



Comhairle Chontae na Gaillimhe
Galway County Council

Galway County Council
Housing Development
Gort Uí Lochlainn & Coill Bhruchláin, Moycullen, Co. Galway
Appropriate Assessment Screening Report



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Document Control Sheet	
Document Reference	10578 - Appropriate Assessment Screening Report
Report Status	FINAL
Report Date	January 2020
Current Revision	A02
Client:	Galway County Council
Client Address:	Galway County Council Áras an Chontae, Prospect Hill, Galway, H91 H6KX
Project Number	10578

Galway Office Fairgreen House, Fairgreen Road, Galway, H91 AXK8, Ireland. Tel: +353 (0)91 565 211	Dublin Office Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N, Ireland. Tel: +353 (0)1 803 0406	Castlebar Office Market Square, Castlebar, Mayo, F23 Y427, Ireland. Tel: +353 (0)94 902 1401	London Office 17 Bowling Green Lane, Clerkenwell, London, EC1R 0QB, United Kingdom. Tel: +44 (0)203 915 6301
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Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
A01	Final	JS	07/07/19	AB	25/07/19	JAH	10/09/19
A02	Addressed client comments	LK	28/01/2020	DM	28/01/2020	DM	28/01/2020

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1.0 INTRODUCTION

This report provides information for an Appropriate Assessment Screening for the proposed construction of 30 no. housing units at Gort Uí Lochlainn & Coill Bhrucláin, Mountain Road, Moycullen, Co. Galway.

Appropriate Assessment (AA) is an assessment of whether a plan or project, alone or in combination with other plans or projects, could result in significant effects on a European site (as designated under the Habitats Directive, more formally referred to as European Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora), in view of the site's Conservation Objectives. Cognisance has been given to European Court of Justice case law clarifying the application of the Habitats Directive and Part XAB of the Planning and Development Act 2000 during the production of this report.

2.0 THE APPROPRIATE ASSESSMENT PROCESS

2.1 Introduction

The AA process is an assessment of the potential adverse or negative effects of a plan or project, in combination with other plans or projects, on the Conservation Objectives of a European site(s). The Natura 2000 network is made up of European sites including Special Protection Areas (SPAs), established under the EU Birds Directive (79/409/EEC), and Special Areas of Conservation (SACs), established under the EU Habitats Directive (92/43/EEC) (more generally referred to as the Habitats Directive). The Natura 2000 network helps provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

The Screening Stage of the AA process identifies any likely significant effects upon European sites from the project alone or in-combination with other projects or plans. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European site; and
- whether the project or plan will have a potentially significant effect on a European site, either alone or in combination with other projects or plans, in view of the site's Conservation Objectives or if residual uncertainty exists regarding potential impacts.

Appropriate Assessment should be based on best scientific knowledge. This report provides information to assist the competent authority in undertaking a Screening Assessment of the proposed development and was informed by a desktop study and field surveys undertaken by John Sherry, B.Sc. (Hons), Graduate Ecologist, Kevin Delahunty, B.Sc. (Hons), Graduate Ecologist, Sophia Couchman B.Sc. (Hons), Graduate Ecologist, Alan Booth B.Sc. (Hons) Project Ecologist and senior reviewed by Joanne Allen-Hamilton, Senior Ecologist (MCIEEM) with TOBIN Consulting Engineers. Potential impacts to European sites arising from the proposed development are considered.

2.2 Legislative Background

The Habitats Directive has been transposed into Irish law by The European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011; hereafter referred to as the Birds and Habitats Regulations). The Birds Directive¹ (Directive 2009/147/EC) on the Conservation of Wild Birds, seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). The Habitats Directive does the same for habitats and other species groups with Special Areas of Conservation (SAC).

The requirement for an AA is outlined in Article 6(3) and further expanded upon in Article 6(4) of the Habitats Directive. Article 6(3) of the Habitats Directive requires that:

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

And Article 6(4) of the Habitats Directive requires that:

“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.”

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

2.3 Guidance

This report has been carried out using the following guidance:

- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (EC, 2018);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013).
- Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, (Department of the Environment, Heritage and Local Government DEHLG, 2010);
- 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 interest,

¹ Directive 2009/147/EC: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147>

- Compensatory measures, overall coherence, and opinion of the commission. Office for Official Publications of the European Communities, Luxembourg (EC, 2007);
- 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, Office for Official Publications of the European Communities, Luxembourg (EC, 2018);
- European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011).

Definitions of conservation status, integrity and significance used in this assessment are defined in accordance with 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2018):

- The conservation status of a natural habitat is defined as 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;
- The conservation status of a species is defined as the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its population;
- The integrity of a European site is defined as the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified;
- Significant effect should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's Conservation Objectives.

2.4 Appropriate Assessment Methodology

There are potentially 4 no. stages in the AA process; the result of each stage determines the requirement for assessment under the next.

Stage One: Screening:

The purpose of the screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in-combination with other plans or projects, could have significant effects on a European site in view of the site's conservation objectives. There is no necessity to establish such an effect; it is merely necessary for the competent authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that have no appreciable effect on a European site may be excluded. The threshold at this first stage is a very low one and operates as a trigger in order to determine whether a Stage Two AA must be undertaken by the competent authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required. Screening determines whether AA is necessary by examining:

1. Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of the European site; and

2. The possible significant effects of a project or plan, either alone or in-combination with other projects or plans, on a European site in view of its conservation objectives and considering whether these effects will be significant.
3. As per EU Guidance² and case law, the screening assessment must be carried out in the absence of any consideration of protective mitigation measures that form part of a project or plan and are designed to avoid or reduce the impact of a project or plan on a European site.

Stage Two: Appropriate Assessment - Consideration is given if the impact of the project or plan would adversely affect the integrity of surrounding European sites, 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 adverse impacts have been identified, an assessment of the potential mitigation to avoid/reduce such impacts is required. A Natura Impact Statement is often produced at this stage to inform the Appropriate Assessment which is undertaken by the competent authority. This stage is required where uncertainty of effect arises, or a potential effect has been defined which requires further procedures/mitigation to remove uncertainty of a defined impact.

Stage Three: Assessment of Alternative Solutions – Where adverse effects on a European site are identified at the end of Stage Two despite the application of mitigation, this third stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site.

Stage Four: Assessment Where Adverse Impacts Remain – The fourth and final stage applies where the project can only proceed for Imperative Reasons of Overriding Public Interest (IROPI), despite the plan or project resulting in adverse effects on European site(s). This stage provides for an assessment of compensation measures to maintain or enhance the overall coherence of the Natura 2000 network.

Appropriate Assessment should be based on best scientific knowledge. This Screening Report informs the first stage in the process to be undertaken by the competent authority i.e. determining if an Appropriate Assessment is required.

3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1.1 Site Location

The proposed development is located near the centre of Moycullen north of the Mountain Road (L1320), approximately 300m west of the junction to the N59. It will involve the construction of 30 no. housing units. The area being developed for this project is approximately 1.8 hectares (see Figure 3-1).

The proposed development is located in an area of cluttered (mixed) broadleaved woodland (WD1) surrounded by residential housing estates and associated amenities. The predominant land use of the study area is (mixed) broadleaved woodland (WD1). The section of woodland that will be affected by the proposed development is closed to the public from the main road but

² EC (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. Office for Official Publications of the European Communities, Luxembourg.

still accessible from the residential estate to the northeast of the site. Although heavily cluttered, visible trails and litter in the woodland indicate that it is used by the public for recreational purposes. There is a playground located just outside the south western section of the proposed site.

3.1.2 Description of Project

The housing typology for this project will include;

- Bedroom numbers (ratio of 3-bed to 2-bed units is 3:1);
- Elderly persons dwellings (circa 15% of units); and
- Vehicular access from the public road (Mountain Road, L1320) with permeability by sustainable means available elsewhere.

The units will primarily be of 2-storey type and the layout will be of terraced formats. The development is to have its own independent access off Mountain Road (L1320). Roadways within the site will be 6m in width and edged with precast concrete kerbs. Roads will have a crossfall of 2.5% from the centre of the road to both edges. Footpaths will line both sides of the roadways for most of the site. Footpaths will vary in width depending on location and will have a light brushed surface to a Class U4 finish. Expansion joints will be located every 12m.

The existing site incorporates established woodland which will be predominately removed, with the exception of a section located in the north of the site and a section located immediately outside the north western site boundary. Mature trees will be retained along the east and south east boundary of the site and several trees standards between 5 and 7m are to be planted in the north, east and south east of the site. Trees will be planted along the access road of the site and will be shallow rooting species such as birch (*Betula* spp.) to avoid services and ducts.

It is estimated that gardens will make up 3,100m² (0.31 ha) of the site and greens space/roadside verge and vegetation will make up approximately 10,000m² (1 ha) of the site. The largest green areas will be located to the west and south of the site and consist of amenity grassland. Figure 3-1 displays the proposed landscape plan.

