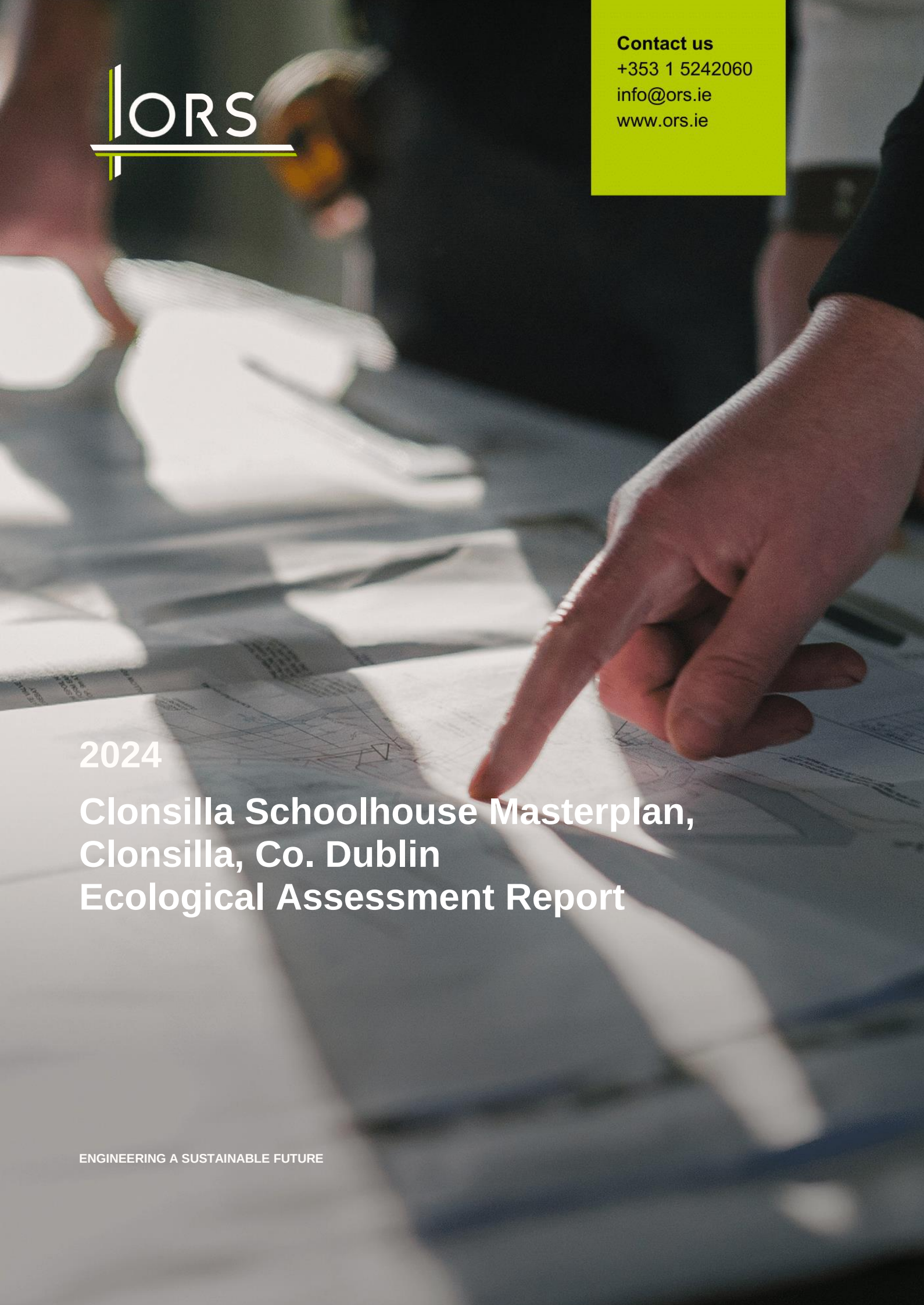


Contact us
+353 1 5242060
info@ors.ie
www.ors.ie

2024

Clonsilla Schoolhouse Masterplan, Clonsilla, Co. Dublin
Ecological Assessment Report

ENGINEERING A SUSTAINABLE FUTURE

Clonsilla Schoolhouse Masterplan, Clonsilla, Co. Dublin
Ecological Assessment Report

Document Control Sheet

Client:	Fingal County Council
Document No:	240216-ORS-XX-XX-RP-EN-13d-001-6

Revision	Status	Author	Reviewed by	Approved by	Issue Date
P01	**Draft**	**SB**	**LaM**	**JB**	**03/09/2024**
P02	**S2**	**SB**	**LaM**	**JB**	**27/09/2024**
P03	**S2**	**LaM**	**LaM**	**JB**	**16/10/2024**
P04	**S2**	**SB**	**LaM**	**JB**	**11/11/2024**
P05	**S2**	**SB**	**LaM**	**JB**	**18/11/2024**
P06	**S2**	**SB**	**LaM**	**LM**	**05/06/2025**

Table of Contents

1 Introduction

1.1 Background

This Ecological Assessment report has been prepared for the subject site located at the Old Schoolhouse, Clonsilla. The assessment adheres to the highest industry standards and methodologies stated in the Environmental Protection Agency (EPA) and Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines to ensure comprehensive evaluation of the baseline ecological conditions of the subject site.

This assessment follows a standard approach based upon the description of the existing baseline conditions within the subject site. An evaluation of the likely habitats and species currently present within the site is also given.

The main objectives of this ecological assessment are to:

- Undertake a desktop review of existing baseline ecological data for the subject site and the wider area, including European and National sites of biodiversity importance within the Zone of Influence of the subject site.
- Undertake a field survey of the receiving environment.
- Evaluate the features of biodiversity value in and in the vicinity of the subject site.

1.2 Statement of Competency

Lead Author

This Ecological Assessment was carried out by Larry Manning BSc (Hons). Larry has an honors degree in Applied Freshwater and Marine Biology from GMIT (ATU) Galway, where he gained an education in ecology and environmental management. Larry has worked on a wide variety of ecological assessments and habitat/species management surveys, including working as a consultant MMO for the Irish Whale and Dolphin Group Consulting, taking a lead role in marine engineering projects and overseeing regulatory compliance. He has extensive experience in the field of fisheries monitoring and research both in North Atlantic waters and in Antarctic waters for CAMMLR representing the South Georgia and South Sandwich Islands government. The author has worked as a fisheries scientist for the Marine Institute since 2017 on research projects, species management plans, and fisheries species-specific population analysis.

While working in the Fisheries Ecosystem Advisory Service at the Marine Institute, Larry engaged with the fishing fleet directly while data gathering at sea on trawlers and played a vital role in gathering sensitive data pertaining to national catch quotas and landings obligations, relevant to current regulations. Larry also has experience in implementing company strategy for offshore aerial surveys and hydrographic and geophysical surveys in line with current legislation for Offshore windfarm development. During seismic surveys the author was employed as an offshore fisheries liaison officer which required in depth knowledge of regulatory frameworks to ensure the fishing fleet, the survey company, and the ships officers of the watch were all compliant and safe during highly complex and dynamic operations. The author also works as an ornithologist and provides habitat and species assessments for terrestrial infrastructure developments. Larry has carried out a number of Appropriate

Assessment Screenings, Ecological Impact Assessments, Environmental Impact Assessment Screenings and consultancies for developments in the marine and terrestrial spaces.

Co-Author

This Ecological Assessment was partly carried out by Olivia Hamilton, BSc (Hons), MSc. Olivia has an honours degree in Environmental Science from the University of Galway and a master's degree in Conservation Behaviour from ATU Galway. During her education, Olivia gained knowledge and skills in environmental management, environmental impact assessment, and a wide range of ecological surveying techniques. She also has previous experience working in ecological roles and has worked as the lead marine biologist on a research vessel where she conducted and led marine mammal surveys. Olivia also has extensive surveying experience with bats, mammals, birds, habitats, and invasive species, having worked as an ecological surveyor for the ACRES scheme and as an assistant bat surveyor for the Galway City Ring Road EIAR planning application. She has a solid understanding of ecological surveying techniques, data collection, and scientific report writing and has experience in Appropriate Assessment, Environmental Impact Assessment, and Ecological Impact Assessment.

Co-Author

This assessment was partly carried out by Seán Burke, MSc. Seán has a bachelor's degree in science – Single Honours Biology from Maynooth University and a master's degree in Ecology & Biodiversity from Stockholm University. His academic experience has provided fundamental training in scientific methods and a strong knowledge of the theoretical background of biological and ecological processes. Seán has previous experience working in the agri-food sector developing biological control agents for the suppression of fungal pathogens which provided hands on experience in learning laboratory techniques and studying ecological interactions. His more recent work experience with ORS has provided the opportunity to take part in ecological field work consisting of macroinvertebrate sampling, bird surveying, habitat assessment and classification, preliminary bat surveying, mammal surveying, and ecological impact assessment. This experience has been applied to projects of varying size across commercial, industrial, and residential projects.

