.7	254	66	53.31875	-6.24406
03750014	11/06/2025 22:51	*Leisler's bat*	13	23.8	28.8	22.9	9	412	66	53.31873	-6.24399
03750015	11/06/2025 22:51	*Leisler's bat*	21	23.7	32	22.8	10	240	66	53.31872	-6.24399
03750016	11/06/2025 22:51	*Leisler's bat*	8	25.8	32.4	24	9	224	65	53.31872	-6.24399
03750017	11/06/2025 22:52	*Leisler's bat*	7	24.1	31.4	23	10	315	65	53.3186	-6.24394
03750018	11/06/2025 22:52	*Leisler's bat*	22	24.1	33.1	22.9	10	330	66	53.31857	-6.24396
03750019	11/06/2025 22:52	*Leisler's bat*	9	23.8	30.6	23	5	364	66	53.31853	-6.24397
03750021	11/06/2025 22:52	*Leisler's bat*	8	25.8	35.8	23.9	10	330	66	53.31851	-6.244
03750022	11/06/2025 22:52	*Leisler's bat*	9	23.9	32.3	23	10	282	66	53.31849	-6.24403
03750023	11/06/2025 22:54	*Leisler's bat*	10	24.6	35.6	23	9	349	66	53.31843	-6.24407
03750024	11/06/2025 22:54	*Leisler's bat*	18	24.5	39.9	23.4	10	330	66	53.31842	-6.24407
03750025	11/06/2025 22:54	*Leisler's bat*	7	27.8	36.1	26.3	4.8	246	66	53.31841	-6.24408
03750028	11/06/2025 23:03	*Leisler's bat*	2	22.1	22.9	21.8	16	1556	66	53.31907	-6.24378
03750029	11/06/2025 23:03	*Leisler's bat*	1	21.8	22.1	21.4	10.1	0	66	53.31907	-6.24378
03750036	11/06/2025 23:10	*Soprano pipistrelle*	1	26.3	35.3	12	2.1	0	66	53.31865	-6.24325
03750037	11/06/2025 23:10	*Soprano pipistrelle*	12	56.6	62.7	55.8	5	90	67	53.31867	-6.24324
03750039	11/06/2025 23:16	*Soprano pipistrelle*	13	57.4	78.1	56.9	4	138	66	53.31813	-6.24392
03750040	11/06/2025 23:16	*Soprano pipistrelle*	8	55.6	96	54.9	4	189	66	53.31808	-6.24403

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
50550158	15/07/2025 22:11	*Nyctalus leisleri*	2	22.3	23.2	21.4	13.1	845	NaN	53.31881	-6.24321
50550160_2	15/07/2025 22:11	*Nyctalus leisleri*	4	22.3	23.7	18.5	13.1	758	NaN	53.31872	-6.24318
50550161	15/07/2025 22:11	*Nyctalus leisleri*	2	29.9	33.9	19.7	8.2	467	NaN	53.31857	-6.24323
50550162_1	15/07/2025 22:11	*Nyctalus leisleri*	17	22.2	23.2	21.4	16	619	NaN	53.31854	-6.24328
50550163_1	15/07/2025 22:12	*Nyctalus leisleri*	30	22.6	23.8	21.8	17	270	NaN	53.31855	-6.24333
50550164	15/07/2025 22:12	*Nyctalus leisleri*	12	22.6	23.7	21.5	16	535	NaN	53.31855	-6.24333
50550167	15/07/2025 22:12	*Nyctalus leisleri*	18	23.9	26.1	21.6	6	230	NaN	53.31855	-6.24338
50550168	15/07/2025 22:13	*Nyctalus leisleri*	11	22.8	24.1	22	12	347	NaN	53.31854	-6.24337
50550171	15/07/2025 22:13	*Nyctalus leisleri*	25	26.5	32.3	24.6	7	94	NaN	53.31855	-6.24337
50550172	15/07/2025 22:13	*Nyctalus leisleri*	11	24.6	26.4	23.2	5	144	NaN	53.31854	-6.24336
50550173_1	15/07/2025 22:14	*Nyctalus leisleri*	13	28.9	31.8	25.9	3	190	NaN	53.31855	-6.24333
50550173_2	15/07/2025 22:14	*Nyctalus leisleri*	1	22.3	22.6	15.6	10.5	0	NaN	53.31855	-6.24333
50550174	15/07/2025 22:15	*Nyctalus leisleri*	3	23.2	24	21.7	8.7	312	NaN	53.31851	-6.24312
50550175	15/07/2025 22:15	*Nyctalus leisleri*	4	22.1	24.6	21.6	13.8	302	NaN	53.31851	-6.24311
50550176	15/07/2025 22:15	*Nyctalus leisleri*	1	29.9	31.7	28.1	14.4	0	NaN	53.31852	-6.24313
50550177	15/07/2025 22:16	*Nyctalus leisleri*	2	22.1	26.2	17.4	8.5	427	NaN	53.31853	-6.24322
50550179	15/07/2025 22:16	*Nyctalus leisleri*	3	23.4	26	22.5	9.6	849	NaN	53.31853	-6.24321
50550182	15/07/2025 22:18	*Nyctalus leisleri*	4	24.3	26.8	23.3	6.6	323	NaN	53.31856	-6.24329
50550183	15/07/2025 22:18	*Nyctalus leisleri*	2	21.7	22.7	20.9	9.8	384	NaN	53.31855	-6.2433
50550184	15/07/2025 22:18	*Nyctalus leisleri*	7	22.3	23.7	21.1	8.8	518	NaN	53.31855	-6.2433
50550185	15/07/2025 22:18	*Nyctalus leisleri*	3	23.1	24.2	22.4	9.2	339	NaN	53.31855	-6.24334
50550186	15/07/2025 22:18	*Nyctalus leisleri*	20	23.4	25.5	22.6	11	240	NaN	53.31855	-6.24334
50550233	15/07/2025 22:32	*Nyctalus leisleri*	2	21.8	22.4	21.4	10.5	1311	NaN	53.31749	-6.24507
50550246	15/07/2025 22:34	*Nyctalus leisleri*	1	21.7	22	20.7	25.6	0	NaN	53.31751	-6.24485
50550258_2	15/07/2025 22:39	*Pipistrellus pygmaeus*	8	53.6	56.8	52.9	3.9	122	NaN	53.31833	-6.24474
50550259_1	15/07/2025 22:39	*Pipistrellus pygmaeus*	3	54.3	72.4	53.5	4.8	145	NaN	53.31835	-6.24472

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
50550260	15/07/2025 22:39	*Pipistrellus pygmaeus*	23	54.1	70.8	53	4	85	NaN	53.31836	-6.24473
50550379	15/07/2025 23:09	*Nyctalus leisleri*	1	26.2	26.5	23.8	9.8	0	NaN	53.31803	-6.24588
50550472	15/07/2025 23:39	*Nyctalus leisleri*	1	16.8	17.1	16.2	22.9	0	NaN	53.31883	-6.24478
24640000	21/08/2025 20:35	*Nyctalus leisleri*	3	21.6	22.1	20.4	14.6	430	49	53.31888	-6.24465
24640001	21/08/2025 20:39	*Nyctalus leisleri*	5	20.5	20.9	19.3	18	428	48	53.31842	-6.2441
24640002	21/08/2025 20:39	*Nyctalus leisleri*	10	20.6	21.1	18.3	18	495	48	53.31842	-6.2441
24640003	21/08/2025 20:39	*Nyctalus leisleri*	8	20.7	21.3	18.8	18	444	48	53.31842	-6.24409
24640004	21/08/2025 20:42	*Nyctalus leisleri*	3	21.1	21.5	20	15.3	302	48	53.31842	-6.2441
24640005	21/08/2025 20:42	*Nyctalus leisleri*	1	20.6	21	20.3	14.9	0	48	53.31842	-6.2441
24640006	21/08/2025 20:44	*Nyctalus leisleri*	18	22.3	23.1	21.4	14	264	48	53.31855	-6.24369
24640007	21/08/2025 20:44	*Nyctalus leisleri*	2	24	26.6	22.9	14.4	238	48	53.31856	-6.24368
24640008	21/08/2025 20:44	*Nyctalus leisleri*	34	22.5	24	21.8	18	370	48	53.31857	-6.24367
24640009	21/08/2025 20:44	*Nyctalus leisleri*	17	22.6	23.9	22	18	410	48	53.31861	-6.24365
24640010	21/08/2025 20:44	*Nyctalus leisleri*	4	22.3	23.7	21.1	18.4	355	48	53.31864	-6.24362
24640011	21/08/2025 20:44	*Nyctalus leisleri*	27	22.4	23.5	21.6	18	390	48	53.31872	-6.24357
24640012	21/08/2025 20:45	*Nyctalus leisleri*	18	22.1	22.6	21.4	17	410	48	53.31888	-6.24341
24640013	21/08/2025 20:45	*Nyctalus leisleri*	14	22.9	23.9	22.2	18	313	48	53.31892	-6.24342
24640014	21/08/2025 20:45	*Nyctalus leisleri*	10	22.5	23.6	21.9	18	363	48	53.31896	-6.24342
24640015	21/08/2025 20:51	*Nyctalus leisleri*	4	22.7	23.5	21.8	20	247	49	53.3189	-6.24339
24640016	21/08/2025 20:52	*Nyctalus leisleri*	3	22.5	23.1	21.5	16	579	49	53.31868	-6.24341
24640017	21/08/2025 20:52	*Nyctalus leisleri*	22	23.7	25.8	22.4	14	280	49	53.31868	-6.24341
24640018	21/08/2025 20:52	*Nyctalus leisleri*	6	22.5	23.1	21.8	18	321	48	53.31868	-6.24342
24640019	21/08/2025 20:52	*Nyctalus leisleri*	9	22.3	22.9	21.5	20	355	48	53.31868	-6.24342
24640020	21/08/2025 20:52	*Nyctalus leisleri*	6	23.5	24.9	22.1	14.7	262	48	53.31869	-6.2434
24640021	21/08/2025 20:52	*Nyctalus leisleri*	36	23.5	26.4	22.6	18	260	48	53.31868	-6.24342
24640022	21/08/2025 20:53	*Nyctalus leisleri*	10	23	23.8	22	19	369	48	53.31867	-6.24341

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
24640023	21/08/2025 20:53	*Nyctalus leisleri*	8	22.8	23.6	21.9	18	410	48	53.31868	-6.2434
24640024	21/08/2025 20:53	*Nyctalus leisleri*	8	22.3	23.4	21.1	18	408	48	53.31867	-6.24339
24640025	21/08/2025 20:53	*Nyctalus leisleri*	13	23	24.4	22	14	409	48	53.31866	-6.24339
24640026	21/08/2025 20:53	*Nyctalus leisleri*	14	22.1	22.8	20.5	18	360	48	53.31867	-6.24339
24640027	21/08/2025 20:54	*Nyctalus leisleri*	6	22.7	23.9	22	18	327	48	53.31869	-6.24342
24640028	21/08/2025 20:54	*Nyctalus leisleri*	7	22.7	24.4	21.8	18	473	48	53.31869	-6.24342
24640029	21/08/2025 20:54	*Nyctalus leisleri*	9	22	22.6	21.1	20	304	48	53.3187	-6.24342
24640030	21/08/2025 20:54	*Nyctalus leisleri*	6	21.9	22.4	20.9	20	279	48	53.31869	-6.24343
24640031	21/08/2025 20:54	*Nyctalus leisleri*	2	21.8	22.9	20.3	16.8	403	48	53.3187	-6.24343
24640032	21/08/2025 20:55	*Nyctalus leisleri*	5	23.6	26.2	21.9	16.4	392	48	53.31869	-6.24341
24640033	21/08/2025 20:55	*Nyctalus leisleri*	18	22.1	22.6	21.5	20	280	48	53.31869	-6.24342
24640034	21/08/2025 20:55	*Nyctalus leisleri*	8	21.9	22.4	20.7	18	324	48	53.31869	-6.24342
24640035	21/08/2025 20:55	*Nyctalus leisleri*	7	23.3	24.2	22.5	12	347	48	53.3187	-6.24343
24640036	21/08/2025 20:55	*Nyctalus leisleri*	12	22.4	23.2	21.6	18	431	48	53.31871	-6.24343
24640037	21/08/2025 20:55	*Nyctalus leisleri*	15	22.4	23.3	21.5	20	423	49	53.31871	-6.24343
24640038	21/08/2025 20:56	*Nyctalus leisleri*	4	22.3	22.9	21.6	16.4	488	49	53.31864	-6.24348
24640039	21/08/2025 20:56	*Nyctalus leisleri*	6	22.7	24.6	19.9	16.4	326	49	53.31856	-6.24356
24640040	21/08/2025 20:56	*Nyctalus leisleri*	6	22.9	23.9	21.8	14	464	49	53.31855	-6.24357
24640042	21/08/2025 20:57	*Nyctalus leisleri*	26	22.9	24.1	22.2	18	370	49	53.31806	-6.24405
24640043	21/08/2025 20:58	*Nyctalus leisleri*	11	23.6	24.8	22.1	18	379	49	53.31804	-6.24406
24640044	21/08/2025 20:58	*Nyctalus leisleri*	2	22.1	23.4	20.8	13.3	283	49	53.31804	-6.24405
24640045	21/08/2025 20:58	*Nyctalus leisleri*	17	23.4	24.5	22.6	12	130	49	53.31803	-6.24404
24640046	21/08/2025 20:58	*Nyctalus leisleri*	26	22.9	23.6	21.8	14	285	49	53.31803	-6.24403
24640047	21/08/2025 20:59	*Nyctalus leisleri*	3	21.8	22.1	20.5	9.8	725	49	53.31802	-6.24403
24640048	21/08/2025 20:59	*Nyctalus leisleri*	10	23.3	24.9	22.4	12.3	210	49	53.31802	-6.24405
24640049	21/08/2025 20:59	*Nyctalus leisleri*	3	23	25.5	21.6	16	281	49	53.31802	-6.24407

