RESIDENTIAL DEVELOPMENT COUNTESS ROAD, KILLARNEY, CO. KERRY

Ecological Impact Assessment

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1 INTRODUCTION

Wetland Surveys Ireland Ltd. were commissioned by Dipharma Unlimited Company to determine the potential impacts, if any, of the construction of a new Large-Scale Residential Development (LRD) at Countess Road, Dromhale, Killarney, Co. Kerry on flora and fauna.

The proposed development will consist of the construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works. The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.

Vehicular access to the proposed development will be via one entrance from Countess Road (L3904) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of existing site boundary walls along Countess Road.

1.1 Statement of Authority

This report was prepared by Dr Patrick Crushell, professional Ecologist with Wetland Surveys Ireland Ltd, a summary of his relevant qualifications and past experience is presented below:

Name	Project role	Experience
Dr Patrick Crushell, BSc, MSc, PhD, C Ecol, MCIEEM	Director and Principal Ecologist	Patrick has been working in the area of nature conservation and ecological impact assessment for over twenty years. He has led the ecological team on a wide range development led projects across various sectors including: large scale infrastructure (renewable energy, roads, water, energy) housing, and tourism. Patrick has particular expertise in the survey and assessment of semi-natural habitats throughout Ireland.

1.2 Statutory Context

This appraisal has consideration to the following legislation:

- Consolidated EIA Directive 2011/92/EU;

- Wildlife Acts 1976-2012;
- The Habitats Directive 92/43/EEC;
- The Birds Directive 2009/147/EC;
- The European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 411 of 2011];
- European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011 [S.I. No. 456 of 2011];
- European Union (Environmental Impact Assessment and Habitats) Regulations 2011 [S.I. No. 473 of 2011];
- European Union (Environmental Impact Assessment and Habitats) Regulations 2012 [S.I. No. 246 of 2012]; and
- Flora (Protection) Order, 2015.

In addition, regard was made to the following guidance and information documents:

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine. (Chartered Institute of Ecology and Environmental Management), Revised 2024 (v. 1.3);
- DAHG (2017). Irelands National Biodiversity Plan: Actions for Biodiversity 2017 - 21;
- EPA (2022). Guidelines on the information to be contained in Environmental Impact Reports;
- EPA (2015). *Advice notes on current practice in the preparation of Environmental Impact Reports.* Draft September 2015*;*
- Fossitt (2000). A Guide to Habitats in Ireland;
- Smith et al. (2011). Best Practice Guidance for Habitat Survey and Mapping in Ireland;
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2);
- KCC (2022). Kerry County Development Plan 2022-2028; and
- KCC (2021). Kerry County Council's Biodiversity Action Plan, 2022-2028. Draft September 2021.

2 METHODOLOGY

2.1 Consultation

Scoping included consultation with Kerry County Council in regard to the ecological topics requiring consideration in the Ecological Assessment of the proposed scheme. In consultation, the local authority highlighted the need for the following:

- Ecological Impact Assessment to include a bat impact assessment and invasive species survey.
- Appropriate Assessment Screening Report and where necessary a Natura Impact Statement.
- The importance of the proposal taking account of particular aspects of the Kerry CDP 2022-2028 including Development Objective: SP-30; Sections S.1.4.2 and S1.5; and the proposed Variation 2, and specifically in relation to in-combination impacts.

2.2 Ecological Surveys

Data were collected through a desktop review of existing literature and a programme of targeted ecological surveys.

- Multidisciplinary Walkover Surveys were conducted on 26 February and 1 November 2025 in accordance with standard methodologies (NRA, 2009). The surveys recorded habitats, flora, and fauna, and assessed the site's potential to support species of conservation concern. All habitats were classified using the Fossitt (2000) system and mapped following Smith et al. (2011) to establish the baseline ecological conditions.
- Bat Surveys were undertaken by a licensed bat specialist, Ms Karen Banks (BSc, MCIEEM, Greenleaf Ecology), between June and September 2025. The full methodology and results are provided in a standalone Bat Survey Report (Appendix 1).

2.3 Ecological Evaluation and Assessment of Impacts

The evaluation of ecological value follows guidance outlined by 'Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018)' and 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009). The description of impacts and impact significance follows the approach and terminology outlined in the 'Guidelines on the information to be contained in Environmental Impact Reports' (EPA, 2022).

3 PROJECT DESCRIPTION

The proposed development will consist of the construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works. The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.

Vehicular access to the proposed development will be via one entrance from Countess Road (L3904) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of existing site boundary walls along Countess Road.

Surface water runoff from the entire developed site will be conveyed through a proposed on-site network incorporating Sustainable Urban Drainage System (SuDS) features (rainwater butts, tree pits, swales, bioretention, hydrocarbon interceptors, and lined attenuation tanks) and will be attenuated and managed prior to final discharge at restricted predevelopment greenfield run-off rates (28.5 l/s). Two outfall options to the public stormwater network are under consideration in the Drainage Impact Assessment (DOSA Consulting Engineers, April 2026): Option 1 (preferred) discharges to the existing Kerry County Council public stormwater network on Countess Road via the Countess Grove estate, with the receiving waterbody being Lough Leane (within SAC 000365) under either of two possible flow paths (via Killarney WWTP for treatment under EPA licence, or via a direct stormwater outfall to Lough Leane); Option 2 (alternative) discharges to an existing 600mm public stormwater pipe traversing the site, with flows conveyed southwards to the River Flesk (within SAC 000365) ca 650m to the south. The on-site drainage infrastructure is identical under both options. The new connection to the chosen public stormwater network will be made at the end of the construction phase, prior to handover of the first units in Phase 1; for the duration of construction, surface water within the site will be managed on-site, with the existing 600mm overflow standpipe proactively bunded to prevent any construction-phase discharge to the southern stormwater network. The ecological assessment of these options is presented in the accompanying Natura Impact Statement.

The foul sewer and watermain connections will be in accordance with the Uisce Eireann requirements outlined in their Code of Practice for Water & Wastewater Infrastructure.

A Construction and Environmental Management Plan has been prepared as part of the proposal. Details are included on the management of surface water during the construction phase to minimise any potential impacts.

A detailed Landscaping Plan has been developed by Cunnane Stratton Reynolds for the project. The plan aims to deliver high-quality, functional and biodiverse open spaces that contribute positively to placemaking, environmental sustainability, and community well-being.

The project ecologist has reviewed the landscape plan to ensure appropriateness of the planting regime in relation to local biodiversity benefits. Key aspects of the plan that are of most relevance to the ecological assessment of the proposal include:

- Planting of 190 native trees as part of the development, with an additional 15 fruit trees that will form two groves (orchards) are included.
- Establishment of 360m of new native hedgerow is to be planted across the site.
- Sustainable Urban Drainage Design Systems are incorporated into the landscape plan including; permeable paving, raingardens and attenuation basins are incorporated into the landscape.
- Planting design supports biodiversity through the use of native plant species suited to local conditions wherever possible.

The suburban site is located approximately 0.6 km south-east of Killarney Town Centre. It currently consists of agricultural land, predominantly improved agricultural grassland, with an area of wet grassland at its western extent. Field boundaries comprise a mix of treelines, hedgerows, and earth banks. The site is bounded to the north by Countess Road, with urban residential land use to the west and south, and agricultural land use to the east.

An overview of the landscape plan for the proposed development is illustrated in Figure 1 below.



Figure 1: Overview of landscape masterplan for proposed residential development at Drumhale, Countess Road, Killarney.

4 ELEMENTS OF THE PROJECT THAT COULD GIVE RISE TO ECOLOGICAL IMPACTS

This section highlights those elements of the project that could give rise to potential impacts on sensitive flora and fauna. In determining those parts of the project that are most relevant the project description above and the sensitivity of the receiving environment as presented below have been considered.

The proposed development comprises the construction of a new residential development as described in Section 3 above.

- The footprint of the proposed development will result in direct loss of habitat;
- The construction of a new development may give rise to disturbance of resident fauna within the proposed development site, due to additional noise, vibration, and light;
- Excavations during the construction phase could give rise to sediment run-off and potentially impact aquatic receptors downstream;
- Potential run-off of hydrocarbons or other harmful substances could lead to a deterioration of downstream water quality;
- Increased human activity through the operational phase of the development could lead to displacement of sensitive fauna;
- Discharges of stormwater and waste water from the site during the operational phase could present a risk to downstream waterbodies; and
- The proposed works could lead to the introduction or spread of non-native invasive species.

5 EXISTING ENVIRONMENT, EVALUATION, AND POTENTIAL IMPACTS

This section describes the ecological baseline conditions of the proposed development site, evaluates ecological significance and assesses potential impacts. The assessment identifies habitats and other ecological features of conservation importance, evaluates their ecological value, and highlights potential ecological constraints and opportunities. The baseline evaluation informs the assessment of potential impacts of the proposed development.

5.1 Designated Sites

A map showing the location of the proposed development in relation to sites designated for nature conservation is presented in Figure 2.

The proposed development site does not occur within or adjacent to any designated nature conservation sites or sites being considered for such designation.

Details of designated sites or sites under consideration for designation that occur within 5km of the proposed development are presented in Table 1. Their location relative to the proposed development is shown in Figure 2. Given the characteristics and scale of the project it is considered that there is no potential for impacts to occur on sites more than 5km from the development.

Special Areas of Conservation (SACs) are sites of international importance due to the presence of listed habitats or species that are of European importance. The closest SAC to the proposed development site is the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365) which occurs ca 500m to the west of the proposed development site at its closest point. The development site lies within the hydrological catchment of the SAC. However, due to the absence of any watercourses or surface water drains within the site there is currently no direct surface water connectivity between the development and the SAC.

Natural Heritage Areas (NHAs) are sites of national importance due to the presence of species and habitats that are recognised as being important on a national level and are afforded protection under the Wildlife (amendment) Act 2000. The proposed development occurs approximately 650m to the north of the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment proposed NHA (000365). The site is a proposed (p)NHAs as it has not formally gone through the designation process. The site does however overlap with the SAC designation and is therefore afforded protection under the Habitats Directive Regulations.

Ireland is required under the terms of the EU Birds Directive (2009/147/EC) to designate Special Protection Areas (SPAs) for the protection of endangered species of wild birds. Sites are selected based on one or more of the following features:

- Presence of listed rare and vulnerable species (Annex I Birds Directive);
- Regularly occurring migratory species, such as ducks, geese, and waders; and
- Wetlands, especially those of international importance, which attract large numbers of migratory birds each year.

The nearest SPA to the proposed dwelling site is Killarney National Park SPA located 2km to the South-west. The species listed as Special Conservation Interests (SCIs) of this SPA are Merlin (*Falco columbarius*) and Greenland White-fronted Goose (*Anser albifrons flavirostris*).

Table 1: Designated sites within 5km of the proposed development site.

European Site	Distance from proposed development site	Ecological / Hydrological connectivity to proposed development site
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365) (overlapping pNHA has similar boundary, is located 650m to south at nearest point)	The SAC occurs ca 500m to the west of the proposed development site	The SAC occurs ca 500m to the west of the proposed development site. The site is removed from the terrestrial extent of the SAC and does not support habitats for which the SAC is designated. Wooded features (hedgerows and treelines) within and bounding the site provide suitable foraging and commuting habitat to Annex II Lesser Horseshoe Bat, a QI of the SAC. The development site lies within the core foraging range for LHB as presented in the SSCO for the SAC. The site lies within the catchment of the River Flesk, which forms part of the SAC. There are no watercourses within or adjacent to the site; surface water predominantly infiltrates to ground but an existing standpipe at the lowest point of the site provides a potential overflow connection to an existing 600mm public stormwater pipe that discharges south to the River Flesk. As part of the proposed development a surface water connection to the public network will be made. Two stormwater outfall options are under consideration: Option 1 (preferred) discharges to the KCC stormwater network on Countess Road, with the receiving waterbody being Lough Leane (within the SAC) under either of two possible flow paths (via Killarney WWTP or via a direct stormwater outfall — the downstream destination is being investigated by Kerry County Council); Option 2 discharges via an existing 600mm public stormwater pipe to the River Flesk (within the SAC) ca 650m to the south. Both options provide a hydrological pathway between the site and the SAC and are assessed in the accompanying Natura Impact Statement. The new connection will be made at the end of the construction phase, prior to handover of the first units in Phase 1; during construction the existing 600mm overflow will be proactively bunded.
Sheheree (Ardagh) Bog SAC / pNHA (000382)	The SAC occurs ca 2.8km to the southeast of the proposed development site	Removed from development and no direct ecological connectivity, absence of habitats / species for which SAC is designated. The bog is located south of the River Flesk within a former kettle-hole at a higher elevation than the proposed development site. There is no hydrological connectivity via rivers and streams between the proposed development site and the SAC. There is no potential connectivity via either surface or groundwater SAC.

European Site	Distance from proposed development site	Ecological / Hydrological connectivity to proposed development site
Killarney National Park SPA (004038)	The SPA occurs ca 500m to the west of the proposed development site	Removed from development and no direct ecological connectivity, absence of species (or supporting habitats) for which SPA is designated. There is potential hydrological connectivity at the proposed development site as it occurs within the same sub-catchment of the SPA. However, there are no watercourses (rivers, streams, or drains) within or adjacent to the proposed development site. The nearest mapped watercourse is the main Flesk River which occurs more than 650m to the south. The Flesk discharges to Lough Leane (part of the SPA) at Ross Bay, a further 2km downstream distance. Killarney WWTP which will receive effluent (and stormwater) from the development discharges treated water to a small stream (the Folly Stream) which flows into Lough Leane (forms part of the SAC) ca 1km downstream from the treatment plant.

5.1.1 Potential Impacts

All designated sites within the potential zone of influence are designated as European sites (SAC or SPA). Legal backing for the protection of SACs and SPAs in Ireland is provided by the EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC; commonly known as the 'Habitats Directive') which has been transposed into Irish Law through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 411/11). Potential effects on these sites from the proposed development are assessed in the Natura Impact Statement which accompanies this application. Potential impacts on designated sites are therefore not considered further in this report.

