CDPVAR26S1-469

From: [redacted]
[redacted]
Subject: Variation No.1 to the Clare County Development Plan 2023-2029
Date: Tuesday 7 April 2026 14:53:28
Attachments: [redacted]

Please find attached submission in relation to Variation No.1 to the Clare County Development Plan.

Please confirm receipt of this submission

Regards,

Martin Mungovan
Darvin Trading

Variation No.1 to the Clare County Development Plan 2023-2029, Date: 7th April 2026
Planning Department,
Clare County Council,
New Road,
Ennis,
Co Clare.
V95 DXP2

Re: Variation No. 1 to Clare County Development Plan 2023-2029

A Chara,

Further to the publication of the Proposed Variation No.1 to Clare County Development Plan 2023 – 2029, I write to express my frustration of the manner in which this process has been carried out. Submissions were requested from landowners/developers and a detailed submission (attached) was prepared by Brian Foudy & Associates on our behalf. There has been no engagement from Clare County Council in their review of this submission and the exclusion of these lands from the Proposed Variation No.1 demonstrates a clear failure on behalf of the council in giving due consideration to the inclusion of these lands in the Proposed Variation No.1 to Clare County Development Plan 2023 – 2029

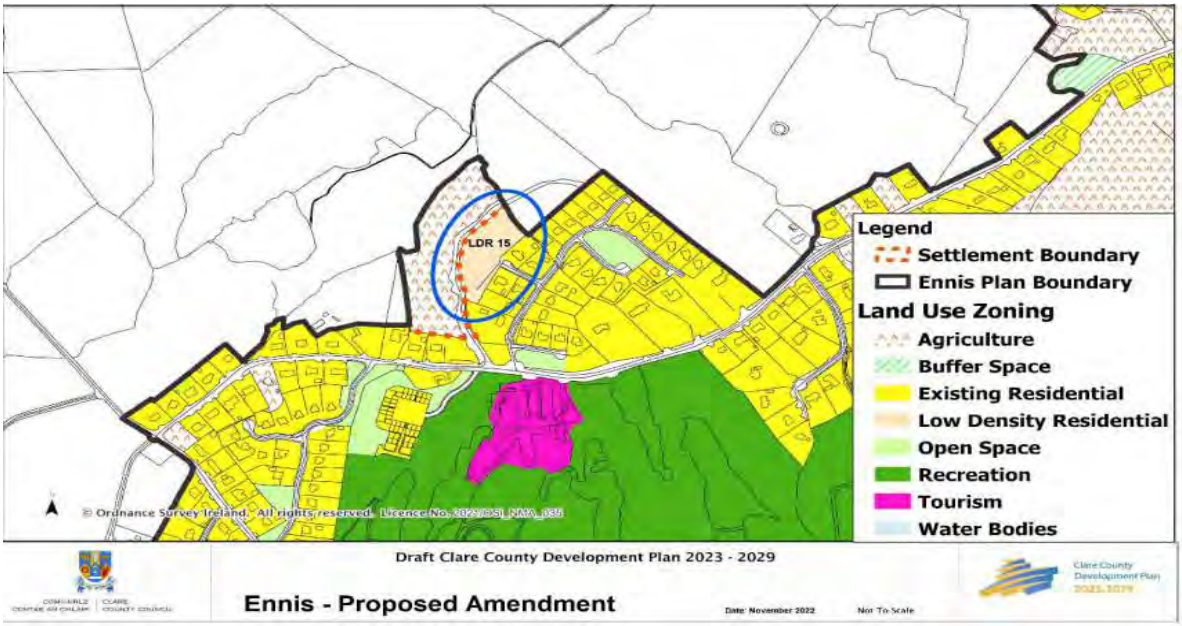
Reasons given for the omission of these lands by staff of the council have included environmental grounds, objections by neighbours to an adjacent planning permission and that the lands are outside of the settlement boundary.

I wish to provide the below further information in relation to the proposed zoning of our lands located at Woodstock.

Location

The lands are located within the Ennis Plan Boundary with the Ennis Settlement Boundary line dividing the site and LDR 15. It is unclear why the Ennis Plan Boundary has been removed from the maps in the Proposed Variation.

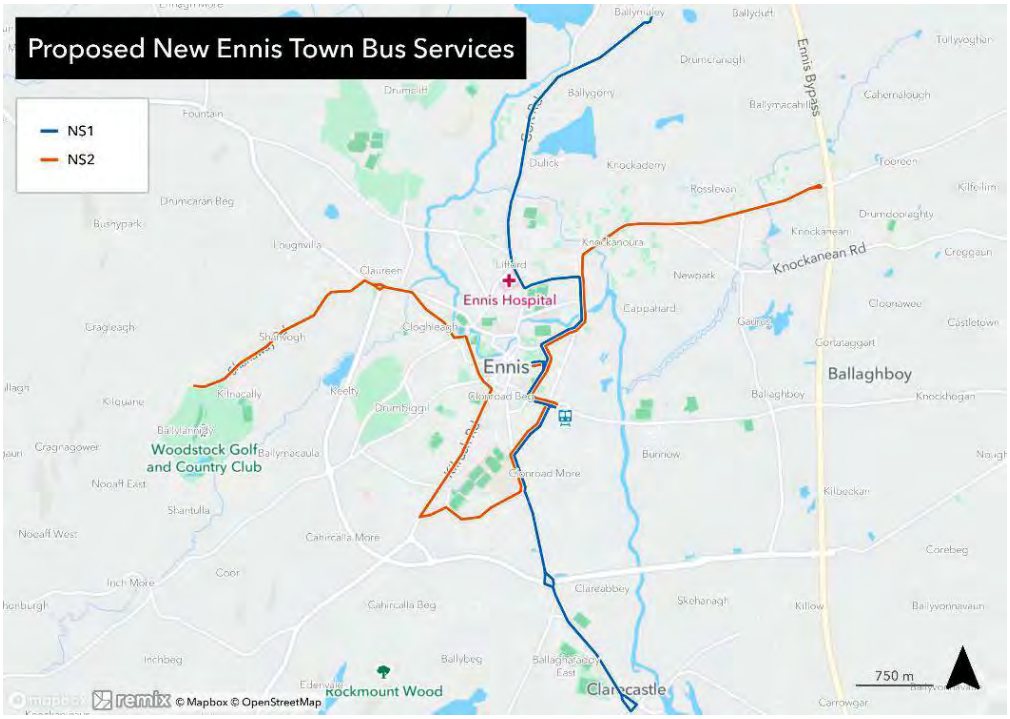
We further note that the Ennis Settlement Boundary has been extended in various locations in the Proposed Variation maps. In fact Clare County Council proposed extending the Settlement Boundary directly north of our site in the original Draft Clare County Council Plan 2023-2029 to facilitate another development, while also proposing to de-zone site LDR15 and refusing our request to extend LDR 15 to the Ennis Plan Boundary.



The subject lands are directly adjacent to significant other developments developed by Darvin Trading including Woodstock View, Woodstock Hill, Garville Court and Woodstock Drive. The site is also adjacent to amenities including Woodstock Hotel & Leisure Centre, Woodstock Golf Club and the Banner GAA Club. Planning permission (P22/263) has been granted for 14 houses as part of LDR 15 and the extension of the zoning as part of this submission is required to make this development viable. We have previously discussed with the planning department regarding submitting a planning application for this site via a material alteration, however we were advised to wait until this proposed Variation to the existing plan was published.

Public Transport

The entrance to the lands is opposite Woodstock Hotel and Golf Club. The TFI Bus Service (Route C6A) is currently operating from the Hotel Carpark serving Ennis, and the Ennis Local Transport Plan included as part of the Proposed Variation No.1 (Volume 3a(iv)) also shows the development served by the proposed bus service.



A bus serving Inch National School also caters for children in the neighbouring Woodstock developments. In light of the Government Initiatives in relation to public transport and climate change, a development at the core of the Woodstock Neighbourhood, with public transport on its doorstep is in keeping with both local and national strategy.

We have facilitated the use of our carpark by the TFI Bus and would also be open to facilitating the proposed Ennis Bus Service.

Services

We note that the Proposed Variation No.1 has incorrectly assessed LRD15 as Tier 2 – Serviceable, when it is in fact Tier 1 – Serviced as demonstrated as part of the Planning Permission (P22/263) for the site.

Settlements	Ref	Area(ha)	Roads	Footpath	Water Supply	Waste Water	Compact Growth	Public Transport	Co-Ordinated Development	Tier1	Tier2
	LDR15	0.80	2	2	2	2	√	√	√		√

Darvin Trading has developed the infrastructure and services along the Shanaway Road at the behest of the council over a number of years. The Shanaway Road was realigned with the provision of footpaths, public lighting, foul sewer and watermain services at considerable expense. Having delivered this considerable infrastructure, we have a legitimate expectation to deliver development in this location.

Deliverability

A significant portion of lands currently proposed to be zoned in the Variation No.1 are unlikely to be developed in the lifespan of the plan due to a number of factors including ownership issues, flood risk or lack of infrastructure and services. In fact a large portion of the lands included are subject to new roads that the council has been talking about delivering for over 10 years and have not even commenced. Other sites appear to have been included without the benefit of any design, environmental assessments, road audits, etc.

The fact that the Council is proposing to omit these lands within a developed area, with infrastructure and services in place, that is currently served by public transport and is identified for inclusion in the Ennis Bus Service is extraordinary in light of the serious shortage of family homes available in Ennis.

We note that a masterplan has been developed for the site and an NIS, Bat Survey, AA Screening & Road audit were completed as part of P22-263 which include an assessment of these lands. All of this information has been provided to the council. With the inclusion of these lands in Variation No.1, planning permission can be quickly advanced with the provision of 50 Nr family home achievable in 2027.

We believe that this proposed development of family homes in a built up community represents a sustainable expansion of the immediate neighbourhood and reflects the key strategies of compact growth and urban form, being located in developed community with amenities and infrastructure on its doorstep.

We believe that the omission of this site is both factually flawed and contrary to the requirements of Ennis and its population in both the long term development and the current housing shortage.

We further note that Council de-zoned approx. 40 acres of residential lands owned by Darvin Trading in the Clare County Council Development Plan 2017 – 2023, despite the lands being subject to an active planning application. We note that a separate submission was provided in relation to these lands as part of this Updated NPF Guidelines Proposed Variation, but we have received no communication from the council in respect of these lands.

We would request that you would note the above in your considerations in relation to the Proposed Variation No.1 Clare County Development Plan 2023 – 2029 and Darvin Trading's history of delivering family homes, amenities and infrastructure in the Woodstock Area.

Yours sincerely

_____

Mr Martin Mungovan
Darvin Trading Company Ltd
[redacted]

CC:
Minister James Brown – Minister for Housing

Deputy Joe Cooney
Deputy Timmy Dooley
Deputy Cathal Crowe

Office of the Planning Regulator

Councillor Pat Daly
Councillor Clare Colleran Molloy
Councillor Tom O'Callaghan
Antoinette Baker Bashua
Councillor Paul Murphy
Councillor Mary Howard
Councillor Tommy Guilfoyle

Brian Foudy
& Associates Limited
Chartered Engineers, Planning Consultants
& Property Surveyors

Submission for NPF Housing Growth

Additional Residential Lands

Our Client	Darvin Trading Company Ltd
Project Title	Lands at Kilquane, Shanaway Road, Ennis, Co. Clare
Project Number	NPF/DTC 010125
Prepared by	Brian Foudy & Associates Ltd (Agent) Osprey House, Carmody St, Ennis
Date	16th December 2025

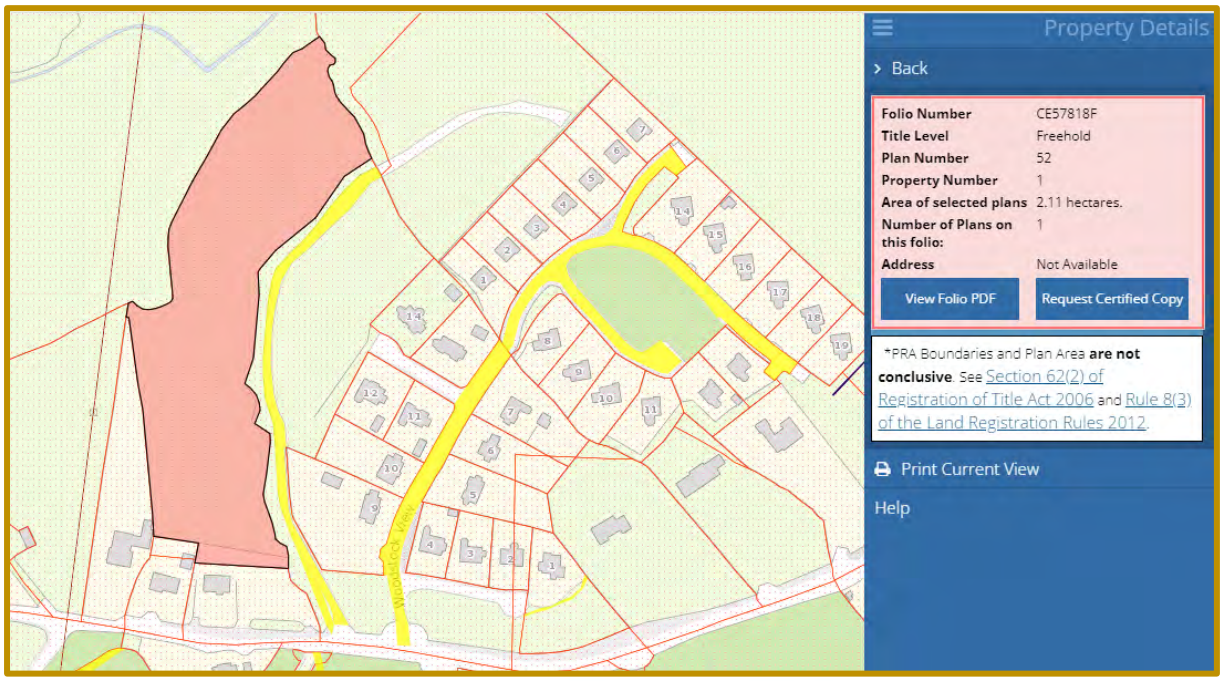
Phone: 065 6893565 Email: info@foudyconsulting.ie CRO No: 679904 VAT No: IE3718687WH
Reg Office: Osprey House, Carmody Street, Ennis, Co. Clare. V95 F720
Director: B. Foudy Comp Secretary: J. Reynolds

www.foudyconsulting.ie

Introduction
We note that Clare County Council are in the review process for lands that are suitable for zoning for residential use in response to the Revised National Planning Framework (NPF)

Brian Foudy & Associates Ltd have been appointed to prepare this submission on behalf of Darvin Trading Company Ltd. This submission will support the request for a change in zoning from 'Agricultural' to 'Residential' in respect of lands located at Kilquane, Ennis, Co. Clare under Clare County Development Plan 2023-2029, and in particular Volume 3a Ennis Municipal District Settlement Plan

Site Location:
The subject lands are located within the Ennis Plan Boundary, on the Shanaway Road opposite the Woodstock hotel and are contained within Folio CE57818F. The lands adjoin an approved development reference number P22-263 / ABP-317090-23 and a more recent application P25-60786.



Map 1: Extract from Land Direct showing lands contained in Folio CE57818F

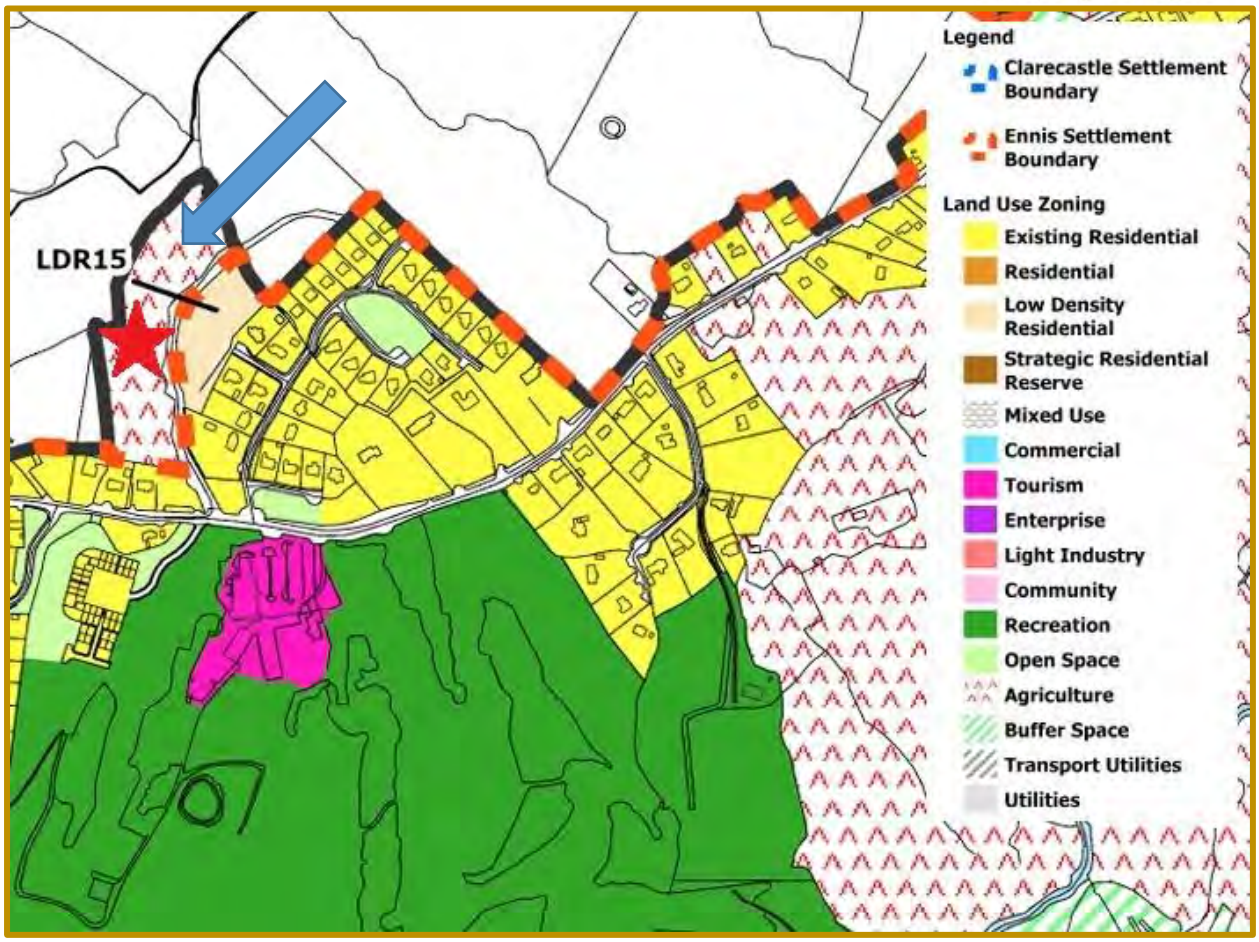


Fig2. Extract from Clare County development Plan 2023- 2029 – Volume 3a Ennis & Environs plan.

Services

Sewers: The Site is serviced by approved infrastructure granted under P22-263 / ABP-317090-23 & connecting to the existing Uisce Éireann sewer network in Shanaway Road.
Note: *The approved infrastructure granted under P22-263 / ABP-317090-23 has been designed to accommodate the additional lands contained within this re-zoning applicaton*

.

Water: The Site as also serviced by an Uisce Éireann Watermain connection located in the Shanaway Road.

Electricity: Existing poles and ESB wires are adjacent to these lands.

Telecoms: Telecom poles and infrastructure to include high speed broadband currently exist adjacent to these lands.

Public Lighting: Public lighting currently exists at the entrance to the subject lands.

Environmental

The Subject site is **not** within or close to the below Natura 2000 sites.

- Special Protection Areas (SPA)
- Proposed Natural Heritage Areas (pNHA)
- Natural Heritage Areas (NHA)
- Special Area of Conservation (SAC)
- A bat survey & NIS was carried out for the proposed lands under P22-263 / ABP-317090-23;

*Fig3. Extract from NPWS Protected Sites Maps _ Subject Site Marked in **RED***

Flood Risk

The subject site is not in the vicinity of any rivers, streams or lakes, there is no flood risk in this area and the owner has confirmed that the subject land has never flooded

*Fig 4. Extract from Flood Maps _ Subject Site Marked in **RED***

Connectivity & Community Facilities.
The subject lands are located in close proximity to a wide variety of amenities and community facilities. See Fig 5 below which illustrates the various amenities in close proximity to the site. There are a wide range of amenities and community facilities located within easy walking / driving distance of the subject lands. These amenities and community facilities are listed below (*this list is not exhaustive*): This area has the benifit of a local public bus service from the Woodstock Hotel to Ennis. This site is also served by public footpaths.

Amenities & Community Facilities

Woodstock	-	100m
Banner GAA	-	750m
Inver & Mace Garage	-	2.1km
Ennis Town Center	-	3.9km
Ennis Golf Club	-	3.9km
Cloghleagh NS	-	3.1km
Ennis Community College	-	3.4km
Gaelcholáiste	-	3.5km
Colaiste Muire	-	3.7km
Rice College	-	4.1km
CBS NS	-	4.2km
Holy Family NS	-	4.3km
Gaelscoil	-	4.8km
St Flannan's College	-	4.9km
Ennis National School	-	5.9km

(Note All distances are via existing road/footpath networks)

See attached 'Amenities & Community Facilities' layout accompaning this submission

Planning History
No previous planning applications appear to have been made on the subject site.
Recent adjoining planning applications
P22-263 / ABP-317090-23 - Granted
P25-60786 – In the validation process

Existing and Approved Developments
The Site is adjacent to an existing housing development Woodstock View & Woodstock Hill housing development to the East & adjoins the approved housing development, consisting of 14 no. dwelling houses granted under P22-263 / ABP-317090-23 to the East. This development adjoins a recently submitted planning application for 3 No houses under planning application P25-60786. Some ribbon development exists along Shanaway road to the West.

Zoning Proposal
Our client is seeking to have the subject lands zoned **Residential** as shown outlined in Red in the attached Land Registry Compliant Map. The area of these lands is 2.061 Hectares.

Conclusion

The main considerations for the proposed rezoning of the subject lands from 'Agricultural to 'Residential' are as follows;

a) To consolidate the existing pattern of development and complete development of lands inside the Town Boundary in this area.
b) The conditions set out in P22-263 / ABP-317090-23 with respect to the woodstock pumpstation are onorous and not viable for the 14 units granted at this site. Additional residential units are required to make this development site viable. In order to do this, the subject land in this submission requires rezoning as Residential.
c) To develop residential serviced land to provide for a high-quality urban environment
d) To create a sustainable residential community with an appropriate mix of housing types and densities, together with complementary land uses such as community facilities and public transport facilities, to serve the current and future residential population of Ennis.
e) To help deliver up to 30% of all new homes targeted for Ennis within the existing built-up footprint.
f) To promote the creation of strong, vibrant neighbourhoods in the Woodstock Neighbourhood, with a range of services and amenities which are easily accessible to local residents and attractive for growth.
g) To ensure delivery of the physical and social infrastructure necessary to facilitate population growth and community development.
h) To support the delivery of the '10 Minute Town' concept.
i) Road infrastructure and potential vehicular access locations are satisfactory and would be in accordance with relevant development plan provisions such as sight distances etc. A Road audit was previously carried out for the entrance of this site onto the Shanaway road under planning reference P22-263.
j) The lands benefit from excellent pedestrian and public transport connectivity to the surrounding area.
k) There are a range of amenities and community facilities located within easy walking distance of the subject lands such as Woodstock Golf Club, The Banner GAA Club, Lees Road etc.
l) The lands benefit from proximity and approval to join to existing services such as Water, ESB, Telecoms, and Sewer.
m) This land meets all the criteria set out for rezoning.

If these lands are rezoned, it is our clients intention to apply to Clare County Counil without delay for permission to construct approximatly 45no. Dwelling houses compising of a mixture of 3 to 4 Bedroom Bungalow, Detached, Semi-Detached & Terrace block. This would constitue a desity of approx 22units per hectare, see attached Drawing No. DTC000125, accompaning this application. Once planning is granted, the entire development will be constructed as one. Several builders are interested in aquiring these lands. Our client has already significant investment and development carried out in the Woodstock Neighbourhood.

We trust that the above submission will be given due consideration in the preparation of the revised land zoning to the Clare County Development Plan 2023-2029 and we look forward to seeing these lands zoned as Residential.

If you have any queries, please don't hesitate to contact the undersigned.