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
24640050	21/08/2025 20:59	*Nyctalus leisleri*	19	23.5	25.2	22.5	17	323	49	53.31804	-6.24405
24640051	21/08/2025 20:59	*Nyctalus leisleri*	12	23.5	24.7	22.3	16	240	49	53.31804	-6.24405
24640052	21/08/2025 21:00	*Nyctalus leisleri*	15	24	24.9	22.5	14	573	49	53.31804	-6.24405
24640053	21/08/2025 21:00	*Nyctalus leisleri*	2	22.3	23.4	21.6	9.9	763	49	53.31804	-6.24405
24640054	21/08/2025 21:01	*Nyctalus leisleri*	7	22.6	23.2	21.5	18	260	49	53.31804	-6.24405
24640055	21/08/2025 21:10	*Nyctalus leisleri*	6	22.1	22.6	21.3	14	649	49	53.31836	-6.24479
24640056	21/08/2025 21:11	*Nyctalus leisleri*	3	21.9	22.1	21.2	16.8	1867	49	53.3184	-6.2448
24640057	21/08/2025 21:11	*Nyctalus leisleri*	3	21.8	22	21.1	16.2	808	50	53.3184	-6.2448
24640058	21/08/2025 21:12	*Pipistrellus pipistrellus*	5	42.5	49.7	40.4	3.5	333	50	53.31837	-6.24481
24640059	21/08/2025 21:17	*Nyctalus leisleri*	3	23.9	25.9	22.8	13.9	801	52	53.31897	-6.24498
24640063	21/08/2025 21:31	*Pipistrellus pipistrellus*	15	47.3	62.4	46.6	6	100	55	53.31836	-6.24595
24640064	21/08/2025 21:32	*Pipistrellus pipistrellus*	3	46.9	60.4	46.3	4.3	345	55	53.31836	-6.24596
24640065	21/08/2025 21:32	*Pipistrellus pipistrellus*	6	46.5	56.6	45.9	4	273	55	53.31836	-6.24596
24640066	21/08/2025 21:32	*Pipistrellus pipistrellus*	5	46.4	54.5	45.6	6	320	55	53.31836	-6.24597
24640067	21/08/2025 21:32	*Pipistrellus pipistrellus*	2	47.4	52.7	46.7	5.1	390	55	53.31836	-6.24598
24640068	21/08/2025 21:32	*Pipistrellus pipistrellus*	13	47	56.4	46.1	6	210	55	53.31836	-6.24599
24640069	21/08/2025 21:33	*Pipistrellus pipistrellus*	16	47.2	58	46.2	6	90	55	53.31836	-6.24599
24640070	21/08/2025 21:33	*Pipistrellus pipistrellus*	14	47.9	59.5	46.8	4	90	55	53.31836	-6.24598
24640071	21/08/2025 21:33	*Pipistrellus pipistrellus*	17	47.3	58.8	46.1	6	200	55	53.31837	-6.24598
24640072	21/08/2025 21:34	*Pipistrellus pipistrellus*	8	46.1	46.8	45.3	8.2	300	55	53.31812	-6.24601
24640083	21/08/2025 21:55	*Pipistrellus pygmaeus*	19	53	67.4	50.3	8	104	57	53.31851	-6.24534
24640085	21/08/2025 22:03	*Pipistrellus pygmaeus*	17	52.8	60.1	51.5	7	100	57	53.31882	-6.24457

Appendix 8.5

Bat Emergence Survey Metadata (Buildings and Trees 2024 and 2025)

Appendix 8-5 Bat Emergence Survey Metadata (Buildings and Trees 2024 and 2025)

Bat Emergence Survey Metadata – Buildings (2024 and 2025)

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	3750007	30/07/2024 21:56	*Common pipistrelle*	22	48.8	81.7	46.6	5	183	18	57	53.31748
VP1	03750008_1	30/07/2024 21:56	*Common pipistrelle*	6	47.8	56	47.1	5	230	18	57	53.31748
VP1	03750008_2	30/07/2024 21:56	*Common pipistrelle*	1	87.8	87.8	82.9	5.3	0	18	57	53.31748
VP1	03750008_3	30/07/2024 21:56	*Common pipistrelle*	1	92.3	92.6	85.9	4.8	0	18	57	53.31748
VP1	03750009_1	30/07/2024 21:57	*Common pipistrelle*	6	45.9	49.1	44.9	4	458	18	57	53.31751
VP1	03750009_2	30/07/2024 21:57	*Common pipistrelle*	3	21.6	22.4	20.6	18	544	18	57	53.31751
VP1	03750010_1	30/07/2024 21:57	*Common pipistrelle*	45	45.9	57.4	45.1	5	85	18	57	53.31751
VP1	03750010_2	30/07/2024 21:57	*Common pipistrelle*	1	22.1	22.5	21.4	18.7	0	18	57	53.31751
VP1	3750011	30/07/2024 21:57	*Common pipistrelle*	20	45.2	51.1	44.5	6	107	18	57	53.31752
VP1	3750012	30/07/2024 21:57	*Common pipistrelle*	13	45.2	50.2	44.6	5	105	18	57	53.31752
VP1	3750013	30/07/2024 21:59	*Common pipistrelle*	30	45.7	68.7	44.9	5	100	17	57	53.31749
VP1	3750014	30/07/2024 21:59	*Common pipistrelle*	14	45.5	50	44.9	6	110	17	57	53.31748
VP1	3750015	30/07/2024 21:59	*Common pipistrelle*	7	46.4	49.9	45.2	4	226	17	57	53.31747
VP1	3750016	30/07/2024 21:59	*Common pipistrelle*	12	45.2	50.8	44.4	5	100	17	57	53.31747

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	3750017	30/07/2024 22:05	*Common pipistrelle*	3	47.9	49.1	46.6	6.9	141	17	58	53.31744
VP1	3750018	30/07/2024 22:11	*Common pipistrelle*	29	48.9	73.4	47.2	4	100	17	58	53.31745
VP1	3750019	30/07/2024 22:11	*Common pipistrelle*	34	47.7	73.5	46.9	5	94	17	58	53.31745
VP1	03750020_1	30/07/2024 22:12	*Common pipistrelle*	3	45.1	47.6	44.4	6.9	233	17	58	53.31748
VP1	03750020_2	30/07/2024 22:12	*Common pipistrelle*	3	92.1	94.5	87.6	4.6	610	17	58	53.31748
VP1	03750021_1	30/07/2024 22:12	*Common pipistrelle*	11	45.5	51.1	44.8	5	100	17	58	53.31749
VP1	03750021_2	30/07/2024 22:12	*Common pipistrelle*	1	90.8	91.1	86.3	6.4	0	17	58	53.31749
VP1	03750021_3	30/07/2024 22:12	*Common pipistrelle*	1	96	96.4	93.4	4.3	0	17	58	53.31749
VP1	3750022	30/07/2024 22:12	*Common pipistrelle*	8	45.3	51.9	44.8	6	194	17	58	53.31748
VP1	3750023	30/07/2024 22:13	*Common pipistrelle*	26	45.6	77	45.1	5	100	17	58	53.31749
VP1	03750024_2	30/07/2024 22:15	*Common pipistrelle*	1	90.4	90.8	87	4.3	0	17	59	53.31749
VP1	03750024_1	30/07/2024 22:15	*Common pipistrelle*	5	45.2	47.7	44.3	6	182	17	59	53.31749
VP1	03750025_1	30/07/2024 22:15	*Common pipistrelle*	6	45.8	48	45.1	5	572	17	58	53.31748
VP1	03750025_2	30/07/2024 22:15	*Common pipistrelle*	1	88.9	89.6	84	10.7	0	17	58	53.31748
VP1	03750026_1	30/07/2024 22:15	*Common pipistrelle*	7	47.7	58.7	45.3	6	353	17	59	53.31748

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	03750026_2	30/07/2024 22:15	*Common pipistrelle*	1	89.6	96.4	84.4	4.3	0	17	59	53.31748
VP1	3750027	30/07/2024 22:15	*Common pipistrelle*	41	45.6	55.9	45	5	104	17	59	53.31748
VP1	03750028_1	30/07/2024 22:15	*Common pipistrelle*	9	45.7	52.5	44.8	4	303	17	58	53.31749
VP1	03750028_2	30/07/2024 22:15	*Common pipistrelle*	1	60.4	71.6	51	3.7	0	17	58	53.31749
VP1	3750029	30/07/2024 22:15	*Common pipistrelle*	57	45.8	66.3	45.1	5	100	17	58	53.31748
VP1	03750030_1	30/07/2024 22:16	*Common pipistrelle*	26	45.5	55.4	44.9	6	100	17	59	53.31749
VP1	03750030_2	30/07/2024 22:16	*Common pipistrelle*	23	25.4	28.6	24.1	10	236	17	59	53.31749
VP1	3750031	30/07/2024 22:16	*Common pipistrelle*	34	45.7	72.9	45.1	5	96	17	59	53.31751
VP1	3750032	30/07/2024 22:16	*Common pipistrelle*	73	48.8	77	46.4	4	70	17	59	53.31752
VP1	3750033	30/07/2024 22:16	*Common pipistrelle*	10	47.2	72	46.1	4	190	17	59	53.31749
VP1	3750034	30/07/2024 22:16	*Common pipistrelle*	12	45.5	53.7	44.3	6	90	17	59	53.31751
VP1	3750035	30/07/2024 22:16	*Common pipistrelle*	36	46.3	69.7	45.3	5	100	17	59	53.3175
VP1	3750036	30/07/2024 22:17	*Common pipistrelle*	34	46.7	68.3	45.8	5	93	17	59	53.31747
VP1	3750037	30/07/2024 22:17	*Common pipistrelle*	37	46.9	65.5	46.1	6	100	17	59	53.31747
VP1	3750038	30/07/2024 22:18	*Common pipistrelle*	11	46.5	49.5	45.4	7	190	17	59	53.31746

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	3750039	30/07/2024 22:18	*Common pipistrelle*	28	47.6	79.8	46.8	4	90	17	59	53.31746
VP1	03750040_1	30/07/2024 22:19	*Common pipistrelle*	5	46.7	49.6	45.8	5.7	169	17	59	53.31748
VP1	03750040_2	30/07/2024 22:19	*Common pipistrelle*	1	91.5	94.1	90	4.3	0	17	59	53.31748
VP1	3750041	30/07/2024 22:19	*Common pipistrelle*	3	46.8	48	46.3	5.5	481	17	59	53.31748
VP1	3750042	30/07/2024 22:19	*Common pipistrelle*	2	45.2	45.6	44.8	8.8	377	17	59	53.31748
VP1	3750043	30/07/2024 22:19	*Common pipistrelle*	48	47.3	74.7	46.4	5	90	17	59	53.31746
VP1	3750044	30/07/2024 22:20	*Common pipistrelle*	29	46.8	59.7	46	6	104	17	59	53.31748
VP1	3750045	30/07/2024 22:20	*Common pipistrelle*	24	47.4	70	46.5	6	94	17	59	53.31746
VP1	3750046	30/07/2024 22:20	*Common pipistrelle*	19	48.2	65.3	46.4	5	180	17	59	53.31746
VP1	3750047	30/07/2024 22:21	*Common pipistrelle*	14	46.3	46.8	45.6	7	110	17	59	53.3175
VP1	3750048	30/07/2024 22:22	*Common pipistrelle*	40	47.5	67.7	46.6	5	180	17	59	53.31747
VP1	3750049	30/07/2024 22:23	*Common pipistrelle*	28	47.1	69.8	46.3	7	180	17	59	53.31746
VP1	03750050_1	30/07/2024 22:24	*Common pipistrelle*	5	46.1	47.8	45.6	9	425	17	59	53.31746
VP1	03750050_2	30/07/2024 22:24	*Common pipistrelle*	1	90.4	94.1	88.1	6.4	0	17	59	53.31746
VP1	3750051	30/07/2024 22:24	*Common pipistrelle*	27	47.2	60.4	46.1	6	100	17	59	53.31746

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	3750052	30/07/2024 22:26	*Common pipistrelle*	18	47.6	66.8	46.9	5	200	17	59	53.31748
VP1	03750053_1	30/07/2024 22:31	*Common pipistrelle*	4	48.3	52.2	47.7	5.5	207	17	60	53.31748
VP1	03750053_2	30/07/2024 22:31	*Common pipistrelle*	1	89.3	91.9	85.1	8	0	17	60	53.31748
VP1	3750054	30/07/2024 22:31	*Common pipistrelle*	62	48.7	70.9	47.7	6	80	17	60	53.31748
VP1	3750055	30/07/2024 22:31	*Soprano pipistrelle*	11	50.5	76.5	49.8	5	184	17	60	53.31748
VP1	3750056	30/07/2024 22:31	*Common pipistrelle*	9	47.2	52.4	46.2	6	247	17	60	53.31747
VP1	03750057_1	30/07/2024 22:32	*Common pipistrelle*	5	46.5	49.4	45.5	5.8	321	17	60	53.31749
VP1	03750057_2	30/07/2024 22:32	*Common pipistrelle*	3	93.4	94.6	87.3	3.4	526	17	60	53.31749
VP1	3750058	30/07/2024 22:32	*Common pipistrelle*	10	46.8	52.2	45.6	5	187	17	60	53.31749
VP1	3750059	30/07/2024 22:32	*Common pipistrelle*	26	47.7	68.8	46.8	4	190	17	60	53.31749
VP1	3750060	30/07/2024 22:32	*Common pipistrelle*	24	47.3	62.2	46.6	4	100	17	60	53.31749
VP1	3750061	30/07/2024 22:33	*Common pipistrelle*	24	47.3	60.8	46.5	6	100	17	60	53.31748
VP1	3750062	30/07/2024 22:33	*Common pipistrelle*	21	47.5	68.2	46.3	5	200	17	60	53.31748
VP1	3750063	30/07/2024 22:33	*Common pipistrelle*	18	47.7	61.6	46.6	5	180	17	60	53.31748
VP1	3750064	30/07/2024 22:41	*Common pipistrelle*	9	48.2	50.7	47.5	6	286	16	60	53.31743