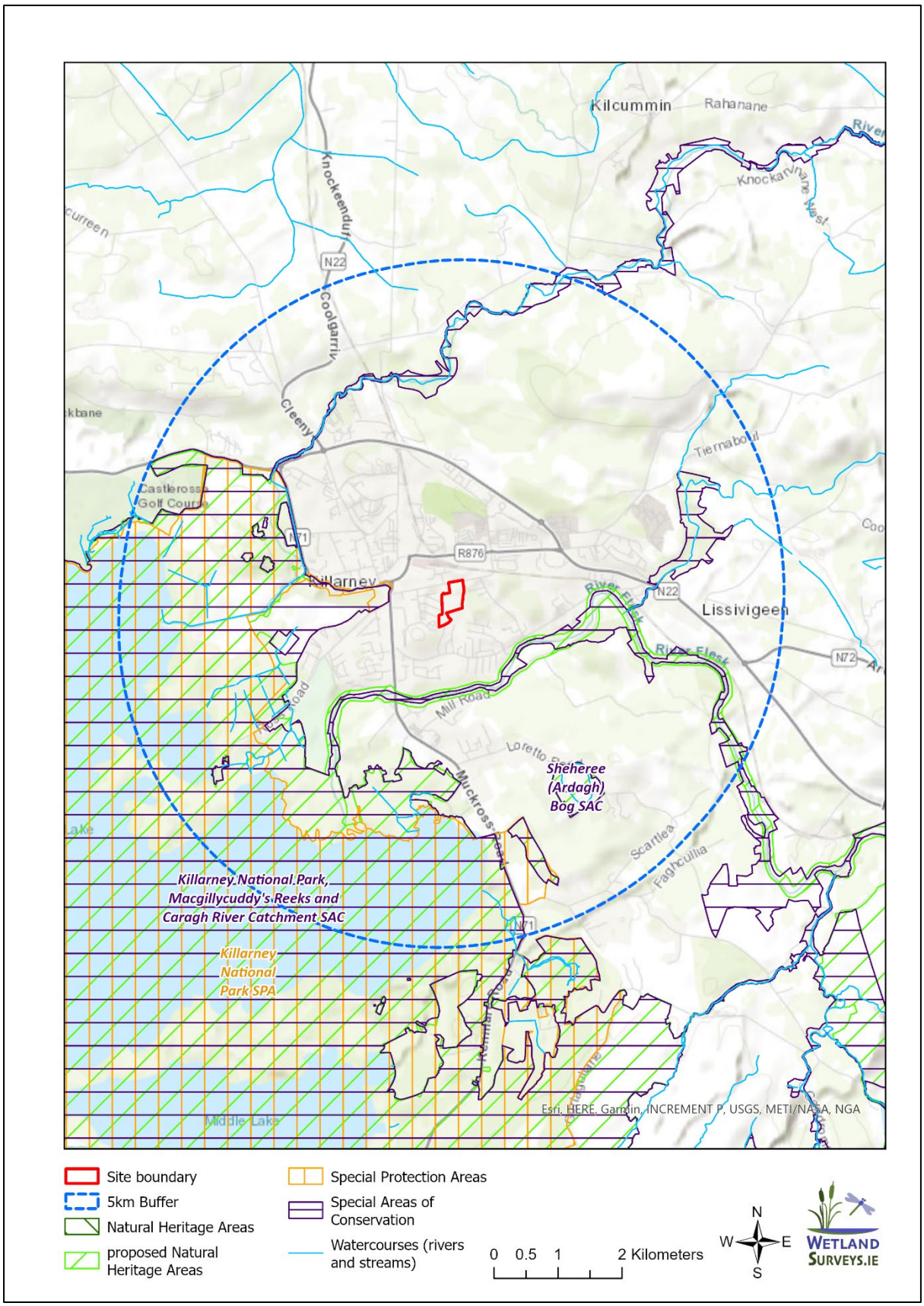


Figure 2: Location of the proposed development in relation to sites designated for nature conservation (all sites identified as SACs and SPAs in this map are also listed as proposed Natural Heritage Areas (pNHAs).

5.2 Terrestrial Habitats and flora

A habitat map of the proposed development site following the Fossitt (2000) classification scheme is presented in Figure 3. Target notes recorded during the survey are presented in Table 2 and their corresponding locations shown in Figure 3.

The proposed development site is situated approximately 0.6km southeast of Killarney town centre. It occupies lands directly south of Countess Road. The N71 is located to the west.

Despite its sub-urban setting, the site is greenfield and currently being occupied by two adjoining dwellings facing onto Countess Road. The main part of the development site extends south from the dwellings and comprise agricultural fields bounded by hedgerows, scrub vegetation and mature trees. There is a low-lying damp wet area located in the northern central area of the site.

The topography is relatively flat and lowers gently towards the west. The site is surrounded on the west and south by existing residential developments consisting of semi detached housing. To the east there is less development and the lands are more agricultural offering connectivity to wider rural habitats. The Dublin/Cork to Killarney train line is located just north of the site. The River Flesk is located 650m south of the site.

The principal terrestrial habitat within the site is Improved Agricultural Grassland (GA1) (see Plate 1). The habitat is managed for grazing cattle and occurs as two distinct land parcels, to the north and to the south (see Plate 2). The sward is species poor having been recently reseeded with a complete dominance of Perennial Rye-grass (*Lolium perenne*).

There is a low-lying area of Wet Grassland (GS4) occurring in the western part of the northern land parcel (Plate 3 and Plate 4). This wet grassland area is fenced off (temporary electrical fencing) from the dry improved grassland to the east. At the time of survey the wet grassland area was being grazed by horses.

The grassland is dominated by Yorkshire Fog (*Holcus lanatus*) with an abundance of Creeping Bent (*Agrostis stolonifera*). Creeping Buttercup (*Ranunculus repens*), Soft Rush (*Juncus effusus*), Marsh Thistle (*Cirsium palustre*) are common throughout. Other wetland indicators that occur frequently include Grey Willow (*Salix cinerea*), Meadowsweet (*Filipendula ulmaria*), Yellow Flag-iris (*Iris pseudacorus*), and Common Duckweed (*Lemna minor*) in wetter areas of ponding water.

The wet grassland grades into Dry Meadow and Grassy Verge (GS3) grassland on more elevated lands to the south where a rank sward dominated by Cock's-foot (*Dactylis glomerata*) and Creeping Buttercup (*Ranunculus repens*) dominate. Agricultural weeds are common throughout the area with Broad-leaved Dock (*Rumex obtusifolius*), Ragwort (*Jacobaea vulgaris*), Spear Thistle (*Cirsium vulgare*), and Common Nettle (*Urtica dioica*) all represented.

Areas of encroaching Willow Scrub (*Salix cinerea*) amongst the wet grassland has recently been cut back to ground level, with significant regrowth occurring. A low voltage overhead line oversails the wet grassland (see Plate 4).

A review of old six-inch mapping together with sub-soil mapping suggests that the site was not part of a natural wetland feature indicating that the wet grassland may be a relatively recent feature due to impeded drainage.

There are two built structures occurring within the site (Buildings and artificial Surfaces (BL3). Two adjoining unoccupied dwellings at the northern extent and a former concrete built out house (no roof, with abundant Ivy (*Hedera helix*) and Bramble (*Rubus fruticosus* agg.) along the main farm access track into the site. Former gardens to the rear of the dwelling houses are largely overgrown with Bramble (*Rubus fruticosus* agg.) thicket forming a stand of Scrub (WS1) (see Plate 5). Some exotic garden shrubs continue to persist within this area.

Field boundaries surrounding the site largely support linear wooded features including a mix of Hedgerows (WL1) and more mature Treeline (WL2) sections (see Plate 6 and Plate 7).

Mature treelines include mature Pedunculate Oak (*Quercus robur*) at a number of locations within the site; along the eastern boundary of the northern land parcel, along the southern boundary of the northern land parcel, and along part of the eastern boundary of the southern land parcel.

An Ash (*Fraxinus excelsior*) dominated treeline defines the northern site boundary along Countess Road. Other trees recorded amongst the hedgerows and treelines within the site include Holly (*Ilex aquifolium*), Hawthorn (*Crataegus monogyna*), Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Silver Birch (*Betula pubescens*), Wych Elm (Ulmus glabra), Elder (*Sambucus nigra*), and Willow (*Salix* spp.). Mature specimens of the non-native Sitka Spruce (*Picea sitchensis*) and Leyland cypress (*Cupressocyparis leylandii*) are present along treelines adjacent to the dwellings in the north. Earth Banks (BL2) are commonly associated with the treelines and hedgerows within the site.

The field layer along hedgerows and treelines include; Bramble (Rubus fruticosus agg.), Ivy (Hedera helix), Cleavers (*Galium aparine*), Lesser Celandine (*Ficaria verna*), Harts-tongue Fern (Asplenium scolopendrium), Dryopteris spp., Wood Vetch (Vicia sylvatica), Nipplewort (*Lapsana communis*), and Foxgloves (*Digitalis purpurea*). Honeysuckle (*Lonicera periclymenum*) is present in places.

Non-native species recorded amongst field boundaries with adjacent properties include Leyland Cypress (*x Cuprocyparis leylandii*), Box (*Buxus sempervirens*), Daffodils (*Narcissus* spp.), Montbretia (*Crocosmia x crocosmiiflora*), and Winter Heliotrope (*Petasites pyrenaicus*), Butterfly Bush (*Buddleja davidii*), and Cherry Laurel (*Prunus laurocerasus*). Further information on the occurrence of invasive non-native species is presented in Section 5.7 below.

No rare or protected plant species were recorded during surveys undertaken at the site. Considering the habitats present it is concluded that there is a low likelihood of rare flora species being present.

5.2.1 Evaluation

The agricultural grassland present within the site is modified and intensively managed for agriculture with a low species diversity. The habitat is deemed to be of low ecological value. The wet grassland area supports a number of wetland indicator plants providing a refuge for these species within the local sub-urban setting. This habitat is deemed to be of local importance (lower value). Some of the hedgerows and mature treelines provide suitable roost, foraging, and commuting habitat for bat species and therefore are of local importance (higher value), particularly in the eastern and southern parts of the site.

5.2.2 Potential Impacts

The proposed development will result in the direct loss of habitat within its footprint. The loss of improved agricultural grassland will not give rise to any ecological impacts of significance.

The loss of wet grassland habitat will, in the absence of mitigation, lead to a permanent loss of a locally important (lower value) habitat, leading to a minor impact. The incorporation of nature-based solutions into the management of surface water within the site will provide refugia for wetland species within the site.

The proposed development will lead to the loss of 344 linear metres of existing hedgerow. This is mostly confined to the hedgerow / treeline along Countess Road as outlined in the tree survey report for the site (Geotree 2025). This loss will be offset by the new planting of 360 linear metres of hedgerow comprising native species.

Of the 80 trees documented as occurring within the site, a total on 38 trees will be lost to the proposed development (seventeen of which to facilitate the development, the remainder are to be removed on safety grounds (see Geotree 2025)), while 42 will be retained. An additional 205 trees are proposed to be planted as part of the proposed development.

As the proposed planting matures, there will be a net gain of 167 trees and 16m hedgerow at the proposed site in the medium to long-term.



Figure 3: Habitat map of proposed residential development at Drumhale, Countess Road, Killarney.

Table 2: Text of selected target notes collected during field survey.

Note Number	Category	Description
N1	Invasive species	Butterfly Bush and Winter Heliotrope occurring along the field boundary.
N2	General	Five mature Oak in cluster along earth bank.
N3	General	Mature treeline with numerous Oak being main component.
N4	Invasive species	Butterfly bush occurring along hedgerow on earth bank.
N5	Invasive species	Montbretia present along earth bank
N6	Invasive species	Cherry Laurel occurring along boundary with private residence.
N7	General	Wet grassland with willow regrowth. Ragwort present amongst sward of Yorkshire Fog and Soft Rush. Common wet grassland species present throughout. Standing water in winter.
N8	Invasive species	Winter Heliotrope occurring along boundary with private dwelling.
N9	General	Mature ash tree line with Holly understory and Ivy. Bordering main road.



Plate 1 Northern land parcel with improved agricultural grassland.



Plate 2: Southern land parcel with improved agricultural grassland.



Plate 3: View northwards across the low-lying wet grassland area. Dry meadow vegetation dominates the foreground.



Plate 4: Low lying wet grassland occurring in the central part of the northern land parcel.



Plate 5: Bramble scrub occurring to the rear of the dwelling.



Plate 6: Hedgerow with mature trees occurring along eastern boundary of site.



Plate 7: Mature Oak along boundary near south of site.

5.3 Aquatic Habitats

Temporary ponding of surface water was noted in the wet grassland area during the February field survey. Although this habitat is suitable to support amphibians (common frog or smooth newt), none were recorded during the site visits. Surface water from within the site appears to pond temporarily at this low-lying area prior to infiltration to groundwater. No permanent surface water features occur within the site and there is no clear connectivity to surrounding watercourses. The closest watercourse to the proposed development site is the River Flesk, which is located ca 650m to the south of the proposed development site, and although the site lies within the catchment of the river there is no identified surface water connectivity with surface water on the site appears to largely infiltrate to ground.

The above describes the existing baseline of predominant infiltration to ground. An existing standpipe at the lowest point of the site is connected to an existing 600mm public stormwater pipe traversing the site that discharges south to the River Flesk; this overflow sits 300–400mm above ground level and is likely rarely activated. As part of the proposed development a surface water connection to the public stormwater network will be made at the end of the construction phase. Two outfall options are under consideration (see project description and Drainage Impact Assessment): Option 1 (preferred) to the KCC stormwater network on Countess Road, with the receiving waterbody being Lough Leane in either of two possible flow paths (via WWTP treatment or via a direct stormwater outfall — the downstream destination is being investigated by Kerry County Council); Option 2 (alternative) to the River Flesk via the existing 600mm public stormwater pipe traversing the site. Under Option 2, a direct surface water connection between the site and the River Flesk will be established. The ecological assessment of the connection to designated sites is presented in the accompanying Natura Impact Statement. Mitigation for water quality protection is set out in the NIS and CEMP.

5.3.1 Evaluation

No permanent freshwater habitats are present within the site. Temporary ponding of water during winter within the wet grassland area may provide suitable breeding habitat to Common Frog and Smooth Newt, both species are protected under the wildlife act.

5.3.2 Potential Impacts

No potential direct impacts on aquatic habitats are identified. The loss of seasonally inundated areas within the site may cause a loss of habitat for amphibians (frogs and newts). The proposed treatment of surface waters and wastewater discharging from the site as outlined in the construction and environmental management plan and the drainage plan for the site will ensure no adverse effect on surface waterbodies that occur outside / downstream of the development.

5.4 Birds

Common bird species including Rook (*Corvus frugilegus*), Hooded Crow (*Corvus cornix*), Jackdaw (*Coloeus monedula*), Magpie (*Pica pica*), Wood Pigeon (*Columba palumbus*), Great Tit (*Parus major*), Wren (*Troglodytes troglodytes*), Robin (*Erithacus rubecula*), Blackbird (*Turdus merula*), Greenfinch (*Chloris chloris*), and Chaffinch (*Fringilla coelebs*) were recorded on site during the field survey. Two Mallard (*Anas platyrhynchos*) were flushed from the wet grassland area during the February 2025 visit. The habitats present on site have limited potential to support species of high conservation concern. The hedgerow and treelines provide suitable nesting and foraging opportunities for common bird species.

