*August '21*

## *Title*

*ECOLOGICAL IMPACT ASSESSMENT REPORT*

## *Development Description*

*" Housing development consisting of 39 residential units, ranging for 1 to 3 storeys high and modification of existing stone vehicular bridge over Pausdeen stream to include footpath and associated and ancillary services and site works"*

## *Location*

*Ardclough Road, Celbridge, Co. Kildare*

## *Applicants*

*Kildare County Council*

## *Prepared by:*

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# 1 INTRODUCTION

This Ecological Impact Assessment Report has been prepared by Megan Lee (B.Sc (Hons), M.Sc(Hons)) in partnership with James O'Donnell, Planning Consultant (BA, MRUP, Dip APM) on behalf of Kildare County Council who are applying for planning permission for a "*Housing development consisting of 39 residential units, ranging for 1 to 3 storeys high and modification of existing stone vehicular bridge over Pausdeen stream to include footpath and associated and ancillary services and site works"* at Ardclough Road, Celbridge, Co. Kildare (Grid Ref: E: 696555.53, N: 731568.32). The assessment is based on a field survey, bat survey and a desk survey conducted in July and August 2021.

The proposed site has an area of 1.4 ha. The proposed development is "*consisting of 39 residential units, ranging for 1 to 3 storeys high and modification of existing stone vehicular bridge over Pausdeen stream to include footpath and associated and ancillary services and site works*". The surrounding area is a residential area in Ardclough Road, Celbridge, Co. Kildare, 1.48km from Celbridge Town Centre. Access to the site will be via the public roadway adjacent to the site. A site layout of the proposed development is depicted in Figure 1.1. See Figure 1.2 for an aerial map of the proposed site.

This report follows a standard approach based upon the description of the current baseline conditions within the proposed site. A survey of the likely habitats and species present in the proposed site is provided, in addition to the identification of the potential ecological impacts, resulting from the construction and operational phases of the development. An assessment of the likely significance of the identified impacts on valued ecological receptors (VERs), within the site and in close proximity to the site, was also provided. Appropriate remedial mitigation measures are provided where significant negative impacts were identified, to prevent, reduce or counteract the impact.

## 1.1 LEGISLATIVE BACKGROUND

### 1.1.1 Legislative Context

The Irish Wildlife Act 1976 and the Wildlife (Amended) Act 2000 allows for the protection of most wild animals and birds. Licences are required for the interference with protected species. The act makes it illegal to interfere with or damage the resting or breeding places of any protected wild animal.

The Flora Protection Order 1999 provides protection in Ireland to several rare plant species from being purposefully cut, picked, uprooted or damaged. It is also illegal under this order to interfere, alter or damage the relevant habitats.

There are three main types of designation for nature conservation in Ireland: Special Areas of Conservation (SACs), Special Protection Areas (SPA) and Natural Heritage Areas (NHAs). NHAs are designated under the Irish Wildlife Act 1976 (amended 2000). A NHA is protected from damage for the presence of habitats and protected plant and animal species. As NHA are not part of the Natura 2000 network, the Appropriate Assessment process is not applicable to these sites.

SACs and SPAs are designated under European legislation, the EU Habitats Directive 92/43/EEC (transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997 as amended in 1998 and 2005) and the EU Birds Directive 79/409/EEC, respectively. These European designated sites (SACs and SPAs) are also known as Natura 2000 sites. This means that they are part of the Natura 2000 Network, a network of important ecological sites across the European Union. Certain habitats, within the EU Habitats Directive are classed as 'priority' habitats and are afforded greater protection. For example, Irish priority habitats include turloughs, heaths, blanket bogs and raised bogs. Waterbodies are also afforded protection and are designated as SACs for the presence of species such as the Harbour seal, Salmon and Freshwater Pearl Mussel.

The Water Framework Directive (WFD) (2000/60/EC) was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722, 2003). The WFD aims to achieve good status in all waterbodies. It forms a framework for community involvement in the topic of water policy. The WFD updates existing legislation and provides for the management of River Basin Districts (RBDs). RBDs are administrative areas that consist of river basins (catchments) and cross-border basins assigned to an International RBD. RBD allow for a co-ordinated approach to water management. Currently, Ireland is in the 2nd Cycle of the WFD (2015-2021), where previous RBDs form one national RBD. The 2nd Cycle allows for greater community involvement in water management at a local level.

## 1.2 METHODOLOGY

The flora and habitats of the site were assessed using a desk study of information pertaining to the proposed and surrounding areas, ecological records and information pertaining to designations and legislation.

A field study was completed by a qualified ecologist from Planning Consultancy Services, Megan Lee (BSc (Hons), MSc (Hons)) on 9th July 2021 and by Megan Lee (Bsc. Hons) and Colette Casey (Bsc. Hons) on 30th August . 'A Guide to Habitats in Ireland' (Fossitt, 2000) was used to identify and assess habitats in and adjacent to the site, based on current vegetation composition and habitat management. The site was traversed and identified habitats were classified and sketched into field maps of the site.

The capability of the site to support certain species (particularly those of the conservation importance that may have been recorded during the field survey due their seasonal absence or cryptic/nocturnal habits) were assessed.

All habitats and species of interest were readily identifiable based on the field surveys in July & August 2021. From the information collected during the field survey, the published information on the site and its environs, it is considered that a comprehensive ecological assessment was achieved.


**Fig 1.1:** Site layout prepared by Vincent Hannon Architects.


**Fig 1.2:** Map of proposed development. Red line indicates proposed site location.

# 2 ESTABLISHING AN ECOLOGICAL BASELINE

## 2.1 DESK STUDY

A desk study was undertaken to review information that was available with regards to the flora and fauna of the area, including the application site. The following sections pertain to NPWS site synopses for designated conservations sites, birds and plant atlases and specialist research publications. These published sources were consulted for the completion of the Ecological Impact Assessment.

### 2.1.1 Designated Sites

All European and National designated sites within a 15km radius of proposed site were identified in relation to this development. Designated sites located further than 15km were also identified, however no pathways for impacts on these sites were identified due to the nature and scale of the development, in addition to the lack of hydrological connectivity. Table 2.1 indicates the proximity of designated sites to the proposed development. The locations of the Natura 2000 sites in relation to the proposed site can be seen in Figure 2.1. The locations of National Heritage Areas and proposed National Heritage Areas in relation to the proposed site can be seen in Figure 2.2. The connectivity between the application and the Rye Water Valley/Carton SAC,the Rye Water Valley/Carton pNHA and the Liffey Valley pNHA via the adjacent flood risk area and via the River Liffey can be seen in Figure 2.3.

