Adamstown Extension: Residential Development at Clonburris SDZ

Ecological Impact Assessment Report

BSM Est. 1968

Brady Shipman Martin

Built. Environment.

Ecological Resilience

Built Environment

Client: Clear Real Estate Holdings Ltd

Date: 31 January 2023

DOCUMENT CONTROL SHEET

6897_AE_RPEA_Ecological Impact Assessment Report

Project No.	6897
Client:	Clear Real Estate Holdings Ltd
Project Name:	Adamstown Extension: Residential Development at Clonburris SDZ
Report Name:	Ecological Impact Assessment Report
Document No.	AE_RPEA
Issue No.	02
Date:	31/01/2023

This document has been issued and amended as follows:

Issue	Status	Date	Prepared	Checked
01	Draft	27 Jan 2023	NK	MH
02	Final	31 Jan 2023	NK	MH

Contents

1 Introduction

1.1 Background

Clear Real Estate Holdings Ltd. is seeking permission for a proposed residential development within the Adamstown Extension tile (Development Area 11) in Clonburris Strategic Development Zone (SDZ). The proposed development will comprise a total of 385 dwellings and all associated development works and landscaping.

Brady Shipman Martin was commissioned by the applicant to prepare this Ecological Impact Assessment report (EcIA) to accompany the planning application to South Dublin County Council (SDCC) for the proposed development. This document comprises an appraisal of the likely effects on biodiversity (flora and fauna) of the proposed development.

The Chartered Institute of Ecology and Environmental Management (CIEEM) defines EcIA as follows (2022, p. 8):

> *"EcIA is a process of identifying, quantifying and evaluating potential effects of development-related or other proposed actions on habitats, species and ecosystems[1]. The findings of an assessment can help competent authorities understand ecological issues when determining applications for consent. EcIA can be used for the appraisal of projects of any scale including the ecological component of Environmental Impact Assessment (EIA). When undertaken as part of an EIA, EcIA is subject to the relevant EIA Regulations. Unlike EIA, EcIA on its own is not a statutory requirement. It is an evaluation process undertaken to support a range of assessments."*

The potential for any significant effects on sites designated as European (Natura 2000) sites, under the EU Habitats and Birds Directives was also appraised, and the results of that study are presented in a separate report (Appropriate Assessment Screening Report).

1.2 Expertise and Qualifications

This report has been prepared by Namrata Kaile, Ecologist and Environmental Consultant at Brady Shipman Martin. She holds a Bachelor's Degree (BSc) in Life Sciences from University of Delhi and a Master's Degree (MSc) with distinction in Environmental Sciences from Trinity College Dublin. She is a Qualifying member of Chartered Institute of Ecology and Environmental Management (CIEEM) and has been working professionally in the field of environmental consultancy for the last three years. Namrata is experienced in drafting and reviewing AA Screening Reports, EIA Screening Reports as well as in coordination of EIARs. She is also experienced in undertaking baseline ecological surveys and preparing Ecological Impact Assessments Reports (EcIA).

A technical review of this document has been completed by Senior Ecologist and Associate, Matthew Hague BSc MSc Adv. Dip. Plan. & Env. Law CEnv MCIEEM. Matthew is a highly experienced and qualified ecologist, with a master's degree in Ecosystem Conservation and Landscape Management. He has 20 years of experience in ecological and environmental consultancy, across a wide range of sectors. He has prepared numerous reports for AA Screening as well as Natura Impact Statements, for projects of all scales, from small residential developments to nationally important infrastructure projects. Matthew is a Chartered Environmentalist (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Matthew

[1] Adapted from the definition originally published in Treweek (1999), *Ecological Impact Assessment* (Blackwell).

has also completed an Advanced Diploma in Planning and Environmental Law, at King's Inns and is a member of the Irish Environmental Law Association (IELA).

2 Methodology

2.1 Desk Study

A detailed desk-based assessment has been undertaken, and a number of comprehensive ecological surveys have been undertaken at the Adamstown Extension tile and the wider area in the preparation of the current planning application.

This report has been prepared in accordance with the following **publications**:

- EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment reports* (EPA, 2022);
- *Environmental Impact Assessment of Projects – Guidance on Screening* (European Commission, 2017);
- *OPR Practice Note PN02: Environmental Impact Assessment Screening* (Office of the Planning Regulator (OPR) (2021);
- *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (European Commission, 2013);
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Housing, Planning and Local Government, August 2018);
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (Transport Infrastructure Ireland (formerly the National Roads Authority, 2009);
- *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine* ('the CIEEM Guidelines') published by the Chartered Institute of Ecology and Environmental Management (CIEEM), September 2018, updated in September 2019 (V1.1), further updated in April 2022 (V1.2).

The proposed development complies with the following **legislative instruments**:

- The Planning and Development Act 2000, as amended (the "Planning Acts");
- The Planning and Development Regulations 2001, as amended (the "Planning Regulations");
- The Wildlife Act 1976 to 2022 and the Wildlife (Amendment) Act 2000;
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive");
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive");
- European Communities (Birds and Natural Habitats) Regulations 2011, as amended;
- Flora (Protection) Order 2022 (SI No. 235 of 2022);
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

The report has regard to the following **Policies and Plans**:

- *Third National Biodiversity Plan 2017 – 2021* (Department of Culture, Heritage and the Gaeltacht, 2017);

- Draft for Public Consultation, Ireland's 4th National Biodiversity Action Plan (Department of Housing, Local Government and Heritage, 2022);
- *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters* (Inland Fisheries Ireland, 2016);
- *Planning for Watercourses in the Urban Environment* (Inland Fisheries Ireland, 2020);
- *All-Ireland Pollinator Plan 2021-2025* (National Biodiversity Data Centre);
- South Dublin County Development Plan 2022 – 2028, including the accompanying Appropriate Assessment documentation (Natura Impact Report);
- Clonburris Strategic Development Zone - Planning Scheme, including the accompanying Appropriate Assessment documentation (South Dublin County Council, 2019);
- Clonburris Strategic Development Zone - Biodiversity Management Plan (Scott Cawley, 2021).

In addition, information collated from the sources listed below was reviewed:

- Data on rare and protected plant and animal species contained in the following databases:
  - The National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage (www.NPWS.ie);
  - The National Biodiversity Data Centre (NDBC) (www.biodiversityireland.ie);
  - Birdwatch Ireland (www.birdwatchireland.ie);
  - Bat Conservation Ireland (www.batconservationireland.org);
- Recent aerial photography and photographs taken at the site;
- Recent and historic ordnance survey mapping (www.geohive.ie, Google Earth);
- Information on protected areas, as well as watercourses, catchments and water quality in the area available from https://gis.epa.ie/EPAMaps/;
- Information on soils, geology and hydrogeology in the area available from www.gsi.ie ;
- Information on the Status of EU Protected Habitats and Species in Ireland (NPWS, August 2019), Article 17 Reports:-
  - The Status of EU Protected Habitats and Species in Ireland – Volume 1 (NPWS, 2019a);
  - The Status of EU Protected Habitats and Species in Ireland – Volume 2 (Habitat Assessments) (NPWS, 2019b);
  - The Status of EU Protected Habitats and Species in Ireland – Volume 3 (Species Assessments) (NPWS, 2019c);
- Information on land-use zoning from the online mapping of the Department of the Environment, Community and Local Government www.myplan.ie/en/index.html.

2.2 Field Study

In order to provide comprehensive baseline on the local ecological environment, biodiversity surveys were carried out at the site by Matthew Hague of Brady Shipman Martin on several dates between 2021 and 2022. The surveys undertaken comprised habitat, invasive species, rare and / or protected species, mammals, bird surveys and assessment of bat roosts. Surveys were undertaken at various points throughout the year, allowing optimal levels of survey to be undertaken for habitats and flora, birds, bats and large mammals (e.g. badgers and otters).

In addition to the surveys undertaken by the author a number of specialist surveys have been undertaken. These include habitat and botanical (hedgerow appraisal) surveys, as well as large mammal, breeding bird, wintering bird and bat surveys, undertaken in 2022 and early 2023. These were undertaken by specialist

ecologists (Mr Brian Keeley, bat ecologist; Mr Alexis FitzGerald MCIEEM, botanist; and Mr John Fox, ornithologist). These surveys covered the entire tile at Adamstown Extension.

A final site survey was undertaken by the authors in the preparation of this report on 24 November 2022. Overall the level of surveys undertaken in 2022 provides a comprehensive biodiversity baseline for the site.

An assessment of habitat suitability for species with links to European sites was undertaken, in order to appraise the potential for *ex-situ* effects on European sites.

As a result of the extensive biodiversity-related surveys and research, and given the habitats and species known to be present on the site and in the wider area, the amount of information gathered to date is sufficient to allow a comprehensive understanding of the potential impacts of any proposed development at the site on biodiversity and related receptors.

Overall, the baseline surveys covered the following elements and, where relevant, the results are included in this document:

- Habitats;
- Invasive species;
- Rare and / or protected plants;
- Bat activity surveys and assessment of bat roosts;
- Large mammal surveys (badger, otter);
- Suitability for breeding and wintering birds;
- Amphibian and common lizard surveys.

The ecological surveys undertaken are up-to-date and valid, and the reports in the Appendices are appropriately detailed to enable the potential impacts of the proposed development to be appraised.

2.2.1 Habitats

During the course of the site visits, the habitats were identified, described and mapped. Habitats were surveyed using the *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.* (2011)) and were classified using *A Guide to Habitats in Ireland* (Fossitt, 2000) with due regard to the *Interpretation Manual of European Union Habitats*. Vascular plant nomenclature follows that of the *New Flora of the British Isles 4th Edition* (Stace, 2019).

2.2.2 Hedgerows and Trees

A dedicated appraisal of the hedgerows on the site was undertaken by Alexis Fitzgerald, Fitzgerald Ecology, on 7 July 2022, in accordance with the methodology contained in the Hedgerow Appraisal System (Foulkes *et al.*, 2013). The surveys were undertaken within the optimal survey period for hedgerow habitats.

For each hedgerow the information recorded included context, construction, structure and condition, management and floristic data. The abundance of each shrub species present in each transect was recorded using the Domin scale (scale from + to 10, each stage representing a range of percentage values from + = cover of <1% and a single individual, to 10 = cover of 91-100%). The tree and ground flora species were recorded according to a more simple presence / absence criterion. The abundance and extent of species was described using the DAFOR scale (Dominant, Abundant, Frequent, Occasional, Rare). Historical significance was assessed using Ordnance Survey Ireland's National Townland and Historical Map Viewer. Vascular plant nomenclature follows that of the *New Flora of the British Isles 4th Edition* (Stace, 2019).

The significance of each hedgerow was scored according to its historical significance, species diversity, ground flora, structure, construction and associated features, habitat connectivity and landscape significance. The

condition of each hedgerow within the site was assessed based on structural variables, continuity and negative indicators, degradation or issues affecting long term viability. A detailed report, which includes descriptions of the three hedgerows present on site and their relative diversity and ecological value (with accompanying illustrative maps), along with the recorded species and other relevant data from each hedgerow transect is included as Appendix 1.

The assessment of the trees has been carried out in accordance with BS5837:2012 *Trees in relation to design, demolition and construction-Recommendations*. A tree survey was undertaken on 18 July 2022, by experienced and qualified arborist, John Morgan (Independent Tree Surveys Ltd). Height, crown spread, and canopy clearance measurements were recorded in accordance with the measurement convention of the criteria. The tree survey (submitted under separate cover) considered all trees that have the potential to be impacted by any development proposal including those outside the application area, but within influencing distance.

2.2.3 Breeding Birds

Three breeding bird surveys were undertaken between late March and early July 2022 by Mr John Fox. The three visits were timed for early morning to coincide with the period when breeding birds are most active and therefore most easily observed. During the site visit, the lands were walked slowly over a two-hour to two hour and 30 minute period. The visits were undertaken on 29 March, 27 April and 1 July 2022 and provided a good overview of breeding activity within the breeding season. Approximate populations, breeding status and conservation status were assigned to each species recorded. A species table and distribution map for the lands were prepared.

All visits were undertaken when weather conditions were suitable for surveying. All species present, were recorded, and their breeding status was determined, where possible, by observation of bird behaviour against a series of standardised behavioural indicators. All accessible areas of the site were walked with emphasis on walking along lines of mature hedgerows and through areas of scrub, as these were the habitats potentially most suitable for breeding birds. The approximate location of all birds seen and heard were noted on aerial photography of the lands, together with any information about their breeding status.

Birds of Conservation Concern in Ireland 4: 2020 to 2026 (BoCCI) (Gilbert *et al.* 2021) indicates three categories of concern. The criteria on which they have been assessed is based on their international conservation status, historical breeding declines, recent population declines, European conservation status, breeding rarity, localised distribution and the international importance of populations. This includes:

- Red list species (high conservation concern);
- Amber list species (medium conservation concern);
- Green list species (least conservation concern).

The following breeding status indicators were used to establish breeding status:

- Confirmed Breeding: Eggs/nest, occupied nest, adult carrying faecal sac or food for young or recently fledged young;
- Probable Breeding: Paired birds seen, agitated behaviour, permanent territory, courtship or display, nest building or visiting a nest site;
- Possible Breeding: Species in suitable habitat during breeding season or singing male present;
- Non Breeding: Birds present but not likely breeding due to a lack of suitable nesting habitat and no behavioural evidence to suggest breeding on the site.

The breeding bird survey report is included in Appendix 2 of this report.

2.2.4 Over-wintering Birds

Between October 2022 and January 2023, a winter bird survey was undertaken on the lands. The lands were visited on five separate dates. The visits were on the 7th and 26th of October, the 7th of November, the 8th of December 2022 and the 3rd of January 2023.

The lands were walked slowly during the visits. The route walked focused primarily on existing hedgerows, habitat along the river, areas of scrub and areas with trees. Bird species that were heard or seen were recorded, their position and numbers were noted. Breeding statuses were not assigned to them, as this was a winter nonbreeding survey.

Data from the five visits were amalgamated and approximate positions for the birds as seen or heard were plotted on aerial photographs. Approximate numbers, and conservation status were assigned to each species. A species table and distribution map for the red and amber listed species encountered on the lands were prepared.

The winter bird survey report is included in **Appendix 2** of this report.

2.2.5 Bats

Day-time appraisals of potential roost sites and night-time bat activity surveys were undertaken. The bat surveys undertaken are consistent with the level of survey recommended in the NPWS document *Bat Mitigation Guidelines for Ireland V2– Irish Wildlife Manuals No. 134 (2022)* and *Bat Mitigation Guidelines for Ireland- Irish Wildlife Manuals No. 25 (2006)*. The survey focussed on all Irish bat species that are fully protected under the Wildlife Act 1976 and subsequent amendments, and under the EU Habitats Directive, which is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). A comprehensive series of bat surveys was also undertaken and the Bat Survey Report is included in **Appendix 3** of this report.

The bat survey was undertaken on 16 September 2021 at the proposed development site and surrounding areas. During the survey the site and surrounding areas were walked to assess for any bat roosting, commuting and feeding potential areas. The survey was undertaken by three surveyors using an Echometer Touch 2 Pro, and two Echometer 3 units. Surveyor no.1 concentrated on mature trees towards the centre of the northern section of proposed development site, surveyor no.2 concentrated on the farm shed and the surveyor no.3 assessed the southern section of the site.

A follow up survey was undertaken on 28 November 2022. The survey assessed the availability of roost sites within and around the site, examination of all hedgerows, trees and buildings, bridge over River Griffeen and a visual assessment of all neighbouring lands and buildings.

An examination of available information from Bat Conservation Ireland (BCI) and the National Biodiversity Data Centre was also undertaken to compile a list of most likely species in the overall area in addition to the evaluation of the habitat for bats. There are no bat species listed as Qualifying Interests in any European sites within the Zone of Influence. However, Article 12 of the Habitats Directive requires Member States to take *requisite measures to establish a system of strict protection of animal species listed in Annex IV(a) in their natural range*.

2.2.6 Mammals

The site was searched for any evidence of large mammals such as otters or badgers, such as setts, commuting routes, territorial markings, latrines or feeding signs as well as paw prints, snagged hairs and piles of bedding material. Mammal surveys followed the methodologies contained in the NRA *Guidelines for the Treatment of*

Badgers Prior to the Construction of National Road Schemes and the *Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes.*

2.2.7 Other Species

During the course of the walkover surveys the site was evaluated for the presence of and suitability for Lepidoptera (butterflies and moths), amphibians (common frog and smooth newt) and reptiles (common / viviparous lizard).

2.2.8 Watercourses

A visual appraisal of ditches and watercourses in the vicinity of the site was undertaken. Biological kick-sampling, a method of assessing the ecological quality of a watercourse, was not carried out, due to the unsuitable substrate of the drainage ditches within the site, the flow regime and general overall condition.

2.3 Evaluation of Ecological Features

The methodologies used to determine the value of ecological resources, to characterise impacts of the proposed development, and to assess the significance of impacts and any residual effects are consistent with the EPA *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2022) (the 'EPA Guidelines') and are in accordance with the NRA *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (2009) (the 'NRA Guidelines')[2]. This methodology is in turn consistent with the CIEEM *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland – Terrestrial, Freshwater, Coastal and Marine (Version 1.2)* (2018, updated 2022) (the 'CIEEM Guidelines'). The methodology allows the baseline to be comprehensively evaluated. This then makes it possible to assess the potential impacts (including cumulative impacts) of the proposed development, to set out appropriate mitigation measures and to assess the residual impacts of the proposed development.

In accordance with the NRA Guidelines, impact assessment is undertaken of sensitive ecological receptors (Key Ecological Receptors) within the Zone of Influence of the proposed development. According to the NRA Guidelines, the Zone of Influence is the "effect area" over which change resulting from the proposed development is likely to occur and the 'Key Ecological Receptors' are defined as features of sufficient value as to be material in the decision-making process for which potential impacts are likely. In the context of the proposed development at Adamstown Extension, a 'Key Ecological Receptor' is defined as any feature valued as follows:

- International Importance;
- National Importance;
- County Importance;
- Local Importance (Higher Value).

Features of local importance (Lower Value) and features of no ecological value are not considered to be 'Key Ecological Receptors'.

[2] The NRA Guidelines, while originally developed for roads projects, provide clear, comprehensive and logical methods for evaluating the potential impacts of significant projects of all kinds in Ireland. The methodologies presented in the Guidelines are reproducible and reliable and are thus appropriate to the proposed development.

3 Baseline Environment

3.1 General Description of the Study Area and Receiving Environment

The proposed development site is located in the townland of Adamstown, west Co. Dublin, within Clonburris Strategic Development Zone (SDZ), 'Development Area 11 Adamstown Extension'. It comprises the development areas AE-S1 and AE-S2 within the Clonburris SDZ, refer to **Figure 3.1**. The proposed development has a total area of approximately 8.94ha.

The site is bound to the north by Dublin-Cork / Kildare Rail Line, to the east by Hayden's Lane (L5149), River Griffeen and the undeveloped lands of Clonburris SDZ, to the south by Lucan Pitch and Putt and the Grand Canal and to the west by Newcastle Road (R120). Refer to **Figure 3.2**.

The site comprises former agricultural fields with mixed habitat types. These include a wooded strip along River Griffeen, bare ground, recolonising bare ground, dry meadow and grassy verges, hedgerow, scrub, and some artificial surfaces. The majority of the site is now largely unmanaged and is covered by recolonising area of meadow and scrub. There are mature hedgerows along several of the boundaries and Hayden's Lane Access Road (L5149) bisects the lands into northern and southern areas. There are some concrete agricultural walls / structures in the northern section of the site.

The corridor of the River Griffeen runs along the eastern and south-eastern boundary of the lands and includes earth banks and unmanaged grassland and trees. This area contains tall grasses, nettles, brambles, hogweed and other species typical of such habitats. The lands in general are flat apart from in locations where the earth banks have been created. The Grand Canal is c. 95m to the south of the proposed site.

The adjacent lands and wider environs are largely urban in nature consisting of residential and commercial area to the north, west and south. The area to the east, comprises the undeveloped lands within the Clonburris SDZ and are largely agricultural in nature. A topographic survey of the proposed site indicates that the site slopes south-west (maximum of 64.52 mOD) to north-east (minimum of 55.81mOD).

Figure 3.1 The location of Adamstown Extension tile within Clonburris SDZ. The site is located in the western most part of Clonburris SDZ boundary and is shaded in pink (Source: Clonburris SDZ Planning Scheme documentation).

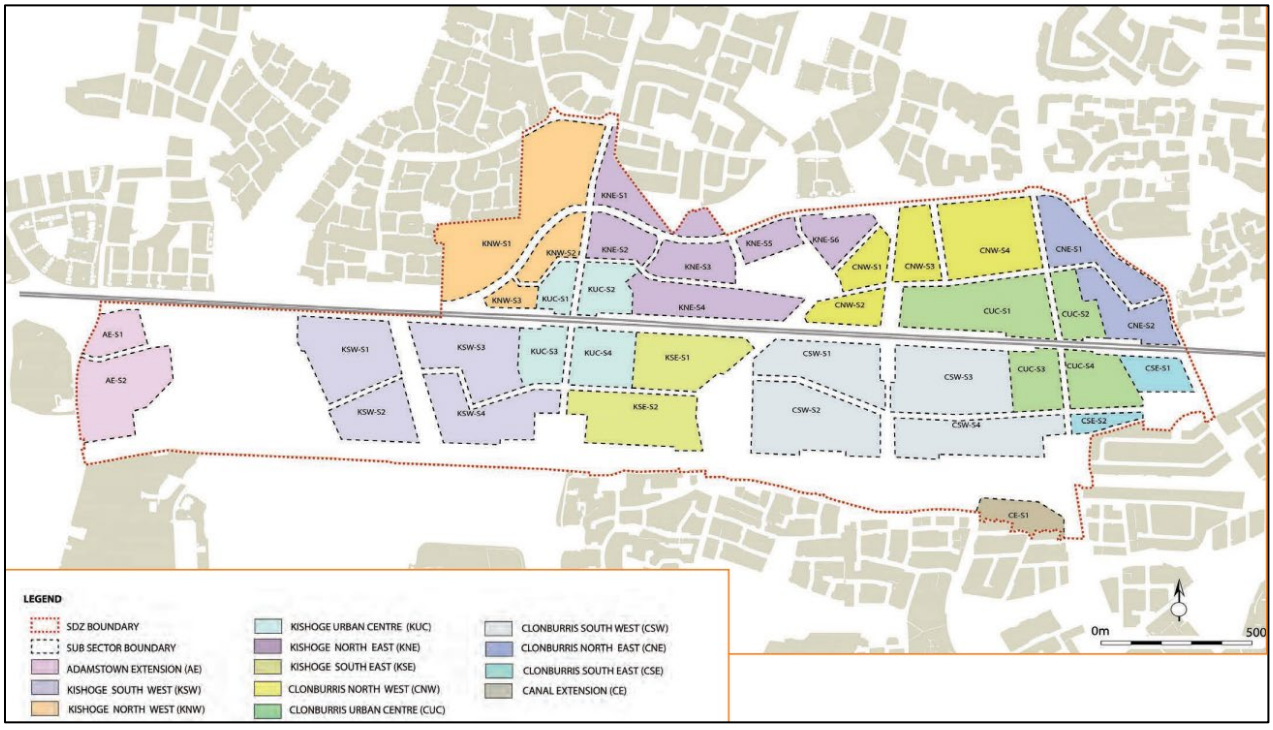
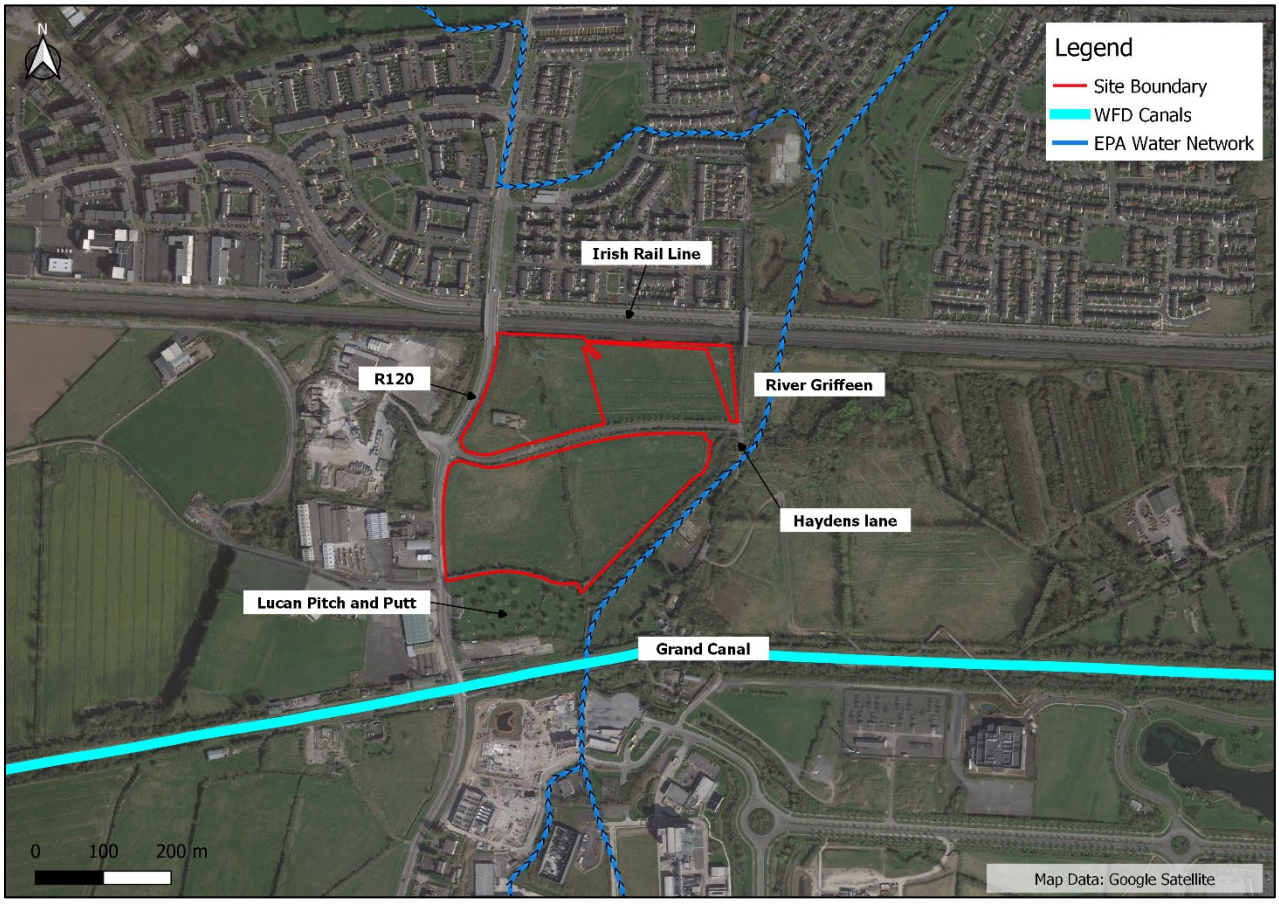


Figure 3.2 The location of the proposed Adamstown extension development site



3.2 Designated Conservation Areas

Screening for Appropriate Assessment has been undertaken, and a report (Appropriate Assessment Screening Report) has been prepared in order to address any potential impacts on European sites. European sites make up a network of sites designated for nature conservation under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive"). The requirements for Appropriate Assessment are set out under *Article 6 of the Habitats Directive*, transposed into Irish law by the *European Union (Birds and Natural Habitats) Regulations 2011-2022*[3] (the "Birds and Natural Habitats Regulations") and the *Planning and Development Act, 2000 - 2022* (the "Planning Acts").