5.4.1 Evaluation

Based on the habitats present, the site is currently of relatively low value to bird species and is unlikely to support species of high conservation concern. Common bird species were recorded within the site and are mostly associated with hedgerow and treeline habitats.

5.4.2 Potential Impacts

No impacts of significance on bird species of conservation concern are foreseen. The proposed planting of additional hedgerow habitat within the site could potentially enhance the value of the site to common bird species.

5.5 Terrestrial Mammals

A targeted mammal survey was undertaken in February 2025 as part of the multi-disciplinary walkover. The assessment focused on optimal habitats, including scrub and hedgerow/treeline networks, for signs of activity, resting places, or commuting routes. The survey concluded:

- No signs of badger (*Meles meles*), including setts, latrines, or paths, were observed.
- The site offers no suitable habitat for otter (*Lutra lutra*), as there are no freshwater bodies of sufficient size or quality.
- No evidence of other protected mammals or indicators of their activity (e.g., field signs, droppings, feeding remains) was found.

5.5.1 Evaluation

The site is currently of low value to terrestrial mammals of conservation importance.

5.5.2 Potential Impacts

No impacts of significance on terrestrial mammal species of conservation concern are foreseen.

5.6 Bats

The standalone bat survey report is presented as Appendix I to this report. The findings of the report in relation to the use and value of the site to bats are summarised in the following paragraphs.

The bat survey conducted for the proposed residential development at Countess Road, Killarney, Co. Kerry, assessed bat roosts, foraging, and commuting habitats, revealing significant bat activity and species diversity.

Results of Existing Bat Data (Desktop Review)

Nine of the ten known Irish bat species were recorded within a 4km radius of the site.

- Species recorded include common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Leisler's, brown long-eared, Daubenton's, Natterer's, whiskered and lesser horseshoe bat.
- Of these species, common pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat and lesser horseshoe bat have been recorded roosting within 4km of the site.
- The landscape is of moderate to high suitability for various bat species.

Bat Roost Survey Findings

The survey identified potential roosts in trees and structures within the site.

- No confirmed bat roosts were found in trees, but five individual trees were deemed suitable for multiple bats.
- Two disused dwellings showed signs of bat activity, including droppings and potential entry points.
- Two soprano pipistrelle were recorded emerging from one of the dwellings.

Bat Activity Survey Results

The survey recorded significant bat activity across the site, with eight species detected.

- Soprano pipistrelle was the most frequently recorded species (52% of calls).
- Passive monitoring recorded a total of 102,088 bat passes across various species.
- Eight species of foraging and commuting bats were identified: soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered, brown long-eared, and lesser horseshoe bat.
- A relatively high amount of common pipistrelle, soprano pipistrelle and Leisler's bat activity was recorded and lower levels of activity from brown long-eared bat, Daubenton's bat, Natterer's bat, whiskered bat and lesser horseshoe bat were also recorded.
- A minor soprano pipistrelle roost is present on-site, with another pipistrelle roost located to the south.
- High bat foraging activity recorded at the eastern and southern boundaries of the site.

5.6.1 Evaluation of Survey Results

The site is considered to have local conservation interest for bats due to high activity levels.

- Overall, a high level of activity and a high diversity of species was recorded within the site.
- Soprano pipistrelle, common pipistrelle, Leisler's bat, Daubenton's, Natterer's, whiskered and brown long-eared bat are all considered to be of Favourable conservation status and the conservation status of lesser horseshoe bat is categorised as being Inadequate (NPWS, 2019).
- Overall, the proposed site is considered to be of local conservation interest (higher value) for bats.

5.6.2 Potential Impacts

The assessment will evaluate potential impacts on bat habitats during construction.

- The construction phase may lead to loss or severance of foraging and commuting habitats.
- Mitigation measures will be necessary to minimize impacts on bat populations.

Habitat Loss

- The development will temporarily affect bat habitats but is expected to have long-term benefits.
- Removal of 38 trees and 344 linear meters of hedgerow, with 38 trees removed for development.
- Landscaping plan includes planting 205 native trees and 360 meters of native hedgerows, resulting in a net gain of 167 trees and 16 meters of hedgerow.

- Short-term minor adverse effects on several bat species expected, but no significant long-term impacts anticipated.

Loss of Roosting Habitat

The development will result in the loss of potential roosting habitats, necessitating mitigation measures.

- Two trees with potential roosting features will be removed, but no bats were recorded during surveys.
- Demolition of existing dwellings will lead to the loss of a minor soprano pipistrelle roost, which could have significant adverse effects without mitigation.

Lighting Effects on Bat Activity

Artificial lighting poses a risk to bat foraging and commuting behaviors, requiring careful management.

- Lighting during construction could have significant negative effects on bats, particularly if not mitigated.
- Long-term lighting impacts could lead to irreversible habitat degradation for bats.

5.7 Non-native invasive species

Four non-native invasive species were recorded within the proposed development site during the field survey: Laurel, Butterfly Bush, Winter Heliotrope, and Montbretia. Both Winter Heliotrope and Montbretia are classified as having a 'Low Impact Risk' by the National Biodiversity Data Centre, while Butterfly Bush is regarded as 'Medium Impact Risk' and Laurel is classified as being of 'High Impact Risk'. All species are locally distributed within the site being confined to field margins and boundary features within the site (see Figure 3 and Table 2 above).

5.7.1 Potential Impacts

The potential impact of spread from these species as a result of the proposed development is low. There is a confirmed absence of sensitive habitats within the site that could be affected by the spread of invasive species. There is currently no signs of recent spread of the species recorded on site and most appear to be associated with disposal of garden waste from adjacent properties of exotic planting along boundaries shared with adjacent properties. Measures will be taken to eradicate these species from the site in advance of the main construction works (see Appendix II).

6 MITIGATION

The site is of low ecological interest, and few potential impacts of significance have been identified. The following general measures are proposed to minimise the ecological impact of the proposed development on terrestrial flora and fauna, while measures specific to bats are described below:

- All construction related activity will be confined to the footprint of the proposed development and adjacent road surfaces.
- Various measures aimed at eradicating and preventing the spread of problematic invasive species are listed within the Invasive Species management plan presented as Appendix II of this report. The invasive species management plan will be incorporated into the final CEMP for the development.
- Woody vegetation removal will be undertaken outside the bird breeding season (March to August inclusive) to avoid potential impacts on breeding birds.
- Pre-construction confirmatory surveys for protected mammals and amphibians will be undertaken in advance of the development commencing. In the event of mammals or amphibians being encountered then any required mitigation that may be required will be done under license.

6.1 Mitigation relevant to bats

The mitigation relevant to bats is taken directly from the standalone bat survey report presented in Appendix I.

6.1.1 Derogation Tests

Test 1, Reason for the Derogation: The demolition of two semi-detached dwellings currently supporting a minor soprano pipistrelle roost is required to facilitate the construction of a residential development.

The proposed site is located on lands zoned for residential purposes under the Kerry County Development Plan 2022-2028. The lands are sequentially suitable for development, being within a short walking distance of Killarney Town centre, and adjacent to social and community infrastructure. As such, the development of the site is supported by national, regional and local policy, including the ministerial 'Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities'. The proposed development includes 20% social housing to meet identified needs arising from the Kerry County Council housing waiting list.

As summarised above, the proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a residential development supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance.

Test 2, Absence of Alternative Solutions: Alternative solutions considered included not constructing the residential development (i.e. do-nothing). However, that option is not feasible due to the need for additional housing provision in the Killarney area. An alternative location was considered; however,

the proposed site is on the outskirts of Killarney town in a location that is zoned for residential development. An alternative location is not feasible. An alternative design was also considered; however, the roost is located in disused dwellings that require demolition for the provision of a residential development. An alternative design is not feasible. The proposed development is the most reasonable solution.

Test 3, Impact of a Derogation on Conservation Status: The national population of soprano pipistrelle is estimated at approximately 1.2-2.7 million at summer 2023. The number of soprano pipistrelle roosting in the dwelling is estimated to be 2 no. individuals during the summer period, the site does not support a maternity roost. In the absence of any mitigation, the demolition of the dwelling may potentially result in the mortality of individual/ small numbers of non-breeding soprano pipistrelle, if timed inappropriately. This would result in a slight adverse effect on the conservation status of the local population of soprano pipistrelle but would not be significant on a national scale. With the implementation of the mitigation measures outlined in the supporting report, using established guidelines (e.g. Marnell, 2022) the proposed development and actions outlined within the supporting report will not be detrimental to the maintenance of populations of bat species at favourable conservation status in their natural range (as required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations, either locally or nationally.

6.1.2 Construction Phase

6.1.2.1 Loss of Roosting Habitat

Structures

Two soprano pipistrelle have been recorded roosting within the disused dwellings at the proposed site, therefore, safeguards are required to ensure the safety of this animal during works.

Application for a derogation licence

NB: Work on a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service before works on the roost can commence. Such a licence is required for the demolition of the dwellings at the proposed site and no demolition works shall be undertaken to the dwellings before the licence is granted by the NPWS.

In accordance with Marnell et al (2022), the dwellings at Countess Road support a bat roost considered to be of low conservation significance. As stated in Figure 20, page 46, this necessitates:

> *"Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring"*

While, as noted above, there is no requirement to comply with timing conditions, it is noted that disturbance to individual bats can be avoided by completing works at an appropriate time of year. In accordance with the Bat Mitigation Guidelines for Ireland, the optimum time for undertaking works to a building supporting a summer roost (not a proven maternity site) is between 1st September and 1st May.

Demolition works to the existing dwellings shall occur between 1st September and 1st May. Demolition works shall only proceed under licence.

The existing dwellings will be subject to a dusk survey or daytime inspection for evidence of bat usage immediately prior to the commencement of works. In the event that no evidence of bat usage is found during the inspection, works can commence. Should bats be found within the building, works will be delayed until they are no longer present (i.e. they have naturally flown from the roost). Prior to commencement of works the bat specialist will brief the contractor on the possible presence of bats on the site, the subsequent need to take appropriate care and attention whilst carrying out the works and the steps to take should bats be discovered at the site at any time (i.e. stop works and inform the bat specialist). Active bats will usually keep out of the way of any operations, but torpid bats may need to be gently temporarily placed in a box until dusk and released on site.

The dwellings support a day roost for 2 no. soprano pipistrelle. Soprano pipistrelle are crevice dwellers, as such, it is considered that the inclusion of 3 no. bat boxes suitable for crevice dwellers (for example: Fledermausflachkasten 1FF | 00139/9) on trees to be retained in a dark area of the site boundary will provide suitable alternative roosting space.

Trees

Pre-construction Potential Roost Feature (PRF) inspection/presence absence surveys of all trees scheduled for felling shall be undertaken. Following this examination, should any of the trees be identified as a bat roost then a derogation licence application will be made to the NPWS to exclude the bats and fell the tree.

Where bats are recorded roosting in the trees scheduled for felling, the following mitigation will be required:

- **Timing:** tree-felling can be undertaken from late August to late October/early November and all works should ideally be undertaken in this period. During this period bats are still capable of flight having not entered hibernation and undertaking works in this period may reduce the risks of tree-felling if proper measures are undertaken. To carry out the works any later in the bat season creates an additional risk that bats may be in hibernation and thus unable to fly out from a tree that is being felled, although bats can be removed by hand by a licenced bat handler if required. Additionally, disturbance during winter may reduce the likelihood of survival as the bats' body temperature is too low and they may have to consume too much body fat to survive.

Trees to be felled under the supervision of the bat specialist (as identified during the pre-construction survey) will be examined and where bats are found, they will be translocated to an area where bat boxes will already be installed on appropriate trees within the proposed site.

The proposed process for felling the trees with PRFs is outlined below:

- The bat specialist will be present during the tree felling works;
- Works will be undertaken in mild weather to ensure that if bats are found during works that they can be released or safely removed;
- Tree(s) identified as having potential to support bats will be surveyed during the daytime for bats prior to felling, on the day the felling is due to take place. The bat specialist will inspect all potential bat roost features of the tree, including those above ground level. This will require the services of a qualified arborist to climb the trees/ use a cherry picker and fell the tree in sections and lower potential roost features slowly to the ground to allow the bat specialist to

inspect them. This will include visual inspection as well as use of an endoscope to inspect cavities/crevices;

- The arborist will be briefed on the technique to be followed prior to the commencement of operations. Felling will follow best practice and mitigation measures, including wedging open cracks/crevices prior to load removal and cutting limbs in sections and lowering to the ground. Trees will only be felled in longer sections if the bat worker is satisfied that there are no potential roost features present;
- When using a chainsaw, the rate of fall of branches will not be accelerated by the use of a chain and vehicle;
- Any bats found in the trees will be removed by hand to a bat box and will then be relocated to the bat boxes installed in advance of works. Notes of any such activities will be maintained;
- The tree and/or tree sections will be left on the ground for a minimum period of 24 hours to enable any unidentified bats residing in deeper crevices to make good their escape during night time hours.

6.1.2.2 Lighting

To minimise disturbance to bats and other fauna that are active at night, construction operations during the hours of darkness will be kept to a minimum. If construction lighting is required during the bat activity period (April to September), lighting shall be directed away from all known roosts and woodland habitats to be retained. This can be achieved by using directional lighting (i.e. lighting which only shines on the proposed works and not nearby countryside) to prevent overspill. This shall be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

6.1.3 Operational Phase

6.1.3.1 Barrier effect as a result of artificial lighting

The protection of dark refuges is essential for bats, particularly in urban and suburban areas. Careful design of the lighting will be important to ensure that the development does not create barriers for bats commuting and foraging in the study area, while maintaining health and safety requirements for human use. This is particularly important for bat foraging/commuting habitat within, and at the edge of, retained linear woodland habitats (hedgerows) at the site.

The following general principles will be followed in relation to the overall lighting plan for the proposed development site:

- Lighting design will be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting shall be used within the proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas, including foraging areas for bats along hedgerows.
- Dark buffer zones will be used to separate habitats or features from lighting by forming a dark perimeter around them. This shall be used for habitat features noted as roosting and foraging areas for bats and light spill onto foraging habitat (i.e. hedgerows) shall be avoided.
- Buffer zones will be used to protect dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance

limit radiating away from the feature or habitat that requires to be protected. This will apply to foraging habitat (i.e. hedgerows).

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2023).