2 Legislation and Policy

2.1 Background

The EU Biodiversity Strategy and national biodiversity strategies reflect the need to conserve biodiversity in the face of pressure from development, other land-use change and climate change. These strategies reflect the aspirations of the Convention on Biological Diversity. International work on the benefits of nature to society (natural capital and ecosystem services), and The Economic and Social Aspects of Biodiversity in Ireland, have increased understanding of the importance of conserving biodiversity for human wellbeing and the economy. This is reflected in national policy objectives for biodiversity and nature conservation, such as the National Biodiversity Action Plan 2023-2030 in Ireland. EcIA supports implementation of national biodiversity strategies and national planning policies for safeguarding biodiversity and supporting the delivery of sustainable development. EcIA is a process of identifying, quantifying, and evaluating the potential effects of development-related or other proposed actions on habitats, species and ecosystems. EcIA can be used for the appraisal of projects of any scale: it is a systematic and repeatable process applicable to a wide range of projects.

Two uses of EcIA are:

- Providing the ecological component of Environmental Impact Assessment (EIA) required under EIA Regulations.
- Demonstrating how a project accords with relevant planning policy and legislation where an EIA is not required.

2.2 National Policy

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora was adopted on the 21st of May 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas are known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an ‘appropriate assessment’ to be undertaken for any plan or project that is likely to have a significant effect on

the conservation objectives of a Natura 2000 site. An ‘appropriate assessment’ is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

The European Communities (Birds & Natural Habitats) Regulations 2011 – 2021 restrict the importation, distribution, sale or release of approximately 70 species of plants and animals considered to be the most harmful Invasive Alien Species. Japanese knotweed is one of the plant species listed in Part 2 of the Third Schedule of the 2011 regulations and it is also listed as a vector material in Part 3 of the Third Schedule.

Regulation 49 (2) states the following:

“*Save in accordance with a license granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to such plant in the third column of Part 1 of the Third Schedule, any plant which is included in Part 1 of the Third Schedule, shall be guilty of an offence*.”

Regulation 50 (1) states the following:

“Save in accordance with a license granted under paragraph (7), and subject to Regulation 74, a person shall be guilty of an offence if he or she has in his or her possession for sale, or for the purposes of breeding, reproduction or propagation, or offers or exposes for sale, transportation, distribution, introduction or release—

a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,
b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated,
c) a vector material listed in Part 3 of the Third Schedule,

in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material.”

Regulation 50 (2) states the following:

“Save in accordance with a license granted under paragraph (7), a person shall be guilty of an offence if he or she imports or transports—

a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,
b) anything from which an animal or plant referred to in Part 2 of the Third Schedule can be reproduced or propagated, or
c) a vector material listed in Part 3 of the Third Schedule,

into or in or to any place in the State specified in relation to such an animal or plant or vector material in relation to that animal or plant or vector material in the third column of the Third Schedule”.

It is also an offence under the Wildlife Acts 1976 – 2023 to plant or otherwise cause to grow in a wild state in any place in the State any species of (exotic) flora, or the flowers, roots, seeds or spores of (exotic) flora.

Flora and fauna in Ireland are also protected at a national level by the Wildlife Acts 1976 to 2023 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that 'Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made'.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

2.3 Regional Policy

Planning at the regional level is now guided by the Regional Spatial and Economic Strategy (RSES). The RSES is a strategic plan which identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives. The RSES recognises the requirement to conserve and enhance the nation's protected habitats and species along with its landscape and heritage. The Strategy also recognises the need to identify, protect and enhance green infrastructure and ensure effective management of natural resources. Establishing a healthy natural environment is addressed in the Strategy with regards to supporting the transition to a low carbon economy and building climate resilience, as well as ensuring provision of clean air and water.

2.4 Local Policy

Chapter 9 – Green Infrastructure and Natural Heritage of The Fingal Development Plan 2023-2029 provides local policy objectives relating to the conservation and management of biodiversity and natural heritage. **Table 2.1** below provides a summary of relevant policies and objectives relating to ecological protection and management as per the FDP.

Table 2.1: Strategic Environmental Objectives

Policy / Objective No.	Description
Policy GINHP1 – Resilient Design	Promote an awareness of the benefits of resilient design and the multi-functional nature of green infrastructure. Apply multi-functional principles of green infrastructure to inform the Development Management process in terms of design and layout of new residential areas, business/industrial development and other significant projects while maximising the multi-functional nature of green infrastructure by ensuring the development of synergies between Public Open Space, Biodiversity, SuDS/Water Sensitive Design, Climate Change and Active Travel objectives.

Policy GINHP2 – Protection of Green Infrastructure	Ensure that areas and networks of green infrastructure are identified, protected, enhanced, managed and created to provide a wide range of environmental, social and economic benefits to communities.
Policy GINHP3 – Greening of Developments	Encourage measures for the 'greening' of new developments including the use of green roofs, brown roofs, green walls and water harvesting. Where feasible require new developments to incorporate greening elements such as green roofs, brown roofs, green walls, green car parking and SuDS (e.g. clean water ponds fed by rainwater via downpipes).
Objective GINHO1 – Urban Greening Plans	Develop and implement Urban Greening Plans for Balbriggan, Swords and the wider Dublin 15 area within the lifetime of the Development Plan.
Policy GINHP4 – Green Infrastructure Themes	Ensure the green infrastructure strategy for Fingal protects and enhances existing green infrastructure resources and plans for future green infrastructure provision which addresses the five main themes identified in this Plan, namely: Biodiversity, Parks, Open Space and Recreation, Sustainable Water Management, Archaeological and Heritage landscapes, Landscape.
Policy GINHP5 – Green Infrastructure Network	Develop the green infrastructure network to ensure the conservation and enhancement of biodiversity, including the protection of European Sites, the provision of accessible parks, open spaces and recreational facilities (including allotments and community gardens), the sustainable management of water, the maintenance of landscape character including historic landscape character and the protection and enhancement of archaeological and heritage landscapes.
Objective GINHO2 – Fragmentation	Reduce fragmentation and enhance the resilience of Fingal's green infrastructure network by strengthening ecological links between urban areas, Natura 2000 sites, proposed Natural Heritage Areas, parks and open spaces and the wider regional network by connecting all new developments into the wider green infrastructure network.
Objective GINHO3 – Biodiversity in Open Space	Make provision for biodiversity within public open space and include water sensitive design and management measures (including SuDS) as part of a sustainable approach to open space design and management.
Objective GINHO4 – Green Infrastructure and Development	Resist development that would fragment or prejudice the County's strategic green infrastructure network.
Objective GINHO5 – Pollinator Plan	Continue to support the provisions of the National Pollinator Plan 2021-2025 through the management and monitoring of the County's pollinator protection sites and through the promotion of additional pollinator sites during the lifetime of this Development Plan.

Objective GINHO6 – Agriculture and Horticulture	Identify and map the important agricultural and horticultural lands in the County for future food security purposes and protect these lands from development.
Objective GINHO9 – Greenways and Net Gain	Ensure that all greenway developments have a biodiversity net gain. Nature conservation and opportunities for biodiversity enhancement will be a key part of these infrastructure projects and nature conservation will be considered throughout the lifetime of the project and into the future, following project completion.
Policy GINHP7 – Protection	Protect and enhance the natural, historical, amenity and biodiversity value of the County's watercourses, flood plains, riparian corridors, wetlands and coastal area though long-term and liaison with relevant Prescribed Bodies where appropriate.
Objective GINHO12 – Green Infrastructure Requirements	Ensure the provision of new green infrastructure addresses the requirements of functional flood storage, the sustainable management of coastal erosion, and links with provision for biodiversity, Sustainable Drainage Systems (SuDS) and provision for parks and open space wherever possible and appropriate.
Objective GINHO13 – Wetlands	Seek the creation of new wetlands and/or enhancement of existing wetlands through provision for Sustainable Drainage Systems (SuDS) where appropriate.
Objective GINHO14 – Green Roofs	Seek the provision of green roofs and green walls as an integrated part of Sustainable Drainage Systems (SuDS) and which provide benefits for biodiversity, wherever possible.
Objective GINHO16 – Coastal	Ensure the green infrastructure strategy for Fingal protects the County's natural coastal defences, such as beaches, sand dunes, salt marshes and estuary lands, and promotes the use of soft engineering techniques as an alternative to hard coastal defence works wherever possible.
Policy GINHP10 – Green Infrastructure and Development	Seek a net gain in green infrastructure through the protection and enhancement of existing assets, through the provision of new green infrastructure as an integral part of the planning process, and by taking forward priority projects including those indicated on the Development Plan Green Infrastructure maps during the lifetime of the Development Plan.
Objective GINHO19 – Green Networks	Create an integrated and coherent green infrastructure for the County by requiring the retention of substantial networks of green space in urban, urban fringe and adjacent countryside areas to serve the needs of communities now and in the future including the need to adapt to and mitigate climate change.