There are no European sites within the immediate vicinity of the proposed development site at Adamstown Extension. The nearest such sites are as follows (as shown in **Figure 3.4**):

- Rye Water Valley/Carton SAC (site code 001398), c.3.9km to the north-west;
- Glenasmole Valley SAC (site code 001209), c.10.2km to the south-east;
- Wicklow Mountains SAC (site code 002122), c.11.7km to the south-east;
- Wicklow Mountains SPA (site code 004040), c.14.8km to the south-east;
- South Dublin Bay SAC (site code 000210), c.16.2km to the east;
- North Dublin Bay SAC (site code 000206), c.18.2km to the north-east;
- South Dublin Bay and River Tolka Estuary SPA (site code 004024), c.16.1km to the east;

[3] SI No. 477 of 2011

- North Bull Island SPA (site code 004006), c.15.2km to the north-east;
- Poulaphouca Reservoir SPA (site code 004063), c.16.8km to the south;
- Rockabill to Dalkey Island SAC (site code 003000), c. 24km to the east.

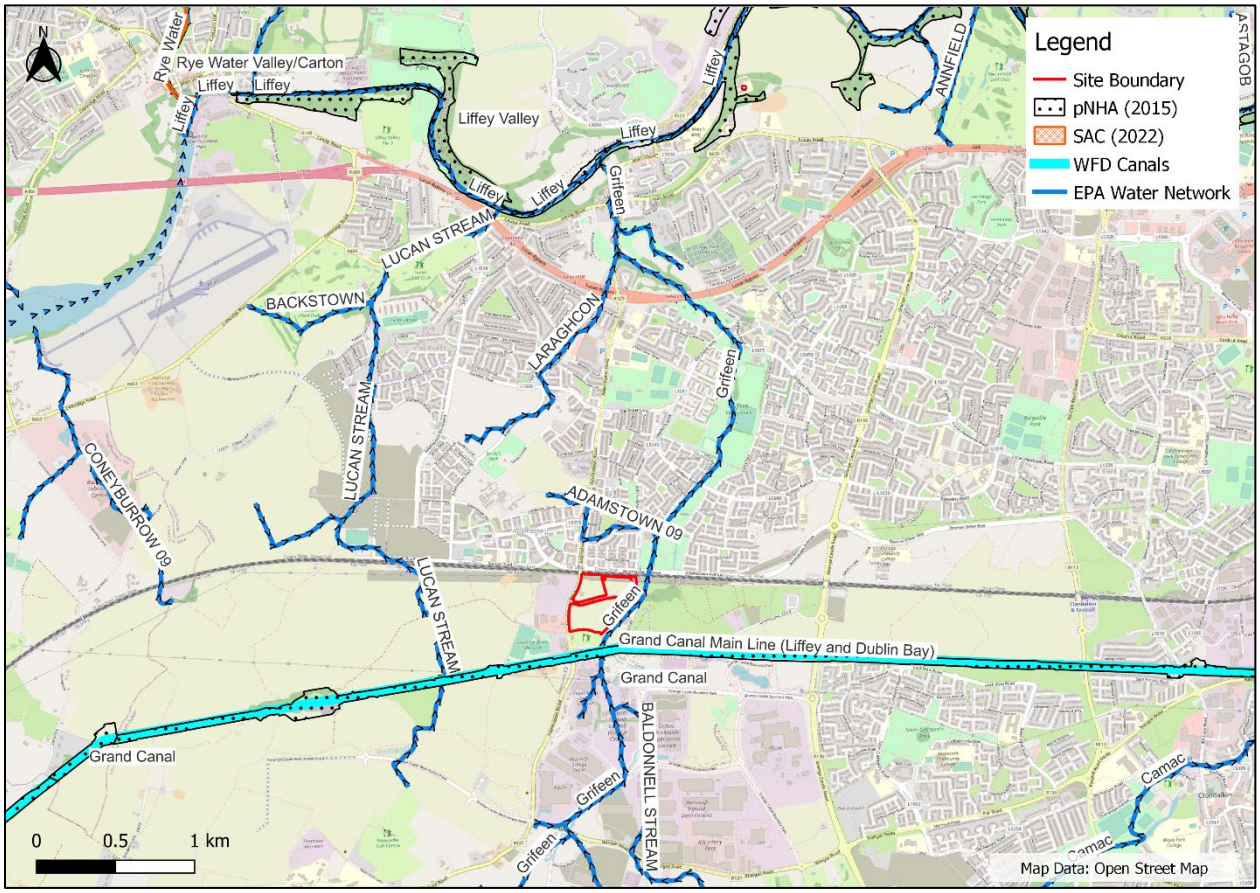
Note that the above-listed distances are linear (i.e. 'as the crow flies).

Designated sites other than European sites (i.e. proposed Natural Heritage Areas (pNHA) and designated Natural Heritage Areas (NHA)) within the potential Zone of Influence have been included in this assessment in order to address their potential to act as supporting sites for European sites. There are no fully designated Natural Heritage Areas (NHA) within the potential Zone of Influence. The pNHAs within the ZoI are as follows (as shown in **Figure 3.5**):

- Grand Canal pNHA (site code 002104), c. 95m to the south;
- Liffey Valley pNHA (site code 000128), c. 2.3km to the north;
- Royal Canal pNHA (site code 002103), c. 4.1km to the north;
- Rye Water Valley/Carton (site code 001398), c. 3.9 km to north-west;
- Lugmore Glen pNHA (site code 001212), c. 7.4km to the south-east;
- Slade of Saggart and Crooksling Glen pNHA (site code 000211), c. 7.6km to the south;
- Dodder Valley pNHA (site code 000991), c. 9.1km to the south-east;
- Glenasmole Valley pNHA (site code 001209), c. 10km to the south-east;
- Dolphin, Dublin Docks pNHA (site code 000201), c. 16.8km to the east;
- South Dublin Bay pNHA (site code 000210), c. 15.9km to the east;
- North Dublin Bay pNHA (site code 000206), c. 14.7km to the north-east.

The site of the proposed development is not under any designation for nature conservation. There are no European sites in the immediate vicinity. A review of the Environmental Protection Agency (EPA) web-tool (confirmed on-site) indicates that the River Griffeen (IE_EA_09L012100) runs c. 35m to the east / south-east of the site. The river flows in a northerly direction, it is culverted under the railwayand Adamstown Avenue and it exits the culvert at Griffeen Valley Park. It then flows northwards to Vesey Park, before it ultimately outfalls to River Liffey at Lucan. The River Liffey then discharges into the transitional waters of Dublin Bay. The Grand Canal flows c. 95m to the south of the site and this also discharges into the transitional waters of River Liffey near the Grand Canal Dock area. Refer to **Figure 3.3.**

Figure 3.3 EPA waterbodies in the proximity of the proposed development[4]



[4] https://gis.epa.ie/EPAMaps/AAGeoTool

Figure 3.4 European sites within zone of influence of the proposed development. A 15km radius is shown for scale.

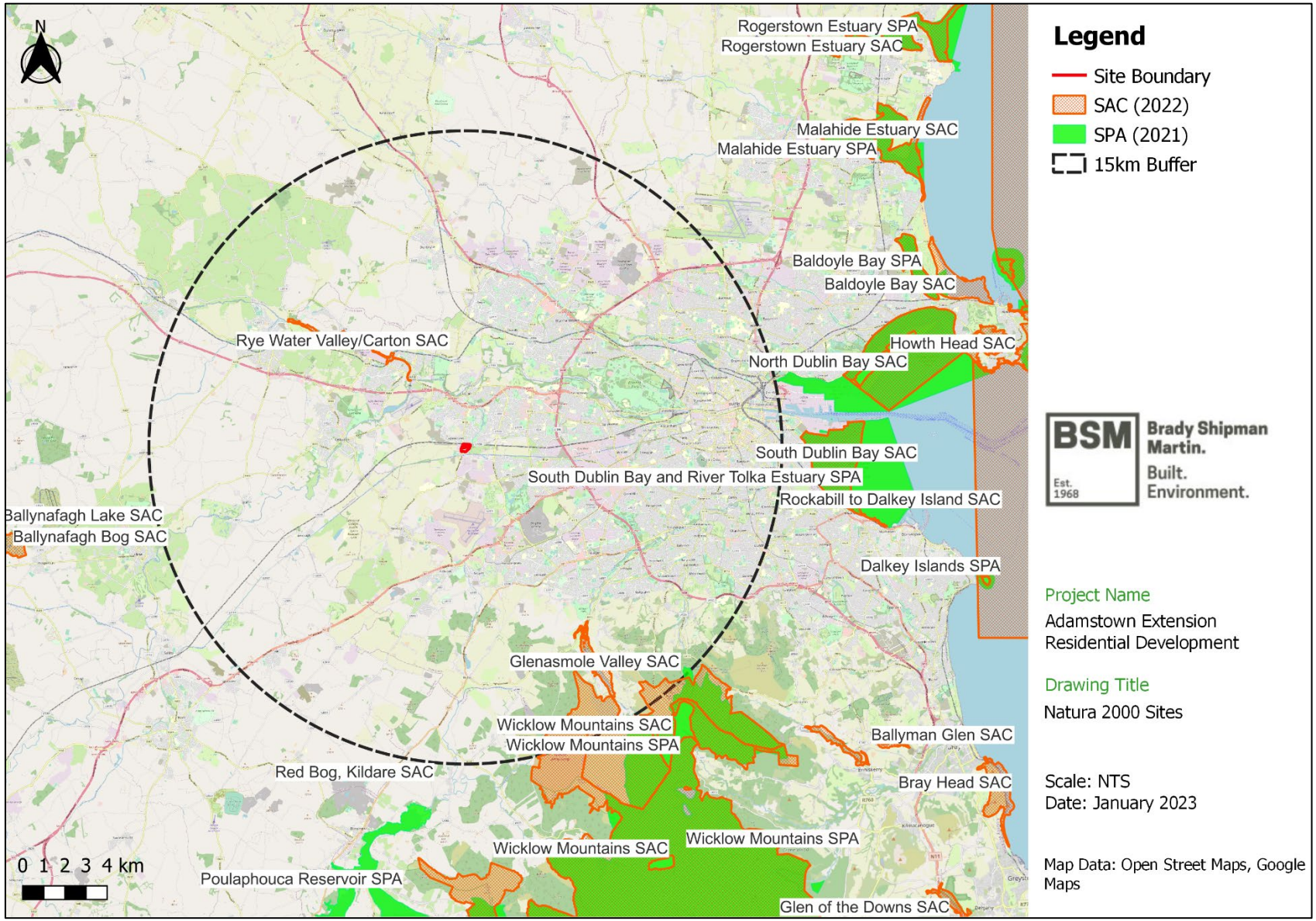
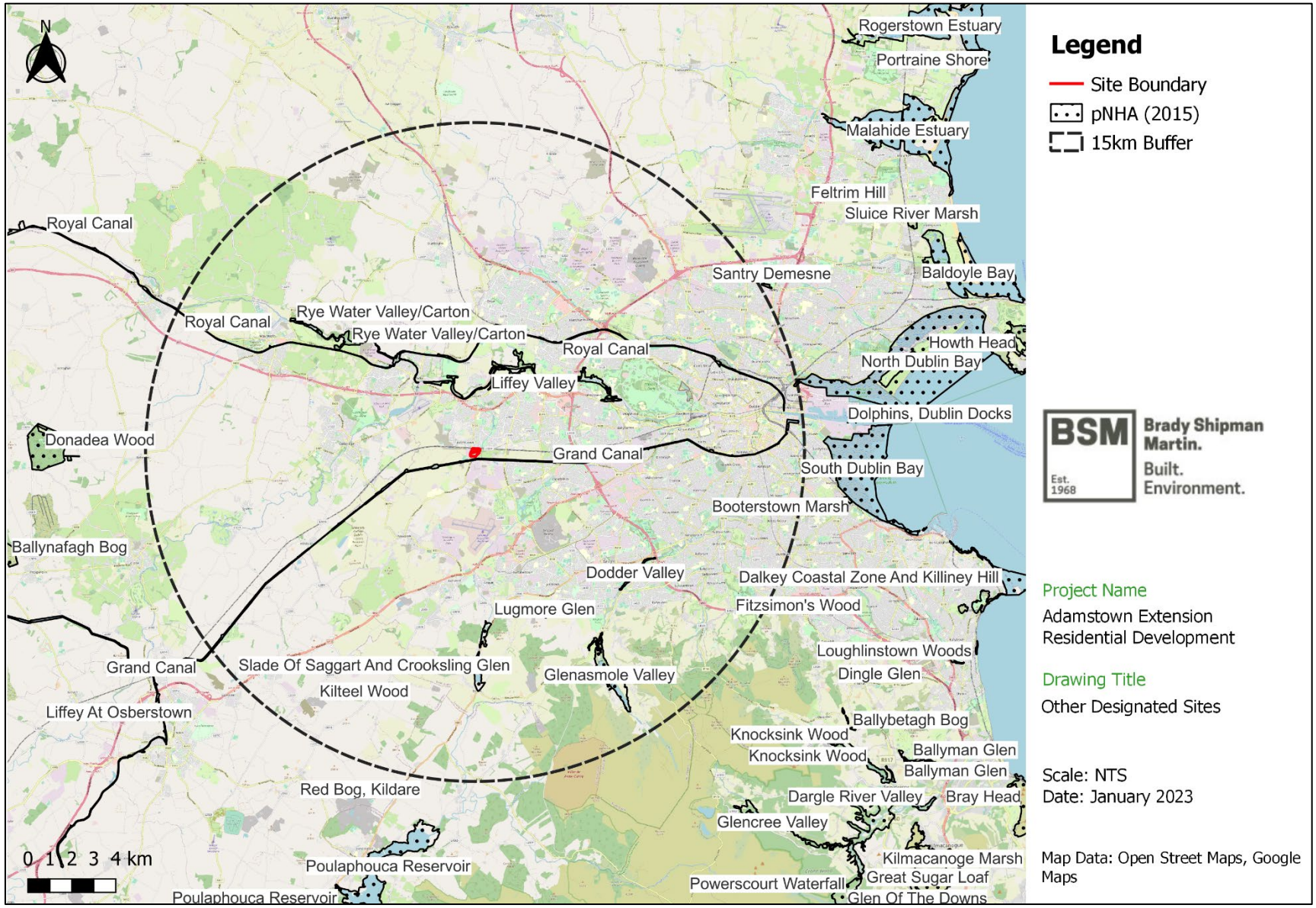


Figure 3.5 pNHA sites within zone of influence of the proposed development. A 15km radius is shown for scale.



3.3 Rare and Protected Species

The proposed development site is not under any wildlife or conservation designation. The National Biodiversity Data Centre (NBDC) database was consulted with regard to rare species (Curtis & McGough, 1988) and species protected under the *Flora Protection Order* (2022). A population of a rare and protected species, hairy St. John's wort (*Hypericum hirsutum*) listed in the Irish Red Data Book 1 – Vascular Plants (Curtis & McGough, 1988) and the Flora Protection Order, 2022 has been recorded in the wider area of Adamstown SDZ, within the boundary of a proposed park (Airlie Park) which is currently under construction, as well as within the Aderrig tile, within the alignment of a proposed (and permitted) linear park.

There are no records of any protected species within the 2km grid square (O03G) that covers the proposed development area. Further no protected plants were recorded during any of the field surveys undertaken in 2021 or 2022 (including Hairy St John's wort).

The non-native invasive species *Buddleia davidii* and *Lonicera nitida* were recorded within hedgerows in northern section and southern boundary, respectively. However, neither of these species are listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011.

3.4 Ecological Features

3.4.1 Habitats

The location of the proposed development site is shown in **Figure 3.2**. The habitats present on the proposed development site are described in this section and are shown in **Figure 3.6**. Further, the hedgerows surveyed during the field survey are shown in **Figure 3.7**. Photographs of the habitats are shown in **Figures 3.8 to 3.16**.

No significant habitats are present on the proposed development site. The site consists of a number of inter-linked former agricultural fields and is fenced on all sides. The existing Hayden's Lane Access Lane (L5149) divides the site into northern and southern section. The northern section includes an existing concrete agricultural shed walls / structures (Fossitt habitat code **BL3**).

A central hedgerow (**WL1**) runs from the north-west to the south of the site and is divided by the existing Hayden's Lane Access Lane. The hedgerow within the northern section of the proposed development site is densely vegetated, and under the hedgerow vegetation there is a shallow wet ditch, c. 0.5-1m in depth. This hedgerow comprises linear dense shrubs dominated by *Rubus fruticosus* agg. (blackberry), *Hedera helix* agg. (ivy), *Crataegus monogyna* (hawthorn) and *Prunus domestica* (common plum). The ground layer of the hedgerow contains the high nutrient indicator (noxious weed) species *Cirsium arvense* (creeping thistle), *Urtica dioica* (nettle), *Rumex obtusifolius* (broad-leaved dock) and *Galium aparine* (cleavers). The non-native invasive species *Buddleia davidii* was also recorded in this hedgerow. The hedgerow in the southern section of the proposed site was the continuation of the hedgerow in the northern section and was split by the access road running east to west. This hedgerow is similar to the northern hedgerow and is densely vegetated. Under the hedgerow vegetation there is a shallow wet ditch c. 0.5-1m in depth, and is dominated by linear dense shrubs dominated by *Rubus fruticosus* agg, *Hedera helix* agg., *Crataegus monogyna* and *Rosa canina* agg (dog-rose). Both these hedgerows due to the low species diversity and favourable condition are classified to be of 'local importance (higher value)'.

The hedgerow (**WL1**) along the south of the site runs approximately from the R120 to the River Griffeen and separates the proposed development site from the Lucan Pitch and Putt club. A ditch (1m deep and 1 m wide) runs under the treeline vegetation and is very densely overgrown. This linear treeline is dominated by *Fraxinus excelsior* along much of its length (alongside lesser quantities of *Corylus avellana* and *Fagus sylvatica*), whilst *Rubus fruticosus* agg., *Hedera helix* agg., *Sambucus nigra* (elder), *Salix cinerea* subsp. Oleifolia (rusty willow)

and *Crataegus monogyna* are the most frequent species in the shrub layer of the hedgerow. The ground layer of the hedgerow contains the indicator species *Asplenium scolopendrium*, alongside the high nutrient indicator (noxious weed) species *Cirsium arvense*, *Urtica dioica*, *Rumex obtusifolius* and *Galium aparine*. The non-native invasive species *Lonicera nitida* was also recorded in this hedgerow. This townland boundary treeline is of historical importance due to the habitat condition and species diversity.

The access road running east-west through the site is bounded by a low quality, planted treeline (WL2) on the northern and southern side.

The northern site boundary is marked by a hedgerow and treeline (WL1 / WL2) along with patches of scrub (WS1). This is in turn bounded by earth banks (BL2) further north and these separate the site from the railway corridor to the north. The north-eastern section just outside the site boundary is covered by dense scrub. Refer to Figure 3.12. The north-western section of the proposed site is covered by immature woodland (WS2), refer to Figure 3.13. The remainder of the site consists of abandoned agricultural field now left unmanaged and covered by dry meadows and grassy verges (GS2).

The River Griffeen (FW2) runs along the east / south-east boundary of the lands and has an associated flood embankment (BL2). The area between the site boundary and the embankment is covered by unmanaged immature woodland (WS2) and wet grassland (GS4) meadows and contains tall grasses, nettles, brambles, hogweed and related species. The Grand Canal flows c. 95m to the south of the site (FW3).

The tree survey assessed a total of 12 individual trees as part of the survey and none of these were graded category A (high value), one was graded category B tree (moderate value), eight trees were category C (low value) and three trees were classed as category U (<10 years useful life expectancy). The south-western hedge that borders the pitch and putt course, is variable in width, density, height and species composition, with the central area being relatively narrow / thin in places. The eastern end of the hedge is taller and denser, with a series of multi-stemmed Ash trees being the dominant feature. Unfortunately, these trees are suffering from Ash dieback disease and are likely to decline in health and condition. Refer to the Tree Survey Report (prepared by Independent Tree Surveys Ltd and submitted as part of the application).

Figure 3.6 Habitat map for the proposed development site. For the project red line please refer to the reports that accompany the application

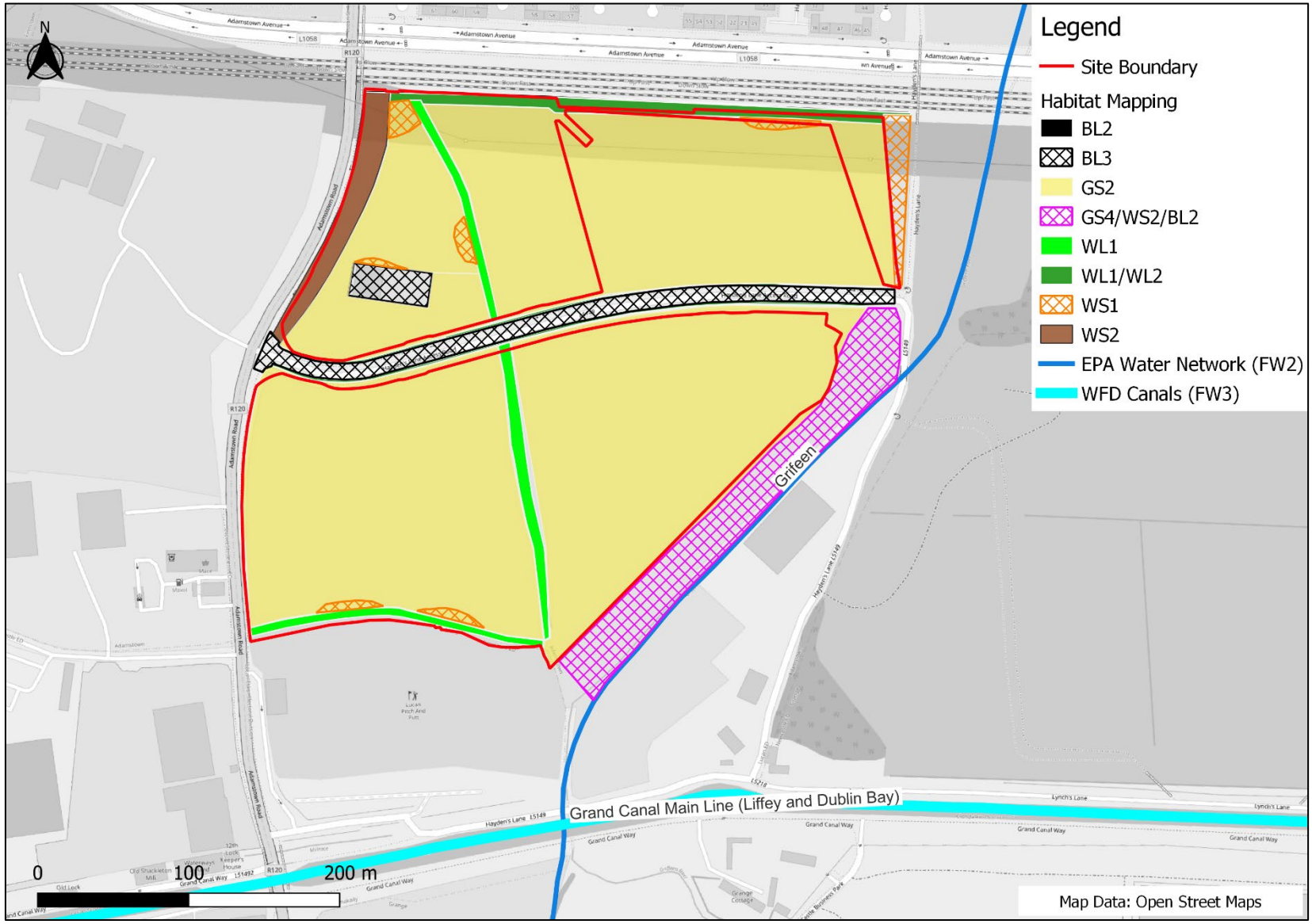


Figure 3.7 Surveyed hedgerows and locations of 30m survey sections

Figure 3.8 Hedgerow within the northern section of the proposed site

Figure 3.8 Hedgerow within the southern section of the proposed site

Figure 3.10 Hedgerow along the southern boundary of the site separating the site from the Lucan pitch and putt club and the remainder of southern section of the site covered by dry meadow and grassy verges

Figure 3.9 The northern boundary of site bounded by hedgerow, treeline and patches of scrub. Dense scrub outside the north-eastern boundary of the site

Figure 3.10 The north-western section of the proposed site covered by immature woodland

Figure 3.11 The northern section of the proposed site covered by dry meadows and grassy verges

Figure 3.12 River Griffeen along the south-eastern site boundary

Figure 3.13 River Griffeen surrounded by wet grassland, immature woodland and flood embankment

Figure 3.14 Grand Canal to the south of the site

3.4.2 Fauna

3.4.2.1 Birds

Birds, as well as their nests and eggs, are fully protected under the Wildlife Act (1976) and subsequent amendments.

The breeding bird surveys were undertaken on the site from late March to early July 2022. A total of 35 species were recorded on the site, all of which are widespread common birds of Ireland. Refer to Table 3.1. As per the breeding bird survey report, Yellowhammer was the only red listed species recorded on the lands. Yellowhammer however was not confirmed to breed on the lands but possibly does. An adult male was seen and heard singing from a hedge that divides the southern half of the site into two separate fields.

The breeding bird survey report states that-

> *"35 species, typical of the type of habitats were recorded on the lands. Of these 7 were confirmed to breed, three probably breed and another twenty possibly breed. The remaining five species do not breed on the lands, but some may breed on lands, buildings or structures close to the Clonburris lands. Just one red listed species was identified on the lands, it was not confirmed to breed, but possibly does breed on the lands. Nine amber listed species were identified but were not confirmed to breed on the lands either. Six amber listed species however do possibly breed and the remaining three amber listed species were confirmed as non-breeding on the lands."*

Further, winter bird surveys were undertaken on the site between October 2022 and January 2023. A total of 30 common bird species of Ireland were recorded on the lands. Two species of high conservation concern (Red listed) were recorded (snipe and meadow pipit). Four species of medium conservation concern, (Amber listed), were recorded. The remaining 24 species recorded were of least conservation concern, (Green listed).