Signed:

Brian Foudy
B.E. C.Eng. MIEI.
Chartered Engineer,
Dip E.I.A & S.E.A Mgt
Approved Site Assessor

Amenities & Community Facilities

Woodstock	-	100m
Banner GAA	-	750m
Inver & Mace Garage	-	2.1km
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Rice College	-	4.1km
CBS NS	-	4.2km
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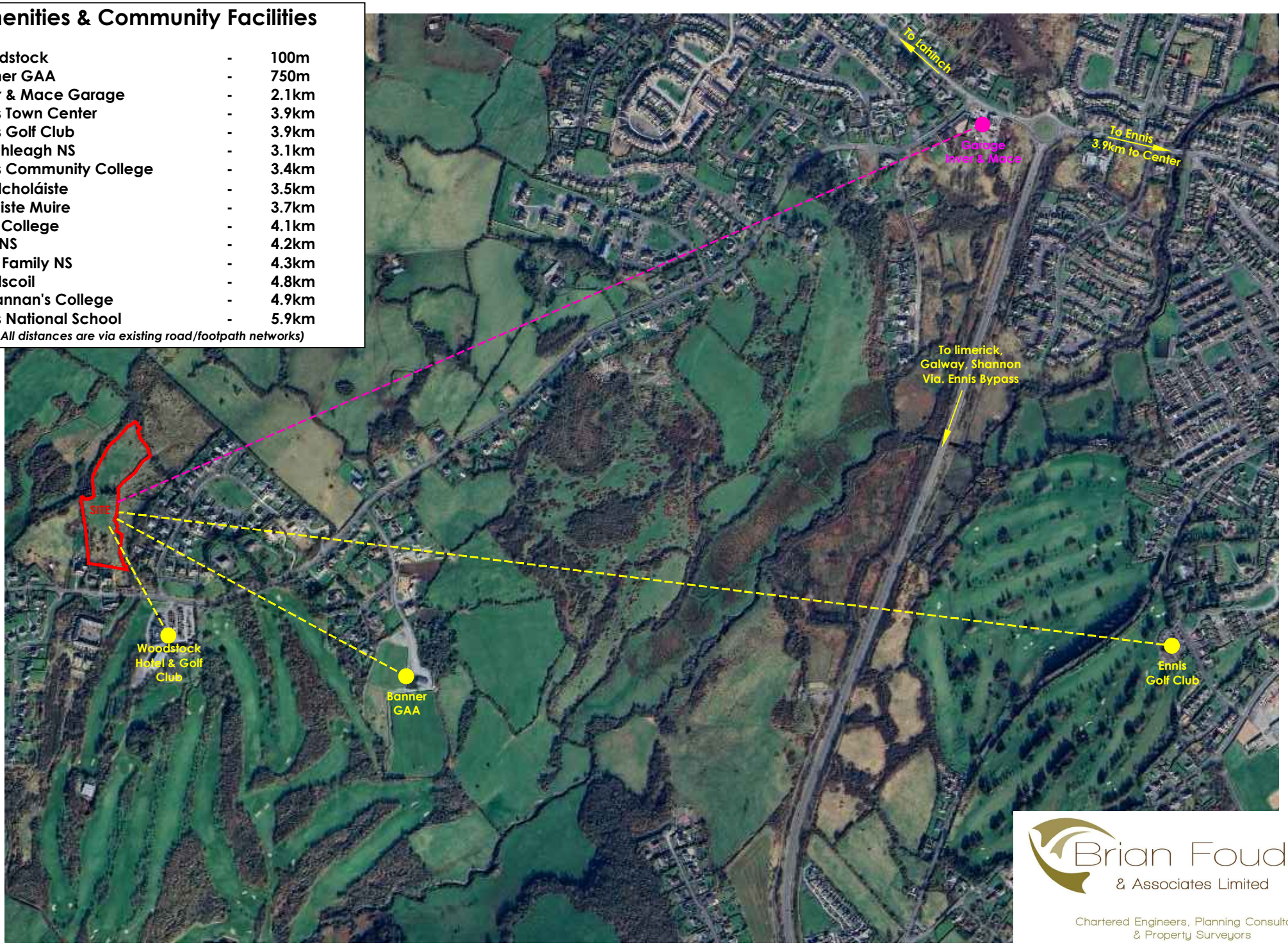
Ennis National School	-	5.9km

(Note All distances are via existing road/footpath networks)



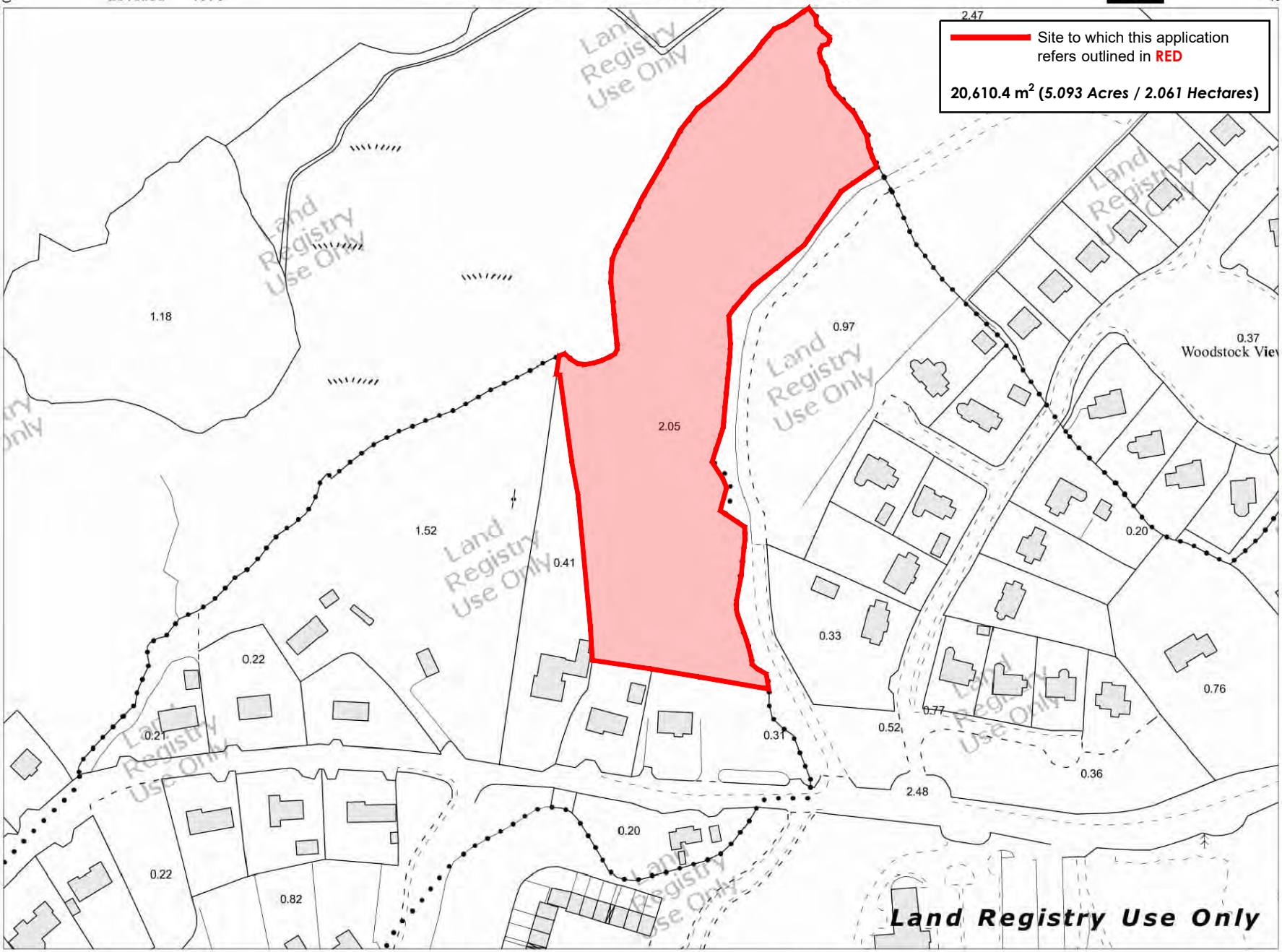
Brian Foudy
& Associates Limited

Chartered Engineers, Planning Consultants
& Property Surveyors

Surveyed 1993
Revised 2016
Levelled 1976

Land Registry Compliant Map

530290 677636 530872 677636



677206 530290 677206 530872

Scale:- 1:2,500
Scála:- 1:2,500

0 50 100 150 200 250 Metres
0 100 200 300 400 500 Feet

Plot Ref. No. 19747030_1_1
Plot Date 17-MAY-2017

ITM CENTRE PT. COORDS.
530581,677421

DESCRIPTION

MAP SHEETS
1:2500
4321-B

Site to which this application refers outlined in **RED**

Authorised Internet Map

Arna thiomsú agus arna fhoilsiú ag Suirbhéireacht Ordanáis Éireann, Páirc an Fhionnuisce, Baile Átha Cliath 8, Eire.
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Ni hionann bóthar, bealach nó cosán a bheith ar an léarscáil seo agus fianaise ar chead slí. The representation on this map of a road, track or footpath is not evidence of the existence of a right of way.

Ni thaispeánann léarscáil de chuid Ordanáis Shuirbhéireacht na hÉireann teorann phoiblí dleathúil de mhaoin riamh, ná úinéireacht de ghnéithe fhisiciúla.
Ordnance Survey maps never show legal property boundaries, nor do they show ownership of physical features.

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A1 Sheet

Note:
This drawing has been developed for **REZOINING** purposes only and not to be used for construction purposes.
Do Not Scale from drawing use figured dimensions only

LEGEND

- Area to which this application refers
- Existing adjoining dwellings/sheds
- FFL +101.300 — Floor/Ridge Levels
- Min 5.0m wide Roadway
- Min 2.0m wide Footpath
- Permeable paving to driveways
- **House Type "A"** 3 Bed Bungalow
- **House Type "B"** 3/4 Bed Detached
- **House Type "C"** 3/4 Bed Semi-Detached
- **House Type "D"** 3 Bed Terrace
- Area to which approved development refers as granted under **P22-263 / ABP-317090-23**
- Area to Which Live Planning Planning Refers **P25/60786**

Approved Attenuation Tank
P22-263 / ABP-317090-23

Proposed Attenuation Tank

P22-263 / ABP-317090-23

P25-60786

WOODSTOCK HILL

WOODSTOCK VIEW

WOODSTOCK HOTEL & GOLF CLUB

GARVILLE COURT

SHANAWAY ROAD

Approved foul sewer network granted under P22-263 / ABP-317090-23 shown dotted in **RED**
NOTE: Sewer network has been *designed to accommodate the additional lands contained within this re-zoning application.*

Approved Surface water network granted under P22-263 / ABP-317090-23 shown dotted in **GREEN**

Approved rising main granted under P22-263 / ABP-317090-23 shown dotted in **MAGENTA** with new connection to existing spare rising main on Shanaway Road

Existing spare rising main shown dotted in **PURPLE**

N

SITE LAYOUT PLAN
Scale 1:500

DEVELOPMENT AREA	-	20,610.4 m² (5.093 Acres / 2.061 Hectares)
TOTAL NO. OF UNITS	-	*45*
DENSITY	-	21.8 Units/*Hectare*

Brian Foudy & Associates Limited
Chartered Engineers, Planning Consultants & Property Surveyors
Osprey House, Carmody Street, Ennis, Co. Clare, V95 F720
Tel:- 0656893565 e-mail:- info@foudyconsulting.ie

Client: **DARVIN TRADING COMPANY LTD**
Address: Kilquane, Ennis, Co. Clare
Title: **REZOING** *SITE LAYOUT PLAN*

Stage: **REZONING**		Scale:	**1:500** @ A1
Drawn: M.D	Check: B.F	Date:	December 2025
Dwg: **DTC 00 01 25**		Rev:	--

SCREENING FOR APPROPRIATE ASSESSMENT

Proposed Development Site in Ballylannidy, Woodstock, Ennis, Co. Clare

Version 16th February 2023

ecofact
Environmental Consultants

Tait Business Centre,
Dominic Street,
Limerick City, Ireland
(061) 419477

info@ecofact.ie
www.ecofact.ie

EXECUTIVE SUMMARY

Project Name	Proposed Residential Development in Ballylannidy, Woodstock, Ennis, Co. Clare.
Project Description	There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263).
Potentially Affected Natura 2000 Sites	Pouladatig Cave SAC; Newhall and Edenvale Complex SAC; Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA
Pathways for Significant Effects (Yes/No)	Yes
Source(s) of Potential Impacts	Site clearance / tree felling, construction phase activities, foul water treatment, artificial lighting
Pathway(s) for Potential Impacts	Habitats on site used by Lesser Horseshoe bats(LHB), LHBs in the surrounding study area outside the site boundary; foul water treatment via discharge to the River Fergus
Receptor(s) for Potential Impacts	Lesser Horseshoe bats and their designated habitats; Estuaries; Mudflats and sandflats; Atlantic Salt Meadows; Mediterranean Salt Meadows; Sea lamprey; River lamprey; Brook lamprey; Salmon; Common bottlenose Dolphin; Otter; Wetland birds in the River Shannon and River Fergus Estuaries SPA; Wetland and Waterbirds Habitat
Pre-assessment Screening	The proposed development site is not located within the boundary of any Natura 2000 site. Several sites have been identified as having potential pathways for significant effects from the proposed development at Ballylannidy, Woodstock, Ennis, Co. Clare. The standalone bat report provides results of bat surveys undertaken at the proposed development site, which show that the Annex II protected Lesser Horseshoe Bat does use the site for foraging and commuting. Due to this, there is the potential for significant impacts on this species which requires assessment. There is therefore the potential for impacts on two LHB SACs within 3km of the site, which are the Pouladatig Cave SAC and the Newhall and Edenvale Complex SAC. There is the potential for disturbance, habitat loss / fragmentation impacts and light pollution. Outside of this, the proposed development will require wastewater treatment likely to be treated at the Ennis North (Clonroadmore) plant, which discharges into the River Fergus. This provides a connection with the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. There is the potential for significant impacts on water quality and this requires assessment. Mitigation measures are required for the proposed development, which cannot be provided in a Screening for Appropriate Assessment.
Mitigation Required (Yes/No)	Yes
Stage 2 (AA) is required (Yes/No) ***If Yes – a Natura Impact Statement must be prepared***	Yes

TABLE OF CONTENTS

Date	Revision	Status	Author	Reviewed By
16-2-23	1.1	Final	AB/WOC	WOC
15-9-22	1	Draft	AB	WOC

1. INTRODUCTION

Ecofact Environmental Consultants Ltd. have been commissioned to carry out a Screening for Appropriate Assessment (AA) of a proposed residential development in Ballylannidy, Woodstock, Ennis, Co. Clare. This screening assesses whether there is the possibility of significant effects on a Natura 2000 sites and, consequently, whether an NIS is required for the project.

Clare County Council requested further information on the 18th of May 2022. Item 2a the FIR is as follows:

(a) *The Pouladatig Cave SAC (00037) lies c. 1.2 kilometres to the south of the site. The likelihood of use of the mature trees as a roosting habitat and / or commuting route for the annex IV species (Lesser Horseshoe Bat which is a qualifying interest of this SAC) cannot be ruled out at this stage. With regard to consideration of habitat protection and avoidance of artificial light spillage that is disruptive to the emergence of bats from roosts at dusk and subsequent movement from habitats to foraging locations the Planning Authority cannot conclusively rule out the requirement for Appropriate Assessment at this stage. Additionally it cannot be ruled out that the proposed development would not be in conflict with section 14.11 (Habitat Protection) of the County Development Plan. In this regard, you are requested to submit a Natura Impact Statement Screening Report, which should be informed by a conclusive and appropriately carried out bat survey. Please submit both a Natura Impact Statement screening Report and bat survey in this regard. You are advised to note that if the NIS Screening Report cannot conclusively rule out any impact to the SAC as mentioned, or any other European Site within the zone of influence, an Natura Impact Statement should be carried out and submitted.'*

It is also noted that the Development Applications Unit (DAU) prepared a submission for the proposed development and the following is noted under the Nature Conservation heading:

'The proposed development is approximately 1 kilometre from Pouladatig Cave Special Area of Conservation (SAC) (Site Code: 000037). In the Conservation Objectives the proposed site is within the 2.5 kilometres Lesser Horseshoe Bat foraging habitat for the SAC. Clare County Council must ensure it is satisfied that the proposed development will not negatively impact the conservation objectives of the European Site. Of concern is the potential loss of foraging habitat for Lesser Horseshoe bats. The conservation objectives of the European Site are to maintain or restore the favourable conservation condition of the qualifying interest Annex habitats and species. Clare County Council is advised to consult the conservation objectives for the site in full.

The current document provides a Screening for Appropriate Assessment addressing item 2(a) above. A standalone Bat Survey report has also been prepared (Ecofact, 2022).

Appropriate Assessment is required under Article 6 of the Habitats Directive (92/43/EEC), in instances where a plan or project may give rise to significant effects upon a Natura 2000 site. Natura 2000 sites are those identified as sites of European Community importance designated under the Habitats Directive (1992) (SACs) or the Birds Directive (2009) (SPAs). Screening is a pre-assessment procedure which considers whether an assessment (i.e. appropriate assessment) is required or not.

1.1 Legislation

Part XAB of the 2000 Act and SI. No 477 of 2011 transpose into Irish law, 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) and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). The 1997 Regulations were updated in 1998 by The European Communities (Natural Habitats) (Amendment) Regulations 1998 (S.I. No. 233/1998) to include the updated Council Directive 97/62/EC. The 1997 regulations were again updated in 2005, by The European Communities (Natural Habitats) (Amendment) Regulations 2005 (S.I. No. 378/2005). This amendment served to consolidate the main nature conservation legislation enacted in Ireland, meaning The Wildlife Act 1976, The Wildlife (Amendment) Act 2000, The European Communities (Natural Habitats) Regulations 1997, The European Communities (Natural Habitats) (Amendment) Regulations 1998, and to draw direct reference upon Council Directive (2009/147/EC) on the conservation of wild birds – '*The Birds Directive'*.

These Directives require Ireland to establish protected sites as part of a European wide network of sites (known in Ireland as European sites) for habitats and species that are of international importance for conservation. In Ireland, European sites include Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs). The Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs) whereas the Habitats Directive does the same for habitats and other species groups with Special Areas of Conservation (SACs). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected areas throughout the European Community.

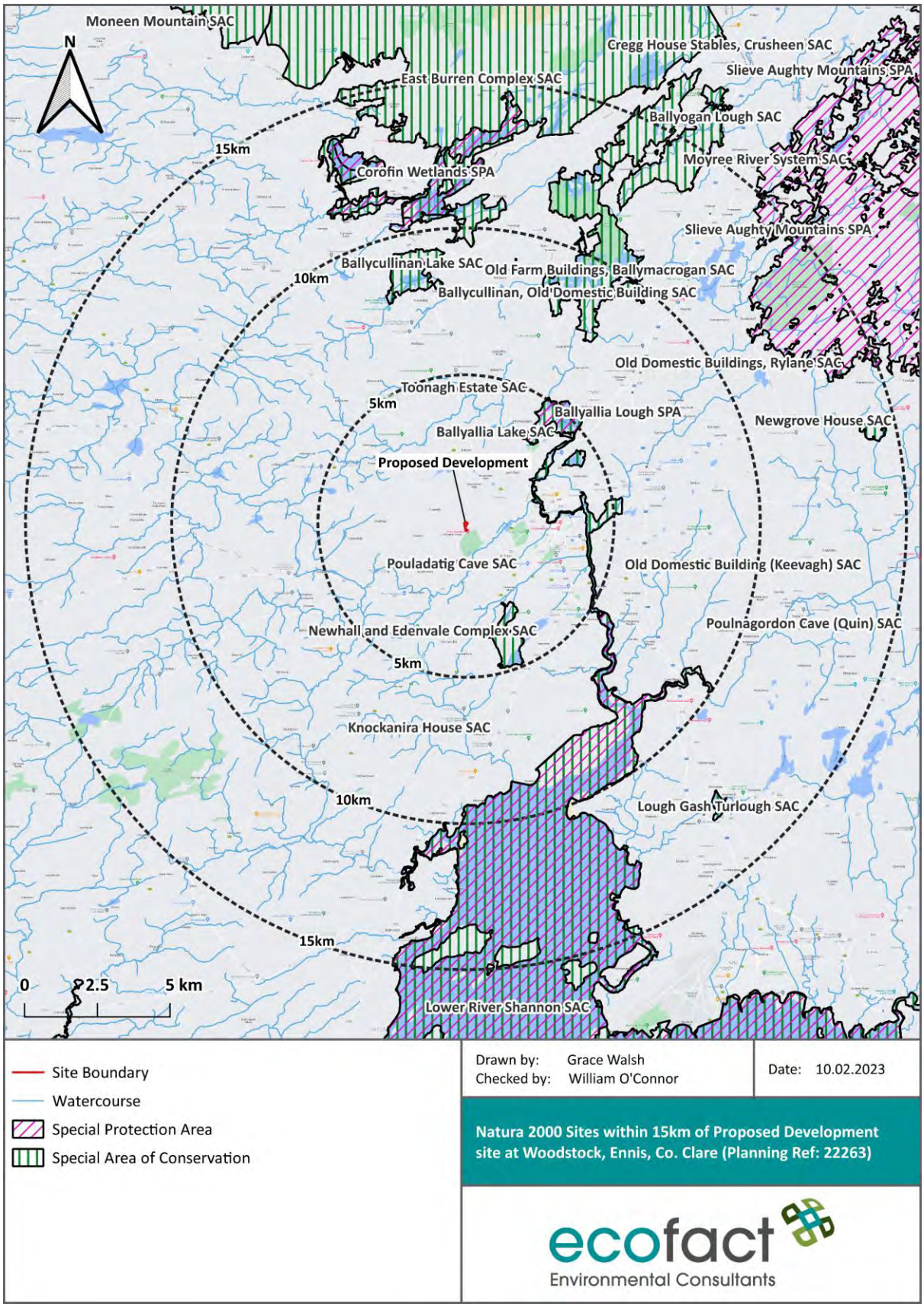

Figure 1 Natura 2000 Sites within 15km of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263).

2. METHODOLOGY

2.1 Screening for Appropriate Assessment

The current Screening for Appropriate Assessment follows this guidance as relevant:

- DoEHLG, (2010). *'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities'*
- Office of the Planning Regulator, (2021). '*Appropriate Assessment Screening for Development Management*.'
- European Commission, (2001). '*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.'*
- European Commission, (2007). '*Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interests, compensatory measures, overall coherence and opinion of the Commission.''*
- European Commission, (2018). '*Managing Natura 2000 Sites. The Provisions of Article 6 of the Habitats Directive 92/43/EEC.'*

The European Commission guidance (2001) prescribes a staged process and the need for each stage being dependent on the outcomes of the preceding stage. These stages are: (1) Screening for Appropriate Assessment; (2) Appropriate Assessment; (3) Assessment of Alternative Solutions and (4) Imperative Reasons of Overriding Public Interest test, and compensatory measures (EC, 2001).

According to DoEHLG (2010), Stage 1 Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the EU Habitats Directive: (1) Whether a plan or project is directly connected to or necessary for the management of the site, and; (2) Whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

A project or plan may only pass at the Screening stage if there is no reasonable scientific doubt remaining as to the absence of impacts on the Natura 2000 network. DoEHLG (2010) states that any Natura 2000 site within a likely zone of impact should be considered, with a distance of 15km recommended, but this is evaluated on a case-by-case basis with reference to the nature, size and location of the project, sensitivities of receptors and potential for in-combination effects. The threshold at the first stage is a very low one (as per Finlay Geoghegan J. in Kelly -v- An Bord Pleanála 2013/802 JR). Screening must be approached on a precautionary basis with the safeguards set out in Article 6(3) and (4) of the Habitats Directive triggered not by certainty - but by the possibility of significant effects.

DoEHLG (2010) outlines that there are 3 potential outcomes of a Screening for Appropriate Assessment, as outlined in Table 1 below.

Table 1 DoEHLG (2010) potential findings and outcomes for Screening for Appropriate Assessment.

Finding	Outcome
Project is directly connected to or necessary for the management of a designated site	Stage 2 (AA) is not required
No potential for significant effects	Stage 2 (AA) is not required
Potential for significant effects identified, or potential for impacts is uncertain	Stage 2 (AA) is required and a Natura Impact Statement will be prepared

2.2 Desk Study

A desktop study was undertaken to identify the extent and scope of the potentially affected designated Natura 2000 sites within the current study area. A full bibliography of information sources reviewed is provided in the reference section. Information sources reviewed include:

- National Parks and Wildlife Service (NPWS) site synopses
- NPWS Conservation Objectives and Natura 2000 Forms
- Protected species data on NPWS/National Biodiversity Data Centre (NBDC) online databases
- Environmental Sensitivity Mapping (ESM) Tool
- Environmental Protection Agency (EPA) mapping tools (including AAGeoTool)
- Catchments.ie
- Online aerial imagery (Bing, Google Satellite).

3. DESCRIPTION OF PROPOSED DEVELOPMENT

There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263). The drawings for the development show two houses at the southern road site, with treeline planting in the area, and an access route following the existing road into the site. Further treeline planting is noted in this area, as well as a green space in front of the main cluster of houses to the east of the site.

3.1 Wastewater Treatment

The proposed development includes for the connection to public services, including wastewater. The RFI from Clare County Council requests information regarding wastewater, including details of a pre-connection enquiry from Irish Water, as well as concerns that the infrastructure at the site may not be taken in charge by Irish Water or if there is sufficient capacity. The closest wastewater treatment plant is the Ennis North (Clonroadmore) WwTP.

The River Fergus is a designated Nutrient Sensitive Area (NSA) associated with the Ennis North WWTP. According to the Shannon North Estuary Catchment Assessment 2010-2015, this WWTP was compliant the environmental objectives for NSAs (EPA, 2018). The documents for the Ennis North WWTP were accessed on the Irish Water and EPA websites on the 9th of September 2022 at the time of writing this report, and so are the most up-to-date publicly available documents for the plant.

The most recent Annual Environmental Report (AER) for the Ennis North WWTP is from 2021 (uploaded on the 28th of July 2022. In this AER, Irish Water state that the plant provides Tertiary P Removal but is non-compliant with its licence conditions. The plant is currently failing on the following parameters: Ammonia – Total as N and Ortho-Phosphate (as P). The plant is therefore non-compliant with the Emission Limit Values (ELVs) set out in the discharge licence. The Ammonia ELV breach is noted to be due to a change in aeration levels, which was noted to be rectified immediately. The ambient monitoring for the plant is also noted to not meet the required EQS. The AER also noted that the plant is working within capacity, with 7197 p.e. remaining and is not expected to exceed capacity within the next 3 years (Irish Water, 2021). The Licence Audit Report in 2021 included a grab sample of the discharge from the Ennis North WwTP plant which showed that the parameters were in compliance with the licence conditions and no follow up actions were deemed to be required (EPA, 2021).

The most recent Inspector's report in 2021 included further details on the plant, including a Screening for Appropriate Assessment carried out by Irish Water. The conclusion as noted in the Inspector's report was such that it can be excluded that the activity will have a significant effect on the Natura 2000 network and thus no Appropriate Assessment was deemed to be required (EPA, 2020). This is despite mitigation measures being in place and a direct discharge into the SAC/SPA. This is obviously an invalid conclusion but the current NIS has taken the absence of a required AA on the Ennis North WwTP into account.

Figure 2 Location of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263).

4. IDENTIFICATION OF RELEVANT NATURA 2000 SITES

The location of the proposed development in the context of the Natura 2000 network is indicated in Figure 1 above. The SACs and SPAs within 15km of the development are considered in the current screening and are listed in Table 2.

Table 2 Designated Natura 2000 Sites within 15km of the development.