Objective GINHO21 – Integration of Green Infrastructure	Avoid the fragmentation of green spaces in site design and to link green spaces /greening elements to existing adjacent green infrastructure / the public realm where feasible and to provide for ecological functions.
Objective GINHO22 – Network Fragmentation	Resist development that would fragment or prejudice the County's strategic green infrastructure network.
Objective GINHO23 – Policies	Support and implement The Forest of Fingal-A Tree Strategy for Fingal, Keeping it Green – An Open Space Strategy for Fingal and Space for Play – A Play Policy for Fingal during the lifetime of the Development Plan.
Objective GINHO25 – Reintroduction Programmes	Promote reintroduction programmes. Reintroduction programmes are an important part of rewilding and increasing biodiversity in the County.
Objective GINHO26 – Re-wilding	Continue to promote and support re-wilding and pollinator initiatives within the County.
Policy GINHP11 – Biodiversity Action Plan	Support the adoption and implementation of the Fingal Biodiversity Action Plan, implementation of the National Biodiversity Action Plan 2017– 2021 and the All-Ireland Pollinator Plan 2021–2025 and any superseding plans.
Policy GINHP12 – Protected Sites	Protect areas designated or proposed to be designated as Natura 2000 sites (i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), proposed Natural Heritage Areas (pNHAs), Natural Heritage Areas (NHAs), Statutory Nature Reserves, and Refuges for Fauna.
Policy GINHP13 – Fingal Ecological Network	Support the development of the Fingal Ecological Network in line with the Fingal Biodiversity Action Plan.
Policy GINHP14 – Biodiversity Net Gain Guidance	Promote biodiversity net gain in new developments and develop a planning guidance document on Biodiversity Net Gain.
Policy GINHP15 – Biodiversity in Buildings Guidance	Promote the inclusion of swift, swallow, house martin, house sparrow, starling, bat and insect boxes and structures in and on building facades and develop a guidance document on how to incorporate these structures into buildings.
Policy GINHP16 – Rewilding and Pollinator Initiatives	Promote and support rewilding and pollinator initiatives in Fingal.

Objective GINHO27 – National Parks and Wildlife Service	Support the National Parks and Wildlife Service, in the maintenance and achievement of favourable conservation status for the habitats and species in Fingal by taking full account of the requirements of the *Habitats and Birds Directives*, in the performance of its functions.
Objective GINHO28 – Protection of Natural Heritage Areas	Ensure that development does not have a significant adverse impact on proposed Natural Heritage Areas (pNHAs), Natural Heritage Areas (NHAs), Statutory Nature Reserves, Refuges for Fauna, Habitat Directive Annex I sites and Annex II species contained therein, and on rare and threatened species including those protected by law and their habitats.
Objective GINHO29 – Biodiversity and Open Space	Ensure that the management of the Council's open spaces and parks is pollinator-friendly, provides more opportunities for biodiversity, and is carried out without the use of pesticides where possible.
Objective GINHO30 – Infrastructure and Net Biodiversity Gain	All greenway and infrastructure projects are to have a net biodiversity gain and this principle shall be incorporated from the start of the project.
Objective GINHO31 – Invasive Species	Continue the control programs of invasive species with all relevant stakeholders and landowners to control the key invasive species.
Objective GINHO32 – Development and Invasive Species	Ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are or were previously present, the applications will be required to submit a control and management program for the particular invasive species as part of the planning process and to comply with the provisions of European Communities (Birds and Natural Habitats) Regulations 2011 and EU Regulations 1143/2014.
Policy GINHP17 – Protection of European and National Sites	Strictly protect areas designated or proposed to be designated as Natura 2000 sites (i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs); also known as European sites) including any areas that may be proposed for designation or designated during the lifetime of this Plan.
Policy GINHP18 – Species Protection	The Council will seek to protect rare and threatened species, including species protected by law and their habitats by requiring planning applicants to demonstrate that proposals will not have a significant adverse impact on such species and their habitats.
Objective GINHO33 – Annex I and Annex II	Ensure that development does not have a significant adverse impact on proposed Natural Heritage Areas (pNHAs), Natural Heritage Areas (NHAs), Statutory Nature Reserves, Refuges for Fauna, Habitat Directive Annex I sites and Annex II species contained therein, and on rare and threatened species including those protected by law and their habitats.

Policy GINHP19 – Ecological Buffer Zones	Protect the functions of the ecological buffer zones and ensure proposals for development have no significant adverse impact on the habitats and species of interest located therein.
Objective GINHO34 – Ecological Management Plans	Develop Ecological Management Plans for the Rogerstown, Malahide and Baldoyle Estuaries focusing on their ecological protection and that of their surrounding buffer zones.
Objective GINHO35 – Appropriate Assessment	In accordance with Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities 2010, any plans or projects that are likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, are subject to a screening for Appropriate Assessment unless they are directly connected with or necessary to the management of a Natura 2000 site.
Objective GINHO36 – Biodiversity Gain in Farmland	Promote biodiversity gain by allocating a proportion of Council owned land currently leased for farming for the purposes of rewilding and biodiversity initiatives over the lifetime of this Plan.
Objective GINHO37 – Nature Development Areas	Maintain and/or enhance the biodiversity of the Nature Development Areas indicated on the Green Infrastructure maps.
Objective GINHO38 – Demonstration Sites	Develop a demonstration site for each Nature Development Area.
Policy GINHP20 – Mammal Ledges	Protect the ecological corridor function along rivers by including mammal ledges or tunnels in new bridges over any of the main rivers: Liffey, Tolka, Pinkeen, Mayne, Sluice, Ward, Broadmeadow, Ballyboghil, Corduff, Matt and Delvin. New bridge structures will also cater for Dipper boxes and Bats where possible. Where new road infrastructure crosses significant urban ecological corridors, tunnels shall be installed underneath the road to facilitate movement of small mammals and amphibians.
Objective GINHO39 – Ecological Corridor Guidance	Develop Design Guidance document for ecological corridors.
Objective GINHO40 – Ecological Assessments	Protect the ecological functions and integrity of the corridors indicated on the Plan Green Infrastructure maps. An ecological assessment may be required for any proposed development likely to have a significant impact on habitats and species of interest in an ecological corridor or stepping-stone.

Objective GINHO41 – Protection of Rivers	Protect rivers, streams and other watercourses and maintain them in an open state capable of providing suitable habitat for fauna and flora, including fish.
Objective GINHO42 – Inland Fisheries	Take full account of Inland Fisheries Guidelines on the Protection of Fisheries during Construction works in and adjacent to Waters 2016 and Planning for Water Courses in the Urban Environment 2020 when undertaking, approving or authorising development or works which may impact on rivers, streams and canals and their associated habitats and species.
Objective GINHO43 – Streamside Riparian Zone	Remove existing revetments and/or gabion baskets along river and streams and restore a minimum of 10m of natural streamside riparian zone, where possible. If existing hard bank structures cannot be removed, provide instream river rehabilitation works in consultation with Inland Fisheries Ireland to improve the overall habitat quality of the river.
Objective GINHO44 – Setback of New Surface Water Drainage Outfalls	Set back new surface water drainage outfalls from the main river channel on the landward edge of the floodplain or a designed wetland feature to cater for water quality improvement before the surface discharges into the river.
Policy GINHP21 – Protection of Trees and Hedgerows	Protect existing woodlands, trees and hedgerows which are of amenity or biodiversity value and/ or contribute to landscape character and ensure that proper provision is made for their protection and management in line with the adopted Forest of Fingal-A Tree Strategy for Fingal.
Policy GINHP22 – Tree Planting	Provide for appropriate protection of trees and hedgerows, recognising their value to our natural heritage, biodiversity and climate action and encourage tree planting in appropriate locations.
Objective GINHO45 – Hedgerow Categorisation	Develop a ‘Hedgerow Categorisation and Management Appraisal Tool’ and associated appropriate planning and management requirements for Development Management purposes to ensure a sustainable future for retained hedgerows in the context of new developments.
Objective GINHO46 – Tree Removal	Ensure adequate justification for tree removal in new developments and open space management and require documentation and recording of the reasons where tree felling is proposed and avoid removal of trees without justification.
Objective GINHO47 – Woodland Development Schemes	Promote and support woodland development schemes by identifying suitable areas to establish and enhance woodlands for biodiversity, climate change and recreational purposes in partnership with local communities in line with the adopted Forest of Fingal-A Tree Strategy for Fingal.

Objective GINHO48 – Wildlife Act and Roads Act	The Council shall comply with the requirements set out in the Wildlife Act and Roads Act in the context of its maintenance programmes and housing, recreational and infrastructure developments.
Objective GINHO49 – Tree Preservation Order Review	Review Tree Preservation Orders within the County and maintain the conservation value of trees and groups of trees that are the subject of any Tree Preservation Order.
Objective GINHO50 – Tree Preservation Orders	Consider the use of Tree Preservation Orders (TPOs) to protect important trees, groups of trees or woodlands.
Objective GINHO51 – Protection of Shellfish Waters	Protect the quality of designated shellfish waters off the Fingal coast.
Policy GINHP33 – Dublin Bay Biosphere Partnership	Participate in and actively support and contribute to the work of the Dublin Bay Biosphere Partnership.
Objective GINHO83 – Dublin Bay Biosphere Nature Conservation Strategy	Support the implementation of the Dublin Bay Biosphere Nature Conservation Strategy, the Education and Awareness strategy and any other programs developed during the lifetime of this Plan.