- All luminaires used will lack UV elements to reduce impact.
- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For this development specifically, there will be light spill onto Countess Road at the northern site boundary, as exists in the current baseline situation; this is required for safety. The lighting along the hedgerows at the rest of the site boundary has been minimised so that dark areas are retained on the eastern site boundary and the south-western site boundary. The lighting has been pulled back from the southern site boundary as far as is practicable while still allowing for human safety.

A copy of the proposed illumination contour drawing for public lighting is enclosed in Appendix B [of the standalone bat survey report].

The proposed private lighting has been designed in compliance with ILP "ILP Guidance notes for the Reduction of Obtrusive light (GN01:2021). It is recognised that light fittings can be adjusted after handover, which may affect light spill levels. However, up to this point, the proposed lighting design ensures that external lighting shall be limited to downlighters, resulting in a 1.0lx.

7 ENHANCEMENT MEASURES

This project presents an opportunity to enhance the biodiversity value of the site. A series of enhancement measures have been incorporated into the landscape plan for the development (included with the planning application). The plan has been developed by Cunnane Stratton Reynolds with input from the ecology team. These measures include:

- Preference of native species in the overall planting design. There will be a loss of 38 existing trees in order to accommodate the development. However, A total of 190 new native trees proposed for the public areas of the, plus an additional 15 fruit trees (comprising two orchard areas).
- A total of 344 linear metres of hedgerow will be removed to facilitate development along Countess Road. Other short sections along the western and eastern boundary are being removed for access purposes. An additional 360 linear metres of new native hedgerow is to be planted across the site as part of the development. Additional tree planting across the site will improve connectivity throughout the site and with surrounding landscape features.
- Hedgerows being planted will include a native mix of species that are suitable for the area.
- Ornamental planting will include a range of pollinator friendly species.
- A differential mowing regime will be promoted to enhance biodiversity.
- Sustainable urban drainage systems (SUDS) will be intrinsically worked into the landscaped open spaces to provide visual interest, biodiversity and habitat services. The existing topography and suds friendly techniques such as permeable paving, raingardens and attenuation basins are incorporated into the landscape proposals for Countess Road LRD.
- Installation of swift bricks within the fabric of the buildings will provide nesting opportunities for this bird species of conservation concern.

8 RESIDUAL IMPACTS

Considering the nature of the project together with the type and extent of habitat that will be affected it is predicted that, subject to the above mitigation being implemented, there will be no significant adverse direct, indirect, or cumulative impacts on terrestrial flora and fauna of the site and its surroundings from the development of the proposed project. The development is expected to have an overall minor positive impact on local biodiversity due to enhancement measures incorporated into the landscape design.

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APPENDIX I

Bat Survey and Report

By

Karen Banks, Greenleaf Ecology

Bat Survey

Large-scale Residential Development
Countess Road
Killarney
Co. Kerry

Report prepared for Dipharma Unlimited Company

By Karen Banks MCIEEM

4th June 2026

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1 Introduction

Greenleaf Ecology were commissioned by Dipharma Unlimited Company to undertake a bat survey for the proposed Large-scale Residential Development at Countess Road, Killarney, Co. Kerry. The location of the site is illustrated in Figure 1-1.

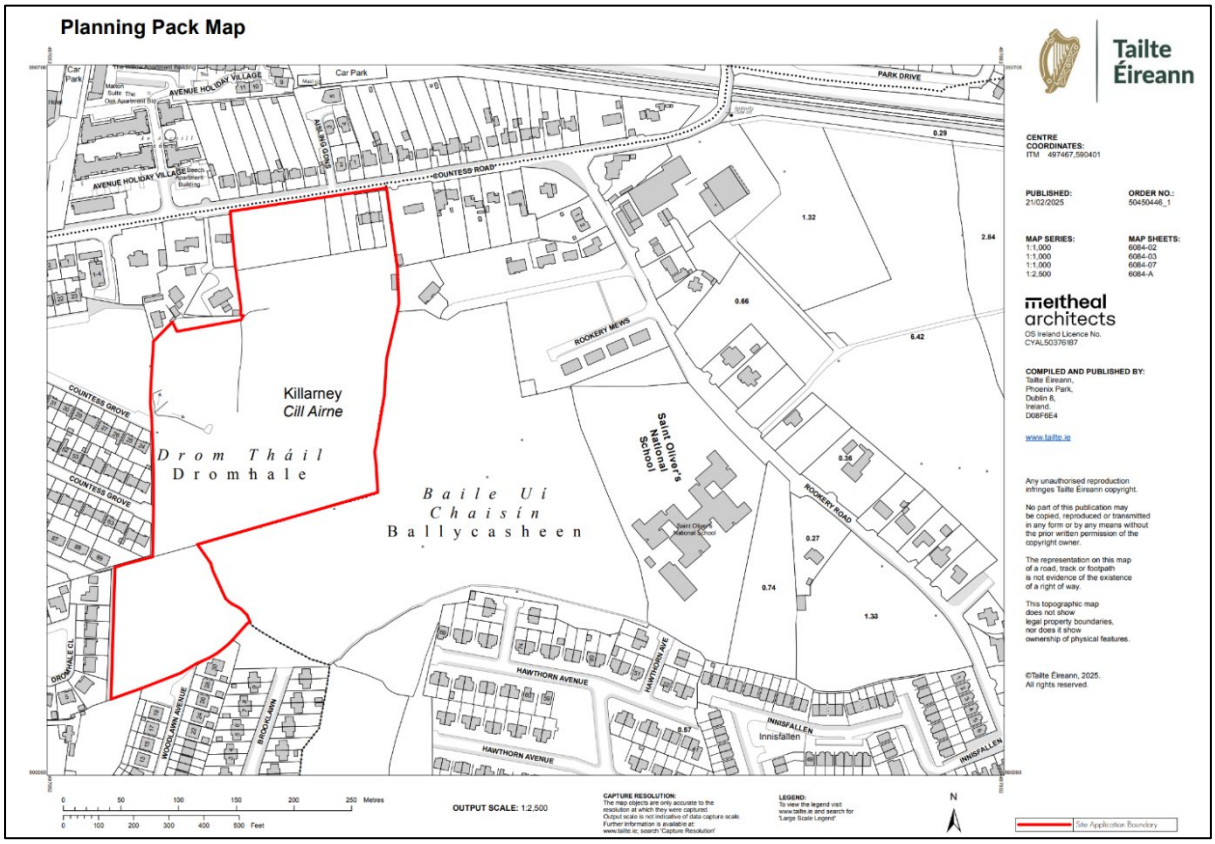


Figure 1-1: Site location

1.1 Legislative Context

All Irish bats are protected under the Wildlife Acts. Also, the EU Habitats Directive, and Irish implementing legislation, seeks to protect rare species, including bats, and their habitats, and requires that appropriate monitoring of populations be undertaken. Moreover, the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) exists to conserve all bat species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) protects migrant bat species across all European boundaries. Ireland has ratified both these conventions.

All bats are listed in Annex IV to the Habitats Directive (92/43/EC) and the Lesser Horseshoe bat is further listed under Annex II to the same Directive. Article 12 of the Directive requires Member States to establish a system of strict protection for animal species listed in Annex IV. Article 16 provides for derogation from the protection under Article 12 in certain circumstances. Articles 12 and 16 are transposed into Irish law by Regulations 51 and 54, respectively, of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

Destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service (NPWS) before works can commence. Any works interfering with bats and especially their roosts, may

only be carried out under a Regulation 54 licence issued by the NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in NPWS Guidance Series 2 – "*Strict Protection of Animal Species: Guidance for Public authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a Public authority*" (Mullen et al., 2021).

1.2 Objectives

The objectives of the bat survey were to:

- Establish the location of any potential or actual bat roosts at the proposed site;
- Establish the value of the proposed site to bats for foraging and commuting;
- Assess the results of the survey and determine the potential impact of the proposed development on any bats that might use the site;
- Provide recommendations for the project design in light of the survey results as appropriate; and
- Provide recommendations for mitigation following the survey.

1.3 Proposed Development

Dipharma Unlimited Company intend to apply for a 10-Year Planning Permission for a Large-Scale Residential Development (LRD) at Countess Road, Dromhale (townland), Killarney, Co. Kerry

The development will consist of:

The construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works.

The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.

Vehicular access to the proposed development will be via one entrance from Countess Road (L3904) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of existing site boundary walls along Countess Road. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application.

The proposed site layout (Meitheal Architects, 2026) is illustrated in Figure 1-2 and the proposed landscaping plan (Cunnane Stratton Reynolds, 2026) is illustrated in Figure 1-3.



Figure 1-2: LRD Countess Road, Site Layout Plan



Figure 1-3: LRD Countess Road- Proposed Landscaping Plan

2 Methodology

2.1 Desk Study

A pre-survey data search was conducted in order to collate existing information from the site and the surrounding area on bat activity, roosts and landscape features that may be used by bats. The data search comprised the following information sources:

- Collation of known bat records from within a 4km radius[1] of the site from the National Bat Database held by the National Biodiversity Data Centre (www.biodiversityireland.ie);
- Review of Ordnance Survey mapping and aerial photography of the site and its environs; and
- Records of European and nationally designated sites from within a 4km radius of the site where bats form part or all of the reason for designation (https://www.npws.ie/protected-sites).

2.2 Field Survey

This bat survey was cognisant of the following guidelines:

- Andrews, H. (2018) Bat Roosts in Trees. A guide to identification and assessment for tree-care and ecology professionals. Pelagic Publishing.
- Bat Conservation Ireland (2010) G*uidance notes for Planners, Engineers, Architects, and Developers*;
- Collins, J. (ed.) (2023) *Bat Surveys for Professional ecologists: Good Practice Guidelines (4th ed.)*. The Bat Conservation Trust, London; and
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

2.2.1 Surveyor Information

The survey was undertaken by Karen Banks, MCIEEM.

Karen is an ecologist with 19 years' experience in the field of ecological assessment. She holds a BSc in Environment and Development from Durham University and is a full member of the Chartered Institute of Ecology and Environmental Management. Karen is an experienced and skilled bat surveyor, first gaining a scientific licence to disturb bats from Natural England, UK in 2008. Karen is trained in bat handling and capture methods and currently holds a bat disturbance licence granted by the NPWS (Licence number: DER/BAT 2023-55 (survey licence)). Karen has undertaken bat survey and assessment for numerous projects, including bridge repair and replacement works, domestic dwelling repair and demolition works, wind farm developments and large-scale infrastructure projects such as flood relief schemes, road developments and pipeline schemes. Karen has also represented Cork County Council as an expert witness for bats at an Oral Hearing.

2.2.2 Study Area

The survey area comprised the proposed site as illustrated in Figure 1-1. The study area for the desk study is described in Section 2.1.

[1] A 4km radius search distance was selected to encompass records of bat roosts within Core Sustenance Zones (CSZ) of the study area for Irish species of bat. A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the conservation status of the colony using the roost (Collins, 2016).

2.2.3 Preliminary Ecological Appraisal

A walkover survey of areas within the proposed site identified as potential roosting, flight paths and foraging habitat during the desk top study was undertaken on 24th June 2025. Potential bat habitat was assessed using the criteria outlined in Table 2-1[2] and suitability of trees within the site for bats was assessed using the criteria outlined in Table 2-2.

Table 2-1: Criteria for Assessing the Potential Suitability of the Proposed Development Site for Bats

Suitability	Description Roosting habitats in structures	Potential flight paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/ suitable shelter at all ground/ underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/ protection for flight-lines, or generate/ shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation- the categorisation described in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used

[2] Collins, J. (ed.) (2023) *Bat Surveys for Professional ecologists: Good Practice Guidelines (4th ed.)*. The Bat Conservation Trust, London

	potential to support high conservation status roosts e.g. maternity or classic cool/ stable hibernation site.	regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table 2-2: Guidelines for assessment of the suitability of trees on proposed scheme area for bats (Collins, 2023)

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

2.2.4 Bat Roost Inspection Survey

2.2.4.1 Trees

A detailed inspection of the exterior of trees was undertaken on 7th November 2025 to ascertain whether any features that bats could use for roosting (Potential Roost Features, or PRFs) were present. The objective of the survey was to determine the actual or potential presence of bats to carry out an impact assessment and determine the need for further survey and/or mitigation.

A detailed inspection of each potential tree roost within the site was undertaken. The inspection was carried out in daylight hours from ground level, and information was compiled on the tree, PRFs and evidence of bats. Where PRFs were recorded, the tree was numbered and marked on a map and a description of each PRF observed was recorded. PRFs that may be used by bats include: -

- Rot holes;
- Hazard beams;
- Other horizontal or vertical cracks or splits (e.g. frost cracks) in stems or branches;
- Lifting bark;
- Knotholes arising from naturally shed branches or branches previously pruned back to the branch collar;
- Man-made holes (e.g. flush cuts) or cavities created by branches tearing out from parent stems;
- Cankers in which cavities have developed;
- Other hollows or cavities;
- Double leaders forming compression forks with included bark and potential cavities;
- Gaps between overlapping stems or branches;
- Partially detached ivy with stem diameters in excess of 50mm; and
- Bat or bird boxes.

Signs of a bat roost (excluding the actual presence of bats), include:

- Bat droppings in, around or below a PRF;
- Odour emanating from a PRF;
- Audible squeaking at dusk or in warm weather; and
- Staining below the PRF.

It should be noted that bats or bat droppings are the only conclusive evidence of a roost and many roosts have no external signs. In the current survey, potential roost sites were viewed by a bat specialist working from ground level. Trees were categorised in accordance with the criteria detailed in Table 2-3.

Table 2-3: Categorisation of potential suitability of PRFs in trees at the proposed site

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

2.2.4.2 Structures

On 25th June 2025 the existing dwellings at the site were surveyed for potential roost sites and signs of bats. The survey utilised a high-powered torch, close focussing binoculars and an endoscope (Explorer Premium 8803 with 9mm camera) where required. The external inspection involved looking for bat droppings on the ground, stuck to walls, windowsills or in crevices in the stonework and recording suitable entry and exit points.

The internal inspection involved looking for features that may be suitable for roosting bats, such as joints and crevices in wood, holes or crevices between stonework in the walls and searching for bat droppings, urine stains and feeding signs on the floor.

2.2.5 Bat Roost Emergence Survey

A dusk survey of the dwellings was undertaken on 2nd July 2025 and 20th July 2025 in order to watch and listen for bats exiting bat roosts to determine the presence or absence of bats at the time of survey. The dusk emergence survey commenced approximately 15 minutes before sunset and ended approximately 90 minutes after sunset. The survey was undertaken in suitable weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C)). Two people surveyed the structure (Karen Banks and Cathál MacPartholan), one surveyor was located at the front of the dwellings and one surveyor was located to the rear of the dwellings.

Anabat Walkabout detectors were utilised for the survey, which record bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data was then downloaded and all recordings were analysed by the Anabat Insight software analysis programme version 2.1.7.