The survey concludes the following:

> *'30 species, typical of the type of habitats were recorded on or over the lands. No nocturnal species were detected on the lands. The only waterbirds that were detected on the lands were small numbers of Snipe. The habitat and sward are currently unsuitable for grazing geese, and none were found on the lands. No winter Thrushes were found on the lands either such as Fieldfare or Redwing.*
>
> *Two red listed species were seen foraging on the lands. Three amber listed species were seen foraging on the lands with a fourth flying over. The remaining 24 species were all green listed of least conservation concern.'*

No winter birds associated with any of the European sites in the zone of influence of the proposed development were recorded during the winter bird surveys.

Table 3.1 Bird species identified, conservation status, breeding status and numbers present during the breeding survey undertaken in 2022 on Adamstown Extension lands

Common Name	Species	Conservation Status	Breeding Status
Grey Heron	*Ardea cinerea*	Green	Non Breeding
Mallard	*Anas platyrhynchos*	Amber	Possible Breeding
Sparrowhawk	*Accipiter nisus*	Green	Possible Breeding
Pheasant	*Phasianus colchicus*	Green	Possible Breeding
Lesser Black-backed Gull	*Larus fuscus*	Amber	Non-Breeding

Woodpigeon	*Columba palmubus*	Green	Probable Breeding
Collared Dove	*Streptopelia decaocto*	Green	Possible Breeding
Barn Swallow	*Hirundo rustica*	Amber	Non-Breeding
House Martin	*Delichon urbica*	Amber	Non-Breeding
Wren	*Troglodytes troglodytes*	Green	Confirmed Breeding
Dunnock	*Prunella modularis*	Green	Confirmed Breeding
Robin	*Erithacus rubecula*	Green	Confirmed Breeding
Song Thrush	*Turdus philomelos*	Green	Possible Breeding
Mistle Thrush	*Turdus viscivorus*	Green	Possible Breeding
Blackbird	*Turdus merula*	Green	Confirmed Breeding
Blackcap	*Sylvia atricapilla*	Green	Probable Breeding
Whitethroat	*Sylvia communis*	Green	Probable Breeding
Willow Warbler	*Phylloscopus trochilus*	Amber	Possible Breeding
Chiffchaff	*Phylloscopus collybita*	Green	Possible Breeding
Great Tit	*Parus major*	Green	Confirmed Breeding
Blue Tit	*Parus caeruleus*	Green	Confirmed Breeding
Long-tailed Tit	*Aegithalos caudatus*	Green	Possible Breeding
Magpie	*Pica pica*	Green	Possible Breeding
Jackdaw	*Corvus monedula*	Green	Possible Breeding
Rook	*Corvus frugilegus*	Green	Non-Breeding
Hooded Crow	*Corvus corone cornix*	Green	Possible Breeding
Starling	*Sturnus vulgaris*	Amber	Possible Breeding
House Sparrow	*Passer domesticus*	Amber	Possible Breeding
Chaffinch	*Fringilla coelebs*	Green	Possible Breeding
Linnet	*Carduelis cannabina*	Amber	Possible Breeding
Goldfinch	*Carduelis carduelis*	Green	Confirmed Breeding
Greenfinch	*Carduelis chloris*	Amber	Possible Breeding
Bullfinch	*Pyrrhula pyrrhula*	Green	Possible Breeding
Reed Bunting	*Emberiza schoeniclus*	Green	Possible Breeding
Yellowhammer	*Emberiza citrinella*	Red	Possible Breeding

Table 3.2 Bird species identified, conservation status, breeding status and numbers present during the winter bird survey undertaken in 2022 on the Adamstown Extension lands

Common Name	Species	Conservation Status	Activity
Buzzard	*Buteo buteo*	Green	Hunting, Soaring
Sparrowhawk	*Accipiter nisus*	Green	Hunting
Herring Gull	*Larus argentatus*	Amber	In Flight
Woodpigeon	*Columba palmubus*	Green	Foraging
Snipe	*Gallinago gallinago*	Red	Foraging
Meadow Pipit	*Anthus pratensis*	Red	Foraging
Wren	*Troglodytes troglodytes*	Green	Foraging
Dunnock	*Prunella modularis*	Green	Foraging
Pied Wagtail	*Motacilla alba yarrelli*	Green	Foraging
Robin	*Erithacus rubecula*	Green	Foraging
Stonechat	*Saxicola torquatus*	Green	Foraging
Song Thrush	*Turdus philomelos*	Green	Foraging
Mistle Thrush	*Turdus pilaris*	Green	Foraging
Blackbird	*Turdus merula*	Green	Foraging
Coal Tit	*Periparus ater*	Green	Foraging
Great Tit	*Parus major*	Green	Foraging
Blue Tit	*Parus caeruleus*	Green	Foraging
Chiffchaff	*Phylloscopus collybita*	Green	Foraging
Long-tailed Tit	*Aegithalos caudatus*	Green	Foraging
Treecreeper	*Certhia familiaris*	Green	Foraging
Magpie	*Pica pica*	Green	Foraging
Jackdaw	*Corvus monedula*	Green	Foraging
Rook	*Corvus frugilegus*	Green	Foraging
Hooded Crow	*Corvus corone cornix*	Green	Foraging
Starling	*Sturnus vulgaris*	Amber	Foraging
Goldcrest	*Regulus regulus*	Amber	Foraging
Chaffinch	*Fringilla coelebs*	Green	Foraging
Linnet	*Carduelis cannabina*	Amber	Foraging
Goldfinch	*Carduelis carduelis*	Green	Foraging
Reed Bunting	*Emberiza schoeniclus*	Green	Foraging

3.4.2.2 Bats

All Irish bat species are protected under the Wildlife Act (1976) and subsequent amendments, and under Annex IV of the Habitats Directive[5], via the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

According to the available databases of Bat Conservation Ireland (BCI), there are no records of bats within the study area boundary. During the surveys undertaken a total of three bat species were recorded feeding or commuting within and around the site (common pipistrelle, soprano pipistrelle and Leisler's bat). No bats were recorded roosting within the proposed development site. No bats emerged from or entered any structure or trees prior to sunrise. There was bat activity throughout the site with the exception of the south-western area due to illumination from nearby building and limited vegetation cover. The trees east of the former farm shed and the southern hedgerow were notable areas for bat activity. Bat activity was also noted along the road running through the site and sections of hedgerows and field boundaries.

3.4.2.3 Mammals and other species

No evidence of Irish hare or other protected large mammals, including badgers was recorded in the site. While signs of otter (*Lutra lutra*) (protected under the Wildlife Act (1976) and subsequent amendments, and under Annex II of the Habitats Directive, via the European Communities (Birds and Natural Habitats) Regulations, 2011) and hare were searched for, none were found in survey undertaken in November 2022. However, during the previously surveys undertaken on site, otter spraints were found along the River Griffeen at the south-eastern corner of the site. The proposed development site itself has no value for commuting otters, which remain within the Griffeen corridor.

The NBDC database 2km grid square (O03G) has record of Eurasian Pygmy Shrew (*Sorex minutus*) (protected under the Wildlife Act (1976) and otter in close proximity to the development site. The NBDC database 2km grid square (O03G) also has record of eastern grey squirrel (*Sciurus carolinensis*) (Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)*) and rabbit (*Oryctolagus cuniculus*). None of these species were recorded during the site walkover surveys.

Common (viviparous) lizard, common frog and smooth newt were not recorded during the site walkover surveys.

3.5 Overall Ecological Valuation of the Site

The proposed development site is not under any wildlife or conservation designation. Furthermore, no rare, threatened or legally protected plant species, as listed in the *Irish Red Data Book 1 – Vascular Plants* (Curtis & McGough, 1988), the Flora Protection Order, 2022, or the Habitats Directive, are known to occur within the site and none were recorded.

No rare habitats or habitats of particularly high ecological value (i.e. International, National or County) are present at the site. The hedgerows, treeline and immature woodland, however, are of Local (Higher Value) Importance.

The hedgerows, treeline and immature woodland are of ecological value for their ecological / habitat connectivity and for nesting birds as well as commuting and foraging bats. The mature hedgerows and trees within the site are of greatest importance as they are relatively diverse and act as significant ecological corridors. Yellowhammer (red listed species as per the BoCCI (Gilbert *et al.* 2021)) was identified on the site during breeding bird survey, however, it was not confirmed to breed on the lands. Snipe and Meadow Pipit

[5] With lesser horseshoe bat, not found on the east coast of Ireland, being further protected under Annex II of the Habitats Directive

(red listed species as per the BoCCI (Gilbert *et al.* 2021)) were observed foraging on the site during the winter bird survey.

The rail line corridor outside the northern site boundary also provides an uninterrupted corridor through countryside, through a range of habitats and could be used by a large number of species for commuting between various habitats.

Although bats were recorded within and around the site during the course of bat surveys undertaken, no evidence of roosting bats (species protected under Article 12 of the Habitats Directive) has been found within the site.

No evidence of any other protected species such as otter (also protected under Article 12 of the Habitats Directive and restricted to the River Griffeen corridor) or badgers was recorded during the surveys carried out.

No evidence of any habitats or species with links to European sites was recorded during either the field surveys or desk study undertaken to date and no 'reservoir' type habitats (habitats which have the potential to support Qualifying Interest / Special Conservation Interest species in any European site) are present.

Overall, with the exception of the north-western boundary immature woodland, northern treeline and central and southern hedgerows which are of Local Importance (Higher Value) the site is of Local Importance (Lower Value) in accordance with the ecological resource valuations presented in the National Roads Authority/Transport Infrastructure Ireland *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA/TII, 2009 (Rev. 2)).

4 Potential Impacts of the Proposed Development

4.1 Description of the Proposed Development

Each element of the development under appraisal is required to comply with the approved Clonburris SDZ Planning Scheme (2019). The 'Section 2.11 Biodiversity and Natural Heritage' of the Clonburris SDZ Planning Scheme Framework (2019) and Biodiversity Management Plan for Clonburris SDZ contains a number of Biodiversity objectives, in order to sustain and enhance ecological habitats, avoid significant adverse impacts and to sustain and enhance key ecological networks. In addition, the South Dublin County Development Plan 2022-2028 has a series of objectives intended to protect and enhance the natural environment. For example the CDP contains significant objectives to protect and enhance green infrastructure within the county. It also includes policies to protect water bodies and watercourses, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains, within the County from inappropriate development.

In line with 'Section 2.3 Green and Blue Infrastructure' and 'Section 2.10 Landscape and Open Space' of the Clonburris SDZ and key principles set therein, landscape plan has been developed and is presented as part of the Landscape Design Report, prepared by the project landscape architects (Brady Shipman Martin) and submitted separately. See also Section 5.2.

The CDP and Clonburris SDZ Planning Scheme aims have been achieved in so far as is practicable within the Adamstown Extension Development Area 11, taking account of the constraints imposed by the SDZ planning scheme.

The development proposed comprises 385no. units comprising 139no. houses, 142 no. duplexes and 104no. apartments in 2no. blocks ranging in height from 1 to 6 storeys. Private rear gardens are provided for all houses. Private patios / terraces and balconies are provided for all duplexes and apartments. The development also includes a single storey tenant amenity building, areas of public open space, car and bicycle parking, bin and bicycle stores, ESB substations, demolition of remaining walls and hardstanding associated with the former

agricultural building and all associated and ancillary site development, infrastructural, hard and soft landscaping and boundary treatment works. Permission is also sought for minor revisions to attenuation pond permitted under SDCC Reg. Ref. SDZ20A/0021 as well as connections to water services (wastewater, surfacewater and water supply) and connections to permitted cycle / pedestrian paths and Link Road permitted under SDCC Reg. Ref. SDZ20A/0021.

4.2 Designated Conservation Areas –Appropriate Assessment

The potential for any significant effects on European designated sites (sites designated for nature conservation under the EU Habitats and Birds Directives) has been assessed separately, and a stand-alone report (AA Screening Report), has been prepared for submission as part of the overall planning application and is submitted under separate cover.

Based on the studies undertaken and the features of the proposed development, the AA Screening process concluded that none of the habitats and species listed as qualifying interests or special conservation interests in any European site designation will be affected by the proposed development and full AA, including the preparation of a Natura Impact Statement (NIS), is not required. The following paragraphs are extracted from the AA screening report conclusions:

> *In view of best scientific knowledge this report concludes that the proposed development at Adamstown Extension, individually or in combination with another plan or project, will not have a significant effect on any European sites. This conclusion was reached without considering or taking into account mitigation measures or measures intended to avoid or reduce any impact on European sites.*
>
> *It is considered that this report provides sufficient relevant information to allow the Competent Authority (South Dublin County Council) to carry out an Appropriate Assessment Screening under Section 177U of the Planning Acts, and reach a determination that the proposed development will not have any likely significant effects on European sites under Article 6 of the Habitats Directive in light of their conservation objectives.*

Similarly, there is no direct or indirect pathway between the proposed development site and any pNHA not already designated as a European site, and therefore no impacts on any pNHA will occur.

4.3 Habitat Loss and Disturbance to Habitats and Species within the Site

In line with the Clonburris SDZ Planning Scheme, there is an expectation / requirement that the lands in question transition from a rural character to an urban one and this will have consequences for the existing habitats.

The proposed development will involve the removal of much of the existing area of the site and its replacement with residential development, open space and development-related infrastructure. This includes the removal of the now disused fields and the north-south hedgerow that traverses the northern and southern sections. The disused fields contain mosaics of scrub, grassland, immature woodland and recolonising-type habitats that are reasonably diverse. The proposed development will also result in the part loss of the north-western immature woodland. This loss is considered to be a *probable permanent impact, significant* at the local level. The loss of the existing habitats will also reduce the feeding opportunities for bats and birds. The removal of these features as well as the internal hedge has the potential to *impact at the local scale* on breeding birds, bats and due to loss of foraging areas, breeding habitat and commuting pathways. No roosting bat species were identified within the site boundary and no impacts on roosting bats are expected.

The mitigation strategy, set out in Section 5.2 and in the Landscape Design Report, includes for enhancement of the green infrastructure and biodiversity of the site through substantial new native tree and shrub planting,

including enhancement of the western side of the River Griffeen Corridor (the River Griffeen corridor will be unaffected by the proposed development – landscape enhancement is within the project red line boundary).

Where this is possible and likely to succeed, sections of the hedgerows on site will be translocated to suitable areas (again within the site) to further enhance the existing and proposed native vegetation. The southern hedgerow separating the proposed site from the Lucan Pitch and Putt boundary will require some tree and hedge removal, however, the hedgerow will be re-planted and enhanced with screening plants in order to maintain this boundary as a habitat corridor.

The northern hedgerow and treeline and part of north-western immature woodland will be retained and enhanced with additional native tree and shrub planting. The north-eastern scrub boundary will be retained and enhanced with additional native tree and shrub planting. The south-eastern boundary close to the River Griffeen comprising of immature woodland and wet grassland will be retained and enhanced with new native trees and shrub planting in line with the Clonburris Planning Scheme SDZ.

The long-term landscaping design, which is focussed on biodiversity enhancement, will ensure that the impacts on biodiversity are reduced over time (refer to the accompanying landscape design, prepared by Bardy Shipman Martin).

It is not expected that there will be any impacts on other large mammals, including on otters, badgers or on amphibians or reptiles, as a result of the proposed development.

There will be no transfer of invasive plant material during the construction phase that could potentially lead to species such as giant hogweed or Japanese knotweed becoming established in the area. The construction methodology will ensure that no invasive species are introduced, either deliberately or inadvertently, to the site.

4.4 Lighting

Lighting can affect different species to varying degrees and within species there is also a range of responses to introduced light ranging from minimal effects to complete avoidance. Badgers in urban areas can become very tolerant to light but in rural areas are typically most comfortable in and confined to unlit areas. However, no badger activity was recorded on the site during the field surveys undertaken. Bats may actively avoid artificial lighting, especially if it is shining upon a roost site. There are no roosts within the Adamstown Extension site.

The proposed lighting for the development, designed by Sabre electrical Services Ltd will have regard to the following guidelines:

- *Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers* (Bat Conservation Ireland, 2010);
- *Guidance Notes for the Reduction of Obtrusive Light GN01* (Institute of Lighting Professionals, 2011); and
- *Bats and Lighting in the UK – Bats and the Built Environment Series* (Bat Conservation Trust UK, 2018).

Provided that the lighting is installed as designed, *no impacts on bats are expected*, either during the construction or operation of the proposed development.

4.5 Water Quality and Dust

All site clearance, demolition and construction activities pose a potential risk to water as surface / ground water arising at a site may contain contaminants. The main contaminants arising from construction activities may include suspended solids, hydrocarbons and concrete/cement products. If not properly managed, such

pollutants could pose a temporary risk to surface water quality in the local surface water network during construction. In addition there is a potential risk to flora and fauna arising from dust deposition, which in extreme cases can inhibit photosynthesis in plants and can increase turbidity in water courses. Given the nature, scale and duration of the construction phase for the proposed development there is the potential for temporary negative impacts on water quality arising during the construction phase.

The River Griffeen runs c. 35m to the east / south-east of the site and is linked to the River Liffey to the north. The site ultimately drains to the Liffey and the construction of the proposed development at Adamstown Extension could have impacts on water quality, via run-off to the wider surface water network, including the sewer network and via infiltration to the ground. Therefore in the event that contaminated water should enter any drainage ditch, watercourse or sewer during the construction (or operation) of the proposed development, there is the theoretical potential for negative effects on water quality. The Grand Canal is c. 95m to the south of the site, however, there is no hydrological link between the proposed development site and the canal.

Once operational, surface water flows from the proposed development site will be restricted in accordance with the requirements of the Greater Dublin Strategic Drainage Strategy (GDSDS). The GDSDS addresses the issue of sustainability by requiring designs to comply with a set of drainage criteria which aim to replicate the run-off characteristics of the greenfield site. The criteria provide a consistent approach to addressing the increase in both rate and volume of run-off. The calculations are set out in the Engineering Assessment Report prepared by Waterman Moylan Consulting Engineers Limited and submitted separately. It is proposed to use a sustainable urban drainage system (SuDS) approach to storm water management throughout the overall site. SuDS are a requirement of South Dublin County Council under the GDSDS and the Greater Dublin Regional Code of Practice for Drainage Works.

A flood risk assessment has been carried out by Waterman Moylan Consulting Engineers, in accordance with the OPW publication "*The Planning System and Flood Risk Assessment Guidelines for Planning Authorities*". The report reviewed and assessed the risk of flooding from tidal, fluvial, pluvial, groundwater and human / mechanical error and proposed mitigation measures where necessary. The report concluded that the residual risk of flooding from any source is low.

It is proposed to discharge foul water from the proposed development via a network of foul gravity sewers, which will flow to the network in Hayden's Lane as permitted under Reg Ref: SDZ20A/0021. There will be a total of 2 no. connections from the proposed development to the permitted infrastructure, 1 no. connection from the north of Hayden's Lane, and 1 no. connection from the south of Hayden's Lane. Irish Water issued a Confirmation of Feasibility letter on 10 January 2023 indicating that a wastewater connection to the Irish Water network is feasible, subject to upgrades (the required infrastructure will be delivered by Clonburris Infrastructure Ltd). A Statement of Design Acceptance was issued by Irish Water on 18 January 2023. Refer to the Engineering Assessment Report, prepared by Waterman Moylan Consulting Engineers and submitted as part of the planning documentation for further information.

Foul water will be conveyed to the Irish Water WwTP at Ringsend, where the effluent will be subject to treatment prior to discharge to Dublin Bay at Poolbeg. This creates an indirect hydrological pathway linking the proposed development site with European Sites in Dublin Bay.

As set out in the Engineering Assessment Report that accompanies the submission, the peak wastewater discharge is calculated at 5.95l/s for the overall development. The Ringsend WwTP operates under licence from the EPA (Licence no. D0034-01) and received planning permission (ABP reg. ref.: 301798) in 2019 for upgrade works, which commenced in 2018 and are expected to be fully completed by 2025. The upgrade works will result in treatment of sewage to a higher quality than current, thereby ensuring effluent discharge to Dublin Bay will comply with the Urban Wastewater Treatment Directive by Q4 2023.

The peak wastewater discharge would not have a measurable impact on the overall water quality within Dublin Bay and therefore would not have an impact on the current Water Body Status (as defined within the Water Framework Directive). Hydrodynamic and chemical modelling within Dublin Bay has shown that there is significant dilution for contaminants of concern (DIN and MRP) available quite close to the outfall for the treatment plant (Ringsend WWTP 2012 EIS, Ringsend WWTP 2018 EIAR; refer to Section 12.4.22, ABP-301798-18 Inspector's report). The most recent water quality assessment of Dublin Bay WFD Waterbody undertaken by the EPA (*Water Quality in 2020: An Indicator Report*, 2021) also shows that Dublin Bay on the whole, currently has an 'Unpolluted' water quality status (refer to www.catchments.ie).

Both the construction and operational phases of the proposed development could have impacts on air and water quality, via dust and contaminated run-off and sedimentation. However, all construction works will proceed in line with the measures provided in the Construction & Environmental Management Plan (CEMP) for the proposed development (prepared by AWN Consulting and submitted under separate cover).

Provided that site facilities are correctly designed and proper working procedures are strictly adhered to, *no impacts on existing air quality or on watercourses are expected*, either during the construction or operation of the proposed development.

4.6 Disturbance via Noise, Vibration and Visual Impacts

There is no possibility of noise, vibration, visual or any other kind of disturbance arising during construction and affecting the species associated with the European sites. There is, further, no possibility of any *ex-situ* effects (effects on birds roosting or feeding outside any of the designated sites). As set out in the AA Screening Report the bird fauna recorded on the site is as expected for such a site and there is no habitat on the site suitable for use, even on a very occasional basis, by any overwintering birds, such as pale-bellied Brent goose, or any other protected bird species listed as a Special Conservation Interest (SCI) in any European site within the Zone of Influence. No such species, and no evidence of such species (e.g. droppings), was recorded during any of the winter bird surveys undertaken.

Noise, vibration and visual disturbance may impact on local fauna of the site, for example by reducing feeding time or causing birds / bats / badgers to temporarily avoid certain areas. This could potentially occur during site clearance and construction operations associated with the proposed development.

Given the nature, scale and duration of the construction phase for the proposed development there is the potential for *short-term, moderate, negative* impacts on ecological receptors in the vicinity of the proposed development.

5 Mitigation Measures

5.1 Designated Conservation Areas

No designated conservation areas will be impacted in any way by the proposed development and no specific mitigation measures are required for the protection of these sites.

Full details in relation to European sites are provided in the accompanying Appropriate Assessment Screening Report.

5.2 Habitats

The Clonburris SDZ Planning Scheme Framework and the accompanying Biodiversity Action Plan set out a range of overarching and key principles and biodiversity measures, which are relevant to biodiversity and have been taken into account for the preparation of this EcIA and the overall development design.

As per the Clonburris SDZ Planning Scheme, the development within Adamstown Extension Development Area 11 will comprise of high quality residential neighbourhood as an extension to Adamstown. The Landscape Design Report includes for enhancement of the green infrastructure and biodiversity of the site through substantial new native tree and shrub planting, including enhancement of the River Griffeen Corridor. Where feasible, sections of the hedgerows to be removed on site will be translocated to suitable areas within the site to further enhance the existing and proposed native vegetation. The southern hedgerow separating the proposed site from the Lucan Pitch and Putt boundary will require some tree and hedge removal, however, the hedgerow will be re-planted and enhanced with screening plants. The northern hedgerow and treeline along the railway corridor and part of north-western immature woodland will be retained and enhanced with additional native tree and shrub planting. The north-eastern scrub boundary will be retained and enhanced with additional native tree and shrub planting. The south-eastern boundary close to the River Griffeen comprising of immature woodland and wet grassland will be retained and enhanced with new native trees and shrub planting in line with the Clonburris Planning Scheme SDZ. A dark corridor will be maintained along the River Griffeen. This will ensure habitat connectivity for commuting bats is maintained. Parts of the existing grassland on the eastern corner will be retained, enhanced and managed.

The loss of the central hedgerow will be mitigated by the provision of additional planting composed of suitable species along roadways within the development (as per *Clonburris SDZ BMP overarching objective HC15)*. The southern hedgerow, which currently forms the boundary between the proposed development site and the Lucan Putt and Pitch lands, will be reinstated with screening planting (as per *Clonburris SDZ BMP overarching objective HC16)*. Refer to the Landscape Design Report (prepared by Brady Shipman Martin and submitted under separate cover as part of this application). In locations where trees, groups of trees or hedgerow sections are to be removed, it is proposed to provide new planting of better quality trees and shrubs in their place. The proposed landscaping plans for the development prioritise native species with non-native planting also provided, where appropriate, within the development. The planting proposed will align with the recommendations of the All-Ireland Pollinator Plan.

Furthermore, additional tree planting has been proposed for the rear gardens to the houses along with tree planting along the streets to maintain habitat connectivity.

In line with the Clonburris SDZ planning scheme framework (Section 2.3 Green and Blue Infrastructure, Section 2.9 Services, Infrastructure and Energy Framework, Section 2.10 Landscape and Open Space and Section 2.11 Biodiversity and Natural Heritage) and accompanying Biodiversity Management Plan (BMP), biodiversity measures will be implemented to mitigate any impacts of habitat loss and disturbance to species on the site. Specifically, the biodiversity objectives and measures for development within Clonburris SDZ as detailed in Section 4 and 5 of the Plan along with the suggested biodiversity measures for Adamstown Extension as presented in '*Table 22'* of the Plan have been taken into account for the proposed development as far as possible. A Habitat Management Plan (HMP) has been prepared for the development and is included as Appendix 4.