Furthermore, Fingal County Council published the Fingal Biodiversity Action Plan 2023-2030 which outlines strategic objectives for the protection and management of biodiversity in the county. *Chapter 9 – Biodiversity Actions* of the Plan provides a summary of actions and objectives aimed at halting biodiversity loss in the countryside, coast, and urban areas and they are centred around six topics, as follows:

Delivery of the Ecological Network Across Fingal: *About half of the actions relate to the development and management of individual sites that collectively make up the Fingal Ecological Network.*

Building for Biodiversity and Managing Open Space for Biodiversity: *Although urban developments can lead to further habitat loss and fragmentation, there are also opportunities to undertake development in a way that will help to enhance biodiversity. Several technical and design guidance notes are to be prepared to inform developers, architects and engineers how nature can be incorporated in buildings, stormwater management and open spaces within a development. The Council will also undertake pilot projects in its own developments to gain more experience with building for biodiversity and share this experience with developers and other local authorities. Existing open space is also to be designed and managed more biodiversity friendly.*

Climate Change Adaptation and Mitigation: *Protecting and restoring ecosystems can help to reduce the impacts of climate change. This can be done by developing projects that address*

biodiversity loss and climate change adaptation and/or mitigation in an integrated manner. The restoration of carbon rich habitats such as saltmarsh, wetland and woodland will benefit many wildlife species, while these habitats can also sequester carbon, absorb floodwater and improve water quality.

Agri Environment Schemes and Rewilding: *There are many options for farmers to support biodiversity on their farms to halt the loss of typical farmland species. The Council is keen to work with farmers to develop supportive measures along headlands of fields to enhance their farms for wildlife, improve water quality and soil health through demonstration projects and agri-environment schemes. A major challenge associated with agri-environment schemes is that the newly created wildlife habitat may be removed once the grant funding comes to an end. The Council is therefore also keen to research the benefits of rewilding farmland for typical farmland species by means of undertaking a rewilding project and monitoring the results.*

Research & Monitoring: *The challenge of halting biodiversity loss must be underpinned by sound science. The Council has a legal responsibility to protect habitats and species listed in European and national legislation. It is therefore important to have a good understanding of the location and status of these habitats and species and to have this information incorporated into a GIS database to inform the planning process. A State of the Natural Environment Report for Fingal is to be prepared based on historical survey data and new studies. This will provide an overview on how our habitats and species are faring and what changes have occurred over the last 20 years. Monitoring the impacts of projects undertaken is also important to determine the success of the measures implemented to inform future projects.*

Raising Awareness: *Educating people of all ages about biodiversity and the essential role it plays in our society and economy is fundamental to the success of the Biodiversity Plan. The best way to learn about the natural environment is to be in it and through direct involvement in nature conservation projects. It is envisaged that a program of outdoor and online events, the development of a nature education centre, a wildlife gardening campaign and the revamping of Fingal biodiversity website as an online resource, will encourage people to take action and get involved. Upskilling of staff and new ecologists is also important and this will be addressed by means of training sessions and providing student placements.*

3 Methodology

The following section outlines the methods used to evaluate the importance of ecological features in the area of the site and to carry out a thorough ecological assessment.

3.1 Study Area

The subject site is located on the southern edge of Clonsilla to the north of the Royal Canal. Access to the site is currently facilitated via the Porterstown Road to the east. The existing premises consists of an old schoolhouse building originally built in 1853. The building is surrounded by recolonising bare ground to the east and an expanse of overgrown vegetation and hedgerow extending westwards.

The site is bounded to the north by The Village estate beyond which lies mixed use developments extending towards Clonsilla Road *ca*. 250m north. The site is bounded to the east by Porterstown Road where access to the site is facilitated. The site is bounded to the south by the Royal Canal watercourse and greenway beyond which lies a commuter rail train line and open greenfield land extending southwards. The site is bounded to the west/northwest by the Lambourn Park housing estate.

An approximate outline of the subject site and its environs is provided in **Figure 3.1** below.

Figure 3.1: Site location and environs (Source: Google Maps)

3.2 Zone of Influence

The site was assessed to identify its Zone of Influence (ZoI). Natura 2000 sites and Natural Heritage Areas within a set radius were identified.

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "*to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected*", and for SPAs "*to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA*".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing.
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future.

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats.
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future.
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured.

Taking the nature and location of the works, the existing land use of the site a precautionary approach to selecting the zone of influence has been adopted. Therefore, a zone of influence of 15 km has been selected for the purpose of identifying the ecological context of the area surrounding the subject site.

3.3 Important Ecological Features

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and / or species rarity; the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

3.4 Determining Importance

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/published accounts of distribution and rarity where available, and professional experience:

- International (European).
- National (Ireland).
- Regional (Leinster).
- County (Dublin).
- Townland (Clonsilla).

- Local (Intermediate between the Site and Townland).
- Site (“the Site”)

The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Examples of relevant lists and criteria include species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive), species protected under the Wildlife Acts 1976 - 2021 and red or amber listed on Birds of Conservation Concern in Ireland (BoCCI).

The Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009) were adopted as part of this methodology for the purpose of evaluating the importance of ecological features within the survey area. The site evaluation criteria from this assessment methodology are produced in accordance with NRA guidelines (2009) and CIEEM (2018), impact assessment is only undertaken of Key Ecological Receptors (KERs). These are features within the zone of influence of the subject site which are “both of sufficient value to be material in decision making and likely to be affected significantly”. According to NRA guidelines (NRA, 2009), KERs are of local importance (higher value) or higher as per NRA value criteria. Features of local importance (lower value) are not considered in the guidance to be KERs and are therefore excluded from assessment.

3.5 Site Environmental Considerations

3.5.1 Hydrology

The subject site is located within the Liffey_180 Sub-Basin; WFD Catchment 09 – Liffey and Dublin Bay; Liffey_SC_100 Sub-Catchment.

The principle hydrological feature within the vicinity of the subject site consists of the Royal Canal Main Line which runs from west to east directly adjacent the south border of the site. The canal runs a course 146km westwards from Spencer Dock, Co. Dublin to Cloondara Co. Longford.

A list of river waterbodies in the site vicinity are included in **Table 3.1** below.

Table 3.1: River Waterbodies in Vicinity of Subject Site

Waterbody	Code	Distance & Direction from Site
Royal Canal Main Line	IE_09_AWB_RCMLE	10m S
River Tolka	IE_EA_09T011000	2.2km NE
Barberstown Stream	IE_EA_09T010800	2.2km N
River Liffey	IE_EA_09L012350	1.5km S

The Water Framework Directive (WFD) runs in 6-year cycles with the most recent data being generated between 2016-2021. The Directive takes rivers, lakes, estuaries, groundwater and

coastal waters into consideration and each waterbody can be awarded one of five statuses: High, Good, Moderate, Poor, and Bad. Additionally, waterbodies can be assigned a risk level ("At Risk", "Not At Risk", "Review") which represents the risk of the waterbody of failing its WFD objectives by 2027. The WFD aims to achieve good status for all rivers, lakes and transitional and coastal waters in the EU. Achieving good ecological status for surface waters is critical to this.

According to the EPA maps, the Royal Canal has a WFD status of "Good" and its risk level is currently under review.

3.5.2 Soils and Hydrogeology

Teagasc soil mapping indicates that the surface sediments and subsoil layer at the site are classified as made/built land. The Geological Survey of Ireland (GSI) bedrock database indicates that soils of the subject site are underlain at depth by the Lucan Formation, which consists predominantly of dark limestone and shale.

3.5.3 Groundwater Vulnerability

According to GSI groundwater maps, the site overlies a locally important aquifer. The groundwater vulnerability index of the site is described as extreme, with bedrock at or near the surface along the course of the Royal Canal.

4 Results

4.1 Natura 2000 Sites and Natural Heritage Areas

11 no. ecologically sensitive sites were identified within a 15km Zone of Influence of the site. The subject site is located immediately adjacent the Royal Canal proposed Natural Heritage Area. **Table 4.1** below comprises a list of Natura 2000 sites within 15km of the subject site at The Old Schoolhouse, Clonsilla. A map displaying the location of these sites relative to the subject site is also included in **Figure 4.1**.