**Table 2.1** Designated sites within the 15km of the proposed development and proximity of these sites to the proposed development. Sites requiring further consideration of impacts are in bold.

| Designated Site and Site Code | Distance from Proposed Site (km) |
|---|---|
| SACs | |
| **Rye Water Vallley/Carton SAC (Site code: 001398)** | **5.59km. Connected via the flood risk area adjacent to site and the river Liffey** |
| Glenasmole Valley SAC (Site code: 001209) | 14.08km |
| Red Bog, Kildare SAC (Site code: 000397) | 14.23km |
| Ballynafagh Bog SAC (Site code: 000391) | 14.74km |
| SPAs | |
| No SPAs within 15km of application | |
| NHAs | |

| | |
|---|---|
| No NHAs within 15km of application | |
| pNHAs | |
| **Rye Water Valley/Carton pNHA (Site code: 001398)** | **5.69km. Connected via the flood risk area adjacent to site and the river Liffey.** |
| **Liffey Valley pNHA (Site code:000128)** | **6.14km. Connected via the flood risk area adjacent to site and the river Liffey** |
| Grand Canal pNHA (Site code: 002104) | 1.96km |
| Royal Canal pNHA (Site code: 002103) | 6.84km |
| Kilteel Wood pNHA (Site code: 001394) | 9.83km |
| Slade of Saggart and Crooksling Glen pNHA (Site code: 000211) | 10.2km |
| Lugmore Glen pNHA(Site code: 001212) | 11.3km |
| Donadea Wood pNHA(Site code: 001391) | 12.1km |
| Red Bog Kildare pNHA (Site code: 000387) | 14km |
| Liffey at Osberstownn pNHA (Site code: 001395) | 14.4km |
| Dodder Valley pNHA (Site code: 000991) | 14.4km |
| Glenasmole Valley pNHA (Site code: 00120) | 14.6km |