The emergence survey was aided by the use of the TrackIR Pro 19 thermal imaging scope.

2.2.6 Bat Activity Survey

Bat activity surveys were conducted across the site using an Anabat Walkabout detector, which records bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data were then downloaded and all recordings were analysed using the Anabat Insight spectrogram sound analysis software Version 2.1.7. Dusk activity surveys (from sunset, for a minimum of 90 minutes) were conducted. These surveys enable a determination of the approximate numbers and species of bats present within the study area, areas used for foraging and commuting routes to and from roosts. The approximate flying height and direction taken by bats were estimated and detailed where possible.

Bat activity transect surveys were undertaken on 2nd July 2025, 24th August 2025 and 8th September 2025. Each survey was conducted in appropriate weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C) (Table 2-4).

Table 2-4: Proposed development site at Countess Road: bat activity survey dates and conditions

Survey Date	Times	Weather conditions
02/07/2025	22:00- 23:35, sunset 22:00	Precipitation: none, temperature at sunset: 11°C, wind F3
24/08/2025	20:40- 22:15, sunset 20:42	Precipitation: none, temperature at sunset: 16°C, wind F3
08/09/2025	20:10-21:40, sunset 20:11	Precipitation: none, temperature at sunset: 15°C, wind F3

In order to supplement the information gathered from the manual activity surveys, a passive monitoring system of bat detection was also deployed for this survey scheme (i.e. a bat detector is left in the field, there is no observer present and bats which pass near enough to the monitoring unit are recorded and their calls are stored for later analysis). This results in a far greater sampling effort over a shorter period of time. Bats are identified by their ultrasonic calls. The passive detectors record bat ultrasonic calls on a continuous basis and store the information onto an internal SD card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded.

Passive monitoring was completed monthly between May and September 2024 using Anabat Swift bat monitors. Three Anabat Swift monitors were deployed each month for the survey and were positioned in or adjacent to hedgerow and scrub habitats as illustrated in Figure 2-2. The detectors were set to record from approximately 30 minutes before sunset until sunrise and recorded for 7 nights at each location. Data were then downloaded and bat echolocation calls were later analysed by the Anabat Insight software analysis programme version 2.1.7. Each time-stamped file was analysed and the species of bat recorded was noted as a bat pass.

2.3 Survey Limitations

Brown long-eared bats can be difficult to detect as they echolocate at a low-amplitude and foraging bats often make no sound. Similarly, lesser horseshoe bat can be difficult to detect as their calls are highly directional. The survey design aimed to increase the likelihood of recording these species by the employment of full spectrum monitoring and the positioning of passive monitors at commuting routes, natural corridors through or adjacent to vegetation and suitable brown long-eared bat and lesser horseshoe bat habitats (such as hedgerows).

The monitors were deployed on a monthly basis between June and September and recording occurred throughout a range of different weather conditions. Bat activity transects were all conducted in optimal weather conditions.

The project timeframes did not allow for monitoring in spring, however, as noted above, monthly monitoring was conducted throughout the summer and autumn months.

No significant constraints to the survey data gathered are noted.



Figure 2-1: Proposed development site at Countess Road- location of passive monitors, 2025

3 Results

3.1 Existing Bat Data

The review of existing records of bat species in the environs of the study area indicates that nine of the ten known Irish species of bat have been recorded within a 4km radius. These bats include common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), Nathusius' pipistrelle (P. nathusii), Leisler's bat (*Nyctalus leisleri*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*M. nattereri*), whiskered bat (*M. mystacinus*) and lesser horseshoe bat (Rhinolophus hipposideros) shown in Table 3-1 below. Five species, namely common pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat and lesser horseshoe bat have been recorded roosting within 4km of the site.

Table 3-1: NBDC bat records from within a 4km radius of the study area

Common Name	Scientific Name	Present (Y/N)	Known Roost within 4km (Y/N)	Date of Last Record
Pipistrelle sp.	*Pipistrellus pipistrellus sensu lato*	Y	Y	24/09/2021
Common Pipistrelle	*Pipistrellus pipistrellus*	Y	Y	21/05/2021
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Y	N	21/05/2022
Nathusius's Pipistrelle	*Pipistrellus nathusii*	Y	N	23/07/2008
Leisler's Bat	*Nyctalus leisleri*	Y	Y	14/05/2022
Brown Long-eared Bat	*Plecotus auratus*	Y	Y	14/05/2021
Daubenton's Bat	*Myotis daubentoniid*	Y	Y	24/08/2021
Whiskered Bat	*Myotis mystacinus*	Y	N	14/05/2021
Natterer's Bat	*Myotis nattereri*	Y	N	02/08/2019
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	Y	Y	21/05/2021
Brandt's Bat	*Myotis brandtii*	N	N/A	N/A

The bat landscape association model (Lundy *et al,* 2011) suggests that the study area is part of a landscape that is of moderate to high suitability for bats including common pipistrelle, soprano pipistrelle, brown long-eared, Leisler's, Daubenton's, Natterer's, whiskered bat and lesser horseshoe bat; and low to moderate suitability for Nathusius' pipistrelle.

3.1.1 Designated Sites

The proposed site is located c.0.5km to the east of Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC at nearest. Lesser Horseshoe bat is a qualifying interest species for this SAC. According to the Conservation Objectives for Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (NPWS, 2017), the proposed site is located within the foraging range for lesser horseshoe bat colony site code 296, which roost within Killarney National Park to the south-west of Killarney.

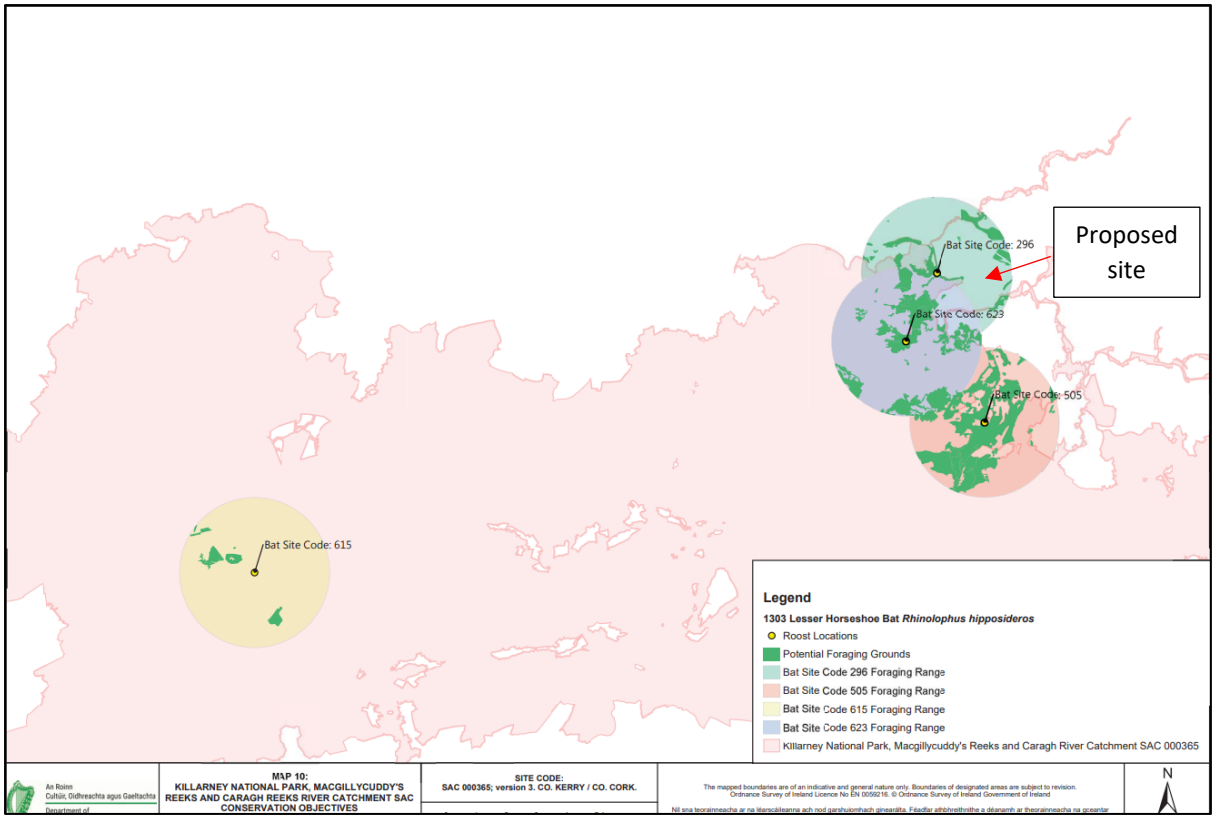


Figure 3-1: Location of lesser horseshoe bat colonies that are QI for Killarney National Park SAC[3] (location of proposed site annoted on map)

3.2 Bat Roost Survey

3.2.1 Preliminary Ecological Appraisal

Review of aerial photography and the results of the site walkover indicate that the site predominantly comprises agricultural fields (improved agricultural grassland (Fossitt code GA1) bound by hedgerows (WL1) and treelines (WL2), with an area of wet grassland (GS4) and occasional scrub (WS1) at the west of the site.

There are no EPA mapped watercourses within the proposed development site boundary, the nearest watercourse is the Flesk River, located c.0.6km to the south of the site.

In accordance with the criteria outlined in Table 2-1, the commuting and foraging habitats within the site are of moderate to high suitability for bats.

A summary of foraging and roosting habitats for Irish bats is included in **Appendix A.**

3.2.2 Bat Roost Inspection Survey

3.2.2.1 Trees

No trees within the proposed site were confirmed as being used as roost sites during the course of the surveys undertaken in 2025. A total of five trees within the proposed site were categorised as being suitable to support multiple bats. The location of the trees with suitability for roosting bats is illustrated in Figure 3-2 and detailed in Table 3-2**.** It is further noted that many of the mature trees at the site boundary support Ivy cover that may hide potential roosting features and may support potential for individual bats to roost opportunistically in warmer months.

[3] Map 10 of ConservationObjectives.rdl (npws.ie)

Table 3-2: Countess Road Residential Development: potential tree roosts

PTR Number	Tree Species	BCT Category	PRFs
1	Oak	PRF-M	Split in limb
2	Oak	PRF-M	2 knot holes on limb
3	Oak	PRF-M	Limb drop and crack in limb
4	Oak	PRF-M	Crack in limb
5	Ash	PRF-M	Knot hole and rot to limb



Figure 3-2: Countess Road Residential Development- location of potential tree roosts

3.2.2.2 Structures

The structures within the proposed site comprise two attached 2-storey disused dwellings. The walls of the houses are rendered, and the roof is constructed of slate tiles with a central chimney breast and wooden fascia boards. Dormer windows are present on the 1st floor.

Potential entry/exit points for bats are present via rot holes in the wooden fascia boards and gaps under the eaves. Internally, large Jackdaw nests are present within the roof space of both dwellings. A small pile (c.10 no.) old bat droppings was present within the roof space of the easternmost dwelling and a single bat dropping was present within the roof space of the westernmost dwelling.

3.2.3 Roost Emergence Survey

Two soprano pipistrelle were recorded emerging from the southern elevation of the westernmost dwelling during the emergence survey conducted on 2nd July and 20th July.

3.3 Activity Survey

The passive monitors recorded eight species of bat, namely common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat, Natterer's bat, whiskered bat, Daubenton's bat and lesser horseshoe bat. Calls from the *Myotis* genus (unidentifiable to species level) were also recorded.

Soprano pipistrelle was the most frequently recorded species within the site (52% of calls recorded), followed by common pipistrelle then Leisler's bat. Brown long-eared bat was recorded across the site, with the highest level of activity recorded on PM1 at the north of the site in July, and PM2 at the south of the site in August. Generally, a low level of activity from Natterer's bat, whiskered bat and Daubenton's bat was recorded across the site, however, a notable spike in whiskered bat and Daubenton's bat activity was recorded on PM2 at the south of the site in August. Likewise, a low level of activity from the *Myotis* genus (unidentifiable to species level) was recorded across the site, with a higher level of activity recorded at PM2 in August (see Table 3-2). Lesser horseshoe bat was recorded across the site, with a high level of activity at PM1 in July.

Overall, the level of bat activity recorded across the site was variable, with a lower level of activity recorded on PM1 at the north of the site and a higher level of activity on PM2 and PM3 at the south of the site.

The number of bat passes per night recorded on the passive monitors is summarised in Table 3-2, the location of the passive monitors is illustrated in Figure 2-1.

Five species were recorded within the site during the bat activity transects undertaken on 2nd July 2025, 24th August 2025 and 8th September 2025. These species were common pipistrelle, soprano pipistrelle, Leisler's bat, whiskered bat and lesser horseshoe bat. Soprano and common pipistrelle were recorded foraging along the hedgerows and treelines throughout the site and Leisler's bat was recorded foraging and commuting overhead. Whiskered bat was recorded foraging along the treeline at the eastern site boundary and lesser horseshoe bat was recorded in low numbers foraging along the site boundary.

During the transects undertaken in August and September, several Soprano and common pipistrelle were recorded early in the evening flying into the south of the site from adjacent housing, suggesting the likely presence of a maternity pipistrelle roost in the immediate environs of the site, outside of the site boundary. As noted previously, two soprano pipistrelle were also recorded emerging from the disused dwellings at the northeast of the site before foraging along the treelines at the field boundaries.

Table 3-3: Bat passes recorded during passive monitoring completed in 2025

Species	24th- 30th June 2024			20h- 26th July 2025			24th-30th August 2025			8th- 14th September 2025			Total
	PM1	PM2	PM3	PM1	PM2	PM3	PM1	PM2	PM3	PM1	PM2	PM3	
Common pipistrelle	948	11,066	4,140	884	2,439	2,805	1,312	11,394	4,501	1,614	4,451	7,607	**53,161 (52%)**
Soprano pipistrelle	258	6,166	1,758	348	1,934	1,299	314	7,272	6,641	531	3,845	5,039	**35,405 (35%)**
Pipistrelle species	1	17	0	3	6	3	4	39	6	0	22	15	**116 (0%)**
Leisler's	1,798	2,730	662	857	825	1,269	398	560	318	192	422	486	**10,517 (10%)**
Whiskered/ Brandt's	0	17	0	20	2	0	12	458	0	8	0	8	**525 (1%)**
Daubenton's	0	6	0	2	6	2	0	198	2	10	6	0	**232 (0%)**
Natterer's	0	4	0	0	26	2	0	6	0	0	4	2	**44 (0%)**
***Myotis* spp**	1	25	0	17	42	4	1	151	1	0	12	9	**263 (0%)**
Brown long-eared	28	54	2	110	57	9	4	137	4	2	20	4	**431 (0%)**
Lesser horseshoe bat	0	10	12	1,100	52	22	18	44	21	32	34	40	**1,385 (1%)**
NoID	0	0	0	4	2	2	0	1	0	0	0	0	**9 (0%)**
Total	**3,034**	**20,095**	**6,574**	**3,345**	**5,391**	**5,417**	**2,063**	**20,260**	**11,494**	**2,389**	**8,816**	**13,210**	**102,088 (100%)**

4 Evaluation of Survey Results

A review of existing bat records from within a 4km radius of the site indicates that nine of the ten known Irish bat species had been recorded. These include common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Leisler's, brown long-eared, Daubenton's, Natterer's, whiskered and lesser horseshoe bat. Of these species, common pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat and lesser horseshoe bat have been recorded roosting within 4km of the site.