Table 4.1: Natura 2000 Sites and Natural Heritage Areas Within 15km of the Subject Site

Site Name & Code	Distance	Qualifying Interests
Royal Canal pNHA, 002103	Located *ca*. 10m S of the subject site	N/A
Rye Water Valley/Carton SAC/pNHA, 001398	Located *ca*. 6.3km W of the subject site	Petrifying springs with tufa formation (*Cratoneurion*) [7220] Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014] Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]
Liffey Valley pNHA, 000128	Located *ca*. 1.4km S of the subject site	N/A
Grand Canal pNHA, 002104	Located *ca*. 5.6km S of the subject site	N/A
Slade of Saggart and Crooksling Glen pNHA, 000211	Located *ca*. 13.2km S of the subject site	N/A
Glenasmole Valley SAC/pNHA, 001209	Located *ca*. 13.9km S of the subject site	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Petrifying springs with tufa formation (*Cratoneurion*) [7220]
Dodder Valley pNHA, 000991	Located *ca*. 11.5km SE of the subject site	N/A

South Dublin Bay SAC/pNHA, 000210	Located *ca*. 14km E of the subject site	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]
South Dublin Bay and River Tolka Estuary SPA, 004024	Located *ca*. 12.3km E of the subject site	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]
North Dublin Bay SAC/pNHA, 000206	Located *ca*. 15km E of the subject site	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals

		colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (*Petalophyllum ralfsii*) [1395]
North Bull Island SPA, 004006	Located *ca*. 15km E of the subject site	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160]

		Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]

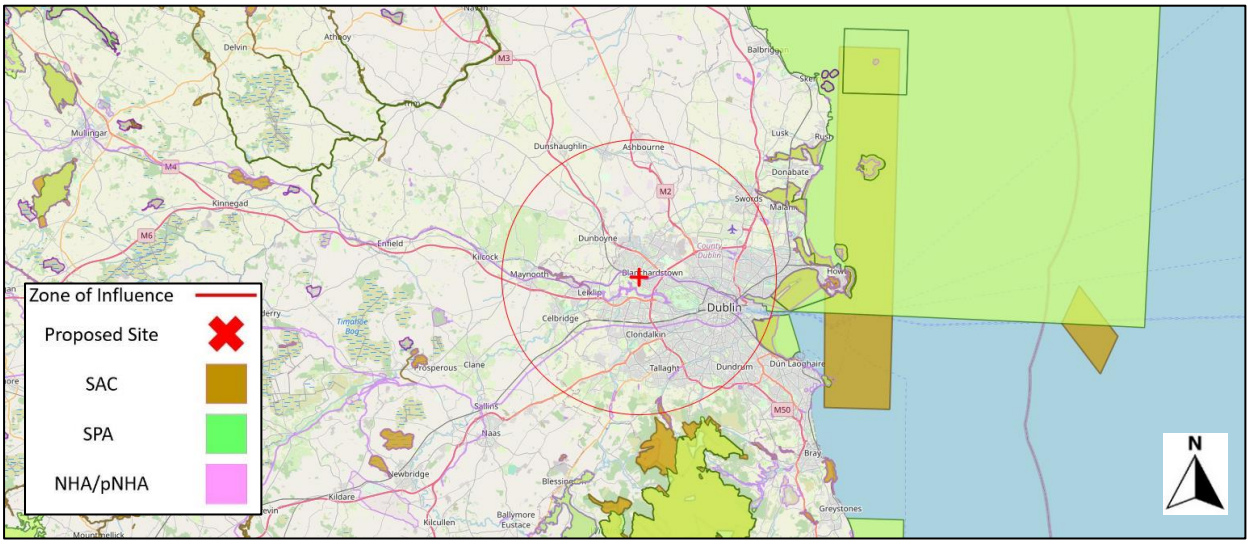


Figure 4.1: Designated sites within 15km of the subject site.

4.2 Habitat Survey and Classification

Walkover of the site was completed in early July 2024 by ORS Ecologists. The habitats within the site were identified and classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000). The plant species present in each habitat type were recorded.

The habitat mapping exercise had regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2011) published by the Heritage Council. Scientific and common names for plants follow Streeter et al, (2016). Habitats were appraised and evaluated according to their occurrence as protected habitats under Annex I of the EU Habitats Directive (92/43/EEC) and for their capacity to support rare, threatened, and endangered species.

An overview of the habitats present on site is included in **Appendix A** and **Table 4.2** provides a summary of the qualities of the habitats recorded.

A summary of the evaluation of habitats can be found in **Table 4.2**.

Table 4.2: Evaluation of habitats within the study area			
Habitat Classification	**Evaluation**	**Rationale**	**Selection as Key Ecological Receptor (KER)**
WS1 - Scrub	High	Inner overgrown sections towards the centre of the site and along the site boundaries consist of dense areas of bramble which provide refuge and foraging habitat for birds and mammals.	Yes
BL3 – Buildings and artificial surfaces	Moderate-High	Feral pigeons were observed resting on the existing Old Schoolhouse building and gaps in walls/roof provide potential roosting habitat for birds and bats.	Yes
ED3 – Recolonising bare ground	Low-Moderate	The site entrance to the east is covered predominantly by gravel/spoil that is becoming recolonised by weeds and grasses.	No
GS2 – Dry meadows and grassy verges	High	The western side of the site is dominated by overgrown grassland displaying a wide range of plant species. Mammal signs such as tracks and droppings were also observed indicating use of the site as foraging habitat and potential nesting habitat for smaller mammals.	Yes
WL1 – Hedgerows	High	Hedgerows provide excellent foraging habitat for birds and mammals. Well-established hedgerows are observed along the north and south boundaries of the site.	Yes
WL2 - Treelines	High	A mature treeline is established along the north boundary of the site provide nesting habitat for birds.	Yes

4.3 Flora

The current list of plant species protected by Section 21 of the Wildlife Act, 1976 is set out in the Flora (Protection) Order, 2022, which super cedes orders made in 1980, 1987, 1999 and 2015. No rare or protected flora species protected under the Flora Protection Order (2022), listed in Annex II and IV of the EU Habitats Directive (92/43/ECC), or listed in the Irish Red List were recorded during the survey.

It is illegal to cut, uproot or damage listed species in any way, or to offer them for sale. This prohibition extends to the taking or sale of seed. In addition, it is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation. A vegetative species list of plants and trees within and along the site boundary was recorded. This list can be found in **Table 4.3**.

Table 4.3: List of Plant Taxa Recorded on Site	
Common Name	**Scientific Name**
Fireweed	*Epibolium angustifolium*
Blackberry	*Rubus fruticosus*
Fieldbriar	*Rosa agrestis*
Spiny sowthistle	*Sonchus asper*
Field thistle	*Cirsium arvense*
Ash	*Fraxinus excelsior*
English Hawthorn	*Crataegus laevigata*
Stinging Nettle	*Urtica dioica*
Hart's-tongue Fern	*Asplenium scolopendrium*
Atlantic Ivy	*Hedera hibernica*
Coralberry	*Symphoricarpos orbiculatus*
Dandelion	*Taraxacum clemens*
Stickywilly	*Galium aparine*
Common elderberry	*Sambucus canadensis*
Railway Bramble	*Rubus elegantispinosus*
Persian Ivy	*Hedera colchica*
Sycamore maple	*Acer pseudoplanatus*
Angelica	*Angelica archangelica*
Purple-leaved willowherb	*Epibolium ciliatum*
Tufted vetch	*Vicia cracca*
Meadowsweet	*Filipendula ulmaria*
Lady's Bedstraw	*Galium verum*
Small restharrow	*Ononis reclinata*
Downy buttercup	*Ranunculus lanuginosus*
False Oat Grass	*Arrhenatherum elatius*
Pruinose Bramble	*Rubus pruinosus*
Common Knapweed	*Centaurea nigra*
Yorkshire-fog	*Holcus lanatus*
Hogweed	*Heracleum sphondylium*
Cock's-foot	*Dactylis glomerata*
Holly	*Ilex aquifolium*
Meadow Vetchling	*Lathyrus pratensis*
Meadow Buttercup	*Ranunculus acris*

Red Clover	*Trifolium medium*
Common milk thistle	*Sonchus oleraceus*
Danewort	*Sambucus ebulus*
Common Horse-chestnut	*Aesculus hippocastanum*
Rough hawkbit	*Leontodon hispidus*
Rough Hawk's-beard	*Crepis biennis*
Hemp Agrimony	*Eupatorium cannabinum*
Shining scabious	*Scabiosa lucida*
Field scabious	*Knautia arvensis*
Dog Rose	*Rosa canina*
Alder	*Alnus glutinosa*
Great Bindweed	*Calystegia silvatica*
Self-heal	*Prunella vulgaris*
Spear thistle	*Cirsium vulgare*
Common Bent	*Agrostis capillaris*
Common Ragwort	*Jacobaea vulgaris*
Wild Daisy	*Leucanthemum heterophyllum*
Weld	*Reseda luteola*
Bush Vetch	*Vicia sepium*
Hedge Woundwort	*Stachus sylvatica*
Green Dock	*Rumex conglomeratus*
Blackthorn	*Prunus spinosa*
Blue Honeysuckle	*Lonicera caerulea*
Noble Yarrow	*Achillea nobilis*
Little Robin	*Geranium purpureum*
Narrow-leaf plantain	*Plantago lanceolata*
Longleaf dock	*Rumex longifolius*
Dyer's Chamomile	*Cota tinctoria*
Queen Anne's lace	*Daucus carota*
Calendula	*Calendula officinalis*
Japanese larch	*Larix kaempferi*
Coltsfoot	*Tussilago farfara*
Black medick	*Medicago lupulina*
Everlasting pea	*Lathyrus grandiflorus*

The site will only have an effect on the species outlined in **Table 4.3** and will be confined within the site boundaries.