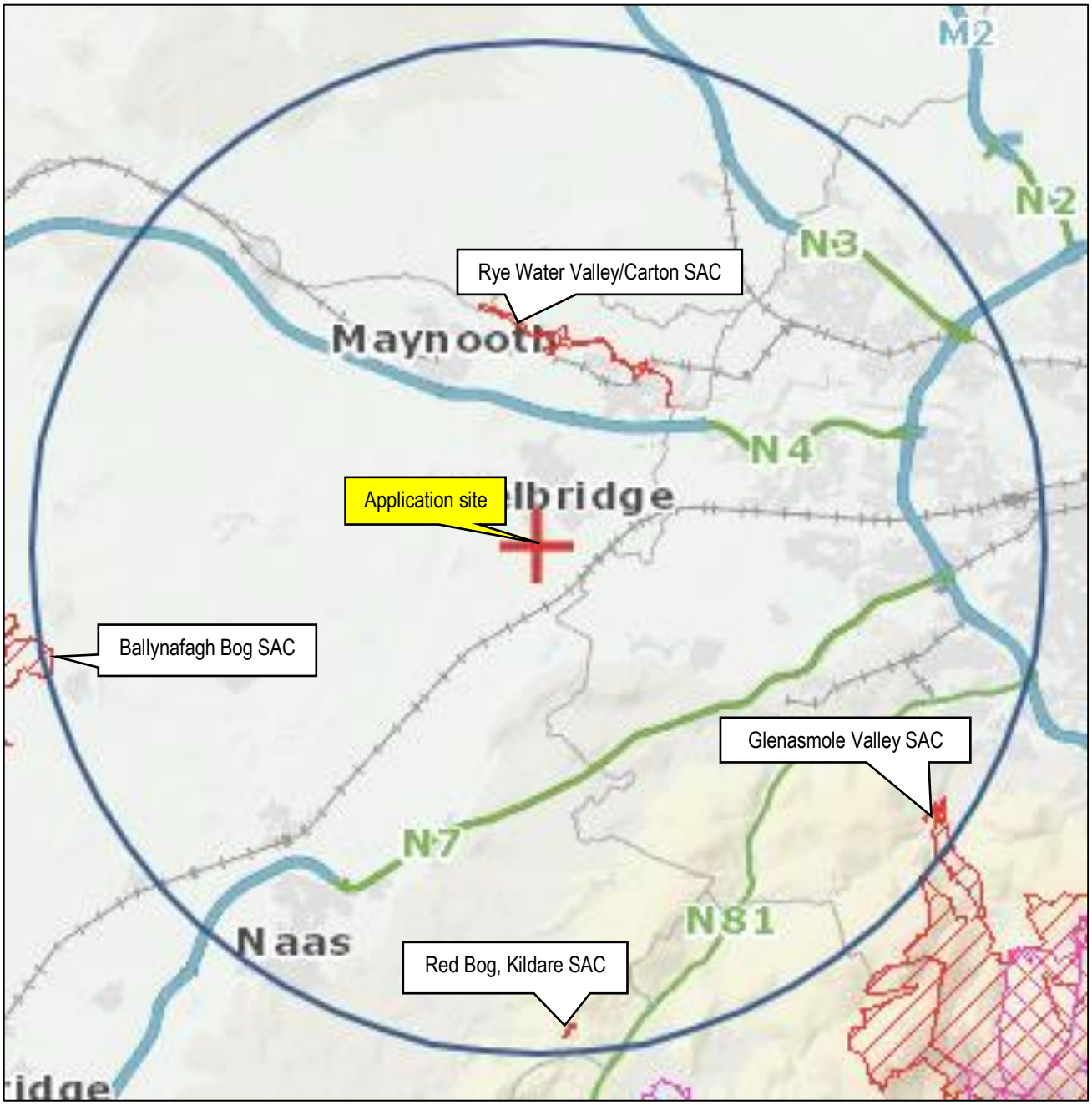


**Fig 2.1:** Location of the proposed site (red cross) in relation to the Natura 2000 sites.

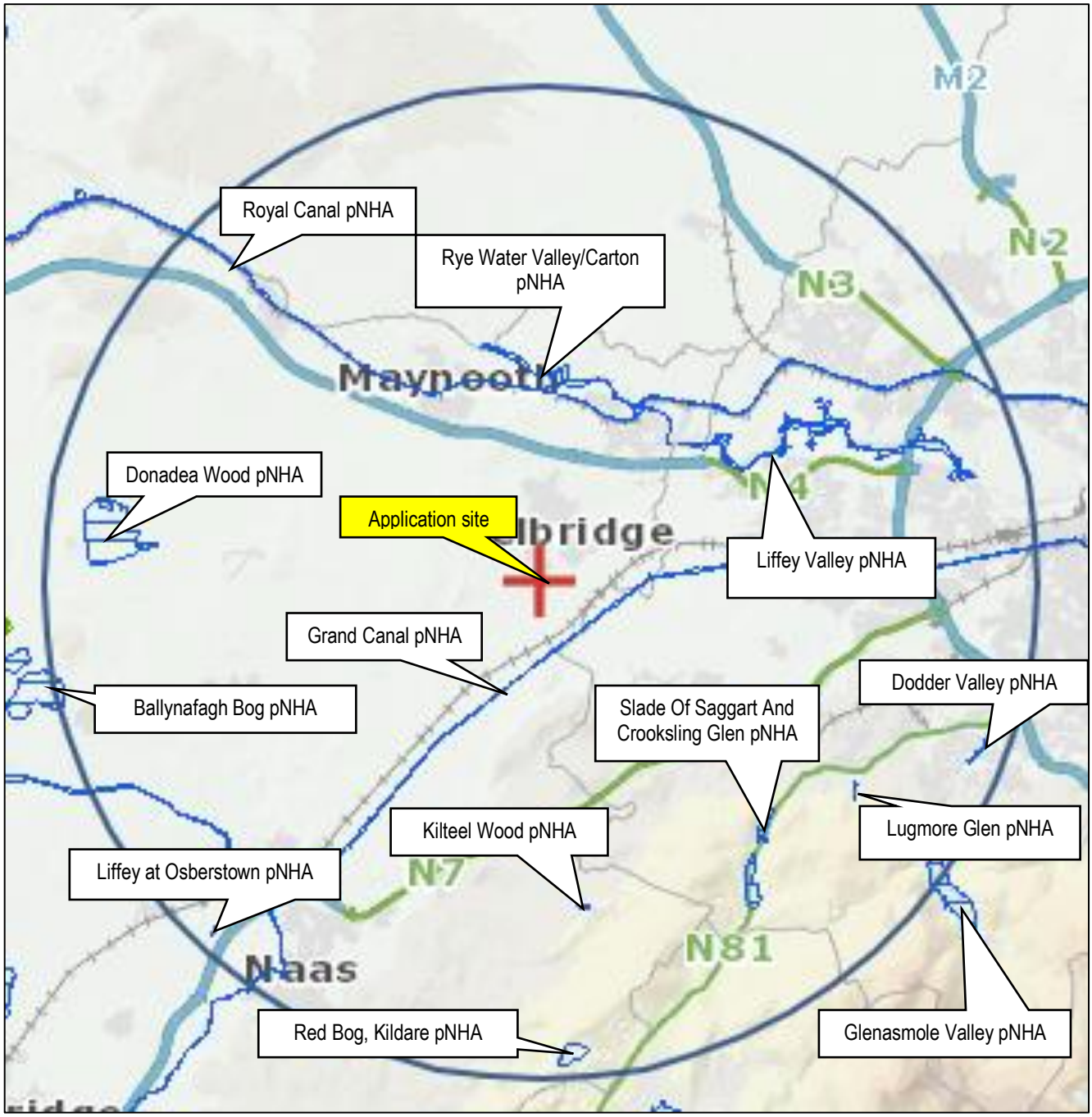


**Fig 2.2:** Location of the proposed site (red cross) in relation to Heritage Areas and proposed National Heritage Area.

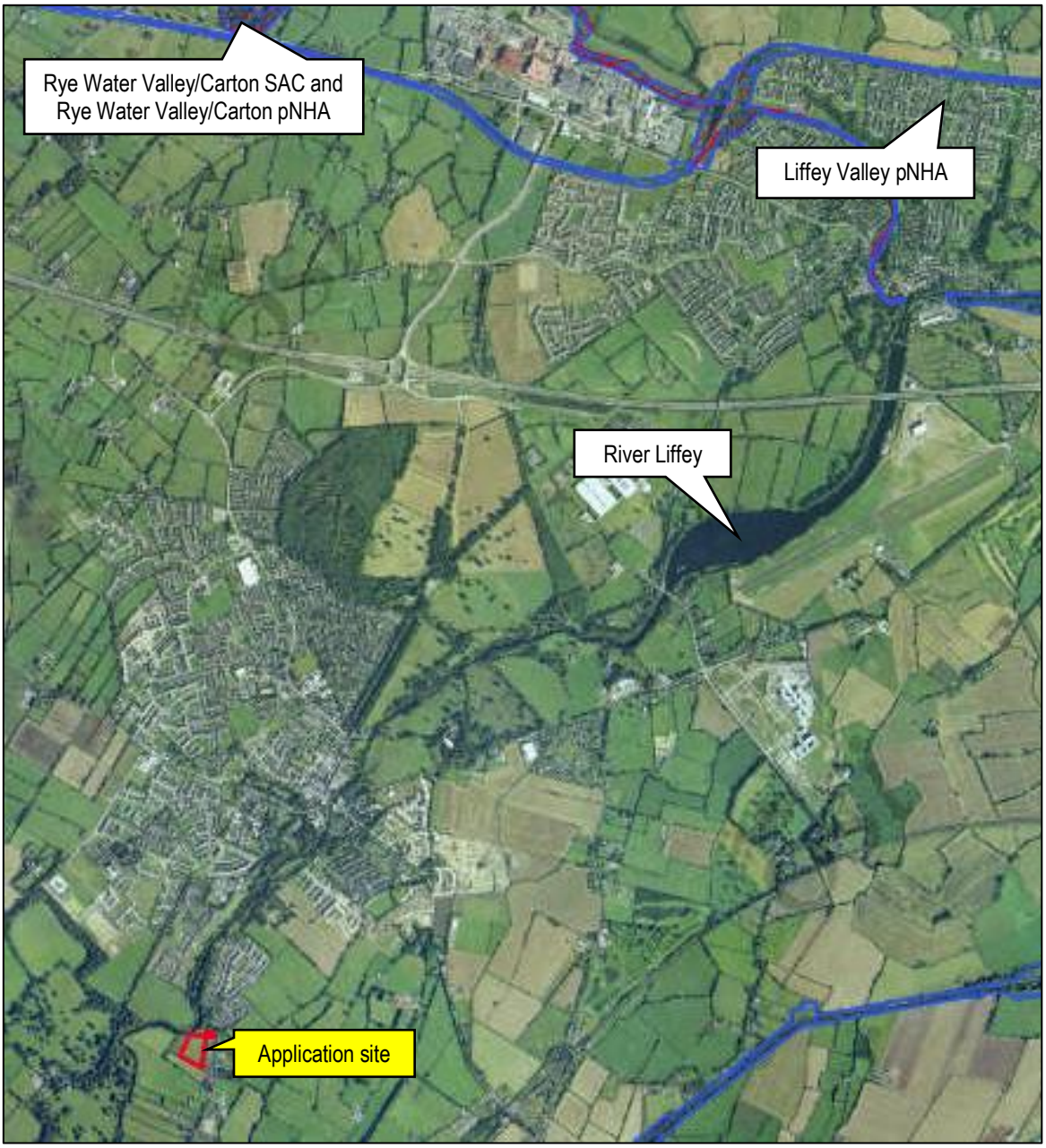


**Fig 2.3:** Connectivity between application site (red outline) and the Rye Water Valley/Carton SAC, the Rye Water Valley/Carton pNHA and the Liffey Valley pNHA.

### 2.1.2 Flora

**Species listed in Annex II of the Habitat's Directive (CEC, 1992)**

No vascular plant species listed in the Annex II of the Habitat's Directive in the site in the Atlas of British and Irish flora.

**Species listed in the Flora (Protection) Order:**

No plant species listed in the Flora (Protection) Order were present in the site. Meadow barley (*Hordeum secalinum*) was recorded in the neighboring Grid:00030. Hairy St John's wort (*Hypericum hirsutum*) was recorded in the neighboring Grid: 0019358.