Natura 2000 Site	Distance (km)
Ballyallia Lake SAC (000014)	3.4km North-east
Ballyogan Lough SAC (000019)	13km North-east
Dromroe Woods and Loughs SAC (000032)	7.3km North-east
Lough Gash Turlough SAC (000051)	12.3km South-east
Moyree River System SAC (000057)	11.km North
East Burren Complex SAC (001926)	9.3km North
Newhall and Edenvale Complex SAC (002091)	2.7km South
Lower River Shannon SAC (002165)	2.3km East
Newgrove House SAC (002157)	13.8km East
Ballycullinan, Old Domestic Building SAC (002246)	7.9km North
Old Domestic Buildings, Rylane SAC (002314)	13.5km North-east
Pouladatig Cave SAC (000037)	1km South
Poulnagordon Cave (Quin) SAC (000064)	11.9km East
Old Domestic Building (Keevagh) SAC (002010)	9.5km East
Old Farm Buildings, Ballymacrogan SAC (002245)	9km North
Ballycullinan Lake SAC (000016)	7.8km North
Toonagh Estate SAC (002247)	4.4km North
Knockanira House SAC (002318)	6.8km South
Ballyallia Lough SPA (004041)	3.4km North-east
River Shannon and River Fergus Estuaries SPA (004077)	5.3km South-east
Slieve Aughty Mountains SPA (004168)	11.5km North-east
Corofin Wetlands SPA (004220)	10.1km North

4.1 Lesser Horseshoe Bat SACs

There are 13 SACs that are designated for the protection of Lesser Horseshoe Bat within 15km of the proposed development site. Each of these SACs and the types of roosts they are designated for are provided in Table 3 below. The closest of which is the Poulnadatig Cave SAC, which is located c. 1km south of the site.

Bat Conservation Trust *Core Sustenance Zones: Determining Zone Size* (2016) lists the core sustenance zone (CSZ) for each bat species found in the UK and Ireland, which is the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. For Lesser Horseshoe Bats, the weighted average foraging range is given as 2.02km and the CSZ is given as 2km. This calculation was based on 4 studies with a reasonable sample size from multiple colonies. As this document also notes that for Annex II species there is some justification for increasing the CSZ zone size, and some research has shown that Lesser Horseshoe Bats may forage up to 2.5km from a roost, NPWS have considered 2.5km an appropriate foraging distance for Lesser Horseshoe Bats. Due to this, any SACs within 3km of the site are considered further. These are the Poulnadatig Cave SAC and the Newhall and Edenvale Complex SAC, located c. 1km and 2.7km from the site respectively.

Table 3 Lesser Horseshoe Bat SACs within15km of the proposed development site, and the type of roost site they are designated for.

Lesser Horseshoe Bat SAC	Type of Roost
Dromroe Woods and Loughs SAC (000032)	Summer Roost
Moyree River System SAC (000057)	Winter Roost
East Burren Complex SAC (001926)	Multiple Winter & Summer Roost Sites
Newhall and Edenvale Complex SAC (002091)	Summer Roost & Multiple Winter Roosts
Newgrove House SAC (002157)	Winter Roost
Ballycullinan, Old Domestic Building SAC (002246)	Summer Roost
Old Domestic Buildings, Rylane SAC (002314)	Multiple Summer Roosts
Pouladatig Cave SAC (000037)	Winter Roost
Poulnagordon Cave (Quin) SAC (000064)	Winter Roost
Old Domestic Building (Keevagh) SAC (002010)	Summer Roost
Old Farm Buildings, Ballymacrogan SAC (002245)	Summer Roost
Toonagh Estate SAC (002247)	Summer Roost
Knockanira House SAC (002318)	Summer Roost

4.1.2 Poulnadatig Cave SAC

Pouladatig Cave SAC is located to the west of Ennis in Co. Clare near Inch Bridge. The area included in the SAC consists of a natural limestone cave along with its surrounding scrubland and hedgerow habitats. The site provides suitable habitat for the Lesser Horseshoe bat in terms of ideal shelter and foraging grounds and supports a population of approximately 100 individuals of the species since 1986. The Pouladatig Cave is a SAC due to the presence of the Cave habitat and the Lesser Horseshoe Bat.

The habitat of interest in this SAC is a natural limestone cave. The cave is relatively short with an active stream flowing through it and is not open to public access. It has a small entrance that is sheltered by Hawthorn *Crataegus monogyna* trees. There is a low bedding crawl inside the entrance and the cave then opens up into larger passageways with some rock falls and small chambers also present. The cave is a suitable roosting site for bats.

Pouladatig cave is not exposed to visitor disturbance and is therefore a suitable hibernating site for the Lesser Horseshoe Bat. The bats utilise the main passage to hang from the roof and along the walls of the main passageway. The active stream within the cave does not pose any flooding threat to the species. The cave is surrounded by scrub vegetation and hedgerows which provide suitable foraging areas and shelter for the bats. The Lesser Horseshoe Bat has been using this cave for many years. Approximately 100 bats have been recorded at this site since 1986. Thus, the site can be classified as of international importance.

4.1.3 Newhall and Edenvale Complex SAC

Newhall and Edenvale SAC is located approximately 4km south of the town of Ennis in County Clare. This SAC site includes three distinct locations that support the Lesser Horseshoe Bat at various times of the year; a narrow-passage cave on Newhall House grounds, a two-storey farm out-house also in Newhall House grounds and a second cave with multiple intercepting passageways on Edenvale House grounds. Newhall House and Edenvale House are less than 1 km from each other and the bats have uninterrupted access to all sites. The two caves were also fitted with grilles in 1983. The area is classified as an SAC due to the presence of the Cave habitat and the Lesser Horseshoe bat.

Both Newhall and Edenvale Caves provide ideal winter hibernation sites for the Lesser Horseshoe bat. The surroundings, which include mixed woodland, parklands and lakes, provide suitable foraging

habitat and shelter throughout the year for the Lesser Horseshoe Bat population, which is estimated at over 500 individuals at the site, approximately 4% of the overall Irish population of the species. The bats have been recorded at the site since 1983. The site is of international importance and is in fact, classed as one of the most important sites in Europe for the Lesser Horseshoes Bat.

4.2 Lower River Shannon SAC

This SAC is a very large site, stretching along the Shannon valley from Killaloe, Co. Clare for 120 km to Loop Head / Kerry Head, encompassing; the Shannon, Feale, Mulkear and Fergus estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head. The Galey, Smearlagh, Oolagh, Allaughaun, Owveg, Clydagh, Caher, Breanagh and Glenacarney rivers are included in the Feale sub-catchment. The Killeenagarriff, Annagh, Newport, the Dead River, the Bilboa, Glashacloonaraveela, Gortnageragh and Cahernahallia rivers are part of the sub-catchment of the Mulkear. The Shannon and Fergus Estuaries form the largest estuarine complex in Ireland. The area features vast expanses of mudflats, many of which are fringed with saltmarsh vegetation. There are over twenty areas of estuarine saltmarsh identified within the SAC site (the most dominant type being Atlantic salt meadow occurring over mud), the most important of which are located around the Fergus estuary and at Ringmoylan Quay.

4.3 River Shannon and River Fergus Estuaries SPA

The River Shannon and River Fergus Estuaries SPA comprises the entire estuarine habitat west from Limerick City and south from Ennis, extending west as far as Killadysert and Foynes on the north and south shores respectively of the River Shannon (a distance of some 25 km from east to west). The site is one of the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl. Other species occurring include Common Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*), the polychaete *Nepthys hombergii*, the gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*. Eelgrass (*Zostera* spp.) is present in places, along with green algae (e.g. *Ulva* spp. and *Enteromorpha* spp.). The site also has vast expanses of intertidal flats, an Annex I habitat on the E.U Habitats Directive (1992).

5. POTENTIAL FOR EFFECTS

Table 3 Designated Natura 2000 Sites within 15km of the development, the location of qualifying interests in relation to the development, potential pathways for impacts and potential for significant impacts.

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
Pouladatig Cave SAC (000037)	Caves not open to the public [8310] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 1km south of the site	Yes	No	Yes	Yes	Located within the Core Sustenance Zone (CSZ) of the Lesser Horseshoe Bats in this SAC (within 2.5km). Lesser Horseshoe Bats have been recorded using the proposed development site as per the standalone bat report (Ecofact, 2022). There is no potential for direct impacts due to distance from the SAC boundary. As these bats use the site for foraging and commuting, there is the potential for significant indirect and cumulative impacts. Potential impacts are identified as disturbance, habitat loss / fragmentation and lighting impacts.
Lower River Shannon SAC (002165)	Sandbanks which are slightly covered by sea water all the time [1110]	Located c. 45km from the site at its closest point according to the conservation objectives Map 3 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 45km south-west of the site. There is no potential for direct impacts. Located c. 62rkm downstream of the WwTP discharge; hydrological distance too far for significant water quality impacts. No potential for indirect or cumulative impacts to arise due to distance, and a lack of hydrological

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							pathways on the proposed development site itself.
	Estuaries [1130]	Located c. 3rkm downstream of the WwTP Discharge point according to the conservation objectives Map 4 (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This habtiat is located c. 3rkm downstream of the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this habitat type. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.
	Mudflats and sandflats not covered by seawater at low tide [1140]	Located c. 3rkm downstream of the WwTP Discharge point according to the conservation objectives Map 5 (NPWS, 2012).	Yes	No	Yes	Yes	
	Coastal lagoons [1150]	Located c. 17km south-east; c. 20rkm downstream of the WwTP Discharge point according to the conservation objectives Map 6 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 17km south-east of the site. There is no potential for direct impacts. Located c. 20rkm downstream of the WwTP discharge; hydrological distance too far for significant water quality impacts. No potential for indirect or cumulative impacts to arise due to distance, and a lack of hydrological pathways on the proposed development site itself.

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
	Large shallow inlets and bays [1160]	Located c. 41km south-west; c. 54rkm downstream of the WwTP Discharge point according to the conservation objectives Map 7 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 41km south-west of the site. There is no potential for direct impacts. Located c. 54rkm downstream of the WwTP discharge; hydrological distance too far for significant water quality impacts. No potential for indirect or cumulative impacts to arise due to distance, and a lack of hydrological pathways on the proposed development site itself.
	Reefs [1170]	Located c. 14.5km south-east; c. 15.1rkm downstream of the WwTP Discharge point according to the conservation objectives Map 8 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 14.5km south-east of the site. There is no potential for direct impacts. Located c. 15.1rkm downstream of the WwTP discharge; hydrological distance too far for significant water quality impacts. No potential for indirect or cumulative impacts to arise due to distance, and a lack of hydrological pathways on the proposed development site itself.
	Perennial vegetation of stony banks [1220]	Located c. 37.8km south-west of the site according to the conservation	No	No	No	No	There are no watercourses on the proposed development site. This terrestrial habitat is located c. 37.8km from the site. There are no pathways identified for

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
		objectives Map 10 (NPWS, 2012).					potential significant effects due to geographical separation.
	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Located c. 36km south-west of the site according to the conservation objectives Map 11 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. This terrestrial habitat is located c. 36km from the site. There are no pathways identified for potential significant effects due to geographical separation.
	Salicornia and other annuals colonising mud and sand [1310]	Located c. 46km from the site at its closest point according to the conservation objectives Map 12 (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 45km south-west of the site. There is no potential for direct impacts. Located c. 62rkm downstream of the WwTP discharge; hydrological distance too far for significant water quality impacts. No potential for indirect or cumulative impacts to arise due to distance, and a lack of hydrological pathways on the proposed development site itself.
	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Located c. 6rkm downstream of the WwTP Discharge point according to the conservation objectives Map 12 (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This habtiat is located c. 6rkm downstream of the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this habitat type. Insufficient wastewater treatment can alter

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.
	Mediterranean salt meadows (Juncetalia maritimi) [1410]	Located c. 9rkm downstream of the WwTP Discharge point according to the conservation objectives Map 12 (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This habtiat is located c. 9rkm downstream of the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this habitat type. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.
	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	According to conservation objectives Map 13, this habitat only occurs in this SAC near Limerick City; there is no known habitat downstream of the site or the WwTP discharge (NPWS, 2012).	No	No	No	No	There are no watercourses on the proposed development site. As the crow flies, this habitat is located c. 27km south-east of the site. There is no known distribution of this habitat type downstream of the WwTP discharge. There is no potential pathway for significant effects.
	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	Full extend of this habitat in the SAC is currently	No	No	No	No	This habitat type is not present on the proposed development site or the immediate vicinity. There is no potential for

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
		unknown (NPWS, 2012).					direct, indirect or cumulative impacts to arise. This is a terrestrial habitat.
	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	According to the conservation objectives Map 14, this habitat is not located near the proposed development. The closest example is c. 35km south-east of the site (NPWS, 2012).	No	No	No	No	This habitat type is not present on the proposed development site or the immediate vicinity. There is no potential for direct, indirect or cumulative impacts to arise. There is no known distribution downstream of the WwTP discharge.
	Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	This species is only present in the River Cloon in this SAC according to the conservation objectives Map 15 (NPWS, 2012).	No	No	No	No	There are no watercourses or drains on the proposed development site. There is no known distribution of this species downstream of the WwTP discharge, as this species only occurs in the River Cloon, which has no downstream hydrological connection. There is no potential pathway for significant impacts to arise.
	Petromyzon marinus (Sea Lamprey) [1095]	This species is likely to be present in the River Fergus at the WwTP discharge (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This species is located within the River Fergus at the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this species.
	Lampetra planeri (Brook Lamprey) [1096]						
	Lampetra fluviatilis (River Lamprey) [1099]						
	Salmo salar (Salmon) [1106]						

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.
	Tursiops truncatus (Common Bottlenose Dolphin) [1349]	This species occurs in the Fergus and Shannon Estuary c. 10km downstream of the WwTP according to the conservation objectives Map 16 (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This species occurs c. 10km downstream of the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this species. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.
	Lutra lutra (Otter) [1355]	This species is likely to be present in the River Fergus at the Ennis North WwTP discharge (NPWS, 2012).	Yes	No	Yes	Yes	There are no watercourses on the proposed development site. There is no potential for direct impacts to arise due to distance. This species is located within the River Fergus at the WwTP discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect this species. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. Potential for significant impacts identified.

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
Newhall and Edenvale Complex SAC (002091)	Caves not open to the public [8310] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 2.7km south of the proposed development site	Yes	No	Yes	Yes	Located close to the Core Sustenance Zone (CSZ) of the Lesser Horseshoe Bats in this SAC. Lesser Horseshoe Bats have been recorded using the proposed development site as per the standalone bat report (Ecofact, 2022). There is no potential for direct impacts due to distance from the SAC boundary. As these bats use the site for foraging and commuting, there is the potential for significant indirect and cumulative impacts. Potential impacts are identified as disturbance, habitat loss / fragmentation and lighting impacts.
Ballyallia Lough SPA (004041)	Wigeon (Anas penelope) [A050] Gadwall (Anas strepera) [A051] Teal (Anas crecca) [A052] Mallard (Anas platyrhynchos) [A053] Shoveler (Anas clypeata) [A056] Coot (Fulica atra) [A125] Black-tailed Godwit (Limosa limosa) [A156]	Located c. 3.4km North-east at its closest point	No	No	No	No	The site is located at a distance from this SPA (3.4km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. The habitats on the proposed development site are unsuitable for these wetland species. None of these species would be expected to occur at the proposed development site. There is no pathway for potential significant effects.
	Wetland and Waterbirds [A999]						The site is located at a distance from this SPA (3.4km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							is no connection between the site and this designated habitat type. There is no pathway for potential significant effects.
Ballyallia Lake SAC (000014)	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150]	Located c. 3.4km North-east at its closest point	No	No	No	No	The site is located at a distance from this SAC (3.4km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this designated habitat type. There is no pathway for potential significant effects.
Toonagh Estate SAC (002247)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 4.4km North of the proposed development site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 4.4km north of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
River Shannon and River	Cormorant (Phalacrocorax carbo) [A017]	Located c. 5.3km south-east of the	Yes	No	Yes	Yes	The proposed development site is located at a distance from this SPA (5.3km). There

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
Fergus Estuaries SPA (004077)	Whooper Swan (Cygnus cygnus) [A038]	site at its closest point					are no watercourses, drains or lakes on the proposed development site. These species would not be expected to be found at the site as these are wetland species. Due to geographical separation, there is no potential for direct impacts, or disturbance impacts. There is some potential however for indirect impacts, through water quality pollution. The SPA is located c.3rkm downstream of the WwTP Discharge, so there is potential for adverse indirect and cumulative impacts on water quality to arise which could affect these species indirectly. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status. This can affect food sources and result in habtiat degradation for these species.
	Light-bellied Brent Goose (Branta bernicla hrota) [A046]						
	Shelduck (Tadorna tadorna) [A048]						
	Wigeon (Anas penelope) [A050]						
	Teal (Anas crecca) [A052]						
	Pintail (Anas acuta) [A054]						
	Shoveler (Anas clypeata) [A056]						
	Scaup (Aythya marila) [A062]						
	Ringed Plover (Charadrius hiaticula) [A137]						
	Golden Plover (Pluvialis apricaria) [A140]						
	Grey Plover (Pluvialis squatarola) [A141]						
	Lapwing (Vanellus vanellus) [A142]						
	Knot (Calidris canutus) [A143]						
	Dunlin (Calidris alpina) [A149]						
	Black-tailed Godwit (Limosa limosa) [A156]						
	Bar-tailed Godwit (Limosa lapponica) [A157]						
	Curlew (Numenius arquata) [A160]						

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
	Redshank (Tringa totanus) [A162]						
	Greenshank (Tringa nebularia) [A164]						
	Black-headed Gull (Chroicocephalus ridibundus) [A179]						
	Wetland and Waterbirds [A999]	Located c. 5.3km from the site; Located c. 3km downstream of the WwTP discharge	Yes	No	Yes	Yes	The proposed development site is located at a distance from this SPA (5.3km). There are no watercourses, drains or lakes on the proposed development site. Due to a lack of hydrological connectivity, there is no potential for direct impacts. There is some potential however for indirect impacts, through water quality pollution. This habitat is located c.3rkm downstream of the WwTP Discharge, so there is potential for adverse indirect and cumulative impacts on water quality. Insufficient wastewater treatment can alter water quality status, with the River Fergus already at 'At Risk' of meeting WFD status..
Knockanira House SAC (002318)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 6.8km south of the site.	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 6.8km south of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
Dromroe Woods and Loughs SAC (000032)	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Limestone pavements [8240] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303] Lutra lutra (Otter) [1355]	Located c. 7.3km north-east of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (7.3km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this SAC. The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified.
Ballycullinan, Old Domestic Building SAC (002246)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 7.9km North of the site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 7.9km north of the site.

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
Ballycullinan Lake SAC (000016)	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]	Located c. 3.4km North-east of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (3.4km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this designated habitat type. There is no pathway for potential significant effects.
Old Farm Buildings, Ballymacrogan SAC (002245)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 9km north of the site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 9km north of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
East Burren Complex SAC (001926)	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]	Located c. 9.3km north of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (9.3km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this SAC and no potential for direct, indirect or cumulative impacts. The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified due to a lack of connectivity between the qualifying interests and the proposed development site.
	Turloughs [3180]						
	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]						
	Alpine and Boreal heaths [4060]						
	Juniperus communis formations on heaths or calcareous grasslands [5130]						
	Calaminarian grasslands of the Violetalia calaminariae [6130]						
	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]						
	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510]						

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]						
	Petrifying springs with tufa formation (Cratoneurion) [7220]						
	Alkaline fens [7230]						
	Limestone pavements [8240]						
	Caves not open to the public [8310]						
	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]						
	Euphydryas aurinia (Marsh Fritillary) [1065]						
	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]						
	Lutra lutra (Otter) [1355]						
Old Domestic Building (Keevagh) SAC (002010)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 9.5km east of the site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 9.5km east of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
Corofin Wetlands SPA (004220)	Little Grebe (Tachybaptus ruficollis) [A004] Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Black-tailed Godwit (Limosa limosa) [A156] Wetland and Waterbirds [A999]	Located c. 10.1km north of the site at its closest point	No	No	No	No	The site is located at a distance from this SPA (10.1km). There are no watercourses, drains or lakes on the proposed development site. None of the wetland species designated in this SPA would be expected to occur on the proposed development site or in the immediate vicinity. There is also no hydrological connectivity between the site and this SPA. No potential pathway for significant impacts has been identified.
Slieve Aughty Mountains SPA (004168)	Hen Harrier (Circus cyaneus) [A082] Merlin (Falco columbarius) [A098]	Located c. 11.5km north-east of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (11.5km). There is no connectivity between this SAC and the proposed development site, with significant geographical separation present. There is no potential for significant impacts on the species designated as a result. No potential pathways for significant impacts have been identified.
Poulnagordon Cave (Quin) SAC (000064)	Caves not open to the public [8310] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 11.9km east of the site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 11.9km east of the site. There is no potential for impacts on the

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
Moyree River System SAC (000057)	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Alkaline fens [7230] Limestone pavements [8240] Caves not open to the public [8310] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303] Lutra lutra (Otter) [1355]	Located c. 11km north of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (11km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this SAC and no potential for direct, indirect or cumulative impacts. The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified due to a lack of connectivity

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
							between the qualifying interests and the proposed development site.
Lough Gash Turlough SAC (000051)	Turloughs [3180] Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation [3270]	Located c. 12.3km south-east of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (12.3km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this SAC and no potential for direct, indirect or cumulative impacts. No pathways for significant effects are identified due to a lack of connectivity between the qualifying interests and the proposed development site.
Ballyogan Lough SAC (000019)	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] Limestone pavements [8240]	Located c. 13km north-east of the site at its closest point	No	No	No	No	The site is located at a distance from this SAC (13km). There are no watercourses or drains on the proposed development site. There is no downstream hydrological connection with this designated site. There is no connection between the site and this SAC and no potential for direct, indirect or cumulative impacts. No pathways for significant effects are identified due to a lack of connectivity between the qualifying interests and the proposed development site.
Old Domestic Buildings,	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 13.5km north-east of the	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC,

Natura 2000 Site	Qualifying Interest	Location in relation to development site	Potential pathway for impacts (Yes/No)	Potential Impact & Source			Pre-assessment Screening
				Direct	Indirect	Cumulative	
Rylane SAC (002314)		site at its closest point					which is located c. 13.5km east of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.
Newgrove House SAC (002157)	Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	Located c. 13.8km east of the site at its closest point	No	No	No	No	The site is located outside the Core Sustenance Zone (CSZ) for Lesser Horseshoe bats designated in this SAC, which is located c. 13.8km east of the site. There is no potential for impacts on the LHB population designated within this site. Lesser Horseshoe bats have been recorded on the site as per the standalone bat report (Ecofact, 2022), however due to distance these individuals are expected to be connected to other designated sites which are located closer to the proposed development site. No pathways for significant effects are identified on the population designated within this SAC.

4. CONCLUSION

Table 4 DoEHLG (2010) potential findings and outcomes for Screening for Appropriate Assessment with Conclusions for proposed solar development at Ballyjamesduff, Co. Cavan.

Finding	Potential Outcome	Conclusion
Project is directly connected to or necessary for the management of a designated site	Stage 2 (AA) is not required	
No potential for significant effects	Stage 2 (AA) is not required	
Potential for significant effects identified, or potential for impacts is uncertain	Stage 2 (AA) is required, and a Natura Impact Statement will be prepared	✓

Several sites have been identified as having potential pathways for significant effects from the proposed development at Ballylannidy, Woodstock, Ennis, Co. Clare. The standalone bat report provides results of bat surveys undertaken at the proposed development site, which show that the Annex II protected Lesser Horseshoe Bat does use the site for foraging and commuting. Due to this, there is the potential for significant impacts on this species which requires assessment. There is therefore the potential for impacts on two LHB SACs within 3km of the site, which are the Pouladatig Cave SAC and the Newhall and Edenvale Complex SAC. Outside of this, the proposed development will require wastewater treatment likely to be treated at the Ennis North (Clonroadmore) plant, which discharges into the River Fergus. This provides a connection with the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. There is the potential for significant impacts on water quality and this requires assessment. Mitigation measures are required for the proposed development, which cannot be provided in a Screening for Appropriate Assessment.

This screening report, based on the best available scientific information, finds that there is reasonable scientific certainty that the proposed development does pose a risk of significant adverse effects on the Natura 2000 network in view of their conservation objectives. The proposed development does require a Natura Impact Statement (Stage 2 Appropriate Assessment). Therefore it is concluded, in the absence of any consideration of mitigation measures or best-practice measures, that the proposed development may have a significant impact, individually or in combination with other plans or projects, on the following Natura 2000 sites: Pouladatig Cave SAC; Newhall and Edenvale Complex SAC; Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. Appropriate Assessment (NIS) is therefore required for the proposed development at Ballylannidy, Woodstock, Ennis, Co. Clare.

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APPENDIX 1 NPWS SITE SYNOPSES

SITE NAME: LOWER RIVER SHANNON SAC
SITE CODE: 002165

This very large site stretches along the Shannon valley from Killaloe to Loop Head/ Kerry Head, a distance of some 120km. The site thus encompasses the Shannon, Feale, Mulkear and Fergus Estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head. The Shannon and Fergus flow through Carboniferous limestone as far as Foynes, but west of Foynes Namurian shales and flagstones redominate (except at Kerry Head, which is formed from Old Red Sandstone). The eastern sections of the Feale catchment flow through Namurian Rocks and the western stretches through Carboniferous Limestone. The Mulkear flows through Lower Palaeozoic Rocks in the upper reaches before passing through Namurian Rocks, followed by Lower Carboniferous Shales and Carboniferous Limestone. The Mulkear River itself, immediately north of Pallasgreen, passes through an area of Rhyolites, Tuffs and Agglomerates. Rivers within the subcatchment of the Feale include the Galey, Smearlagh, Oolagh, Allaughaun, Owveg, Clydagh, Caher, Breanagh and Glenacarney. Rivers within the sub-catchment of the Mulkear include the Killeenagarriff, Annagh, Newport, the Dead River, the Bilboa, Glashacloonaraveela, Gortnageragh and Cahernahallia.

The site is a candidate SAC selected for lagoons and alluvial wet woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for floating river vegetation, *Molinia* meadows, estuaries, tidal mudflats, Atlantic salt meadows, Mediterranean salt meadows, *Salicornia* mudflats, sand banks, perennial vegetation of stony banks, sea cliffs, reefs and large shallow inlets and bays all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Bottle-nosed Dolphin, Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Atlantic salmon and Otter.