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	3750065	30/07/2024 22:41	*Common pipistrelle*	17	48.2	69.7	47.4	4	270	16	60	53.31745
VP1	3750066	30/07/2024 22:41	*Common pipistrelle*	11	48	68.5	47.4	5	90	16	60	53.31746
VP1	03750067_1	30/07/2024 22:44	*Common pipistrelle*	1	47.3	47.3	46.9	5.3	0	16	61	53.31747
VP1	03750067_2	30/07/2024 22:44	*Common pipistrelle*	1	92.3	92.3	86.6	6.9	0	16	61	53.31747
VP1	3750068	30/07/2024 22:44	*Common pipistrelle*	9	50.1	57.3	49.2	5	210	16	61	53.31748
VP1	3750069	30/07/2024 22:49	*Common pipistrelle*	9	48.8	52.2	48	6	190	16	61	53.31748
VP1	3750070	30/07/2024 22:49	*Common pipistrelle*	2	48.4	48.8	47.4	6.4	219	16	61	53.31752
VP1	3750071	30/07/2024 22:49	*Common pipistrelle*	7	48.6	50.6	48	7.6	295	16	61	53.31753
VP1	3750072	30/07/2024 22:49	*Common pipistrelle*	30	49.6	69.3	48.7	5	103	16	61	53.31752
VP1	3750073	30/07/2024 22:50	*Soprano pipistrelle*	10	49.7	63.6	48.7	4	367	16	61	53.31752
VP1	3750074	30/07/2024 22:50	*Soprano pipistrelle*	15	50.2	73.1	49.4	4	312	16	61	53.31751
VP1	3750075	30/07/2024 22:50	*Common pipistrelle*	17	49.5	69.4	48.5	4	285	16	61	53.31751
VP1	3750076	30/07/2024 22:51	*Common pipistrelle*	2	47.8	49.3	46.9	12.3	902	16	61	53.3175
VP1	3750077	30/07/2024 22:51	*Common pipistrelle*	0	0	0	0	0	0	16	61	53.3175
VP1	7370000	29/08/2024 20:13	*Leisler's bat*	4	22.3	22.8	21.7	12.8	395	19	64	

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 1	7370001	29/08/2024 20:16	*Leisler's bat*	2	21.2	28.9	16.3	8.5	954	19	62	
VP 1	7370004	29/08/2024 20:52	*Common pipistrelle*	29	45.3	55.1	44	5	180	16	61	53.31747
VP 1	7370005	29/08/2024 20:52	*Common pipistrelle*	8	45.3	46.7	43.6	6	221	16	61	53.31754
VP 1	7370006	29/08/2024 20:52	*Common pipistrelle*	15	45.9	57.6	44.4	5	105	16	61	53.31754
VP 1	7370007	29/08/2024 21:09	*Common pipistrelle*	13	47	52	46.1	6	190	16	61	53.31737
VP 1	07370008_3	29/08/2024 21:09	*Common pipistrelle*	1	90.8	92.6	86.6	6.4	0	16	61	53.31736
VP 1	07370008_2	29/08/2024 21:09	*Common pipistrelle*	1	84.4	86.3	80.6	9.1	0	16	61	53.31736
VP 1	07370008_1	29/08/2024 21:09	*Common pipistrelle*	10	46.8	50.2	45.9	6	252	16	61	53.31736
VP 1	07370009_1	29/08/2024 21:09	*Common pipistrelle*	8	46.5	50	45.6	7	239	16	61	53.31733
VP 1	07370009_2	29/08/2024 21:09	*Common pipistrelle*	2	86.8	90.2	83.6	3.5	1919	16	61	53.31733
VP 1	07370010_1	29/08/2024 21:09	*Common pipistrelle*	3	47.9	53.6	47.3	4.4	206	16	61	53.31731
VP 1	07370010_2	29/08/2024 21:09	*Common pipistrelle*	1	86.6	87.8	83.6	8	0	16	61	53.31731
VP 1	7370011	29/08/2024 21:09	*Common pipistrelle*	2	46.5	51.4	45.6	6.7	109	16	61	53.3173
VP 1	07370012_1	29/08/2024 21:10	*Common pipistrelle*	12	46.8	50.3	45.8	6	100	16	61	53.31732
VP 1	07370012_2	29/08/2024 21:10	*Common pipistrelle*	2	86.3	91.7	84	4.8	281	16	61	53.31732

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	07370012_3	29/08/2024 21:10	*Common pipistrelle*	1	82.9	94.1	82.5	5.3	0	16	61	53.31732
VP1	07370013_2	29/08/2024 21:10	*Common pipistrelle*	1	90.8	95.6	84.8	5.3	0	16	61	53.31729
VP1	07370013_1	29/08/2024 21:10	*Common pipistrelle*	8	47	51.5	45.8	6	236	16	61	53.31729
VP1	7370014	29/08/2024 21:11	*Common pipistrelle*	12	47.3	51.2	46.1	5	250	16	61	53.31734
VP1	07370015_2	29/08/2024 21:11	*Common pipistrelle*	2	90.4	94.7	84.9	6.4	501	16	61	53.31734
VP1	07370015_1	29/08/2024 21:11	*Common pipistrelle*	8	46.5	49.4	45.6	5	224	16	61	53.31734
VP1	7370016	29/08/2024 21:12	*Common pipistrelle*	5	46.9	50	46.2	5.8	199	16	61	53.31739
VP1	07370017_1	29/08/2024 21:13	*Common pipistrelle*	4	47.2	53.3	46.1	6.1	222	16	61	53.31752
VP1	07370017_2	29/08/2024 21:13	*Common pipistrelle*	2	89.6	92.6	86.8	7.7	1593	16	61	53.31752
VP1	7370018	29/08/2024 21:13	*Common pipistrelle*	6	47.9	54.4	46.4	5	246	16	61	53.31754
VP1	7370023	29/08/2024 21:46	*Common pipistrelle*	5	48.1	114.9	47	5	194	16	62	53.31748
VP1	7370024	29/08/2024 21:46	*Common pipistrelle*	1	50.6	53.6	46.5	4.3	0	16	62	53.31749
VP1	07370026_1	29/08/2024 21:49	*Common pipistrelle*	4	48.7	52.4	47.8	6.3	630	16	62	53.31756
VP1	07370026_2	29/08/2024 21:49	*Common pipistrelle*	1	86.6	91.5	82.5	3.7	0	16	62	53.31756
VP1	07370026_3	29/08/2024 21:49	*Common pipistrelle*	1	93.4	95.6	90.8	3.2	0	16	62	53.31756

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP1	7370027	29/08/2024 21:49	*Common pipistrelle*	10	51.1	61	50.2	5	350	16	62	53.31757
VP1	7370028	29/08/2024 21:57	*Common pipistrelle*	11	47	50.4	46.1	7	220	16	62	53.31753
VP2	2180008	30/07/2024 21:57	*Leisler's bat*	2	23.8	24.6	22.3	17.3	359	18	55	53.31739
VP2	2180010	30/07/2024 22:02	*Soprano pipistrelle*	24	58.8	69.9	57.9	5	130	19	54	53.31735
VP2	02180011_2	30/07/2024 22:03	*Leisler's bat*	1	96	101.3	94.5	3.7	0	18	54	53.31734
VP2	02180011_1	30/07/2024 22:03	*Leisler's bat*	3	26.6	27.6	24.5	9.8	213	18	54	53.31734
VP2	2180013	30/07/2024 22:06	*Common pipistrelle*	11	48.7	69.4	47.8	6	90	18	54	53.31738
VP2	02180014_1	30/07/2024 22:08	*Soprano pipistrelle*	3	51.1	55	49.9	5	807	18	55	53.31732
VP2	02180014_2	30/07/2024 22:08	*Soprano pipistrelle*	2	99.9	102.9	96.9	6.4	710	18	55	53.31732
VP2	2180015	30/07/2024 22:08	*Soprano pipistrelle*	4	52.4	59.6	50.5	4	379	18	55	53.31732
VP2	2180016	30/07/2024 22:08	*Soprano pipistrelle*	4	50.4	56.6	49.6	5.2	581	18	55	53.31733
VP2	02180017_1	30/07/2024 22:09	*Soprano pipistrelle*	1	50.6	55.9	49.5	8	0	18	55	53.31733
VP2	02180017_2	30/07/2024 22:09	*Soprano pipistrelle*	1	97.1	98.6	92.6	9.1	0	18	55	53.31733
VP2	2180018	30/07/2024 22:09	*Soprano pipistrelle*	1	54	94.5	52.5	5.9	0	18	55	53.31734
VP2	02180019_2	30/07/2024 22:09	*Soprano pipistrelle*	1	95.3	96.8	90.8	7.5	0	18	55	53.31735

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP2	02180019_1	30/07/2024 22:09	*Soprano pipistrelle*	7	52.3	66.4	50.7	4	102	18	55	53.31735
VP2	02180020_1	30/07/2024 22:09	*Soprano pipistrelle*	23	51.6	77.9	50.6	4	80	18	55	53.31735
VP2	02180020_2	30/07/2024 22:09	*Soprano pipistrelle*	1	58.9	73.5	54.4	1.6	0	18	55	53.31735
VP2	02180021_1	30/07/2024 22:09	*Soprano pipistrelle*	3	51.3	62	50.5	5.7	448	18	54	53.31736
VP2	02180021_2	30/07/2024 22:09	*Soprano pipistrelle*	1	61.1	75.4	54.4	1.6	0	18	54	53.31736
VP2	2180022	30/07/2024 22:09	*Soprano pipistrelle*	15	51.1	76.8	49.2	4	80	18	54	53.31736
VP2	02180023_1	30/07/2024 22:09	*Soprano pipistrelle*	16	50.9	73.6	48.5	4	80	18	54	53.31737
VP2	02180023_2	30/07/2024 22:09	*Soprano pipistrelle*	1	93.8	95.6	93	6.4	0	18	54	53.31737
VP2	2180024	30/07/2024 22:11	*Soprano pipistrelle*	7	52.2	65.3	51.4	4	90	18	53	53.31738
VP2	2180025	30/07/2024 22:16	*Leisler's bat*	6	25.8	26.8	24.8	12	240	18	54	53.3174
VP2	2180026	30/07/2024 22:16	*Leisler's bat*	5	25.3	26.6	24.4	9.8	438	18	54	53.3174
VP2	2180027	30/07/2024 22:16	*Leisler's bat*	1	27.8	28.9	26.6	7.5	0	18	54	53.31741
VP2	2180028	30/07/2024 22:18	*Soprano pipistrelle*	12	51.8	61.2	50.9	4	192	18	54	53.3174
VP2	02180029_1	30/07/2024 22:21	*Soprano pipistrelle*	10	52.1	58.4	51.4	3	170	18	54	53.31742
VP2	02180029_2	30/07/2024 22:21	*Soprano pipistrelle*	2	18.4	30.4	12	4.3	738	18	54	53.31742

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP2	2180030	30/07/2024 22:26	*Soprano pipistrelle*	10	50.9	55.9	50.3	6	120	18	55	53.31734
VP2	02180031_1	30/07/2024 22:26	*Soprano pipistrelle*	1	26.6	30	22.9	4.3	0	18	55	53.31731
VP2	02180031_2	30/07/2024 22:26	*Soprano pipistrelle*	1	52.1	63.8	51.4	7.5	0	18	55	53.31731
VP2	2180035	30/07/2024 22:37	*Soprano pipistrelle*	11	57.2	60.6	56.1	6	160	17	56	53.31744
VP2	2180036	30/07/2024 22:38	*Leisler's bat*	1	25.9	26.3	24.4	9.1	0	17	56	53.31743
VP2	2180037	30/07/2024 22:38	*Leisler's bat*	4	24.9	25.9	23.9	6.8	806	17	56	53.31743
VP2	50520013	29/08/2024 20:16	*Leisler's bat*	16	21.9	22.4	21	18	600	19	NaN	53.31738
VP2	50520057	29/08/2024 20:33	*Leisler's bat*	6	21.9	22.3	20.7	18	1268	18	NaN	53.3174
VP2	50520182	29/08/2024 21:22	*Leisler's bat*	27	23.5	24.2	22.6	10	754	18	NaN	53.3174
VP2	50520245	29/08/2024 21:47	*Leisler's bat*	3	25.3	26.9	24	8.7	1207	18	NaN	53.3174
VP3	50510020	30/07/2024 21:50	*Common pipistrelle*	7	48.1	53.4	46.8	5	259	19	NaN	53.31777
VP3	50510021	30/07/2024 21:55	*Common pipistrelle*	16	47.4	53.4	46.5	5	96	19	NaN	53.31739
VP3	50510022	30/07/2024 21:55	*Common pipistrelle*	5	47.2	50.2	45.9	5	277	19	NaN	53.31738
VP3	50510023_1	30/07/2024 21:56	*Common pipistrelle*	1	21.7	22	21.4	13.1	0	19	NaN	53.3172
VP3	50510023_2	30/07/2024 21:56	*Common pipistrelle*	1	45.8	46.1	45.4	4.6	0	19	NaN	53.3172