Features within the site that are of potential use by foraging and commuting bats are hedgerows and treelines, which provide connectivity between the site and other foraging areas in the wider landscape. Overall, the site is considered to be of moderate to high suitability for foraging and commuting bats due to the presence of connectivity to other suitable habitats in the wider landscape.

Results from bat surveys undertaken between June and September 2025 indicate that eight species of bat forage within the site. A relatively high amount of common pipistrelle, soprano pipistrelle and Leisler's bat activity was recorded and lower levels of activity from brown long-eared bat, Daubenton's bat, Natterer's bat, whiskered bat and lesser horseshoe bat were also recorded.

Two soprano pipistrelle were recorded emerging from the disused dwellings at the north-east of the site and soprano and common pipistrelle fly into the site from a nearby roost to the south of the site, outside of the site boundary.

Overall, a high level of activity and a high diversity of species was recorded within the site.

Soprano pipistrelle, common pipistrelle, Leisler's bat, Daubenton's, Natterer's, whiskered and brown long-eared bat are all considered to be of Favourable conservation status and the conservation status of lesser horseshoe bat is categorised as being Inadequate (NPWS, 2019).

Overall, the proposed site is considered to be of local conservation interest (higher value) for bats.

5 Impact Assessment

This section of the report provides an assessment of the potential impacts on bats of the proposed development of large-scale residential development at the site.

5.1 Construction Phase

5.1.1 Loss or Severance of Foraging and Commuting Habitat

The results of the bat activity survey undertaken for the proposed development indicate that the site supports eight species of foraging and commuting bat (soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered, brown long-eared and lesser horseshoe bat), with a minor soprano pipistrelle roost present within the site and a pipistrelle roost present to the south of the site.

The hedgerows and treelines present on site provide foraging and commuting habitat for a high diversity of bat species, as noted previously. The proposed development will require the removal of trees and hedgerows as follows:

- Removal of 38 no. trees, 17 of which are to be removed to facilitate the development, all other trees are to be removed for safety reasons (see Geotree, 2025).
- Removal of 344 linear metres of hedgerow.

The proposed landscaping plan includes for the following:

- Planting of 205 no. trees comprised of native species.
- Planting of 360 linear metres hedgerows comprised of native species.

As the proposed planting matures, there will be a net gain of 167 trees and 16m hedgerow at the proposed site in the medium to long-term.

As described in the Tree Survey Report (Geotree, 2025), the most extensive tree/ hedgerow removal will be required at the north of the site at the boundary adjacent to Countess Road and the treeline bounding the gardens of the existing dwellings. The highest levels of bat foraging activity were recorded at the eastern and southern site boundaries, away from Countess Road. In view of the landscaping proposals as summarised above, it is expected that the removal of trees and hedgerow habitat will result in a short-term minor adverse effect on common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat, Natterer's bat and whiskered bat at the local (site) level. No significant adverse effects on these species are expected in the medium to long term.

Lesser horseshoe bats were recorded foraging and commuting at the proposed site. The proposed site is located within the foraging range for lesser horseshoe bat colony site code 296, a qualifying interest for Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC. In 2016, the Bat Conservation Trust (BCT) carried out a review of literature pertaining to mean and maximum bat foraging distances[4]. In their review, a Core Sustenance Zone (CSZ) refers to 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. The weighted average maximum foraging distance for lesser horseshoe bats was 2.02km. However, as noted in the National Parks and Wildlife Service (NPWS) document *Conservation objectives supporting document – lesser horseshoe*

[4] Collins, J. (ed.) (2016). *Bat Surveys for Professional ecologists: Good Practice Guidelines* (3rd ed.). The Bat Conservation Trust, London

bat (*Rhinolophus hipposideros*)[5], some researchers have found that lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts, therefore, as specified for the purpose of current site specific conservation objective (SSCO) targets for this species, a 2.5km zone is considered an appropriate distance to foraging areas for each roost.

Lesser horseshoe bat is generally considered to be reluctant to cross open areas more than 10m wide. The proposed development will require the removal of vegetation along Countess Road and the treeline bounding the gardens of the existing dwellings. Aside from this section of hedgerow, all removal of hedgerows/ treeline required (e.g. for facilitation of pedestrian access) will be under 10m in length. As detailed in Table 3-2, lesser horseshoe bat calls recorded on PM1 to the north of the site (as illustrated in Figure 2-1) recorded a lower level of bat activity than the other monitors recording at the site, with the exception of July, when a high level of foraging was recorded. It is expected that the removal of trees and hedgerow habitat at the north of the site will result in a short-term adverse effect on lesser horseshoe bat at the local (site) level. However, in view of the landscaping proposals detailed above, which would retain foraging and commuting habitat at the rest of the site boundary, these effects would not be expected to have an adverse effect at the population level (i.e. they would not be significant).

No significant adverse effects on lesser horseshoe bat are expected in the medium to long term as the proposed landscape planting matures.

5.1.2 Loss of Roosting Habitat

The proposed development will require the removal of 2 no. trees identified as supporting potential roosting features, however no bats were recorded emerging from these trees during the bat activity surveys undertaken in 2025. There is potential for the proposed development to result in the loss of potential roosting habitat. This would result in a minor adverse effect at the local level.

The proposed development will require the demolition of the existing dwellings at the site. This will result in the loss of a minor soprano pipistrelle roost. In the absence of mitigation this would result in a significant adverse effect at the local level.

5.1.3 Lighting

Linear woodland and scrub edge habitat provides important flyways and feeding sites for a diversity of bats. Artificial lighting at night may have an adverse effect on foraging bats as light-averse bats may be repelled from lit areas and restrict their use of commuting or feeding space. In the absence of mitigation, disturbance of bats due to lighting used during the construction phase, should it be required, would have an indirect, temporary, negative effect for the duration of construction. The effect would be significant at the Local geographic level for soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered and brown long-eared bat. As outlined previously, there is potential that the lesser horseshoe bat activity recorded at the site is from the QI population for Killarney National Park SAC; applying the precautionary principle, effects on lesser horseshoe bat may be significant at the International Level.

[5] NPWS (2018) Conservation objectives supporting document – lesser horseshoe bat (*Rhinolophus hipposideros*) Version 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland.

5.2 Operational Phase

5.2.1 Lighting

As noted in Section 5.1.3, artificial lighting at night may have an adverse effect on commuting and foraging bats.

Habitat degradation due to the use of artificial lighting at night may result in a long-term to permanent, irreversible negative effect on bats. The effect would be significant at the Local geographic level for soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered and brown long-eared bat. There is potential that the lesser horseshoe bat activity recorded at the site is from the QI population for Killarney National Park SAC; applying the precautionary principle, effects on lesser horseshoe bat may be significant at the International Level.

6 Mitigation

6.1 Derogation Tests

Test 1, Reason for the Derogation: The demolition of two semi-detached dwellings currently supporting a minor soprano pipistrelle roost is required to facilitate the construction of a residential development (as described in Section 1.3).

The proposed site is located on lands zoned for residential purposes under the Kerry County Development Plan 2022-2028. The lands are sequentially suitable for development, being within a short walking distance of Killarney Town centre, and adjacent to social and community infrastructure. As such, the development of the site is supported by national, regional and local policy, including the ministerial 'Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities'. The proposed development includes 20% social housing to meet identified needs arising from the Kerry County Council housing waiting list.

As summarised above, the proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a residential development supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance.

Test 2, Absence of Alternative Solutions: Alternative solutions considered included not constructing the residential development (i.e. do-nothing). However, that option is not feasible due to the need for additional housing provision in the Killarney area. An alternative location was considered; however, the proposed site is on the outskirts of Killarney town in a location that is zoned for residential development. An alternative location is not feasible. An alternative design was also considered; however, the roost is located in disused dwellings that require demolition for the provision of a residential development. An alternative design is not feasible. The proposed development is the most reasonable solution.

Test 3, Impact of a Derogation on Conservation Status: The national population of soprano pipistrelle is estimated at approximately 1.2-2.7 million at summer 2023. The number of soprano pipistrelle roosting in the dwelling is estimated to be 2 no. individuals during the summer period, the site does not support a maternity roost. In the absence of any mitigation, the demolition of the dwelling may potentially result in the mortality of individual/ small numbers of non-breeding soprano pipistrelle, if timed inappropriately. This would result in a slight adverse effect on the conservation status of the local population of soprano pipistrelle but would not be significant on a national scale. With the implementation of the mitigation measures outlined in the supporting report, using established guidelines (e.g. Marnell, 2022) the proposed development and actions outlined within the supporting report will not be detrimental to the maintenance of populations of bat species at favourable conservation status in their natural range (as required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations, either locally or nationally.

6.2 Mitigation Measures

6.2.1 Construction Phase

6.2.1.1 Loss of Roosting Habitat

Structures

Two soprano pipistrelle have been recorded roosting within the disused dwellings at the proposed site, therefore, safeguards are required to ensure the safety of this animal during works.

Application for a derogation licence

NB: Work on a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service before works on the roost can commence. Such a licence is required for the demolition of the dwellings at the proposed site and no demolition works shall be undertaken to the dwellings before the licence is granted by the NPWS.

A derogation license for the proposed development has been received and is enclosed in Appendix C.

In accordance with Marnell *et al* (2022), the dwellings at Countess Road support a bat roost considered to be of low conservation significance. As stated in Figure 20, page 46, this necessitates:

"Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring"

While, as noted above, there is no requirement to comply with timing conditions, it is noted that disturbance to individual bats can be avoided by completing works at an appropriate time of year. In accordance with the *Bat Mitigation Guidelines for Ireland*, the optimum time for undertaking works to a building supporting a summer roost (not a proven maternity site) is between 1st September and 1st May.

Demolition works to the existing dwellings shall occur between 1st September and 1st May.

Demolition works shall only proceed under licence.

The existing dwellings will be subject to a dusk survey or daytime inspection for evidence of bat usage immediately prior to the commencement of works. In the event that no evidence of bat usage is found during the inspection, works can commence. Should bats be found within the building, works will be delayed until they are no longer present (i.e. they have naturally flown from the roost). Prior to commencement of works the bat specialist will brief the contractor on the possible presence of bats on the site, the subsequent need to take appropriate care and attention whilst carrying out the works and the steps to take should bats be discovered at the site at any time (i.e. stop works and inform the bat specialist). Active bats will usually keep out of the way of any operations, but torpid bats may need to be gently temporarily placed in a box until dusk and released on site.

The dwellings support a day roost for 2 no. soprano pipistrelle. Soprano pipistrelle are crevice dwellers, as such, it is considered that the inclusion of 3 no. bat boxes suitable for crevice dwellers[6] on trees to be retained in a dark area of the site boundary will provide suitable alternative roosting space.

Trees

[6] For example: Fledermausflachkasten 1FF | 00139/9

Pre-construction Potential Roost Feature (PRF) inspection/presence absence surveys of all trees scheduled for felling shall be undertaken. Following this examination, should any of the trees be identified as a bat roost then a derogation licence application will be made to the NPWS to exclude the bats and fell the tree.

Where bats are recorded roosting in the trees scheduled for felling, the following mitigation will be required:

- Timing: tree-felling can be undertaken from late August to late October/early November and all works should ideally be undertaken in this period. During this period bats are still capable of flight having not entered hibernation and undertaking works in this period may reduce the risks of tree-felling if proper measures are undertaken. To carry out the works any later in the bat season creates an additional risk that bats may be in hibernation and thus unable to fly out from a tree that is being felled, although bats can be removed by hand by a licenced bat handler if required. Additionally, disturbance during winter may reduce the likelihood of survival as the bats' body temperature is too low and they may have to consume too much body fat to survive.

Trees to be felled under the supervision of the bat specialist (as identified during the pre-construction survey) will be examined and where bats are found, they will be translocated to an area where bat boxes will already be installed on appropriate trees within the proposed site.

The proposed process for felling the trees with PRFs is outlined below:

- The bat specialist will be present during the tree felling works;
- Works will be undertaken in mild weather to ensure that if bats are found during works that they can be released or safely removed;
- Tree(s) identified as having potential to support bats will be surveyed during the daytime for bats prior to felling, on the day the felling is due to take place. The bat specialist will inspect all potential bat roost features of the tree, including those above ground level. This will require the services of a qualified arborist to climb the trees/ use a cherry picker and fell the tree in sections and lower potential roost features slowly to the ground to allow the bat specialist to inspect them. This will include visual inspection as well as use of an endoscope to inspect cavities/crevices;
- The arborist will be briefed on the technique to be followed prior to the commencement of operations. Felling will follow best practice and mitigation measures, including wedging open cracks/crevices prior to load removal and cutting limbs in sections and lowering to the ground. Trees will only be felled in longer sections if the bat worker is satisfied that there are no potential roost features present;
- When using a chainsaw, the rate of fall of branches will not be accelerated by the use of a chain and vehicle;
- Any bats found in the trees will be removed by hand to a bat box and will then be relocated to the bat boxes installed in advance of works. Notes of any such activities will be maintained;
- The tree and/or tree sections will be left on the ground for a minimum period of 24 hours to enable any unidentified bats residing in deeper crevices to make good their escape during night time hours.

6.2.1.2 Loss or Severance of Foraging and Commuting Habitat

As noted in Section 5.1.1, the proposed landscaping plan includes for the planting of 205 no. trees comprised of native species and planting of 321 linear metres hedgerows comprised of native species. As the proposed planting matures, there will be a net gain of 167 trees and 237m hedgerow at the proposed site in the medium to long-term. No further specific mitigation measures are required.

For a detailed description of Biodiversity Net Gain achieved by the proposed planting scheme please refer to the Landscaping Plan and Ecological Impact Assessment (EcIA) accompanying the planning application.