The mitigation measures proposed include:

- All site clearance and landscaping works will comply with current legislative requirements and best practice. The clearance of any vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August) (as per *Clonburris SDZ BMP overarching objective Bi01, Bi03)*. Should the construction programme require vegetation clearance between March and August, and this is unavoidable, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the

eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately;

- Construction works will be undertaken in strict accordance with the requirements of the Construction Environmental Management Plan (prepared by AWN Consulting and submitted separately);
- As it is proposed to effectively change the site from former agricultural / disturbed ground to an urban character, it is not possible to mitigate all of the potential impacts on local ecological receptors. Hedgerows will be removed, as will areas of scrub, unmanaged grassland and recolonising ground. In order to mitigate this loss the design team, specifically the project landscape architect, arborist, architect, ecologist, civil engineer and developer have all collaborated to ensure that, within the constraints imposed by the SDZ planning scheme, the impacts on local biodiversity receptors are minimised, and the areas of new biodiversity are maximised;
- The SDZ Planning Scheme states that high value hedgerows / treelines will be retained and protected where feasible (*as per Clonburris SDZ Planning Scheme Section 2.3 Green and Blue Infrastructure- key principles*; *Clonburris SDZ BMP overarching objective HR01; Clonburris SDZ BMP suggested biodiversity measures for Adamstown Extension Table 22*). As far as is practicable, and within the constraints imposed by the requirements of the SDZ Planning Scheme itself, the biodiversity and green infrastructure objectives of the Planning Scheme are being implemented in the proposed development. It is necessary to remove the north-south hedgerow, and to alter/replace the boundary with the pitch and putt club to the south. However, the northern boundary (with the railway) is being retained and enhanced, significant new planting, including trees and hedgerows, is proposed and all of the retained hedgerows / treeline will be treated in accordance with British Standard *BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations*, with protective fencing being installed prior to commencement of development as per *Clonburris SDZ BMP overarching objective HR10)*;
- As per *Clonburris SDZ BMP overarching objective HR02,* a habitat management plan has been prepared and included as part of the application to detail the management and protection of the hedgerows, treelines, woodland and other semi-natural habitats that are retained and / or enhanced within the SDZ lands (the HMP is included at Appendix 4);
- The planting proposed for the development will, wherever possible, comprise an appropriate mixture of native trees and shrubs, preferably of local provenance (*as per Clonburris SDZ Planning Scheme Section 2.3 Green and Blue Infrastructure- key principles*; *Clonburris SDZ BMP overarching objective HC01, HC02, HC03, HC20, HC21; Clonburris SDZ BMP biodiversity measure 5.1.1; Clonburris SDZ BMP suggested biodiversity measures for Adamstown Extension Table 22*). The planting will also incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. It will take account of and implement the relevant objectives of the All-Ireland Pollinator Plan 2021-2025 (as per *Clonburris SDZ BMP overarching objective HR09, I03)*. Details of the planting (planting plan and species lists) are included in the Landscape Design Statement and drawings, prepared by Brady Shipman Martin and submitted separately;
- Replacement trees and hedgerows shall be of appropriate age, structure and species to provide an immediate positive impact, and in the long term offer significant benefits that see an improvement upon the pre-development baseline;
- The grassland on the eastern part of the proposed development in close proximity to the River Griffeen corridor will be retained and managed as per *Clonburris SDZ BMP overarching objective HR08.* This boundary will be enhanced as part of the development, and will remain unlit;
- Species listed on Schedule 3 of the Birds and Habitats Regulations, 2011, as amended, such as Japanese knotweed and giant hogweed, have not been recorded on the site. Nevertheless, aappropriate

biosecurity measures will be implemented during the construction phase of the proposed development to ensure that no invasive species are introduced, either deliberately or inadvertently, to the site (as per *Clonburris SDZ BMP overarching objective HC02, HC03*);

- The following recommendations from Inland Fisheries *Ireland 'Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters'* (2016) will be implemented as necessary:
  - No direct discharges be made to waters where there is potential for cement or residues in discharge.
  - The pH of any and all discharges made from and during construction works shall be in the range of 6.0 – 9.0 units and not alter the pH of any receiving fisheries waters by more than+/- 0.5 pH units.
  - The level of suspended solids in any discharges to fisheries waters as a consequence of construction works shall not exceed 25 mg/l, nor result in the deposition of silts on gravels or any element of the aquatic flora or fauna.
- Bat boxes will be provided to compensate for the potential loss of roost sites from tree removal. A total of six (6) no. x 2F Schwegler bat boxes or equivalent are proposed for erection, either on suitable trees or poles or within the fabric of the buildings themselves (*as per Clonburris SDZ Planning Scheme Section 2.10 Biodiversity and Natural Heritage- key principles*, *Clonburris SDZ BMP biodiversity measure 5.3; Clonburris SDZ BMP suggested biodiversity measures for Adamstown Extension Table 22*);
- Bird boxes and insect hotels will be provided throughout the proposed development site. A total of six 6 no. assorted wooden or woodcrete bird boxes and 4 no. wooden insect hotels (to be located within the proposed parks) will be included (*as per Clonburris SDZ Planning Scheme Section 2.10 Biodiversity and Natural Heritage key principles*; *Clonburris SDZ BMP overarching objective Bi04, Bi05, I02; Clonburris SDZ BMP biodiversity measure 5.2, 5.5; Clonburris SDZ BMP suggested biodiversity measures for Adamstown Extension Table 22*);
- Further details on the proposed planting, including details on the native hedgerows are set out in the landscape design report that accompanies the application. All planting is in line with the requirements of the Clonburris SDZ BMP, including overarching objective HR12;
- A Green Space Factor (GSF) Plan has been prepared for the proposed development in line with GI Objective 4 of the South Dublin County Development Plan 2022 – 2028. In line with the scoring set out in SDCC's Guidance Note on GSF, the proposed development achieves a GSF score of 0.31. As set out in the Guidance note there is a minimum score of 0.5 for SDZ zoning in SDCC. However, the proposed development is constrained by the following factors:
  - The requirement for the removal of internal hedgerows and trees to facilitate the layout prescribed in the Planning Scheme;
  - The design of the proposed houses and duplex units preclude use of green roofs;
  - Limitations on tree planting created by underground services;
  - Provision of car parking as specified in the SDZ.
- Given the primary importance of complying with the SDZ planning scheme it is not possible to achieve the full GSF score for the proposed development. There has therefore been a concerted effort by the design team to promote green infrastructure and to enhance both the ecology of the site and overall habitat connectivity to the wider area. Retention of trees and hedgerows as well as the proposed enhancement planting to the Griffeen corridor and other boundaries, generous provision of tree group stepping stones throughout, wildlife factors (provision of bird and bat boxes), SuDS measures, green roofs to apartments, intensive green roof to tenant amenity building, permeable paving to in-curtilage car parking, use of grass paving to on-street parking and a firm management/maintenance schedule have all been included as part of the proposed design.

- There is a range of GI measures listed on page 5 of the SDCC Guidance Note on GSF. The development team will engage with SDCC in order to achieve the best possible GI solution at the site, and where possible will seek to implement as many of these measures, and others, as possible;
- The landscaping and enhancement / mitigation planting will, over time, provide replacement habitat of benefit to the bats and birds that will continue to use the site and its boundaries.

5.3 Fauna

Construction works will be undertaken in strict accordance with the requirements of the Construction Environmental Management Plan (prepared by AWN Consulting and submitted separately).

5.3.1 Bats – recommendations

No bat roosts have been recorded at Adamstown Extension and there is no evidence that trees within the site are in use as bat roosts from the surveys undertaken in 2022. It will not be necessary to apply for a derogation licence under Regulation 54 or 55 of the European Communities (Birds and Natural Habitats) Regulations 2011).

Nevertheless, bats are mobile creatures and all mature trees shall be checked by a bat specialist prior to felling or major surgery. If the felling occurs in winter, all suitable cavities offering roost potential to bats shall be checked by a bat specialist by way of access from a hoist or other height access means. Felling in autumn is preferable as it would avoid nesting birds and hibernating bats. A bat detector assessment will be carried out if felling takes place in the period September to early October. Any ivy-covered trees which require felling should be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape. Trees with potential for bat roosting i.e. those showing cavities, should be felled in the presence of a bat specialist in case bats are present. If found, such animals should be safely retained in an escape-proof container until nightfall then released onsite (as per *Clonburris SDZ BMP overarching objective Ba01; Clonburris SDZ BMP biodiversity measure 5.3*).

A total of 6no. bat boxes, such as Schwegler 2F with a double front (or similar, as recommended by the project ecologist/bat specialist) shall be installed in the site. If these cannot be facilitated within the site then bat access into the built structures shall be provided using specially designed bat access elements (e.g., bat access bricks, built-in boxes etc.). This is as per *Clonburris SDZ BMP overarching objective Ba05*.

5.3.2 Lighting

As per the Biodiversity Action Plan for Clonburris SDZ, it is a key objective of the Clonburris SDZ Planning Scheme *'To provide good public lighting to the edge of Griffeen Valley Park that is sensitively designed and operated to reduce disturbance to wildlife particularly bat species.'*

Further, as per *Clonburris SDZ BMP overarching objective Ba02, Ba03*; *Clonburris SDZ BMP biodiversity measure Section 5.3; and Clonburris SDZ BMP suggested biodiversity measures for Adamstown Extension Table 22,* all new public lighting (see the accompanying Public Lighting report and drawings, prepared by Sabre Electrical Services Ltd. and submitted as part of the planning application) for the proposed development will be constructed in line with the recommendations of the Bat Conservation Trust (Lighting Guidelines, 2018).

The lighting design has been reviewed to consider the potential impact on foraging and commuting bats. The most important part of the site, the south-eastern corridor near River Griffeen, is to be maintained as a dark corridor. Prior to installation, the final lighting design for the proposed development will be reviewed to ensure that, while taking account of all necessary safety and security requirements, it minimises the potential for impacts on the local bat population, particularly along the western edge of the site.

The lighting, designed by Sabre, takes account of the following lighting design characteristics:

- There will be no light spill onto the boundary hedgerows and scrubs – the street lights and associated cowling are designed to point away from the hedge to light the street only;
- The minimum level of appropriate / required lighting level will be provided within the developed / residential areas;
- Light standards will be fitted with low intensity, horizontal cut-off LED light fittings. This will avoid the effect of light spill arising;
- A warm white spectrum shall be adopted to reduce blue light component;
- Luminaires shall feature peak wavelengths higher than 550 nm;
- Light standards and associated lighting will where design requirements permit, be directed away from areas of open space, in particular the proposed linear River Griffeen corridor;
- No floodlighting will be used in the development.

Given the level of bat activity recorded on the site during the bat surveys undertaken at the site it is considered that the lighting design is appropriate. The lighting design has been reviewed to consider the potential impact on roosting, foraging and commuting bats, and it is concluded that the lighting as designed will have no significant impacts on bat populations in the area.

As noted in the bat survey report, there will be a loss of vegetation within the site and an increase in lighting in areas where lighting is essential for traffic movement. This will lead to a slight to negligible negative impact upon bats.

5.4 Water

5.4.1 Surface Water

The measures listed in this section are in accordance with Clonburris SDZ planning scheme framework (Section 2.3 Green and Blue Infrastructure, Section 2.9 Services, Infrastructure and Energy Framework, Section 2.10 Landscape and Open Space and Section 2.11 Biodiversity and Natural Heritage) and the accompanying Biodiversity Management Plan (BMP). Specific biodiversity measures for Adamstown Extension as presented in '*Table 22*' of the BMP have been taken into account for the proposed development as far as possible.

As per the BMP for Clonburris SDZ, it is a key objective of the Clonburris SDZ Planning Scheme – *'To provide significant and integrated SuDS infrastructure, including a high amenity retention pond / lake within the Griffeen Valley Park.'* This has been incorporated into the site design and the surface water drainage and sustainable drainage system strategy for the proposed development (as per *Clonburris SDZ BMP overarching objective HC28, HC29, HC30, HC 31, HC32; Clonburris SDZ BMP biodiversity measure 5.1.3)*. Refer to **Figure 5.1.**

Figure 5.1 Proposed attenuation pond for the site in the future development area for Griffeen Valley Park

A Construction and Environmental Management Plan has been prepared by AWN Consulting and submitted separately). In addition to the requirement to implement these measures in full, the following best practice measures will be adopted during construction:

- As per *Clonburris SDZ BMP overarching objective HR05 and HR06,* watercourses will be fenced off at a minimum distance of 10m from the watercourse bank in order to maintain a biodiversity protection zone. If fact, the River Griffeen is c.35m from the site boundary at its closest point, and all fencing will therefore be significantly further than 10m from the river channel). No storage / stockpiling of materials or machinery or construction works activities will be undertaken within 50m of the watercourse;
- The stripped topsoil and excavated subsoil stockpiles will be protected for the duration of the works and located away from the areas where sediment laden runoff has potential to enter the existing surface water drains. Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion and silt generation;
- Measures such as sediment retention ponds, silt fencing, hydrocarbon interceptors, surface water inlet protection and earth bunding adjacent to open drainage ditches will be implemented to capture and treat sediment laden surface water runoff;
- Surface water runoff from areas stripped of topsoil, surface water collected in excavations or discharge from any vehicle wheel wash areas will be directed to on-site settlement ponds / distilling tanks where

measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate. On-site settlement ponds are to include geotextile liners and rip-rapped inlets and outlets to prevent scour and erosion. Monitoring of these sediment control measures will be undertaken throughout the construction phase;

- Concrete batching will take place off-site. Wash down and wash out of concrete trucks will also take place off-site. Any excess concrete is not to be disposed of on-site;
- All oils, fuels, paints and other chemicals will be stored in a secure, bunded, hardstand area. These areas shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance of 30 mm for rainwater ingress). Drainage from the bunded area(s) shall be diverted for collection and safe disposal;
- Refuelling and servicing of construction machinery will take place in a designated hardstand area that is also remote from any surface water inlets (when not possible to carry out such activities off-site). A response procedure will be put in place to deal with any accidental pollution events. Spill kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment. Monitoring of all fuel / oil storage areas will be undertaken;
- Foul drainage discharge from the construction compound will be tinkered off-site to a licensed facility until a connection to the public foul drainage network has been established;
- To prevent emissions to air, vehicle wheel wash facilities will be installed in the vicinity of any site entrances and road sweeping will be implemented, as necessary, in order to maintain the road network in the immediate vicinity of the site. Also, dust suppression measures (e.g. dampening down) will be implemented, as necessary, during dry periods;
- Further, material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods. During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions;
- The newly constructed storm water systems will be protected from ingress of silt, debris and deleterious material during all phases of construction;
- Appropriately designed silt prevention measures will be installed where necessary and will be regularly maintained and retained in situ for the duration of the construction phase, until such time as all proposed permanent surface water protection measures are installed and operational;
- Discharge Licences – It will not be permitted to discharge into any newly constructed storm water systems or watercourse without adhering to the conditions of the discharge licence and agreeing the same with the Site Manager and Local Authority Area Engineer;
- Discharge of surface water from the construction site will be via silt / sediment trap and / or temporary hydrocarbon interceptors and will be monitored to meet any requirements set by the Local Authority / Environmental Protection Agency;
- No discharge will occur where there is a risk of cement or residue in the discharge;
- Concrete Washout – The washing out of concrete trucks on site will not be permitted as they are a potential source of high alkalinity in watercourses. Consequently it is a requirement that all concrete truck washout takes place back in the ready-mix depot;
- Control of spoil and other materials to prevent spillage, and through appropriate handling and selection of spoil / material storage locations;
- Careful siting and bunding of fuel storage facilities and any areas used for the storage of potentially hazardous materials;
- Should invasive weeds be found, they will be treated as controlled waste and disposed of off- site at a landfill site that is licensed to receive such material.

The implementation and effectiveness of these standard best-practice mitigation measures will be inspected and recorded regularly during the construction period and where deficiencies or faults are identified they will be immediately remedied.

5.4.2 Foul water

It is proposed to discharge foul water from the proposed development via a network of foul gravity sewers, which will flow to the network in Hayden's Lane as permitted under Reg Ref: SDZ20A/0021. There will be a total of 2no. connections from the proposed development to the permitted infrastructure, 1no. connections from the north of Hayden's Lane, and 1no. connection from the south of Hayden's Lane.

Foul water will be conveyed to the Irish Water WwTP at Ringsend, where the effluent will be subject to treatment prior to discharge to Dublin Bay at Poolbeg. This creates an indirect hydrological pathway linking the proposed development site with European Sites in Dublin Bay.

As set out in the Engineering Assessment Report that accompanies the submission, the peak wastewater discharge is calculated at 5.95l/s for the overall development. The Ringsend WwTP operates under licence from the EPA (Licence no. D0034-01) and received planning permission (ABP reg. ref.: 301798) in 2019 for upgrade works, which commenced in 2018 and are expected to be fully completed by 2025. The upgrade works will result in treatment of sewage to a higher quality than current, thereby ensuring effluent discharge to Dublin Bay will comply with the Urban Wastewater Treatment Directive by Q4 2023.

The peak wastewater discharge would not have a measurable impact on the overall water quality within Dublin Bay and therefore would not have an impact on the current Water Body Status (as defined within the Water Framework Directive). Hydrodynamic and chemical modelling within Dublin Bay has shown that there is significant dilution for contaminants of concern (DIN and MRP) available quite close to the outfall for the treatment plant (Ringsend WWTP 2012 EIS, Ringsend WWTP 2018 EIAR; refer to Section 12.4.22, ABP-301798-18 Inspector's report). The most recent water quality assessment of Dublin Bay WFD Waterbody undertaken by the EPA (*Water Quality in 2020: An Indicator Report*, 2021) also shows that Dublin Bay on the whole, currently has an 'Unpolluted' water quality status (refer to www.catchments.ie).

There will be no impacts on foul water treatment capacity at the Ringsend WwTP as a result of the proposed development. No mitigation measures are required in this regard.

5.4.3 Noise, Vibration and Visual Impacts

As per the CEMP, the following measures will be implemented:

- Noise and vibration during the construction phase will be controlled with reference to the best practice control measures within *BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2*. The contractor will ensure that all best practice noise and vibration control methods will be used as necessary in order to ensure impacts to nearby noise sensitive locations are not significant. This will be particularly important during site preparation works;
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations. All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.

5.5 Monitoring

A suitably experienced Project Ecologist will be appointed for the duration of the construction phase and regular monitoring of all related works will take place to ensure the correct and full implementation of all

mitigation measures. The Project Ecologist will ensure that all construction works take place in accordance with planning conditions, the project CEMP and the mitigation measures set out in this EcIA.

Should vegetation clearance be required during the bird nesting season, and should this work be unavoidable, such clearance will take place only after the Project Ecologist has undertaken a survey to ensure that no active bird nests or recently fledged birds are present. Pre-construction surveys will be required to ensure that any necessary tree felling or works to buildings continue to have no impact on roosting bats.

Monitoring of all fuel / oil storage areas will also be undertaken to ensure that all related mitigation measures are being implemented effectively.

No long-term ecological monitoring is required, other than post-construction monitoring of the bat and bird boxes, and insect hotels installed. The bat and bird boxes, and insect hotels installed on the site will be checked annually for a period of two years post-completion of the works, to ensure that they continue to be accessible to these species. If necessary, they will be repositioned within the site.

On completion of construction, the lighting installed will be reviewed by the Project Ecologist and a bat specialist, to ensure that it is operating according to the approved specifications. The landscape architect will similarly ensure that all works undertaken are in full compliance with the landscape specification. The arborist will ensure that all hedgerow and tree management measures are fully implemented. All monitoring tasks will be recorded and logged for inspection by the site manager.

6 Conclusion

The proposed Adamstown Extension development in Clonburris SDZ will result in the removal of an internal hedge, as well as areas of scrub, immature woodland, unmanaged grassland and disturbed and recolonising ground. In line with the requirements of the Clonburris SDZ planning scheme, a new residential development will be delivered. Associated with the development will be new public open space and landscaped areas, including significant areas of ecologically sensitive planting and bat and bird boxes, insect hotels and the retention and enhancement of the boundary hedgerow / treeline and scrub. With the implementation of the required mitigation, including the significant additional hedgerow and treeline planting, and enhancement of retained grassland, there will be no long-term residual impact on any ecological receptors, either within or in the vicinity of the site, or associated with any site designated for nature conservation as a result of the proposed development.

7 References

- Bat Conservation Ireland (2010). Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers
- CIEEM (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester, United Kingdom (V1.2)
- Clonburris SDZ Planning Scheme 2019
- Council Directive 79/409/EEC on the Conservation of Wild Birds. (The EU Birds Directive)
- Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. (The EU Habitats Directive)
- Council Directive 2000/60/EC of the European Parliament and of the Council establishing a Framework for the Community Action in the Field of Water Policy (The Water Framework Directive)
- Department of Culture, Heritage and the Gaeltacht (2017). Ireland's Third National Biodiversity Plan
- DG Environment (2003). Interpretation Manual of European Union Habitats. European Commission.
- Doogue D., Nash D., Parnell J., Reynolds S., & Wyse Jackson P. (1998). Flora of County Dublin. The Dublin Naturalists' Field Club
- EPA (2003). Advice Notes on Current Practice in the preparation of Environmental Impact Statements
- Fossitt J. (2000). A Guide to Habitats in Ireland. Heritage Council
- Hayden T. & Harrington R. (2001). Exploring Irish Mammals. Town House Dublin
- Kelleher, C. and Marnell, F. (2006). Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, no. 25. NPWS, Department of Culture, Heritage and the Gaeltacht
- NPWS (2019a). The Status of EU Protected Habitats and Species in Ireland – Volume 1. NPWS, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2019b). The Status of EU Protected Habitats and Species in Ireland – Volume 2 (Habitat Assessments). NPWS, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2019c). The Status of EU Protected Habitats and Species in Ireland – Volume 3 (Species Assessments). NPWS, Department of Culture, Heritage and the Gaeltacht.
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes.
- NRA (n.d.). Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes.
- South Dublin County Council Development Plan 2022-2028
- Smith G. F., O'Donoghue P., O'Hora K. and Delaney E. (2010). Best Practice Guidance for Habitat Survey and Mapping. Heritage Council
- Stace, C. (2010). New Flora of the British Isles, 3rd Edition. Cambridge University Press
- Webb D.A., Parnell J. & Doogue D. (1996). An Irish Flora. Dundalgan Press

Appendix 1 Hedgerow Survey Report

Hedgerow Study of a Proposed Development Site at Clonburris, Co. Dublin

Report for *Brady Shipman Martin*

By Alexis FitzGerald, *FitzGerald Ecology*

August 2022

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1. Introduction

Brady Shipman Martin commissioned FitzGerald Ecology to produce a hedgerow study of a proposed development site at Clonburris in west Co. Dublin (the centre point of the site is at approximately Irish Grid reference O 03126.32571). The site is part of the Clonburris Strategic Development Zone (SDZ). The three internal hedgerows under study in this report are to be lost under the current proposed development plans. As such, it is important to understand the value of these hedgerow habitats, which will help to inform a better understanding of the overall ecological value of the site, as well as the assessment of potential impacts of the loss of these important ecological corridor habitats as a result of the construction of the proposed development.

A survey of three hedgerows within the development site was to be conducted according to the methodology of Kelleher Ecology Services (2021) and Foulkes *et al.* (2013). A detailed report was also to be provided, which includes descriptions of the three hedgerows present on site and their relative diversity and ecological value (with accompanying illustrative maps), along with the recorded species and other relevant data from each hedgerow transect.

The study area for this hedgerow study comprises all internal hedgerows within the proposed development site, which can be seen in Figure 1 below.

2. Methodology

The hedgerow survey was carried out by Alexis FitzGerald B.A. M.Sc. on the 7th July 2022 (which is within the optimal survey period for hedgerow habitats), according to the methodology of Kelleher Ecology Services (2021), which was adapted from that of Foulkes *et al.* (2013) to a smaller, development site-based scale. As such, all habitats classified as hedgerows (WL1) and treelines (WL2) as per the Irish Heritage Council classification system (Fossitt, 2000) were included and recorded for this survey (these definitions are included by Foulkes *et al.* (2013) in their descriptions of relevant hedgerow habitats for surveying). As a result, habitats technically classified according to Fossitt (2000) as treelines (WL2) habitat are referred to as "*hedgerows*" throughout this report.

A standard hedgerow appraisal form (following Kelleher Ecology Services (2021) and Foulkes *et al.* (2013)) was used to record the relevant assessment criteria and indicator species, and the forms and the data recorded for each hedgerow are presented in Appendix I. The hedgerow appraisal form recorded information for each hedgerow under the following five criteria:

- Context
- Construction
- Structure and condition
- Management
- Floristic data – tree, shrub and ground flora layers

The positive indicator species recorded for the floristic data are those presented in Appendices D and E of Foulkes *et al.* (2013). The abundance of each shrub species present in each transect was recorded using the Domin scale[1], whilst the tree and ground flora etc. species were recorded according to a more simple presence/absence criterion (trees were either Present, P, or Dominant, D; ground flora

[1] The Domin scale is used to estimate the abundance of a particular species in a particular area of vegetation. The scale utilised here is from + to 10, each stage representing a range of percentage values from + = cover of <1% and a single individual, to 10 = cover of 91-100%.

etc. were only Present, P), as per the methodology in Foulkes *et al.* (2013). All other species (including negative indicator species, etc.) noted within the transects are presented below the positive indicator species in Appendix I, with abundance estimated according to the DAFOR scale[2]. Vascular plant taxonomy and nomenclature follows Stace (2019).

Two non-concurrent hedgerow sample transects were selected ("*1 30m a*", "*1 30m b*", etc.) and recorded for each of the three hedgerows, with 6 transects therefore recorded in total (see Figure 2 for locations of hedgerows and transects). The locations of these transects were selected via a randomised process in Microsoft Excel ©, as per the methodology in Foulkes *et al*. (2013). The distance (in metres) of the transects along the hedgerows are also included in Appendix I.

Historic information on the hedgerows on site was found by reviewing downloadable present-day Ordnance Survey Ireland townland boundaries shapefiles[3], as well as historic 1st and 2nd edition 6-inch Ordnance Survey maps of the area available online[4].

The significance of each hedgerow on site was assessed as part of the survey, according to the following criteria as set out by both Foulkes *et al.* (2013) and Kelleher Ecology Services (2021):

- Historical Significance
- Species Diversity Significance
- Ground Flora significance
- Structure, Construction & Associated Features
- Habitat Connectivity
- Landscape Significance

Each of the above criteria is ranked on a scale of 0-4 based upon the field data collected. As noted by Foulkes *et al.* (2013), "*a score of 4 in any category indicates a hedge of high significance (Heritage Hedgerow). Hedges can also be considered of high significance (Heritage Hedgerows) if they record a cumulative score of 6 or greater in the Historical, Species Diversity or Structural Categories, or a cumulative score of 16 or greater over the five categories*". Therefore, a hedgerow may be considered as a Heritage Hedgerow under three different scenarios (or any combination of these).

The condition of each hedgerow within the site was also assessed as part of the survey, according to the following criteria as set out by both Foulkes *et al.* (2013) and Kelleher Ecology Services (2021):

- Structural variables
- Continuity
- Negative indicators/Degradation/Issues affecting long term viability

Each of the above criteria is ranked on a scale of 0-3 based upon the field data collected. The higher the score, the more favourable the condition. As noted by Foulkes *et al.* (2013), "*A score of 0 in any category represents a hedgerow in Unfavourable Condition*".

[2] The DAFOR scale is used to estimate the abundance of a particular species in a particular area of vegetation, with D = Dominant, A = Abundant, F = Frequent, O = Occasional, and R = Rare.