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510024_1	30/07/2024 21:56	*Common pipistrelle*	27	45.8	49.3	44.6	5	100	19	NaN	53.31713
VP3	50510024_2	30/07/2024 21:56	*Common pipistrelle*	2	21.4	21.5	20.4	18.4	864	19	NaN	53.31713
VP3	50510025	30/07/2024 21:56	*Common pipistrelle*	14	45.1	46.8	43.5	5	100	19	NaN	53.31688
VP3	50510026	30/07/2024 21:56	*Common pipistrelle*	14	45.5	49	43.5	5	285	19	NaN	53.31688
VP3	50510028	30/07/2024 21:58	*Common pipistrelle*	13	46.1	51.6	45.1	5	90	19	NaN	53.31705
VP3	50510029	30/07/2024 21:58	*Common pipistrelle*	23	45.4	48.1	44.1	5	100	19	NaN	53.31708
VP3	50510031	30/07/2024 21:58	*Common pipistrelle*	18	45.3	47.2	43.9	5	100	19	NaN	53.31703
VP3	50510032	30/07/2024 21:58	*Common pipistrelle*	15	46.2	55	45	5	100	19	NaN	53.31703
VP3	50510033	30/07/2024 22:04	*Common pipistrelle*	5	47.3	48.6	46	7.2	226	19	NaN	53.31737
VP3	50510034	30/07/2024 22:10	*Common pipistrelle*	20	47.8	60.8	45.5	5	100	19	NaN	53.31744
VP3	50510035	30/07/2024 22:10	*Common pipistrelle*	19	48.1	62.3	45.1	6	100	19	NaN	53.31748
VP3	50510036	30/07/2024 22:10	*Common pipistrelle*	7	47.8	53.2	45	5	313	19	NaN	53.31749
VP3	50510037	30/07/2024 22:11	*Common pipistrelle*	19	45.8	47.6	44.6	5	200	19	NaN	53.31761
VP3	50510038	30/07/2024 22:11	*Common pipistrelle*	4	45.6	48	44.5	5.2	469	19	NaN	53.31774
VP3	50510039	30/07/2024 22:12	*Common pipistrelle*	15	46.2	54.5	45.4	5	100	19	NaN	53.31747

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510041	30/07/2024 22:14	*Common pipistrelle*	2	47	52.2	45.8	4.9	259	19	NaN	53.31748
VP3	50510042	30/07/2024 22:14	*Common pipistrelle*	3	45.8	48.5	45.2	5.2	140	19	NaN	53.31752
VP3	50510043	30/07/2024 22:14	*Common pipistrelle*	5	45.8	50.4	45	6	206	19	NaN	53.31751
VP3	50510044	30/07/2024 22:14	*Common pipistrelle*	13	46.1	51	45.2	4	100	19	NaN	53.31748
VP3	50510045	30/07/2024 22:14	*Common pipistrelle*	7	44.9	45.7	44.4	5	295	19	NaN	53.31746
VP3	50510046	30/07/2024 22:14	*Common pipistrelle*	4	45.2	50.1	44.5	5	585	19	NaN	53.31744
VP3	50510047	30/07/2024 22:14	*Common pipistrelle*	10	45.6	48.1	45	5	262	19	NaN	53.31743
VP3	50510048	30/07/2024 22:15	*Common pipistrelle*	2	51.5	63.7	48.2	2.6	60	19	NaN	53.31741
VP3	50510049	30/07/2024 22:15	*Common pipistrelle*	5	45.3	48.9	44.5	5	305	19	NaN	53.31741
VP3	50510050_1	30/07/2024 22:15	*Common pipistrelle*	14	45.5	50.7	44.8	4	259	19	NaN	53.31741
VP3	50510050_2	30/07/2024 22:15	*Common pipistrelle*	4	24.3	25.4	23.7	10.5	338	19	NaN	53.31741
VP3	50510051	30/07/2024 22:15	*Common pipistrelle*	2	45.6	48	44.7	4.6	313	19	NaN	53.31743
VP3	50510052	30/07/2024 22:15	*Common pipistrelle*	9	46	55.4	45	5	208	19	NaN	53.31744
VP3	50510053	30/07/2024 22:15	*Common pipistrelle*	2	45.9	53.2	45.1	3.9	265	19	NaN	53.31744
VP3	50510054	30/07/2024 22:15	*Common pipistrelle*	11	45.7	49.8	44.8	5	100	19	NaN	53.31746

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510055	30/07/2024 22:16	*Common pipistrelle*	10	45	48.4	44.1	6	100	19	NaN	53.31753
VP3	50510056	30/07/2024 22:16	*Common pipistrelle*	11	45.8	49.2	44.6	9	187	19	NaN	53.31754
VP3	50510057	30/07/2024 22:16	*Common pipistrelle*	8	46.2	50.4	44.8	5	325	19	NaN	53.31767
VP3	50510058	30/07/2024 22:16	*Common pipistrelle*	11	46.2	49.4	45.1	6	110	19	NaN	53.31767
VP3	50510059	30/07/2024 22:16	*Common pipistrelle*	6	45.3	46.9	44.3	5.9	373	19	NaN	53.31767
VP3	50510061	30/07/2024 22:16	*Common pipistrelle*	15	46.6	50.9	45.8	6	106	19	NaN	53.31765
VP3	50510062	30/07/2024 22:17	*Common pipistrelle*	0	0	0	0	0	0	19	NaN	53.31759
VP3	50510063	30/07/2024 22:17	*Common pipistrelle*	15	46.4	50.4	45.2	4	200	19	NaN	53.31759
VP3	50510064	30/07/2024 22:17	*Common pipistrelle*	0	0	0	0	0	0	19	NaN	53.31758
VP3	50510065	30/07/2024 22:17	*Common pipistrelle*	8	46.5	49.4	45.6	7	328	19	NaN	53.31758
VP3	50510066	30/07/2024 22:17	*Common pipistrelle*	18	47.3	55	44.6	5	100	19	NaN	53.31761
VP3	50510067	30/07/2024 22:18	*Common pipistrelle*	6	47.2	49.7	45.8	5.9	606	19	NaN	53.31765
VP3	50510068	30/07/2024 22:18	*Common pipistrelle*	7	46.9	47.9	45.8	7	303	19	NaN	53.31764
VP3	50510069	30/07/2024 22:18	*Common pipistrelle*	2	47.6	49.4	47	4.3	1155	19	NaN	53.31746
VP3	50510070	30/07/2024 22:18	*Common pipistrelle*	6	46.9	48.9	45.8	7	331	19	NaN	53.31733

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510071	30/07/2024 22:19	*Common pipistrelle*	12	46.1	48.4	45	6	232	19	NaN	53.31736
VP3	50510072	30/07/2024 22:19	*Common pipistrelle*	11	46.4	48.6	45.7	8	110	19	NaN	53.31743
VP3	50510073	30/07/2024 22:19	*Common pipistrelle*	15	46	47	45.3	5	200	19	NaN	53.31744
VP3	50510074	30/07/2024 22:19	*Common pipistrelle*	15	46.6	48	45.7	6	105	19	NaN	53.31744
VP3	50510075	30/07/2024 22:20	*Common pipistrelle*	17	46.7	50.1	45	7	425	19	NaN	53.31744
VP3	50510076	30/07/2024 22:20	*Common pipistrelle*	12	46.4	47.9	45.8	7	100	19	NaN	53.3175
VP3	50510077	30/07/2024 22:22	*Common pipistrelle*	8	47.6	49.4	46.4	5	211	19	NaN	53.31752
VP3	50510078	30/07/2024 22:22	*Common pipistrelle*	6	46.5	50.3	45.7	5	178	19	NaN	53.31753
VP3	50510079	30/07/2024 22:22	*Common pipistrelle*	1	47	47.6	46.1	4.6	0	18	NaN	53.31757
VP3	50510080	30/07/2024 22:22	*Common pipistrelle*	9	46.5	48	45.5	7	203	18	NaN	53.31756
VP3	50510081	30/07/2024 22:22	*Common pipistrelle*	5	45.9	48.9	45.1	5.2	215	18	NaN	53.31755
VP3	50510082	30/07/2024 22:23	*Common pipistrelle*	4	46.5	48.7	45.9	6.9	204	18	NaN	53.31755
VP3	50510083	30/07/2024 22:23	*Common pipistrelle*	1	46.1	47.3	45.4	4.6	0	18	NaN	53.31754
VP3	50510084	30/07/2024 22:23	*Common pipistrelle*	9	46.6	49.6	45.9	6	293	18	NaN	53.31754
VP3	50510085	30/07/2024 22:23	*Common pipistrelle*	3	46.3	48.8	45.1	6.1	516	18	NaN	53.31753

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510086	30/07/2024 22:25	*Common pipistrelle*	6	48.7	50.1	47.6	5	560	18	NaN	53.31754
VP3	50510087	30/07/2024 22:30	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31756
VP3	50510088	30/07/2024 22:30	*Common pipistrelle*	13	47.7	51.1	46.6	5	104	18	NaN	53.31758
VP3	50510089	30/07/2024 22:30	*Soprano pipistrelle*	7	52.5	58.6	50.9	5	80	18	NaN	53.31759
VP3	50510090	30/07/2024 22:31	*Common pipistrelle*	13	47.8	52.3	45.4	5	451	18	NaN	53.31757
VP3	50510091	30/07/2024 22:31	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31755
VP3	50510092	30/07/2024 22:31	*Common pipistrelle*	1	46.1	47.9	45.1	5.9	0	18	NaN	53.31755
VP3	50510093	30/07/2024 22:31	*Common pipistrelle*	4	46.4	49	45.8	6.2	216	18	NaN	53.31755
VP3	50510094	30/07/2024 22:31	*Common pipistrelle*	6	45.9	47.3	45.2	7	281	18	NaN	53.31755
VP3	50510095	30/07/2024 22:31	*Common pipistrelle*	11	46.9	48.4	45.7	9	224	18	NaN	53.31758
VP3	50510096	30/07/2024 22:32	*Common pipistrelle*	11	46.4	48.9	45.6	6	316	18	NaN	53.31761
VP3	50510097	30/07/2024 22:32	*Common pipistrelle*	8	47.5	48	46.6	5	257	18	NaN	53.31769
VP3	50510098	30/07/2024 22:32	*Common pipistrelle*	9	48.5	54	47.3	4	273	18	NaN	53.31768
VP3	50510099	30/07/2024 22:32	*Common pipistrelle*	5	46.4	46.8	45.1	8.4	277	18	NaN	53.31761
VP3	50510100	30/07/2024 22:33	*Common pipistrelle*	6	46.2	47.6	45.2	7	307	18	NaN	53.31757

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510101	30/07/2024 22:37	*Leisler's bat*	3	23.2	23.7	22.4	8.1	315	18	NaN	53.31765
VP3	50510104	30/07/2024 22:40	*Soprano pipistrelle*	1	53.1	58.6	52.2	4.6	0	18	NaN	53.31763
VP3	50510105	30/07/2024 22:40	*Common pipistrelle*	18	49.6	52	48.2	5	100	18	NaN	53.31763
VP3	50510106_1	30/07/2024 22:40	*Common pipistrelle*	7	47.6	49.4	46.9	7.4	227	18	NaN	53.31764
VP3	50510106_2	30/07/2024 22:40	*Common pipistrelle*	1	20.4	36.3	11.9	5.9	0	18	NaN	53.31764
VP3	50510107	30/07/2024 22:40	*Common pipistrelle*	6	46.2	46.8	45.5	5	318	18	NaN	53.31762
VP3	50510108	30/07/2024 22:43	*Common pipistrelle*	5	49.8	51.9	49	5	235	18	NaN	53.31768
VP3	50510109	30/07/2024 22:43	*Common pipistrelle*	2	48.3	54.4	47.7	5.2	267	18	NaN	53.31768
VP3	50510110	30/07/2024 22:43	*Common pipistrelle*	2	46.8	47.7	45.8	6.2	269	18	NaN	53.31768
VP3	50510009	29/08/2024 20:31	*Leisler's bat*	2	22	22.4	21.5	10.8	522	19	NaN	53.31723
VP3	50510010	29/08/2024 20:31	*Leisler's bat*	5	22.6	22.9	21.2	11.7	770	19	NaN	53.31723
VP3	50510020	29/08/2024 20:50	*Common pipistrelle*	10	46.3	49.6	44.1	5	283	19	NaN	53.31777
VP3	50510021	29/08/2024 20:50	*Common pipistrelle*	3	44.5	47	43.9	3.7	733	19	NaN	53.31778
VP3	50510022	29/08/2024 20:50	*Common pipistrelle*	1	46.7	49.7	44.8	3.3	0	19	NaN	53.3178
VP3	50510023	29/08/2024 20:50	*Common pipistrelle*	2	45.9	48	44.7	5.9	619	19	NaN	53.31778

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP3	50510024	29/08/2024 20:51	*Common pipistrelle*	9	45.4	49.4	44.1	6	416	19	NaN	53.31777
VP3	50510037	29/08/2024 21:07	*Common pipistrelle*	2	47.3	49.3	46.1	5.9	206	19	NaN	53.31784
VP3	50510039	29/08/2024 21:07	*Common pipistrelle*	1	46.7	47.6	46.1	5.9	0	19	NaN	53.31785
VP3	50510040	29/08/2024 21:08	*Common pipistrelle*	2	46.8	49.1	45.8	5.6	665	19	NaN	53.31783
VP3	50510042	29/08/2024 21:09	*Common pipistrelle*	3	46.3	48.6	45.5	6.3	274	19	NaN	53.31764
VP3	50510043	29/08/2024 21:09	*Common pipistrelle*	1	46.7	47.3	45.1	5.2	0	19	NaN	53.31763
VP3	50510045	29/08/2024 21:11	*Common pipistrelle*	1	47	53.4	46.4	5.2	0	19	NaN	53.31752
VP3	50510046	29/08/2024 21:11	*Common pipistrelle*	0	0	0	0	0	0	19	NaN	53.31754
VP3	50510048	29/08/2024 21:20	*Leisler's bat*	2	26.1	31.3	25.6	6.6	130	19	NaN	53.3173
VP3	50510049	29/08/2024 21:20	*Leisler's bat*	5	28.5	32	26.3	6.6	274	19	NaN	53.31733
VP3	50510050	29/08/2024 21:20	*Leisler's bat*	1	26.2	27.5	25.6	5.9	0	19	NaN	53.31723
VP3	50510051	29/08/2024 21:20	*Leisler's bat*	0	0	0	0	0	0	19	NaN	53.31725
VP3	50510052	29/08/2024 21:20	*Leisler's bat*	2	21.8	22.1	21.5	9.5	669	19	NaN	53.3172
VP3	50510053	29/08/2024 21:21	*Leisler's bat*	2	20.9	21.5	20.4	15.7	237	19	NaN	53.3172
VP3	50510054	29/08/2024 21:23	*Leisler's bat*	0	0	0	0	0	0	19	NaN	53.31745