**Species listed in 'The Irish Red Data Book.10. Vascular Plants' (Jackson, *et al*, 2016)**

No plant species listed in The Irish Red Data Book.10. Vascular Plants' were present in the site. Yarrow (*Achillea millefolium*) was recorded in the neighboring Grid: N981338. Agrimony (*Agrimonia eupatoria*) was recorded in the neighboring Grid: N983339. Hoary Ragwort (*Senecio erucifolius*), Hart's tongue (*Asplenium scolopendrium*), Quaking-grass (*Briza media*), Cowslip (*Primula veris*), Wall rue (*Asplenium ruta-muraria*) and Bulbous buttercup (*Ranunculus bulbosus*) were recorded in the neighboring Grid: 00532.

### 2.1.3 Fauna

**Bats**

A search of the NBDC database was carried out to examine the suitability of the proposed site for bat species found in Ireland. The Bat suitability index from the NBDC ranges from 0 to 100, with 0 showing least favourable conditions and 100 most favourable for bats. The results of the search are shown in Table 3.1.

***Table 3.1 NBDC bat suitability index for Celbridge, Co. Kildare***

| Species Name | Scientific Name | Conservation Status | Bat Suitability Index |
|---|---|---|---|
| Brown long-eared bat | *Plecotus auritus* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 46 |
| Lesser Noctule | *Nyctalus leisleri* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 47 |

| | | | |
|---|---|---|---|
| Lesser horseshoe bat | *Rhinolophus hipposideros* | EU Habitats Directive: Annex II & IV; Wildlife Acts 1976-2017 | 0 |
| Common pipistrelle | *Pipistrellus pipistrellus* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 51 |
| Soprano pipistrelle | *Pipistrellus pygmaeus* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 41 |
| Natterer's bat | *Myotis nattereri* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 43 |
| Nathusius' pipistrelle | *Pipistrellus nathusii* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 13 |
| Daubenton's bat | *Myotis daubetonii* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 33 |
| Whiskered bat | *Myotis mystacinus* | EU Habitats Directive: Annex IV; Wildlife Acts 1976-2017 | 23 |

From the table above the area would be suitability for bats, the species that would be predicted to frequent the area would be Lesser Noctule. This site also shows a suitability index of 0 for Lesser horseshoe bat

**Other mammals**

During the site survey carried out on the 30th of August, no mammals were identified using the site, evidence of cattle on the site was seen.

**Birds**

The most recent bird atlas project took place over four winters and four summers, from November 2007 to July 2011. This data has been published in '*Bird Atlas 2007-2011 - The Breeding and Wintering Birds of Britain and Ireland*'. Distribution map data were also accessed from the Birdwatch Ireland Map store: hiip://blx1.bto.org/mapstore/StoreServlet.

Of the species recorded in the above dataset from the application site hectad (N93) seventy-six are protected under the EU Birds Directive or mentioned on the Birds of Conservation Concern in Ireland (BoCCI) Red List (See Table 2.4). Birds listed under Annex 1 of the EU Birds Directive are offered special legislative protection. Those listed on the BoCCI Red List meet one or more of the following criteria:

- Breeding population or range has declined by more than 50% in the last 25 years.
- Breeding population has undergone significant declines since 1900.
- Species is of global conservation concern.

It is important to note that breeding was not proven in all cases where birds were recorded during the breeding atlas surveys, and also that the absence of a species record does not necessarily indicate the absence of the species from the grid location.

## 2.2 PLANNING SEARCH

A search of Kildare County Council planning files was carried out to establish the nature and scale of developments within 300 meters of the application site and granted within the last 5 years are listed below:.

**Pl. Ref no. 161271** - Extension of Duration of Planning Ref. 11/213 - for a two storey dormer style dwelling house and detached garage with all associated site works including a new vehicular entrance.

**Pl. Ref. no. 161338** - Alterations to the existing kitchen roof, a new sliding door to existing rear elevation and internal alterations to the existing house to provide for the construction of a new two storey side extension, including a new kitchen, utility, office, main bedroom, dressing room and ensuite, of 88.2sqm and all associated site works.

**Pl. Ref. no. 18877** - A single storey extension to the side of existing dwelling comprising of family room, WC and storage room.

**Pl. Ref. no. 21144** - Demolition of existing sub-standard lean-to extension to rear of house and construction of new single storey sunroom and storeroom extension with internal alterations to house and for all ancillary site and drainage works. Also, for installation of new external insulation to existing house with selected smooth plaster finish.

**Pl. Ref. no. 21621** - Extension of Duration of planning Ref. No. 16/1338 - alterations to the existing kitchen roof, a new sliding door to existing rear elevation and internal alterations to the existing house to provide for the construction of a new two storey side extension, including a new kitchen, utility, office, main bedroom, dressing room and ensuite, of 88.2sqm and all associated site works.

**Pl. Ref. no. 18676** - Sought for side and rear single storey extensions to an existing two storey semi detached dwelling, associated alterations to side and rear elevations and all associated site works.

**Pl. Ref. no. 21277** - An attic conversion to a non-habitable storage space with roof windows to front of existing roof and ancillary works.

**Pl. Ref. no. 16340** - Conversion of attic into habitable room, sky-lights to front for light and fire escape and all ancillary site works.

**Pl. Ref. no. 181089** - 1 No. two storey dwelling house (190sqm approximately) to include new vehicle and pedestrian access, service and drainage connections, car parking, garden storage, surface treatments, new boundary fence, landscaping and other associated site works including demolition of existing 28sqm shed, on site comprising 0.0510 hectares approximately

## 2.3 FIELD SURVEY

### 2.3.1 Habitats

A habitat survey of the application site was conducted on 9th July 2021 and on 30th August 2021. The habitat classifications and codes correspond to habitats described in 'A Guide to Habitats in Ireland' (Fossitt, 2000). The habitats observed during the site visit are listed below on Table 2.5. A habitat map of the application site is provided for in Figure 2.4

**Table 2.5** Habitats recorded in the application site and corresponding habitat codes

| Habitat | Code |
|---|---|
| Spoil and bare ground | ED2 |
| Horticultural land | BC2 |
| Improved agricultural grassland | GA1 |
| Hedgerow | WL1 |
| Dwelling house | BL3 |
| Ornamental and non-native shrub | WS3 |
| Treelines | WL2 |
| Scrub | WS1 |