6.2.2 Lighting

To minimise disturbance to bats and other fauna that are active at night, construction operations during the hours of darkness will be kept to a minimum. If construction lighting is required during the bat activity period (April to September), lighting shall be directed away from all known roosts and woodland habitats to be retained. This can be achieved by using directional lighting (i.e. lighting which only shines on the proposed works and not nearby countryside) to prevent overspill. This shall be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

6.3 Operational Phase

6.3.1 Barrier effect as a result of artificial lighting

The protection of dark refuges is essential for bats, particularly in urban and suburban areas. Careful design of the lighting will be important to ensure that the development does not create barriers for bats commuting and foraging in the study area, while maintaining health and safety requirements for human use. This is particularly important for bat foraging/commuting habitat within, and at the edge of, retained linear woodland habitats (hedgerows) at the site.

The following general principals will be followed in relation to the overall lighting plan for the proposed development site:

- Lighting design will be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting shall be used within the proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas, including foraging areas for bats along hedgerows.
- Dark buffer zones will be used to separate habitats or features from lighting by forming a dark perimeter around them. This shall be used for habitat features noted as roosting and foraging areas for bats and light spill onto foraging habitat (i.e. hedgerows) shall be avoided.
- Buffer zones will be used to protect dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance limit radiating away from the feature or habitat that requires to be protected. This will apply to foraging habitat (i.e. hedgerows).

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2023).

- All luminaires used will lack UV elements to reduce impact.
- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.

- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For this development specifically, there will be light spill onto Countess Road at the northern site boundary, as exists in the current baseline situation; this is required for safety. The lighting along the hedgerows at the rest of the site boundary has been minimised so that dark areas are retained on the eastern site boundary and the south-western site boundary. The lighting has been pulled back from the southern site boundary as far as is practicable while still allowing for human safety.

A copy of the proposed illumination contour drawing for public lighting is enclosed in Appendix B.

The proposed private lighting has been designed in compliance with ILP "ILP *Guidance notes for the Reduction of Obtrusive light* (GN01:2021). It is recognised that light fittings can be adjusted after handover, which may affect light spill levels. However, up to this point, the proposed lighting design ensures that external lighting shall be limited to downlighters, resulting in a 1.0lx light spill onto footpaths but with a minimal spill outside of these areas.

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Appendix A: Description of Irish Bat Species

Ireland has ten known bat species from two distinct families. Each is briefly described below. For a more comprehensive overview see Roche *et al* (2014). The conservation status of each species is derived from NPWS (2019).

Vespertilionidae:

Common pipistrelle (*Pipistrellus pipistrellus*)

This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*, which is detailed below (Barratt et al, 1997). The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland. The conservation status of this species is Favourable.

Soprano pipistrelle (*Pipistrellus pygmaeus*)

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer. The conservation status of this species is Favourable.

Nathusius' pipistrelle (*Pipistrellus nathusii*)

Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down (Richardson, 2000) and also in Fermanagh, Longford and Cavan. It has also been recorded in Counties Cork and Kerry (Kelleher, 2005). However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The conservation status of this species is Favourable.

Leisler's bat (*Nyctalus leisleri*)

This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddis-flies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. The conservation status of this species is Favourable.

Brown long-eared bat (*Plecotus auritus*)

This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings. The conservation status of this species is Favourable.

Natterer's bat (*Myotis nattereri*)

This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddis-flies and spiders. Known roosts are usually in old stone buildings but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland. The conservation status of this species is Favourable.

Daubenton's bat (*Myotis daubentonii*)

This bat species prefers feeding close to the surface of smooth water, either over rivers, canals, ponds, lakes or reservoirs but it can also be found foraging in woodlands. Flying at 15 kilometres per hour, it gaffs insects with its over-sized feet as they emerge from the surface of the water - feeding on caddis flies, moths, mosquitoes, midges etc. It is often found roosting beneath bridges or in tunnels and also makes use of hollows in trees. The conservation status of this species is Favourable.

Whiskered bat (*Myotis mystacinus*)

This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The conservation status of this species is Favourable.

Brandt's bat (*Myotis brandtii*)

According to NPWS (2013), whiskered and Brandt's bats are cryptic species and can only be told apart using DNA techniques. Brand't bat has been confirmed only once from Ireland; a single specimen found in 2003 in Wicklow (Mullen, 2006). Following this discovery, an intensive re-survey, involving DNA testing, was undertaken of all known whiskered bat roosts in Ireland, by the Centre for Irish Bat Research. Woodland mist-netting was also conducted for the species. Despite the extensive survey-work, no further Brandt's bats were identified. The most recent Red Data List for Irish Mammals (Marnell *et al*. 2009) lists Brandt's bat as data deficient. There is no evidence of any roosts for this species in the country and at present the single record for the species is considered an anomaly. Boston et al (2010) concluded that "M. brandtii …. cannot currently be considered a resident species. This species is now considered a vagrant to the country and consequently, a detailed assessment has not been carried out.

Rhinolophidae:

Lesser horseshoe bat (*Rhinolophus hipposideros*)

This species is the only representative of the Rhinolophidae or horseshoe bat family in Ireland. It differs from our other species in both habits and looks, having a unique nose leaf with which it projects its echolocation calls. It is also quite small and, at rest, wraps its wings around its body. Lesser horseshoe bats feed close to the ground, gleaning their prey from branches and stones. It often carries its prey to a perch to consume, leaving the remains beneath as an indication of its presence. The echolocation call of this species is of constant frequency and, on a heterodyne bat detector, sounds like a melodious warble. The species is confined to six counties along the Atlantic seaboard: Mayo, Galway, Clare, Limerick, Kerry and Cork. The current Irish national population is estimated at 12,500 animals. This species is listed on Annex II of the EC Habitats Directive and 41 Special Areas of Conservation have been designated in Ireland for its protection. Where it occurs, it is often found roosting within farm buildings. The conservation status of this species is Inadequate.

Appendix B Illumination Contour Drawing



Appendix C Derogation License

Derogation Number
DER-BAT-2026-177

EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS, 2011 (S.I. No 477 of 2011)

DEROGATION

Granted under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, hereinafter referred to as "the Habitats Regulations".

The Minister for Housing, Local Government & Heritage, in exercise of the powers conferred on him by Regulation 54 of the Habitats Regulations hereby grants to **Tadhg Twohig** of **Dipharma Unlimited Company, Cahernard, Castleisland, County Kerry** a derogation. It is stated that this derogation is issued:

A. In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment
B. As there is no satisfactory alternative, and the action authorised by this derogation will not be detrimental to the maintenance of the population of **bats** referred to below at a favourable conservation status in their natural range.

This derogation authorises the following:

1. Roost disturbance
2. Actions authorised within the derogation

The derogation is issued in respect of the following **bat species**:

- **Soprano Pipistrelle** **Pipistrellus Pygmaeus**

Terms and Conditions

1. This derogation is granted solely to allow the activities specified in connection with the works located at **Countess Road, Killarney, County Kerry** for **Tadhg Twohig**
2. All activities authorised by this derogation, and all equipment used in connection herewith, shall be carried out, constructed and maintained (as the case may be) so as to avoid unnecessary injury or distress to any species of **BAT**. Anything done other than in accordance with the terms of this derogation may constitute an offence
3. This derogation may be modified or revoked, for stated reasons, at any time. In addition, the Minister reserves the right to revoke the derogation where updated information indicates that the basis upon which the derogation was granted has materially changed.
4. The mitigation measures outlined in the application report **(Bat Survey Large-scale Residential Development Countess Road Killarney Co. Kerry)** together with any changes or clarification agreed in correspondence between NPWS and the agent or applicant, are to be carried out. Strict adherence must be paid to all the proposed measures in the application.
5. The actions which this derogation authorise shall be completed between **2nd April – 31st December 2026, inclusive.**
6. The works will be supervised by bat ecologist(s): **Karen Banks**
7. If this derogation addresses works that are subject of a planning application, no such works permitted under this derogation can occur until planning permission is granted.
8. If this derogation expires prior to works permitted under this derogation commencing, a new application must be sought in advance, including the provision of any updated data or reports.
9. This derogation shall be produced for inspection on a request being made on that behalf by a member of An Garda Síochána or an authorised NPWS officer appointed under Regulation 4 of the Habitats Regulations.
10. The local **NPWS Conservation Ranger – Jason Lyne,** jason.lyne@npws.gov.ie**,** must be contacted prior to the commencement of any activity, and if bats are detected on site during the course of the work, under the terms of this derogation.
11. On completion of the actions which this derogation authorises, all recordings of bat species affected will be made using the standardised Returns form and must be submitted to the NPWS **within four weeks of the expiry date of this derogation**. Included with the Returns form, a report will also be submitted to wildlife.reports@npws.gov.ie detailing results of works and success of mitigation. **Both documents must be submitted to constitute a derogation return.**

For the Minister for Housing, Local Government & Heritage

(an officer authorised by the Minister to sign on his behalf)

02 April 2026

Any query in relation to this derogation should be sent to reg54derogations@npws.gov.ie



Derogation Assessment

Name of Applicant: Tadhg Twohig

Location/Name of Project: Countess Road, Killarney, County Kerry

Tick the following prohibition as chosen on the application:

(a) Deliberately capture or kill any specimen of the relevant species in the wild	☐
(b) Deliberately disturb these species particularly during the period of breeding, rearing, hibernation and migration	☐
(c) Deliberately take or destroy eggs of the relevant species in the wild	☐
(d) Damage or destroy a breeding or resting place of such an animal, or	☒
(e) Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of the relevant species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.	☐
(a) Deliberately pick, collect, cut, uproot or destroy any specimen of these species in the wild, or	☐
(b) Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 13(1)(b) of the Habitats Directive.	☐

Test 1: A reason(s) listed in Regulation 54 (a)-(e) applies to the proposed activity

i. Tick which reason <u>the applicant claims</u> should be applied to the derogation

(a) In the interests of protecting wild flora and fauna and conserving natural habitats,	☐
(b) To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property	☐
(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment,	☒
(d) For the purpose of research and education, of re-populating and re-introducing these species and for the breeding operations necessary for these purposes, including artificial propagation of plants, or	☐
(e) To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule.	☐

ii. Test 1: Conclusion

Please tick the following where it applies:

There is a valid reason(s) listed in Regulation 54 (a)-(e) which applies to the proposed activity:	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion:

The application form and associated documentation provided by the applicant has been reviewed in full. The application relies on regulation 54(2)(c) '*in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment*' as the reason chosen for a derogation that they believe applies to the proposed activity.

In the detail provided, it is clear that the applicants are relying on the imperative reasons of overriding public interest, including those of a social or economic nature aspect of Reason C. As outlined on page two of the accompanying report titled "Bat Survey Countess Road", a derogation is required for proposed works at Countess Road, Dromhale (townlands), Killarney, Co. Kerry.

The objective of the works is the construction of a large-scale residential development, a crèche and associated development and infrastructure works. The report further outlines on page 20 that the proposed development located within walking distance to Killarney Town centre will support local housing needs and provide employment while being "adjacent to social and community infrastructure. The development will allocate 20% of the stock to social housing, which will assist with Kerry County Councils housing waiting list and the crèche will also providing a social and economic benefit for the area.

The applicant has provided evidence as to the nature and scale of the public interest including those of a social or economic nature for the proposed works and the proposed activity is necessary to achieve these overall objectives. Based on the above this application has passed Test 1 and can now proceed to Test 2

Test 2: Absence of a satisfactory alternative

Please tick the following where it applies and add a comment below to support the recommendation:

The applicant has provided satisfactory evidence that alternative solutions have been considered and have given reasons why the proposed approach is the only satisfactory alternative:	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion (If you wish to add additional conditions please complete pg. 6):

The documentation submitted by the applicant has been reviewed, including the evidence for alternative solutions.
The purpose of the derogation is to allow the following activity to take place: The demolition of two semi-detached dwellings currently supporting a minor soprano pipistrelle roost is required to facilitate the construction of a residential development.

The specific situation that needs to be addressed is that the proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a residential development supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance.

The alternative solutions suggested by the applicant are:
"Do-Nothing" scenario [NPWS regional staff accept the reasoning outlined by the applicant in their report as to why this is not a satisfactory alternative, do-nothing would result in loss of much needed residential properties. The dwellings themselves are of limited use by bats, alternative roost are present in the wider environment considering the presence of Killarney National Park roughly 700m from the dwellings.

"Alternative Location" scenario [NPWS regional staff accept the reasoning outlined by the applicant in their report as the location of the works is in a location zoned for residential development, situated in an urban setting. An alternative location is not feasible.]

"Alternative Design" scenario [NPWS regional staff accept the reasoning outlined by the application in their report as, the demolition of the dwellings, is required for the provision of residential developments. An alternative design is not feasible

Upon completion of your assessment, please return this Recommendation to WLU to continue the application process.

Test 3: Impact of a derogation on conservation status of the species

Please tick the following where it applies and add a comment below to support the recommendation:

The derogation would NOT be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range.	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion. (If you wish to add additional conditions please complete pg. 6)

A small soprano pipistrelle roost is present within one of the buildings on site. This species is widespread and abundant in Ireland and is in favourable conservation status. This species is also adaptable and quick to occupy new roosting features.

Suitable and proportionate mitigation has been proposed, including the erection of bat boxes and sensitive lighting.

Providing these mitigation measures are implemented, I am satisfied that the works will not be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range.

If the answer above is Yes then the derogation may be granted, providing Tests 1 and 2 have also been met.

Upon completion of your assessment, please return this Recommendation to WLU to continue the application process.

Derogation decision

The application for a derogation under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477 of 2011), as amended, has been assessed by officials in the Department and the following decision has been made:

Tick box where appropriate:

There is no satisfactory alternative	☒
and the derogation is not detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range.	☒

Therefore, a derogation may be granted to the applicant, since it is—

(a) in the interests of protecting wild fauna and flora and conserving natural habitats	☐
(b) to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property,	☐
(c) in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment,	☒
(d) for the purpose of research and education, of repopulating and re-introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants, or	☐
(e) to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule.	☐
OR **This application has been refused as one or more of the conditions set out above have not been met**	☐

The following conditions should be attached to the derogation:

1.
2.
3.
4.

[add additional conditions where required]

Signed: 

Date: April 2, 2026

Position: Ecologist

APPENDIX II

Invasive Species Management Plan

By

Wetland Surveys Ireland Ltd

November 2025

RESIDENTIAL DEVELOPMENT COUNTESS ROAD

Invasive Species Management Plan

Wetland Surveys Ireland Limited
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Document Control Sheet

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Revision	Status	Author	Review	Approved	Date
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Wetland Surveys Ireland Ltd					

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1 INTRODUCTION

This invasive species management plan was prepared by Wetland Surveys Ireland Ltd. on behalf of Dipharma Unlimited Company for a proposed residential development at Drumhale, Countess Road, Killarney.