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 3	50510059	29/08/2024 21:33	*Leisler's bat*	1	20.7	20.7	20.1	7.2	0	19	NaN	53.3175
VP 3	50510070	29/08/2024 21:44	*Common pipistrelle*	7	49.3	61.5	45.5	6.1	369	19	NaN	53.31754
VP 3	50510071	29/08/2024 21:44	*Common pipistrelle*	3	47.5	54.1	45.3	6.6	238	19	NaN	53.31752
VP 3	50510072	29/08/2024 21:44	*Common pipistrelle*	1	47	59.5	46.4	7.2	0	19	NaN	53.31752
VP 3	50510073	29/08/2024 21:44	*Brown long eared bat*	17	29.7	36.7	27.2	5	398	19	NaN	53.31752
VP 3	50510075	29/08/2024 21:47	*Common pipistrelle*	2	47.7	48.3	47.3	6.6	360	19	NaN	53.3177
VP 3	50510076	29/08/2024 21:47	*Soprano pipistrelle*	1	53.1	66.2	51.9	5.2	0	19	NaN	53.3177
VP 3	50510077	29/08/2024 21:49	*Leisler's bat*	1	22	22.3	21.7	9.8	0	19	NaN	53.3176
VP 3	50510078	29/08/2024 21:49	*Leisler's bat*	2	23.3	23.6	22.9	8.5	535	19	NaN	53.31759
VP 3	50510082	29/08/2024 21:55	*Common pipistrelle*	7	46.6	49.1	45.9	5	270	19	NaN	53.3177
VP 3	50510085	29/08/2024 21:59	*Common pipistrelle*	3	46.1	46.4	45.3	9.2	910	19	NaN	53.31757
VP 4	50530005	17/07/2024 22:38	*Leisler's bat*	4	22.3	22.8	20.5	12	681	18	NaN	53.31764
VP 4	50530006	17/07/2024 22:38	*Leisler's bat*	1	22.3	23.2	21	18.4	0	18	NaN	53.31762
VP 4	50530007	17/07/2024 22:39	*Leisler's bat*	37	23.5	25.6	21.9	16	260	18	NaN	53.31763
VP 4	50530008	17/07/2024 22:40	*Leisler's bat*	1	22	22.3	21.4	11.1	0	18	NaN	53.31768

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50530009	17/07/2024 22:40	*Leisler's bat*	12	22	22.8	21.3	12	525	18	NaN	53.31768
VP 4	50530011	17/07/2024 22:41	*Leisler's bat*	3	21.5	22.2	20.9	11.4	474	18	NaN	53.31767
VP 4	50530012	17/07/2024 22:41	*Leisler's bat*	3	21.5	21.9	20.5	15.9	443	18	NaN	53.31767
VP 4	50530014	17/07/2024 22:43	*Leisler's bat*	3	20.8	21.4	20.2	16.6	276	18	NaN	53.31768
VP 4	50530015	17/07/2024 22:43	*Leisler's bat*	5	21.3	21.7	20.5	17.4	470	18	NaN	53.31768
VP 4	50530021	17/07/2024 22:45	*Leisler's bat*	2	20.9	21.5	20.3	15.1	942	18	NaN	53.3177
VP 4	50530022	17/07/2024 22:45	*Leisler's bat*	20	21.2	21.5	20.1	12	260	18	NaN	53.3177
VP 4	50530026	17/07/2024 22:46	*Leisler's bat*	4	21.2	21.8	20.3	13.3	482	18	NaN	53.31767
VP 4	50530029_1	17/07/2024 22:51	*Leisler's bat*	10	22.9	23.9	21.1	18	314	18	NaN	53.31769
VP 4	50530029_2	17/07/2024 22:51	*Leisler's bat*	1	18	21	11.9	3.9	0	18	NaN	53.31769
VP 4	50530030	17/07/2024 22:51	*Leisler's bat*	3	21.1	21.9	20.5	17	506	18	NaN	53.31769
VP 4	50530031	17/07/2024 22:51	*Leisler's bat*	6	21	21.4	20	18	421	18	NaN	53.31769
VP 4	50530043	17/07/2024 23:12	*Leisler's bat*	2	24.4	25.5	23.5	6.9	1338	18	NaN	53.31767
VP 4	50530047	17/07/2024 23:28	*Common pipistrelle*	2	45.4	46.5	44.1	5.6	566	18	NaN	53.31771
VP 4	50530048	17/07/2024 23:29	*Common pipistrelle*	12	52.3	80.6	47.8	3	40	18	NaN	53.31766

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50530049	17/07/2024 23:29	*Common pipistrelle*	1	48.8	50.9	46.4	4.6	0	18	NaN	53.31766
VP 4	50530050	17/07/2024 23:29	*Common pipistrelle*	1	47	48.2	45.8	4.6	0	18	NaN	53.31767
VP 4	50530051	17/07/2024 23:30	*Common pipistrelle*	2	47.6	50	47.1	3.6	258	18	NaN	53.31765
VP 4	50530052	17/07/2024 23:30	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31763
VP 4	50530053	17/07/2024 23:30	*Leisler's bat*	2	23.2	23.8	22.6	14.4	822	18	NaN	53.31762
VP 4	50530054	17/07/2024 23:30	*Leisler's bat*	5	22	22.6	21.3	16	526	18	NaN	53.31762
VP 4	50530055	17/07/2024 23:30	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31762
VP 4	50530056	17/07/2024 23:31	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31763
VP 4	50530057	17/07/2024 23:31	*Common pipistrelle*	1	46.1	47	45.1	4.6	0	18	NaN	53.31763
VP 4	50530058	17/07/2024 23:33	*Common pipistrelle*	2	47.1	48.5	45.6	4.6	260	18	NaN	53.31766
VP 4	50530059	17/07/2024 23:33	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31766
VP 4	50530060	17/07/2024 23:33	*Common pipistrelle*	1	45.1	47.9	44.8	4.6	0	18	NaN	53.31766
VP 4	50530061	17/07/2024 23:33	*Common pipistrelle*	1	47	51.9	46.7	3.9	0	18	NaN	53.31767
VP 4	50530062	17/07/2024 23:34	*Common pipistrelle*	3	46.8	49.4	45.8	5.7	280	18	NaN	53.31767
VP 4	50530063	17/07/2024 23:34	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31769

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50530064	17/07/2024 23:34	*Common pipistrelle*	13	48.7	83.1	43.6	5	90	18	NaN	53.31769
VP 4	50530065	17/07/2024 23:35	*Common pipistrelle*	1	48.8	52.5	48.2	2.6	0	18	NaN	53.31766
VP 4	50530066	17/07/2024 23:35	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31766
VP 4	50530067	17/07/2024 23:35	*Common pipistrelle*	1	46.1	46.4	45.8	6.6	0	18	NaN	53.31766
VP 4	50530068	17/07/2024 23:36	*Common pipistrelle*	1	45.4	46.1	44.8	17	0	18	NaN	53.31765
VP 4	50530069	17/07/2024 23:36	*Common pipistrelle*	2	46.2	49	45.3	6.2	1990	18	NaN	53.31765
VP 4	50530070	17/07/2024 23:36	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31763
VP 4	50530071	17/07/2024 23:36	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31764
VP 4	50530072	17/07/2024 23:37	*Common pipistrelle*	1	46.7	52.8	45.1	5.9	0	18	NaN	53.31764
VP 4	50530073	17/07/2024 23:37	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31765
VP 4	50530074	17/07/2024 23:38	*Common pipistrelle*	2	48.2	50	46.1	5.2	733	18	NaN	53.31765
VP 4	50530077	17/07/2024 23:42	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31767
VP 4	50530078	17/07/2024 23:43	*Common pipistrelle*	1	45.8	46.4	45.1	9.8	0	18	NaN	53.31765
VP 4	50530081	17/07/2024 23:52	*Common pipistrelle*	2	47.3	47.7	46.1	4.6	176	18	NaN	53.31766
VP 4	50530082	17/07/2024 23:52	*Common pipistrelle*	4	44.4	45.2	43.4	7.5	837	18	NaN	53.31767

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50530083	17/07/2024 23:55	*Leisler's bat*	21	28.4	41.4	25.4	7	110	18	NaN	53.31766
VP 4	50530084	17/07/2024 23:55	*Common pipistrelle*	1	48.5	54	46.7	5.2	0	18	NaN	53.31767
VP 4	50530085	17/07/2024 23:55	*Common pipistrelle*	1	47.9	51.5	46.1	5.2	0	18	NaN	53.31767
VP 4	50530086	17/07/2024 23:56	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31767
VP 4	50530087	17/07/2024 23:56	*Common pipistrelle*	3	47.3	51.2	46.6	4.8	785	18	NaN	53.31768
VP 4	50530088	17/07/2024 23:56	*Soprano pipistrelle*	4	51.2	61.8	48.8	3	249	18	NaN	53.31768
VP 4	50530089	17/07/2024 23:56	*Common pipistrelle*	1	48.2	52.8	47.3	2.6	0	18	NaN	53.31768
VP 4	50530090	17/07/2024 23:57	*Common pipistrelle*	2	48.5	50.8	47.3	6.6	607	18	NaN	53.31768
VP 4	50530091	17/07/2024 23:57	*Common pipistrelle*	1	47.3	50	46.7	9.2	0	18	NaN	53.31768
VP 4	50530092	17/07/2024 23:57	*Common pipistrelle*	0	0	0	0	0	0	18	NaN	53.31767
VP 4	50530093	17/07/2024 23:57	*Common pipistrelle*	1	45.8	46.1	45.4	7.9	0	18	NaN	53.31766
VP 4	50530094	17/07/2024 23:57	*Common pipistrelle*	1	45.8	46.1	44.8	6.6	0	18	NaN	53.31767
VP 4	50530095	17/07/2024 23:59	*Common pipistrelle*	6	48.2	52.3	47.1	5.9	360	18	NaN	53.31758
VP 4	50530096	18/07/2024 00:01	*Common pipistrelle*	2	48.2	50.2	46.4	4.3	69	18	NaN	53.31764
VP 4	50550082	30/07/2024 22:31	*Leisler's bat*	4	20.8	21.1	20.3	12.3	308	18	NaN	53.31768

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50550142	30/07/2024 22:54	*Leisler's bat*	22	21.4	22	21	16	270	17	NaN	53.31767
VP 4	50550147	30/07/2024 22:56	*Leisler's bat*	13	21.2	21.6	20.6	18	913	17	NaN	53.31766
VP 4	50550149	30/07/2024 22:57	*Leisler's bat*	19	21.7	22.1	21.1	18	280	17	NaN	53.31764
VP 4	50550151	30/07/2024 22:58	*Common pipistrelle*	7	44.6	46.2	43.9	7	2641	17	NaN	53.31764
VP 4	50550188	30/07/2024 23:12	*Common pipistrelle*	4	45.5	46.7	44.8	5.9	3404	17	NaN	53.31768
VP 4	50550197	30/07/2024 23:16	*Leisler's bat*	11	24.7	26.3	23.6	12	606	17	NaN	53.31768
VP 4	50550200	30/07/2024 23:17	*Common pipistrelle*	4	47.9	54.1	45.8	4.3	5330	17	NaN	53.31768
VP 4	50550203	30/07/2024 23:18	*Common pipistrelle*	2	46.7	51.4	45.1	5.6	455	17	NaN	53.31766
VP 4	50550205	30/07/2024 23:19	*Common pipistrelle*	2	46.1	51.9	45.4	5.2	372	17	NaN	53.3177
VP 4	50550206	30/07/2024 23:19	*Common pipistrelle*	3	47.1	49.2	46.4	5.2	9050	17	NaN	53.3177
VP 4	50550210	30/07/2024 23:21	*Common pipistrelle*	3	46.8	47.1	46.1	12.8	508	17	NaN	53.31768
VP 4	50550215	30/07/2024 23:23	*Common pipistrelle*	5	47.6	50.9	46.4	6.2	2069	17	NaN	53.31769
VP 4	50550216	30/07/2024 23:23	*Common pipistrelle*	1	47.6	52.5	45.4	9.2	0	17	NaN	53.31768
VP 4	50550217	30/07/2024 23:23	*Common pipistrelle*	3	47.8	51.3	46.8	4.4	5337	17	NaN	53.31769
VP 4	50550238	30/07/2024 23:32	*Common pipistrelle*	8	48.2	50.3	46.1	6	1074	17	NaN	53.31769