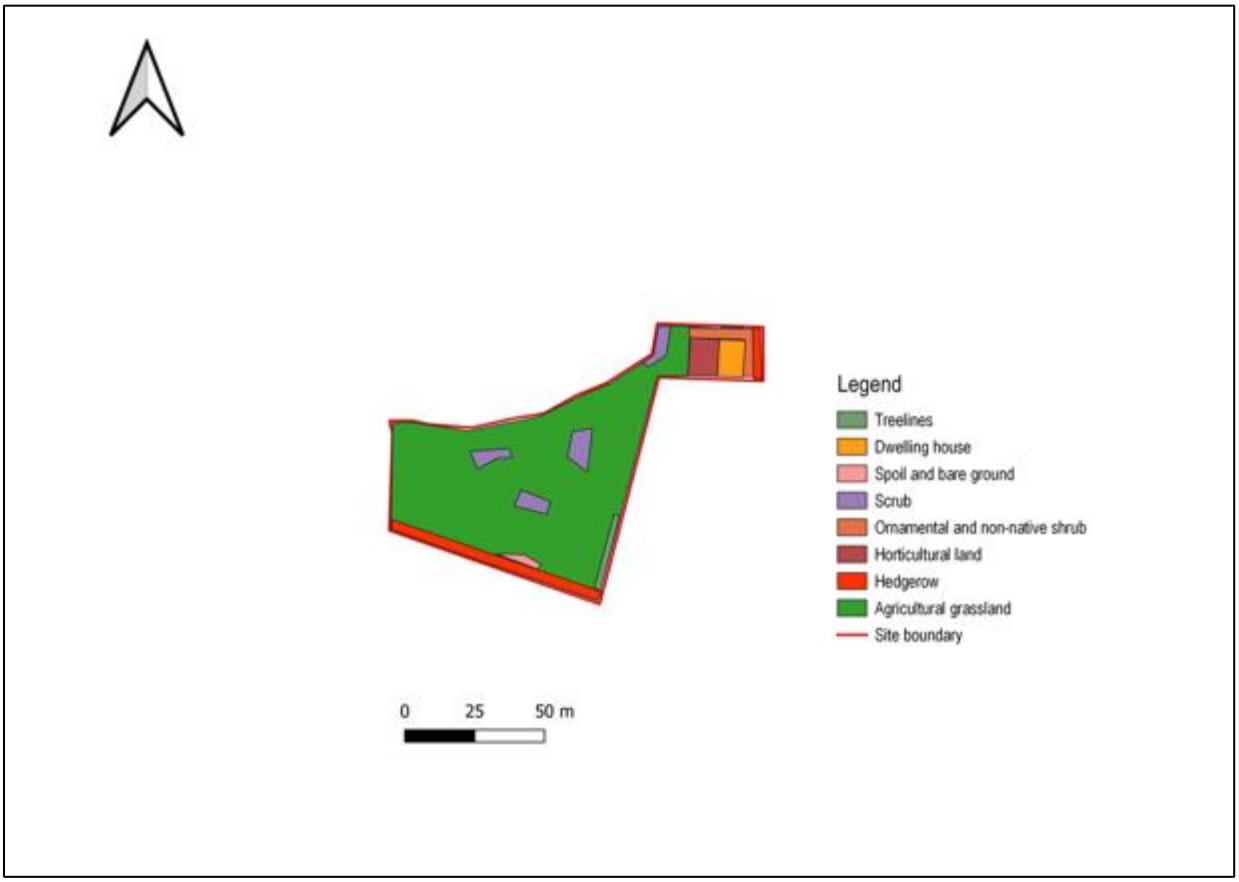


**Figure 2.4:** A Habitat Map of the application site.

Upon entering the application site from the northeastern most boundary, the first habitat observed in the application site was a hedgerow habitat (WL1). This habitat was composed of: Brambles (*Rubus fruticosus agg.),* Creeping Buttercup (*Ranunculus repens*) and Common Nettle (*Urtica dioica*) (See Plate 2.1). Another hedgerow habitat present in the application site was observed along the southern site boundary. In addition to Brambles (*R. fruticosus agg.*) and Common Nettle (*U. dioica*) present in this hedgerow, Bracken (*Pteridium spp*.), Elder (*Sambucus nigra*), Hawthorn (*Crataegus monogyna*) and Ivy (*Hedera helix*) were also identified in the southern hedgerow habitat (See Plate 2.7).

The next habitat observed in the northeastern most section of the application site was a built land and artificial surfaces habitat (BL3) in the form of a dwelling house. This habitat had only Ivy (*Hedera helix*) present (See Plate 2.1).

Another habitat that was present in the northeastern most section of the application site was an ornamental and non-native shrub (WS3). This habitat was composed of: Dotted loosestrife (*Lysimachia punctata*), Buttonbush (*Cephalanthus occidentalis*) and Mediterranean cypress (*Cupressus sempervirens*) (See Plate 2.2).

The habitat observed behind the dwelling house in the application site was a Horticultural land (BC2), in the form of a small vegetable garden with raised vegetable beds. This habitat was composed of Cabbage (*Brassica oleracea*), Onion (*Allium cepa*) and Runner beans (*Phaseolus coccineus*) (See Plate 2.3).

The dominant habitat present throughout the application site was the improved agricultural grassland (GA1). There was evidence of cowpats, indicating the use of the habitat as a grazing area for cattle. This habitat was composed of a multitude of vegetative species, including: Red clover, White clover, Perennial Ryegrass, Ribwort Plantain (*Plantago lanceolata*), Creeping Buttercup (*R. repens*), Bristly Oxtongue (*Helminthotheca echioides*) (See Plate 2.4).

The scrub habitats were scattered throughout the application site (WS1). There were four scrub habitats present in the application site. These habitat were composed of Brambles (*R. fruticosus agg*), Creeping Buttercup (*R.* repens), Spear Thistle (*Cirsium vulgare*), Common Nettle (*Urtica dioica*), Dandelion (*Taraxacum vulgaria*), Broad-leafed dock (*Rumex obtusifolius*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Gorse (*Ulex europaeus*) (See Plate 2.5).

A small treeline habitat (WL2) was present on the eastern boundary of the application site. This habitat was composed of Brambles (*R. fruticosus agg.*), Pussy willow (*Salix caprea*) and Leyland cypress (*Cupressus x leylandii*) (See Plate 2.6).

A spoil and bare habitat (ED2) was the smallest habitat present in the application site. This habitat was located adjacent to the hedgerow habitat along the southern boundary of the application site. There were no visible vegetation present in this habitat. Field signs indicate that this habitat arose from poaching by the cattle grazed in the application site (See Plate 2.8).

Plate 2.1 – Dwelling house and hedgerow habitats present in application site .

Plate 2.2 – Ornamental and non-native scrub habitat in application site.

Plate 2.3 – Horticultural land habitat present in application site.

Plate 2.4 – Improved agricultural grassland in application site with evidence of cattle grazing.

Plate 2.5 – Scrub habitat present in application site.

Plate 2.6 – Treeline habitat present in application site.

Plate 2.7 – Hedgerow habitat present in the southern section of application site.

Plate 2.8 – Spoil and bare ground habitat in application site with evidence of poaching.

### 2.3.2 Fauna

**Invertebrates**

A dragonfly (*Anisoptera spp*.), Bumblebee (*Bombus spp*.) and Meadow Brown Butterfly (*Maniola jurtina*) were the invertebrates identified in the application site.

**Birds**

A rook (*Corvus frugilegus*), woodpigeon (*Columba palumbus*) , swift (*Apus apus*) and European robin (*Erithacus rubecula*) were the birds identified in the application site.