The Shannon and Fergus Estuaries form the largest estuarine complex in Ireland. They form a unit stretching from the upper tidal limits of the Shannon and Fergus Rivers to the mouth of the Shannon estuary (considered to be a line across the narrow strait between Kilcredaun Point and Kilconly Point). Within this main unit there are several tributaries with their own 'sub-estuaries' e.g. the Deel River, Mulkear River, and Maigue River. To the west of Foynes, a number of small estuaries form indentations in the predominantly hard coastline, namely Poulnasherry Bay, Ballylongford Bay, Clonderalaw Bay and the Feale or Cashen River Estuary.

Both the Fergus and inner Shannon estuaries feature vast expanses of intertidal mudflats, often fringed with saltmarsh vegetation. The smaller estuaries also feature mudflats, but have their own unique characteristics, e.g. Poulnasherry Bay is stony and unusually rich in species and biotopes. Plant species are typically scarce on the mudflats, although there are some Eel-grass beds (*Zostera* spp.) and patches of green algae (e.g. *Ulva* sp. and *Enteromorpha* sp.). The main macro-invertebrate community, which has been noted from the inner Shannon and Fergus estuaries, is a *Macoma- Scrobicularia-Nereis* community.

In the transition zone between mudflats and saltmarsh, specialised colonisers of mud predominate: swards of Common Cord-grass (*Spartina anglica*) frequently occur in the upper parts of the estuaries. Less common are swards of Glasswort (*Salicornia europaea* agg.). In the innermost parts of the estuaries, the tidal channels or creeks are fringed with species such as Common Reed (*Phragmites*

australis) and Club-rushes (*Scirpus maritimus, S. tabernaemontani* and *S. triquetrus*). In addition to the nationally rare Triangular Club-rush (*Scirpus triquetrus*), two scarce species are found in some of these creeks (e.g. Ballinacurra Creek): Lesser Bulrush (*Typha angustifolia*) and Summer Snowflake (*Leucojum aestivum*).

Saltmarsh vegetation frequently fringes the mudflats. Over twenty areas of estuarine saltmarsh have been identified within the site, the most important of which are around the Fergus Estuary and at Ringmoylan Quay. The dominant type of saltmarsh present is Atlantic salt meadow occurring over mud. Characteristic species occurring include Common Saltmarsh Grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea-milkwort (*Glaux maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Creeping Bent (*Agrostis stolonifera*), Saltmarsh Rush (*Juncus gerardi*), Long-bracted Sedge (*Carex extensa*), Lesser Seaspurrey (*Spergularia marina*) and Sea Arrowgrass (*Triglochin maritima*). Areas of Mediterranean salt meadows, characterised by clumps of Sea Rush (*Juncus maritimus*) occur occasionally. Two scarce species are found on saltmarshes in the vicinity of the Fergus Estuary: a type of robust Saltmarsh-grass (*Puccinellia foucaudii*), sometimes placed within the compass of Common Saltmarsh-grass (*Puccinellia maritima*) and Hard-grass (*Parapholis strigosa*).

Saltmarsh vegetation also occurs around a number of lagoons within the site. The two which have been surveyed as part of a National Inventory of Lagoons are Shannon Airport Lagoon and Cloonconeen Pool. Cloonconeen Pool (4-5 ha) is a natural sedimentary lagoon impounded by a low cobble barrier. Seawater enters by percolation through the barrier and by overwash. This lagoon represents a type which may be unique to Ireland since the substrate is composed almost entirely of peat. The adjacent shore features one of the best examples of a drowned forest in Ireland. Aquatic vegetation in the lagoon includes typical species such as Beaked Tasselweed (*Ruppia maritima*) and green algae (*Cladophora* sp.). The fauna is not diverse, but is typical of a high salinity lagoon and includes six lagoon specialists (*Hydrobia ventrosa, Cerastoderma glaucum, Lekanesphaera hookeri, Palaemonetes varians, Sigara stagnalis* and *Enochrus bicolor*). In contrast, Shannon Airport Lagoon (2 ha) is an artificial saline lake with an artificial barrier and sluiced outlet. However, it supports two Red Data Book species of Stonewort (*Chara canescens* and *Chara cf. connivens*).

Most of the site west of Kilcredaun Point/Kilconly Point is bounded by high rocky sea cliffs. The cliffs in the outer part of the site are sparsely vegetated with lichens, Red Fescue, Sea Beet (*Beta vulgaris*), Sea Campion (*Silene maritima*), Thrift and Plantains (*Plantago* spp.). A rare endemic Sea Lavender (*Limonium recurvum* subsp. *pseudotranswallinum*) occurs on cliffs near Loop Head. Cliff-top vegetation usually consists of either grassland or maritime heath. The boulder clay cliffs further up the estuary tend to be more densely vegetated, with swards of Red Fescue and species such as Kidney Vetch (*Anthyllis vulneraria*) and Bird's-foot Trefoil (*Lotus corniculatus*).

The site supports an excellent example of a large shallow inlet and bay. Littoral sediment communities in the mouth of the Shannon Estuary occur in areas that are exposed to wave action and also in areas extremely sheltered from wave action. Characteristically, exposed sediment communities are composed of coarse sand and have a sparse fauna. Species richness increases as conditions become more sheltered. All shores in the site have a zone of sand hoppers at the top and below this each of the shores has different characteristic species giving a range of different shore types in the cSAC.

The intertidal reefs in the Shannon Estuary are exposed or moderately exposed to wave action and subject to moderate tidal streams. Known sites are steeply sloping and show a good zonation down the shore. Well developed lichen zones and littoral reef communities offering a high species richness in the

sub-littoral fringe and strong populations of *Paracentrotus lividus* are found. The communities found are tolerant to sand scour and tidal streams. The infra-littoral reefs range from sloping platforms with some vertical steps to ridged bedrock with gullies of sand between the ridges to ridged bedrock with boulders or a mixture of cobbles, gravel and sand. Kelp is very common to about 18m. Below this it becomes rare and the community is characterised by coralline crusts and red foliose algae. Flowing into the estuaries are a number of tidal rivers.

Other coastal habitats that occur within the site include the following:

- Stony beaches and bedrock shores - these shores support a typical zonation of seaweeds (*Fucus* spp., *Ascophyllum nodosum* and kelps).
- Shingle beaches - the more stable areas of shingle support characteristic species such as Sea Beet, Sea Mayweed (*Matricaria maritima*), Sea Campion and Curled Dock (*Rumex crispus*).
- Sandbanks which are slightly covered by sea water at all times – there is a known occurrence of sand/gravel beds in the area from Kerry Head to Beal Head.
- Sand dunes - a small area of sand dunes occurs at Beal Point. The dominant species is Marram Grass (*Ammophila arenaria*).

Freshwater rivers have been included in the site, most notably the Feale and Mulkear catchments, the Shannon from Killaloe to Limerick (along with some of its tributaries, including a short stretch of the Kilmastulla River), the Fergus up as far as Ennis, and the Cloon River. These systems are very different in character: the Shannon being broad, generally slow-flowing and naturally eutrophic; the Fergus being smaller and alkaline; while the narrow, fast-flowing Cloon is acid in nature. The Feale and Mulkear catchments exhibit all the aspects of a river from source to mouth. Seminatural habitats, such as wet grassland, wet woodland and marsh occur by the rivers, however, improved grassland is most common. One grassland type of particular conservation significance, *Molinia* meadows, occurs in several parts of the site and the examples at Worldsend on the River Shannon are especially noteworthy. Here are found areas of wet meadow dominated by rushes and sedges and supporting diverse and species-rich vegetation, including such uncommon species as Blue-eyed Grass (*Sisyrinchium bermudiana*) and Pale Sedge (*Carex pallescens*).

Floating river vegetation characterised by species of Water-crowfoot (*Ranunculus* spp.), Pondweeds (*Potamogeton* spp.) and the moss *Fontinalius antipyretica* are present throughout the major river systems within the site. The rivers contain an interesting bryoflora with *Schistidium alpicola* var. *alpicola* recorded from in-stream boulders on the Bilboa, new to county Limerick.

Alluvial woodland occurs on the banks of the Shannon and on islands in the vicinity of the University of Limerick. The woodland is up to 25m wide on the banks and somewhat wider on the largest island. The most prominent woodland type is gallery woodland where White Willow (*Salix alba*) dominates the tree layer with occasional Alder (*Alnus glutinosa*). The shrub layer consists of various willow species with sally (*Salix cinerea* ssp. *oleifolia*) and what appear to be hybrids of *S. alba* x *S. viminalis.* The herbaceous layer consists of tall perennial herbs. A fringe of Bulrush (*Typha* sp.) occurs on the riverside of the woodland. On slightly higher ground above the wet woodland and on the raised embankment remnants of mixed oak-ash-alder woodland occur. These are poorly developed and contain numerous exotic species but locally *t*here are signs that it is invading open grassland. Alder is the principal tree species with occasional Oak (*Quercus robur*), Elm (*Ulmus glabra, U. procera*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*) and the shrubs Guelder-rose (*Viburnum opulus*) and willows. The ground flora is species-rich.

Woodland is infrequent within the site; however Cahiracon Wood contains a strip of old Oak woodland. Sessile Oak (*Quercus petraea*) forms the canopy, with an understorey of Hazel and Holly (*Ilex aquifolium*). Great Wood-rush (*Luzula sylvatica*) dominates the ground flora. Less common species present include Great Horsetail (*Equisetum telmeteia*) and Pendulous Sedge (*Carex pendula*).

In the low hills to the south of the Slievefelim Mountains, the Cahernahallia River cuts a valley through the Upper Silurian rocks. For approximately 2km south of Cappagh Bridge at Knockanavar, the valley sides are wooded. The woodland consists of Birch (*Betula* spp.), Hazel, Oak, Rowan (*Sorbus aucuparia*), some Ash (*Fraxinus excelsior*) and Willow (*Salix* spp.). Most of the valley is not grazed by stock, and as a result the trees are regenerating well. The ground flora feature prominent Greater wood-rush and Bilberry (*Vaccinium myrtillus*) with a typical range of woodland herbs. Where there is more light available, Bracken (*Pteridium aquilinum*) features.

The valley sides of the Bilboa and Gortnageragh Rivers, on higher ground north east of Cappamore, support patches of semi-natural broadleaf woodland dominated by Ash, Hazel, Oak and Birch. There is a good scrub layer with Hawthorn, Willow, Holly and Blackthorn (*Prunus spinosa*) common. The herb layer in these woodlands is often open with a typically rich mixture of woodland herbs and ferns. Moss species diversity is high. The woodlands are ungrazed. The hazel is actively coppiced in places.
There is a small area of actively regenerating cut away raised bog at Ballyrorheen. It is situated approx. 5km north west of Cappamore Co. Limerick. The bog contains some wet areas with good moss (*Sphagnum*) cover. Species of particular interest include the Cranberry (*Vaccinium oxycoccos*) and the White Sedge (*Carex curta*) along with two other regionally rare mosses including *S. fimbriatum*. The site is being invaded by Birch (*Betula pubescens*) scrub woodland. Both commercial forestry and the spread of rhododendron has greatly reduced the overall value of the site.

A number of plant species that are Irish Red Data Book species occur within the site; several are protected under the Flora (Protection) Order, 1999:

- Triangular Club-rush (*Scirpus triquetrus*) - in Ireland this protected species is only found in the Shannon Estuary, where it borders creeks in the inner estuary.
- Opposite-leaved Pondweed (*Groenlandia densa*) - this protected pondweed is found in the Shannon where it passes through Limerick City.
- Meadow Barley (*Hordeum secalinum*) - this protected species is abundant in saltmarshes at Ringmoylan and Mantlehill.
- Hairy Violet (*Viola hirta*) - this protected violet occurs in the Askeaton/Foynes area.
- Golden Dock (*Rumex maritimus*) - noted as occurring in the River Fergus Estuary.
- Bearded Stonewort (*Chara canescens*) - a brackish water specialist found in Shannon Airport lagoon.
- Convergent Stonewort (*Chara connivens*) - presence in Shannon Airport Lagoon to be confirmed.

Overall, the Shannon and Fergus Estuaries support the largest numbers of wintering waterfowl in Ireland. The highest count in 1995-96 was 51,423 while in 1994-95 it was 62,701. Species listed on Annex I of the E.U. Birds Directive which contributed to these totals include: Great Northern Diver (3; 1994/95), Whooper Swan (201; 1995/96), Pale-bellied Brent Goose (246; 1995/96), Golden Plover (11,067; 1994/95) and Bar-tailed Godwit (476; 1995/96). In the past, three separate flocks of Greenland White-fronted Goose were regularly found but none were seen in 1993/94. Other wintering waders and wildfowl present include Greylag Goose (216; 1995/96), Shelduck (1,060; 1995/96), Wigeon (5,976; 1995/96); Teal (2,319; 1995-96); Mallard (528; 1995/96), Pintail (45; 1995/96), Shoveler (84; 1995/96),

Tufted Duck (272; 1995/96), Scaup (121; 1995/96), Ringed Plover (240; 1995/96), Grey Plover (750; 1995/96), Lapwing (24,581; 1995/96), Knot (800; 1995/96), Dunlin (20,100; 1995/96), Snipe (719, 1995/96), Black-tailed Godwit (1062; 1995/96), Curlew (1504; 1995/96), Redshank (3228; 1995/96), Greenshank (36; 1995/96) and Turnstone (107; 1995/96). A number of wintering gulls are also present, including Black-headed Gull (2,216; 1995/96), Common Gull (366; 1995/96) and Lesser Black-backed Gull (100; 1994/95).

This is the most important coastal site in Ireland for a number of the waders including Lapwing, Dunlin, Snipe and Redshank. It also provides an important staging ground for species such as Black-tailed Godwit and Greenshank.

A number of species listed on Annex I of the E.U. Birds Directive breed within the site. These include Peregrine Falcon (2-3 pairs), Sandwich Tern (34 pairs on Rat Island, 1995), Common Tern (15 pairs: 2 on Sturamus Island and 13 on Rat Island, 1995), Chough (14-41 pairs, 1992) and Kingfisher. Other breeding birds of note include Kittiwake (690 pairs at Loop Head, 1987) and Guillemot (4010 individuals at Loop Head, 1987)

There is a resident population of Bottle-nosed Dolphin in the Shannon Estuary consisting of at least 56-68 animals (1996). This is the only known resident population of this E.U. Habitats Directive Annex II species in Ireland. Otter, a species also listed on Annex II of this directive, is commonly found on the site.

Five species of fish listed on Annex II of the E.U. Habitats Directive are found within the site. These are Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), Twaite Shad (*Allosa fallax fallax*) and Salmon (*Salmo salar*). The three lampreys and Salmon have all been observed spawning in the lower Shannon or its tributaries. The Fergus is important in its lower reaches for spring salmon while the Mulkear catchment excels as a grilse fishery though spring fish are caught on the actual Mulkear River. The Feale is important for both types. Twaite Shad is not thought to spawn within the site. There are few other river systems in Ireland which contain all three species of Lamprey.

Two additional fish of note, listed in the Irish Red Data Book also occur, namely Smelt (*Osmerus eperlanus*) and Pollan (*Coregonus autumnalis pollan*). Only the former has been observed spawning in the Shannon.

Freshwater Pearl-mussel (*Margaritifera margaritifera*), a species listed on Annex II of the E.U. Habitats Directive, occurs abundantly in parts of the Cloon River.

There is a wide range of land uses within the site. The most common use of the terrestrial parts is grazing by cattle and some areas have been damaged through overgrazing and poaching. Much of the land adjacent to the rivers and estuaries has been improved or reclaimed and is protected by embankments (especially along the Fergus Estuary). Further, reclamation continues to pose a threat as do flood relief works (e.g. dredging of rivers). Gravel extraction poses a major threat on the Feale.

In the past, Cord-grass (*Spartina* sp.) was planted to assist in land reclamation. This has spread widely, and may oust less vigorous colonisers of mud and may also reduce the area of mudflat available to feeding birds.

Domestic and industrial wastes are discharged into the Shannon, but water quality is generally satisfactory - except in the upper estuary, reflecting the sewage load from Limerick City. Analyses for trace metals suggest a relatively clean estuary with no influences by industrial discharges apparent. Further industrial development along the Shannon and water polluting operations are potential threats.

Fishing is a main tourist attraction on the Shannon and there are a large number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The River Feale is a designated Salmonid Water under the E.U. Freshwater Fish Directive. Other uses of the site include commercial angling, oyster farming, boating (including dolphin-watching trips) and shooting. Some of these may pose threats to the birds and dolphins through disturbance. Specific threats to the dolphins include underwater acoustic disturbance, entanglement in fishing gear and collisions with fast moving craft.

This site is of great ecological interest as it contains a high number of habitats and species listed on Annexes I and II of the E.U. Habitats Directive, including the priority habitat lagoon, the only known resident population of Bottle-nosed Dolphin in Ireland and all three Irish lamprey species. A good number of Red Data Book species are also present, perhaps most notably the thriving populations of Triangular Club-rush. A number of species listed on Annex I of the E.U. Birds Directive are also present, either wintering or breeding. Indeed, the Shannon and Fergus Estuaries form the largest estuarine complex in Ireland and support more wintering wildfowl and waders than any other site in the country. Most of the estuarine part of the site has been designated a Special Protection Area (SPA), under the E.U. Birds Directive, primarily to protect the large numbers of migratory birds present in winter.

SITE NAME: RIVER SHANNON AND RIVER FERGUS ESTUARIES SPA
SITE CODE: 004077

The estuaries of the River Shannon and River Fergus form the largest estuarine complex in Ireland. The site comprises the entire estuarine habitat west from Limerick City and south from Ennis, extending west as far as Killadysert and Foynes on the north and south shores respectively of the River Shannon (a distance of some 25 km from east to west). Also included are several areas in the outer Shannon estuary, notably Clonderalaw Bay and Poulnasherry Bay, as well as the intertidal areas on the south shore of the Shannon between Tarbert and Beal Point.

The site has vast expanses of intertidal flats. The main macro-invertebrate community present is a *Macoma-Scrobicularia-Nereis* community which provides a rich food resource for the wintering birds. Other species occurring include Common Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*), the polychaete *Nepthys hombergii*, the gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*. Eelgrass (*Zostera* spp.) is present in places, along with green algae (e.g. *Ulva* spp. and *Enteromorpha* spp.).

Salt marsh vegetation frequently fringes the mudflats and this provides important high tide roost areas for the wintering birds. Characteristic species occurring include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea-milkwort (*Glaux maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*) and Saltmarsh Rush (*Juncus gerardi*). In the innermost parts of the estuaries, the tidal channels or creeks are fringed with species such as Common Reed (*Phragmites australis*) and club-rushes (*Scirpus maritimus, S. lacustris* subsp. *tabernaemontani)*. Also found is the nationally rare Triangular Club-rush (*Scirpus triqueter*).

Elsewhere in the site the shoreline comprises stony or shingle beaches. The site is the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl (mean of 59,183 for the 4 seasons 1996-97 to 1999/00), a concentration easily of international importance. The site has internationally important populations of Dunlin (14,987), Black-tailed Godwit (706) and Redshank (1,983) - all figures are average peaks for 3 of the 5 seasons in the 1995/96-1999/00 period. A further 16 species have populations of national importance, i.e. Cormorant (148), Whooper Swan (141), Greylag Goose (88), Shelduck (895), Wigeon (3,025), Teal (1,558), Pintail (40), Shoveler (56), Scaup (76), Golden Plover (4,073), Grey Plover (564), Lapwing (13,007), Knot (686), Bar-tailed Godwit (481), Curlew (1,231) and Greenshank (33). The site is among the most important in the country for several of these species, notably Dunlin (11% of national total), Grey Plover (7.5% of total), Lapwing (6.5% of total), Redshank (6% of total) and Shelduck (6.0% of total). The site is also used by Oystercatcher (363), Ringed Plover (70), Brent Goose (135), Great Crested Grebe (47), Red-breasted Merganser (14), Mallard (247), Turnstone (71), Mute Swan (54), Grey Heron (25), Black-headed Gull (1,233) and Common Gull (194). The Shannon / Fergus system was formerly frequented by a Greenland Whitefronted Goose population but this declined during the 1980s and 1990s and the birds now appear to have abandoned the area. The site provides both feeding and roosting areas for the wintering birds. Habitat quality for most of the estuarine habitats is good. Some species, particularly Whooper Swan and Greylag Goose, utilise areas outside of the site for feeding. Apart from the wintering birds, large numbers of some species also pass through the site whilst on migration in spring and/or autumn. Regular species include Blacktailed Godwit, Whimbrel and Greenshank. Much of the land adjacent to the rivers and estuaries has been reclaimed and improved for agriculture and is protected by embankments (especially along the River Fergus estuary). Further reclamation, especially near to the urbanised and industrial areas continues to pose a threat. The site receives pollution from several sources, including industry and agriculture, but it is not known if this has any significant impacts on the wintering birds.

Aquaculture occurs in some areas of the site – future increases in this activity could cause disturbance to the habitats and the associated birds. Common Cord-grass (*Spartina anglica*) is well-established and may threaten some of the estuarine habitats. Some disturbance occurs from boating activities. This site is of great ornithological interest, being of international importance on account of the numbers of wintering birds it supports. It also supports internationally important numbers of three species, i.e. Dunlin, Black-tailed Godwit and Redshank. In addition, there are 16 species that have populations of national importance. For several of the bird species, it is the top site in the country. Also of note is that three of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover and Bar-tailed Godwit. The site is most effectively censused from the air and this is carried out in most winters.

Site Name: Pouladatig Cave SAC
Site Code: 000037

Pouladatig cave is a natural limestone cave situated near Inch bridge, west of Ennis, Co. Clare. It is used as a hibernating site for the Lesser Horseshoe Bat.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[8310] Caves
[1303] Lesser Horseshoe Bat (Rhinolophus hipposideros)

The site comprises a relatively short, active stream cave with some rock falls and small chambers. The cave entrance is small and is sheltered by Hawthorn (Crataegus monogyna) trees. After the entrance there is a low bedding crawl but the cave then opens out into roomier passageways. Cave habitats include flowing water, mud banks, boulders, rock roof and walls.

The bats hang from the roof and along the walls of the main passageway. The surrounding scrub vegetation and hedgerows are included in the site as they provide suitable foraging habitat areas and shelter for the bats.

Lesser Horseshoe Bats have been using this cave for many years and approximately 100 bats have been recorded at this site each winter since 1986. The site is therefore of international importance.

Although there is an active stream in the cave, this does not pose any threat of flooding to the bats. This site is not subject to visitor disturbance and is considered to be a safe hibernating site for the Lesser Horseshoe Bat.

Site Name: Newhall and Edenvale Complex SAC
Site Code: 002091

Newhall and Edenvale Complex SAC is situated approximately 4 km south of Ennis in Co. Clare. It consists of three distinct locations which are used, at various times throughout the year, by the Lesser Horseshoe Bat.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[8310] Caves
[1303] Lesser Horseshoe Bat (Rhinolophus hipposideros)

Newhall and Edenvale Caves are natural fossil limestone caves. Newhall is a narrow, dry passage formed along an inclined joint. The main passage of Edenvale Cave runs into a cliff for 15 m and is crossed by a number of other passages. The side passages run in two directions at acute angles to each other, forming many intersections, hence the local name “The Catacombs”. The two caves are used as winter hibernation sites by the bats, while a two-storey farm out-building is used as a breeding site. Two of the locations, Newhall Cave and the farm building, are in the grounds of Newhall House, and the second cave, Edenvale Cave, is in the grounds of Edenvale House, within 1 km of Newhall House. The bats have uninterrupted access to all sites. In 1983 grilles were fitted to both caves.

The surrounding areas of mature mixed woodland, parkland and lakes provide ideal foraging habitat and shelter for the bats throughout the year and are included within the site.

Bats have been recorded at this site since 1983 and the population is estimated at more than 500 individuals. The site is of international importance for Lesser Horseshoe Bat, and ranks as one of the most important sites in Europe for the species.

Bat Survey Report (Habitat, Emergence, and Activity Surveys)

Proposed Development Site in Ballylannidy, Woodstock, Ennis, Co. Clare

15-9-22

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EXECUTIVE SUMMARY

Ecofact were commissioned to undertake a bat survey at a proposed development site in Ballylannidy, Woodstock, Ennis, Co. Clare. There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263). The current surveys were undertaken during August 2022 and comprise a daytime visual survey of the habitats on the site, followed by a two-night of bat activity survey and additional static detector surveys. The surveys were completed by fully licensed bat surveyors (Dr. Will O'Connor, Amy Butler, and Grace Walsh).

Clare County Council requested further information including the requirement for a Screening Report or Natura Impact Statement, informed by a conclusive and appropriately carried out bat survey. The Development Applications Unit also prepared a submission for the proposed development, which noted the presence of SACs for Lesser Horseshoe bats in the wider study area, as well as a Soprano pipistrelle roost in the vicinity, with specific measures for maintaining bat habitats on the site.

There are no structures on the proposed development site. No bat roosts were identified on the proposed development site. The current surveys included a daytime inspection, including trees on the site, as well as a total of 6 nights of bat activity / static detector recordings. Two mature trees on the site were identified as having low potential for bat roosting habitat. No bats were observed to emerge from these trees. The main species using the site are Common pipistrelle, Soprano pipistrelle and Leisler's bats. The activity was noted to be moderate to low on some nights. Some bats were recorded early on the detectors, which may indicate a roost site nearby. However no bat roosts were identified on the site.

It is known that there is a Soprano pipistrelle roost in the wider area. Lesser Horseshoe bats, the only bat species in Ireland protected under Annex II of the EU Habitats Directive, were recorded using the site. Based on an analysis of records obtained from the National Parks and Wildlife Service, the nearest roost site is c. 1km from the site, with a building roost also c. 1.7km from the site. One Static detector was placed inside the red line boundary in the middle treeline, which recorded one bat pass of LHB over 4 full nights of recordings. It was suspected that these bats are more likely to use the mature wide treeline outside the site boundary to the west as this was more suitable. A static detector was then placed along this treeline for two nights, and the LHBs were found to use this regularly based on data from August. It can therefore be concluded that LHBs infrequently cross into the red line boundary, but frequently use an adjacent mature treeline outside the site boundary. No LHBs were recorded during the detector surveys.