2024 Building Emergence Results												
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]
VP 4	50550239	30/07/2024 23:32	*Common pipistrelle*	7	46.4	47.9	45.2	7	1695	17	NaN	53.31769
VP 4	50550240	30/07/2024 23:32	*Common pipistrelle*	3	46.7	49.9	46.1	7	2120	17	NaN	53.31769
VP 4	50550242	30/07/2024 23:33	*Common pipistrelle*	4	46.9	51.2	46.2	5.9	407	17	NaN	53.31769
VP 4	50550255	30/07/2024 23:38	*Leisler's bat*	5	24.2	25	23.2	10.2	561	17	NaN	53.31768
VP 4	50550262	30/07/2024 23:41	*Common pipistrelle*	3	49	54.2	47.8	6.6	400	16	NaN	53.31769
VP 4	50550263	30/07/2024 23:41	*Common pipistrelle*	1	48.2	48.2	47.3	4.6	0	16	NaN	53.31768
VP 4	50550269	30/07/2024 23:44	*Common pipistrelle*	4	47.7	50.1	46.7	5.7	2027	16	NaN	53.31769
VP 4	2180000	29/08/2024 20:16	*Leisler's bat*	4	22.1	22.5	21.6	13.3	302	19	58	53.31764
VP 4	2180003	29/08/2024 21:13	*Common pipistrelle*	1	47.3	52.5	46.1	4.8	0	18	59	53.31772
VP 4	2180004	29/08/2024 21:22	*Leisler's bat*	2	24.9	26.1	24.2	14.1	208	16	59	53.31771
VP 4	2180005	29/08/2024 21:22	*Leisler's bat*	6	24.9	26.2	23.9	10.3	318	16	59	53.31771
VP 4	2180008	29/08/2024 21:25	*Common pipistrelle*	2	44.3	45	43.5	10.7	0	16	60	53.31769
VP 4	2180009	29/08/2024 21:31	*Common pipistrelle*	2	90.4	93.2	86.8	7.7	1206	17	60	53.3177
VP 4	2180011	29/08/2024 22:00	*Common pipistrelle*	4	46.1	46.4	41.7	9.3	571	21	55	53.31771

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP1	50520024	30/06/2025 21:54	*Leisler's bat*	7	20.8	21.4	20.1	18	638	20	NaN		
VP1	50520027	30/06/2025 21:55	*Leisler's bat*	18	22	22.7	21.2	12	929	20	NaN		
VP1	50520039	30/06/2025 22:00	*Leisler's bat*	9	23.4	24.7	22.3	12	736	21	NaN		
VP1	50520040	30/06/2025 22:00	*Leisler's bat*	5	22.8	24	22	7.3	632	21	NaN		
VP1	50520048	30/06/2025 22:03	*Leisler's bat*	8	22.1	23	21.2	10	414	21	NaN		
VP1	50520058	30/06/2025 22:07	*Leisler's bat*	14	24.2	25.5	22.9	7	440	20	NaN		
VP1	50520080	30/06/2025 22:16	*Leisler's bat*	7	23.7	25.1	22.8	6.9	319	20	NaN		
VP1	50520084	30/06/2025 22:17	*Common Pipistrelle*	5	49	53.7	45.3	5	286	20	NaN		
VP1	50520136	30/06/2025 22:37	*Soprano pipistrelle*	3	50.6	57.6	48.5	4.4	535	21	NaN		
VP1	50520214	30/06/2025 23:08	*Leisler's bat*	3	22.9	23.8	22.1	11.8	342	19	NaN	53.31731	-6.24538
VP1	50520222	30/06/2025 23:11	*Leisler's bat*	2	22.1	22.3	21.5	8.5	200	19	NaN		
VP1	50520247	30/06/2025 23:21	*Leisler's bat*	5	23.2	23.4	22.7	7.6	462	20	NaN		
VP1	50550002	31/07/2025 21:26	*Leisler's bat*	19	22	22.6	21.4	10	250	18	NaN		
VP1	50550003	31/07/2025 21:26	*Leisler's bat*	10	23.2	24	22.1	10.7	543	18	NaN		
VP1	50550004	31/07/2025 21:26	*Leisler's bat*	3	21.7	22.4	21	12.9	356	18	NaN		

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP1	50550005	31/07/2025 21:26	*Leisler's bat*	3	23.1	24.2	22.5	12	133	18	NaN		
VP1	50550006	31/07/2025 21:26	*Leisler's bat*	8	21.9	22.7	21.3	9.6	490	18	NaN		
VP1	50550007	31/07/2025 21:26	*Leisler's bat*	1	21	21.4	19.8	20.3	0	18	NaN		
VP1	50550008	31/07/2025 21:26	*Leisler's bat*	15	22.3	22.9	21.7	18	338	18	NaN		
VP1	50550009	31/07/2025 21:27	*Leisler's bat*	2	21.7	22.1	21.2	13.1	263	18	NaN		
VP1	50550010	31/07/2025 21:27	*Leisler's bat*	3	23.5	24.4	22.6	11.4	245	18	NaN		
VP1	50550011	31/07/2025 21:27	*Leisler's bat*	4	21.4	22.6	20.9	12.6	429	18	NaN		
VP1	50550012	31/07/2025 21:40	*Leisler's bat*	9	23.8	24.8	23.2	12	470	18	NaN		
VP1	50550013	31/07/2025 21:41	*Leisler's bat*	0	0	0	0	0	0	18	NaN		
VP1	50550014	31/07/2025 21:43	*Leisler's bat*	6	23.8	24.4	22.1	14	337	18	NaN		
VP1	50550015	31/07/2025 21:43	*Leisler's bat*	3	24.3	25.6	23.5	11.6	634	18	NaN		
VP1	50550016	31/07/2025 21:43	*Leisler's bat*	1	23.2	24.1	22.9	16.4	0	18	NaN		
VP1	50550017	31/07/2025 21:44	*Leisler's bat*	16	25	27	24	12	120	18	NaN		
VP1	50550019_1	31/07/2025 22:07	*Soprano pipistrelle*	1	58.6	65.6	57.6	3.3	0	18	NaN		
VP1	50550019_2	31/07/2025 22:07	*Soprano pipistrelle*	1	61.6	68	60.4	2.6	0	18	NaN		

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP1	50550020	31/07/2025 22:07	*Soprano pipistrelle*	6	55.1	55.6	54.4	7.1	132	18	NaN		
VP1	50550026	31/07/2025 22:53	*Common Pipistrelle*	0	0	0	0	0	0	17	NaN		
VP1	24640000_1	27/08/2025 20:47	*Nyctalus leisleri*	1	20.6	22.5	19.5	15.5	0	17	61	53.31743	-6.24522
VP1	24640001	27/08/2025 20:54	*Nyctalus leisleri*	1	22.1	22.5	21.8	13.3	0	17	62	53.31777	-6.24516
VP1	24640002	27/08/2025 20:54	*Pipistrellus pipistrellus*	20	44.9	58.9	43.7	6	100	17	62	53.31759	-6.24515
VP1	24640003	27/08/2025 21:07	*Pipistrellus pipistrellus*	4	47.1	50.4	46.1	6	263	17	63	53.31768	-6.24526
VP1	24640004_1	27/08/2025 21:31	*Pipistrellus pygmaeus*	3	52.5	57.6	49.6	3.2	166	17	63	53.3176	-6.2454
VP1	24640005	27/08/2025 21:33	*Pipistrellus pipistrellus*	12	47.5	69.8	46.8	5	110	17	63	53.31776	-6.24528
VP1	24640006	27/08/2025 21:33	*Pipistrellus pipistrellus*	26	48.1	61.4	47.3	3	76	17	62	53.31776	-6.2453
VP1	24640007_1	27/08/2025 21:34	*Pipistrellus pipistrellus*	12	47.7	56.6	46.5	3	320	17	62	53.31774	-6.24526
VP1	24640008_1	27/08/2025 21:34	*Pipistrellus pygmaeus*	16	54.4	80.9	48.5	3	60	17	62	53.31774	-6.24526
VP1	24640008_2	27/08/2025 21:34	*Myotis spec.*	4	85.5	103.4	69	2.3	123	17	62	53.31774	-6.24526
VP1	24640008_3	27/08/2025 21:34	*Myotis spec.*	1	62.3	91.5	55.1	5.3	0	17	62	53.31774	-6.24526
VP1	24640009	27/08/2025 21:38	*Pipistrellus pygmaeus*	21	52.3	73.8	51.5	4	90	17	62	53.31769	-6.24521
VP1	24640010	27/08/2025 21:51	*Myotis spec.*	4	78.8	90.9	53.1	4	92	17	63	53.31757	-6.24515

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP1	24640011	27/08/2025 21:51	*Pipistrellus pygmaeus*	4	52.9	58.9	50.9	2.1	98	17	63	53.31752	-6.24516
VP1	24640012	27/08/2025 21:51	*Pipistrellus pipistrellus*	5	51.4	52.3	49.6	1.4	150	17	63	53.31753	-6.24516
VP1	24640013	27/08/2025 21:52	*Pipistrellus pipistrellus*	6	49.6	54.1	48.5	2.7	113	17	63	53.31756	-6.24516
VP1	24640014_1	27/08/2025 21:52	*Pipistrellus pipistrellus*	5	51.3	55.1	49.1	3.1	180	17	63	53.31756	-6.24516
VP1	24640015	27/08/2025 21:52	*Pipistrellus pipistrellus*	8	49.8	53.9	48.6	2	80	17	63	53.31755	-6.24516
VP1	24640016	27/08/2025 21:52	*Pipistrellus pipistrellus*	19	58.6	84.6	49.6	3	80	17	63	53.31754	-6.24517
VP1	24640017_1	27/08/2025 21:59	*Pipistrellus pygmaeus*	7	51.3	59.3	49.9	2	146	17	63	53.31738	-6.24517
VP1	24640018	27/08/2025 22:01	*Nyctalus leisleri*	6	25.8	28.4	24.4	7.9	223	17	63	53.3173	-6.2452
VP1	24640019_1	27/08/2025 22:01	*Pipistrellus pygmaeus*	62	58	75.2	57.1	6	85	17	63	53.3173	-6.2452
VP1	24640019_2	27/08/2025 22:01	*Pipistrellus pygmaeus*	7	22	34.4	20.3	6.7	903	17	63	53.3173	-6.2452
VP1	24640020	27/08/2025 22:06	*Pipistrellus pygmaeus*	5	52.4	56.5	50.5	3.7	95	17	63	53.31745	-6.24519
VP1	24640021	27/08/2025 22:06	*Pipistrellus pygmaeus*	15	51.5	66.7	50.7	6	80	17	63	53.31745	-6.24519
VP1	24640022_1_1	27/08/2025 22:06	*Pipistrellus pipistrellus*	7	44.1	54.3	43	3.6	157	17	63	53.31746	-6.24518
VP1	24640022_2	27/08/2025 22:06	*Pipistrellus nathusii*	5	39.9	43.3	36.6	6	172	17	63	53.31746	-6.24518
VP1	24640022_4	27/08/2025 22:06	*Pipistrellus pygmaeus*	4	58	61.7	56.6	2	89	17	63	53.31746	-6.24518

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP1	24640023_1	27/08/2025 22:06	*Pipistrellus pygmaeus*	15	61.5	75.6	57.6	4	60	17	63	53.31744	-6.24519
VP1	24640023_2	27/08/2025 22:06	*Pipistrellus pipistrellus*	1	51.4	55.9	46.9	1.6	0	17	63	53.31744	-6.24519
VP1	24640023_3	27/08/2025 22:06	*Myotis spec.*	1	90.8	91.1	70.9	2.1	0	17	63	53.31744	-6.24519
VP1	24640024_1	27/08/2025 22:06	*Pipistrellus pipistrellus*	23	45.7	69.8	42.9	4	73	17	63	53.31742	-6.2452
VP1	24640024_2	27/08/2025 22:06	*Pipistrellus pipistrellus*	40	42.4	61.9	38.3	4	75	17	63	53.31742	-6.2452
VP1	24640025	27/08/2025 22:07	*Pipistrellus pipistrellus*	15	46.7	56.7	44.6	3	80	17	63	53.31743	-6.24522
VP1	24640026	27/08/2025 22:07	*Pipistrellus pipistrellus*	33	44.3	57.4	41.9	4	70	17	63	53.31742	-6.2452
VP1	24640027	27/08/2025 22:07	*Pipistrellus pipistrellus*	10	48.9	53.8	46.5	2	179	17	63	53.31743	-6.24521
VP1	24640028	27/08/2025 22:07	*Pipistrellus pipistrellus*	9	50.3	54.2	46.6	3	70	17	63	53.31743	-6.24521
VP1	24640029	27/08/2025 22:07	*Pipistrellus pipistrellus*	4	47.7	73.7	45.7	4	150	17	63	53.31744	-6.2452
VP1	24640030	27/08/2025 22:08	*Pipistrellus pipistrellus*	12	52.6	97.3	48	4	121	17	63	53.3174	-6.24522
VP1	24640031_1	27/08/2025 22:09	*Pipistrellus pipistrellus*	3	46.4	56.1	45.8	3.6	70	17	63	53.31729	-6.24524
VP1	24640032_1	27/08/2025 22:09	*Pipistrellus pipistrellus*	9	45.5	51.1	44.6	3	148	17	63	53.31728	-6.24522
VP1	24640033	27/08/2025 22:26	*Pipistrellus pipistrellus*	12	50.8	78.6	49.1	3	138	16	63	53.3177	-6.24527
VP1	24640034_1	27/08/2025 22:29	*Myotis spec.*	4	82.2	87.8	69.2	2	78	16	63	53.31766	-6.24516

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP2	50530001	30/06/2025 23:00	*Common Pipistrelle*	2	48	48.3	46.8	8.5	450	19	NaN	53.31738	-6.24569
VP2	50530002	30/06/2025 23:00	*Common Pipistrelle*	1	48.2	48.5	45.4	10.5	0	20	NaN	53.31732	-6.2457
VP2	50530003	30/06/2025 23:00	*Common Pipistrelle*	2	48.2	48.6	47.3	7.5	347	20	NaN	53.31734	-6.24564
VP2	50530004	30/06/2025 23:00	*Common Pipistrelle*	3	48.1	48.5	46.5	8.3	642	20	NaN	53.31736	-6.24561
VP2	50530005	30/06/2025 23:00	*Common Pipistrelle*	1	48.2	48.5	46.7	7.9	0	20	NaN	53.31707	-6.24595
VP2	50530006	30/06/2025 23:13	*Common Pipistrelle*	0	0	0	0	0	0	20	NaN	53.31741	-6.24563
VP2	50530007	30/06/2025 23:15	*Soprano pipistrelle*	8	48.5	58.9	47.3	5	292	19	NaN	53.31714	-6.2459
VP2	50530008	30/06/2025 23:16	*Common Pipistrelle*	0	0	0	0	0	0	20	NaN	53.31711	-6.24593
VP2	50520095	31/07/2025 21:32	*Common Pipistrelle*	15	45.9	52.4	45	5	100	18	NaN	53.31739	-6.24558
VP2	50520118	31/07/2025 21:41	*Leisler's bat*	6	22.9	24.2	22.5	15.6	478	18	NaN	53.31742	-6.24559
VP2	50520157	31/07/2025 21:57	*Common Pipistrelle*	7	47.9	56.9	45.9	5	270	17	NaN	53.3174	-6.24562
VP2	50520295	31/07/2025 22:51	*Leisler's bat*	17	26.2	35	25	10	100	17	NaN	53.31734	-6.24563
VP2	50520296	31/07/2025 22:51	*Leisler's bat*	2	25	26.4	24.2	4.9	633	17	NaN	53.31733	-6.24566
VP2	24240171	27/08/2025 20:54	*Pipistrellus pipistrellus*	14	44.9	52	43.8	7	100	18	63	53.3174	-6.24567
VP2	24240189_1	27/08/2025 21:02	*Pipistrellus pipistrellus*	12	46.8	51.2	46	3	96	18	63	53.31738	-6.24576