4.3.1 Invasive Species Survey

The invasive species survey aimed to identify and assess the extent of non-native species that may pose ecological risks. Invasive species require special consideration when trying to clear them for development.

In this case, there were no invasive species found on the site, therefore there is no likelihood that the spread of invasive species beyond the site boundaries and into sensitive ecosystems associated with SAC's, SPA's or NHA's in the vicinity will occur.

4.4 Macro-invertebrate Survey

The primary objective of this study is to evaluate the adjacent Royal Canal water quality, specifically, the study aims to utilise macro-invertebrate sampling to gather Q-value ratings to obtain a biotic assessment of the water body. The biotic assessment will provide a Q – value rating and will be supplemented by examination of vegetative characteristics, including macrophytes present in the canal, to assess ecological health and support regulatory compliance with regards to protection of water bodies under the Water Framework Directive (WFD).

Sampling was conducted at 2 sites along the Royal Canal adjacent to the subject site at Clonsilla, both upstream (site 1, West) and downstream (site 2, East) which represented the West and East extents of the subject site boundary to cover the entire site, see **Figure 4.2** below. Sampling was carried out using sweep net from the bank with a standard 1mm fine mesh to catch invertebrates. At each site, three samples were taken to provide a representative profile of each downstream and upstream section. Vegetative characteristics, including macrophytes, were considered during sampling to provide additional ecological context but none were found. Substrate composition and water body characteristics including flow type, and water depth and width were also measured. Collected specimens were identified to the lowest taxonomic level possible using a taxonomic key and stereoscopic microscope, following standard procedures. Q-values were assigned to identify taxa based on their sensitivity to pollution.

Q-value ratings were calculated for each sampling site based on the composition of macro-invertebrate communities as per **Table 4.4**. The presence of highly sensitive species was emphasised as an indicator of good water quality. Vegetative characteristics, including macrophytes, were also included as ancillary data to supplement the assessment of stream health. The taxonomic groupings at family level, with which a Q-value may be assigned, is presented in **Table 4.5**. The taxa presented in this report are specific to Ireland and Britain.

Indicator groups were calculated from their relative abundance and then into their respective proportional values per grouping. The relative abundance value helps to assign the Q-Value score for each taxonomic group with the following methodology where:

1. Present = 1/2 individuals
2. Scarce/Few = <1%
3. Small Numbers = <5%

4. Fair Numbers = 5-10%
5. Common = 10-20%
6. Numerous = 25-50%
7. Dominant = 50-75%
8. Excessive = >75%

Table 4.4: Biotic Indices ("Q Values")

Q Value	WFD Status	Pollution Status	Condition
Q5, Q4-5	High	Unpolluted	Satisfactory
Q4	Good	Unpolluted	Satisfactory
Q3-4	Moderate	Slightly polluted	Unsatisfactory
Q3, Q2-3	Poor	Moderately polluted	Unsatisfactory
Q2, Q1-2, Q1	Bad	Seriously polluted	Unsatisfactory

Table 4.5: Taxonomic indicator groups at family level and their assigned sensitivity to pollution.

Group A	Group B	Group C	Group D	Group E
Sensitive	**Less Sensitive**	**Tolerant**	**Very Tolerant**	**Most Tolerant**
Siphlonuridae	*Leuctra*	*Caenis*	*Hirudinae*	*Tubificidae*
Isoperla	*Protonemura*	*Limnephilidae*	*Valvatidae*	*Chironomus*
Perla	*Amphinemura*	*Hydroptilidae*	*Hydrobiidae*	
Chloroperla	*Ephemerella*	*Glossosomatidae*	*Lymnea*	
Ecdyonurus	*Ephemera*	*Gammaridae*	*Physidae*	
Rithrogena	*Baetidae*	*Rhyacophilidae*	*Planorbidae*	
Heptagenia	*Pschomyidae*	*Philopotamidae*	*Sphaeriidae*	
	Sericostomatidae	*Polycentropidae*	*Asellidae*	
	Odontoceridae	*Hydropsychidae*	*Chironomidae*	
	Lepidostomatidae	*Coenagridae*	*Culicidae*	
	Goeridea	*Baetis rhodani*	*Planariidae*	
	Molannidae	*Tricladida*		
	Beraeidae	*Coleoptera*		
	Odonata	*Hydracarina*		
	Aphelocheirus	*Gammaridae*		
	Rheotanytarsus	*Sialidae*		
	Plecoptera	*Tipulidae*		
		Simuliidae		
		Ancylidae		
		Neritidae		

		Viviparidae		
		Haliplidae		
		Ceratopogonidae		
		Elminthidae		

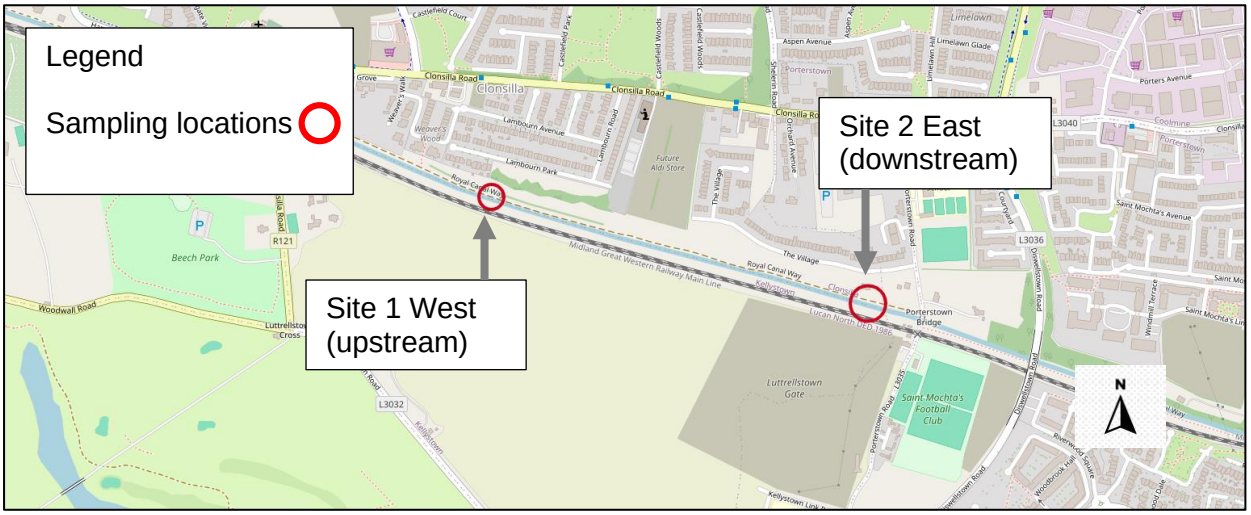


Figure 4.2: Sampling locations for the macro invertebrate survey.

Results for the Upstream (Site 1) sampling location at the Royal Canal are presented in **Table 4.6, 4.7 & 4.8.** A Q-value of **Q 3** has been assigned to the upstream sample (site 1), the rational being that taxonomic indicator group C (very tolerant) were excessive in the sample, the highest proportion of taxa were dominated by indicator group C where they represented a total of 97% of the sample, indicator group D accounted for 3% of the sample (Common) and indicator group E represented 3% (small numbers) of the sample. The Upstream sample therefore has a WFD status of "Poor", a Pollution Status of "Moderately polluted", and a Condition of "Unsatisfactory". Results for the Downstream (Site 2) sampling location at the Royal Canal are presented in **Table 4.9, 4.10 & 4.11**. A Q-Value of **Q 3** has been assigned to the Downstream (site 2) sampling location, the rational being that taxonomic indicator group D (tolerant) were present and "excessive" where they represented 97% of the overall sample. The taxonomic group C (tolerant) were present in "fair numbers" making up 6% of the sweep net sample. Downstream site 2 has a WFD status of "Poor", a pollution status of "Moderately Polluted", and a condition of unsatisfactory.

Table 4.6: Macro-invertebrates identified down to family level, their abundance, indicator groupings and proportion (%) found within the Upstream Site 1 kick sample.