Impacts on other bat species using the site were identified as roost habitat loss, foraging and commuting habitat loss, lighting and disturbance. Impacts at most are assessed to be slight negative, long-term and in the local context in the absence of any mitigation measures. If the two identified trees are required to be felled, a derogation licence will be required, which must be obtained from the National Parks and Wildlife Service in advance of any works. This would result in the loss of this potential roosting habitat, though suboptimal due to the location of the trees in the landscape, with one on the Shanaway Rd and one adjacent to the eastern residential dwelling. The site layout plan does however include for the existing boundary treatments to be retained and supplemented with planting. Mitigation measures outlined to reduce potential impacts on bats include timing and avoidance of the active bat season, tree felling mitigation, native landscaping and measures to reduce light spill on the site and surrounds.

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Date	Revision	Status	Author	Reviewed By
15-9-22	1	Draft	AB	WOC

1. INTRODUCTION

Ecofact were commissioned to undertake a bat survey at a proposed development site in Ballylannidy, Woodstock, Ennis, Co. Clare. There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263). The current surveys were undertaken during August 2022 and comprise a presence / absence survey of the habitats on the site. The current surveys undertaken include a desk study, daytime inspection and static detector survey.

Clare County Council requested further information on the 18th of May 2022. Item 2a the FIR is as follows:

(a) *The Pouladatig Cave SAC (00037) lies c. 1.2 kilometres to the south of the site. The likelihood of use of the mature trees as a roosting habitat and / or commuting route for the annex IV species (Lesser Horseshoe Bat which is a qualifying interest of this SAC) cannot be ruled out at this stage. With regard to consideration of habitat protection and avoidance of artificial light spillage that is disruptive to the emergence of bats from roosts at dusk and subsequent movement from habitats to foraging locations the Planning Authority cannot conclusively rule out the requirement for Appropriate Assessment at this stage. Additionally it cannot be ruled out that the proposed development would not be in conflict with section 14.11 (Habitat Protection) of the County Development Plan. In this regard, you are requested to submit a Natura Impact Statement Screening Report, which should be informed by a conclusive and appropriately carried out bat survey. Please submit both a Natura Impact Statement screening Report and bat survey in this regard. You are advised to note that if the NIS Screening Report cannot conclusively rule out any impact to the SAC as mentioned, or any other European Site within the zone of influence, an Natura Impact Statement should be carried out and submitted.'*

The current report provides the findings of the bat survey carried out at the site during August 2022 to address part of item 2a above.

It is also noted that the Development Applications Unit (DAU) prepared a submission for the proposed development and the following is noted under the Nature Conservation heading:
'The proposed development is approximately 1 kilometre from Pouladatig Cave Special Area of Conservation (SAC) (Site Code: 000037). In the Conservation Objectives the proposed site is within the 2.5 kilometres Lesser Horseshoe Bat foraging habitat for the SAC. Clare County Council must ensure it is satisfied that the proposed development will not negatively impact the conservation objectives of the European Site. Of concern is the potential loss of foraging habitat for Lesser Horseshoe bats. The conservation objectives of the European Site are to maintain or restore the favourable conservation condition of the qualifying interest Annex habitats and species. Clare County Council is advised to consult the conservation objectives for the site in full.

Also, a Soprano pipistrelle bat roost has been recorded adjacent to the site, and they are very likely to use the site.

a. *It is strongly recommended that Clare County Council ensure existing hedges and tree lines are retained. It is also recommended that native hedgerow/tree line planting is included in the site design to replace those recently removed and retain connections between the bat foraging habitats mapped in the Conservation Objectives.*
b. *It is strongly recommended that Clare County Council ensure site lighting does not impact on potential bat foraging habitats in particular hedgerows and tree lines. See Bat Conservation*

Ireland's guidelines in Bats & Lighting: Guidance Notes for Planners, engineers, architects and developers.'

1.1 Legislation

Bats are strictly protected under both national and international law. The purpose of this legislation is to maintain and restore bat populations within their natural range. This implies that the habitats on which they rely and the ecology of their life cycles should not be compromised by human activities. Where activities have the potential to compromise bat populations, measures are required to be put in place to avoid impacts or compensate and mitigate for those impacts. The key legislation which provides protection to bats is outlined below.

1.1.1 Wildlife Act 1976

In the Republic of Ireland, all bats and their roosts are protected under Schedule 5 of the *Wildlife Act 1976* (amended 2000 and 2010). It is unlawful to disturb either without the appropriate Licence.

1.1.2 EU Habitats Directive

In addition to domestic legislation bats are also protected under the *EC Directive on the Conservation of Natural habitats and of Wild Fauna and Flora* (Habitats Directive 1992). This Directive seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All bat species are protected under Annex IV of the EU Habitats Directive, while the lesser horseshoe bat (*Rhinolophus hipposideros*) is listed under Annex II. Member states are required to designate Special Areas of Conservation for all species listed under Annex II in order to protect them. The EU Habitats Directive has been transposed into Irish law with the European Communities (Birds and Natural Habitats) Regulations 2011.

1.1.3 Bern and Bonn Conventions

Ireland has also ratified two international conventions which afford protection to bats amongst other fauna. These are known as the 'Bern' and 'Bonn' Conventions. *The Convention on the Conservation of European Wildlife and Natural Habitats* (Bern Convention 1982), in relation to bats, exists to conserve all species and their habitats. *The Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries, which covers certain species of bat.

1.1.4 Derogation Licences

The destruction, alteration or evacuation of a known bat roost is a notifiable action and can only be carried out with a derogation licence from the National Parks and Wildlife Service. Any works that might interfere with bats or their roost sites can only be carried out under licence to derogate from Regulation 23 of the Habitats Regulations 1997 and Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (which transposed the EU Habitats Directive into Irish Law). Details with regards to Appropriate Assessments, procedures and parameters under which derogation licences may be obtained are outlined in Circular Letter NPWS 2/07 *'Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 – strict protection of certain species / applications for derogation licences'* issued on the 16th of May 2007 on behalf of the Minister of the Environment, Heritage and Local Government.

Figure 1 Location of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263).

2. METHODOLOGY

2.1 Desk Study

The bat suitability of habitat in the study area for bats was obtained from the National Biodiversity Data Centre (NBDC) database. This map provides a picture of the broad scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species. The maps are a visualization of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats (Lundy *et al* 2011). The NBDC online National Bat Database of Ireland was accessed to review bat records in the study area.

2.2 Field Survey

2.2.1 Guidance

The survey had regard to the methodology outlined in:

- *Bat Mitigation Guidelines for Ireland v2* by Marnell *et al*., (2022)
- *Bat Tree Habitat Key (BTHK)* by Andrews, H (2018).
- *Bat Surveys for Professional Ecologists: Best Practice Guidelines 3rd Edition* by Collins (2016)
- *Guidance on the strict protection of certain animal and plant species under the Habitats Directive in Ireland* by NPWS (2021)
- *Bat Workers' Manual 3rd Edition* by JNCC (2004) and
- *British Bat Calls: A Guide to Species Identification* (Russ, 2012).

The definition of bat roost types used in this report is adapted from Collins (2016).

Table 1 Definition of bat roost types adapted from Collins (2016).

Roost Type	Definition
Day Roost	A place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
Night Roost	A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
Transitional/occasional Roost	Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming Site	Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.
Mating Sites	Where mating takes place from late summer and can continue through winter.
Maternity Roost	Where female bats give birth and raise their young to independence.
Hibernation Roost	Where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Figure 2 Location of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263) showing Anabat Express Locations.

2.2.2 Daytime Inspection

A survey of the site took place on the 12th of August 2022. This survey involved a daytime inspection of the subject site during daylight hours to assess the habitats present on the site and their potential importance for bats. Mature trees were inspected for their potential to have bats, using visual observations to examine the trees for knotholes, dense ivy coverage, woodpecker holes, damaged limbs, lifting bark or impact shatters. Any Potential Roost Features (PRFs) were recorded. The rest of the site was inspected for suitable bat foraging habitat and potential commuting routes. Any other features relevant to the usage by bats including existing lighting was recorded.

2.2.3 Activity Surveys

Two emergence / activity surveys were completed on the 12th August and 22nd August 2022 under ideal survey conditions. The surveys were completed by two ecologists from 30 minutes before dusk to 2 hours after dusk. The weather conditions for the survey were considered to be optimal. Each of the ecologists used bat detectors for the duration of the survey. The bat detectors used included BatBox Duet Bat Detector and Elecktron Battscanner. Bat species using the site during the course of the survey and notes on their behaviour and flight paths were recorded.

An Anabat Express Static Detector was set up on site on the 12th of August 2022 and was left in place for 4 full nights. These records were analysed and it was decided that a further static detector be placed just outside the site boundary, in the same field, along a more likely foraging route for Lesser Horseshoe Bats. Therefore, on the 22nd of August another Anabat Express Static Detector was deployed on the site for 2 full nights. The locations of these Anabat Express detectors is shown in Figure 2.

Data recorded was then analysed using the Anabat Insight software. Bat Calls were identified to species level (where possible) based on professional judgement and with reference to *British Bat Calls: A Guide to Species Identification* (Russ, 2012).

2.2.4 Personnel

The surveys were completed by fully licensed bat surveyors (Dr. Will O'Connor, Amy Butler, and Grace Walsh).

3. DESCRIPTION OF PROJECT CHARACTERISTICS

There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263). The drawings for the development show two houses at the southern road site, with treeline planting in the area, and an access route following the existing road into the site. Further treeline planting is noted in this area, as well as a green space in front of the main cluster of houses to the east of the site.

4. RESULTS

4.1 Desk Study

The site is located within the Ballylannidy area of Ennis, Co. Clare. The access to the site is via an entrance on the Shanaway Rd, with the Woodstock view and Woodstock Hill housing estates to the east outside the site boundary. The Woodstock Golf and Country Course are located to the south of the site.

The National Biodiversity Data Centre (NBDC) maps landscape suitability for bats based on Lundy et al., (2011). The maps are a visualisation of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats. Table 1 below gives the suitability of the study area for the bat species found in Ireland (based on NBDC) along with their Irish Red List Status (from Marnell et al., 2009). The overall assessment of bat habitats for the current study area is given as 42.56, which is considered to be high.

Table 2 Suitability of the study area for the bat species previously recorded in the Ballylannidy, Ennis, Co. Clare area (based on the NBDC data). Irish Red list status also indicated (based on Marnell *et al.,* 2009).

Common name	Scientific name	Suitability index	Irish red list status
All bats	-	42.56	
Common pipistrelle	*Pipistrellus pipistrellus*	50	Least Concern
Leisler's bat	*Nyctalus leisleri*	55	Near Threatened
Natterer's bat	*Myotis nattererii*	54	Least Concern
Soprano pipistrelle	*Pipistrellus pygmaeus*	48	Least Concern
Brown long-eared bat	*Plecotus auritus*	60	Least Concern
Lesser horseshoe bat	*Rhinolophus hipposideros*	35	Least Concern
Whiskered bat	*Myotis mystacinus*	38	Least Concern
Daubenton's bat	*Myotis daubentonii*	36	Least Concern
Nathusiius's pipistrelle	*Pipistrellus nathusii*	7	Least Concern

4.1.1 Previous Records

According to the National Bat Database of Ireland as viewed on the National Biodiversity Data Centre, the closest bat record is c. 1km from the site to the south. There are numerous records at this point, comprising Lesser Horseshoe Bat NPWS Roost records from 1989 to 2009. This is noted to be a cave roost. This is for the Poulnadatig Cave SAC. There are also records of a NPWS building roost for Lesser Horseshoe Bats c. 1km west of the site from 2001, as well as another one from 1998 c. 100m west of this record. There are also records of Leisler's bat, Common and Soprano pipistrelles as well as Daubenton's bat in the wider study area.

Using records from a data request sent in to the National Parks and Wildlife Service for Lesser Horseshoe bat records from the Ennis area, the closest record if c. 1km south-west of the site as above. This is for a building roost and the numbers are recorded as 2 individuals. There are also records for the Pouladatig Cave SAC. The closest record north of the site is c. 1.7km and this is for a building night roost.

4.2 Field Survey

4.2.1 Daytime Inspection

The proposed development site consists of rough grassland, treeline, scrub, access roads and debris. There is an existing access road running from Shanaway Rd to the south up through the site and continues north past the site boundary. This access route comprises old gravel and is likely used to access the fields for agricultural purposes. At the south of the site, there is a small square section of overgrown scrub which was inaccessible. It is proposed to place two houses here. There are no trees along the perimeter of this section which were noted to have the potential for usage by bats for roosting, due to a lack of Potential Roosting Features (PRFs), such as lifting bark, knotholes or dense ivy. There are few trees in this area and it comprises mostly medium height scrub. There is one mature Ash tree to the left (west) of the entrance that does have some potential, but this is limited and this tree stands alone on the side of the road. Overall this tree is considered to have low potential for bats. There is a stone wall to the eastern side of the access road to the south, which is the boundary of a house and what appears to be a car salvage area, with some old cars parked outside the entrance. There is little potential for bat habitat here, apart from the linear access route into the site.

Beyond this point, the site opens up mostly to the eastern side. As viewed from previous aerial imagery, the site appears to have consisted of scrub and potentially sections of rank woodland in the past. This is not the case currently, as it appears this area of the site has been cleared in the recent past. Some areas of past burning of materials were noted. The site now comprises mostly sections of debris such as piles of branches, which have recolonised. Scrub is beginning to develop but this is limited and resembles a site that has been cleared and has begun to recolonise this summer with flowers and grasses present. There is therefore limited potential for bats but this may provide suboptimal foraging habitat. There are some mature trees along the eastern boundary that have potential for bats but this is limited as the trees are in generally good condition. However, some PRFs were noted such as lifting bark, on a tree in the most north-eastern corner of the site. Overall this is considered to have low bat roosting potential. There is another wall bounding the site to the east backing onto a residential property. Along the western edge of the existing access route, there is a loose stone wall and some bracken present but there is no hedgerow really present, as it appears on aerial photography. There is one treeline heading west in the middle of the site just outside the red line, and this comprises non-native trees such as conifers, and none of these trees in this area were noted as having potential for bats. The western side of the site comprises part of the adjoining field, where just the grassland is included in the boundary. However, the treeline west of this field outside the boundary is wide and tall, with mature trees and was noted to be a good potential foraging route, especially for Lesser Horseshoe bats due to its mature nature and placement within the landscape. Some trees along this area were noted to have low bat roost potential with some PRFs noted in the form of knotholes.

4.2.2 Activity Surveys

The emergence / activity surveys were undertaken on the 12th and 22nd August 2022. These surveys were timed to coincide with ideal weather conditions. The main purpose of these surveys was assess the presence of any bat roosts on the site. During these surveys moderate bat activity was recorded. Three species were recorded - Common pipistrelle *Pipistrellus pipistrellus*, Soprano pipistrelle *Pipistrellus pygmaeus*, and Leisler's bat *Nyctalus leisleri.* At the start of the survey on the 12th August 2022 a stationary detector first Anabat Express was located on a treeline to the north of the proposed development site. This Anabat was deployed for 4 full nights. Over these 4 nights there were a total of 766 bat passes. These were made up of at least 6 species - Common pipistrelle, Soprano pipistrelle,

Leisler's bat, Brown long-eared Bat *Plecotus auritus*, *Myotis* sp. and Lesser horseshoe bat *Rhinolophus hipposideros.* In addition, unidentified pipistrelles were recorded.

On the night of the 12th of August there were a total of 370 bat passes. Of these, 80% were common pipistrelle. These were the most commonly recorded bat. There were 58 soprano pipistrelle passes accounting for 15.7% of total passes. These two species made up the majority of bat passes on the first night. Also recorded were Leisler's bat (1.6%), Brown long-eared bat (1.6%) and *Myotis* sp. (0.3%). Also recorded were 3 unidentified pipistrelles. On the second night (13th August) there were a total of 333 bat passes. A similar pattern to the first night was recorded where the majority of passes were from common pipistrelle (57%) and soprano pipistrelle (35%). Also recorded were Leisler's Bat (5.7%), Brown long-eared bat (0.9%) and unidentified pipistrelle (0.9%).

On the following two nights bat activity was very low relative to the previous two nights. This is likely due to the adverse weather conditions with stormy conditions, heavy rain along with thunder and lightning. On the night of the 14th of August there were only 14 bat passes. These consisted of common pipistrelle (50%), soprano pipistrelle (35%), and Leisler's bat (29%). On the fourth night, the 15th of August there were 49 bat passes. Common pipistrelle were again recorded accounting for 39% of bat passes however on this night there was a high proportion of soprano pipistrelle recorded. Soprano pipistrelle bat passes were 43% of the total. Also recorded were Leisler's bat (14%), Brown-long eared bat (2%) and Lesser horseshoe bat (2%, 1 bat pass).

Table 3 Anabat Express Records for Ballylannidy, Ennis, Co. Clare for the 4 full nights records from the 12th to the 16th of August 2022.

Species	Nights							
	12/8/22		13/8/22		14/8/22		15/8/22	
Common pipistrelle *Pipistrellus pipistrellus*	296	80%	191	57%	7	50%	19	39%
Soprano pipistrelle *Pipistrellus pygmaeus*	58	15.7%	117	35%	3	21%	21	43%
Unidentified pipistrelle	3	0.8%	3	0.9%				
Leisler's bat *Nyctalus leisleri*	6	1.6%	19	5.7%	4	29%	7	14%
Brown long-eared Bat *Plecotus auritus*	6	1.6%	3	0.9%	-	-	1	2%
Myotis sp.	1	0.3%	-	-	-	-	-	-
Lesser horseshoe bat *Rhinolophus hipposideros*	-	-	-	-	-	-	1	2%
Total	**370**	**-**	**333**	**-**	**14**	**-**	**49**	**-**

The second Anabat was placed just outside the site boundary but within the same field as the western extent of the site boundary on the 22nd August 2022 at the start of the second emergence/activity survey. This was placed on a treeline here as Lesser Horseshoe bats were recorded on the first Anabat within the site, which was considered to be suboptimal foraging habtiat for LHBs. Therefore, due to connectivity to suitable habitat for this species in the wider area, and known roost locations, it was considered likely that this species uses the mature treeline west of the site outside the boundary. This Anabat was deployed for a further 2 full nights. A total of 245 bat passes were recorded – which is considered to be low to moderate activity.

On the night of the 22nd of there were 98 bat passes in total. There were 33.7% common pipistrelle bat passes and 32.7% soprano pipistrelle. The next highest count was from lesser horseshoe bats at 24.5%, at a total of 24 bat passes on the first night. Also recorded were Leisler's bat (4.1%) and *Myotis* sp. (1%). Unidentified pipistrelles accounted for 4.1% of bat passes. There was a relatively high proportion of lesser horseshoe bat passes recorded compared to other nights, likely due to the change in Anabat location along a more suitable route. There were three bat species recorded on the night of

August 23rd. Soprano pipistrelle accounted for 72.1% of all bat passes. Common pipistrelle accounted for 16.3%. Lesser horseshoe bats were also recorded, accounting for 7.5% of bat passes, accounting for 11 bat passes on the second night.

Table 4 Anabat Express Records for Ballylannidy, Ennis, Co. Clare for the 2 full nights records from the 22nd to the 23rd of August.

Species	Nights			
	22/8/22		23/8/22	
Common pipistrelle *Pipistrellus pipistrellus*	33	33.7%	24	16.3%
Soprano pipistrelle *Pipistrellus pygmaeus*	32	32.7%	106	72.1%
Unidentified pipistrelle	4	4.1%	6	4.1%
Leisler's bat *Nyctalus leisleri*	4	4.1%	-	-
Myotis sp.	1	1.0%	-	-
Lesser horseshoe bat *Rhinolophus hipposideros*	24	24.5%	11	7.5%
Total	**98**	**-**	**147**	**-**

Overall the site was surveyed over 6 full nights with a combination of detector emergence / activity surveys (2 nights) and static detector surveys (6 nights). The emergence / activity surveys coincided with ideal optimal weather conditions. Two nights of the detector surveys were affected by suboptimal weather but overall a robust survey was completed. The survey has confirmed that bat activity on the site is low to moderate, here are no bat roosts on the site, and small numbers of Annex II Lesser Horseshoe Bats use the site.

4. IMPACTS

4.1 Roost Habitat Loss

There are no structures on the proposed development site. The site comprises mostly an existing access track, recolonising bare ground, scrub, low loose stone walls and treelines. Most of the site appears to have been cleared in the recent past and is now recolonised. There are very few trees on the site with bat roost potential. However, no bats were recorded emerging from these trees. At best, trees within the site boundary that have potential are rated as having low potential for bats. There is a mature Ash tree to the west of the entrance on the Shanaway Rd which has low potential for usage by bats. There is a further tree in the north-west corner of the site that has low potential for bats. It is considered unlikely that bats are present in these trees due to their location and surrounding habitat, but there is some potential and bats can use trees at various times of the year across the seasons. There is no suitable roosting habtiat on the site for Lesser Horseshoe bats.

Common pipistrelles were recorded from approximately 20 minutes before dusk, which may indicate that there is a roost site nearby the site. However, there are no confirmed roosts on the site. This was followed by Leisler's bats, which are generally the first to emerge. It is known that there is a Soprano pipistrelle roost in the wider area. Overall however, activity was low during the emergence period for these species. The site is not considered to have any roost sites present. At most, a small number of bats may use mature trees on the site – but this was not confirmed by the current survey. The loss of these low potential trees as roost sites is not considered to be significant in the context of these common bat species and the surrounding landscape, where more suitable trees are present west of the site outside the site boundary. Impacts regarding roost habtiat loss are assessed as being slight negative and in the local context.

4.2 Foraging and Commuting Habitat Loss

There are suitable linear features on the site that are used by foraging and commuting bats. These consist of the existing access road into the site, the treeline to the east, the low stone wall along the western side of the access road and treelines outside the site boundary such as that to the west. Common pipistrelles regularly use the western side of the site for foraging and commuting, but activity overall was considered to be moderate (at most) for this common species. Soprano pipistrelles were also frequently recorded but in lower numbers, as well as Leisler's bats which were lower again. These three species are the most common in Ireland and can be found in most suitable habitats for bats. They are adaptable species that when compared with other species, are not considered to be the most sensitive. Nonetheless, the proposed development will result in a loss of some foraging and commuting habitat regularly used by these species. There is also a Soprano pipistrelle roost nearby, which may use these commuting and foraging routes as this species was recorded frequently using the site. This is evaluated as being slight negative, long-term and in the local context. This impact can be reduced by additional planting and lighting mitigation. It is noted that the design includes for existing boundary treatments to be maintained and supplemented with planting. Further planting of linear features is also proposed. This will ensure that impacts on bats are minimised insofar as possible.
Lesser Horseshoe bats are the only Annex II protected bat species on the island of Ireland, meaning it is protected under this Annex of the EU Habitats Directive, while all other species of bat are protected under Annex IV of this directive. This is a species considered to be very sensitive to impacts from developments, particularly involving the loss of foraging and commuting habtiat between it's roost sites. This species forages mainly in woodland habitats and relies on mature treelines to connect fragmented habitats in the landscape. This bat is confined to six western counties including the Ennis area of Clare

(NPWS & VWT, 2022). One Lesser Horseshoe bat pass was picked up on the first bat detector within the site boundary over 4 full nights of recordings during August 2022. This is opposed to a total of 35 bat passes for LHBs over two nights recordings, on the western boundary. Therefore, it can be surmised that Lesser Horseshoe bats regularly use the western treeline regularly for commuting and foraging through the landscape, but this is outside the site. The site itself is less suitable for these species, with non native trees, no mature dense treelines and mostly comprises overgrown cleared land and an access road. Some LHBs will enter the site but this is considered to be at a lower frequency when compared to the more suitable habitat just outside the site.

Nonetheless, the proposed development may result in the loss of this foraging and commuting habitat for Lesser Horseshoe bats. Disturbance through artificial lighting may affect this mature treeline outside the site boundary. If there is light spill along this corridor, coming from within the site boundary, Lesser Horseshoe bats may no longer use this linear feature. This species is sensitive to light pollution. This would lead to potential knock on effects relating to habitat loss and habitat fragmentation, which is known to greatly affect the clusters of subpopulations of this species (NPWS & VWT, 2022). This could lead to a significant effect on the population in this area of Ennis, in the absence of any mitigation. Impacts within the site boundary are considered to be less significant, as the one bat pass recorded is likely to be a bat straying from the mainly used linear corridor, and is unlikely to be important, with a suboptimal non native and sparse treeline here.

4.3 Lighting and Disturbance

As noted above, lighting impacts can affect bat populations. Light spill affects all bat species in Ireland, by resulting in displacement and habitat loss, as well as delayed emergence times and reduced foraging opportunities. Some bat species are more sensitive than others, with common species being more adaptable to such impacts, while others are very light sensitive. If artificial lighting is included in the proposed development, this could result in negative impacts on bat species. The majority of bats using the site were found to be common species, such as Common pipistrelle, Soprano pipistrelle and Leisler's bats. These species would be less sensitive when compared to Lesser Horseshoe bats, which were also recorded on the site, but can still be affected. Lighting installed on the site whether for security, residential housing or access, can spill on adjacent habitats such as the linear features of the site and this may displace bats from using these areas, causing them to use other habitats elsewhere. Over time this can fragment and reduce habitat areas that are used by these species locally. In the absence of any mitigation and taking the precautionary principle, this impact is assessed as being slight negative, long-term and in the local context, for the common species using the site. This can be reduced with light spill mitigation measures, which are outlined below.

Lesser Horseshoe bat is an Annex II protected species and is very sensitive to light pollution. It is already confined to certain areas of Ennis. Impacts such as habitat fragmentation and a lack of connectivity between subpopulations of the species are already having an effect on this horseshoe species. Therefore, if lighting included with the proposed development spills onto the treeline to the west that this species has been found to regularly use to move through the landscape, this could result in further habitat fragmentation and potentially sever the connections between different habitats used by this species in this area of Ennis. This impact needs to be assessed in a Natura Impact Statement as this species is protected under Annex II of the EU Habitats Directive, and has the potential to be significant in the absence of any mitigation measures.