Connections to the existing water network services (drinking and foul water services) will be located along the Mountain Road (L1320). It is proposed to discharge wastewater generated by the proposed development to the existing foul sewer network which runs on the public roads adjacent to the proposed development (Mountain road [L1320]). This wastewater will be treated at Moycullen Wastewater Treatment Plant (WwTP) (D0191-01) located approximately 500m from the proposed development. Treatment processes include preliminary treatment (screening and grit removal), secondary treatment (conventional activated sludge), nutrient removal (chemical dosing for phosphorus removal) and tertiary treatment (integrated constructed wetland). The receiving body from this facility is the Ballyquirke Canal located north east of the Wastewater facility. The Ballyquirke Canal flows approximately 1 km downstream and enters into Ballyquirke Lough which forms part of the Lough Corrib SAC (000297). Ballyquirke Lough flows into Lough Corrib SPA a further 2kms downstream. The plants current load capacity is designed for a population equivalent (P.E.) of 4000. In 2017 the collected load was 2060 PE and is not expected to exceed the design capacity in the next three years³. It is expected that the proposed development of 30 housing units will have a PE of 116 during the operational phase.

³ Irish Water (2017), *Annual Environmental Report 2017 – Moycullen, D0191-01*

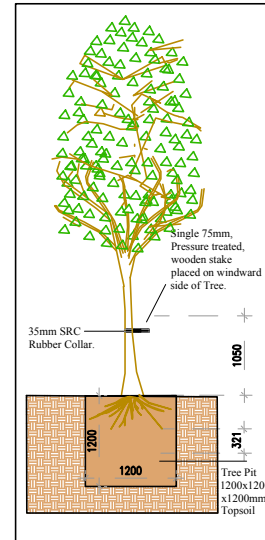
Storm water drains will flow along the roadways in the site to the site entrance at mountain road (L1320), where it will enter a petrol interceptor and then a soakaway located near the southern boundary.

3.1.3 Lighting

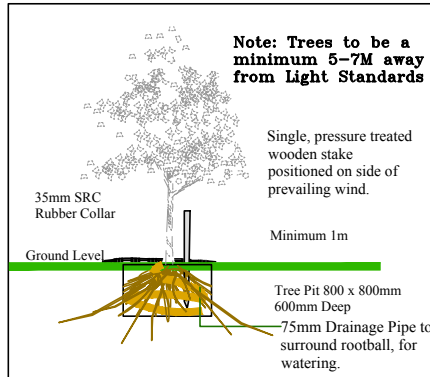
The site will host public night-time security lighting. Lights will be located along the access road and in turning areas. Fourteen luminaires (street lights) will be erected onsite, 13 of which will have a lux levels of 3000K and one, in close proximity to the eastern boundary will have a lux level of 2200K. The average light level is 4.6 lux with a minimum of 0.8 lux. The proposed lighting plan can be viewed in Appendix 1.



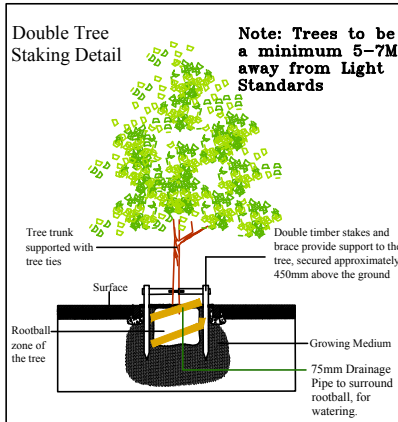
Tree Pit Detail



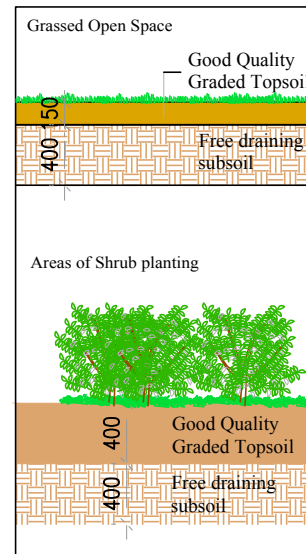
Tree Staking Detail



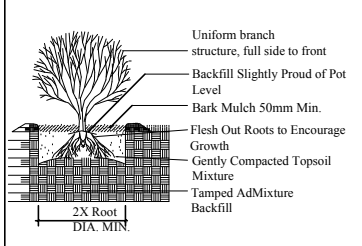
Trees In Excess of 12-14cm



Minimum soil depths



Shrub Planting Detail



Proposed Trees

Name	Size
Birch (silver) (Betula pendula)	14-16cm
Oak (Quercus robur)	16-18cm
Scots Pine (Pinus sylvestris)	20-25cm
Holly (Ilex aquifolium)	200cm
Mountain ash (Sorbus aucuparia)	400cm
Cherry (Prunus avium)	250cm
Yew (Taxus baccata)	300cm

Legend:

	Existing Tree		Concrete Block Paving
	Tree Planting (Roadside/Street Areas)		Concrete Path
	Tree Planting (Openspace Areas)		Concrete drive/yard
	Shrub Planting		Road - Tarmacadam Surface
	Woodland Planting		Private Grassed Areas
			Public Grassed Areas

GENERAL LANDSCAPE NOTES:

It is strongly recommended that all plant suggestions made on this drawing are assessed at detail planting design stage to ensure satisfactory location and combinations of plants in the completed scheme.

Trees would range in size from Standards of 10-12cm girth to Extra Heavy Standards of 14-16cm girth

Shrubs would range in size from 300-900mm in height from the ground and be planted at between 2 and 4 no. per metre squared

All standard and semi-mature trees to be protected with spiral tree guards selected as appropriate to tree size. All standard and semi-mature trees to be staked

All existing hedgerows and trees are to be retained, managed and maintained as an existing planting matrix for the proposed development

Positions of trees in open spaces to be agreed at later stage

All positions of planting/lawn areas to be interchangeable

All areas for bin storage are subject to agreement.

All plants shall be of high quality stock & checked by the Landscape Architect before & after planting.

Trees/shrubs to be purchased from suitable nursery and to be planted in accordance with nursery specifications.

The contractor, on a seasonal basis, shall check plants for two years after planting. Any trees or shrubs that die due to natural causes shall be replaced. (This does not include vandalism or theft).

NOTE:

- All trees to be 5 - 7m from light standards.
- Trees selected for grass margins to road to be shallow rooting Birch - to avoid services and ducts.
- Trees selected for grass margins to road not to impede visual line of cars and pedestrians.

NOTE:

Dense underplanting to consist of the following extensive dense native planting groups - providing necessary all year round screening, colour and interest, while maintaining and enhancing the existing natural habitat of the area.

Suggested Palette of Ground Cover :
To be native to the area



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VINCENT HANNON ARCHITECTS CHARTERED ARCHITECTS, SURVEYORS & PROJECT MANAGERS ABBEY STREET, SLIGO. T: 01-91-510022 UNIT 2A, DEERPARK BUSINESS CENTRE, ORANMORE, GALWAY. T: 01-81-483934 e-mail: info@vha.ie website: www.vha.ie			
Rev	Description	By	Date
1	Client / job description: SITE AT MOYCULLEN, CO. GALWAY FOR GALWAY COUNTY COUNCIL	drawn by:	SB
2	Drawing title: FIGURE 3-1 PROPOSED SITE LAYOUT AND LANDSCAPING PLAN	checked by:	BF
Scale: 1:500 @ A1	Date: 15/10/2019	Drawing no:	180901-03-102
rev:	project stage: SKETCH DESIGN		

3.2 Overview of Potential Impacts of the Project

Elements of the proposed works that may give rise to impacts and that will be considered for potential significant effects to European sites are as follows:

- Release of sediment and pollutants which may be discharged into surface water, particularly during high rainfall events during the construction phase;
- Potential for spillages of oils, fuels or other pollutants into groundwater during the construction phase;
- Disturbance to Qualifying Interest species during the construction and operation phase from lighting; and
- Loss of habitat resulting in the loss/fragmentation of commuting and/or foraging habitat by Qualifying Interest species;
- Loss of habitat/resting places used by Qualifying Interest species.

These potential impacts are associated with the construction and operational phases of the proposed development.

4.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 Desktop Study and Information Sources

The ecological desktop study completed for the proposed development comprised the following elements:

- Identification of European sites within the Zone of Influence (Zol) of the proposed development area through the identification of potential pathways/links from the proposed development area and European sites and/or supporting habitats (See Figure 4-1);
- Review of the National Parks and Wildlife Service (NPWS) site synopsis, Natura 2000 data form and Conservation Objectives for European sites⁴ identified through potential pathways from the proposed development; and
- Review of available literature and web data. This included a detailed review of the NPWS and Biodiversity Data Centre websites including mapping and available reports⁵ for relevant sites and in particular Qualifying Interests described and their Conservation Objectives.