[3] Available at: https://data.gov.ie/dataset/townlands-osi-national-statutory-boundaries1

[4] Available at: https://geohive.maps.arcgis.com/apps/webappviewer/index.html?id=9def898f708b47f19a8d8b7088a100c4

3. Baseline Study

Site Description

The proposed development site consists of a number of inter-linking former arable fields. These fields are currently largely unmanaged and have become overgrown with dense recolonising and/or rank vegetation. Bounding these fields within the centre of the site are two hedgerows (WL1) (hedgerows 1 and 2) and one treeline (WL2) ('hedgerow' 3) (both habitat types are considered as 'hedgerows' for surveying, as mentioned previously), all of which are to be removed under current development plans. Hedgerow 3 represents a townland and former farm boundary, whilst hedgerows 1 and 2 are internal within the site, only representing boundaries between the fields.

No plant species listed on the Flora (Protection) Order, 2015, nor any locally rare species, were recorded within the three surveyed hedgerows during the field survey in July 2022. The non-native invasive species *Buddleia davidii* and *Lonicera nitida* were recorded within hedgerows 1 and 3, respectively, however, neither of these species are listed on the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations, 2011.*

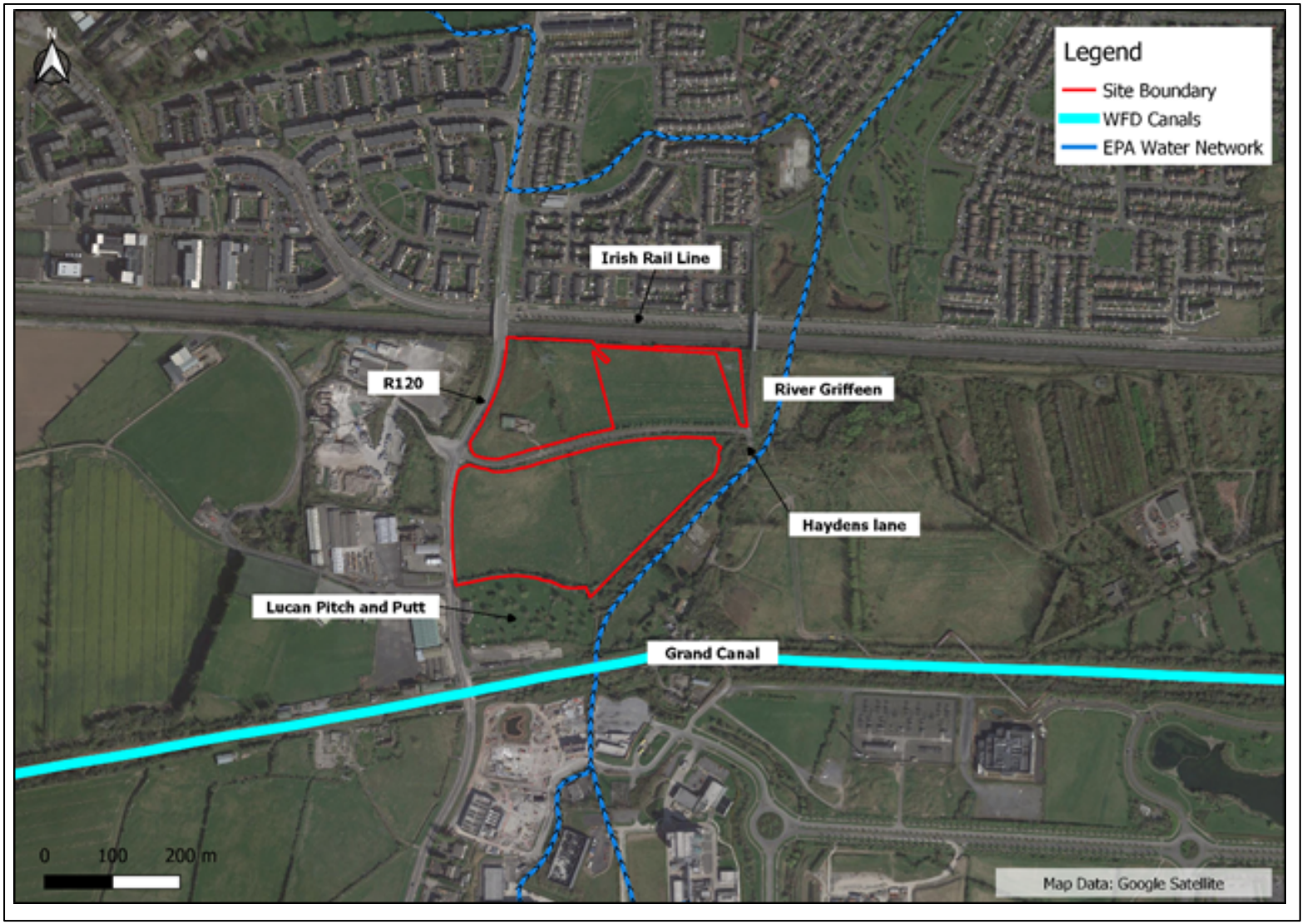

Figure 1. Proposed development site boundary

Figure 2. Three hedgerows recorded within the proposed development site during the field survey in July 2022, with six randomised hedgerow sample transects (thick orange lines) shown

3.1. Hedgerow 1

Hedgerow 1 (see Plate 1) is an internal hedgerow which occurs in the northern section of the proposed development site and runs approximately north to south. Under the hedgerow vegetation, a shallow, wet ditch *c.* 0.5-1 m in depth can be found. This ditch is very densely overgrown and so is not easily visible. The hedgerow is mostly very densely vegetated and has almost no gaps, with the exception of a narrow section in the north of the hedgerow. A former arable field occurs on the eastern side of this hedgerow, whilst an unmanaged dry meadows and grassy verges (GS2) dominated field (which was probably formerly also an arable field) occurs to the west.

This habitat classifies as a hedgerow (WL1) according to Fossitt (2000). This linear line of dense shrubs is dominated by *Rubus fruticosus* agg., *Hedera helix* agg., *Crataegus monogyna* and *Prunus domestica*. The ground layer of the hedgerow contains the high nutrient indicator (noxious weed) species *Cirsium arvense, Urtica dioica, Rumex obtusifolius* and *Galium aparine*, which is perhaps unsurprising given that this hedgerow is directly adjacent to former agricultural fields. The non-native invasive species *Buddleia davidii* was also recorded in this hedgerow. Both sides of the hedgerow have wide (over 2 metre) margins which are currently unmanaged. The maximum height of the hedgerow is *c.* 5 metres, although most shrubs/small trees here are lower in height.

This hedgerow will be removed under current development plans. It is considered to be of local importance (higher value), given its mature status as part of the wider linear habitat network in the area.

Plate 1. Hedgerow 1 within the proposed development site

1.1. Hedgerow 2

Hedgerow 2 (see Plate 2) is an internal hedgerow which occurs in the centre of the proposed development site and runs approximately north to south. It was probably formerly a continuation of hedgerow 1, but these were split into two separate sections by a roadway running east to west through the site. As such, the construction features of these two hedgerows are very similar to each other. Under the hedgerow vegetation, a shallow, wet ditch *c.* 0.5-1 m in depth can be found. This ditch is very densely overgrown and so is not easily visible. The hedgerow is mostly very densely vegetated and has almost no gaps, with the exception of a gap for livestock access in the north of the hedgerow (this gap occurs through transect A, and so is taken into account in the extended length of this transect). Former arable fields occur on both sides of this hedgerow.

This habitat classifies as a hedgerow (WL1) according to Fossitt (2000). This linear line of dense shrubs is dominated by *Rubus fruticosus* agg., *Hedera helix* agg., *Crataegus monogyna* and *Rosa canina* agg. The ground layer of the hedgerow contains the high nutrient indicator (noxious weed) species *Cirsium arvense, Urtica dioica, Rumex obtusifolius* and *Galium aparine*, which is perhaps unsurprising given that this hedgerow is directly adjacent to former agricultural fields. Both sides of the hedgerow have wide (over 2 metre) margins which are currently unmanaged. The maximum height of the hedgerow is *c.* 5 metres, although most shrubs/small trees here are lower in height.

This hedgerow will be removed under current development plans. It is considered to be of local importance (higher value), given its mature status as part of the wider linear habitat network in the area, being directly adjacent (to the south) to a townland boundary hedgerow (*i.e.* hedgerow 3).

Plate 2. Hedgerow 2 within the proposed development site

1.2. Hedgerow 3

Hedgerow 3 (see Plate 3) is a farm boundary (and townland boundary) hedgerow in the south of the site which runs approximately west to east from a roadway to the Griffeen River (which river occurs along the eastern edge of the site). Under the hedgerow vegetation, a deep (1m) and wide (1m) ditch can be found. This ditch is very densely overgrown and so is not easily visible. The hedgerow has no gaps and is densely vegetated, currently maintaining a property (and former farm boundary) to a separate pitch and putt golf course property to the immediate southern side of the hedgerow. The northern side of the hedgerow adjoins an unmanaged former arable field. This hedgerow is visible on historic 1st edition 6-inch Ordnance Survey maps.

Whilst this habitat classifies as a treeline (WL2) according to Fossitt (2000), such treelines are also included by Foulkes *et al.* (2013) for assessment and are therefore considered here. This linear line of trees is dominated in the tree layer by *Fraxinus excelsior* along much of its length (alongside lesser quantities of *Corylus avellana* and *Fagus sylvatica*), whilst *Rubus fruticosus* agg., *Hedera helix* agg., *Sambucus nigra, Salix cinerea* subsp. *oleifolia* and *Crataegus monogyna* are the most frequent species in the shrub layer of the hedgerow. The ground layer of the hedgerow contains the indicator species *Asplenium scolopendrium*, alongside the high nutrient indicator (noxious weed) species *Cirsium arvense, Urtica dioica, Rumex obtusifolius* and *Galium aparine*, which is perhaps unsurprising given that this hedgerow is directly adjacent to former agricultural fields and heavily managed putting greens. The non-native invasive species *Lonicera nitida* was also recorded in this hedgerow. The northern side of the hedgerow has a wide (over 2 metre) margin, whilst the southern side (although not visible) likely has a narrower (less than 1 metre) margin. The maximum height of the hedgerow is within 10-20 metres.

This hedgerow will be removed under current development plans. It is considered to be of county importance, given its mature status as part of the wider linear habitat network in the area and its relatively high tree and shrub species diversity, as well as its historic status as a townland boundary hedgerow identifiable in historic 1st edition 6-inch Ordnance Survey maps.

Plate 3. Hedgerow 3 within the proposed development site

2. Assessment of Significance and Condition of Hedgerows

2.1. Hedgerow Significance

A summary of assessments of hedgerow significance is presented below in Table 1. This assessment follows the methodology outlined in Section 2 above, which follows Kelleher Ecology Services (2021 and Foulkes *et al.* (2013).

Table 1. Summary of significance criteria calculations for all hedgerows within the study area

Hedgerow Reference Number	**1**	**2**	**3**
Historical Significance	1	1	4
Species Diversity Significance	1	2	3
Ground Flora significance	0	0	0
Structure, Construction & Associated Features	2	2	3
Habitat Connectivity	1	1	1
Landscape Significance	2	2	3
Total	**7**	**8**	**14**

As can be observed in Table 1 above, hedgerow 3 represents the most significant hedgerow within the proposed development site (with a combined score of 14). Hedgerow 3 is also a townland boundary hedgerow. As noted above in Section 2, hedgerows of high significance ('Heritage Hedgerows') can be

classified under three different scenarios. Therefore, under these criteria, hedgerow 3 should be considered as a hedgerow of high significance ('Heritage Hedgerow'). Indeed, hedgerow 3 can be considered as such purely based upon its historical importance, being as it is a townland boundary hedgerow which is identifiable in historic 1st edition 6-inch Ordnance Survey maps (as well as its high species diversity score). Hedgerows 1 and 2 do not classify as hedgerows of high significance, due largely to their lack of historical importance and their relatively low species diversity scores. Unfortunately, the 'Heritage Hedgerow' 3 will be removed under current development plans, as well as hedgerows 1 and 2.

2.2. Hedgerow Condition

A summary of assessments of hedgerow condition is presented below in Table 2. This assessment follows the methodology outlined in Section 2 above, which follows Kelleher Ecology Services (2021 and Foulkes *et al.* (2013).

Table 2. Summary of condition assessment criteria calculations for all hedgerows within the study area

Hedgerow Reference Number	**1**	**2**	**3**
Structural Variables	Highly favourable (3)	Highly favourable (3)	Highly favourable (3)
Continuity	Favourable (2)	Favourable (2)	Highly favourable (3)
Negative Indicators/Degradation/Issues affecting long-term viability	Adequate (1)	Favourable (2)	Adequate (1)
Total	**6**	**7**	**7**

As can be observed in Table 2 above, hedgerows 2 and 3 represent the hedgerows with the most favourable conditions within the proposed development site (each with an overall score of 7). As noted by Foulkes *et al.* (2013), "*A score of 0 in any category represents a hedgerow in Unfavourable Condition*". None of the hedgerows surveyed are considered to be in an 'Unfavourable Condition' currently. However, the 'Favourable Condition' hedgerows 1, 2 and 3 will all be removed under current development plans.

3. Summary

This report presents a summary of findings from a hedgerow survey in July 2022 of a proposed development site at Clonburris in west Co. Dublin. A total of three separate lengths of hedgerow were surveyed as part of this assessment, with two randomised samples transects being recorded in each. The results in terms of hedgerow significance showed that hedgerow 3 is the most important within the site, qualifying as a 'Heritage Hedgerow'. Hedgerow 3 is also of high historical importance, given that it is present on historic 1st edition 6-inch Ordnance Survey maps. Hedgerow 3 is therefore considered to be of county importance, whereas hedgerows 1 and 2 are considered to be only of local importance (higher value). In terms of condition assessment of the hedgerows, hedgerows 2 and 3

were found to have the most favourable conditions within the site, however, none of the hedgerows surveyed are considered to be in an 'Unfavourable Condition' currently. All three surveyed hedgerows (including the 'Heritage Hedgerow' 3) identified above will be removed under the proposed development plans.

4. References

Fossitt, J.A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Church Lane, Kilkenny, Ireland.

Foulkes, N., Fuller, J., Little, D., McCourt, S. & Murphy, P. (2013). *Hedgerow Appraisal System: Best Practise Guidance on Hedgerow Surveying, Data Collation and Appraisal*. Report prepared for Woodlands of Ireland, Dublin.

Kelleher Ecology Services (2021). *Ecological Hedgerow Appraisal & Evaluation of Pedestrian Connection Area Associated with a Proposed Residential Development Site at Ardarostig, Bishopstown, Cork*. Report prepared for HW Planning, on behalf of Ardstone Homes Ltd. Available at: https://www.ardarostigplanning.ie/custom/public/files/ardarostig-residential-hedge-vegetation-appraisal-rev-1-final.pdf.

Stace, C. (2019). *New Flora of the British Isles*. *4th Edition*. C&M Floristics.

Appendix I: Hedgerow Transect Data

Structural Recording Form			
Hedgerow Reference Number	**1**	**2**	**3**
Date of Recording	07/07/2022	07/07/2022	07/07/2022
Length of Hedgerow (m)	143	160	206
Surveyors	AF	AF	AF
GPS Start Point (ITM)	703004, 732777	703065, 732616	702895, 732425
GPS End Point (ITM)	703056, 732646	703091, 732458	703095, 732408
Start Point to start of 1st 30m transect	0	35	14
End of 1st 30m transect to start of 2nd 30m transect	40	37	197
End of 2nd 30m transect to End Point	71	0	200
Corine			
Soil Type			
a1. Altitude min. (m)			
a2. Altitude max.(m)			
b1. Aspect Side 1	W	W	S
b2. Aspect Side 2	E	E	N
A1. Adjacent Land Use Side 1	h	a	a
A2. Adjacent Land Use Side 2	a	a	h
B. History	1	1	2
B1. History Road / Stream			
B1a. Road Class	NP	L	NS
B2 History Ordnance Survey	n/a	n/a	1
B3 Sites and Monuments Record	n/a	n/a	n/a
B4 Old Woodland Link	n/a	n/a	n/a
C1. Adjacent Land Class Side 1	GS2	BC3	BC3
C2. Adjacent Land Class Side 2	BC3	BC3	GA2

D1. Habitat Link Class End 1	WL2	BC3	BL3
D2. Habitat Link Class End 2	GS2	GS2	FW2
D3. Designated Site	No	No	No
E. Boundary Function	2	2	2
F. Outline	a	a	a
G1. Linearity of Shrubs	1	1	1
G2. Bank, Wall, Shelf	1	1	1
G3. Drain	b	b	b
G4. Fossit Class	WL1	WL1	WL2
H. Bank,Wall,Shelf size	c	c	c
I1. Drain Size	3	3	3
I2. Drain wet/dry	b	b	a
J. Profile	b	b	b
J1. Profile base suffix	b	b	b
K. Height	4	4	5
K1. Height o/head cables	a	n/a	n/a
L. Width	d	d	d
M. % of Gaps	2	2	1
M1. Specific or general	b	b	n/a
N. Base Structure	d	d	d
N1. Base - Vegetation	a	a	a
O. Bank Degradation Degree	2	2	2
O1. Bank Degradation Extent	n/a	n/a	n/a
P. Trees Quantity	b	b	e
Q. Tree Age Composition	3	3	1
Q1. Tree Height (max)	c	c	d
Q2. Tree Height (min)	b	b	b
R. Verge / Margin Width Side 1	d	d	d
R2. Verge / Margin Side 1 Degradation	0	0	0

R3. Verge / Margin Width Side 2	d	d	a
R4. Verge / Margin Side 2 Degradation	0	0	0
S. Vigour	c	c	c
U. Management	k	k	k
U1. Management - out of season	n/a	n/a	n/a
U2. Management Stage	8	8	10
V. Management Method	8	8	8
W. Evidence of Rejuvenation - Past	a	a	a
W1. Evidence of Laying - Recent	n/a	n/a	n/a
X. Fencing Side	none	none	none
X1. Fencing Side 2	none	none	none
X3. Fencing wire to stems	n/a	n/a	n/a
Y. Ground Flora	d - *Cirsium arvense* O; *Rumex obtusifolius* O; *Urtica dioica* O; *Galium aparine* R	e - *Cirsium arvense* O; *Rumex obtusifolius* R; *Urtica dioica* O; *Galium aparine* O	e - *Cirsium arvense* O; *Rumex obtusifolius* R; *Urtica dioica* O; *Galium aparine* A
Mammal Holes	None observed	Two small mammal holes seen along western edge of hedgerow, likely rabbit and/or fox	None observed

	1 30m a	**1 30m b**	**2 30m a**	**2 30m b**	**3 30m a**	**3 30m b**
Shrub Recording Form (Domin Scale)						
Hedera helix agg.	5	7	7	7	6	8
Crataegus monogyna	4	8	7	7	7	4
Ligustrum vulgare				3		
Rubus fruticosus agg.	7	7	9	8	8	7
Rosa canina agg.		5	5	5	4	
Sambucus nigra	4	5		4	7	5
Salix cinerea subsp. *oleifolia*						4
Prunus domestica	8					

Prunus spinosa				7	4	
Climbers And Trees Recording Form						
Climbers (DAFOR, except *Hedera helix* agg. which is either present, P, if in ground/shrub layer, or absent, X)						
Hedera helix agg. *(P/X)*	P	P	P	P	P	P
Trees (Present, P/Dominant, D)						
Acer pseudoplatanus		P		P		
Corylus avellana					P	P
Fraxinus excelsior		P				D
Fagus sylvatica					P	
Ground Flora etc. Recording Form (Present, P)						
Asplenium scolopendrium						P
Other (negative indicator species, etc.) (DAFOR)						
Brachypodium sylvaticum		O	O	O		
Buddleia davidii	R					
Cirsium arvense	O	O	O			
Galium aparine	F			O	A	A
Galium verum		O				
Heracleum sphondylium			R			
Lonicera nitida						O
Ranunculus acris				O		
Rumex obtusifolius	R		R			
Taraxacum agg.			R			
Urtica dioica	O	O	O	O	A	F

Veronica chamaedrys		R				
Vicia sepium		R		R		

Appendix 2 Bird Survey Reports

Breeding Bird Survey Clonburris Lands

Adamstown

Dublin

John Fox

Late March to early July 2022.

Fig 1. Griffin River and Woodland Habitat, Clonburris Lands. March 2022.

John Fox

31 Waverley Avenue,

Fairview,

Dublin 3

foxjohn3@gmail.com

Summary:

Between late March and early July 2022, a breeding bird survey was undertaken on the lands known as Clonburris, Adamstown, Co Dublin. The lands were visited on three separate dates. The visits were on 29th of March, 27th of April and 1st of July 2022.

The lands were walked slowly over a two-hour to two hour and 30-minute period during the visits. The route walked focused primarily on existing hedge rows, habitat along the river, areas of scrub and areas with trees. Bird Species that were heard or seen were recorded, their position were noted, and a breeding status assigned to them.

Data from the three visits were amalgamated and approximate positions for the birds as seen or heard were plotted on aerial photographs. Approximate populations, breeding status and conservation status were assigned to each species. A species table and distribution map for the red and amber listed species encountered on the lands were prepared.

A total of 35 common bird species of Ireland were recorded on the lands, of which seven were confirmed as breeding. One species of high conservation concern was recorded and possibly breeds on or very close to the lands. Nine species of medium conservation concern were recorded of which six possibly breed and three do not breed on the lands. The remaining 25 species recorded were of least conservation concern, seven of which were confirmed to breed on the site. Three of the 35 species recorded were seen in flight only and most probably were not breeding on the site.

Introduction:

This survey of the breeding birds at the Clonburris Lands, Adamstown, Co Dublin, was commissioned by Brady Shipman Martin in March 2022. The survey was undertaken between late March and early July 2022.

This aim of the survey is to identify all the bird species observed on or close to the property and to establish which if any bird species are breeding on the property.

Study area:

The site is approximately 13.2 hectares in area and is of mixed habitat types. These include a wooded strip along a river, previously tilled land, bare ground, recolonising bare ground, dry meadow and grassy verges, hedgerow, scrub, recently exposed soil and some artificial surfaces. There are some concrete agricultural walls/structures from which roofs have been removed recently.

The bulk of the site was formerly tilled land which was probably sown with a cereal crop but is now recolonising area of meadow and scrub. There are mature hedgerows along many of the boundaries and a public road bisects the lands into northern and southern areas.

The Griffin River runs along the southeaster boundary of the lands and an earth berm has been created some meters to the west of the river presumably to control flooding. There is a strip of undisturbed unmanaged woodland and meadow along most of western riverbank. These meadows contain tall grasses, nettles, brambles, hog weed etc making it was quite difficult to penetrate in places due to the overall sward height particularly during the final visit.

The lands in general are flat apart from in locations where the berms have been created.

Fig 2. Singing male Yellowhammer. Red listed species. Possibly breeding on Clonburris lands, Adamstown.

Fig 3. Clonburris Lands. Typical habitat in northwestern area. Disused agricultural buildings/structures in foreground.

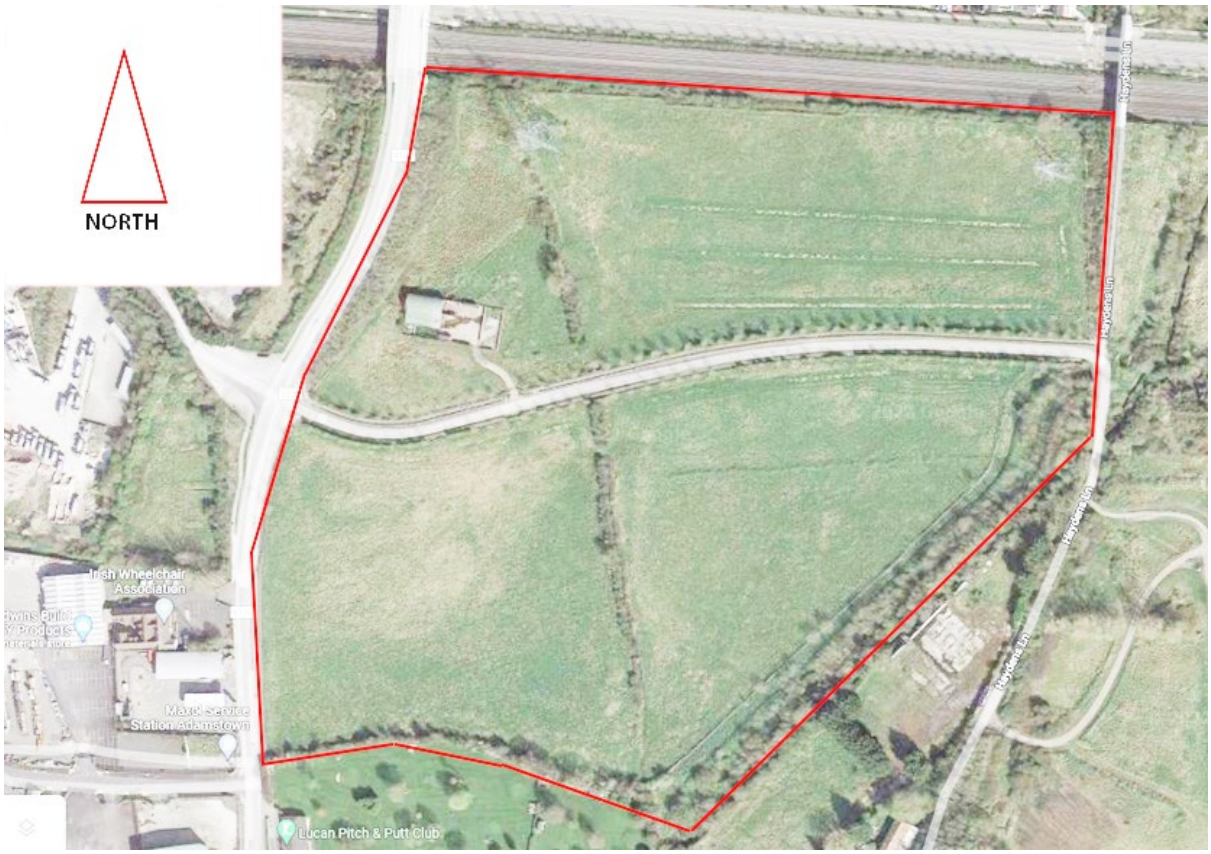

Fig 4. Overall site aerial photography. Red line encloses approximate extent of the Clonburris lands surveyed.

Methodology:

The site was visited on three occasions from late March to early July 2022. The three visits were timed for early morning to coincide with the period when breeding birds are most active and therefore most easily observed. The shortest visit was for just 2 hours. The longest visit was for 2 hours and 30 minutes. The visits were undertaken on 29th of March, 27th of April and 1st of July 2022 giving a good overview of breeding activity within the breeding season. It was intended to visit the lands on 24th of July however unexpected persistent rain that morning meant that visit was not undertaken. No visits were made after dark and no nocturnal species were recorded during this survey.

All observations took place when weather conditions were suitable for surveying. All species observed were recorded, and their breeding status was determined by observation of bird behaviour against a series of standardised behavioural indicators. Binoculars (42x10) were used throughout each survey period, to aid with identification of species and activities.