5. MITIGATION

5.1 License Requirements

There are no structures on the proposed development site. There is a low potential for a few trees on the site to be used by bats at any time of the year. It is considered unlikely that bats use these trees at present, but it cannot be ruled out, and that in the time period elapsed from the current surveys to the time of site clearance / tree felling, that bats may use these trees. If the identified trees, such as the mature Ash west of the site entrance on Shanaway Rd, or the tree in the north-west corner, will be felled a derogation licence will be required. This derogation licence is required under Regulation 25 of the European Communities (Natural Habitats) Regulations 1997 and will be obtained from the National Parks and Wildlife Service in advance of any works. Disturbance of a known bat roost is a notifiable action under current national and European legislation. It is noted however that in these areas, the design drawing does show that existing boundary treatments will be maintained and supplemented with additional planting, which is welcomed and outlined below in section 5.3.

5.2 Timing and Avoidance

Any major site clearance or works involving vibration should be undertaken outside the active bat season. This runs from around mid-April to the end of September. This will ensure that any bats using the mature trees outside the site boundary would be protected and disturbance avoided during this sensitive time period. Fencing should be erected around the site boundary during construction to ensure the works area is clearly delineated.

5.3 Landscaping & Tree Felling

No trees outside the site boundary will be felled to facilitate the development. Within the site boundary, any trees to be felled will follow NRA (2006) '*Guidelines for the Treatment of Bats during Construction of National Road Schemes'*. If the mature Ash tree to the west of the site entrance, or the large tree in the north-west corner of the site, are required to be felled to facilitate the development, a derogation licence will be required as noted above in section 5.1. It is noted however that in these areas, the design drawing does show that existing boundary treatments will be maintained and supplemented with additional planting, which is welcomed and outlined below in section 5.3.

Once a derogation licence has been obtained, tree removal should take place in the period from late August to late October / early November. During this time all bats (young and old) are capable of flight and are not yet in hibernation, therefore would be capable of escaping. Warning must be given to any tree-roosting bats prior to felling which is done by nudging the tree two to three times, with a pause of approximately 30 seconds between nudges, to warn bats that may be present and encourage them to become active and escape. The guidelines highlight that the rate of fall of cut trees should not be accelerated by the use of chain and vehicle. This would cause a heavy impact which any occupying bat would not survive. Also, as a precaution, knocked / cut trees should be left for a period of 24hrs or overnight before they are sawn up or mulched to ensure bats that could have been present have escaped. If bats are found, a derogation licence will likely then be required. This derogation licence is required under Regulation 25 of the European Communities (Natural Habitats) Regulations 1997 and will have to be obtained from the *National Parks and Wildlife* Service in advance of any works. Disturbance of a known bat roost is a notifiable action under current national and European legislation.

Any planting undertaken on the site should endeavour to utilise native species wherever possible. Plants chosen for landscaping should also follow the All-Ireland Pollinator Plan, which would provide suitable foraging opportunities for bat species in the area, as well as promote biodiversity (National Biodiversity Data Centre, 2021). Night-scented plants should be used wherever possible which would benefit bats in the local area. The site layout plan does shoe that there will be additional planting along the access road which will be used, further planting to the south of the site where two houses are proposed, as well as a green area just east of the access road in the middle of the site. This planting should be native, and will ensure that impacts on bats are minimised insofar as possible. This additional planting of trees and hedgerow species will also likely improve areas along the existing access road, where there is currently no trees along much of its length.

5.4 Lighting

A lighting plan should be prepared for the proposed development site, showing expected light spill from all areas of the site, including any light spill that may occur outside the red line boundary. Light spill should be minimised insofar as possible, and only used where absolutely necessary for security etc, in the interest of local bat species and nocturnal fauna. LED lighting does have a greater impact on bats when compared with other lighting such as low-pressure sodium. If LEDs must be used, colours other than white may be used to lessen potential light spill impacts. Warmer colour wavelengths between 2700 and 3000 Kelvin seem to have less impacts on wildlife (Marnell *et al*., 2022; Bat Conservation Trust & Institute of Lighting Professionals 2018). Consideration should be given to restrictions during dark hours, such as reducing light levels, or turning off lights, during late hours of the night. Motion sensor lighting could also be considered. Bat Conservation Trust & Institute of Lighting Professionals (2018) guidance may also be followed, as well as Bat Conservation Ireland's *Bats & Lighting: Guidance Notes for Planners, Engineers, Architects and Developers* (2010).

6. CONCLUSIONS

There are no structures on the proposed development site. No bat roosts were identified on the proposed development site. The current surveys included a daytime inspection, including trees on the site, as well as a total of 6 nights of activity surveys. Two mature trees on the site were identified as having low potential for bat roosting habitat. The main species using the site are Common pipistrelle, Soprano pipistrelle and Leisler's bats. Activity was noted to be moderate to low on some nights. Some bats were recorded early on the detectors, which may indicate a roost site nearby or potentially a small number using trees on the site, however the likelihood of this is considered to be low due to the locations of these suitable trees. Lesser Horseshoe bats, the only bat species in Ireland protected under Annex II of the EU Habitats Directive, were recorded using the site. Based on an analysis of records obtained from the National Parks and Wildlife Service, the nearest roost site is c. 1km from the site, with a building roost also c. 1.7km from the site. One Static detector was placed inside the red line boundary in the middle treeline, which recorded one bat pass of LHB over 4 full nights of recordings. It was suspected that these bats are more likely to use the mature wide treeline outside the site boundary to the west as this was more suitable. A static detector was then placed along this treeline for two nights, and the LHBs were found to use this regularly based on data from August. It can therefore be concluded that LHBs infrequently cross into the red line boundary, but frequently use an adjacent mature treeline outside the site boundary.

Due to the presence of Lesser Horseshoe Bats on the site, a Natura Impact Statement is likely to be required, as this species is strictly protected under Annex II of the EU Habitats Directive.

Impacts on other bat species using the site were identified as roost habitat loss, foraging and commuting habitat loss, lighting and disturbance. Impacts at most are assessed to be slight negative, long-term and in the local context in the absence of any mitigation measures. Two mature trees on the site were identified as having low potential for bat roosting. If these trees are required to be felled, a derogation licence will be required, which must be obtained from the National Parks and Wildlife Service in advance of any works. This would result in the loss of this potential roosting habitat, though suboptimal due to the location of the trees in the landscape, with one on the Shanaway Rd and one adjacent to the eastern residential dwelling. Mitigation measures outlined to reduce potential impacts on bats include timing and avoidance of the active bat season, tree felling mitigation, native landscaping and measures to reduce light spill on the site and surrounds. The site layout plan also includes for additional planting along linear features such as the access road, and existing boundary treatments will be maintained and supplemental planting included.

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PLATES

Plate 1 Entrance to the proposed development site. Mature Ash tree has low potential for roosting bats but some PRFs were noted.

Plate 2 Existing access road through the proposed development site.

Plate 3 Most of the site had been cleared in the past, and some debris was noted, but this area has recolonised.

Plate 4 Spoil and bare ground on the proposed development site. Some evidence of burning in areas were noted.

Plate 5 View (looking west) of the proposed development site showing surrounding habitat. Mature treelines further west used by Lesser Horseshoe bats to commute through the landscape.

Plate 6 Anabat Express Statis Detector.

Plate 7 Mature treeline outside the red line boundary to the west is used frequently by Lesser Horsehoe bats.

Plate 8 Low quality non native treeline in the middle of the site, One bat pass of LHB was recorded here over 4 full nights of records.

Plate 9 Low loose stone wall along the western edge of the existing access road appeared to be a hedgerow in the past.

Proposed Development Site in Ballylannidy, Woodstock, Ennis, Co. Clare (Planning Ref: 22/263)

NATURA IMPACT STATEMENT

VERSION: 16th February 2023

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TABLE OF CONTENTS

1. INTRODUCTION

The current document provides a Natura Impact Statement (NIS) and assesses the likely significant effects effects on the Lower River Shannon SAC, River Shannon and River Fergus Estuaries SPA, Pouladatig Cave SAC, and the Newhall and Edenvale Complex SAC from a proposed Housing development at Ballylannidy, Woodstock, Ennis, Co. Clare. There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22/263). The location of the proposed development is shown in Figures 1 and 2.

Clare County Council requested further information on the 18th of May 2022 requesting that a Screening for Appropriate Assessment (AA) was carried out. Ecofact Environmental Consultants Ltd. completed the Screening for AA and concluded that there was the potential for impacts on the Pouladatig Cave SAC, Newhall and Edenvale Complex SAC, Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA (Ecofact, 2023). A standalone bat impact assessment has been prepared (Ecofact, 2022).

The proposed development site is not located within the boundary of any Natura 2000 site. The standalone bat report provides results of bat surveys undertaken at the proposed development site, which show that the Annex II protected Lesser Horseshoe Bat does use the site for foraging and commuting. This species was also indicated to frequently use areas of land adjoining the site that could be potentially fragmented as a result of the proposed development. Due to this, there is the potential for significant adverse impacts on this species which requires assessment. There is potential for impacts on two LHB SACs within 3km of the site, which are the Pouladatig Cave SAC and the Newhall and Edenvale Complex SAC. There is the potential for disturbance, habitat loss / fragmentation impacts and light pollution.

The proposed development will produce wastewater that will be treated at the Ennis North (Clonroadmore) plant, which discharges into the River Fergus. This provides a connection with the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. Therefore there is a pathway for potentially significant impacts on water quality and this requires assessment.

Mitigation measures are required for the proposed development, which cannot be provided in a Screening for Appropriate Assessment.

2. METHODOLOGY

2.1 Desktop Review

A desktop study was undertaken to identify the extent and scope of the potentially affected Natura 2000 sites within the current study area. The desktop study identified the conservation interests of the designated sites with respect to the qualifying interests (species and habitats) relevant to the designated sites within the area.

A review of published literature was undertaken in order to collate data on the receiving environment; a range of additional sources of information including scientific reports produced by, and information on the websites of the Environmental Protection Agency (EPA) and the National Parks and Wildlife Service (NPWS) were also reviewed. The National Biodiversity Data Centre website was accessed for previous records of protected species in the area. A full bibliography of information sources reviewed is given in the reference section.

2.2 Site Survey

A survey of the site took place during August 2022. This survey involved a daytime inspection of the subject site during daylight hours to assess the habitats present on the site and their potential importance for bats. Mature trees were inspected for their potential to have bats, using visual observations to examine the trees for knotholes, dense ivy coverage, woodpecker holes, damaged limbs, lifting bark or impact shatters. Any Potential Roost Features (PRFs) were recorded. The rest of the site was inspected for suitable bat foraging habitat and potential commuting routes. Any other features relevant to the usage by bats including existing lighting was recorded.

Two emergence / activity surveys were completed on the 12th August and 22nd August 2022 under ideal survey conditions. The surveys were completed by two ecologists from 30 minutes before dusk to 2 hours after dusk. The weather conditions for the survey were considered to be optimal. Each of the ecologists used bat detectors for the duration of the survey. The bat detectors used included BatBox Duet Bat Detector and Elecktron Battscanner. Bat species using the site during the course of the survey and notes on their behaviour and flight paths were recorded. An Anabat Express Static Detector was set up on site on the 12th of August 2022 and was left in place for 4 full nights. These records were analysed and it was decided that a further static detector be placed just outside the site boundary, in the same field, along a more likely foraging route for Lesser Horseshoe Bats. Therefore, on the 22nd of August another Anabat Express Static Detector was deployed on the site for 2 full nights. Data recorded was then analysed using the Anabat Insight software. Bat Calls were identified to species level (where possible) based on professional judgement and with reference to *British Bat Calls: A Guide to Species Identification* (Russ, 2012).

The site was visited again in January 2023 when this NIS was being prepared. A general walkover of the site was completed.

2.2.1 Personnel

The surveys and assessments were completed by fully licensed bat surveyors (Dr. Will O'Connor, Amy Butler, and Grace Walsh). This NIS was written by Dr. William O'Connor who is a Charted Biologist, a Chartered Environmentalist, and Fellow of the Royal Society of Biology. Dr. O'Connor as over 20 years professional ecological consultancy experience.

2.3 Appropriate Assessment Methodology

The preparation of this NIS for Appropriate Assessment follows the guidance published by DoEHLG (2010) '*Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities'*. According to these guidelines, assessing the impacts of a project or plan on a Natura 2000 site is a four staged approach, as described below:

- ***Stage One: Screening / Test of Significance*** - The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;
- ***Stage Two: Appropriate Assessment*** - The consideration of the impact of the project or plan on the integrity of the Natura 2000 site, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

- ***Stage Three: Assessment of Alternative Solutions*** - The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site; and
- ***Stage Four: Assessment Where Adverse Impacts Remain*** - An assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

The safeguards set out in Article 6(3) and (4) of the Habitats Directive are triggered not by certainty but by the possibility of significant effects. Thus, in line with the precautionary principle, it is unacceptable to fail to undertake an appropriate assessment on the basis that it is not certain that there are significant effects.

2.3.1 Natura Impact Assessment

A Natura Impact Statement (NIS) considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The current report is set out in the format of a NIS and comprises a scientific examination of the plan / project and the relevant Natura 2000 sites; to identify and characterize any possible implications for the site in view of the site's conservation objectives, structure and function, taking account of in combination effects. The requirements for Appropriate Assessment derive directly from Article 6(3) of the EU Habitats Directive (1992).

Direct and indirect impacts in isolation or in combination with other plans and projects on the identified Natura 2000 sites in view of the sites' conservation objectives have been examined. Case law of the European Court of Justice (ECJ) has established that Appropriate Assessment must be based on best scientific knowledge in the field. These are the qualifying interests i.e. Annex I habitats, Annex I bird species (EU Birds Directive, incorporated into the EU Habitats Directive) and Annex II species hosted by a site and for which that site has been selected. The conservation objectives for Natura sites (SACs and SPAs) are determined under Article 4 of the Habitats Directive and are intended to ensure that the relevant qualifying interests i.e. Annex I habitats, Annex I bird species and Annex II species present within the designated sites are maintained in a favourable condition. The current assessment of the proposed housing development provides a description of the project and the receiving environment. The conservation objectives of the Natura 2000 site potentially affected by the proposal are listed and potential impacts outlined with respect to the integrity of the Natura 2000 site. Mitigation measures have been proposed for the protection of the conservation interests and the avoidance of impacts to Natura 2000 Sites occurring within the study area.

3. DESCRIPTION OF THE PROJECT

There is a proposal for a residential development at the site, to consist of 16 no. dwelling houses in total consisting of 2 no. detached two storey dwelling houses and 14 no. semi-detached two storey dwelling houses and all ancillary site development works and connections to public services (Planning Reference No.: 22263). The drawings for the development show two houses at the southern road site, with treeline planting in the area, and an access route following the existing road into the site. Further treeline planting is noted in this area, as well as a green space in front of the main cluster of houses to the east of the site.

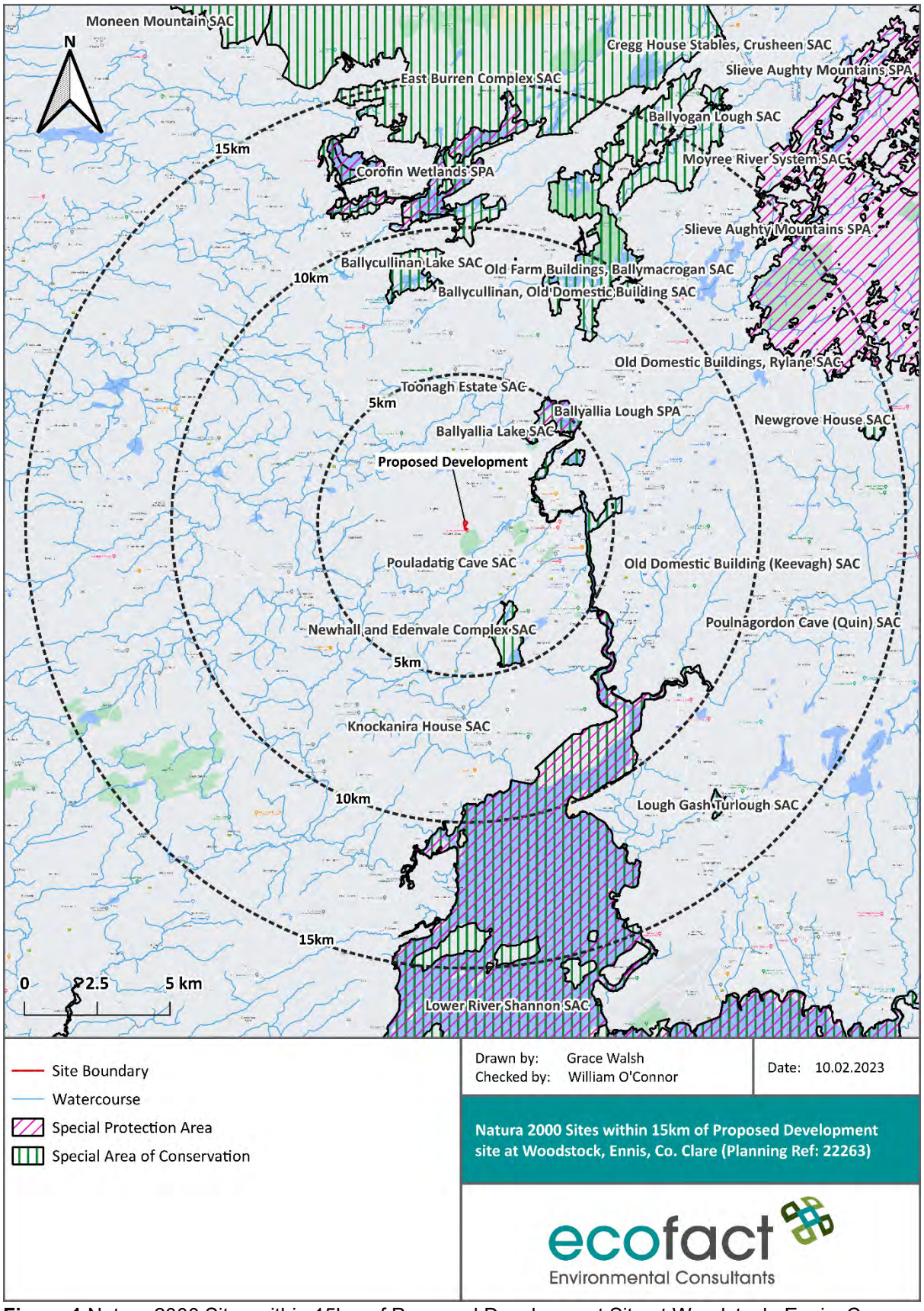

Figure 1 Natura 2000 Sites within 15km of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263). `

Figure 2 Location of Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263).

4. RECEIVING ENVIRONMENT

4.1 Lower River Shannon SAC

This SAC is a very large site, stretching along the Shannon valley from Killaloe, Co. Clare for 120 km to Loop Head / Kerry Head, encompassing; the Shannon, Feale, Mulkear and Fergus estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head. The Galey, Smearlagh, Oolagh, Allaughaun, Owveg, Clydagh, Caher, Breanagh and Glenacarney rivers are included in the Feale sub-catchment. The Killeenagarriff, Annagh, Newport, the Dead River, the Bilboa, Glashacloonaraveela, Gortnageragh and Cahernahallia rivers are part of the sub-catchment of the Mulkear. The Shannon and Fergus Estuaries form the largest estuarine complex in Ireland. The area features vast expanses of mudflats, many of which are fringed with saltmarsh vegetation. There are over twenty areas of estuarine saltmarsh identified within the SAC site (the most dominant type being Atlantic salt meadow occurring over mud), the most important of which are located around the Fergus estuary and at Ringmoylan Quay.

The River Fergus is a designated Nutrient Sensitive Area (NSA) associated with the Ennis North WWTP. According to the Shannon North Estuary Catchment Assessment 2010-2015, this WWTP was compliant the environmental objectives for NSAs (EPA, 2018). The documents for the Ennis North WWTP were accessed on the Irish Water and EPA websites on the 9th of September 2022.

The most recent Annual Environmental Report (AER) for the Ennis North WWTP is from 2021 (uploaded on the 28th of July 2022. In this AER, Irish Water state that the plant provides Tertiary P Removal but is non-compliant with its licence conditions. The plant is currently failing on the following parameters: Ammonia – Total as N and Orthophosphate (as P). The plant is therefore non-compliant with the Emission Limit Values (ELVs) set out in the discharge licence. The Ammonia ELV breach is noted to be due to a change in aeration levels, which was noted to be rectified immediately. The ambient monitoring for the plant is also noted to not meet the required EQS. The AER also noted that the plant is working within capacity, with 7197 p.e. remaining and is not expected to exceed capacity within the next 3 years (Irish Water, 2021). The Licence Audit Report in 2021 included a grab sample of the discharge from the Ennis North WwTP plant which showed that the parameters were in compliance with the licence conditions and no follow up actions were deemed to be required (EPA, 2021).

The most recent Inspector's report in 2021 included further details on the plant, including a Screening for Appropriate Assessment carried out by Irish Water. The conclusion as noted in the Inspector's report was such that it can be excluded that the activity will have a significant effect on the Natura 2000 network and thus no Appropriate Assessment was deemed to be required (EPA, 2020). This is despite mitigation measures being in place and a direct discharge into the SAC/SPA. This is obviously an invalid conclusion but the current NIS has taken the absence of a required AA on the Ennis North WwTP into account.

4.2 River Shannon and River Fergus Estuaries SPA

The River Shannon and River Fergus Estuaries SPA comprises the entire estuarine habitat west from Limerick City and south from Ennis, extending west as far as Killadysert and Foynes on the north and south shores respectively of the River Shannon (a distance of some 25 km from east to west). The site is one of the most important coastal wetland sites in the country and regularly supports in excess of 50,000 wintering waterfowl. The site also has vast expanses of intertidal flats, an Annex I habitat on the E.U Habitats Directive (1992).

4.3 Lesser Horseshoe Bats [1303] and associated SACs

4.3.1 Introduction and ecology

The Irish population of Lesser Horseshoe Bats (*Rhinolophus hipposideros*) is supported only in the western region where suitable habitats are provided in the karstic landscape (Mayo, Galway, Clare, Limerick, Cork and Kerry) with availability of roosting sites surrounded by or in close proximity to optimal foraging habitats. The most important foraging habitats for the Lesser Horseshoe Bat are mixed and broad-leaf woodlands. Favourable roosts for this broad-winged, manoeuvrable species are those whose surrounding habitat is predominated by woodland and they avoid roosting in sites with mixed agricultural land covers in the surrounding area (Lundy et. al. 2011).

Although habitat type and composition of a landscape is important, connectivity is also essential for gene-flow and the sustainability of the Lesser Horseshoe Bat population. Suitable access network of sub-populations, roosts (especially maternity roosts) and ideal foraging grounds is a determining factor in habitat selection of the Lesser Horseshoe Bat (Roche *et al.,* 2015). In Ireland these species rely largely on disused buildings which are typically more prone to deterioration than natural roosts (e.g. caves). This has been identified as a reason for bat number declines at certain sites, however, it has also been noted that this decline can be offset by exchange of individuals between roosts and migration to more favourable sites. This balance however, can only be maintained if good connectivity is maintained and habitat fragmentation, which is known to have a significant negative impact on the species, is prevented, so that the population is facilitated to optimise habitat selection (Roche *et al.,* 2015).

Lesser Horseshoe Bats are particularly sensitive to environmental changes which means that alterations to their habitats and/or flight path networks have a significant impact on their behaviour and distribution. Lesser Horseshoes bats opt for flight routes along narrow corridors or parallel to linear landscape structures, such as hedgerows, as they are more suitable for echolocation and they are known to avoid exposure to open spaces (Ramovs *et al.,* 2010).

Stone *et. al*. (2009) demonstrated how streetlights degrade Lesser Horseshoe Bat's commuting routes and disrupt their natural behaviour. This species is not easily habituated to the introduction of anthropogenic light a long commuting routes and the introduction of light was found to significantly reduce bat activity and delay the onset of commuting behaviour. Disturbance to bat's commuting routes may also force the bats to use alternative, sub-optimal routes at an energetic cost, or they may be forced to abandon roosting sites due to isolation from foraging habitats (Stone *et. al*., 2015)

In some cases, the species' intolerance of environmental changes is over-ridden by their loyalty to long-term roosts. There have been cases in which the species has been uncharacteristically tolerant of environmental changes. However, this can leave the bats isolated in sub-optimal habitats where young may be weaker and less viable, impacting on their survival and conservation (Kelleher, 2007).

Bat Conservation Trust *Core Sustenance Zones: Determining Zone Size* (2016) lists the core sustenance zone (CSZ) for each bat species found in the UK and Ireland, which is the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. For Lesser Horseshoe Bats, the weighted average foraging range is given as 2.02km and the CSZ is given as 2km. This calculation was based on 4 studies with a reasonable sample size from multiple colonies. As this document also notes that for Annex II species there is some justification for increasing the CSZ zone size, and some research has shown that Lesser Horseshoe Bats may forage up to 2.5km from a roost, NPWS have considered

2.5km an appropriate foraging distance for Lesser Horseshoe Bats. By either measure the proposed development site and adjoining areas is with the CSZ for Lesser Horseshoe Bats.

Lesser horseshoe bat populations will use a variety of roosts during the year. The main roosts are hibernation roosts (e.g. cave sites) and summer roosts (usually buildings). However, Lesser Horseshoe Bats also rely on a network of sites that may include satellite, transitional and night roosts along with the main summer and winter roost sites, to fulfil their lifecycle requirements within a locality. The location of all the "auxiliary roosts" that bats associated with Newhall and Edenvale Complex SAC and Pouladatig Cave SAC, for example, will not be known.

In the Lesser Horseshoe Bat Species Action Plan 2022-2026 (NPWS & VWT, 2022) it is staged that "*In many cases it is only the structure the bats inhabit that has been included within the boundary of the SAC, due to a lack of information on how the colony utilized the surrounding habitat at the time of designation. We now know that the presence of suitable commuting and foraging habitat within a radius of at least 2.5km is important for the success of a maternity colony*". Lundy *et al*., (2011) indicated that there is little scope for this species to extend beyond its current distribution and the most recent Article 17 report (NPWS, 2019) states that the short-term trend for foraging habitat for this species is decreasing. It is essential, therefore, that existing foraging habitat supporting colonies is retained, and that steps are taken to provide new habitat (NPWS & VWT, 2022).