No species, or any signs of their presence, considered as Qualifying Interests in the Rye Water Valley/Carton SAC conservation objectives were recorded on the proposed site. Furthermore, no Annex II species, or any signs of their presence, were recorded on site.

**Bats**

An existing one-storey dwelling house is present in the application site. As the dwelling house is to be demolished as part of the development, it was considered best practice to inspect the dwelling house for the presence of roosting bats and the potential of the dwelling house to act as a roost.

Additionally, due to the presence of existing hedgerow and treeline habitats present, there is the potential for the application site to be utilized by the existing bat population as a foraging and commuting areas.

A bat survey was completed as part of this Ecological Impact Assessment report on 30th August 2021. Prior to a night-time detector survey being carried out a detailed daytime visual inspection of the site was undertaken to assess the suitability of the dwelling house, existing treeline and hedgerow as roosting habitats and to assess the suitability of commuting and foraging habitats onsite. Habitats were classified according to A Guide to Habitats in Ireland (Fossitt, 2000). The entire site was walked and the potential for suitable roosting, foraging and commuting habitats to occur were assessed based on the 'Negligible, Low, Moderate and High' classification described in Table 4.1 of Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins (ed.), 2016).

**Daytime Inspection**

A daytime survey of the proposed development site was undertaken by consultant ecologists Megan Lee (B.Sc (Hons), M.Sc (Hons)) and Colette Casey (B.Sc (Hons)) on the 30/08/2021. Prior to a night-time detector survey being carried out a detailed

daytime visual inspection of the site was undertaken to assess the suitability of the existing dwelling house and trees as roosting habitats.

The aim of this inspection was to compile information on actual and potential access points and roosting locations. This was done by searching for evidence of bats including live and dead individuals, droppings, prey item remains, urine splashes, fur oil staining and noises. The exterior of the dwelling was first inspected which included the ground, windowsills, walls, eaves, roof tiles, gutters and down spouts. A systematic search of the interior of the dwelling was also undertaken where each accessible room was inspected in turn for evidence of bats. Searches were carried out with the aid of binoculars and torches. The interior search focused on floors, roof beams, window panes and window sills, lintels, furniture surfaces etc.

**Transect Survey**

A transect survey was conducted on the evening of the 30/08/2021. The survey aimed to record any bat species emerging from the trees, and to record bat species utilising the surrounding environment. The surveyor was using a "Wildlife Acoustics Echo Meter Touch2 Pro" bat detector which is triggered to record when a bat call is emitted louder than 18dB for 1sec. This detector uses full spectrum sampling; detecting all frequencies simultaneously, meaning that multiple bat calls can be recorded at the same time.

The survey began at sunset at 19:39 and finished at 21:39. The temperature before the survey was 19°C. The temperature after the survey was 16°C. There was no rain and the wind was measured at 1 to 2 on the Beaufort scale. There was no moon during the survey. The cloud measured at a 1 on the Oktas scale. Mature trees within the application site were inspected for potential roost features (PRFs).

**Limitations of Survey**

The survey was carried out in accordance with the most appropriate guidance, Bat Surveys for Professional Ecologists Good Practice Guidelines (BCT, 2016) and Bat Mitigation Guidelines for Ireland (Kelleher and Marnell, 2006). The bat survey was undertaken within the optimal time for bat activity/roost surveys, May - August. The survey was carried out in optimal weather conditions and no limitations with regard to weather conditions were identified. One room of the dwelling house was not accessible and could not be inspected for signs of live bats and field signs.

**Daytime Inspection Results**

The dwelling house is a bungalow of concrete block construction with a tile roof. Windows and doors to the house are tightly sealed with wooden boards with no potential entry points for bats. There were no cracks and crevice identified on the exterior of the dwelling house. A collapsed section of the roof was identified as a possible entry point (See Plate 3.1). There were no field signs for bats identified on the exterior of the dwelling house (See Plate 3.2).

The interior of the dwelling house was inspected. No field signs for bats and no sightings of bats were observed in the interior of the dwelling house. There were cobwebs present throughout the dwelling (See Plate 3.3) and dwelling house had mould on the walls and was draughty (See Plate 3.4). The house was considered to have a **Low - Moderate** roosting potential.

Plate 3.1 – Partial collapsed section of roof of existing house.

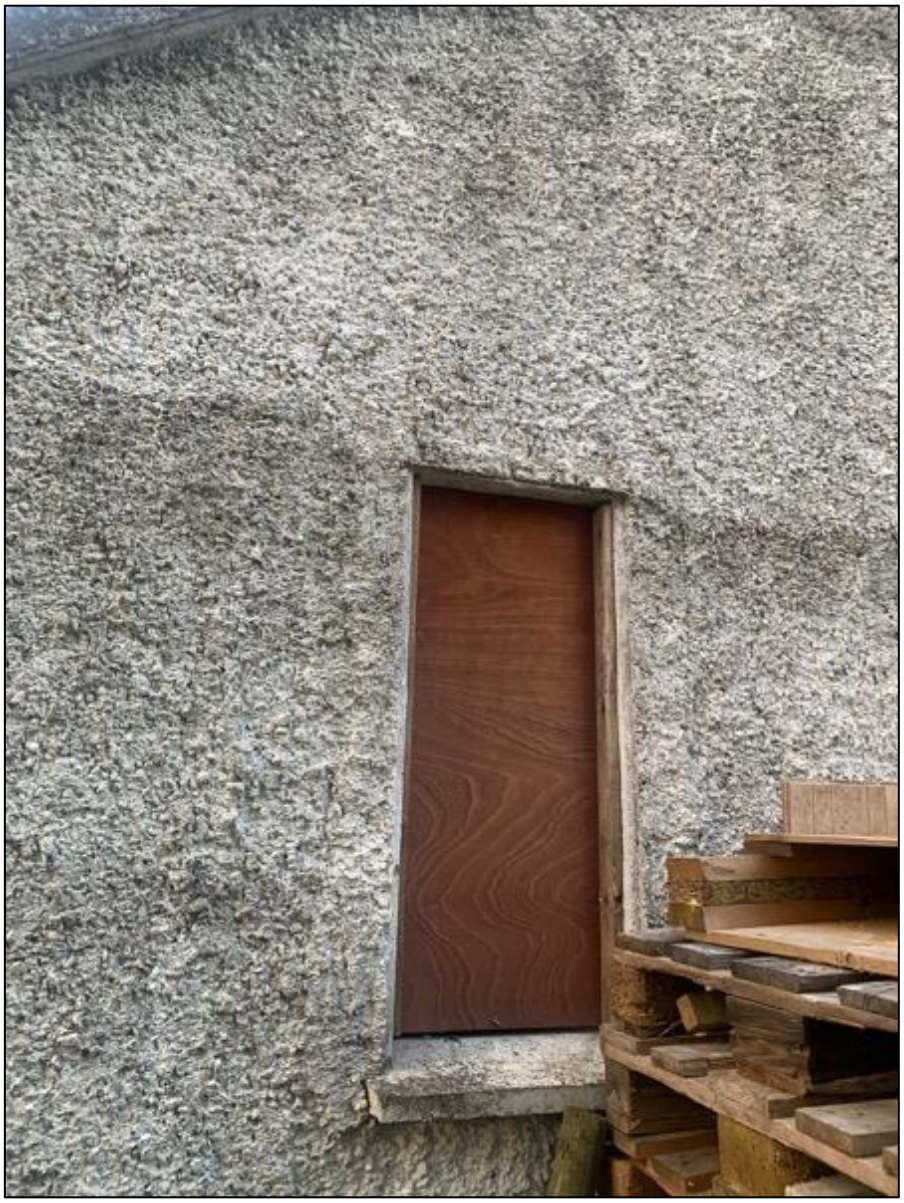

Plate 3.2 – Boarded windows in existing dwelling house.