An outline of the key datasets and information sources reviewed as part of the study are provided below:

- National Parks and Wildlife Service (NPWS) database of areas designated (and proposed) for nature conservation⁴;
- National Biodiversity Data Centre database (NBDC)⁶;
- Water Framework Directive website⁷;
- GIS Online mapping⁸;
- EPA Mapping database⁹; and

⁴ <http://www.npws.ie/protectedsites/> [Accessed July 2019]

⁵ <http://www.npws.ie/mapsanddata/> [Accessed July 2019]

⁶ <https://maps.biodiversityireland.ie/> [Accessed July 2019]

⁷ <https://www.catchments.ie/guide-water-framework-directive/> [Accessed July 2019]

⁸ <http://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228> [Accessed July 2019]

⁹ <https://gis.epa.ie/EPAMaps/AAGeoTool> [Accessed July 2019]

- NPWS datasets on Annex I habitats¹⁰.

In addition, aerial photography and mapping were used to identify non-designated semi-natural habitats of local ecological importance.

4.1.1 Site Visits

Ecological surveys including a swift survey, habitat mapping and bat survey were carried out by experienced TOBIN personnel on the 23rd of May 2019. A bat and swift survey were also conducted on the 4th of July 2019. The bat survey involved a walked transect in and around the perimeter of the proposed site boundary and the deployment of a SM4BAT ZC static bat detector for one night. To establish the movement and commuting habits of bat species through the site, two SMBAT ZC static detectors were also deployed on the 25th of July 2019, the 8th of August 2019, and the 13th of August 2019 and remained on site for a minimum of five nights. The results of these surveys are included in Section 4.1.3. An additional bat survey (walked transect) was also carried out on the 19th of August 2019. Lands surrounding the proposed site were walked, where access was feasible.

4.1.2 Desktop Results

The proposed location for the 30 no. constructed housing units is located close to the centre of the village Moycullen, Co. Galway on Mountain Road. The site is situated approximately 300m west of the N59 junction. Access to the existing track was from a local unnamed tertiary road, leading from L1320.

Desktop study results highlighted six Lesser Horseshoe Bat (*Rhinolophus hipposideros*) roosting areas in the vicinity of the proposed development. Two roost locations were in the Ross Lake and Woods SAC approximately 6 km and 4 km north west of the proposed development^{11,12}. One roost located approximately 4 km to the north east is situated in the Lough Corrib SAC¹².

The remaining three Lesser Horseshoe Bat roost sites/ populations within the greater area of the proposed development^{12,13} were noted with a 15 km buffer of the site, outside of any European sites. The location of these sites varied in distance from less than 1 km to over 8 km. Approximately 900m from the proposed development a roost is located in a cave to the north east of Moycullen village at Killarainy. Approximately 1.6 km from the proposed development, a roost in a building can be found close to the western shore of Ballyquirke Lough. And a large population of horseshoe bats and several roost sites could be found in the Menlough area approximately 8 km south east from the proposed development. These sites are not listed as SACs. Other Lesser Horseshoe Bat roost sites of importance were noted such as the large roost/population as Eborhall House (on northern shore of Lough Corrib). However, this location was more than 24 km away from the proposed development. This distance would be regarded

¹⁰ <https://www.npws.ie/maps-and-data/habitat-and-species-data> [Accessed July 2019]

¹¹ NPWS (2018) Conservation Objectives: Ross Lake and Woods SAC 001312. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. Available online at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001312.pdf [Accessed July 2019].

¹² National Biodiversity Data Centre Map viewer - <https://maps.biodiversityireland.ie/Map/Terrestrial/Species/119456> [Accessed July 2019].

¹³ Galway County Council (2018), N6 Galway City Ring Road Environmental Impact Assessment Report – Chapter 8 – Biodiversity. Available online at: <http://www.n6galwaycityringroad.ie/media/N6%20EIAR%20-%20Chapter%208%20Biodiversity.pdf> [Accessed July 2019].

as beyond the normal core foraging range and commuting range of this species, except on exceptional occasions or over long periods of time¹⁴.

4.1.3 Field Survey Results

Habitats onsite were classified during the walkover survey by TOBIN ecologist Alan Booth on the 23rd of May 2019 according to Fossitt 2000¹⁵. They included (Mixed) broadleaved woodland (WD1), Exposed sand, gravel or till (ED1) and Recolonising bare ground (ED3). A linear habitat of Stone walls and other stonework (BL1) was recorded along part of the northern boundary of the site. No surface water or ditches were recorded within or adjacent to the proposed development. The dominant habitat type present within the site boundary is (Mixed) broadleaved woodland (WD1) comprising of a cluttered environment of sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), beech (*Fagus sylvatica*), birch, rowan (*Sorbus aucuparia*) and willow (*Salix* sp.), with an understory dominated by ivy (*Hedera helix*), bramble (*Rubus fruticosus*), and bracken (*Pteridium aquilinum*).

Houses (BL3) and gardens (GA2) exist along the north east and south west boundaries of the proposed site. To the south, across the Mountain Road, lies a shopping centre (BL3), a car park (BL3) and an area of recolonising bare ground (ED3) and scrub (WS1). Along the northern boundary lies amenity grassland (improved) (GA2) and the (mixed) broadleaved woodland (WD1) continues.

A bat survey (emergence survey and walked transect) and swift survey was undertaken by TOBIN ecologists Kevin Delahunty and Sophia Couchman on the 4th July 2019, a SM4BAT ZC bat static detector was also deployed for one night during this site visit. An additional bat survey (walked transect) was carried out on the 19th of August 2019 by TOBIN ecologist Kevin Delahunty. Lands surrounding the proposed site were walked, where access was feasible.

Two SM4BAT ZC static detectors were deployed for five consecutive nights on three occasions, the first from the 25th to the 30th of July 2019 and the second from the 8th to the 13th of August 2019 and the third from the 13th to the 19th of August 2019.

The emergence survey conducted on the 4th July 2019 indicated that no roost was located within the boundary of the proposed development. Bat activity in the vicinity of the emergence survey site was minimal with only seven soprano pipistrelle bats and one unidentified *Myotis* species being recorded foraging or commuting. No species were recorded in the immediate areas around the perimeter of the site boundary during the walking transect. A second walking transect on the 19th of August 2019 recorded three soprano pipistrelle's, three Leisler's bats and a single Natterer's bat foraging around the perimeter of the proposed development site.

Results from the static detectors deployed on the 25th of July for five nights recorded Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, Natter's Bat, unidentifiable *Myotis* spp. and Lesser Horseshoe Bat. The majority of the recordings for the Lesser Horseshoe bat (11 records) occurred outside the site boundary for the proposed development, with only one recording within the site boundary (see Figure 4-2). No bat roosts or bat species were recorded onsite during walked transect and emergence surveys on the 4th of July 2019.

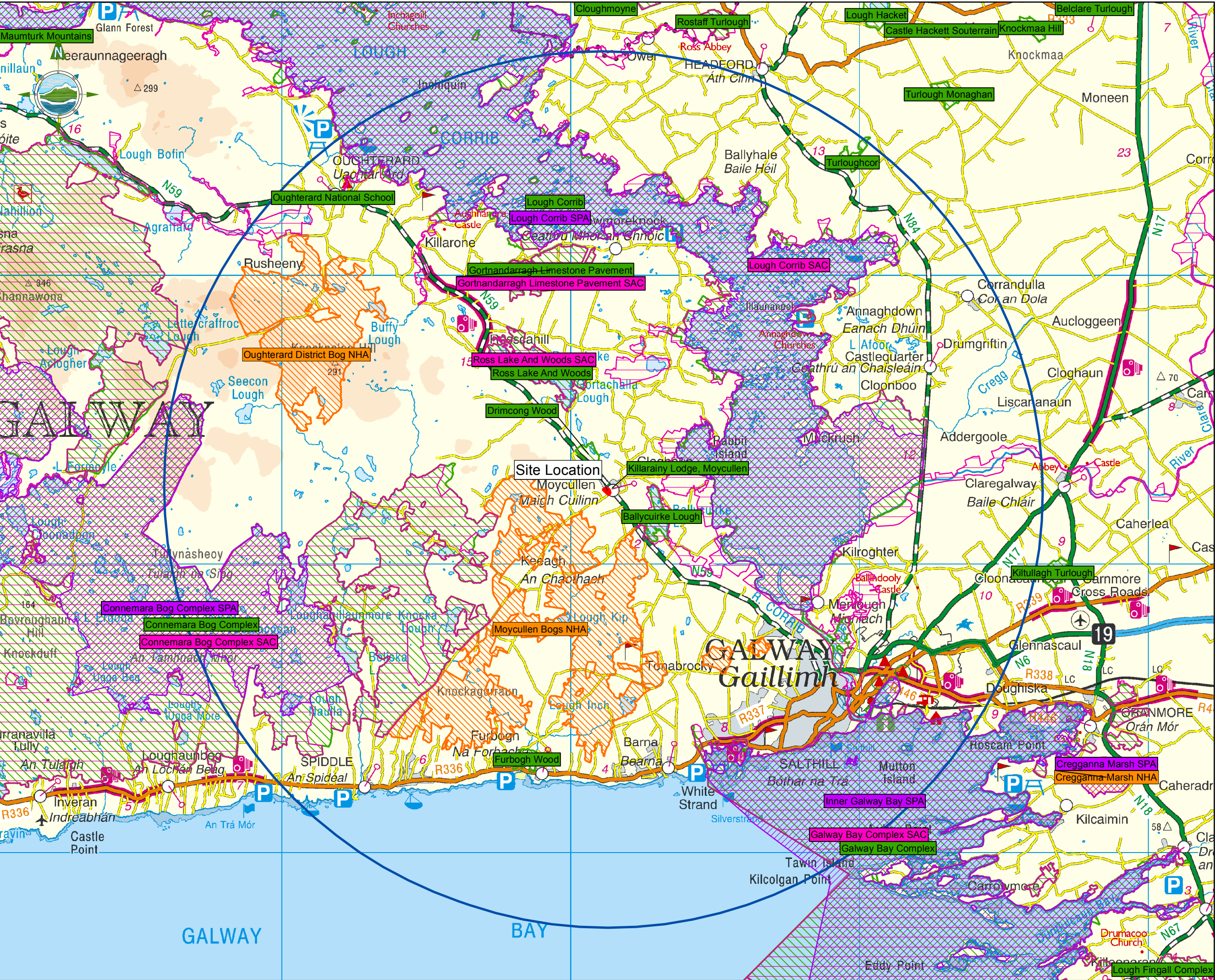
¹⁴ Bontadina, F., Schofield, H. and Naef-Daenzer, B. (2002) Radio-tracking reveals that lesser horseshoe bats (*Rhinolophus hipposideros*) forage in woodland. *Journal of Zoology* 258: 281-290. Available online at: <https://www.vwt.org.uk/wp-content/uploads/2015/04/bontadina-f-et-al-2002-radio-tracking-reveals-that-lesser-horseshoe-bats-forage-in-woodland.pdf> [Accessed July 2019]