NPWS & VWT (2022) also state that "*maintaining the genetic diversity of the lesser horseshoe bat in Ireland is crucial for its long- term survival. The retention of existing linear landscape features within at least 2.5km but preferably 5km of lesser horseshoe bat roosts with 20 bats or more is essential to counteract the documented genetic differentiation that has already occurred within the species throughout its Irish distribution*". NPWS & VWT (2022) also reported that 75% of the lesser horseshoe bats they radio tracked over two summers roosted in buildings at night that were not their day roost. These night roosts were significantly nearer to the core foraging area of the bats than to the day roosts. The authors suggested that minimising the distance to feeding sites may be the primary function of night roosts and are an integral feature of core foraging areas and warrant protection. VWT designed a timber night roost that can be easily located in suitable habitat and several of these have been erected under a number of schemes that will provide evidence of their efficacy for future use.

4.3.2 Pouladatig Cave SAC

Pouladatig Cave SAC is located to the west of Ennis in Co. Clare near Inch Bridge. The area included in the SAC consists of a natural limestone cave along with its surrounding scrubland and hedgerow habitats. The site provides suitable habitat for the Lesser Horseshoe bat in terms of ideal shelter and foraging grounds and supports a population of approximately 100 individuals of the species since 1986. The Pouladatig Cave is a SAC due to the presence of the Cave habitat and the Lesser Horseshoe Bat. The location of Pouladatig Cave SAC in relation to the subject site is indicated in Figure 3.

The habitat of interest in this SAC is a natural limestone cave. The cave is relatively short with an active stream flowing through it and is not open to public access. It has a small entrance that is sheltered by Hawthorn *Crataegus monogyna* trees. There is a low bedding crawl inside the entrance and the cave then opens up into larger passageways with some rock falls and small chambers also present. The cave is a suitable roosting site for bats.

Pouladatig cave is not exposed to visitor disturbance and is therefore a suitable hibernating site for the Lesser Horseshoe Bat. The bats utilise the main passage to hang from the roof and along the walls of the main passageway. The active stream within the cave does not pose any flooding threat to the species. The cave is surrounded by scrub vegetation and hedgerows which provide suitable foraging

areas and shelter for the bats. The Lesser Horseshoe Bat has been using this cave for many years. Approximately 100 bats have been recorded at this site since 1986. Thus, the site can be classified as of international importance.

4.3.3 Newhall and Edenvale Complex SAC

Newhall and Edenvale SAC is located approximately 4km south of the town of Ennis in County Clare. This SAC site includes three distinct locations that support the Lesser Horseshoe Bat at various times of the year; a narrow-passage cave on Newhall House grounds, a two-storey farm out-house also in Newhall House grounds and a second cave with multiple intercepting passageways on Edenvale House grounds. Newhall House and Edenvale House are less than 1 km from each other, and the bats have uninterrupted access to all sites. The two caves were also fitted with grilles in 1983. The area is classified as an SAC due to the presence of the Cave habitat and the Lesser Horseshoe bat.

There are two natural fossil limestone caves at this SAC site; Newhall and Edenvale caves. The surroundings of the caves include mature mixed woodland, parkland and lakes. Newhall cave consists of a narrow dry passage which runs along an inclined joint. This cave is located in the grounds of Newhall House, as is a two-storey farm out-building which is used as a breeding site by Lesser Horseshoe Bats. Edenvale Cave consists of a main passage running into a cliff for 15m where it is intersected by several other passages. Edenvale Cave is often referred locally as 'the Catacombs' as the numerous side passages run at acute angles to each other and form many intersections. This cave is located within the grounds of Edenvale House, less than 1 km from Newhall House.

Lesser Horseshoe Bats have uninterrupted access to all sites of this SAC. Both Newhall and Edenvale Caves provide ideal winter hibernation sites for the Lesser Horseshoe bat. The surroundings, which include mixed woodland, parklands and lakes, provide suitable foraging habitat and shelter throughout the year for the Lesser Horseshoe Bat population, which is estimated at over 500 individuals at the site, approximately 4% of the overall Irish population of the species. The bats have been recorded at the site since 1983. The site is of international importance and is in fact, classed as one of the most important sites in Europe for the Lesser Horseshoes Bat.

4.3.4 Importance of the subject to Lesser Horseshoe Bats

There are no roosts for any bat species on the proposed development site. This was confirmed in the August 2022 bat survey (Ecofact, 2022). A further inspection of the site was completed in January 2023.

Lesser Horseshoe bats were recorded using the site during the August survey (Ecofact 2022b). The nearest *known* roost site is c. 1km from the site, with a *known* building roost also c. 1.7km from the site. The location of Lesser Horseshoe Bats SACs and recent records in relation to the Proposed Development Site are indicated in Figure 3.

During the August 2022 survey a Static detector was placed inside the red line boundary in the middle treeline, which recorded one bat pass of LHB over 4 full nights of recordings. It was suspected that these bats are more likely to use the mature wide treeline outside the site boundary to the west as this was more suitable. A static detector was then placed along this treeline for two nights, and LHBs were found to use this regularly based on data from August. It can therefore be concluded that LHBs infrequently cross into the red line boundary, but frequently use an adjacent mature treeline outside the site boundary.

The August survey was undertaken over a relatively short period and only one static detector was used. The fact that Lesser Horseshoe Bats were recorded on the site is very significant. Lesser Horseshoe

Bat occur on the site and is a species is strictly protected under Annex II of the EU Habitats Directive. The habitat for Lesser Horseshoe Bats on the site is sub-optimal and is already being affected by activities on the site and the fragmentation of habitats on the east (existing housing estate) and south (golf club). However, any further impact in terms of habitat loss and habitat fragmentation would have to be considered to be significant cumulative impact and mitigation to offset this will be required.

Table 1 Suitability of the site at Ballylannidy, Ennis, Co. Clare for Lesser Horseshoe bats (based on the NBDC data). Irish Red list status also indicated (based on Marnell *et al.,* 2009).

Common name	Scientific name	Suitability index	Irish red list status
Lesser horseshoe bat	*Rhinolophus hipposideros*	35	Least Concern

Table 2 Anabat Express Records for Ballylannidy, Ennis, Co. Clare for the 2 full nights records from the 22nd to the 23rd of August.

Species	Nights			
	22/8/22		23/8/22	
Common pipistrelle *Pipistrellus pipistrellus*	33	33.7%	24	16.3%
Soprano pipistrelle *Pipistrellus pygmaeus*	32	32.7%	106	72.1%
Unidentified pipistrelle	4	4.1%	6	4.1%
Leisler's bat *Nyctalus leisleri*	4	4.1%	-	-
Myotis sp.	1	1.0%	-	-
Lesser horseshoe bat *Rhinolophus hipposideros*	24	24.5%	11	7.5%
Total	**98**	**-**	**147**	**-**

Figure 3 Location of LHB SACs and recent records in relation to the Proposed Development Site at Woodstock, Ennis, Co. Clare (Planning Ref: 22263).

5. IMPACT ASSESSMENT

5.1 Introduction

This NIS provides an assessment of the water quality dependent Qualifying Interests of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

The proposed development will increase the loading presumably to the Clonroadmore Wastewater Treatment Plant (WwTP) which discharges into the Fergus estuary, part of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. This provides a potential pathway for significant effects to the water quality dependent Qualifying Interests of the SAC and SPA. This NIS also provides an assessment of the impact on foraging and commuting of Lesser Horseshoe Bats [1303] that may be associated with the Pouladatig Cave SAC and Newhall and Edenvale Complex SAC. Lesser Horseshoe Bats use the site, and the site is with the Core Sustenance Zone (CSZ) of the Pouladatig Cave SAC. There are no roosts on the site for this species. However, development of the site will result in a small loss of foraging and commuting habitat and further habitat fragmentation of the area.

5.2 Lower River Shannon SAC

The proposed development will increase the loading presumably to the Clonroadmore Wastewater Treatment Plant (WwTP) which discharges into the Lower River Shannon SAC. This provides a potential pathway for significant effects to the water quality dependent Qualifying Interests of the SAC and SPA. These would be indirect and cumulative effects and are related to the efficiency of water treatment at the WwTP. There are no watercourses draining the site providing a pathway for effects to this Natira 2000 site. The standard data Natura 2000 form for the Lower River Shannon SAC lists the threats and pressures currently having an impact on this protected site. There are no impacts listed that are having a high impact on this SAC. The following are noted as having a medium impact on the SAC: fertilisation, urbanised areas, human habitation, air pollution, air-borne pollutants, discharges, eutrophication (natural), grazing, polderisation and reclamation of land from sea, estuary or marsh (NPWS, 2012a).

The potential for cumulative impacts arising from the proposed development relate to water quality impacts. The potential water quality impacts of the proposed development may also act in combination with other discharge and pollution pressures identified for the Fergus catchment and the listed Natura 2000 sites such as siltation, agricultural run-off / discharges, urban wastewater and sewage discharge pressures. Mitigation is required to minimise the proposed developments contribution to other sources of adverse water quality impacts.

5.3 River Shannon and River Fergus Estuaries SPA

The proposed development will increase the loading presumably to the Clonroadmore Wastewater Treatment Plant (WwTP) which discharges into the Fergus estuary, part of the River Shannon and River Fergus Estuaries SPA. This provides a potential pathway for significant effects to the water quality dependent Qualifying Interests of the SAC and SPA. As with the Lower River Shannon SAC, this would be indirect and cumulative effects and are related to the efficiency of water treatment at the WwTP. There are no watercourses draining the site providing a pathway for effects to this Natura 2000 site.

The standard data Natura 2000 form for the River Shannon and River Fergus Estuaries SPA lists the threats and pressures currently having an impact on this protected site. Fertilisation, urbanisation and human habitation, industrial and commercial areas and discharges are listed as having a high negative

impact on the SPA. Pier/tourist harbours and recreational piers, nautical sports and aquaculture are also having a medium impact on the site (NPWS, 2012b).

5.4 Lesser Horseshoe Bat SACs

The proposed development site is nominally located within the Core Sustenance Zone (CSZ) of the Lesser Horseshoe Bats in this SAC (within 2.5km). Lesser Horseshoe Bats have been recorded using the proposed development site as per the bat report (Ecofact, 2022). As these bats use the site and surrounding areas for foraging and commuting, there is the potential for significant indirect and cumulative impacts.

Potential impacts on Lesser Horseshoe Bats likely to be associated with the Pouladatig Cave SAC and Newhall and Edenvale Complex SAC are:-

- Disturbance – both construction and operation
- Direct Habitat loss – the site is used by LHBs, and lighting could indirectly affect an important foraging and commuting route.
- Habitat fragmentation – this is already a threat to LHBs in the are and any further development could add to this problem. Habitat fragmentation can be caused by the physical presence of development, and indirect effects of light spill etc.

Mitigation will be required to offset these impacts. With the implementation of a generous landscaping plan, minimisation of light spill, and the provision of a well-designed LHB night roost integrated into the landscaping, Lesser Horseshoe Bats could potentially be better off in this area than they already are. Lesser horseshoe bats are extremely sensitive to artificial light, even at low light intensities. Light spill can act as a barrier to the movements of Lesser Horseshoe bats. NPWS & VWT (2022) recommended that there is no significant increase in artificial lighting adjacent to roosts of importance, or along commuting routes within 2.5km of these roosts. There is an important Lesser Horseshoe Bat commuting route near the western boundary of the site. In the absence of mitigation this foraging and commuting route, which is with the CSZ, would be adversely affected. Lesser Horseshoe Bats also use the site to at least some degree. In addition, there is the potential for the proposed development to act in-combination with impacts on Lesser Horseshoe bats in the wider study area. While the Natura 2000 forms for the two nearest SACs designated for the species do not list many threats, the proposed development could act in-combination with existing pressures relating to habitat loss and fragmentation. The proposed development is used by small numbers of Lesser Horseshoe bats. The site is considered to be on the edge of core sustenance zones for known roosts in the wider area. Mitigation and appropriate landscaping will be required to avoid significant impacts and ensure that the proposed development complies with the national Lesser Horseshoe Bat Species Action Plan 2022-2026 (NPWS & VWT, 2022).

Developing the site has the potential to impact indirectly on Lesser Horseshoe Bats commuting and foraging just outside the site boundary due to disturbance, light spill, and habitat fragmentation. Some Lesser Horseshoe Bats also use the actual site within the red line boundary. It will therefore be very important to provide robust landscaping around the proposed development. This landscaping will need to be generous and must be landscaping designed to enhance biodiversity – not urban amenity-type landscaping. It will also be very important to ensure that light spill from the proposed development is minimised and that dark areas are retained around the border of the site. This can be achieved with the landscaping and minimising light spill. As there is no roosting habitat on the site it is recommended that a night roost for Lesser Horseshoe Bats is provided on the lands controlled by the developer. This bat roost would need to be designed and integrated into the landscaping / existing vegetation areas in consultation with a licenced bat specialist.

7. MITIGATION

7.1 Summary

The potential impacts and mitigation for the proposed development at Ennis, Co. Clare are provided in the Table below.

Table 1 Potential impacts and mitigation for the proposed development at Ennis, Co. Clare.

Natura Code	Qualifying Interest	Impacts	Mitigation
1303	Lesser Horseshoe Bat *Rhinolophus hipposideros*	Foraging / Commuting Habitat Loss' Disturbance; Lighting	• Provide generous landscaping of native species around the western and northern boundaries of the site. • Minimise light spill. • Provide LHB night roost integrated into the landscaping.
2165	Lower River Shannon SAC All water quality dependent QIs (as per Ecofact screening for AA report)	Water quality impacts via Clonroadmore Wastewater Treatment Plant (WwTP)	• Prior to the commencement of works a site-specific Construction and Environmental Management Plan and Method Statement must be drawn up. • Ensure valid Appropriate Assessment is in place for plant in advance of construction. • Ensure that capacity and discharge licence conditions are being met.
4077	River Shannon and River Fergus Estuaries SPA All water quality dependent QIs (as per Ecofact screening for AA report)		

7.2 Water Quality Mitigation

The proposed development will increase the loading presumably to the Clonroadmore Wastewater Treatment Plant (WwTP) which discharges into the Fergus estuary, part of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. This provides a potential pathway for significant effects to the water quality dependent Qualifying Interests of the SAC and SPA. So, this must be considered in the Appropriate Assessment. The mitigation will be that a connection agreement to the plant be obtained in advance of construction, that the plant be operated within capacity, and that an Appropriate Assessment is in place for the plant. This will need to be conditioned into any Planning Permission granted.

7.3 Mitigation for Lesser Horseshoe Bats

7.3.1 Introduction

This NIS also provides an assessment of the impact on foraging and commuting of Lesser Horseshoe Bats [1303] that may be associated with the Pouladatig Cave SAC and Newhall and Edenvale Complex SAC. Lesser Horseshoe Bats use the site, and the site is with the Core Sustenance Zone (CSZ) of the Pouladatig Cave SAC. There are no roosts on the site for this species. However, development of the site will result in a small loss of foraging and commuting habitat and further habitat fragmentation of the area. This can be fully offset if (1) a generous landscaping plan around the site is provided, and (2) light spill is minimised and will not extend outside of the site. In addition, a night roost for Lesser Horseshoe Bats should be provided on the northwest corner of the applicant's site. The landscaping and location of the night roost must be designed and implemented in full consultation with a licenced bat ecologist.

Outline recommendations for the landscaping and bat house are provided in this NIS. This mitigation will need to be conditioned into any Planning Permission granted.

7.3.2 Landscaping

A generous landscaping plan with native planting should be provided to provide a buffer area around the proposed development. This will be outside any amenity landscaping and will be provided as a foraging and commuting linear feature for bats. The landscaping should be integrated into the area where the bat night roost will be provided. Existing hedgerows and scrub can also be used. Night scented plants and additional landscaping should be considered around the area of the proposed night roost location. This landscaping plan must be drawn up with a licenced bat ecologist and needs to be a panning condition.

7.3.4 LHB night roost

A suitable night roost for Lesser Horseshoe Bats should be provided. Night roosts are used as resting places between foraging periods and can be of use to Lesser Horseshoe Bats in extending foraging ranges. This night roost will be designed, and its location decided by a suitably qualified ecologist, and integrated into the landscaping plan.

As the proposed development site is considered to be at the edge of foraging ranges for Lesser Horseshoe Bats in the wider study area, the provision of a night roost would aim to provide a suitable resting place in order to maintain the foraging range of LHBs in the study area. The location should be in an off-site and in an area of trees and vegetation providing the most suitable foraging habitat in the immediate surrounds of the site. The night roost design could be based on the Vincent Wildlife Trust's Cathedine Night Roost Design. However, this design is not a permanent structures and where night roosting is considered critical for a colony, a more robust structure should be provided. A suitable design for the current site could be the VWT design but with no wheels. It would need to be a permanent structure.

7.3.3 Minimise light spill

Lighting should follow Bat Conservation Ireland's *Bats & Lighting: Guidance Notes for Planners, Engineers, Architects and Developers* (2010). Light columns should be kept as low as possible. Some light restrictions may be considered during dark hours. Light spill should be minimised by using shields, masking or louvres. Directional and controllable Light Emitting Diodes (LEDs) of warmer colour temperatures (2700ºK or less) have a lower risk of impact and therefore would be preferred (Bat Conservation Trust and LIP, 2018). There should also be no light spill on the proposed location of the landscaping and night roost for Lesser Horseshoe bats.

7.3.4 Conclusions

This site is at the edge of already fragmented habitat for Lesser Horseshoe Bats. With the implementation of a generous landscaping plan, minimisation of light spill, and the provision of a well-designed LHB night roost integrated into the landscaping, Lesser Horseshoe Bats will be better off in this area than they already are.

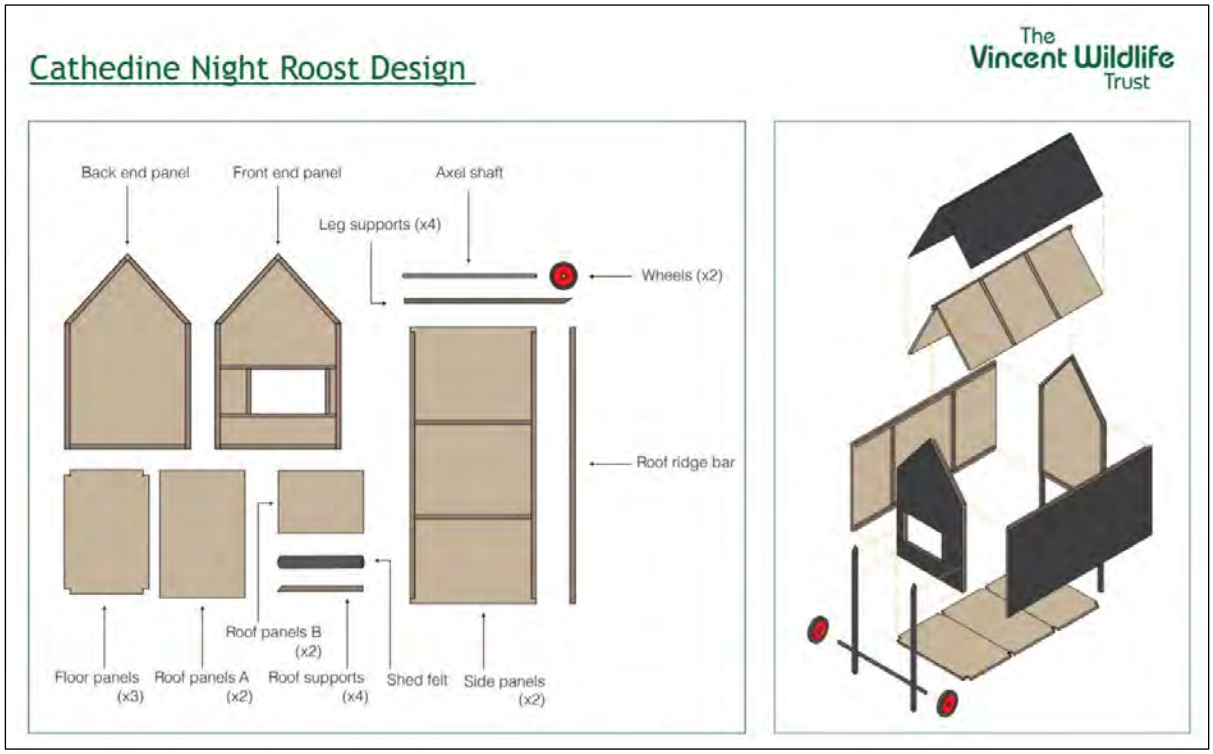

Figure 4a Cathedine Night Roost design from Vincent Wildlife Trust
https://www.vincentwildlife.ie/wp-content/uploads/2016/01/lesser-horseshoe-night-roost-design.pdf

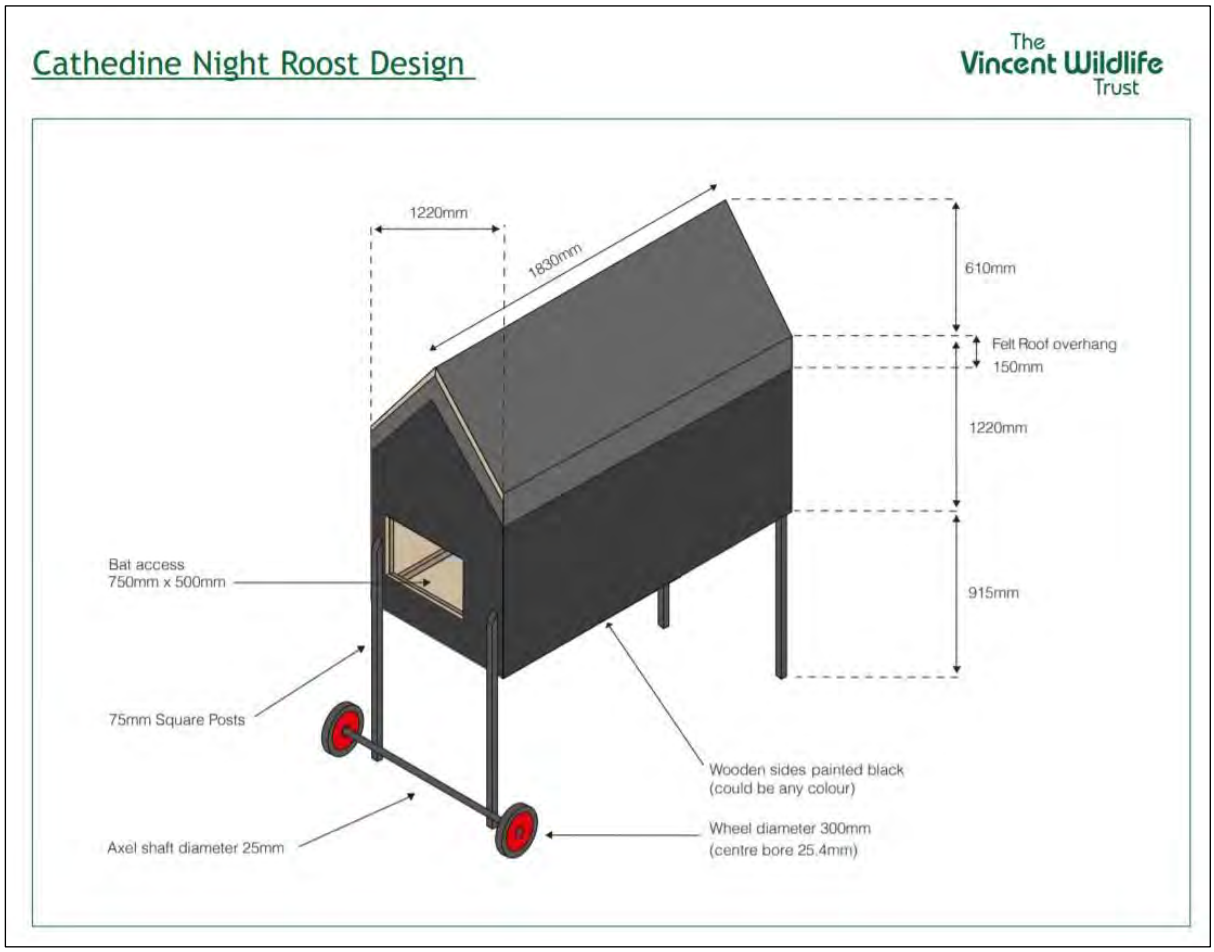

Figure 4b Cathedine Night Roost Design from Vincent Wildlife Trust.

8. RESIDUAL IMPACTS

8.1 Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. Favourable conservation status is defined for Annex I habitats and Annex II species in the Habitat Directive (1992):

Article 1 (e)

> Conservation status of a natural habitat means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2.
>
> The conservative status of a natural habitat will be taken as 'favourable' when: its natural range and areas it covers within that range are stable or increasing, and 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.

Article 1 (i)

> Conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2.
>
> The conservation status will be taken as 'favourable' when: 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, and the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- 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, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- 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, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

8.2 Water quality

The proposed development will increase the loading presumably to the Clonroadmore Wastewater Treatment Plant (WwTP) which discharges into the Fergus estuary, part of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. This provides a potential pathway for significant effects to the water quality dependent Qualifying Interests of the SAC and SPA. So, this must be considered in the Appropriate Assessment. The mitigation will be that a connection agreement to the plant be obtained in advance of construction, that the plant be operated within capacity, and that an

Appropriate Assessment is in place for the plant. This will need to be conditioned into any Planning Permission granted. This would ensure that there were no residual impacts.

8.3 Lesser Horseshoe bats

This is a sub-optimal site for Lesser Horseshoe bats (LHBs). However, they were recorded using the site and adjoining areas during the August 2023 surveys (Ecofact 2023b). The site is also nominally within the Core Sustenance Zone (CSZ) of 2.5km for LHBs from Pouladatig Cave SAC. Any record of this rare and vulnerable species on a site must be considered carefully. Moreover, Lesser Horseshoe bats were confirmed to be regularly foraging and commuting in areas juts outside the site boundary. In the absence of mitigation this foraging and commuting route would be lost. If this happened it would be a breach of the '*Lesser Horseshoe Bat Species Action Plan 2022-2026'* (NPWS & VWT, 2022).

The site itself is a sub-optimal habitat for LHBs, as it has already been affected by habitat fragmentation. If a generous vegetation buffer area was provided around the proposed development, light spill was minimized and did not affect this buffer area, and a LHB night time roost was provided, the LHBs would be protected. This landscaping plan would have to be designed and implemented in consultation with a licensed bat specialist. It is expect that this approach could bring significant residual benefits to LHBs and reverse some of the habitat fragmentation that has already occurred in this area.