Plate 3.3 – Cobwebs present in existing house.

Plate 3.4 – Source of draught into the dwelling house.

**Transect Survey Results**

Bats that were recorded during the transect survey within the application site were: Soprano pipistrelle (*Pipistrellus pygmaeus*), Common pipistrelle (*Pipistrellus pipistrellus*), Pipistrelle species (*Pipistrellus species*) (Pipistrelle species with a lower frequency than the frequency expected from a Common pipistrelle indicating a possible Nathusius pipistrelle) and Leisler's bat (*Nyctalus leisleri*). The first bat species was recorded at 19:39 and consisted of a Leisler's bat pass. The next bat species identified during the survey was a Pipistrelle species pass was observed at 19:44. A Soprano pipistrelle pass was observed at 20:34. The next species identified was a Common pipistrelle pass at 20:35. Leisler's bat and Common pipistrelle passes were identified and recorded regularly throughout the night until the dusk survey finished at 21:39.

There were moderate foraging and commuting habitat for bats along the treeline and hedgerow habitats. See Table 2.6.

**Table 2.6: Bat passes results from transect bat survey**

| Species | 19:30-20:00 | 20:00-20:30 | 20:30-21:00 | 21:00-21:30 | Total |
|---|---|---|---|---|---|
| Common pipistrelle | 0 | 0 | 4 | 4 | 8 |
| Soprano pipistrelle | 0 | 0 | 6 | 6 | 12 |
| Pipistrelle species | 1 | 0 | 0 | 1 | 2 |
| Leisler's bat | 3 | 14 | 4 | 9 | 30 |
| **Total** | **4** | **14** | **14** | **20** | **52** |
| **% passes** | **7.6%** | **26.9%** | **26.9%** | **38.6%** | |

**Discussion**

The visual survey onsite did not find any potential roost features onsite (PCFs). It is therefore considered that the house and the trees onsite are not used as a roost by any bat species and were classified as negligible. Bats identified to species level during the various surveys included: Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Leisler's bat (*Nyctalus leisleri*) and Pipistrelle species (*Pipistrellus species*).

A majority of the bat activity on site was observed along the east boundary of the application site. Loss of habitat will marginally reduce potential foraging and commuting habitat but this will be lessened by a compensatory hedgerow being planted along the northern and western boundaries of the site. Wooded and hedgerows areas surrounding the site allow for more favourable habitats.

**Significance of Fauna**

The ecological evaluation in this section follows the methodology provided from in Chapter 3 of National Roads Authority's 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2009).

All Irish bat species are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Irish bats are also protected under the Wildlife Act 1997-2012 and the Birds and Natural Habitats Regulations (2011). No bat roosts were identified within the application site. Linear feature in the site were assigned Low to Medium suitability with regards to providing potential foraging and commuting habitat to bats. Bats as an ecological receptor have been classed as Local Importance (Higher value) because of aspects of the existing habitats are likely to be used by local regularly occurring bat population of Local Importance.

No evidence of additional fauna of ecological significance were observed

# 3 ECOLOGICAL IMPACT ASSESSMENT

## 3.1 DO NOTHING IMPACT

If the proposed development did not go ahead, it is likely that the site will continue to be used for agricultural purposes.

## 3.2 IMPACTS DURING CONSTRUCTION

### 3.2.1 Impacts to Fauna

**Bats**

**Temporary Neutral Impact**

There will be temporary loss of commuting and foraging habitats onsite, however, this will be mitigated and compensated for by the planting of a new hedgerow along the northern and western boundaries of the site.

Public lighting is to be located to Public Roads and Public Open Space areas, trying to avoid excessive luminescence to peripheral existing and compensatory hedgerows, as much as possible.

**General Fauna**

**Permanent Slight Negative Impact**

If the proposed development did not go ahead, it is likely that the site will continue to be used for agricultural purposes. The development has been designed to ensure that ecological connectivity and cover is maintained around the site boundary. Additionally, native tree species will be planted in groups throughout the application site. There is limited potential for the construction activity to cause disturbance to wildlife in areas surrounding the application site. The proposed development works will be temporary in duration and will be confined to the application site.

**Best Practice Incorporated into the project design**

- A solid fence will be erected around the perimeter of the proposed development site prior to the commencement of construction works. This will create a solid boundary between the site and the surrounding area.

- All works will be located within the confines of these fences. No works will take place outside the fences to prevent damage to areas outside the necessary development footprint.
- A silt trap will be erected along the northern and western site boundaries of the application site, before the commencement of works on site. The silt trap will remain in place for entirety of the construction phase.
- During the construction phase of the proposed pedestrian bridge sediments will be placed to the west of the bridge, this is in order to minimize water quality deterioration.
- Construction of pedestrian bridge and the proposed storm drain is to be carried out outside of the salmon and trout season (October to February)
- Removal of vegetation from the site is to be carried outside of the 1st of March to the 31St of August.
- A compensatory hedgerow is to be planted on the northern and western boundaries of the site.