¹⁵ Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny. Available online at: http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Guide_to_Habitats.pdf

Data collected from static detectors indicate that lesser horseshoe bats use the area surrounding the proposed development infrequently as foraging-grounds and a commuting route. The species was mainly recorded using the area to the north of the proposed development boundary as a foraging ground. Only one record of this species was captured within the perimeter of the proposed site. The static detectors indicate that the proposed site is used regularly as a foraging ground and commuting route area by soprano pipistrelle, Leisler's and unidentified *Myotis* species.

A single Hedgehog (*Erinaceus europaeus*) was recorded within the Proposed Planning Application Boundary on the 4th of July 2019. Hedgehogs are a protected species under the Wildlife Acts. No further protected mammals were recorded onsite.

A number of common passerines were recorded within the vicinity of the proposed development. These included Magpie (*Pica pica*), Dunnock (*Prunella modularis*), Blackbird (*Turdus merula*), Chiffchaff (*Phylloscopus collybita*), Blue tit (*Cyanistes caeruleus*), Robin (*Erithacus rubecula*), Chaffinch (*Fringilla coelebs*), Blackcap (*Sylvia atricapilla*), Pheasant (*Phasianus colchicus*), Jackdaw (*Corvus monedula*), Wren (*Troglodytes troglodytes*), Song thrush (*Turdus philomelos*) and Wood pigeon (*Columba palumbus*). No Swifts (*Apus apus*) were recorded during swift surveys on the 23rd of May and 4th of July 2019.



Legend

- Site Boundary
- 15km Buffer from Site Boundary
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Natural Heritage Area (NHA)
- proposed Natural Heritage Area (pNHA)

0 2.5 5
Kilometres

Issue	Date	Description	By	Chkd.
A	Aug. 2019	Issue	F.H.	J.S.

Client:

Comhairle Chontae na Gaillimhe
Galway County Council

Project:

Gort Uí Lochlainn & Coill Bruachláin,
Moycullen, Co. Galway
- 30 Housing units

Title:

Designated Sites Within
15 Kilometres of Site Boundary

Scale @ A3: 1:120,000

Prepared by:	Checked:	Date:
F. Healy	J. Sherry	October 2019

Project Director: D. Grehan

TOBIN
Patrick J. Tobin & Co. Ltd.

Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax: +353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

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Issue:

Figure 4.1 A

4.2 Determining the likely zone of influence

Guidance on Appropriate Assessment of Plans and Projects in Ireland notes that a distance of 15km is recommended in the case of plans, derived from UK guidance¹⁶. For projects, the distance could be much less than 15 km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects.

Using the Source – Pathway – Receptor model^{17, 18}, an examination of the potential effects of the project was undertaken (alone and in combination) to identify what European sites, and which of their Qualifying Interests; Special Conservation Interests or Conservation Objectives, were potentially at risk. This was required to review the Zol of the project, as shown in Figure 4-1.

Using the Source, Pathway, Receptor model, five European sites were identified that were within the Zone of Influence (Zol) of the proposed development, due to their proximity and potential for hydrological links with protected sites and the presence of qualifying species within the development boundary. These sites were Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA and Ross Lakes and Woods SAC. These sites are shown in Table 4-1 below. There are several other European sites which were reviewed as part of the assessment (Figure 4-1) but were not considered to be within the Zol of the proposed development area.

Table 4-1 Relevant European sites

Designated Site	Site Code	Approximate Distance from Proposed Works (km) ¹⁹
Lough Corrib SAC	000297	1.3 km to the east
Lough Corrib SPA	004042	2.7 km to the northeast
Galway Bay Complex SAC	000268	8.6 km to the southeast
Inner Galway Bay SPA	004031	9.5 km to the southeast
Ross Lake and Woods SAC	001312	3 km to the northwest

Lough Corrib SPA and SAC, Galway Bay Complex SAC and Inner Galway Bay SPA are connected via the outflow river of Lough Corrib (River Corrib). As a result, any potential pollution or sediment which enters the waters of the upstream protected areas has the potential to affect the Qualifying Interests or special Conservation Interests of the downstream protected areas (Galway Bay SAC and Inner Galway Bay SPA). However, no surface or ground water links can be found between these protected sites and the proposed development.

The presence of lesser horseshoe bat within and surrounding the proposed development may result in the impact of the populations of this species in Lough Corrib SAC and Ross Lake and Woods SAC, where the lesser horseshoe bat is a Qualifying Interest species. However, the proposed development is not expected to impact on the populations and roosts for which the SACs are designated. Lough Corrib SAC has been selected for lesser horseshoe bats because of the presence of one important summer roost (roost id. 217 in NPWS database) approximately 24km from the proposed development. And Ross Lake and Woods SAC has been selected for

¹⁶ Department of the Environment, Heritage and Local Government DEHLG (2010). *Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities*.

¹⁷ Cooper, L. M. (2004). *Guidelines for Cumulative Effects Assessment in SEA of Plans*. EPMG Occasional Paper 04/LMC/CEA, Imperial College London.

¹⁸ OPW (2014), *Arterial Drainage Maintenance Categories, Source » Pathway » Receptor Chains for Appropriate Assessment*. OPW, Galway.

¹⁹ Distances obtained from appropriate assessment tool on EPA online maps. (<https://gis.epa.ie/EPAMaps/AAGeoTool>) (Accessed July 2019)

lesser horseshoe bat because of the presence of one internationally important summer roost (roost id 212 in NPWS database), which is located approximately 6km from the proposed development. Upon review of the conservation objectives for this species in both SACs^{20,21}, no significant effects are expected on the species attributes or targets. This is based on the commuting range of the species from the above-mentioned designated populations. Lesser horseshoe bats core foraging range is 2.5km from their roosts¹⁴. The proposed development is located approximately 34km from the roost within Lough Corrib SAC and 6km from the roost within Ross Lake and Woods SAC. Therefore, based on the normal foraging distance of 2.5km as per the conservation objectives, no likely significant effects are anticipated.

Other roosts for the lesser horseshoe bat (an Annex II and Annex IV species), did occur within 2.5km of the proposed development. Impacts on these roosts could not be ruled out, due to the loss of foraging habitat and possible disturbance from light. However, as these roosts were not located within any European sites, mitigation measures do not need to be dealt with by the Appropriate Assessment process. Instead mitigations for lesser horseshoe bats and other bat species located within the boundary of the proposed site, will be examined in the Ecological Report for the proposed development²².

Other sites reviewed for potential links to the proposed development, but not considered to be within the Zol of the proposed development due to a lack of pathways include Connemara Bog Complex SAC, Gortnandarragh Limestone Pavement SAC and Connemara Bog Complex SPA. A review of these European sites noted they are located in separate sub-catchments to the proposed development, are located upstream of the development or are considered beyond the normal core foraging/commuting range of Qualifying Interest species. It is therefore considered unlikely that any significant impacts may occur to these designated sites and their Qualifying Interests as a result of the proposed development.

The closest NHA to the development is the Moycullen Bogs NHA. The site largely consists of the lowland blanket bog and wet heath. Peat cutting (both mechanical and hand) is a prevalent land use and grazing pressure has been identified locally. There are no hydrological or hydrogeological links to the proposed development and the NHA.