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP2	24240189_2	27/08/2025 21:02	*Pipistrellus pipistrellus*	9	46.8	50.7	46.1	3	100	18	63	53.31738	-6.24576
VP3	07370004	30/06/2025 21:57	*Leisler's bat*	5	22.8	23.9	21.5	18	347	20	64		
VP3	07370005	30/06/2025 21:57	*Leisler's bat*	2	20.4	21.2	19.9	15.5	623	20	64		
VP3	07370006	30/06/2025 22:02	*Leisler's bat*	13	23.3	25.4	22.6	9	220	20	63	53.31689	-6.2455
VP3	07370007	30/06/2025 22:02	*Leisler's bat*	7	23.5	24.9	22.6	8.2	236	20	63	53.31691	-6.24563
VP3	07370009	30/06/2025 22:05	*Leisler's bat*	8	22	23.6	21.2	12.7	270	20	64	53.31709	-6.24584
VP3	07370011	30/06/2025 22:09	*Leisler's bat*	5	25.1	28.5	23.5	8.4	316	20	64	53.31703	-6.24537
VP3	07370015	30/06/2025 22:19	*Common Pipistrelle*	20	48.6	71.9	45.2	3	80	19	65		
VP3	07370016	30/06/2025 22:40	*Common Pipistrelle*	10	49.4	77.6	47.6	3	90	19	67	53.31675	-6.24576
VP3	07370017	30/06/2025 23:23	*Leisler's bat*	2	24	24.9	23.6	9.3	629	18	69	53.31696	-6.24852
VP3	50530002	31/07/2025 21:26	*Leisler's bat*	5	23.1	23.5	22.3	7.3	359	18	NaN		
VP3	50530003	31/07/2025 21:26	*Leisler's bat*	4	22	22.8	21.4	13.8	315	18	NaN		
VP3	50530004	31/07/2025 21:40	*Leisler's bat*	7	24	24.9	23.4	10	310	18	NaN		
VP3	50530005	31/07/2025 21:44	*Leisler's bat*	6	23.7	24.6	23.2	10	310	17	NaN		
VP3	50530006	31/07/2025 21:45	*Leisler's bat*	7	24.5	25.5	23.3	9	256	17	NaN		

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP3	50530008	31/07/2025 22:07	*Soprano pipistrelle*	6	58.7	65	57.5	4	408	18	NaN		
VP3	50530009	31/07/2025 22:53	*Common Pipistrelle*	3	45.4	46.2	44.8	6.8	618	17	NaN		
VP3	50530002	27/08/2025 20:54	*Pipistrellus pipistrellus*	24	44.8	46.3	43.2	7	100	18	NaN		
VP3	50530006	27/08/2025 21:33	*Pipistrellus pipistrellus*	20	47.6	50.7	46.2	2	110	19	NaN		
VP3	50530007	27/08/2025 21:34	*Pipistrellus pipistrellus*	12	48.1	55.5	47	1	90	19	NaN		
VP3	50530008	27/08/2025 21:34	*Pipistrellus pipistrellus*	15	48.1	53.1	47	1	76	19	NaN		
VP3	50530009	27/08/2025 21:34	*Pipistrellus pipistrellus*	29	48.4	54.4	46.8	2	86	19	NaN		
VP3	50530010_1	27/08/2025 21:34	*Myotis spec.*	10	55.1	61.3	49.7	2	117	19	NaN	53.31682	-6.24007
VP3	50530010_2	27/08/2025 21:34	*Myotis spec.*	1	61	78.4	53.7	2.6	0	19	NaN	53.31682	-6.24007
VP3	50530011	27/08/2025 21:39	*Pipistrellus pygmaeus*	33	51.7	57	50.1	3	95	19	NaN	53.31756	-6.245
VP3	50530012_1	27/08/2025 22:01	*Myotis spec.*	27	56.3	59.6	54.2	5	90	19	NaN	53.31752	-6.24506
VP3	50530012_2	27/08/2025 22:01	*Nyctalus leisleri*	10	24	27	21.7	1	117	19	NaN	53.31752	-6.24506
VP3	50530012_3	27/08/2025 22:01	*Nyctalus leisleri*	1	29.6	36.3	24.4	2.6	0	19	NaN	53.31752	-6.24506
VP3	50530013	27/08/2025 22:06	*Myotis spec.*	21	52.9	57.8	50.8	2	70	19	NaN	53.31745	-6.2452
VP3	50530014	27/08/2025 22:07	*Myotis spec.*	8	59.3	66.3	57.6	3	80	19	NaN	53.31745	-6.2452

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP3	50530015	27/08/2025 22:07	*Pipistrellus pipistrellus*	17	46.9	52.8	44.9	4	80	19	NaN	53.31745	-6.2452
VP3	50530016_1	27/08/2025 22:07	*Myotis spec.*	18	40.9	52.7	36.3	7	186	19	NaN	53.31745	-6.2452
VP3	50530016_2	27/08/2025 22:07	*Pipistrellus pygmaeus*	2	50.9	59.5	47.3	3.9	1861	19	NaN	53.31745	-6.2452
VP3	50530017	27/08/2025 22:07	*Pipistrellus pipistrellus*	8	43.9	44.6	42.5	3	140	19	NaN		
VP3	50530018	27/08/2025 22:08	*Pipistrellus pipistrellus*	16	50.1	57.1	48.2	3	80	19	NaN	53.31753	-6.24517
VP3	50530019	27/08/2025 22:26	*Pipistrellus pipistrellus*	22	50.9	58.8	48.4	3	80	18	NaN		
VP4	50190009	31/07/2025 21:25	*Leisler's bat*	5	23.4	24.6	22.3	14	197	18	NaN	53.31769	-6.24517
VP4	50190010	31/07/2025 21:26	*Leisler's bat*	29	22.7	25.3	21.6	16	250	18	NaN	53.3177	-6.24517
VP4	50190011	31/07/2025 21:26	*Leisler's bat*	33	22.6	24.5	21.6	20	235	18	NaN	53.3177	-6.24517
VP4	50190012_1	31/07/2025 21:26	*Leisler's bat*	10	21.4	22.4	20.9	15	488	18	NaN	53.31771	-6.24519
VP4	50190012_2	31/07/2025 21:26	*Leisler's bat*	1	24.7	33.9	24.4	13.1	0	18	NaN	53.31771	-6.24519
VP4	50190013	31/07/2025 21:27	*Leisler's bat*	18	22.1	23.3	21.4	20	260	18	NaN	53.31769	-6.24519
VP4	50190014	31/07/2025 21:27	*Leisler's bat*	3	21.8	23.2	21.5	12.7	515	18	NaN	53.31768	-6.24516
VP4	50190015	31/07/2025 21:27	*Leisler's bat*	3	22.7	23.1	21.7	15.3	321	18	NaN	53.31768	-6.24517
VP4	50190017	31/07/2025 21:39	*Leisler's bat*	1	25	26.2	24.1	11.1	0	17	NaN	53.31769	-6.24517

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP4	50190018	31/07/2025 21:39	*Leisler's bat*	3	25.5	26.4	24.2	10.3	466	17	NaN	53.31769	-6.24517
VP4	50190019	31/07/2025 21:40	*Leisler's bat*	17	24.1	25.2	22.9	14	483	17	NaN	53.31769	-6.2452
VP4	50190020	31/07/2025 21:40	*Leisler's bat*	6	24.4	25.7	23.6	11.4	346	17	NaN	53.31769	-6.24518
VP4	50190021	31/07/2025 21:41	*Leisler's bat*	12	23.5	25.2	23.1	14.3	373	18	NaN	53.31768	-6.24518
VP4	50190022	31/07/2025 21:43	*Leisler's bat*	1	23.5	24.1	23.2	15.7	0	18	NaN	53.31772	-6.24518
VP4	50190023	31/07/2025 21:43	*Leisler's bat*	1	25.6	27.8	25	5.2	0	18	NaN	53.31772	-6.24518
VP4	50190024	31/07/2025 21:43	*Leisler's bat*	42	24.1	25.7	23.4	10	540	18	NaN	53.31772	-6.24518
VP4	50190025	31/07/2025 21:43	*Leisler's bat*	4	23.8	24.7	22.9	8.4	434	18	NaN	53.31771	-6.24521
VP4	50190026	31/07/2025 21:44	*Leisler's bat*	3	23.3	24.5	22.6	11.4	273	18	NaN	53.31771	-6.2452
VP4	50190027	31/07/2025 21:44	*Leisler's bat*	19	24.1	26.5	23	14	337	18	NaN	53.31771	-6.2452
VP4	50190052	31/07/2025 22:53	*Common Pipistrelle*	2	46.5	47	45.8	7.5	346	17	NaN	53.31765	-6.24512
VP4	24250002	27/08/2025 20:45	*Nyctalus leisleri*	5	21.2	22.4	19.8	8.9	347	15	65	53.31768	-6.24522
VP4	24250003	27/08/2025 20:45	*Nyctalus leisleri*	6	21.4	22.5	20	11.5	365	15	65	53.31769	-6.24522
VP4	24250004	27/08/2025 20:46	*Nyctalus leisleri*	3	21.4	22.5	20.4	8	394	15	65	53.31768	-6.24522
VP4	24250005	27/08/2025 20:54	*Nyctalus leisleri*	4	21.8	22.2	20.2	12	369	15	66	53.31769	-6.2452

2025 Building Emergence Survey Results													
VP	Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
VP4	24250006	27/08/2025 20:54	*Nyctalus leisleri*	11	22.3	23	20.9	7	400	15	66	53.31769	-6.2452
VP4	24250007	27/08/2025 20:54	*Pipistrellus pipistrellus*	11	46.3	63.3	45.6	4	105	15	66	53.3177	-6.2452
VP4	24250008	27/08/2025 21:11	*Nyctalus leisleri*	3	23.3	23.9	22.4	9.4	643	15	66	53.31769	-6.24513
VP4	24250009	27/08/2025 22:01	*Nyctalus leisleri*	8	25	26.9	23.9	5.9	225	15	67	53.31768	-6.24517
VP4	24250010	27/08/2025 22:01	*Nyctalus leisleri*	5	24.9	25.7	23.2	6	381	15	67	53.31768	-6.24517
VP4	24250011	27/08/2025 22:09	*Pipistrellus pipistrellus*	15	47.1	68.6	45.6	4	80	15	67	53.31769	-6.24516
VP4	24250012_1	27/08/2025 22:21	*Pipistrellus pipistrellus*	5	49.3	52.6	47.8	4.3	264	14	67	53.31769	-6.24515

Bat Emergence Survey Metadata – Trees (2025)

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]	Tree No.
50550090	29/07/2025 21:44	*Common Pipistrelle*	1	45.8	47.9	45.1	12.5	0	25	NaN			Tree 267
50550091	29/07/2025 21:44	*Common Pipistrelle*	0	0	0	0	0	0	25	NaN			Tree 267
50550092	29/07/2025 21:45	*Common Pipistrelle*	1	46.7	47	45.8	7.9	0	25	NaN			Tree 267
50550093	29/07/2025 21:45	*Common Pipistrelle*	0	0	0	0	0	0	25	NaN			Tree 267
50550094	29/07/2025 21:45	*Common Pipistrelle*	0	0	0	0	0	0	25	NaN			Tree 267
50550119	29/07/2025 21:57	*Leisler's bat*	2	23.3	23.8	22.7	11.8	1057	25	NaN			Tree 267
50550139	29/07/2025 22:12	*Leisler's bat*	0	0	0	0	0	0	24	NaN			Tree 267
50550148	29/07/2025 22:20	*Leisler's bat*	3	20.8	21.1	20.2	10.9	783	25	NaN			Tree 267
50550149	29/07/2025 22:20	*Leisler's bat*	1	20.7	21	20.4	9.2	0	25	NaN			Tree 267
50550155	29/07/2025 22:35	*Leisler's bat*	0	0	0	0	0	0	25	NaN			Tree 267
50550178	29/07/2025 22:52	*Leisler's bat*	0	0	0	0	0	0	24	NaN			Tree 267
24670005	04/09/2025 20:19	*Pipistrellus pipistrellus*	10	48.5	50	47.1	3	80	17	61	53.31838	-6.2427	Tree 267
24670007	04/09/2025 20:22	*Nyctalus leisleri*	5	23.8	24.8	22.6	6.1	429	17	61	53.31846	-6.24263	Tree 267
07370003	26/06/2025 22:10	*Leisler's bat*	0	0	0	0	0	0	14	71			Tree 290