Taxon	Abundance	Indicator Group	Indicator Group Proportion (%)
Gammeridae	56	C	88
Planorbidae	1	C	1
Baetidae	5	C	8
Planariidae	2	D	3

Table 4.7: Indicator Groups representative of the kick sample and their total combined proportion (%) for the Upstream Site 1 sample.	
Indicator Group	**Total Combined Proportion (%)**
C	97 (Excessive)
D	3 (Small numbers)

Table 4.8: Water properties for Upstream Site 1 sample.	
Indicator Group	**Total Combined Proportion (%)**
GPS coordinates	53°22'54.0"N 6°25'01.4"W
Water body width (cm)	400
Water depth (cm)	150
Flow type	Glide
Overhead shade (%)	80
Macrophytes	No macrophytes present
Substrate composition	Mud 100%

Table 4.9: Macro-invertebrates identified down to family level, their abundance, indicator groupings and proportion (%) found within the Upstream Site 2 kick sample.			
Taxon	**Abundance**	**Indicator Group**	**Indicator Group Proportion (%)**
Gammeridae	49	C	80
Planorbidae	1	C	2
Culicidae	1	C	2
Baetidae	6	C	10
Planariidae	4	D	6

Table 4.10: Indicator Groups representative of the kick sample and their total combined proportion (%) for the Upstream Site 2 sample.	
Indicator Group	**Total Combined Proportion (%)**
C	94 (Excessive)
D	6 (Fair numbers)

Table 4.11: Water properties for Upstream Site 1 sample.	
Indicator Group	**Total Combined Proportion (%)**
GPS coordinates	53°22'48.0"N 6°24'25.0"W
Water body width (cm)	400
Water depth (cm)	150
Flow type	Glide
Overhead shade (%)	85
Macrophytes	None present
Substrate composition	Mud 100%

4.5 Fauna

4.5.1 Bird Survey

Bird survey was conducted during the breeding season (4th, 8th and 10th July) for many resident and migratory passerines. No nesting individuals or their nests and young were discovered at the site. Site walkover techniques were employed, but to maximise the detection and presence of likely species which use the site, three days of continuous effort were carried out. A vantage point survey technique was employed throughout the 8 hours of site walkovers per day. Use of binoculars and bird call playback for detection were employed.

Species identification and abundance presented in **Table 4.12** below along with the conservation status within Ireland. Surveyors should be mindful of the zone of influence of any development scheme (i.e. the distance beyond the redline boundary that a scheme may still have an impact on breeding birds, either during construction or operation). Surrounding habitat (outside of the redline boundary) should also be surveyed to a reasonable distance – particularly land immediately surrounding the site itself, and any nearby potentially valuable habitat which is likely to be impacted by development/disturbance (including but not restricted to waterbodies and woodland).

Table 4.12: Bird species and counts recorded on site			
Species	**Count**	**Conservation Status**	**Date**
Wood pigeon (*Columba palumbus*)	9	Green	04/07/24
Ferel pigeon (*Columba livia f. domestica*)	6 (nesting)	Green	04/07/24
Jackdaw (*Coloeus monedula*)	1	Green	04/07/24
Magpie (*Pica pica*)	3	Green	04/07/24
Chiffchaff (*Phylloscopus collybita*)	3	Green	04/07/24
House Sparrow (*Passer domesticus*)	2	Amber	04/07/24
Long tailed tit (*Aegithalus caudatus*)	1	Green	04/07/24
Great tit (*Parus major*)	1	Green	04/07/24
Goldfinch (*Carduelis carduelis*)	6	Green	04/07/24

Swift (*Apus apus*)	1	Red	04/07/24
House martin (*Delichon urbicum*)	3	Amber	04/07/24
Buzzard (*Buteo buteo*)	1	Green	04/07/24
Chaffinch (Fringilla coelebs)	1	Green	04/07/24
Blackbird (*Turdus merula*)	2 (nesting)	Green	04/07/24
Herring gull (*Larus argentatus*)	3	Amber	04/07/24
Dunnock (*Prunella modularis*)	1 (nesting)	Green	04/07/24
Jackdaw (*Coloeus monedula*)	1	Green	04/07/24
Wren (*Troglodytes troglodytes*)	1 (nesting)	Green	04/07/24
Black cap (*Sylvia atricapilla*)	2	Green	04/07/24
Swallow (*Hirundo rustica*)	1	Amber	04/07/24
Ferel pigeon (*Columba livia f. domestica*)	8 (nesting)	Green	08/07/24
Goldfinch (*Carduelis carduelis*)	2	Green	08/07/24
Herring gull (*Larus argentatus*)	2	Amber	08/07/24
Gold crest (*Regulus regulus*)	1	Amber	08/07/24
Wood pigeon (*Columba palumbus*)	29	Green	08/07/24
Sand martin (*Riparia riparia*)	1	Amber	08/07/24
Magpie (*Pica pica*)	1	Green	08/07/24
Blackbird (*Turdus merula*)	1	Green	08/07/24
Chiffchaff (*Phylloscopus collybita*)	2 (nesting)	Green	08/07/24
Buzzard (*Buteo buteo*)	1	Green	08/07/24
Lesser Black Back Gull (*Larus fuscus*)	1	Amber	08/07/24
Cormorant (*Phalacrocorax carbo*)	2	Amber	08/07/24
Goldfinch (*Carduelis carduelis*)	32	Green	10/07/24
Chiffchaff (*Phylloscopus collybita*)	1	Green	10/07/24
Swallow (*Hirundo rustica*)	5	Amber	10/07/24
Hooded crow (*Corvus cornix*)	1	Green	10/07/24
Ferel pigeon (*Columba livia f. domestica*)	6 (nesting)	Green	10/07/24
Bullfinch (*Pyrrhula pyrrhula*)	4	Green	10/07/24
Lesser Black Back Gull (*Larus fuscus*)	2	Amber	10/07/24
Herring gull (*Larus argentatus*)	3	Amber	10/07/24
Jackdaw (*Coloeus monedula*)	2	Green	10/07/24
Magpie (*Pica pica*)	5	Green	10/07/24
Willow warbler (*Phylloscopus trochilus*)	1 (nesting)	Green	10/07/24
Dunnock (*Prunella modularis*)	1	Green	10/07/24

Wren (*Troglodytes troglodytes*)	3	Green	10/07/24
Cormorant (*Phalacrocorax carbo*)	1	Amber	10/07/24

The hedgerows were seen to be providing nesting habitat for a number of bird species, some resident in Ireland all year round, and others such as the chiffchaff (*Phylloscopus collybita*) and the willow warbler (*Phylloscopus trochilus*) which migrate into Ireland annually for breeding purposes. Migration for breeding is an essential ecological function of the life history of those species which take part in the activity. Feral pigeons (*Columba livia f. domestica*) were observed using the old schoolhouse building as a nesting and roosting habitat. It must be noted that it is an offence to disturb or displace the nests and roosts of any bird species in Ireland. Due to the nesting activity on the site, it is recommended that any cutting be carried outside of the nesting season where "*The National Parks & Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage is reminding the public the cutting, grubbing, burning or other destruction of "vegetation growing in any hedge or ditch" between 1st March and 31st August is prohibited*". As well as feral pigeons, a number of other bird species were observed nesting at the site including Blackbird (*Turdus merula*), Dunnock (*Prunella modularis*), Wren (*Troglodytes troglodytes*), Chiffchaff (*Phylloscopus collybita*) and Willow warbler (*Phylloscopus trochilus*).

The site may be of larger importance to bird species in the surrounding area due to the presence of mice and voles which support raptor species such as buzzard (*Buteo buteo*). The presence of swifts (*Apus apus*), house martins (*Delichon urbicum*), swallows (*Hirundo rustica*) and sand martins (*Riparia riparia*) seen within the site boundary is evidence of the site being used for feeding by those migratory species. The nesting habitat of those conservation status Amber species was not observed within the site boundary but are likely nearby, as they generally don't fly great distances to find food during the nesting season.

To include connectivity into the considerations for the management of habitats and for the purpose of more sensitive planning to local ecology, the following actions may help in maintaining that ecological connectivity between species and habitats:

- Keep as much of the existing vegetative understory intact without interference.
- Avoid the removal of the Southern tree line which borders the site along the top of the embankment, because this is a vital pathway to species from the water at the canal below, to the site environment.
- Keep some natural grassland incorporated into the plans to allow for a coexistence between humans and small mammals that use the grasslands and provide a food source for raptors.

The theory is that habitat fragmentation on any level is the very process which impedes the continuous ecological functions of the area, and the various taxa observed within it. Avifauna are an indicative group from which some of our conclusions have been made.

4.5.2 Mammal Survey

Survey techniques employed on this site investigation utilised direct observation methods, camera traps, looking for tracks, footprints, and other signs such as scat and faeces ID. The mammal survey focused on identifying terrestrial and semi-aquatic mammals within the site. There were no badger setts, otter holts or other resting places of mammals identified on site.

Infra-red trail cameras were set throughout the site over three nights, see **Figure 4.2** below to see where the camera traps were located. The cameras were pointed towards badger bait in the form of peanuts (300 grams) and syrup (400 grams) mix with red pellets to ascertain possible movements of Badger if there were seen. The badger would have ingested the pellets and the spread of the pellets in the faeces would mark out their foraging territory.

Small burrows potentially suitable for mice or voles were observed on the edges of scrub area and within dense tufts of grass. Camera traps were set up along the palisade fencing adjacent the schoolhouse building and along the manmade tracks to observe signs of foraging mammals. Camera footage confirmed presence of fox and mice within the site, as seen in **Figure 4.2**. The embankment showed signs of animal runs linking up the footpath below to the main subject site area. No signs of otter holts, scat, footprints or other signs were observed during site survey. Hedgehog faeces was present, but the animals were not seen on video camera footage.