A possible link could be established between two SPAs located within the Zol, they include Lough Corrib SPA and Connemara Bog Complex SPA. Two species of bird were identified to use both SPAs, they include golden plover (*Pluvialis apricaria*) and common gull (*Larus canus*). These species have potential to commute between the two protected sites with the proposed development located in between these SPAs (approximately 2.8 km to Lough Corrib SPA to the east and 10.4 km to Connemara SPA to the west). However due to the type of development (housing development of two-story houses) and the location of the development in an urban area and away from suitable habitat for the species named, there is unlikely to be an effect on these species and protected areas.

Potential impacts and their significance, if any, on the European sites listed above, are considered in Table 4-2 where a source- pathway-receptor relationship has been identified.

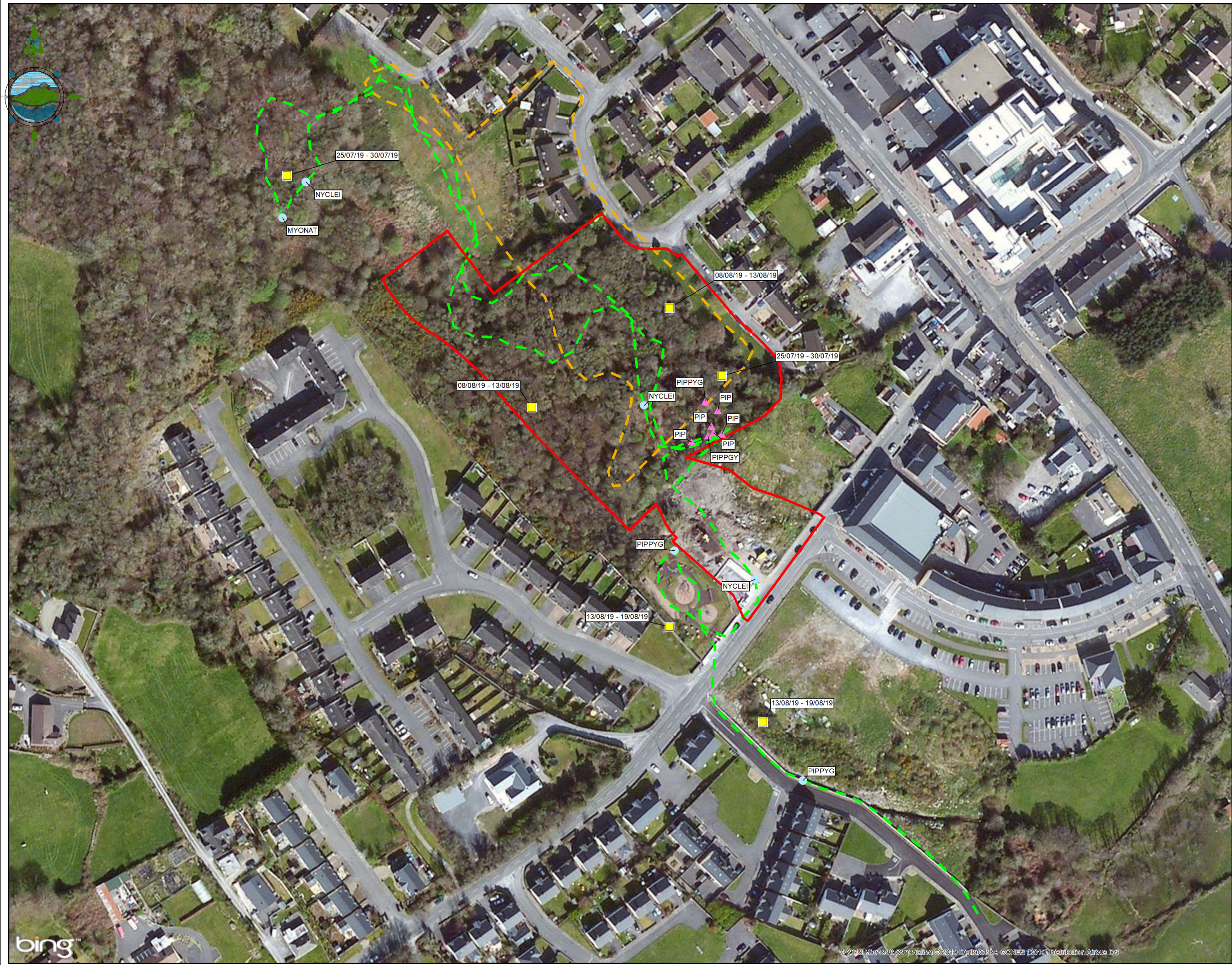
²⁰ NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000297.pdf

²¹ NPWS (2018) Conservation Objectives: Ross Lake and Woods SAC 001312. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001312.pdf

²² TOBIN (2019), *Housing Development Gort Uí Lochlainn & Coill Bhruchláin, Moycullen, Co. Galway - Ecology Report*. Dublin: TOBIN Consulting Engineers

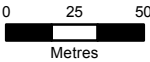
Impacts are considered in light of the Conservation Objectives for which the sites are designated. This may include Annex I Habitats, Annex II species or Annex I bird species.



Legend

- Site Boundary
- Walked Transect 19th Aug 2019
- Walked Transect 4th July 2019
- Location of SM4BAT ZC Bat Static Detectors
- Bat Species Recorded on Walked Transect - 19th Aug 2019
- Bat Species Recorded During Emergence Survey - 4th July 2019

Code	Bat Species
PIPPG	Soprano Pipistrelle
MYONAT	Natterer's Bat
NYCLEI	Leislars Bat
PIP	Pipistrelle spp.



NOTES

- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
- ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
- ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
- ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

D01	Aug '19	Draft Issue	J.S.	A.B.
Issue	Date	Description	By	Chkd.

Client:

Project: Gort Uí Lochlainn & Coill Bruachláin, Moycullen, Co. Galway - 30 Housing units

Title: Walked transect routes and bat activity on the 4th of July and 19th of August 2019.

Scale @ A3: 1:2,750

Prepared by: J. Sherry	Checked: A. Booth	Date: August 2019
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Project Director: S.Tinnelly

TOBIN
Patric J. Tobin & Co. Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax: +353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

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Drawing No: **Figure 4-2** **D01**

Table 4-2 Brief description of European sites, Qualifying Interests, and Likely Significant Effects

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
Lough Corrib SAC (000297) Lough Corrib is situated to the north of Galway city and is the second largest lake in Ireland, with an area of approximately 18,240 ha (the entire site is 20,556 ha). The lake can be divided into two parts: a relatively shallow basin, underlain by Carboniferous limestone, in the south, and a larger, deeper basin, underlain by more acidic granite, schists, shales and sandstones to the north. The surrounding lands to the south and east are mostly pastoral farmland, while bog and heath predominate to the west and north. A number of rivers are included within the cSAC as they are important for Atlantic Salmon. These rivers include the Clare, Grange, Abbert, Sinking, Dalgan and Black to the east, as well as the Cong, Bealanabrack, Failmore, Cornamona, Drimneen and Owenriff to the west. In addition to the rivers and lake basin, adjoining areas of conservation interest, including raised bog, woodland, grassland and limestone pavement, have	• [3110] Oligotrophic Waters containing very few minerals • [3130] Oligotrophic to Mesotrophic Standing Waters • [3140] Hard Water Lakes • [3260] Floating River Vegetation • [6210] Orchid-rich Calcareous Grassland* • [6410] Molinia Meadows • [7110] Raised Bog (Active)* • [7120] Degraded Raised Bog • [7150] Rhynchosporion Vegetation • [7210] Cladium Fens* • [7220] Petrifying Springs* • [7230] Alkaline Fens • [8240] Limestone Pavement* • [91A0] Old Oak Woodlands • [91D0] Bog Woodland* • [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) • [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	• A02.01 Agricultural intensification (High rank, inside and outside SAC) • A04.03 Abandonment of pastoral systems, lack of grazing (Medium rank, inside SAC) • A08 fertilisation (Medium rank, inside and outside SAC) • A10.01 removal of hedges and copses or scrub (Medium rank, inside the SAC) • B01 forest planting on open ground and (Medium rank, inside and outside SAC) • C01.01 sand and gravel extraction (Low rank, outside SAC) • C01.03.02 Mechanical removal of peat (High rank, inside SAC) • D01 roads, paths and railroads (Medium rank, inside the SAC) • D03.01.02 Piers/tourist harbours or recreational piers (Medium rank, inside the SAC) • E01.01 Continuous urbanisation (medium rank, outside SAC) • E01.03 Dispersed habitation (Medium rank, inside SAC) • E03.01 Disposal of household/recreational facility waste (Low rank, inside SAC) • G05 Other human intrusion and disturbances (High rank, inside SAC)	Spills/leak to ground and/or surface water. Disturbance of species of qualifying interest.	Based on the lack of rivers, streams, and ditch networks close to the development, no significant effects are expected on the protected sites aquatic and water dependent habitats and species. It is unlikely that any pollution/run off or contaminates will enter this protected site via ground or surface waters. Due to the distance from the protected site (1.3km), the type of development (housing development) and the location of the houses in an urban setting there is unlikely to be a disturbance effect on the qualifying interests of the SAC. With regards to the lesser horseshoe bat, no significant effects will occur to the roost for which the species was designated for as the proposed development is outside the normal commuting range (34km away) of the species and no impacts are expected on the