Conservation Status: A list of *"Birds of Conservation Concern in Ireland 4: 2020 to 2026"* (Gilbert *et al* 2021) indicates three categories of concern as follows. See appendix 1 for more detail.

- Red list species (high conservation concern).
- Amber list species (medium conservation concern).
- Green list species (least conservation concern).

These statuses have been assigned to all regularly occurring species in Ireland. The criteria on which they have been assessed is based on their international conservation status, historical breeding declines, recent population declines, European conservation status, breeding rarity, localised distribution and the international importance of populations.

Breeding Status Indicators: The following breeding status indicators were used to establish breeding status.

1. **Confirmed Breeding**: Eggs/nest, occupied nest, adult carrying faecal sac or food for young or recently fledged young.
2. **Probable Breeding**: Paired birds seen, agitated behaviour, permanent territory, courtship or display, nest building or visiting a nest site.
3. **Possible Breeding**: Species in suitable habitat during breeding season or singing male present.
4. **Non Breeding**: Birds present but not likely breeding due to a lack of suitable nesting habitat and no behavioural evidence to suggest breeding on the site.

The site was entered from the unnamed road that bisects the lands. All areas of the lands were walked. The location of all birds seen and heard were noted on aerial photography of the lands, together with any information about their breeding status. Emphasis was placed on walking along lines of mature hedge rows along the river and through areas of scrub as these were the habitats potentially most suitable for breeding birds. Weather conditions were also noted at the start of each visit, including rainfall, cloud cover, wind speed and visibility.

Fig 5. Foraging male Greenfinch. Amber listed species, possibly breeding on Clonburris lands Adamstown.

Results:

A total of 35 bird species were recorded on the site. See Table 1.

Table 1. Clonburris Lands, Adamstown, Co Dublin. Bird Species Identified, Numbers Present and Breeding Status, 2022.

Common Name	BTO Code	Species	Breeding Status	Numbers Behaviour
Grey Heron	H.	*Ardea cinerea*	Non Breeding	Single bird
Mallard	MA	*Anas platyrhynchos*	Possible Breeding	5 birds
Sparrowhawk	SH	*Accipiter nisus*	Possible Breeding	1 soaring bird
Pheasant	PH	*Phasianus colchicus*	Possible Breeding	2 calling males
Lesser Black-backed Gull	LB	*Larus fuscus*	Non-Breeding	4 birds in flight
Woodpigeon	WP	*Columba palmubus*	Probable Breeding	6-8 singing males
Collared Dove	CD	*Streptopelia decaocto*	Possible Breeding	2 singing males
Barn Swallow	SL	*Hirundo rustica*	Non-Breeding	2 birds in flight
House Martin	HM	*Delichon urbica*	Non-Breeding	3 birds in flight
Wren	WR	*Troglodytes troglodytes*	Confirmed Breeding	12-16 singing males
Dunnock	D.	*Prunella modularis*	Confirmed Breeding	4-6 singing males
Robin	R.	*Erithacus rubecula*	Confirmed Breeding	2-4 singing males
Song Thrush	ST	*Turdus philomelos*	Possible Breeding	2 singing males
Mistle Thrush	M.	*Turdus viscivorus*	Possible Breeding	1 bird
Blackbird	B.	*Turdus merula*	Confirmed Breeding	2 singing males
Blackcap	BC	*Sylvia atricapilla*	Probable Breeding	3 singing males
Whitethroat	WH	*Sylvia communis*	Probable Breeding	1-2 singing males
Willow Warbler	WW	*Phylloscopus trochilus*	Possible Breeding	1 singing male
Chiffchaff	CC	*Phylloscopus collybita*	Possible Breeding	1-2 singing males
Great Tit	GT	*Parus major*	Confirmed Breeding	2-4 pairs
Blue Tit	BT	*Parus caeruleus*	Confirmed Breeding	3-5 pairs
Long-tailed Tit	LT	*Aegithalos caudatus*	Possible Breeding	1 pair
Magpie	MG	*Pica pica*	Possible Breeding	1 to 2 pairs
Jackdaw	JD	*Corvus monedula*	Possible Breeding	9 foraging birds
Rook	RO	*Corvus frugilegus*	Non-Breeding	4 foraging birds
Hooded Crow	HC	*Corvus corone cornix*	Possible Breeding	1-2 pairs
Starling	SG	*Sturnus vulgaris*	Possible Breeding	Foraging flock of 22
House Sparrow	HS	*Passer domesticus*	Possible Breeding	1 bird
Chaffinch	CH	*Fringilla coelebs*	Possible Breeding	2 singing males
Linnet	LI	*Carduelis cannabina*	Possible Breeding	1 singing male
Goldfinch	GO	*Carduelis carduelis*	Confirmed Breeding	2 to 4 pairs
Greenfinch	GR	*Carduelis chloris*	Possible Breeding	2 singing males
Bullfinch	BF	*Pyrrhula pyrrhula*	Possible Breeding	2 pairs
Reed Bunting	RB	*Emberiza schoeniclus*	Possible Breeding	1 pair
Yellowhammer	Y.	*Emberiza citrinella*	Possible Breeding	1 singing male

Coloured text refers to the conservation concern status of that species. Red, Amber or Green.

Yellowhammer was the only red listed species recorded on the lands. Yellowhammer however was not confirmed to breed on the lands but possibly does. An adult male was seen and heard singing from a hedge that divides the southern half of the site into two separate fields.

Nine amber listed species were observed none of which were confirmed as breeding on the lands. Six amber listed species were possible breeders, Mallard, Willow Warbler, Starling, House Sparrow, Linnet, and Greenfinch. Three amber listed species were observed which were non-breeding on the lands, Lesser Black-backed Gull, Barn Swallow and House Martin. These three non-breeding species were observed in flight only.

An additional 25 green listed species were observed of which seven were confirmed breeding. These were Wren, Dunnock, Robin, Blackbird, Great Tit, Blue Tit and Goldfinch. Three were probably breeding. Woodpigeon Blackcap and Whitethroat. A further 13 were possibly breeding, Sparrowhawk, Pheasant, Collared Dove, Song Thrush, Mistle Thrush, Chiffchaff, Long-tailed Tit, Magpie, Jackdaw, Hooded Crow, Chaffinch, Bullfinch and Reed Bunting. Two green listed species were observed that are non-breeders, Grey Heron and Rook.

No mammals were observed on the lands however Otter spraint was found along the Griffeen River at the south-eastern corner of the site.

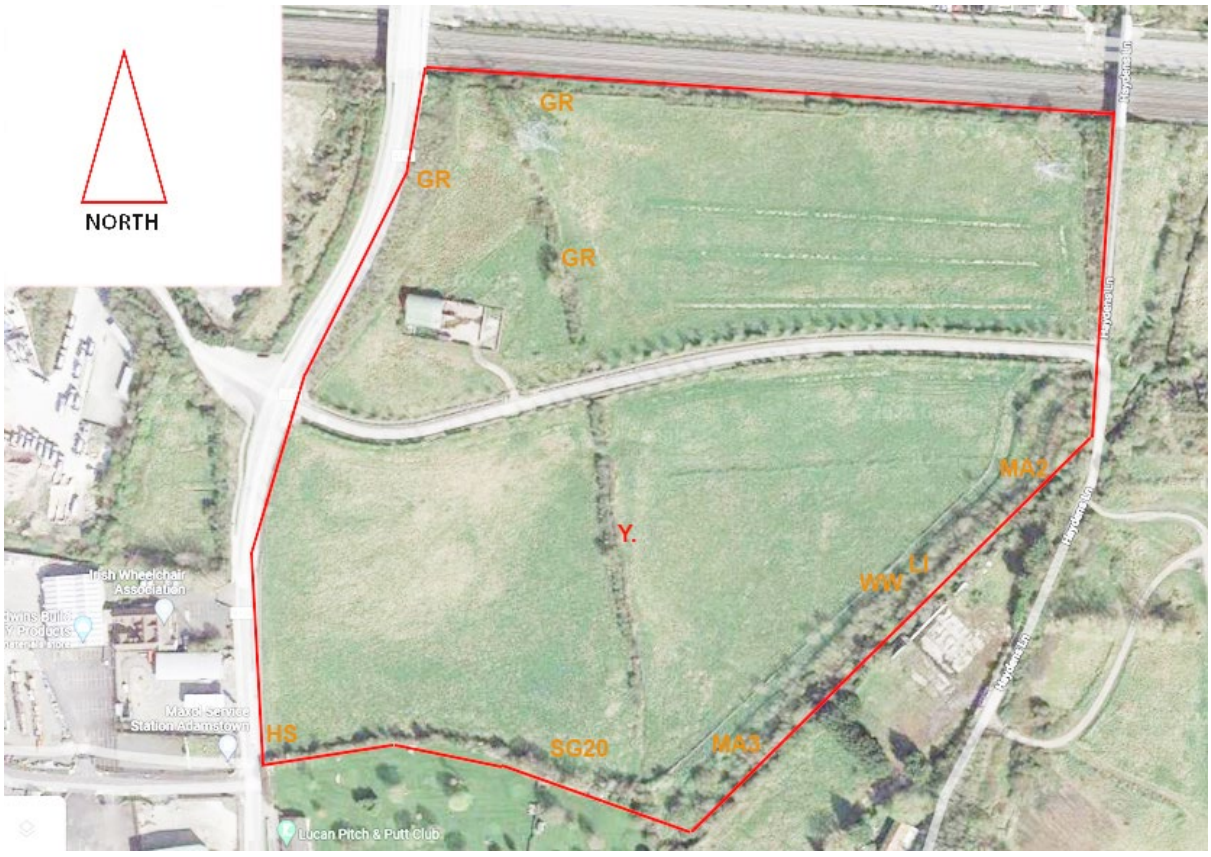

Fig 6. Red and Amber Listed Bird Species Distribution Map. Clonburris Lands, Adamstown 2022. (For BTO Codes see Table 1).

Discussion:

The species encountered on the site are all widespread common birds of Ireland. Most species observed are currently green listed as species of least conservation concern in Ireland. A single red listed species of highest conservation concern, together with nine amber listed species, of medium conservation concern were observed. The red listed species, Yellowhammer, was identified as a

possible breeding species as a single male was seen singing along a hedgerow during the final visit, indicating that he was holding territory. No stronger indicators of breeding for this species were found.

Nine amber listed species were identified, however none were confirmed to breed on the lands. Six were identified as possible breeding species and 3 were considered to be non-breeding.

Mallard was considered as a possibly breeding species as five birds were flushed from suitable habitat close to the river Griffin during the first visit. A single Willow Warbler was heard singing from trees close to the river Griffin during the second visit indicating a male holding territory therefore possibly breeding. A flock of approximately 20 juvenile Starlings were seen foraging along the southern boundary hedge, during the third visit. These birds appeared independent of adults and may have travelled considerable distances to get to the lands. It is however possible that some of their parent birds may have bred on or close to the lands. A single House Sparrow was identified in the hedge at the southwestern corner of the lands in suitable breeding habitat. House Sparrows more usually nest in buildings or structures and therefore more probably was breeding in a building or structure close to the lands. A single Linnet was identified during the final visit in suitable woodland habitat close to the river, indicating it to be a possible breeding species. The final amber listed species to be identified as a possible breeding species was Greenfinch. Two singing males were identified in the northern part of the site in suitable nesting habitat during the first and second visits, indicating them to be possible breeding birds.

The three remaining amber listed species were seen in flight only and were non-breeding as there is no suitable breeding habitat for these species on the lands. Lesser Black-backed Gull, Barn Swallow and House Martin are more usually associated with nesting on or within buildings or structures in urban or sub-urban settings such as Adamstown. There are no suitable buildings or structures present on the lands to accommodate nesting of any of these three species, however nesting may have occurred somewhere nearby for any of these species.

Of the remaining 25 green listed species 7 were confirmed to breed. These were Wren, Dunnock, Robin, Blackbird, Great Tit, Blue Tit and Goldfinch. Three species Wood Pigeon, Blackcap and Whitethroat are probable breeders and a further 13 species possibly breed on or close to the lands. These are Sparrowhawk, Pheasant, Collared Dove, Song Thrush, Mistle Thrush, Chiffchaff, Long-tailed Tit, Magpie, Jackdaw, Hooded Crow, Chaffinch, Bullfinch and Reed Bunting. There is suitable nesting habitat available within the site for any of those 13 species.

Conclusion:

The survey was carried out between late March and early July of 2022, that being the optimal time of year to conduct a breeding bird survey.

35 species, typical of the type of habitats were recorded on the lands. Of these 7 were confirmed to breed, three probably breed and another twenty possibly breed. The remaining five species do not breed on the lands, but some may breed on lands, buildings or structures close to the Clonburris lands.

Just one red listed species was identified on the lands, it was not confirmed to breed, but possibly does breed on the lands. Nine amber listed species were identified but were not confirmed to breed

on the lands either. Six amber listed species however do possibly breed and the remaining three amber listed species were confirmed as non-breeding on the lands.

The areas of hedge, scrub, trees and woodland along the river are the habitats of most importance for the breeding birds present on the site. Any hedgerow, scrub or tree removal should only be undertaken outside the breeding season. All mature trees and hedgerows should be retained where possible and checked for existing nest sites if they are to be removed.

The site may also support many wintering species including some already mentioned and others not commonly found in Ireland during the breeding season. These may include thrushes such as Fieldfare and Redwing, finches such as Siskin and Brambling as well as Snipe to name but a few. Refer to the winter bird survey report for further details.

Appendix 1.

Birds of Conservation of Concern in Ireland (BoCCI)

The first comprehensive analysis of the population status of birds on the island which identified those species most in need of conservation was published 16 years ago. (Newton *et al* 1999). It was an initial review followed the publication of the Irish Red Data Book by Wilde in 1993. A further review followed several years later (Lynas *et al* 2007), which include data for the first time on an all-Ireland basis. A third review six years later BoCCI (Colhoun and Cummin 2013) followed and was also on an all-Ireland basis. BoCCI in Ireland 4: (Gilbert *et al* 2021) was published in 2021 and forms the basis on which the conservation statuses were assigned to the bird species in this report.

Seven quantitative criteria have been adopted to determine population status for birds in Ireland. These include, assessments of global and European conservation status, recent population decline (both in terms of numbers and distribution), historical population decline, breeding rarity, localised distribution and international importance.

The status of 211 species in Ireland was assessed against each of the chosen criteria.
Of these 54 species, were assigned to the Red List. A further 79 species were assigned to the Amber List. The remaining 78 species were assigned to the Green List. In terms of conservation concern the Red listed species are species of immediate conservation concern, Amber listed species are of medium-term concern while Green listed species are currently of least conservation concern.

Refrences:

- Colhoun, K. and Cummins, S. 2013. Birds of Conservation Concern in Ireland 2014-2019. Irish Birds, 9: 523 - 544. Birdwatch Ireland, Kilcoole Co Wicklow
- Gilbert G., Stanbury A., & Lewis L. 2021. Birds of Conservation Concern in Ireland 2020-2026. Irish Birds, 43: 1-22. Birdwatch Ireland, Kilcoole Co Wicklow.
- Lynas, P., Newton, S.F, & Robinson, J.A., 2007. The Status of Birds in Ireland: an analysis of conservation concern 2008 – 2013. Irish Birds 8:149 – 166.
- Newton, S.F., Donaghy, A., Allen, D. & Gibbons, D.1999. Birds of Conservation Concern in Ireland. Irish Birds 6: 333 – 344.

Winter Bird Survey Clonburris Lands

Adamstown

Dublin

John Fox

October 2022 to January 2023.

Fig 1. North-eastern Field, Looking West.

John Fox

31 Waverley Avenue,

Fairview,

Dublin 3

foxjohn3@gmail.com

Summary:

Between October 2022 and January 2023, a winter bird survey was undertaken on the lands known as Clonburris, Adamstown, Co Dublin. The lands were visited on five separate dates. The visits were on the 7th and 26th of October, the 7th of November, the 8th of December 2022 and the 3rd of January 2023.

The lands were walked slowly during the visits. The route walked focused primarily on existing hedge rows, habitat along the river, areas of scrub and areas with trees. Bird species that were heard or seen were recorded, their position and numbers were noted. Breeding statuses were not assigned to them, as this was a winter nonbreeding survey.

Data from the five visits were amalgamated and approximate positions for the birds as seen or heard were plotted on aerial photographs. Approximate numbers, and conservation status were assigned to each species. A species table and distribution map for the red and amber listed species encountered on the lands were prepared.

A total of 30 common bird species of Ireland were recorded on the lands. Two species of high conservation concern (Red listed) were recorded. Four species of medium conservation concern, (Amber listed), were recorded. The remaining 24 species recorded were of least conservation concern, (Green listed).

Introduction:

This survey of the winter birds at the Clonburris Lands, Adamstown, Co Dublin, was commissioned by Brady Shipman Martin in October 2022. The survey was undertaken between October 2022 and January 2023.

This survey aims to describe the birds occurring during those months, particularly any waterbirds, on the lands known as Clonburris Lands as outlined on the aerial photography at fig 4.

Study area:

The site is of mixed habitat types. These include a wooded strip along the Griffeen river, previously tilled land, bare ground, recolonising bare ground, dry meadow and grassy verges, hedgerow, scrub, recently exposed soil and some artificial surfaces. There are some concrete agricultural walls/structures from which roofs have been removed.

The bulk of the site was formerly tilled land which was probably sown with a cereal crop but is now recolonising area of meadow and scrub. There are mature hedgerows along many of the boundaries and a public road bisects the lands into northern and southern areas.

The Griffin River runs along the southeaster boundary of the lands and an earth berm has been created some meters to the west of the river presumably to control flooding. There is a strip of undisturbed unmanaged woodland and meadow along most of western riverbank. These meadows contain tall grasses, nettles, brambles, hog weed etc making it was quite difficult to penetrate in places due to the overall sward height.

The lands in general are flat apart from in locations where the berms have been created.

Fig 2. Meadow Pipit. Red listed species.

Fig 3. Clonburris Lands. View from South-eastern corner looking North..

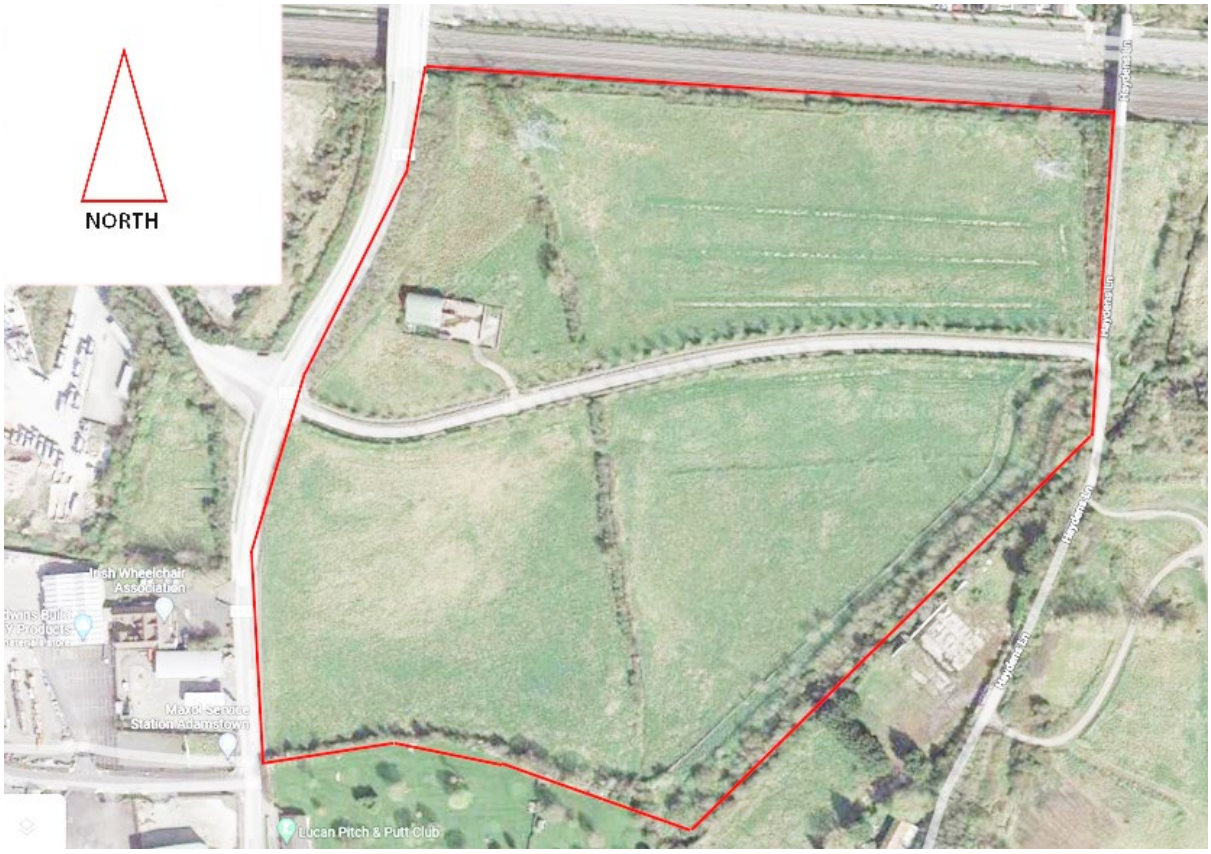

Fig 4. Overall site aerial photography. Red line encloses approximate extent of the Clonburris lands surveyed.

Methodology:

The site was visited on five occasions from October 2022 to early January 2023. The first visit was undertaken on the 7th of October and the final one on 3rd January 2023. All the visits were undertaken in the morning to coincide with the period when many birds are often most active and therefore most easily observed.

Of the five visits, the shortest was for two hours duration with the longest for about two hours and 15 minutes. A total time of 10 hours and 35 minutes were spent surveying the lands. The visits were timed to achieve a good overview within the survey time period.

All visits were undertaken when weather conditions were suitable for surveying. All species and approximate numbers present were recorded.

Binoculars (42x10) were used throughout each survey period to aid with identification of species and activities.

The site was entered from the unnamed road that bisects the lands. All areas of the lands were walked. The location of all birds seen and heard were noted on aerial photography of the lands. Emphasis was placed on walking along lines of mature hedge rows along the river and through areas of scrub as these were the habitats potentially most suitable for birds. Weather conditions were also noted at the start of each visit, including rainfall, cloud cover, wind speed and visibility.

Conservation Status: A list of *"Birds of Conservation Concern in Ireland 4: 2020 to 2026"* (Gilbert *et al* 2021) indicates three categories of concern as follows. See appendix 1 for more detail.

- Red list species (high conservation concern).
- Amber list species (medium conservation concern).
- Green list species (least conservation concern).

These statuses have been assigned to all regularly occurring species in Ireland. The criteria on which they have been assessed is based on their international conservation status, historical breeding declines, recent population declines, European conservation status, breeding rarity, localised distribution and the international importance of populations.

Fig 5. Foraging Linnet. Amber listed species.

Results:

A total of 30 bird species were recorded on the site. See Table 1.

Table 1. Clonburris Lands, Adamstown, Co Dublin. Bird Species Identified, Activity and Numbers Present, 2022 - 2023.

Common Name	BTO Code	Species	Activity	Estimated Maximum Numbers Detected
Buzzard	BZ	*Buteo buteo*	Hunting, Soaring	1 bird
Sparrowhawk	SH	*Accipiter nisus*	Hunting	1 bird
Herring Gull	HG	*Larus argentatus*	In Flight	Fly over only
Woodpigeon	WP	*Columba palmubus*	Foraging	10 birds
Snipe	SN	*Gallinago gallinago*	Foraging	2 birds
Meadow Pipit	MP	*Anthus pratensis*	Foraging	4 birds
Wren	WR	*Troglodytes troglodytes*	Foraging	9 birds
Dunnock	D.	*Prunella modularis*	Foraging	3 birds
Pied Wagtail	PW	*Motacilla alba yarrelli*	Foraging	1 bird
Robin	R.	*Erithacus rubecula*	Foraging	4 birds
Stonechat	SC	*Saxicola torquatus*	Foraging	2 birds
Song Thrush	ST	*Turdus philomelos*	Foraging	4 birds
Mistle Thrush	M	*Turdus pilaris*	Foraging	2 birds
Blackbird	B.	*Turdus merula*	Foraging	8 birds
Coal Tit	CT	*Periparus ater*	Foraging	1 bird
Great Tit	GT	*Parus major*	Foraging	2 birds
Blue Tit	BT	*Parus caeruleus*	Foraging	3 birds
Chiffchaff	CC	*Phylloscopus collybita*	Foraging	1 bird
Long-tailed Tit	LT	*Aegithalos caudatus*	Foraging	5 birds
Treecreeper	TC	*Certhia familiaris*	Foraging	1 bird
Magpie	MG	*Pica pica*	Foraging	4 birds
Jackdaw	JD	*Corvus monedula*	Foraging	6 birds
Rook	RO	*Corvus frugilegus*	Foraging	2 birds
Hooded Crow	HC	*Corvus corone cornix*	Foraging	2 birds
Starling	SG	*Sturnus vulgaris*	Foraging	6 birds
Goldcrest	GC	*Regulus regulus*	Foraging	1bird
Chaffinch	CH	*Fringilla coelebs*	Foraging	2 birds
Linnet	LI	*Carduelis cannabina*	Foraging	Flocks of up to 15 birds
Goldfinch	GO	*Carduelis carduelis*	Foraging	Flocks of up to 25 birds
Reed Bunting	RB	*Emberiza schoeniclus*	Foraging	2 Birds

Text colour indicates species conservation status (Red, Amber, or Green listed).

Two red listed species were observed, Snipe and Meadow Pipit. Both red listed species were seen foraging on the lands.

Four amber listed species were observed, Herring Gull, Goldcrest, Starling and Linnet. Three of these were seen foraging on the lands. The remaining amber listed species, Herring Gull, was only observed flying over the lands.

An additional 24 green listed species were observed. These were Buzzard, Sparrowhawk, Woodpigeon, Wren, Dunnock, Pied Wagtail, Robin, Stonechat, Mistle Thrush, Blackbird, Song Thrush, Great Tit, Coal Tit, Blue Tit, Chiffchaff, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Rook, Hooded Crow, Chaffinch, Goldfinch, and Reed Bunting. All were seen foraging on the survey lands, other than Buzzard and Sparrowhawk which were seen flying over.

The only waterbirds that were observed on the lands during any of the visits were Snipe.

No mammals were observed on the lands.