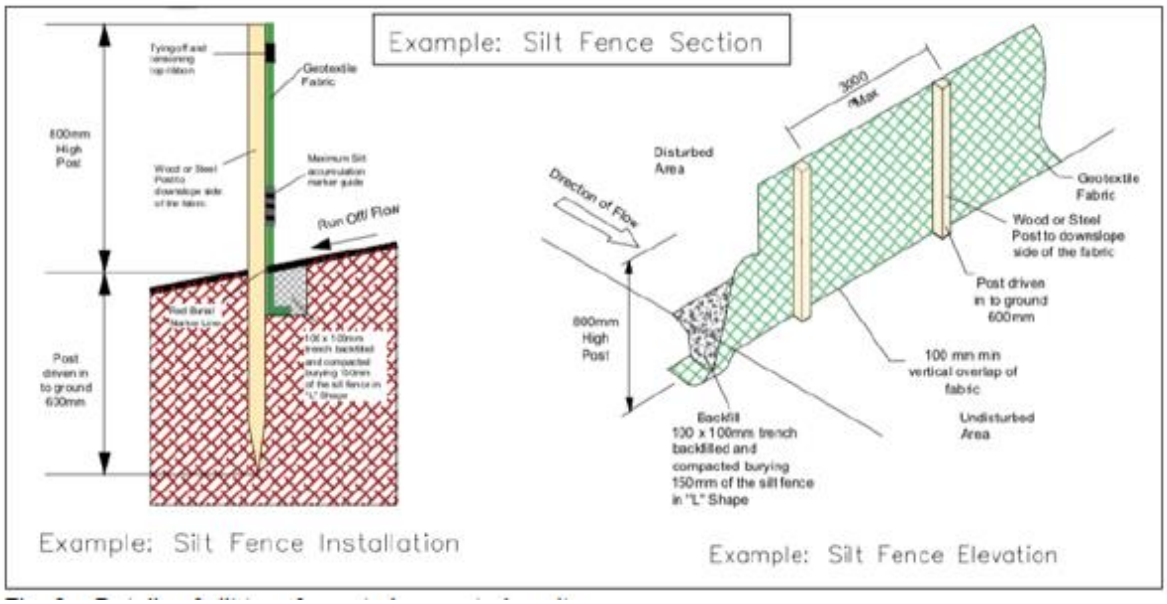


**Fig 3.1:** Example of suitable silt trap installation.

**Residual Impact**

No residual significant impacts on fauna are expected.

### 3.2.2 Loss of Floral Habitat

The degree of impact on floral habitat, in absence of best practice, is assessed as:

**Permanent Slight Negative Impact**

The proposed development will result in the permanent loss of spoil and bare ground (ED2), horticultural land (BC2), improved agricultural grassland (GA1), hedgerow (WL1), ornamental and non-native shrub (WS3), treelines(WL2) and scrub (WS1) habitats.

The proposed development will plant a new hedgerow of native species along the northern and western boundaries of the site. Additionally, native tree species will be planted in groups throughout the application site.

**Best Practice incorporated into the project design**

- Habitat loss will be minimised by temporary fencing off the construction site during the construction phase of the development and the confinement of construction works to within this fence.
- The proposed development will involve the planting of a new hedgerow along the northern and western boundaries. Additionally, new trees will be planted throughout the application site, which will allow for connectivity to hedgerows and tree lines of the surrounding environment.
- Removal of vegetation from the site is to be carried outside of the 1st of March to the 31St of August.

**Residual Impact**

The proposed development will not result in any significant impact on floral habitat within the proposed development site. No significant residual impacts are anticipated.

### 3.2.3 Pollution of the Wider Area

**Temporary Moderate Negative Impact**

The construction phase of the proposed development will involve earth moving and levelling which create the potential for pollution in various forms to run off the site and enter the surrounding environment. Chemicals used in construction including hydrocarbons and cement-based products could potentially be washed off the site. Good construction practices will be in place to prevent any risk of pollution running off the site.

The degree of impact, in the absence of best practice, is assessed as **Temporary Moderate Negative Impact.**

**Best Practice incorporated into the project design**

- All machinery maintenance and re-fuelling shall be carried out off-site. Spill kits for contaminants such as fuels oils and lubricants must be used.
- All petroleum products to be bunded during the construction stage of the development.
- The works shall be planned and executed in accordance with Environmental Protection Agency Guidelines.
- Wash water from on-site mixers or lorries shall be disposed of appropriately off site.
- To prevent run off from stripped ground, banks are to be placed on the downstream side of stock piles.
- Water from excavations shall be pumped to land and allowed to settle.

- Washing out of concrete trucks should not be permitted within the site and should be conducted in hard standing areas.
- Works with concrete shall be done during dry conditions for a period sufficient to cure the concrete (at least 48 hours).
- Concrete pours shall occur in contained areas.
- During the construction of the pedestrian bridge concrete structures should be pre-casted, this is to minimize concrete pours on site.
- All shuttering must be inspected for leaks prior to pouring during the construction of the proposed pedestrian bridge.
- Portable toilets and sanitary facilities will be provided for site use.
- Plant will be re-fuelled away from watercourses.
- All site operatives will have immediate access to spill kits when machinery is being used.
- A silt trap will be erected along the northern and western site boundaries of the application site, before the commencement of works on site. The silt trap will remain in place for entirety of the construction phase.

**Residual Impact**

With best practice incorporated into the design and the above mitigation in place, the potential for significant run off of pollutants from the site is greatly reduced. No significant residual impacts are anticipated.

### 3.2.4 Spread of Invasive Species

**Long Term Slight Negative Impact**

The proposed development will involve the movement of soil on the site and will create disturbed ground. No Third Schedule Invasive species were recorded at the site, however, construction related activity has the potential to result in the introduction and establishment of problematic invasive plant species (Rhododendron and Japanese Knotweed). In the absence of suitable control measures this impact is classed as **Long Term Slight Negative Impact.**

**General Good Construction Management**

If gravel or handstand materials are being brought onsite ensure that the source is free of invasive species such as Japanese Knotweed, Gunnera and Rhododendron.

**Residual Impacts**

With control measures in place, the potential for the introduction and establishment of invasive alien species deemed to be No Impact.

## 3.3 IMPACTS DURING OPERATION

### 3.3.1 Increased human activity

The proposed development will serve as a housing development so it is anticipated that that there will an increase in human activity at the site.

**Disturbance to Fauna**

The site of the proposed development is of low ecological significance. It is proposed to plan a hedgerow along the Northern and western boundaries of the site. Additionally, it also proposed to plant native tree species throughout the application site. This will minimise the development's impact on the flora and fauna of the surrounding environment

### 3.3.2 Pollution of the Environment

**Moderate Long Term Negative**

The development will be serviced by a connection to the existing public sewer and a new storm drain. The sewer system will have the capabilities to deal and effectively treat waste in accordance with EPA requirements. The storm drain will discharge into the River Liffey which is connected via the adjacent flood risk area to the Rye Water Valley/Carton SAC, Rye Water Valley/Carton pNHA and Liffey Valley pNHA.

## 3.4 IMPACTS ON NATIONALLY DESIGNATED SITES

Any potential impacts on European sites, are discussed in the Natura Impact Statement prepared for this application. The proposed works are located adjacent to a flood risk area, which is connected via the River Liffey to the Rye Water Valley/Carton SAC and Rye Water Valley/Carton pNHA and Liffey Valley pNHA. The Rye Water Valley/Carton pNHA and the Liffey Valley pNHA run concurrently with the SAC, therefore the measures incorporated into the design of the project, to avoid impacts on SAC will also serve to prevent impacts on the pNHAs. The remaining Natural Heritage Areas and proposed Natural Heritage Areas are located further than 3km from the proposed development site and no pathways for impacts were identified.

# 4 CONCLUSION

Following consideration of the residual effects (post mitigation) it is noted that the proposed development will not result in any significant effects on any of the flora and fauna of the existing environment. No effects on receptors of Internationally, Nationally, County or Local value.

Provided that the proposed development, is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant effects on ecology are not anticipated at any geographical scale.

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