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
been incorporated into the site ²³ .	[1095] Sea Lamprey (<i>Petromyzon marinus</i>) [1096] Brook Lamprey (<i>Lampetra planeri</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) [1355] Otter (<i>Lutra lutra</i>) [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)²⁴	- H01.08 diffuse pollution to surface waters due to household sewage and waste waters (High rank, outside the SAC) - I01 invasive non-native species (High rank, inside SAC) - J02.01.03 infilling of ditches, dykes, ponds, pools, marshes or pits (Medium rank, inside SAC) - J02.15 Other human induced changes in hydraulic conditions (Medium rank, inside and outside SAC)²⁵.		species conservation objectives.
Lough Corrib SPA (004042) Lough Corrib is the largest lake in the country and is located, for the most part, in County Galway, with a small section in the north extending into County Mayo. The lake can be divided into two parts: a relatively shallow basin in the south, and a larger, deeper basin to the north. The main inflowing rivers are the Black, Clare, Dooghda, Cregg, Owenriff	[A051] Gadwall (<i>Anas strepera</i>) [A056] Shoveler (<i>Anas clypeata</i>) [A059] Pochard (<i>Aythya ferina</i>) [A061] Tufted Duck (<i>Aythya fuligula</i>) [A065] Common scoter (<i>Melanitta nigra</i>) [A082] Hen harrier (<i>Circus cyaneus</i>)	- A04 Grazing (Low rank, outside SPA) - A08 Fertilisation (Low rank, outside SPA) - B Forestry (medium rank, outside SPA) - E01 Urbanised areas, human habitation (High rank, outside SPA) - E03.01 Hunting (High rank, inside SPA) - F02.03 Leisure fishing (High rank, inside SPA)	Spills/leak to ground and/or surface water	Based on the lack of rivers, streams, and ditch networks close to the development, no significant effects are expected on the protected sites aquatic and water dependent habitats and species. It is unlikely that any pollution/run off or contaminants will enter this protected site via ground or surface waters.

²³ NPWS (2015) *Site synopsis: Lough Corrib SAC 000297*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000297.pdf> [Accessed July 2019].

²⁴ NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000297.pdf [Accessed July 2019].

²⁵ NPWS (2017) *NATURA 2000 - STANDARD DATA FORM Lough Corrib SAC*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000297.pdf> [Accessed July 2019].

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
and the channel from Lough Mask. The main outflowing river is the Corrib, which reaches the sea at Galway City. The lime-rich waters of the southern basin of the lake support extensive beds of Stoneworts (Charophytes). These Chara beds are a very important source of food for waterfowl. More oligotrophic and acidic waters are found in the north basin where large areas of reedswamp vegetation occur. Numerous islands are also found with varying habitats of bare rock, grassland or woodland. Lough Corrib SPA is an internationally important site which supports in excess of 20,000 wintering waterbirds, several breeding birds and several birds listed on Annex I of the E.U. Birds Directive ²⁶ .	• [A125] Coot (<i>Fulica atra</i>) • [A140] Golden plover (<i>Pluvialis apricaria</i>) • [A179] Black-headed gull (<i>Chroicocephalus ridibundus</i>) • [A182] Common gull (<i>Larus canus</i>) • [A193] Common tern (<i>Sterna hirundo</i>) • [A194] Artic tern (<i>Sterna paradisaea</i>) • [395] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)²⁷	• G01.01 Nautical sports (Low rank inside SPA)²⁸.		Due to the distance from the protected site (2.8km), the type of development (housing development) and the location of the houses in an urban setting there is unlikely to be a disturbance effect on the qualifying interests of the SPA.
Galway Bay complex SAC (000268) Situated on the west coast of Ireland, this site comprises the inner, shallow part of a large bay	• [1140] Mudflats and sandflats not covered by seawater at low tide • [1150] Coastal lagoons	• A02.01 Agricultural intensification (Medium rank, inside SAC) • A04.02.01 non intensive cattle grazing (Medium rank, inside SAC)	Spills/leak to ground and/or surface water	Based on the lack of rivers, streams, and ditch networks close to the development, no significant effects are expected on the protected

²⁶ NPWS (2014) *Site synopsis for Lough Corrib SPA [004042]*. Department of Culture, Heritage and the Gaeltacht. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004042.pdf> [Accessed July 2019].

²⁷ NPWS (2018) *Conservation objectives for Lough Corrib SPA [004042]. Generic Version 6.0*. Department of Culture, Heritage and the Gaeltacht. Available online at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004042.pdf [Accessed July 2019].

²⁸ NPWS (2017) *NATURA 2000 - STANDARD DATA FORM Lough Corrib SPA*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004042.pdf> [Accessed July 2019]

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
which is partially sheltered by the Aran Islands. The Burren karstic limestone fringes the southern sides and extends into the sublittoral. West of Galway city the bedrock geology is granite. There are numerous shallow and intertidal inlets on the eastern and southern sides, notably Muckinish, Aughinish and Kinvarra Bays. A number of small islands composed of glacial deposits are located along the eastern side. These include Eddy Island, Deer Island and Tawin Island. A diverse range of marine, coastal and terrestrial habitats, including several listed on Annex I of the E.U. Habitats Directive, occur within the site, making the area of high scientific Importance²⁹.	• [1160] Large shallow inlets and bays • [1170] Reefs • [1220] Perennial vegetation of stony banks • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • [1310] Salicornia and other annuals colonising mud and sand • [1330] Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) • [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • [3180] Turloughs • [5130] <i>Juniperus communis</i> formations on heaths or calcareous grasslands • [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) • [7210] Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	• A04.02.02 non intensive sheep grazing (Medium rank, inside SAC) • A08 fertilisation (Medium rank, inside and outside SAC) • A10.01 removal of hedges and copses or scrub (Medium rank, inside the SAC) • C01.01 sand and gravel extraction (Medium rank, inside SAC) • C01.01.02 Removal of beach material (Medium rank, inside SAC) • D01.01 paths, tracks, cycling tracks (Low rank, inside the SAC) • D02.02 pipelines (medium rank, inside the SAC) • D03 shipping lanes, ports, marine constructions (high rank, inside SAC) • D03.01.01 Slipways (Low rank, inside the SAC) • D03.01.04 industrial ports (high rank, inside the SAC) • E03.03 Disposal of inert materials (Low rank, inside SAC) • F01 Marine and Freshwater Aquaculture (Medium rank, inside and outside SAC) • F02.03.01 bait digging / collection (Low rank, inside SAC) • F06 Hunting, fishing or collecting activities (Medium rank, inside SAC)		sites aquatic and water dependent habitats and species. It is unlikely that any pollution/run off or contaminants will enter this protected site via ground or surface waters. Due to the distance from the protected site (8.6km), the type of development (housing development) and the location of the houses in an urban setting there is unlikely to be a disturbance effect on the qualifying interests of the SAC.

²⁹ NPWS (2015) *Site synopsis: Galway Bay Complex SAC 000268*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000268.pdf> [Accessed July 2019].

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
	• [7230] Alkaline fens • [8240] Limestone pavements • [1355] <i>Lutra lutra</i> (Otter) • [1365] <i>Phoca vitulina</i> (Harbour Seal)³⁰	• G01.01.02 non-motorized nautical sports (Low rank, inside SAC) • G02.01 golf course (Low rank, inside SAC) • H01.05 diffuse pollution to surface waters due to agricultural and forestry activities (High rank, inside and outside SAC) • H01.08 diffuse pollution to surface waters due to household sewage and waste waters (High rank, inside and outside the SAC) • I01 invasive non-native species (medium rank, inside and outside SAC) • J02.01.02 reclamation of land from sea, estuary or marsh (Medium rank, inside SAC) • J02.02.02 estuarine and coastal dredging (Low rank, inside SAC) • J02.12.01 sea defence or coast protection works, tidal barrages (Medium rank, inside SAC)³¹		
Inner Galway Bay SPA (004031) Inner Galway Bay SPA is a very large, marine-dominated site situated on the west coast of Ireland. The inner bay is protected from exposure to	• Great Northern Diver (<i>Gavia immer</i>) [A003] • Cormorant (<i>Phalacrocorax carbo</i>) [A017] •	• A04 Grazing (low rank, inside SPA) • A08 fertilisation (Medium rank, inside and outside SPA) • D01.01 Roads and motorways (Medium rank, outside the SPA)	Spills/leak to ground and/or surface water	Based on the lack of rivers, streams, and ditch networks close to the development, no significant effects are expected on the protected sites aquatic and water

³⁰ NPWS (2013). Conservation Objectives: Galway Bay Complex SAC 000268. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available online at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000268.pdf [Accessed July 2019].