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]	Tree No.
07370009	26/06/2025 22:32	*Leisler's bat*	7	26.1	29.7	24.9	6.2	210	15	71			Tree 290
07370010	26/06/2025 22:36	*Leisler's bat*	0	0	0	0	0	0	15	71			Tree 290
07370013	26/06/2025 22:55	*Leisler's bat*	2	30.8	31.1	30	8.8	31	14	71	53.31859	-6.24257	Tree 290
50190013	29/07/2025 21:22	*Leisler's bat*	1	21.4	22.3	20.7	18.4	0	23	NaN			Tree 290
50190014	29/07/2025 21:22	*Leisler's bat*	1	25	26.8	24.4	8.5	0	23	NaN			Tree 290
50190015	29/07/2025 21:22	*Leisler's bat*	2	21.5	22.1	21.2	11.5	754	23	NaN			Tree 290
50190019	29/07/2025 21:25	*Leisler's bat*	3	15.3	15.5	14.7	13.3	229	23	NaN			Tree 290
50190071	29/07/2025 22:04	*Leisler's bat*	1	21	21.4	20.7	9.2	0	23	NaN			Tree 290
50190072	29/07/2025 22:04	*Leisler's bat*	2	20.9	21.2	20.6	14.4	995	23	NaN			Tree 290
50190075_1	29/07/2025 22:12	*Leisler's bat*	9	18.3	18.6	17.9	13.6	207	23	NaN			Tree 290
50190075_2	29/07/2025 22:12	*Leisler's bat*	8	23.4	23.9	23	8.5	389	23	NaN			Tree 290
50190089	29/07/2025 22:35	*Leisler's bat*	2	26.7	33.7	24.6	6.9	556	23	NaN			Tree 290
50190090	29/07/2025 22:35	*Leisler's bat*	1	24.4	31.1	23.8	7.9	0	23	NaN			Tree 290
50190096	29/07/2025 22:41	*Leisler's bat*	11	25.9	27.5	24.7	4	371	23	NaN			Tree 290
50190105	29/07/2025 22:50	*Common Pipistrelle*	0	0	0	0	0	0	23	NaN			Tree 290

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]	Tree No.
50190106	29/07/2025 22:52	*Leisler's bat*	0	0	0	0	0	0	23	NaN			Tree 290
50190109	29/07/2025 22:57	*Leisler's bat*	1	23.5	24.7	23.2	9.2	0	23	NaN			Tree 290
50530004	04/09/2025 21:27	*Pipistrellus pipistrellus*	2	47.1	47.6	46.8	2.9	214	16	NaN			Tree 290
50530005	04/09/2025 21:35	*Pipistrellus pipistrellus*	9	49.3	49.8	48.7	3	215	16	NaN			Tree 290

Appendix 8.1

Relevant Legislation and Policies

Appendix 5-1 International Legislation

EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European Union. Article 4 establishes that there should be a sustainable management of hunting of listed species, and that any large scale non-selective killing of birds must be outlawed. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds. There are 25 Annex I species that regularly occur in Ireland.

EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approx. 1000 species through-out Europe. The habitats and species are listed in the Directives annexes where Annex I covers habitats and Annex II, IV and V cover species. There are 59 Annex I habitats in Ireland and 33 Annex IV species which require strict protection wherever they occur. The Directive requires the designation of Special Areas of Conservation (SACs) for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive from a network of protected sites called Natura 2000.

Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced in order to give protection to migratory species across borders in Europe.

Ramsar Convention

The Ramsar Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, in 1971. The treaty is a commitment for national action and international cooperation for the conservation of wetlands and their resources. In Ireland there are currently 45 Ramsar sites which cover a total area of 66,994ha.

Water Framework Directive

The EU Water Framework Directive (WFD) 2000/60/EC is an important piece of environmental legislation which aims to protect and improve water quality. It applies to rivers, lakes, groundwater, estuaries, and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles; the second cycle ran from 2016 – 2021, and the current (third) cycle runs from 2022-2027. The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high-water quality status where it exists. The WFD requires member states to manage their water resources on an integrated basis to achieve at least 'good' ecological status, through River Basin Management Plans (RBMP), by 2027.

National Legislation

Wildlife Act 1976 and amendments

The Wildlife Act 1976 was enacted to provide protection to birds, animals, and plants in Ireland and to control activities which may have an adverse impact on the conservation of wildlife. With regard to the listed species, it is an offence to disturb, injure or damage their breeding or resting place wherever these occur without an appropriate license from the National Parks and Wildlife Service (NPWS). This list includes all wild birds along with their nests and eggs. Intentional destruction of an active nest from the building stage up until the chicks have fledged is an offence. This includes the cutting of hedgerows from the 1st of March to the 31st of August. The act also provides a mechanism to give statutory protection to Natural Heritage Areas (NHAs). The Wildlife Amendment Act 2000 widened the scope of the Act to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act.

The current list of plant species protected by Section 21 of the Wildlife Act, 1976 (and amendments) is set out in the Flora (Protection) Order, 2015 (S.I. No. 356/2015). The Flora (Protection) Order affords protection to several species of plant in Ireland, including 68 vascular plants, 40 mosses, 25 liverworts, 1 stonewort and 1 lichen. This Act makes it illegal for anyone to uproot, cut or damage any of the listed plant species and it also forbids anyone from altering, interfering, or damaging their habitats. This protection is not confined to within designated conservation sites and applies wherever the plants are found.

EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations 2011

The EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) provides protection to particular species and habitats throughout Europe. The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011.

Annex IV of the EU Habitats Directive provides protection to a number of listed species, wherever they occur. Under Regulation 23 of the Habitats Directive, any person who, in regard to the listed species, "Deliberately captures or kills any specimen of these species in the wild, deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, deliberately takes or destroys eggs from the wild or damages or destroys a breeding site or resting place of such an animal shall be guilty of an offence."

Invasive Species Legislation

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Failure to comply with the legal requirements set down in this legislation can result in either civil or criminal prosecution, or both, with very severe penalties accruing. Convicted parties under the Act can be fined up to €500,000.00, jailed for up to 3 years, or both.

Extracts from the relevant sections of the regulations are reproduced below.

"49(2) Save in accordance with a licence granted [by the Department of Arts, Heritage and the Gaeltacht]*, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in anyplace* [a restricted non-native plant]*, shall be guilty of an offence.*

49(3) … it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

50(1) Save in accordance with a licence, a person shall be guilty of an offence if he or she […] offers or exposes for sale, transportation, distribution, introduction, or release—

(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,

(b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or

(c) a vector material listed in the Third Schedule, in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material."

National Biodiversity Action Plan 2023-2030

The National Biodiversity Plan (NBAP) 2023-2030, the fourth such plan for Ireland, captures the objectives, targets and actions for biodiversity that will be undertaken by a wide range of government, civil society and private sectors to achieve Ireland's Vision for Biodiversity. The NBAP provides a framework to track and assess progress towards Ireland's Vision for Biodiversity over a seven-year timeframe from 2023 to 2030. To achieve the Vision, five strategic objectives were identified in the new NBAP for 2023-2030. Actions required to achieve the strategic objectives as well as the lead and key partners responsible for their implementation are set out for each of the objectives and their targets (Table A5-1:1).

TABLE A5-1 OBJECTIVES AND TARGETS OF THE NATIONAL BIODIVERSITY ACTION PLAN 2023-2030

Objective	Target
1: Adopt a whole-of-government, whole-of-society approach to biodiversity	Outcome 1A. Governance structures and reporting outputs have improved
	Outcome 1B. Organisational capacity and resources for biodiversity have increased at all levels of Government
	Outcome 1C: Responsibility for biodiversity is shared across the whole of government
	Biodiversity Outcome 1D: Biodiversity initiatives are supported across the whole of society
	Outcome 1E. The legislative framework for biodiversity conservation is robust, clear and enforceable
2: Meet urgent conservation and restoration needs	Outcome 2A: The protection of existing designated areas and protected species is strengthened and conservation and restoration within the existing protected area network are enhanced
	Outcome 2B: Biodiversity and ecosystem services in the wider countryside are conserved and restored – agriculture & forestry

	Outcome 2C: Biodiversity and ecosystem services in the wider countryside are conserved and restored – peatlands & climate action
	Outcome 2D: Biodiversity and ecosystem services in the marine and freshwater environment are conserved and restored
	Outcome 2E: Genetic diversity of wild and domesticated species is safeguarded
	Outcome 2F: A National Restoration Plan is in place to contribute to the ambition of the EU Biodiversity Strategy 2030 and global restoration targets
	Outcome 2H: Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment
3: Secure nature's contribution to people	Outcome 3A: Ireland's natural heritage and biocultural diversity is recognised, valued, enhanced and promoted in policy and practice
	Outcome 3B: The role of biodiversity in supporting wellbeing, livelihoods, enterprise and employment is recognised and enhanced
	Outcome 3C: Planning and development will facilitate and secure biodiversity's contributions to people
	Outcome 4C: Long-term monitoring programmes are in place to guide conservation and restoration goals
	Outcome 4D: Ireland has prepared national assessments of ecosystem services
4: Enhance the evidence base for action on biodiversity	Outcome 4A: Research funding bodies will have an improved understanding of the research and skills required to address biodiversity research gaps
	Outcome 4B: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised
5: Strengthen Ireland's contribution to international biodiversity initiatives.	Outcome 5A: Science, policy and action on biodiversity conservation and restoration is effectively coordinated in an all-island approach
	Outcome 5B: Ireland takes action internationally to cooperate with other countries, sectors, disciplines and communities to address the biodiversity crisis
	Outcome 5C: Ireland enhances its contributions to the international biodiversity data drive

Dún Laoghaire-Rathdown County Development Plan 2022-2028[1]

Policies and objectives of the Dún Laoghaire-Rathdown County Development Plan 2022 – 2028 that are of relevance to this Screening Report are outlined below:

[1] Dún Laoghaire-Rathdown County Development Plan 2022-2028. Available at: https://www.dlrcoco.ie/sites/default/files/atoms/files/written_statement.pdf [Accessed June 2023]

- **GIB11:** Coastal Area Feasibility Study. It is a Policy Objective to explore undertaking a comprehensive feasibility study on the recreational potential along the coastal area of the County, which comprehensively addresses recreational impact - including visitor numbers, mapping and surveying of sensitive habitats and species and identification of significant threats on European sites - and which would allow an assessment of any future proposals, alone or in combination, to assess impact on the coastal and marine zone within and adjacent to the County boundary. The Council will explore the possibility of carrying out this study with adjoining and/or coastal Local Authorities and/or other agencies.

- **GIB18:** Protection of Natural Heritage and the Environment. It is a Policy Objective to protect and conserve the environment including, in particular, the natural heritage of the County and to conserve and manage Nationally and Internationally important and EU designated sites - such as Special Protection Areas (SPAs), Special Areas of Conservations (SACs), proposed Natural Heritage Areas (pNHAs) and Ramsar sites (wetlands) - as well as non-designated areas of high nature conservation value known as locally important areas which also serve as 'Stepping Stones' for the purposes of Article 10 of the Habitats Directive.
- **GIB19:** It is a Policy Objective to ensure the protection of natural heritage and biodiversity, including European Sites that form part of the Natura 2000 network, in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines.
- **GIB21:** It is a Policy Objective to protect and preserve areas designated as proposed Natural Heritage Areas, Special Areas of Conservation, and Special Protection Areas. It is Council policy to promote the maintenance and as appropriate, delivery of 'favourable' conservation status of habitats and species within these areas.
- **GIB22:** It is a Policy Objective to protect and promote the conservation of biodiversity in areas of natural heritage importance outside Designated Areas and to ensure that notable sites, habitats and features of biodiversity importance - including species protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979, the Habitats Directive 1992, Birds and Habitats Regulations 2011, Flora (Protection) Order, 2015, Annex I habitats, local important areas, wildlife corridors and rare species - are adequately protected. Ecological assessments will be carried out for all developments in areas that support, or have potential to support, features of biodiversity importance or rare and protected species and appropriate mitigation/ avoidance measures will be implemented. In implementing this policy, regard shall be had to the Ecological Network, including the forthcoming DLR Wildlife Corridor Plan, and the recommendations and objectives of the Green City Guidelines (2008) and 'Ecological Guidance Notes for Local Authorities and Developers' (Dún Laoghaire-Rathdown Version 2014).
- **GIB23:** It is a Policy Objective to protect the Ecological Network which will be integrated into the updated Green Infrastructure Strategy and will align with the DLR County Biodiversity Action Plan. Creating this network throughout the County will also improve the ecological coherence of the Natura 2000 network in accordance with Article 10 of the Habitats Directive. The network will also include non designated sites.
- **GIB25:** It is a Policy Objective to retain and protect hedgerows in the County from development, which would impact adversely upon them. In addition, the Council will promote the protection of existing site boundary hedgerows and where feasible require the

retention of these when considering a grant of planning permission for all developments. The Council will promote the County's hedgerows by increasing coverage, where possible, using locally native species and to develop an appropriate code of practice for road hedgerow maintenance. The Council will promote the protection of existing hedgerows when considering a grant of planning permission for all developments.

- **GIB28:** It is a Policy Objective to prepare an 'Invasive Alien Species Action Plan' for the County which will include actions in relation to Invasive Alien Species (IAS) surveys, management and treatment and to also ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are or were previously present, the applicants will be required to submit a control and management program for the particular invasive species as part of the planning process and to comply with the provisions of the European Communities Birds and Habitats Regulations 2011 (S.I. 477/2011).

Dún Laoghaire-Rathdown Biodiversity Action Plan[2]

The Dún Laoghaire-Rathdown Biodiversity Action Plan (BAP) is set out to protect and improve biodiversity, following five main themes:

1. Biodiversity research including climate change adaption and mitigation;
2. Building for Biodiversity;
3. Delivery of the Ecological Network across the Dún Laoghaire-Rathdown;
4. Raising awareness among the public, local communities, and council staff; and,
5. Increased collaboration with stakeholders.

[2] Dún Laoghaire-Rathdown Biodiversity Action Plan (BAP). Available at: https://www.dlrcoco.ie/sites/default/files/atoms/files/5488-dlr_biodiversity_plan_2021-2025_lr_0.pdf [Accessed June 2023]