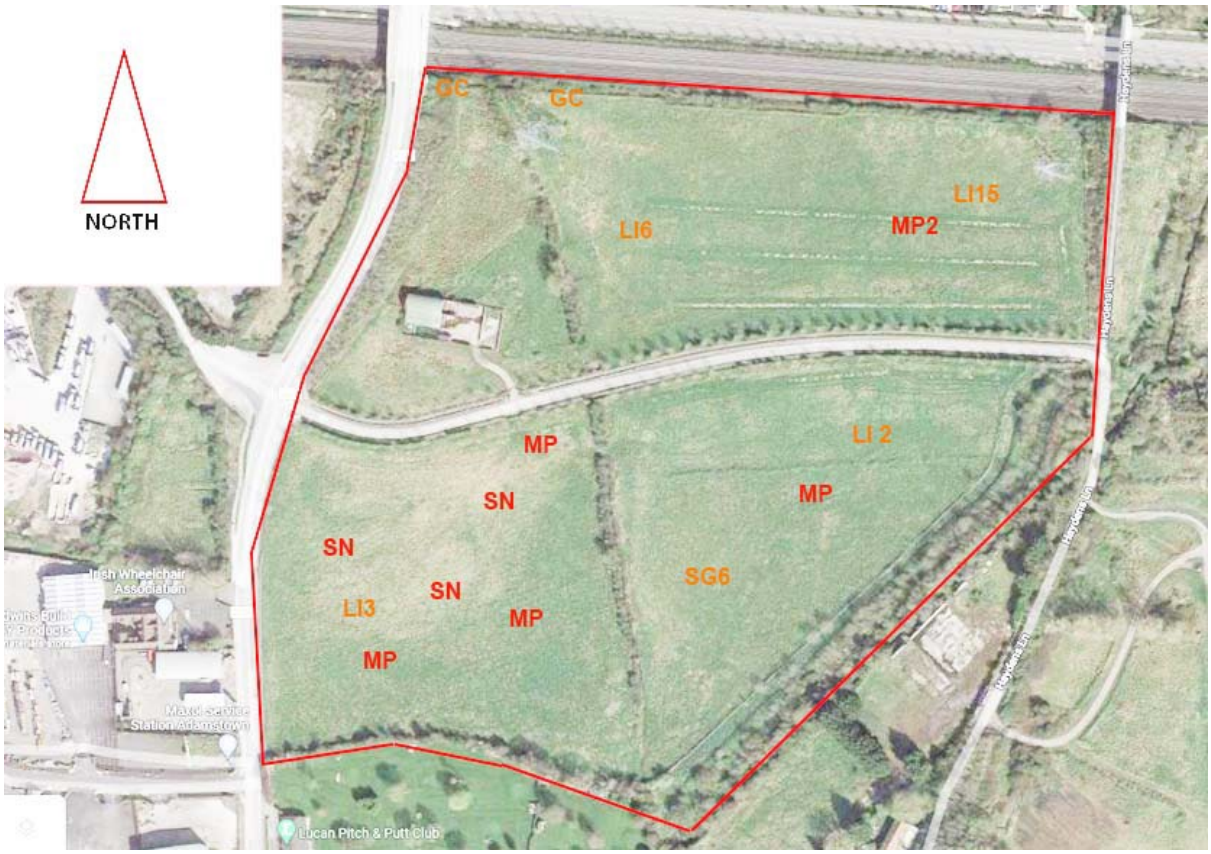

Fig 6. Red and Amber Listed Bird Species Distribution Map. Clonburris Lands, Adamstown 2022. (For BTO Codes see Table 1).

Discussion:

Birds were recorded in all areas of the lands, with hedges and trees producing most records. Areas of scrub, rank meadows and previously arable land, now fallow, also produced many records.

Most birds were observed foraging in areas of scrub, trees or hedges with a few species singing or calling from prominent perches such as trees, bushes or fences.

Flocks of birds such as Starling, Goldfinch and Linnet were observed in more open areas of fallow, previously arable land, often moving to perch in trees and hedges when disturbed. Foraging Snipe Meadow Pipit, Starlings, Blackbirds, Mistle Thrush, Song Thrushes and some finches such as Goldfinch and Linnet were occasionally disturbed from fallow areas that are present in many of the fields.

The species encountered on the site are all widespread common birds of Ireland. Most species observed are currently green listed as species of least conservation concern in Ireland. Two red listed species of highest conservation concern, together with four amber listed species, of medium conservation concern were observed. The red listed species, Snipe and Meadow Pipit were recorded frequently but in small numbers and were found to be foraging on the lands.

Three Snipe were flushed during a single visit from the most south-westerly field and two on other occasions from the same field. Four Meadow pipits were detected on a single visit with just one or two found during other visits. Meadow pipits were recorded in all the four fields except the small field in the north-western corner of the lands where the sward is particularly rank.

The four amber listed species were all seen foraging on the lands except Herring Gull which was only observed in flight.

Small flocks of Starling were seen foraging in the south-eastern field on just one occasion.

A single Goldcrest was seen and heard calling on two occasions from hedgerows in the north-western areas of the lands along the boundary with the railway line.

Flocks of Linnets were observed foraging in the three larger fields on several occasions with the largest flock of approximately 15 birds flushed from the north-eastern field on one occasion.

The remaining 24 Green listed species were all seen foraging on the lands except for two birds of prey, Buzzard and Sparrow, which were both seen in flight over the lands.

A Sparrowhawk was seen on one occasion being mobbed by a Hooded Crow over the field in the north-eastern corner of the lands. A Buzzard was seen on three occasions flying over the land to the south-west and over the trees along the Griffeen River.

Conclusion:

The survey was carried out between October 2022 and early January of 2023.

30 species, typical of the type of habitats were recorded on or over the lands. No nocturnal species were detected on the lands. The only waterbirds that were detected on the lands were small numbers of Snipe. The habitat and sward are currently unsuitable for grazing geese, and none were found on the lands. No winter Thrushes were found on the lands either such as Fieldfare or Redwing.

Two red listed species were seen foraging on the lands. Three amber listed species were seen foraging on the lands with a fourth flying over. The remaining 24 species were all green listed of least conservation concern.

Appendix 1.

Birds of Conservation of Concern in Ireland (BoCCI)

The first comprehensive analysis of the population status of birds on the island which identified those species most in need of conservation was published 16 years ago. (Newton *et al* 1999). It was an initial review followed the publication of the Irish Red Data Book by Wilde in 1993. A further review followed several years later (Lynas *et al* 2007), which include data for the first time on an all-Ireland basis. A third review six years later BoCCI (Colhoun and Cummin 2013) followed and was also on an all-Ireland basis. BoCCI in Ireland 4: (Gilbert *et al* 2021) was published in 2021 and forms the basis on which the conservation statuses were assigned to the bird species in this report.

Seven quantitative criteria have been adopted to determine population status for birds in Ireland. These include, assessments of global and European conservation status, recent population decline (both in terms of numbers and distribution), historical population decline, breeding rarity, localised distribution and international importance.

The status of 211 species in Ireland was assessed against each of the chosen criteria.
Of these, 54 species were assigned to the Red List. A further 79 species were assigned to the Amber List. The remaining 78 species were assigned to the Green List. In terms of conservation concern the Red listed species are species of immediate conservation concern, Amber listed species are of medium-term concern while Green listed species are currently of least conservation concern.

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- Lynas, P., Newton, S.F, & Robinson, J.A., 2007. The Status of Birds in Ireland: an analysis of conservation concern 2008 – 2013. Irish Birds 8:149 – 166.
- Newton, S.F., Donaghy, A., Allen, D. & Gibbons, D.1999. Birds of Conservation Concern in Ireland. Irish Birds 6: 333 – 344.

Appendix 3 Bat Survey Report

A bat assessment of lands at Clonburris proposed for development

Brian Keeley B.Sc.(Hons) in Zool.

January 2023

Introduction

Bats are a widespread element of the Irish fauna. They are known to occur from much of the rural landscape, but they are also present within the urban environment and here they occupy buildings and occasionally trees for short or long periods. Houses and other buildings including farm sheds and stables are a vital element of the annual cycle of all Irish bat species and at no time more so than the period May to August, but many bats may also avail of buildings as hibernation sites, but the presence of bats may be impossible to determine at that time of year.

Changes to a site such as the introduction of new lighting systems may reduce the lands available to bats as a feeding site or by interfering with a bat's ability to commute through a site in addition to prevention of roost establishment or abandonment of existing roosts. Bats are active for all of the summer period as well as the late spring and autumn with less frequent activity being noted in winter and early spring. Bat roosts vary from the breeding roosts in summer to the smaller mating roosts in autumn and transitional and non-breeding roosts while hibernation sites are difficult to categorize in Ireland due to a scarcity of known sites for species other than the lesser horseshoe bat. Bats are protected by Irish and EU law and to prevent unlawful injury or death, it is essential that a full understanding of the site is available in advance to protect the resident bats from unintentional disturbance and to create a pathway by which a legal derogation and exemption may be designed in consultation with the National Parks and Wildlife Service of The Department of Housing, Local Government and Heritage, if impacts are likely to be severe.

The site at Clonburris, near Adamstown and Lucan, County Dublin will undergo a number of changes to facilitate the construction of housing and associated infrastructure. Prior to such significant changes to a site, it is essential to ensure that there will be no impact upon protected species, such as all of Ireland's bats. Bats of less common species may be present within a site unbeknownst to owners and residents and there is a requirement to undertake a survey by suitably qualified ecologists with the appropriate equipment to determine which species are present. Should bats be present, knowledge of the species concerned and the potential consequences of the modifications of the site can assist in identifying measures to alleviate the negative effects of these changes.

This assessment examines bat activity and roost potential within the site and immediate area and determines the potential for any negative impacts upon bats and proposes measures to avoid and mitigate any impacts.

Methodology

The site and surrounding roads and public areas were walked on 16th September 2021 to examine all elements within the site and immediately adjacent to it that may have bat roost or feeding potential. A large farm building within the site (in 2021 but absent in 2022) was examined for bat signs including droppings or staining and any accessible tree cavities or loss bark were examined for any evidence of roosting bats.

A bat activity survey was undertaken from prior to sunset (which was at 19.38 hours. Temperature at this time was 17 degrees Celsius. Conditions were dry with 80% cloud cover and no wind) and for a total of approximately 1.5 hours by three surveyors. Due to security concerns, it was determined that the placement of a Songmeter Mini Bat static monitor within the site would not be undertaken. The site and adjoining roadways were examined for the presence of roosting, commuting, and feeding bats with the aid of a range of bat detectors including an Echometer Touch 2 Pro, and 2 x Echometer 3 units.

One surveyor concentrated on mature trees towards the centre of the northern section of land, one surveyor concentrated on the farm shed while the third surveyor covered all of the southern section of the site.

A follow-up winter examination of the site was undertaken on 28th November 2022 to evaluate the availability of roost sites within and around the site. This involved an examination of all hedgerows, trees and buildings, the bridge over the River Griffeen that passes along the edge of the site and a visual assessment all neighbouring lands and buildings.

Bat species roosting within the site *None*

No bats emerged from any structure (tree or shed in 2021) and no bat entered any structure prior to sunrise.

In winter 2022, no evidence of bats was noted within any structure (shed remains or trees) within the site or within structures such as the river bridge on the edge of the site.

Bat species feeding or commuting within the site.

Common pipistrelle	*Pipistrellus pipistrellus*
Soprano pipistrelle	*Pipistrellus pygmaeus*
Leisler's bat	*Nyctalus leisleri*

There was bat activity throughout the site with the exception of the southwestern edge where there was high illumination from the nearby garage and limited vegetation cover. Areas notable for bat activity were the trees east of the former farm shed and the southern hedgerow.

Bat activity was noted along the road running through the site, along various sections of hedgerow and field boundaries that had good vegetation cover. Leisler's bat activity was noted prior to sunrise at the northwestern section of the site. The bat(s) did not enter any of the buildings or trees in the site and it is probable that it continued towards the housing (or a tree) north of the site.

Bat activity was noted around the farm buildings early into observations, but no bats were noted to return to the buildings prior to sunrise. Bats noted in this area at that time were principally Leisler's bats as discussed above.

Potential Impacts

Loss of roosts

There is some minor potential for roost loss within the site through tree removal. The shed present in 2021 has been removed and now this remaining structure offers low to nil roost potential. Some of the trees are suitable for roosting bats but this is primarily through ivy cover and no obvious cavities or crevices were observed in 2021. This would be a long-term slight negative impact if there were a bat roost. Should bats be in a tree when it is being felled, this would raise the significance of this to a long-term moderate negative impact as well as being a breach of the Wildlife Act and implementation of the Habitats Directive.

Loss of habitat

There will be a loss of hedgerow and scrub and free-standing mature trees which provide good shelter for bats to feed, and which would also assist in reducing light levels within the site. This will reduce insect abundance and feeding and commuting corridors. This is a long-term to permanent moderate negative impact without the implementation of mitigation.

Disturbance from lighting

At present, the site is predominantly unlit green area with some light entering from a garage and nearby housing. Lighting will be introduced for two different functions: 1) Access and safety 2) Security and policing. The former is to allow ease of use at night while the latter ensures a perceived higher security level.

Lighting may affect bat species, in particular, light-intolerant bat species during foraging and if directed at emergence points would affect all bat species, even those that will feed in illuminated areas. This is a long-term moderate negative impact without the implementation of mitigation.

Mitigation Measures

Examination of all trees prior to removal

The trees shall be examined by an experienced bat specialist for the presence of bats prior to their removal. Overall, there is limited roosting potential within the site and there is one tree in the northern section (with ivy cover in the north-south hedge east of the former shed location) with low roost potential and similarly a tree in the north-south hedgerow in the southern section with even less roost potential. The level of evaluation shall be determined by a bat specialist and would range from a visual confirmation of no roost potential to a requirement to inspect trees noted to have cavities, crevices, or ivy cover. If the examination of the trees is undertaken at a time when bats are active, a bat detector survey shall be undertaken of the site sufficient to confirm the presence / absence of bats. The discovery of a bat roost shall require a derogation from NPWS and additional mitigation. The removal of the trees in winter shall be accompanied by a visual inspection from height with a fibrescope to ensure that no bats are present.

Provision of bat boxes

Specially designed bat boxes shall be incorporated into the site to provide roosts for bats. The following Woodcrete design offer high roost potential - 6 x Schwegler 2F with double front panel (or similar). If these cannot be facilitated within the site (i.e., no area provides sufficient darkness, a height of 3 metres and low disturbance), bat access into the built structures shall be provided using specially designed bat access elements (e.g., bat access bricks, built-in boxes etc.).

Lighting

Lighting must be designed that will limit overspill from the required area for illumination and prevent light pollution. This should aim to avoid mature trees and flanking vegetation. LED is the most energy efficient source available and wherever a permanent source of night lighting is unessential, it should be motion-activated.

•Dark corridor for movement of bats along the grounds of the site. Lighting should be directed downwards away from the treetops.

•All luminaires shall lack UV elements when manufactured and shall be LED

•A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component

•Luminaires shall feature peak wavelengths higher than 550 nm

•Tree crowns in the adjacent lands shall remain unilluminated

•Planting shall provide areas of darkness suitable for bats to feed and commute through the site. Trees must not be illuminated as this would prevent their use for feeding by bats.

Planting

Planting shall seek to provide good shelter and future mature trees to create feeding and potential future roosts for bats. Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan – All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf (pollinators.ie). (https://pollinators.ie/wp-content/uploads/2021/03/All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf).

The railway is one area where vegetation may be used to create a vegetation corridor for bat feeding and commuting. The southern hedgerow is another area where planting would be beneficial for bats. Light control along the eastern edge of the site would ensure that bats that can commute through the area to the Grand Canal.

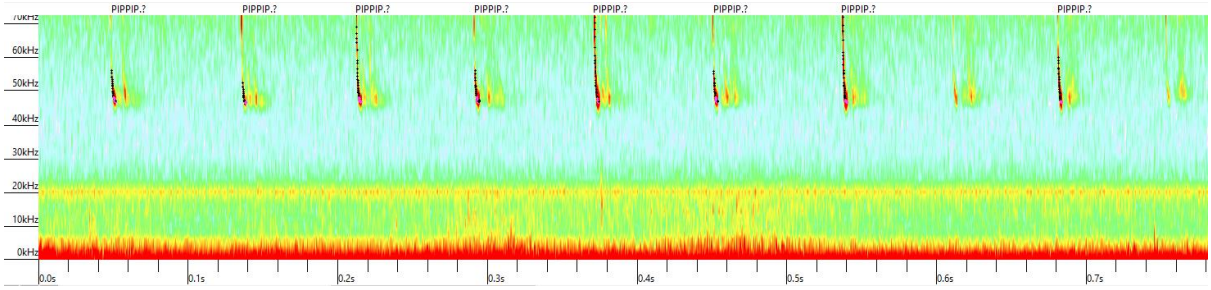
Impacts of the Development following Mitigation

Vegetation removal may result in a slight long-term negative impact upon bat species with full implementation of the proposed measures as there is a loss of hedgerow, mature trees and scrub and introduction of housing to a green area. This will reduce to a negligible negative impact over time. The measures proposed meet the requirements proposed in the Commission notice Guidance document on the strict protection of animal species of Community interest under the Habitats Directive, (Brussels, 12.10.2021 C(2021) 7301 final) as there will not be a measurable impact on the conservation status of any bat species within the site.

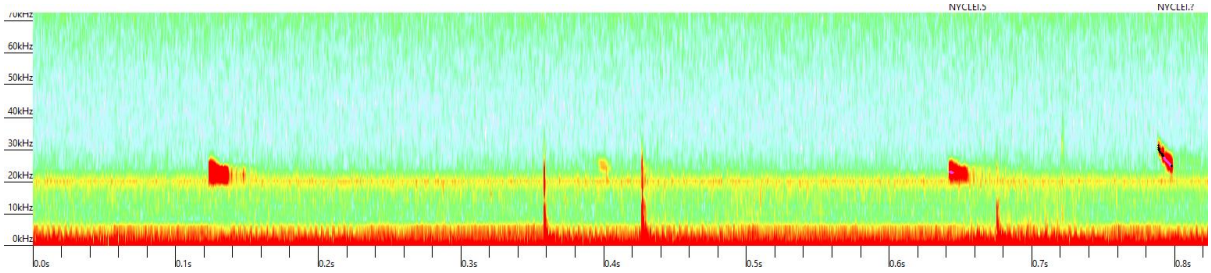
APPENDICES

Bat Conservation Ireland data: search results (26th January 2022).

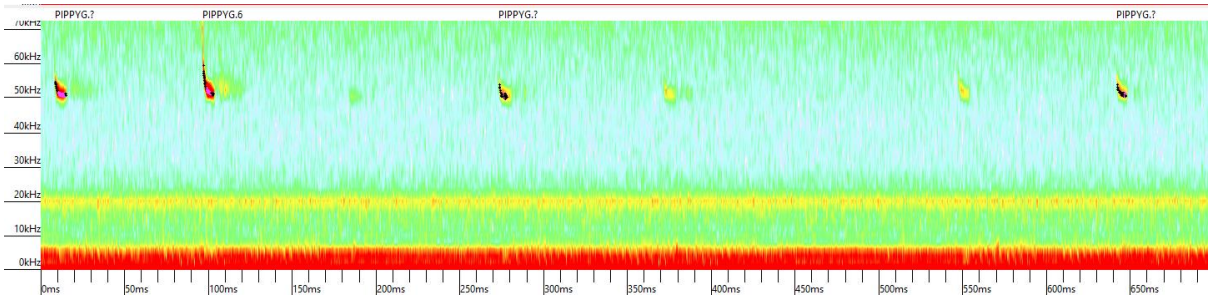
BCIreland data: search results 26 Jan 2023			
All bats within 1000m of O0314432543			
Roosts			
Name	Grid reference	Species observed	
Tandy's Lane Farmhouse, Adamstown, Co. Dublin	O0233	Unidentified bat, Plecotus auritus	
Transects			
Name	Grid reference start	Species observed	
12th Lock, Lucan Road Bridge Transect	O0232	Myotis daubentonii, Unidentified bat	
Ad-hoc observations			
Survey	Grid reference	Date	Species observed
Bat Survey - Scott Cawley	0332	24/09/2015	
Bat Survey - Scott Cawley	O0331	19/08/2013	Myotis daubentonii, Pipistrellus pygmaeus
BATLAS 2010	O0432	21/05/2008	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus, Myotis daubentonii, Plecotus auritus
BATLAS 2010	O0332	21/05/2008	Nyctalus leisleri, Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz),Myotis daubentonii, Plecotus auritus
BATLAS 2020	O0232	06/08/2016	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus
EIS and Road Surveys - Conor Kelleher	O0332	25/08/2002	Plecotus auritus, Myotis daubentonii, Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz),Nyctalus leisleri
EIS and Road Surveys - Conor Kelleher	O0432	15/09/2002	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus, Nyctalus leisleri
EIS and Road Surveys - Conor Kelleher	O0332	08/07/2007	Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz),Myotis daubentonii, Nyctalus leisleri
EIS and Road Surveys - Conor Kelleher	O0432	08/07/2007	Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz),Myotis daubentonii, Nyctalus leisleri
Faith Wilson	O0233	31/08/2009	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus



Common pipistrelle at 20.01 hours



Leisler's bat at 20.15 hours

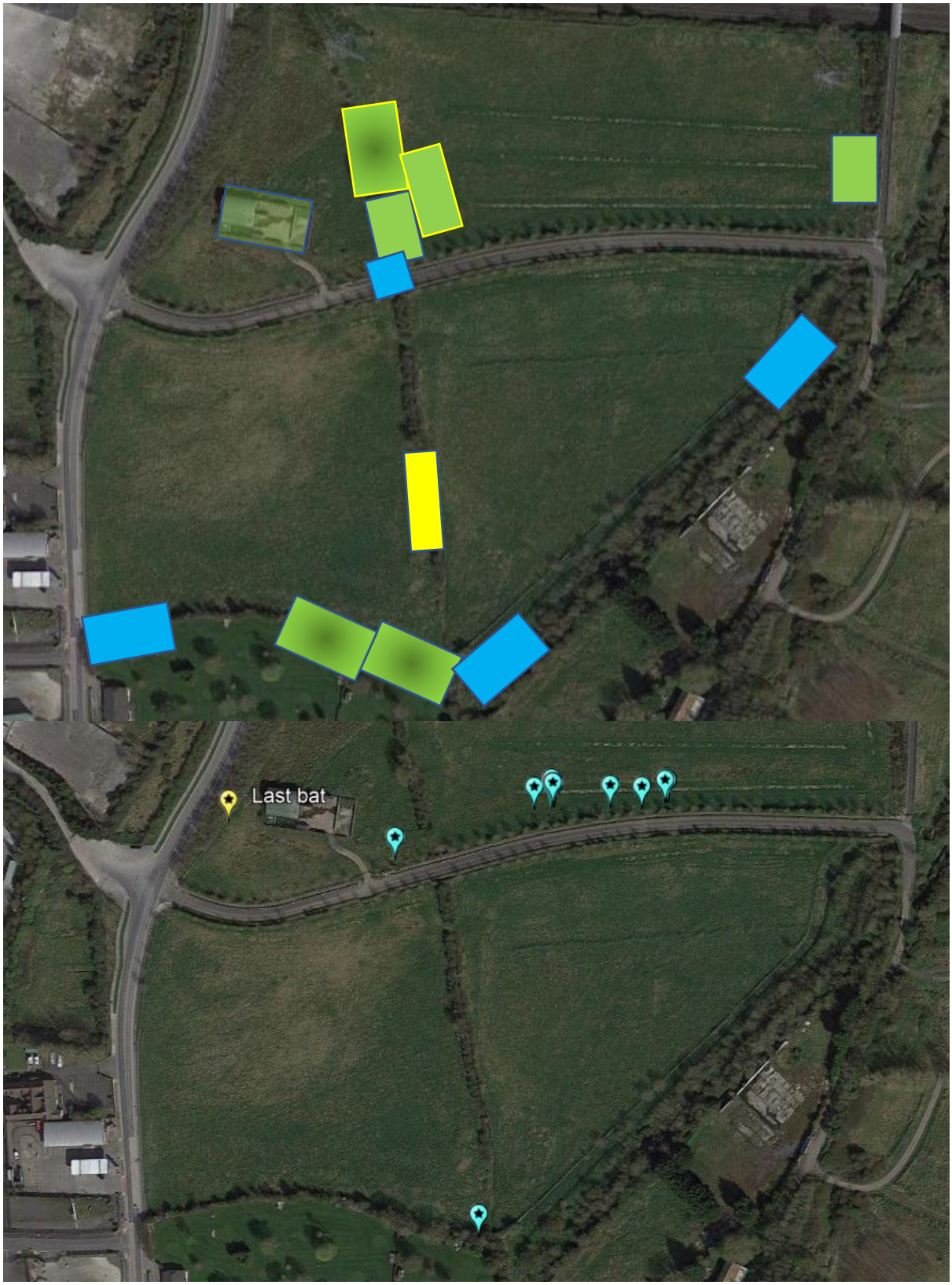


Soprano pipistrelle at 20.55 hours

Bat signals from the Clonburris site 2021

Table 1: Bat data from static monitor 4th to 5th August 2021 in a site in the Clonburris area 3 km directly east of the site

Bat species	Bat passes per hour										
	0	1	2	3	4	5	6	21	22	23	Grand Total
Leisler's bat	6	2		1			5	1			15
Common pipistrelle	2	2	11	12	4			16	6		53
Soprano pipistrelle	5	8	3	7	2	5		31	10	3	74
Grand Total	**13**	**12**	**14**	**20**	**6**	**5**	**5**	**48**	**16**	**3**	**142**



Bat activity 16th September 2021 after sunset (top) and prior to sunrise (bottom). Both pipistrelle bat species (soprano and common) were noted north of the lane along the north/south hedge at 06.09 hours while a soprano pipistrelle was east of this point at 06.11 hours. A common pipistrelle was noted near the power cable pylon at 06.11 hours. A Leisler's bat was noted at the shed (that was present in 2021) at 06.21 hours and along the middle of the north hedge at much the same time. Soprano pipistrelle was heard east of the north/south hedge on the lane. Faint Leisler's at shed at 06.28 hours. Soprano 06.35 hours at southern hedge (running north/south). A Leisler's bat flew past the shed at 06.47 hours.

Light pollution in areas surrounding the site.

Railway walk (left) and Maxol garage (right)

2021 (top) and 2022 (bottom) images of the farm sheds


Farm buildings in November 2022

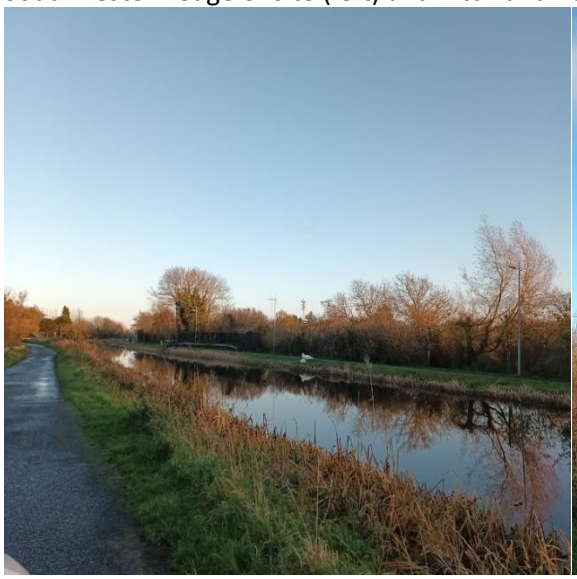
Largest tree within the site with low bat roost potential


Hedgerow and trees running south through the southern section of the site.