³¹NPWS (2017) *NATURA 2000 - STANDARD DATA FORM Galway Bay SAC*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000268.pdf> [Accessed July 2019]

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
Atlantic swells by the Aran Islands and Black Head. Subsidiary bays and inlets (e.g. Poul-na-clough, Aughinish and Kinvarra Bays) add texture to the patterns of water movement and sediment deposition, which lends variety to the marine habitats and communities. The terraced Carboniferous (Viséan) limestone platform of the Burren sweeps down to the shore and into the sublittoral. The long shoreline is noted for its diversity, and comprises complex mixtures of bedrock shore, shingle beach, sandy beach and fringing salt marshes. Intertidal sand and mud flats occur around much of the shoreline, with the largest areas being found on the sheltered eastern coast between Oranmore Bay and Kinvarra Bay. A number of small islands and rocky islets in the Bay are included within the site. Inner Galway Bay supports an excellent diversity of wintering wetland birds with two wintering species having populations of international	• Grey Heron (<i>Ardea cinerea</i>) [A028] • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Wigeon (<i>Anas penelope</i>) [A050] • Teal (<i>Anas crecca</i>) [A052] • Shoveler (<i>Anas clypeata</i>) [A056] • Red-breasted Merganser (<i>Mergus serrator</i>) [A069] • Ringed Plover (<i>Charadrius hiaticula</i>) [A137] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Lapwing (<i>Vanellus vanellus</i>) [A142] • Dunlin (<i>Calidris alpina</i>) [A149] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Curlew (<i>Numenius arquata</i>) [A160] • Redshank (<i>Tringa totanus</i>) [A162] • Turnstone (<i>Arenaria interpres</i>) [A169] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	• E01 Urbanised areas, human habitation (High rank, outside SPA) • E02 Industrial or commercial areas (Medium rank, outside SPA) • E03 Discharge (High rank, inside SPA) • F01 Marine and Freshwater Aquaculture (Medium rank, inside SPA) • F02.03 Leisure fishing (Medium rank, inside SPA) • F03.01 Hunting, (Low rank, inside SPA) • G01.01 Nautical sports (Medium rank, inside SPA) • G01.02 walking, horse-riding and non-motorised vehicles (Medium rank, inside SPA) • J02.01.02 reclamation of land from sea, estuary or marsh (High rank, inside SPA) • J02.12 Dykes, embankments, artificial beaches, general (Medium rank, inside SPA)³⁴.		dependent habitats and species. It is unlikely that any pollution/run off or contaminants will enter this protected site via ground or surface waters. Due to the distance from the protected site (9.5km), the type of development (housing development) and the location of the houses in an urban setting there is unlikely to be a disturbance effect on the qualifying interests of the SPA.

³⁴ NPWS (2017) *NATURA 2000 - STANDARD DATA FORM Inner Galway Bay SPA*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004031.pdf> [Accessed July 2019]

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
importance and a further sixteen wintering species having populations of national importance. And has several important populations of breeding birds with breeding colonies of Sandwich Tern, Common Tern and Cormorant are also of national importance. Also, of note is that six of the regularly occurring species are listed on Annex I of the E.U. Birds Directive, Inner Galway Bay is a Ramsar Convention site and part of the Inner Galway Bay SPA is a Wildfowl Sanctuary. ³²	• Common Gull (<i>Larus canus</i>) [A182] • Sandwich Tern (<i>Sterna sandvicensis</i>) [A191] • Common Tern (<i>Sterna hirundo</i>) [A193] • Wetland and Waterbirds [A999]³³			
Ross Lake and Woods SAC (0001312) The main habitat on the site is a medium-sized lake, Ross Lake, which has a limestone bed covered by deposits of precipitated marl and a shoreline of marl-encrusted limestone boulders. It is a good example of a hard water lake, and supports beds of stoneworts, including <i>Chara globularis</i> var. <i>virgata</i> , <i>C. pedunculata</i> and <i>C. curta</i> . The last two species in particular are	• [3140] Hard Water Lakes • [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)¹¹	• A02.01 Agricultural intensification (Medium rank, inside SAC) • A04 Grazing (Low rank, inside SAC) • A04.03 Abandonment of pastoral systems, lack of grazing (Low rank, inside and outside SAC). • A08 Fertilisation (Low rank, inside SAC) • A10.1 Removal of hedges and copses or scrub (Medium rank, inside SAC). • C01.01 Sand and gravel extraction (Medium rank, inside and outside SAC).	Disturbance of species qualifying interest.	No significant effects will occur to the lesser horseshoe roost for which the species was designated, as the proposed development is 6km from the roost and therefore outside the normal commuting range of the species of 2.5km. No likely significant impacts are therefore expected on the species conservation objectives.

³² NPWS (2014) *Site synopsis: Inner Galway Bay SPA 004031*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000268.pdf> [Accessed 2019]

³³ NPWS (2014) *Site synopsis: Inner Galway Bay SPA 004031. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available online at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004031.pdf [Accessed 2019]

European site	Qualifying Interests / Special Conservation Interests	Main Threats & Pressures	Pathway	Possibility of Likely Significant Effects
characteristic of marl lakes. The open water also supports Yellow Waterlily (<i>Nuphar lutea</i>) and Broad-leaved Pondweed (<i>Potamogeton natans</i>). The site is of importance because it contains a good example of a hard water lake, a habitat listed on Annex I of the E.U. Habitats Directive, and for the internationally important population of Lesser Horseshoe Bat, a species listed on Annex II of this Directive, which occurs. The presence of Otter and breeding Common Gull is also of note. ³⁵		• C01.04 Mines (Low rank, inside and outside SAC). • D01.01 Paths, tracks and cycling tracks (Medium rank, inside SAC). • D03.01.02 Piers/ tourist harbours or recreational piers (Low rank, inside SAC) • E06 Other urbanisation, industrial and similar activities (High rank, inside SAC). • E06.02 Reconstruction, renovation of buildings (High rank, inside SAC). • H01 Pollution to surface waters (limnic, terrestrial, marine & brackish). (High rank, inside and outside SAC). • H01.08 diffuse pollution to surface waters due to household sewage and waste waters (High rank, inside and outside SAC). • H02.06 Diffuse groundwater pollution due to agricultural and forestry activities. (High rank, inside and outside SAC). • I01 Invasive non-native species (Medium rank, inside SAC) • J02.04.01 Flooding (Medium rank, inside and outside SAC)³⁶		No significant effects are expected on the hard water lakes found in the SAC due the lack of surface and ground water entry points and that the SAC is located approximately 3kms upstream of the proposed development.

³⁵ NPWS (2013). Site Synopsis: Ross Lake and Woods SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001312.pdf> [Accessed 2019]

³⁶ NPWS (2017) *NATURA 2000 - STANDARD DATA FORM Ross Lake and Woods SAC*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available online at: <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF001312.pdf> [Accessed July 2019].

5.0 IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

5.1 Potential Significant Effects

The proposed housing development site is not located within any designated European site. Two European sites with the potential to be directly impacted by the proposed development by the disturbance of the lesser horseshoe bat were identified as Lough Corrib SAC and Ross Lake and Woods SAC. But upon review of the conservation objective documents for these sites no significant impacts are expected on the proposed sites.

As no surface or ground waters linking protected areas to the proposed development were identified, there is a low potential risk of significant effects on protected areas.

5.2 *Potential for In Combination Effects*

The characteristics of existing, proposed, or other approved projects, which may result in combination effects with the proposed development and potentially affect a European Site, were assessed.

Other cumulative developments of relevance identified in the vicinity of the proposed development include;

- The proposed N6 Galway bypass is located approximately 8 km to the south of the proposed Moycullen development. Construction is expected to commence in 2021 and expected to last for three years. In combination effects, impacting on the Lesser Horseshoe populations around Moycullen are determined to be unlikely due to this distance between developments. This was determined through the use of radio tracking and ringing the lesser horseshoe populations closer to the road development. No link was established between the two populations.¹³
- A proposed development consisting of a community centre and playing fields has been granted planning permission approximately 350m to the northwest of the site. This proposed community centre would require the removal of an existing woodland. However, this development is unlikely to commence within the next five years due to a lack of funding³⁷. It is unknown at the time of writing this report the lighting regime and extent of habitat removal required by this project.
- A three-story mixed-use building has been granted permission directly adjacent to the southern boundary of the proposed development. This development is unlikely to have significant adverse effect on the lesser horseshoe populations around Moycullen as it will not require the removal of the woodland habitat that is utilised by the species.
- Agricultural practices including grassland and arable management in the surrounding landscape both upstream and downstream of proposed development site; and
- Discharge from Moycullen (D0191) Wastewater treatment plant and Storm Water Overflows, which discharges into Ballyquirke canal and then enters Ballyquirke lough (part of the Lough Corrib SAC); Combination effects from the Moycullen WwTP are determined to be low/unlikely. Based on the plants current load capacity, which is designed for 4000 PE. The plant is currently servicing 2060 PE and is not expected to exceed the design capacity in the next three years³. The addition of 30 new houses

³⁷ Galway County Council (2018) – Application for Extension of Planning Permission for a Ionad Pobail, Páirc Imeartha, Cispheil agus Dhá Phairc Imeartha Uile-Aimsire a Thógail - <http://gccapps.galway.ie/viewexternaldocuments/ViewPDF?ref=2171301>

increasing the current load in the plant by 116 PE is not expected to overburden the design capacity of the plant.