Ecological surveys undertaken at the site of the proposed development identified the presence of four non-native invasive plant species as follows:

- Cherry Laurel (*Prunus laurocerasus*) - high impact risk species. Single specimen present along a hedgerow at southern extent of the site.
- Butterfly bush (*Buddleja davidii*) – medium. impact risk species. Recorded at two locations within the site.
- Winter Heliotrope (*Petasites fragrans*) – low impact risk species. Two infestations recorded, one on the farm laneway entering the site.
- Montbretia (*Crocosmia x crocosmiiflora*) - low impact risk species. Small infestation restricted to one location within the site, along an earth bank in the southern part of the site.

The following is presented in this report:

- The current distribution and extent of non-native invasive plant species occurring within the site.
- The proposed management of existing invasive plant species at the site during construction to control the occurrence and spread of these species within and surrounding the site.
- Proposed measures aimed at preventing the further spread of invasive plant species within or outside of the site during the construction and operation phases of the proposed development.

2 LEGISLATIVE CONTEXT

In Ireland, the management and control of invasive plant species are regulated by various legislation and policies. The key legislation governing invasive plant species includes:

1. Wildlife (Amendment) Act 2000: This act provides legal protection to native flora and fauna, including the prohibition of the introduction, sale, and planting of certain invasive plant species.
2. European Communities (Birds and Natural Habitats) Regulations 2011: These regulations implement the EU Birds Directive and Habitats Directive in Ireland. They aim to protect and conserve habitats and species of European importance, including native flora, by preventing the introduction and spread of invasive species. Under these regulations, it is an offence to release or allow to disperse or escape, to breed, propagate, import, transport, sell or advertise species listed on the Third Schedule of the Regulations without a licence. Of the Regulations, the two regulations that deal specifically with the Third Schedule are:
   - Regulation 49: Prohibition of introduction and dispersal of certain species; and,
   - Regulation 50: Prohibition on dealing in and keeping certain species.

   Hence it is necessary to highlight that the following is prohibited:

- Dumping invasive species cuttings in the countryside;
- Planting or otherwise causing to grow in the wild (hence the landowner should be careful not to cause further spread);
- Disposing of invasive species at a landfill site without first informing the landfill site that the waste contains invasive species material (this action requires an appropriate license); and,
- Moving soil in the Republic of Ireland which contains specific invasive species unless under a license from National Parks and Wildlife Service (NPWS).

3. European Communities (Control of Invasive Alien Species) Regulations 2015: These regulations implement the EU Regulation on the prevention and management of the introduction and spread of invasive alien species. They provide a framework for the prevention, early detection, and rapid response to invasive species, including plants, in Ireland.
4. National Biodiversity Action Plan (2023-2030): The National Biodiversity Action Plan sets out Ireland's strategic approach to the conservation and sustainable use of biodiversity. It includes actions and measures to address the threat posed by invasive species, promoting strengthened biosecurity, with explicit focus on Prevention, Early Detection, Rapid Response, and Management.

3 DISTRIBUTION OF INVASIVE SPECIES

Four non-native species invasive species; Cherry Laurel (*Prunus laurocerasus*), Butterfly bush (*Buddleja davidii*), Winter Heliotrope (*Petasites fragrans*), and Montbretia (*Crocosmia x crocosmiiflora*) were recorded at the site during a multidisciplinary ecological walkover survey carried out during February and November 2025. A map showing the occurrence of the species within the site is presented in Figure 1 below. Background information on the four species is provided in the following paragraphs together with proposed treatment approaches with the aim of eradicating the species from the site and preventing their further spread.



Figure 1: Location of non-native invasive plant species within the site.

3.1 Cherry Laurel

Cherry Laurel (*Prunus laurocerasus*) is located at the southern edge of the site, where it occurs as an mature individual specimen (see Figure 1). The plant is native to regions of southeastern Europe and southwestern Asia. This non-native species was introduced to Ireland in the 17th century as a robust ornamental shrub for gardens and estates, and remains popular for hedging and screening. Cherry Laurel exhibits a vigorous, dense growth pattern, casting deep shade that suppresses ground flora and prevents the regeneration of native tree saplings. Its presence significantly reduces biodiversity and can alter soil conditions through a heavy leaf-fall that decomposes slowly. This species spreads effectively by seeds, which are produced in large quantities and dispersed widely by birds. It is now commonly found on a range of well-drained to moist soils in Ireland and is particularly invasive in ecologically sensitive woodland habitats (Maguire et al. 2008). This species is classified by the National Biodiversity Data Centre as a medium-impact invasive species. Cherry Laurel can be controlled using physical methods (cutting and stump removal), chemical treatment of cut stumps, or a combination of both (Maguire et al. 2008).

3.1.1 Proposed Treatment

The species is currently restricted in its distribution within the site to a few isolated locations on the western and northern boundaries (see Figure 1 above). Two eradication methods will be employed depending on the maturity and situation of the individual plants as follows:

Cutting to ground level and direct herbicide application of the remaining stump using Glyphosphate immediately after cutting taking place. A vegetable dye should be added to the herbicide to enable treated stumps to be clearly identified. This method is recommended along the southern boundary where the plant is mature and occurs within a treeline feature that will be retained as part of the development. Monitoring and follow up treatment likely to be required for 2-3 years, potential for regrowth from the treated stump. The cut material will be stored on site and subsequently mulched, use of mulched material should be away from sensitive wooded habitats.

Physical Control

Method	Season	Follow-up
Cutting	**Anytime of the year.**	Very labour intensive and does not kill plant. Regular follow-up to deal with re-growth required.
Uprooting	**Anytime of the year.**	Small plants can be pulled by hand. Large stems cut and roots grubbed out by winch or machine.
Mulch matting	**Anytime of the year.**	Labour intensive. Requires maintenance and follow up treatment.
Bud-rubbing	**Spring to autumn.**	Labour intensive. Requires regular follow-up.

Chemical Control

Chemical	Season	Follow-up
Glyphosate	During active growth in **late spring or summer (June to September).** May require follow-up for 2–3 years.	Foliar spray, wiper applicator or spot treatment. Also as stem injection or cut-stump.
Triclopyr	During active growth in **late spring or summer (June to September).** May require follow-up for 2–3 years.	As for glyphosate. Do not apply if very hot or during drought.

Figure 2: Recommended control methods for Rhododendron reproduced from NRA (2010). The treatment for Cherry Laurel is comparable to that of Rhododendron as outlined by Maguire et al (2008).

3.2 Butterfly Bush

Butterfly bush (*Buddleja davidii*) was recorded in two locations on the site (see Figure 1). Butterfly bush is a deciduous shrub that typically grows 2-3 m tall, with long, arching branches and lance-shaped leaves. Its flowers are fragrant and come in various colors, attracting butterflies and other pollinators. The plant colonises bare ground very rapidly by wind blown seeds and can quickly form mono-typic stands.

3.2.1 Proposed Treatment

The occurrence of the species is currently sparse and therefore physical removal is the preferred option although herbicide treatment may also be employed. More mature specimens will be grubbed out (see Figure 3). Material will be buried on site in such a manner that cut material will not regrow. The site should be cleared of the species early in growing season late spring / early summer (prior to June) to maximise herbicide absorption and minimise the risk of regrowth while also ensuring that the plants have not set seed. Following construction, the site will be reinstated and all soft landscaping will be planted which will prevent the site from being infested. After eradication efforts, regular monitoring is crucial to identify any regrowth or new infestations. Any re-emerging butterfly bush plants will be identified and treated to prevent further spread.

Physical Control

Method	Season	Follow-up
Grubbing	**Any time of year when the soil is suitably dry.** Small plants can be pulled by hand. Large stems cut and roots grubbed out.	Regular follow-up to deal with re-growth or seedlings which can result from exposure of soil.

Chemical Control

Chemical	Season	Follow-up
Systemic weed-killer mix (Starr et al 2003)	During active growth in **late spring or summer.**	Brushed on to cut back stumps.
Triclopyr or Glyphosate	During active growth in **summer** of limited infestations of young plants	Foliar spray. Requires follow-up at 6 monthly intervals.

Figure 3: Recommended control methods for Butterfly Bush reproduced from NRA (2010).

3.3 Winter Heliotrope

Winter Heliotrope (*Petasites fragrans*) was recorded from a two locations within the site, along field margins (see Figure 1). The species is native to Italy, Sardinia, and North Africa. This plant species was originally planted in Ireland for use as ground cover or a winter food plant for bees. Winter Heliotrope spreads vegetatively in Ireland and is now commonly found along roadsides where it can form dense stands (NRA 2010). This non-native species is also found in hedgerows, along streams, on waste ground, or at the edges of woodland. Winter Heliotrope poses a threat to native biodiversity by out competing native species. This species is classified by Biodiversity Ireland as a low risk non-native species. Winter Heliotrope can be treated using physical or chemical control methods (NRA 2010). Winter heliotrope has a rhizomatous root system which enables it to spread vegetatively.

3.3.1 Proposed Treatment

The species is currently restricted in its distribution within the site two locations across the site (see Figure 1). It is proposed to treat it by a combination of physical removal (see Figure 4) and subsequent follow up chemical treatment using herbicide, where deemed necessary. The plant will be excavated and care will be taken to include all root material to prevent subsequent spread from Rhizomes. Excavated material will be subject to on-site burial to a depth of at least 2 metres to prevent subsequent spread.

Physical Control

Method	Season	Follow-up
Excavation	Any time of year when the soil is suitably dry.	Regular follow-up to deal with re-sprouting.

Chemical Control

Chemical	Season	Follow-up
Glyphosate	After flowering in February to March, or in mid to late summer.	Foliar spray, wiper applicator or spot treatment

Figure 4: Recommended control methods for Winter Heliotrope reproduced from NRA (2010).

3.4 Montbretia

Montbretia (*Crocosmia x crocosmiiflora*) is a perennial plant species that can become invasive and problematic at construction sites. Its ability to spread rapidly and outcompete native vegetation poses a threat to the ecology. Montbretia is characterized by its sword-shaped leaves, vibrant orange flowers, and underground corms. The corms form linear chains with the youngest at the top and the oldest buried deepest in the soil. The chains are fragile and corms readily break off giving the plant a ready means of spread.

3.4.1 Proposed Treatment

This plant is not considered to be problematic within the site. A minor infestation was recorded along the western boundary (on an earthen embankment) of the southern land parcel (see Figure 1). To prevent the species from further spread and it is proposed to undertake physical treatment by excavation (see Figure 5). The material will be buried on site at a depth of more than 2m. Due to the potential for reinfestation from corms, regular follow-up will be required over a period of at least 2 years to deal with any regrowth.

Physical Control

Method	Season	Follow-up
Excavation	**Any time of year** when the soil is suitably dry.	Regular follow-up to deal with missed corms re-sprouting.

Chemical Control

Chemical	Season	Follow-up
Glyphosate	During active growth in **late spring** or **summer.**	Foliar spray, wiper applicator or spot treatment.
Metsulfuron	During active growth in **late spring** or **summer.**	Foliar spray, wiper applicator or spot treatment.

Figure 5: Recommended control methods for Montbretia reproduced from NRA (2010).

4 MANAGEMENT OF INVASIVE SPECIES

4.1 Pre-construction Surveys

A pre-construction invasive species survey will be carried out prior to any construction activities (including enabling works) by a suitably qualified specialist to confirm the presence and extent of any invasive species within the proposed development site prior to the development and implementation of the final ISMP which will form part of the Construction and Environmental Management Plan (CEMP).

4.2 Measures to Avoid Spread of Invasive Species during construction

The species outlined in Section 3 above are particularly effective at colonising disturbed ground (e.g. construction sites). Some species spread by the re-growth of cut fragments or root material, they can readily re-grow in new areas if the existing stands are disturbed e.g. by machinery, people, livestock etc. It is preferable to eradicate invasive species prior to the onset of construction of any proposed development in close proximity and the treatment methods outlined above considered the means of spread of the relevant species.

The most common ways that these species can be spread is:

- Site and vegetation clearance, mowing, hedge-cutting or other landscaping activities;
- Spread of plant fragments during the movement or transport of soil;
- Spread of plant fragments through the local surface water and drainage network;
- Contamination of vehicles or equipment with plant fragments which are then transported to other areas; and;
- Importation of soil from off-site sources contaminated with invasive species plant material.

In the event that eradication treatments have not been achieved before construction begins then the affected areas must be fenced off prior to and during construction in order to avoid spreading seeds or plant fragments around or off the construction site. Earthworks or machinery movement must be avoided in these areas until the relevant species have been eradicated. If soil is imported to the site for landscaping, infilling or embankments, the contractor must gain documentation from suppliers that the material is free from invasive species.

4.3 Disposal of Material

During the course of eradication or earth works, should any invasive species plant material be encountered it is important that its disposal does not lead to a risk of further spread. The movement of plant material of any plants listed on the Third Schedule (none of those species currently recorded at the site are on this list) requires a license from the National Parks and Wildlife Service (NPWS) under Section 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). Invasive species (particularly roots, flower heads or seeds) must be disposed of at licensed waste facilities or composting sites, appropriately buried, or incinerated having regard to relevant legislation, for example; Section 32 of the Waste Management Act, 1996 to 2008; Section 4 of the Air Pollution Act, 1987; relevant local authority byelaws and any other relevant legislation. All disposals must be

carried out in accordance with the relevant Waste Management legislation (as per guidance from NRA 2010). It should be noted that some invasive species plant material or soil containing residual herbicides may be classified as either 'hazardous waste' or 'non-hazardous waste' under the terms of the Waste Management Acts, and both categories may require special disposal procedures or permissions. Advice should be sought from a suitably qualified waste expert regarding the classification of waste and the suitability of different disposal measures.

4.4 use of herbicides

Some of the treatment options outlined in Section 3 above will require the use of herbicides, which can pose a risk to human health, to non-target plants or to wildlife. In order to ensure the safe use and application of herbicides, a qualified and experienced contractor, and qualified Herbicide Advisor, must be employed to carry out all work.

5 MONITORING AND FOLLOW-UP

Monitoring of any regrowth following eradication programmes is necessary. Annual monitoring surveys of any regrowth or spread within the site should be undertaken for a period of three years. Timing of such surveys may vary depending on the species in question. The outcome of this annual monitoring will inform whether further treatment or other measures are necessary.

6 REFERENCES

European Union (2011) European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

National Roads Authority (2010) The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads.

Environment Agency (2010). Managing Invasive Non-native Plants in or near Freshwater

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National Parks and Wildlife Service (2023) Ireland's 4th National Biodiversity Action Plan 2023-2030. Government of Ireland, Dublin.