Figure 4.2: Camera trap footage of mouse (top) and fox (bottom).

Figure 4.3: Map shows the coverage and location of infra-red camera traps.

4.5.3 Amphibians, Reptiles, and Invertebrates

No suitable breeding habitats for common frog or smooth newt are within the subject site boundary but there may be some opportunity in the canal due to very slow flow rates. The subject site does offer the opportunity for winter hibernation of Smooth newts (*Lissotriton vulgaris*), due to the presence of extensive grassland and woodland habitat. No common lizard (*Zootoca vivipara*) or slow worms (*Anguis fragilis*) were found. Retention of some unmanaged grassland is advisable in order to provide some refuge for amphibians and invertebrates which may be present within the subject site or in the site vicinity.

4.5.4 Preliminary Bat Roost Potential (BRP) Survey

The exterior of the old schoolhouse was thoroughly examined for signs of Bat Roost Potential. The interior of the schoolhouse was inaccessible on the day of surveying. There are cracks and crevices in the stonework throughout the building. The majority of these are unsuitable for roosting, however, there are some suitable for bats to roost during nighttime foraging. There are also ventilation holes and gaps in the walls, however, these are too large for bat roost potential. There were no signs of activity on any entry route. External examination included the visual search for droppings at doorways and windowsills and on the ground where any access point would have otherwise been found. Urine stains and drops were searched for on windows and doors, on windowsills and on surfaces close to building eaves and soffits and none were discovered. The survey was carried out during daylight hours. The structures on the site were classified as **High** for bat roost suitability. See map of bat roost potential below in **Figure 4.4.**

Mature trees on site were also examined for bat roost potential. There are multiple trees on site suitable for bat roosting. The site is also a suitable foraging area. The canal adjacent to the site is important for water feeding species such as Daubenton's bat (*Myotis daubentonii*). In the arboricultural assessment, the northern hedgerow was classed as 'grade A'. There are also some veteran specimen trees such as Elder (*Sambucus nigra*) and Ash (*Fraxinus excelsior*).

Figure 4.4: Map of the potential sites for bat roosts.

Table 4.13 below describes habitat suitability criteria for bat roosts. The area of Clonsilla presents a variety of features that may be suitable for bats with regards to roosting and foraging. The nearby Royal Canal and boundary treelines present foraging opportunities, while the presence of the old schoolhouse present potential roosting opportunities.

Table 4.13: Bat roost suitability descriptors

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

The overall suitability of the landscape for bats was determined using the geographic suitability index from The National Biodiversity Data Centre (NBDC). The index ranges from 0 (least favourable) to 100 (most favourable) for bats.

Results displayed in **Table 4.14** indicate that across all bat species found in Ireland, the site lies within a moderate-to-high suitability area.

The highest suitability results are for Lesser noctule bat (*Nyctalus leisleri*) with an index of 51.

The lowest suitability index was assigned to the Lesser horseshoe bat (*Rhinolophus hipposideros*) with an index of 0. This means that Lesser horseshoe bats (*Rhinolophus hipposideros*) are the least likely bat species to be found in the area due to habitat suitability.

Table 4.14: Bat Suitability Index for the Subject Site (NBDC)

Bat Species	Suitability Index
All Bats	35.44
Soprano pipistrelle (*Pipistrellus pygmaeus*)	43
Brown long-eared bat (*Plecotus auratus*)	50
Common pipistrelle (*Pipistrellus pipistrellus*)	50
Lesser horseshoe bat (*Rhinolophus hipposideros*) *	0
Lesser noctule (*Nyctalus leisleri*)	51
Whiskered bat (*Myotis mystacinus*)	33
Daubenton's bat (*Myotis daubentoniid*)	33
Nathusius's pipistrelle (*Pipistrellus nathusii*)	18
Natterer's bat (*Myotis nattereri*)	41

**Annex II Species*

Appendix A: Habitat Classification

240216 - Clonsilla Schoolhouse Masterplan

8/27/2024

Phase 1 Habitat

- WS1 - Scrub
- BL3 - Buildings and artificial surfaces
- ED3 - Recolonising bare ground
- GS2 - Dry meadows and grassy verges
- WL1 - Hedgerows
- WL2 - Treelines

Boundaries

- Site Boundary

World Imagery

1:4,000

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

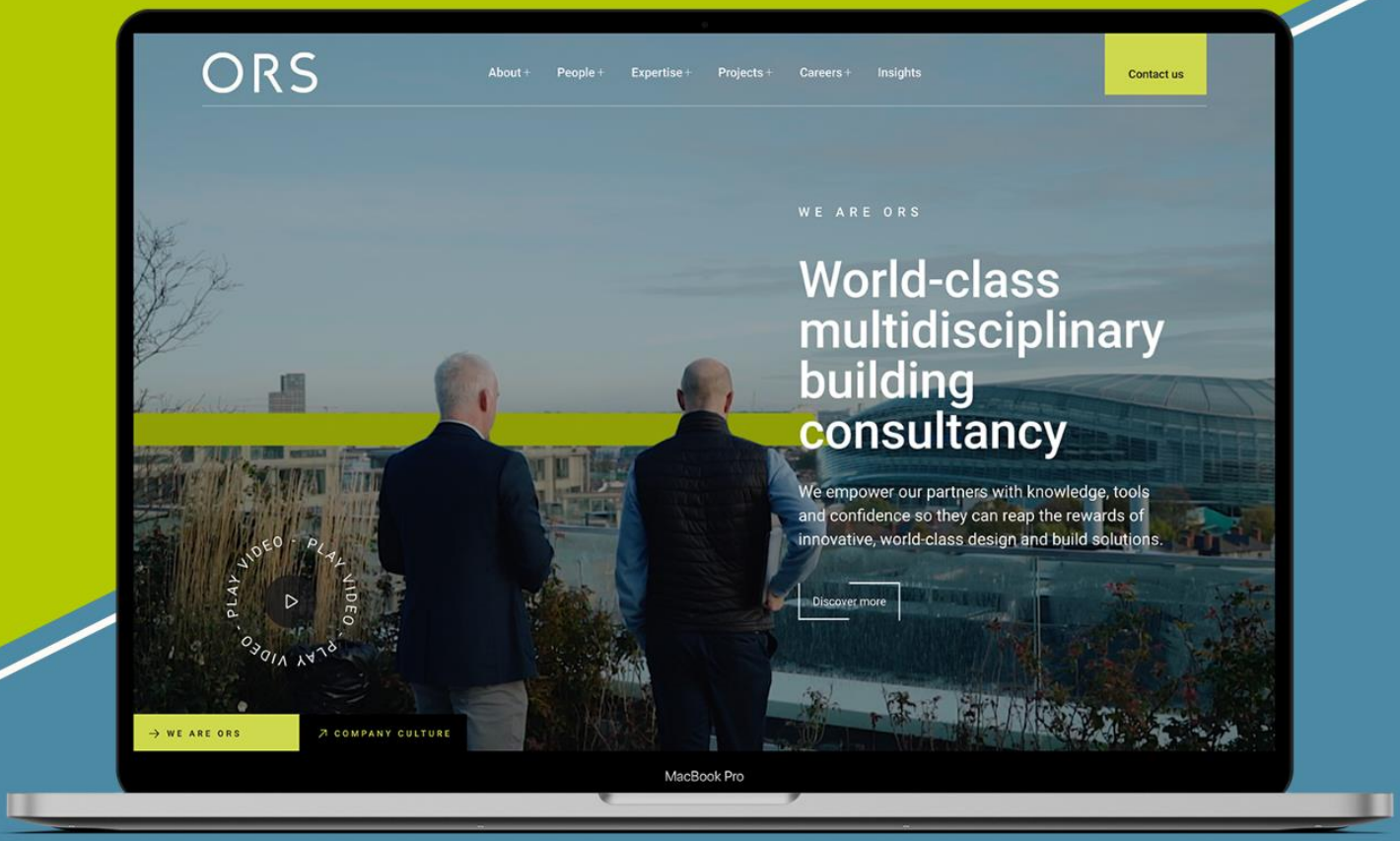
Maxar, Microsoft

ORS | Multidisciplinary Building Consultancy

Best Workplaces™ Great Place To Work. IRELAND 2023

Access more information on our services and expertise by visiting our brand-new website.

Click here



Find Us Nationwide, on LinkedIn or on Youtube

Block A,
Marlinstown Business Park,
Mullingar, Co. Westmeath,
Ireland, N91 W5NN

Suite: G04, Iconic Offices,
Harmony Row,
Dublin 2, Co. Dublin,
Ireland, D02 H270

Level One, Block B,
Galway Technology Park,
Parkmore, Co. Galway,
Ireland, H91 A2WD

Office 2, Donegal Town,
Enterprise Centre, Lurganboy,
Donegal Town, Co. Donegal,
Ireland, F94 KT35

Office 4, Spencer House,
High Road, Letterkenny,
Co. Donegal,
Ireland, F92 PX8N

NSQ2,
Navigation Square,
Albert Quay, Cork
Ireland, T12 W351