- Other pressures within the catchment that have potential to result in negative in combination effects include but are not limited to licensed and unlicensed waste emissions and discharges.

No likely significant in combination effects are anticipated, based on the above analysis.

6.0 CONCLUSION

The proposed development constitutes the proposal to construct 30 no., two story housing units in an approximately 1.8 ha site, west of the village of Moycullen, County Galway.

Based on the information provided in relation to the works involved for the proposed development, this screening exercise concludes likely significant effects can be ruled out for the European sites including Lough Corrib SPA, Lough Corrib SAC, Galway Bay Complex SAC, Inner Galway Bay SPA and Ross Lake and Woods SAC.

It was determined that there is no entry points to the protected sites via surface and ground waters and due to the distances of the potentially impacted sites to the proposed development, significant effects from sediment and pollution run off can be ruled out for Lough Corrib SAC and SPA, the Galway Bay Complex SAC, Inner Galway Bay SPA and Ross Lake and Woods SAC. Impacts on the lesser horseshoe bat, which is an Annex II and IV species under the EU Habitats Directive, were also ruled out, as no impacts were identified to the conservation objectives for this species in the Lough Corrib SAC and Ross Lake and Woods SAC.

Appendix 1 – Lighting Plan

DATE: 25 September 2019
DESIGNER: Dan Staunton
PROJECT No: 19-09-17-01B
PROJECT NAME: Moycullen, Co. Galway



Residential Development,
Moycullen, Co. Galway
EN13201:2015 / BS5489-1:2013
Class P4
S/P Ratio 1.2

Outdoor Lighting Report

Based On:
Lumen Output at 100,000 hours
Spot Lamp Replacement
Normal Environment
6 Year Cleaning Cycle
Ground is Level

PREPARED BY: Dan Staunton
Veelite Lighting Ltd
Waterford, Ireland
+353 (0)51 875399
design@light.ie
www.light.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Road	-0.28	5.56	180.75	271.82	1.49	1.49
2	Light Spill	4.72	10.56	180.75	271.82	1.49	1.49

Luminaires

Luminaire A Data

Supplier	
Type	Veelite Metro Streetlight 28w LED Street Optic R03
Lamp(s)	12LED 3K
Lamp Flux (klm)	2.93
File Name	5MTA10LGA-R03.ies
Maintenance Factor	0.76
Lum. Int. Class	G3
Lamp S/P Ratio	1.20
No. in Project	8

Luminaire B Data

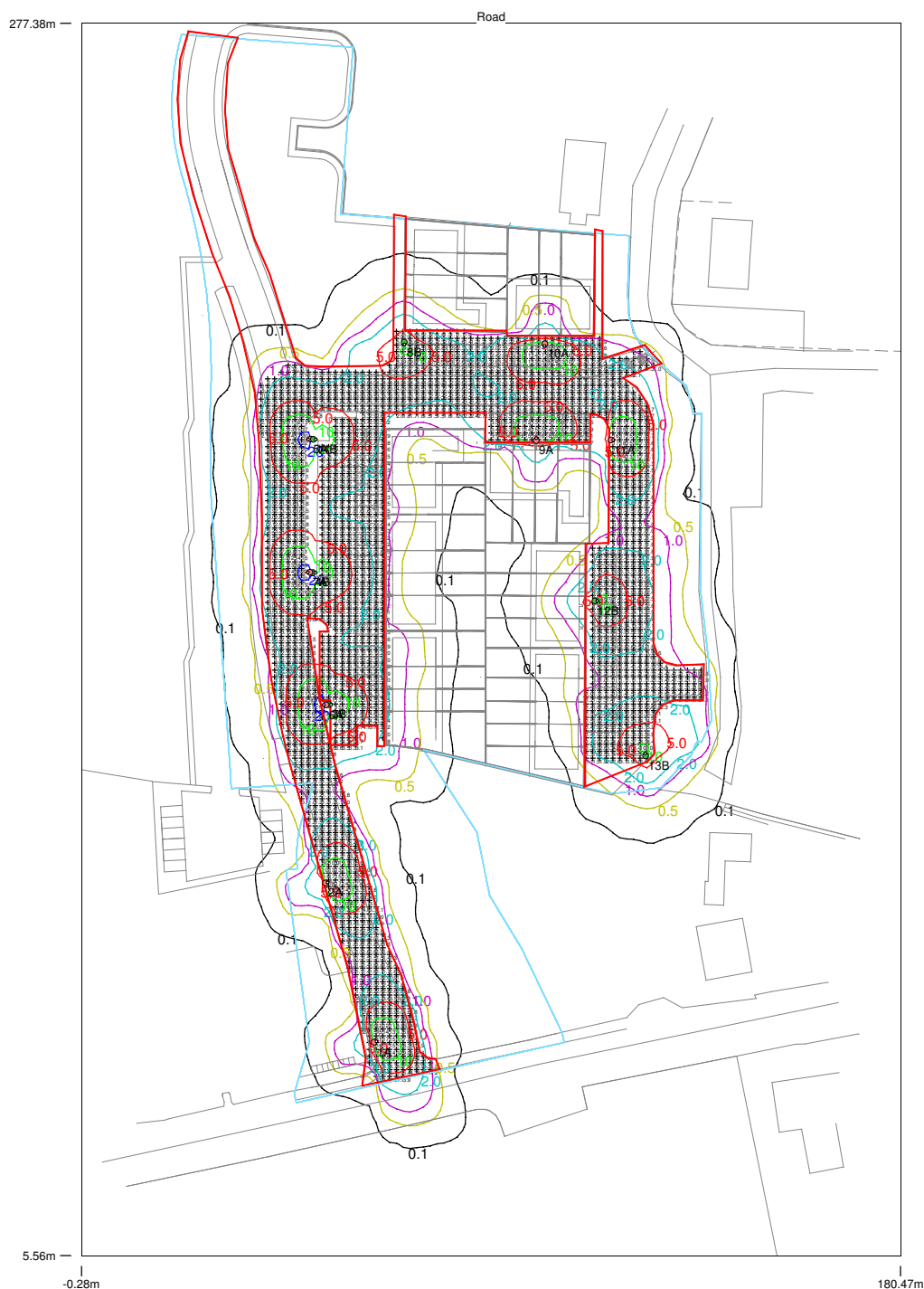
Supplier	
Type	Veelite Metro Streetlight 28w LED Forward Throw Optic
Lamp(s)	12LED 3K
Lamp Flux (klm)	2.76
File Name	5MTA10LGA-FT.ies
Maintenance Factor	0.76
Lum. Int. Class	G1
Lamp S/P Ratio	1.20
No. in Project	6

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	64.28	52.71	6.00	16.00	0.00	0.00	0.50			
2	A	53.53	87.79	6.00	17.00	0.00	0.00	0.50			
3	B	54.29	127.11	6.00	0.00	0.00	0.00	0.50			
4	B	50.74	156.27	6.00	358.00	0.00	0.00	0.50			
5	A	50.23	185.67	6.00	185.00	0.00	0.00	0.50			
6	A	53.67	127.08	6.00	180.00	0.00	0.00	0.50			
7	A	50.12	156.29	6.00	180.00	0.00	0.00	0.50			
8	B	70.94	207.07	6.00	273.00	0.00	0.00	0.50			
9	A	100.04	185.38	6.00	90.00	0.00	0.00	0.50			
10	A	101.92	206.72	6.00	268.00	0.00	0.00	0.50			
11	A	116.54	185.50	6.00	0.00	0.00	0.00	0.50			
12	B	113.02	149.96	6.00	0.00	0.00	0.00	0.50			
13	B	124.15	115.86	6.00	95.00	0.00	0.00	0.50			
14	B	50.85	185.65	6.00	0.00	0.00	0.00	0.50			

Horizontal Illuminance (lux)

Road



Results

Eav	4.58
Emin	0.80
Emax	23.07
Emin/Emax	0.03
Emin/Eav	0.17

Horizontal Illuminance (lux)

Light Spill



Results

Eav	0.11
Emin	0.00
Emax	8.55
Emin/Emax	0.00
Emin/Eav	0.00

www.tobin.ie



TOBIN Consulting Engineers



@tobinengineers

Galway

Fairgreen House,
Fairgreen Road,
Galway,
H91 AXK8,
Ireland.
Tel: +353 (0)91 565 211

Dublin

Block 10-4,
Blanchardstown Corporate Park,
Dublin 15,
D15 X98N,
Ireland.
Tel: +353 (0)1 803 0406

Castlebar

Market Square,
Castlebar,
Mayo,
F23 Y427,
Ireland.
Tel: +353 (0)94 902 1401

London

17 Bowling Green Lane
Clerkenwell
London,
EC1R 0QB,
United Kingdom.
Tel: (+44) (0)203 915 6301