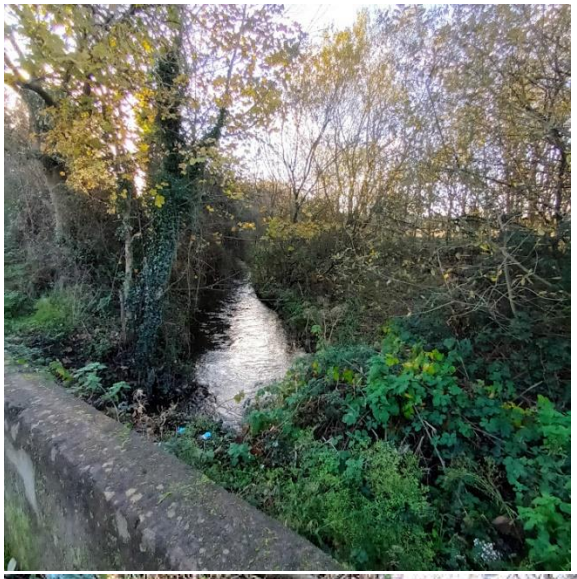

Northern edge at railway line (left) and Western edge of northern section of the site (right)

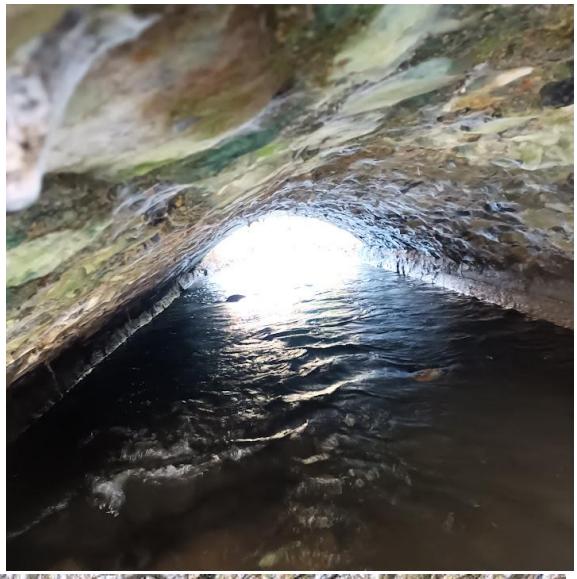

Road through middle of site and Western edge of the southern section of the site


Southwestern edge of site (left) and Pitch and Putt course to the south of the site (right)




Lighting along the Grand Canal





Watercourse and bridge to the south

Appendix 4 Habitat Management Plan

Adamstown Extension: Residential Development at Clonburris SDZ
Habitat Management Plan

BSM Est. 1968
Brady Shipman Martin
Built. Environment.

Ecological Resilience
Built Environment

Client: Quintain Developments Ireland Ltd

Date: 30 January 2023

DOCUMENT CONTROL SHEET

6897_AE_RPEA_Habitat Management Plan

Project No.	6897
Client:	Quintain Developments Ireland Ltd
Project Name:	Adamstown Extension: Residential Development at Clonburris SDZ
Report Name:	Habitat Management Plan
Document No.	AE_RPEA
Issue No.	01
Date:	30/01/2023

This document has been issued and amended as follows:

Issue	Status	Date	Prepared	Checked
01	For issue	30 Jan 2023	NK	MH

Contents

1 Introduction

This Habitat Management Plan (HMP*)* has been prepared to support the planning application for proposed development at Adamstown Extension, Clonburris SDZ. It provides an account of the habitats and sets out the biodiversity management measures that will be implemented to help protect and enhance biodiversity within the proposed site.

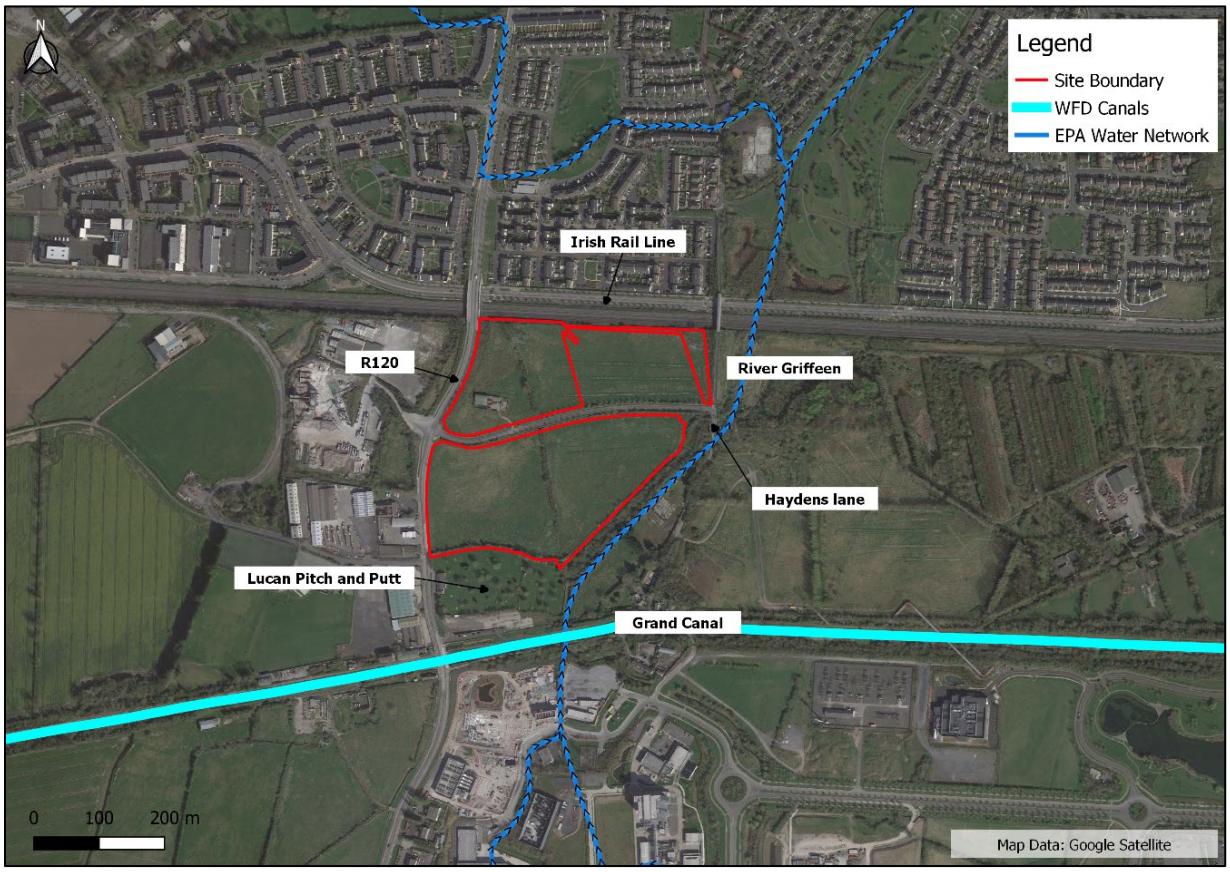
This HMP has been prepared by Ecologist and Environmental Consultant, Namrata Kaile, BSc Life Sc., MSc Env. Sc., QCIEEM, with three years' experience in the environmental consultancy. A technical review of this document has been completed by Senior Ecologist and Associate, Matthew Hague BSc MSc Adv. Dip. Plan. & Env. Law CEnv MCIEEM, with over 20 years of experience in ecological and environmental consultancy.

This document is provided as **Appendix 4** to the Ecological Impact Assessment (EcIA) Report for Adamstown Extension Residential Development at Clonburris SDZ. While no significant effects to the ecological receptors were identified during the impact assessment for the proposed development, the applicant is committed to providing enhancement to biodiversity of the development site and the surrounding landscape.

This HMP aims to provide biodiversity enhancement as per the South Dublin County Development Plan 2022-2028, Clonburris SDZ Planning Scheme Framework (2019) and the accompanying Biodiversity Management Plan for Clonburris SDZ. This document takes into consideration the Landscape Design Report, prepared by the project landscape architects (Brady Shipman Martin) and submitted separately.

The proposed development site (9.08ha in area) is located within Development Area 11- Adamstown Extension of the Clonburris SDZ Planning Scheme 2019, as amended. The proposed development will consist of 385no. units (139no. houses, 70 no. 'Build-to-Rent' duplex / apartments, 72 no. duplexes and 104no. apartments), ranging between 2-6 storeys in height. The location of the proposed development site is shown in **Figure 1.1**.

Figure 1.1 The location of the proposed Adamstown extension development site



2 Baseline Ecological Conditions

The site consists of a number of inter-linked former agricultural fields and is fenced on all sides. It comprises a mix of dry meadows and grassy verges (GS2), hedgerows (WL1), treelines (WL2), scrub (WS1), immature woodland (WS2), and wet grassland (GS4). The River Griffeen (FW2) runs along the east / south-east boundary of the lands and is surrounded by flood embankment (BL2). The Grand Canal flows c. 95m to the south of the site (FW3).

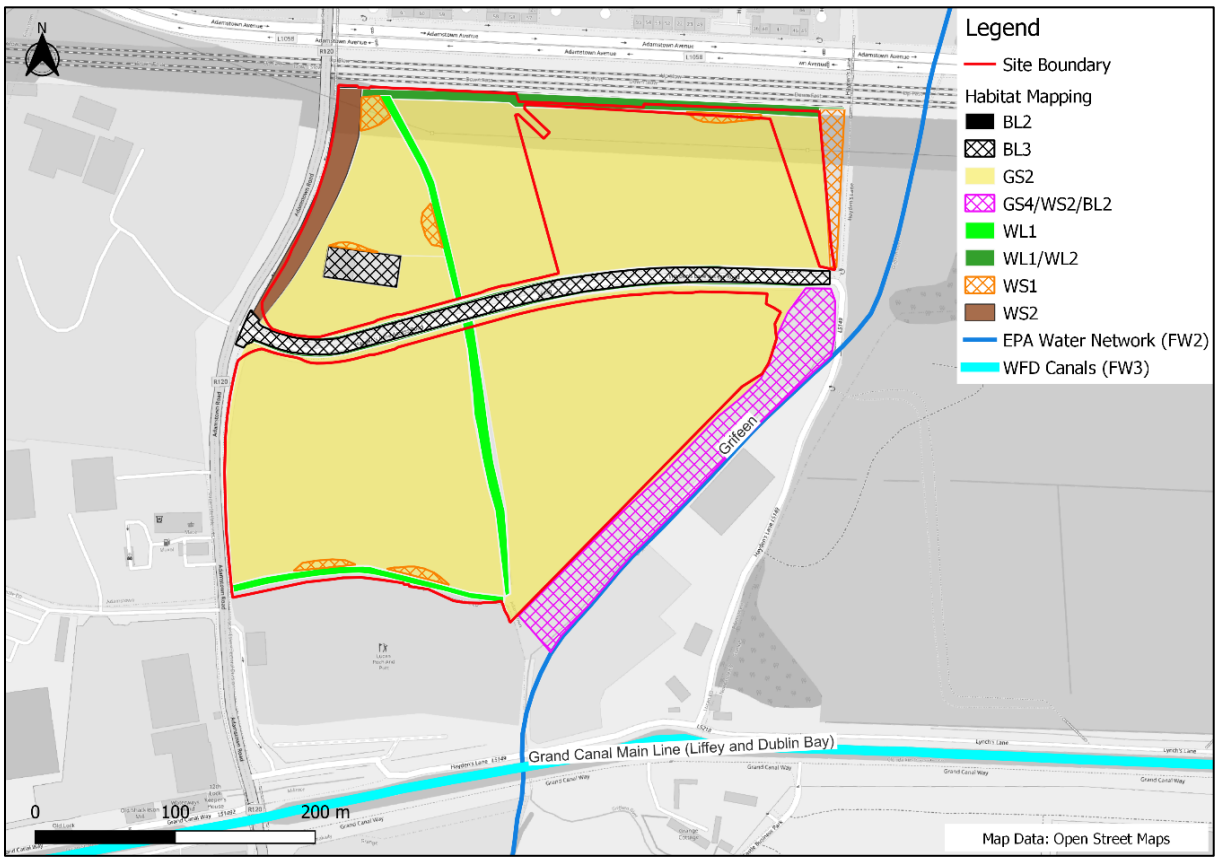
The non-native invasive species *Buddleia davidii* was also recorded in the hedgerow running from the north-west to the south of the site, on the northern side of the road that passes through the site. Another non-native invasive species, *Lonicera nitida,* was recorded in the southern boundary hedgerow.

The proposed development will involve the removal of much of the existing area of the site and its replacement with residential development, open space and development-related infrastructure. This includes the removal of the now disused fields and the hedgerow running from north-west to the south of the site along with the re-planting of the southern boundary hedgerow. The proposed development will also result in the part loss of the north-western immature woodland, mosaics of scrub, grassland and recolonising type habitats.

The southern hedgerow separating the proposed development site from the Lucan Pitch and Putt boundary is to be reinstated and enhanced with screening plants. The northern hedgerow and treeline will be retained and enhanced with native tree and shrub planting. The north-eastern scrub boundary will be retained and enhanced with additional native tree and shrub planting. The south-eastern boundary close to River Griffeen comprising of immature woodland and wet grassland will be retained and enhanced with new native trees and shrub planting in line with the Clonburris Planning Scheme SDZ. The treeline running east-west on the northern and southern side the existing access road will be retained.

The habitats present on the proposed development site described in this section and are shown in Figure 2.1. For further details on the habitat types present on the site, refer to the EcIA report.

Figure 2.1 Habitat map for the proposed development site



3 Roles and Responsibilities

The following key personnel will be involved in the implementation of the HMP, also refer to **Table 4.1**:

3.1 Project Manager

The project manager will be responsible for ensuring that the site manager and the appointed contractors comply with the biodiversity measures and recommendations as stated in this HMP. The project manager will ensure that the HMP and CEMP are included in the site manager's and contractor's contract and all site personnel are trained in accordance with the HMP requirements. The project manager will also be responsible for liaising between the site manager and project ecologist and contacting the latter for checks ahead of any site clearance works.

3.2 Site Manager

The site manager will be responsible for ensuring that the HMP is implemented by the contractor and all site personnel and will ensure that any on-site mitigation measures as stated in the CEMP and EcIA are implemented in full. The site manager will also be responsible for keeping the HMP up to date and will include any revisions or amendments to the HMP that arise during the course of the proposed development as per discussions with the project ecologist.

Further, the site manager will be responsible for checking for compliance on-site as per the measures and recommendations of the HMP. The site manager will schedule meetings with the project manager and project ecologist as required to discuss the progress of the HMP and also to report and record any non-conformances and correction measures.

3.3 Project Ecologist

A suitably qualified and experienced project ecologist will be contracted for the duration of the construction period to ensure that all mitigation measures are undertaken. The project ecologist will be the primary contact for the project manager and site manager for on-site implementation of the HMP. The project ecologist, working with the project landscape architect, will be responsible for regular site inspections to ensure compliance with the HMP and to raise any non-conformances to the project and site managers. During the course of the proposed development, if any changes to design or construction methodology arise, the project ecologist will be required to review the documentation and update the HMP accordingly.

The project ecologist will also be responsible for reporting the progress of the HMP and will report any ecological incidents and non-conformances to the project manager.

4 Management and Enhancement Measures

This section and **Table 4.1** below describe the biodiversity objectives and measures that will be undertaken for the proposed development at Adamstown Extension lands within Clonburris SDZ. This HMP requires all the commitments made in the EcIA and the planning application documentation as they apply to the protection and management of habitats and species to be fulfilled, as follows:

Table 4.1 Biodiversity objectives and measures for the proposed development at Adamstown Extension lands within Clonburris SDZ

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
HMP 1	GS2 - Dry Meadows and Grassy Verges	Habitat Creation	Where possible, where existing grassland must be removed to facilitate development, the topsoil will be retained and reused on site (utilising the existing natural seedbank to maintain seedbank diversity). Native wildflower meadows will, where possible, be seeded with seed harvested from the existing meadows on site to retain local biodiversity. Where seed mixes must be bought, a suitable, native mix will be used, following a review by the project ecologist.	Site Manager Project Ecologist
HMP 2	GS2 - Dry Meadows and Grassy Verges	Habitat Creation	Prior to planting wildflower meadow on site, proper ground preparation and weed elimination will be undertaken and factors such as soil and aspect will be considered for successful creation of this habitat. The creation and management of the wildflower meadow will be undertaken as per National Biodiversity Data Centre (NBDC) Guide- *'How to guide creation and management of a wildflower meadow (2018)'.*	Site Manager
HMP 3	WL1 - Hedgerows WL2 - Treeline WS2 - Immature Woodland WS1 - Scrub	Protection of retained habitats	All site clearance and landscaping works will comply with current legislative requirements and best practice. The clearance of any vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the construction programme require vegetation clearance between March and August, and this is unavoidable, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.	Site Manager Project Ecologist
HMP 4	WL1 - Hedgerows WL2 - Treeline	Protection of retained habitats	All of the retained hedgerows / treeline will be treated in accordance with British Standard BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*, with protective fencing being installed prior to commencement of development.	Site Manager

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
HMP 5	WL1 - Hedgerows WL2 - Treeline WS2 - Immature Woodland WS1 - Scrub	Protection of retained habitats	All retained habitats will be fenced-off from construction traffic using BS5837:2012 fencing or similar at the outset of works and for the duration of construction. Spoil materials such as rubble, topsoil, building goods and equipment, will not be placed within the RPA of trees or within 5m of hedgerows	Site Manager
HMP 6	WL1 - Hedgerows WL2 - Treeline WS2 - Immature Woodland WS1 - Scrub	Protection of retained habitats	The planting proposed for the development will, wherever possible, comprise an appropriate mixture of native trees and shrubs, preferably of local provenance. The planting will also incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. It will take account of and implement the relevant objectives of the All-Ireland Pollinator Plan 2021-2025.	Site Manager
HMP 7	WL1 - Hedgerows WL2 - Treeline	Protection of retained habitats	Replacement trees and hedgerows shall be of appropriate age, structure and species to provide an immediate positive impact, and in the long term offer significant benefits that see an improvement upon the pre-development baseline.	Site Manager
HMP 8	WL2 - Treeline	Enhancement of retained habitat and creation of new habitat	Supplementary native understorey shrub and herbaceous planting is proposed for existing treeline along the existing access road to strengthen green and blue infrastructure within the site. Additional tree planting has been proposed for the rear gardens to the houses along with double row tree planting along the streets to maintain habitat connectivity.	Project Manager
HMP 9	Invasive Species - *Buddleia davidii* and *Lonicera nitida*	Control spread of invasive species	Appropriate biosecurity measures will be implemented during the construction phase of the proposed development to ensure that no invasive species are introduced or dispersed, either deliberately or inadvertently, to the site. An invasive species management plan will be prepared by the project ecologist prior to commencement of works. *Buddleia davidii* and *Lonicera nitida*– Chemical treatment includes application of herbicides by cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix.	Site Manager Project Ecologist Specialist invasive species controller

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
HMP 10	FW2 - River Griffeen	Protection of surface water	The River Griffeen will be protected from ingress of silt and deleterious material during all phases of construction. It will be fenced off at a minimum distance of 10m from the watercourse bank in order to maintain a biodiversity protection zone. No storage / stockpiling of materials or machinery or construction works activities will be undertaken within 50m of the watercourse.	Site Manager
HMP 11	FW2 - River Griffeen	Protection of surface water	The stripped topsoil and excavated subsoil stockpiles will be protected for the duration of the works and located away from the areas where sediment laden runoff has potential to enter the existing surface water drains. Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion and silt generation. Measures such as sediment retention ponds, silt fencing, hydrocarbon interceptors, surface water inlet protection and earth bunding adjacent to open drainage ditches will be implemented to capture and treat sediment laden surface water runoff. Surface water runoff from areas stripped of topsoil, surface water collected in excavations or discharge from any vehicle wheel wash areas will be directed to on-site settlement ponds / distilling tanks where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate. On-site settlement ponds are to include geotextile liners and rip-rapped inlets and outlets to prevent scour and erosion. Monitoring of these sediment control measures will be undertaken throughout the construction phase. Appropriately designed silt prevention measures will be installed where necessary and will be regularly maintained and retained in situ for the duration of the construction phase, until such time as all proposed permanent surface water protection measures are installed and operational.	Site Manager
HMP 12	FW2 - River Griffeen	Protection of surface water	Concrete batching will take place off-site. Wash down and wash out of concrete trucks will also take place off-site. Any excess concrete is not to be disposed of on-site. Concrete Washout – The washing out of concrete trucks on site will not be permitted as they are a potential source of high alkalinity in watercourses.	Site Manager

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
			Consequently it is a requirement that all concrete truck washout takes place back in the ready-mix depot.	
HMP 13	FW2 - River Griffeen	Protection of surface water	Careful siting and bunding of fuel storage facilities and any areas used for the storage of potentially hazardous materials. All oils, fuels, paints and other chemicals will be stored in a secure, bunded, hardstand area. These areas shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance of 30 mm for rainwater ingress). Drainage from the bunded area(s) shall be diverted for collection and safe disposal. Refuelling and servicing of construction machinery will take place in a designated hardstand area that is also remote from any surface water inlets (when not possible to carry out such activities off-site). A response procedure will be put in place to deal with any accidental pollution events. Spill kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment. Monitoring of all fuel / oil storage areas will be undertaken.	Site Manager
HMP 14	FW2 - River Griffeen	Protection of surface water	Foul drainage discharge from the construction compound will be tinkered off-site to a licensed facility until a connection to the public foul drainage network has been established.	Site Manager
HMP 15	FW2 - River Griffeen	Protection of surface water	Discharge of surface water from the construction site will be via silt / sediment trap and / or temporary hydrocarbon interceptors and will be monitored to meet any requirements set by the Local Authority / Environmental Protection Agency.	Site Manager
HMP 16	Air quality	Protection of habitats	To prevent emissions to air, vehicle wheel wash facilities will be installed in the vicinity of any site entrances and road sweeping will be implemented, as necessary, in order to maintain the road network in the immediate vicinity of the site. Also, dust suppression measures (e.g. dampening down) will be implemented, as necessary, during dry periods. Further, material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods. During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.	Site Manager

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
HMP 17	FW2 - River Griffeen	Protection of habitats	The riparian corridor along the River Griffeen will be retained intact or fully reinstated as part of the proposed development.	Project Manager
HMP 18	Fauna	Protection of habitats	Noise and vibration during the construction phase will be controlled with reference to the best practice control measures within *BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2*. The contractor will ensure that all best practice noise and vibration control methods will be used as necessary in order to ensure impacts to nearby noise sensitive locations are not significant. No badger setts are present on the site, however badgers (and otters) are known from the wider area. The following mitigation measures are proposed for the general protection of badgers: ■ Day-to-day measures to ensure the welfare of badgers is maintained will be implemented as follows: □ Good house-keeping measures will be maintained and no loose netting, fencing or other materials that could trap badgers will be left out on site; □ Food waste will be secured so as not to attract badgers to the construction site at night; □ Ramps will be included in any excavation deeper than 500mm to allow animals to escape if necessary.	Site Manager
HMP 19	Birds	Enhancement of habitat	To compensate for the loss of trees and shrubs, a total of 6 no. assorted wooden or woodcrete bird boxes will be included at locations- see landscape plan.	Site Manager
HMP 20	Insects	Enhancement of habitat	4 no. wooden insect hotels (to be located within the proposed parks) will be included.	Site Manager
HMP 21	Bats	Protective Measures	No bat roosts have been recorded at the site and it will not be necessary to apply for a derogation licence under Regulation 54 or 55 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011). Nevertheless, bats are mobile creatures and all mature trees shall be checked by a bat specialist prior to felling or major surgery. If the felling occurs in winter, all suitable cavities offering roost potential to bats shall be checked by a bat specialist	Site Manager

Reference	Habitat and Species	Objective	Measure	Personnel Responsible
			by way of access from a hoist or other height access means. Felling in autumn is preferable as it would avoid nesting birds and hibernating bats. A bat detector assessment will be carried out if felling takes place in the period September to early October. Any ivy-covered trees which require felling should be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape. Trees with potential for bat roosting i.e. those showing cavities, should be felled in the presence of a bat specialist in case bats are present. If found, such animals should be safely retained in an escape-proof container until nightfall then released onsite. Lighting (during construction and operation) will be designed to take account of the BCI Lighting Guidelines.	
HMP 22	Bats	Enhancement of habitat	To compensate for the loss of trees, 6 no. x 2F Schwegler bat boxes or equivalent are proposed for erection, either on suitable trees or poles or within the fabric of the buildings themselves.	

5 Monitoring

5.1 Construction Phase

During the construction phase the following monitoring measures will be undertaken:

- A suitably experienced Project Ecologist will be appointed for the duration of the construction phase and regular monitoring of all related works will take place to ensure the correct and full implementation of all mitigation and management measures. The Project Ecologist will ensure that all construction works take place in accordance with planning conditions, the project CEMP, the HMP and the mitigation measures set out in the EcIA;
- A detailed and comprehensive programme of reporting and monitoring of all actions included in this HMP as well as in the project Construction and Environmental Management Plan (CEMP), prepared by AWN Consulting will be agreed with South Dublin County Council, prior to the commencement of construction. This will include a detailed schedule of monitoring for the mitigation measures to be implemented;
- On-site meetings will take place between the Project Ecologist and personnel from South Dublin County Council, if required. The purpose of the meetings will be to review progress and to agree any amendments to the mitigation strategies that may be necessary.

5.2 Operational Phase

During the operational phase following monitoring measures will be undertaken:

- On completion of construction, the lighting installed will be reviewed by the Project Ecologist and a bat specialist, to ensure that it is operating according to the approved specifications. The landscape architect will similarly ensure that all works undertaken are in full compliance with the landscape specification. The arborist will ensure that all hedgerow and tree management measures are fully implemented. All monitoring tasks will be recorded and logged for inspection by the site manager.

6 Conclusion

The proposed development has been designed to secure the protection and enhancement of existing green infrastructure within the development site. This Habitat Management Plan (HMP) outlines the measures and objective for the proposed development that will contribute to the protection and enhancement of existing green and blue infrastructure on the site. These measures include native tree and hedgerow planting and enhancement, scrub enhancement, and provision of areas of wildflower meadow containing pollinator friendly species. These measures will increase habitat connectivity with the wider landscape and provide refuges for native species including pollinators.

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