9. CONCLUSION STATEMENT

The provisions of Article 6 of the 'Habitats' Directive 92/43/EC (2000) defines 'integrity' as the: 'coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or population of species for which the site is or will be classified'.

Mitigation measures have been proposed ensure that there are no residual impacts on the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. The mitigation will be that a connection agreement to the plant be obtained in advance of construction, that the plant be operated within capacity, and that an Appropriate Assessment is in place for the plant. This will need to be conditioned into any Planning Permission granted.

In relation to the local Lesser Horseshoe Bat SACs, it is concluded that the proposed housing development at Ballylannidy, Ennis, Co Clare will not pose a risk adversely affecting the integrity of any Natura 2000 site, either alone or in-combination with other plans or projects providing the mitigation specified in this NIS is implemented in full. The required mitigation will be to provide generous landscaping of native species around the western and northern boundaries of the site, minimise light spill, and provide Lesser Horseshoe Bat night roost integrated into the landscaping.

Dr. Will O' Connor
PhD, MSc, BSc, CBiol, CEnv, MCIEEM, FRSB, MIFM

PLATES

Plate 1 Entrance to the proposed development site, January 2022.

Plate 2 Proposed development site, January 2022. The site only provides sub-optimal foraging and commuting habitat for LHBs. The bats would benefit greatly from the implantation of a generous landscaping plan integrated into a night roost.

Plate 3 Horses on the proposed development site, January 2022.

Plate 4 Proposed development site, January 2022.

Plate 5 Mature treeline outside the red line boundary to the west is used frequently by Lesser Horseshoe bats (August 2022).

Plate 6 Low quality non native treeline in the middle of the site (August 2022). LHBs were also recorded here. But the habitat is sub-optimal and the bats would benefit greatly from the implementation of a landscaping plan and the installation of a night roost.

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Coakley Consulting Engineers

Proposed Residential Development, Ballylannidy, Ennis, Co. Clare

Stage 1 Road Safety Audit

P·M·C·E

February 2023

Coakley Consulting Engineers

Proposed Residential Development, Ballylannidy, Ennis, Co. Clare

Stage 1 Road Safety Audit

Document Ref:	P22-171-RSA-PD-RP-001

Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
2.0	TAG	AOR	AOR	13th Feb 2023	Final Report
1.0	TAG	AOR	AOR	16th Nov 2022	Draft Report

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Table of Contents

1 Introduction

1.1 General

This report results from a Stage 1 Road Safety Audit on the proposed Residential Development in Ballylannidy, Ennis, Co. Clare, carried out at the request of Mr Brian Coakley of Coakley Consulting Engineers.

The members of the Road Safety Audit Team are independent of the design team, and include: -

Mr. Alan O'Reilly
(BA, BAI, MSc, CEng, MIEI, RSACert)
Road Safety Audit Team Leader

Mr. Aly Gleeson
(BSc, MEng, MBA, RSACert, CEng, FIEI)
Road Safety Audit Team Member

The Road Safety Audit took place during November 2022 and comprised an examination of the documents provided by the designers (see Appendix B). In addition to examining the documents supplied the Road Safety Audit Team visited the site of the proposed measures on the 9th November 2022. Weather conditions during the site visit were dry and the road surface was dry. Traffic volumes during the site visit were low, pedestrian and cyclist volumes were low and traffic speeds were considered to be generally within the posted speed limit.

Where problems are relevant to specific locations these are shown on drawing extracts within the main body of the report and their locations are shown in Appendix D. Where problems are general to the proposals sample drawing extracts are within the main body of the report, where considered necessary.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of GE-STY-01024 - Road Safety Audit (December 2017), contained on the Transport Infrastructure Ireland (TII) Publications website.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety and considers the perspective of all road users. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme and minimise collision occurrence.

If any of the recommendations within this road safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observations are intended to be for information only. Written responses to Observations are not required.

1.2 Items Not Submitted for Auditing

Details of the following items were not submitted for audit; therefore no specific problems have been identified at this stage relating to these design elements, however where the absence of this information has given rise to a safety concern it has been commented upon in Section 3: -

- Personal Injury Collision data
- Vehicle swept paths
- Drainage

2 Project Description

The proposed residential development is in the townland of Ballylannidy, approximately 3km southwest of Ennis, Co. Clare. The development is located in a rural area on an existing green field site bounded to the south by Shanaway Road, to the east by an existing residential development (Woodstock View), and to the north and west by greenfield sites.

Shanaway Road is a two-way single carriageway road running in a northeast-southwest direction and would provide the proposed development with a connection to the N85 National Road. Shanaway Road is approximately 6.5m wide with a posted speed limit of 50kph. Immediately east of the proposed development access, there is an existing footpath and public lighting provided on the south side of Shanaway Road.

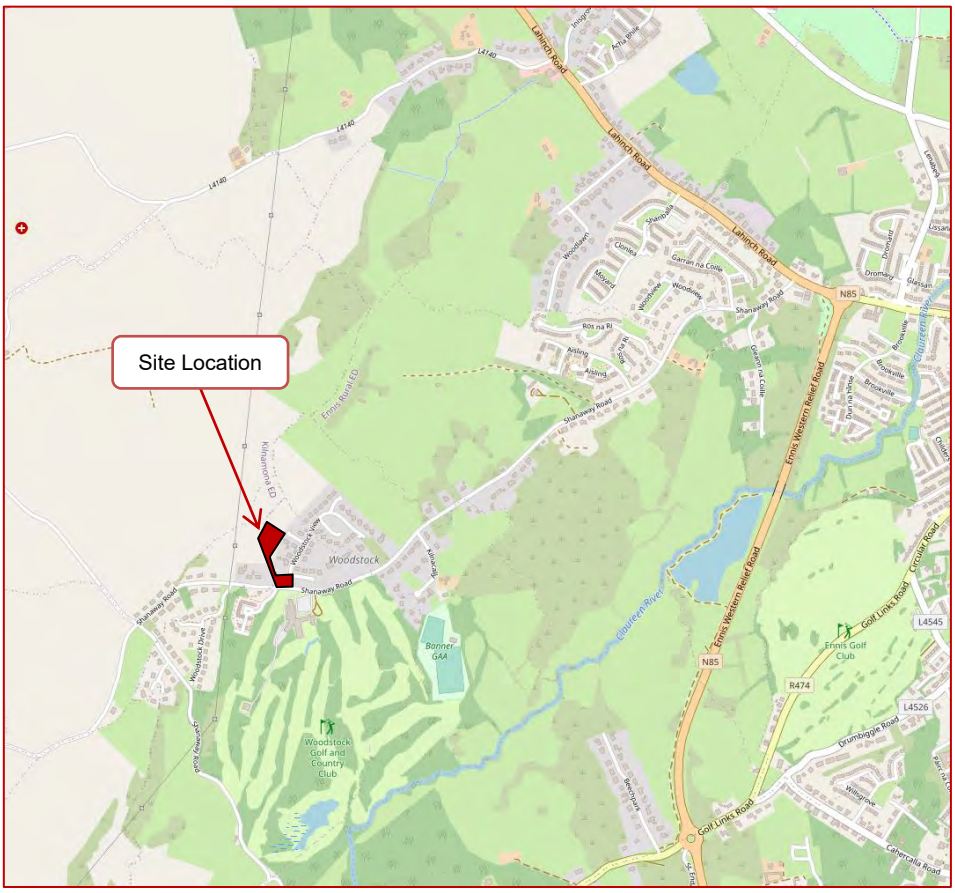


FIGURE 2-1: LOCATION PLAN (SOURCE: WWW.OPENSTREETMAP.ORG)

The proposed residential development would be accessed via Shanaway Road and would be comprised of the following:

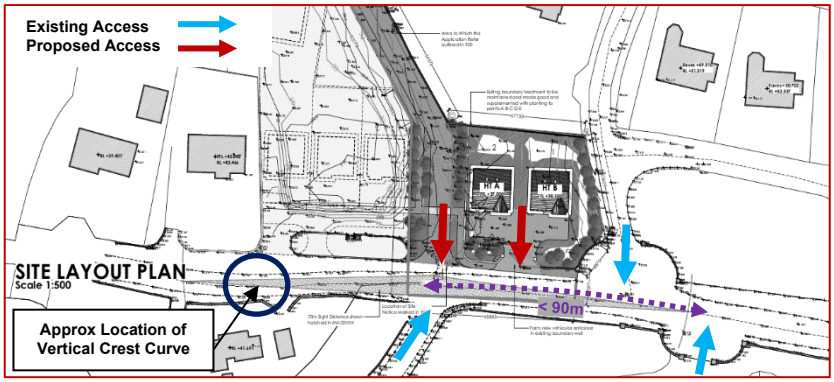
- 16 residential units, including 2 detached 4-bed houses and 14 semi-detached 3/4-bed houses.
- An internal road network including an access road and access junction onto Shanaway Road.
- A footpath network within the proposed development connecting all residential units and extending as far as the development access on the northern side of Shanaway Road.
- 4 raised-table pedestrian crossings.
- 8 visitor car parking spaces, 5 of which would provide facilities for Electric Vehicle (EV) charging.
- Public lighting columns throughout the proposed development.
- Landscaped areas.

3 Main Report

3.1 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *The number and proximity of development accesses on Shanaway Road may increase the risk of rear-end-shunt and side-on collisions.*



The proposed development indicates two new accesses on Shanaway Road, a primary access to service 14 residential units, and an adjacent access to accommodate two single detached units. The proposed accesses are adjacent an existing access to a residential development (Woodstock View), located directly to the east of the proposed development, and opposite Garville Crescent and the carpark for the Woodstock Golf and Country Club. All accesses are located within 90m of each other, which will likely increase the number of turning movements in a confined space, and increase the risk of rear-end-shunt and side-on collisions.

This problem is exacerbated by a vertical crest curve on Shanaway Road, located to the west of the proposed access, which may diminish visibility for drivers exiting the access to the two detached residential units.

Recommendation

The access to the two detached residential units should be removed from Shanaway Road.

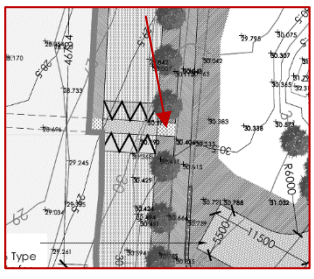
Additionally, confirm that the visibility assessment indicated on the site layout plan is cognisant of the vertical geometry on Shanaway Road.

3.2 Problem

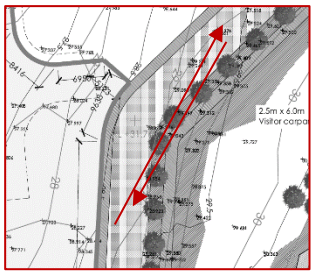
Location: *Drawing No 2032 (P) 01*

Summary: *The location of trees within the development may reduce visibility at pedestrian crossings and side road junctions.*

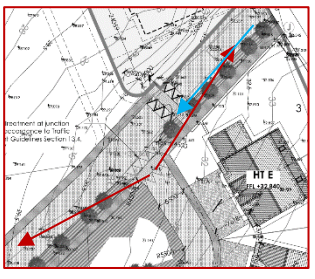
Driver/Ped Inter-visibility



Driver/Ped Inter-visibility



Stopping Sight Distance



Visibility At Junction &
Driver/Ped Inter-visibility

Trees have been indicated throughout the proposed development. The location of some trees may restrict inter-visibility between drivers and pedestrians at pedestrian crossings, visibility at the internal side road junction, and the Stopping Sight Distance (SSD) along the development's access road.

Restricted visibility within the development may increase the risk of vehicle/pedestrian collisions, particularly where small children and electric scooter users are present, and rear-end-shunt collisions where insufficient SSD is provided. Trees may also restrict visibility at the internal side road junction, increasing the risk of side-on collisions where drivers enter the main residential access road when unsafe to do so.

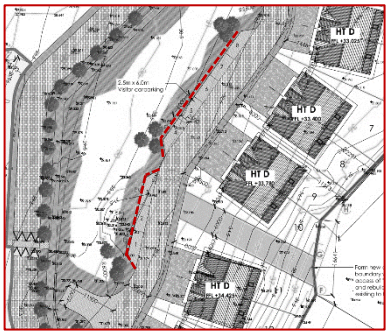
Recommendation

Trees should be strategically located away from conflict points where vehicles and pedestrians may cross each other, and away from sharp horizontal bends where they may restrict visibility to the road layout ahead.

3.3 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *Risk of slips, trips, and falls where passengers exit their vehicle at visitor parking spaces and walk within the Public Open Space.*



Visitor parking is provided within the Public Open Space, opposite units 6-11. Drivers, or passengers, exiting their vehicles at visitor parking spaces may be required to step into the grass verge, which may include uneven ground that is prone to rutting and ponding. This may increase the risk of slips, trips, and falls for drivers/passengers after exiting their vehicles at the visitor parking spaces.

This problem may be exacerbated by the need to retrieve electrical charging cables when using the EV facilities.

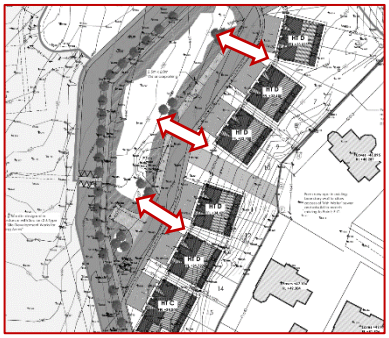
Recommendation

A pedestrian footway, using bound material (e.g. concrete), should be provided within the Public Open Space, along the length of the visitor parking spaces. The footway should be wide enough to accommodate the EV charging docks/pedestals, whilst leaving a minimum effective width of 1.8m for pedestrians.

3.4 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *The absence of safe pedestrian crossing points between the residential properties and the Public Open Space may increase the risk of slips, trips, and falls.*



A large public open space has been indicated within the centre of the proposed development, which is likely to attract pedestrians, especially small children. No formal crossing points have been indicated to this Public Open Space from the residential units within the development. This could lead to pedestrians choosing to cross the carriageway at unsafe locations, where drivers may not be anticipating a pedestrian to step into the carriageway, resulting in an increased risk of vehicle-pedestrian collisions.

The absence of dropped kerbs and tactile paving may also limit access for mobility impaired pedestrians, requiring them to travel a long distance within the carriageway to access the Public Open Space, increasing the risk of vehicle/pedestrian collisions.

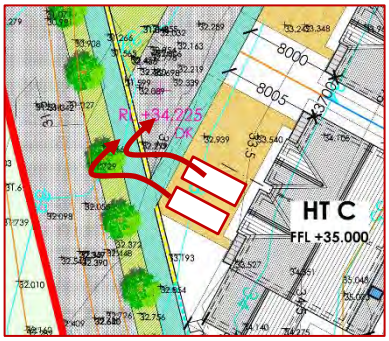
Recommendation

Uncontrolled pedestrian crossings, including tactile paving and dropped kerbs, should be strategically located between the residential units and the Public Open Space.

3.5 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *Constrained road layout may restrict safe vehicle entry/egress at Unit 16, leading to material damage collisions.*



Unit 16 is located at the end of a cul de sac, and adjacent a retaining wall. The cul de sac's terminal is skewed by the angle of the primary development access road, which runs in a north-south direction. These constraints may restrict entry and exit manoeuvres for the resident(s) at Unit 16, increasing the risk of unsafe reversing manoeuvres and possibly material damage collisions.

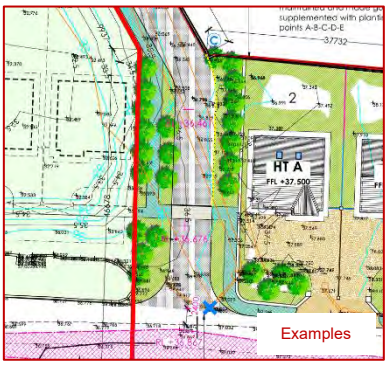
Recommendation

Undertake a swept path analysis for vehicle movements entering and exiting Unit 16, and amend the layout as necessary to ensure vehicle movements are safe, and do not conflict with the adjacent kerb line.

3.6 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *Low hanging tree canopies may conflict with pedestrian movement if located over pedestrian footways.*



The mounting height of tree canopies has not been indicated. Trees are indicated as overhanging the footpaths within the development. If mounted too low (less than 2.3m) there is a risk that they may present obstacles to pedestrians on the footpath, resulting in personal injuries.

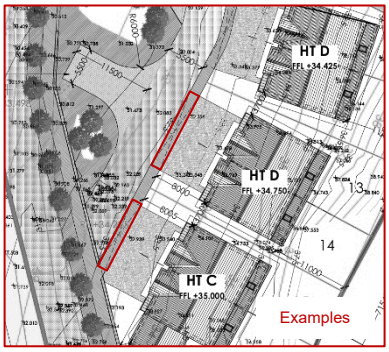
Recommendation

Ensure tree canopies are no lower than 2.3m when overhanging pedestrian footways.

3.7 Problem

Location: *Drawing No 2032 (P) 01*

Summary: *Risk of visually impaired pedestrians inadvertently entering the carriageway at property crossovers.*



'Dished' kerbs have been indicated at driveway accesses within the proposed development. However, the upstand of the kerb has not been indicated. If the upstand is less than 25mm it may not be detected by a visually impaired pedestrian, resulting in an increased risk of them inadvertently entering the carriageway and being struck by a vehicle.

Recommendation

Ensure dropped kerbs at property crossovers are installed with a 25mm upstand.

Dropped kerbs at pedestrian crossings should have an upstand of 0-6mm.

3.8 Problem

Location: *Drawing No 2032 (P) 03*

Summary: *Location of lighting columns near the kerb edge may increase the risk of vehicle strikes, and restrict pedestrian movement on the footway.*

At this early stage in the design process, detailed information regarding the exact location of public lighting columns has not been provided to the Audit Team. Should public lighting columns be located within the footpath, the effective width of the footpath may be reduced resulting in pedestrians possibly having to enter the carriageway to avoid the obstruction, leading to an increased risk of collisions with vehicles and cyclists.

Additionally, locating lighting columns near the kerb edge may increase the risk of being struck by high-side vehicles, or errant drivers, leading to material damage collisions.

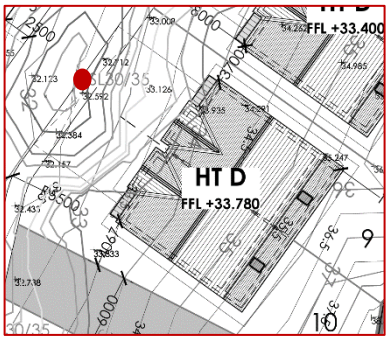
Recommendation

Ensure public lighting columns are located at the back of the footpath such that they do not constitute a hazard to pedestrians. Care should also be taken to ensure that they are not located close to trees and other vegetation.

3.9 Problem

Location: *Drawing No 2032 (P) 03*

Summary: *Lighting column location between two driveways may increase the risk of material damage collisions.*



A lighting column has been indicated between the driveways of properties 9 and 10. It is not clear what form of boundary treatment is proposed at property frontages, but the Audit Team note that a dropped kerb is indicated across the full width of units 9 and 10. There may be a risk, therefore, of the lighting column being exposed in this location, and at risk of being struck by vehicles entering/exiting Unit 9 or 10, leading to material damage collisions.

Recommendation

Ensure the lighting column is protected from vehicle strikes.

4 Observations

4.1 At this early stage in the design process, tactile paving, drainage, signs, and road markings have yet to be fully considered. Ensure that these key design elements are fully considered as part of the detail design process, and included as necessary in the construction drawings.

4.2 Shanaway Road includes an existing pedestrian footway on its southern side, to the east of the proposed development. No pedestrian link, or pedestrian crossing of Shanaway Road, has been indicated between the new development and the existing footway, or indeed the Woodstock Golf and Country Club, both of which will likely be attractive amenities for residents of the new development.

Whilst this is outside the scope of this project, as it relies on land not in the ownership of the developer, the Designer should liaise with Clare County Council, and investigate possible pedestrian measures between the proposed development and these two amenities.

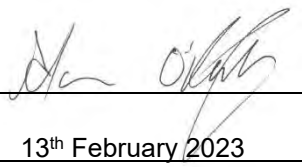
5 Road Safety Audit Team Statement

We certify that we have examined the drawings referred to in this report. The examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions, which we would recommend should be studied for implementation.

No one on the Road Safety Audit Team has been involved with the design of the scheme.

ROAD SAFETY AUDIT TEAM LEADER

Alan O'Reilly Signed: 

Dated: 13th February 2023

ROAD SAFETY AUDIT TEAM MEMBER

Aly Gleeson Signed: 

Dated: 13th February 2023

Appendix A – Road Safety Audit Brief Checklist

Have the following been included in the audit brief?: (*if 'No', reasons should be given below)*

		Yes	No
1.	The Design Brief	☐	☑
2.	Departures from Standard	☐	☑
3.	Scheme Drawings	☑	☐
4.	Scheme Details such as signs schedules, traffic signal staging	☐	☑
5.	Collision data for existing roads affected by scheme	☐	☑
6.	Traffic surveys	☐	☑
7.	Previous Road Safety Audit Reports and Designer's Responses/Feedback Form	☐	☑
8.	Previous Exception Reports	☐	☑
9.	Start date for construction and expected opening date	☐	☑
10.	Any elements to be excluded from audit	☐	☑

Any other information?

(if 'Yes', describe below)

☐ ☑

Appendix B – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Site Layout Plan	2032 (P) 01	--
Street Lighting Layout	2032 (P) 03	--
F.I.	--	--

Appendix C – Feedback Form

Road Safety Audit Feedback Form

Scheme: Proposed Residential Development, Ballylannidy, Ennis, Co. Clare

Route No.: Shanaway Road

Audit Stage: 1 **Date Audit Completed:** 15th November 2022

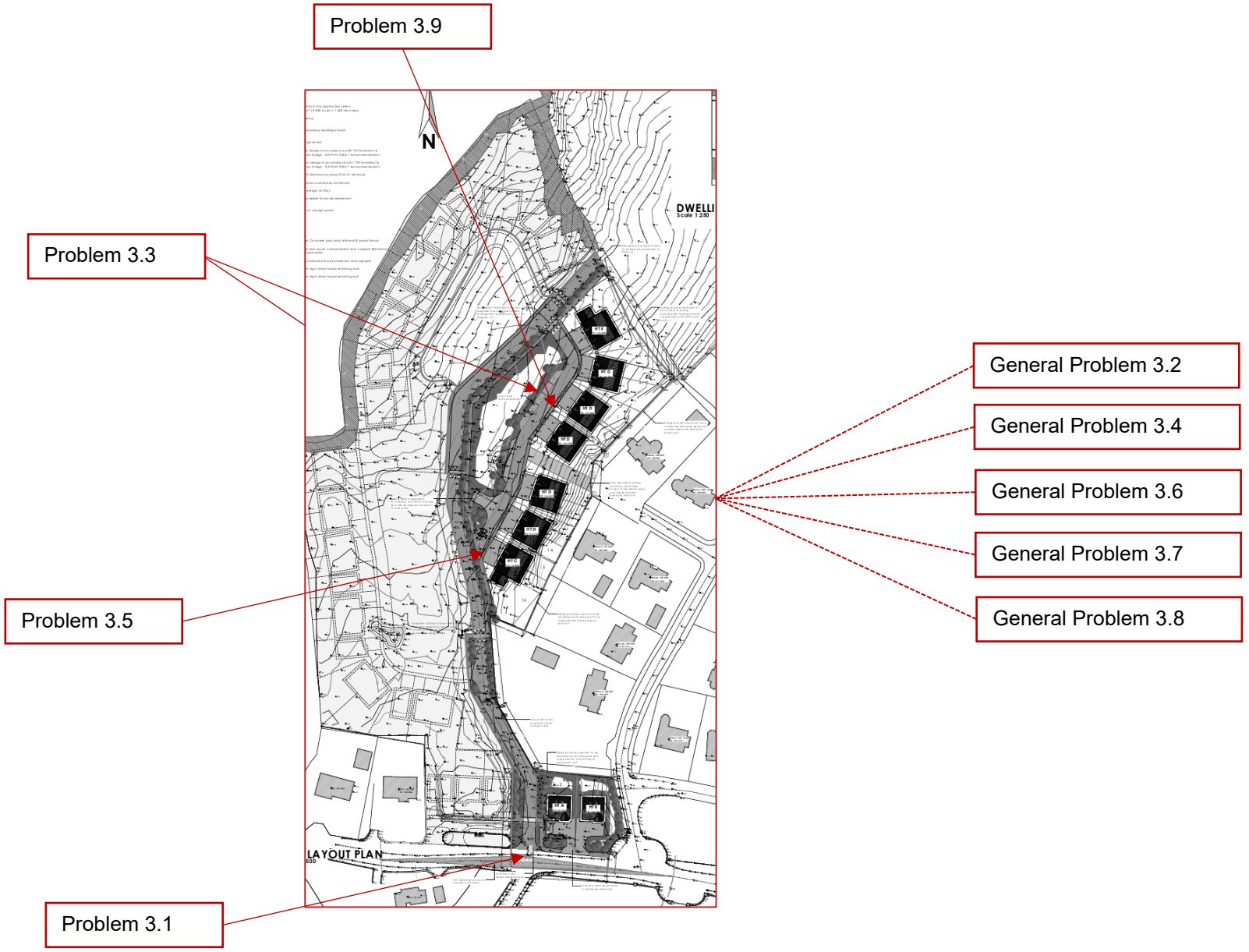
	To be Completed by Designer			To be Completed by Audit Team Leader
Paragraph No. in Safety Audit Report	**Problem Accepted (Yes/No)**	**Recommended Measure(s) Accepted (Yes/No)**	**Describe Alternative Measure(s). Give reasons for not accepting recommended measure**	**Alternative Measures or Reasons Accepted by Auditors (Yes/No)**
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	No	No longer relevant, as the site layout has changed.	Yes
3.6	Yes	Yes		
3.7	Yes	Yes		
3.8	Yes	Yes		
3.9	Yes	Yes		

Signed: Brian Foudy Designer **Date** 13-02-2023

Signed: Audit Team Leader **Date** 13th Feb 2023

Signed: Employer **Date**

Appendix D – Problem Locations


Problem 3.9
Problem 3.3
Problem 3.5
Problem 3.1
General Problem 3.2
General Problem 3.4
General Problem 3.6
General Problem 3.7
General Problem 3.8
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