Strategic Housing Development: No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24 Ecological Impact Assessment Report

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1 EXECUTIVE SUMMARY

This report examines the ecological considerations of a proposed residential development in Firhouse, in South Dublin County. The proposed development is located on lands located at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24. The site includes the former Firhouse Inn public house which has ceased trading.

Bluemont Developments (Firhouse) Limited intend to apply to An Bord Pleanála (the Board) for a Strategic Housing Development with a total site area of c.0.46 ha, on lands located at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24.

The development will consist of the demolition of all existing structures on site (c. 1,326 sq m), including:

- Two storey building formally used as public house, ancillary off-licence and associated structures (c. 972 sq m);
- Two storey building comprising an existing barber shop and betting office (c. 260 sq m);
- Single storey cottage building and associated structures (c. 94 sq m); and
- Eastern boundary wall and gated entrance from Mount Carmel Park.

The development with a total gross floor area of c. 11,638 sq m, will also consist of 100 no. residential units arranged in 2 blocks (Blocks 01 and 02) ranging between 3 and 5 storeys in height, over lower ground floor and basement levels, comprising:

- 96 no. apartments (consisting of 2 no. studio units; 45 no. one bedroom units; 10 no. two bedroom (3 person) units; 34 no. two bedroom (4 person) units; and 5 no. three bedroom units), together with private (balconies and private terraces) and communal amenity open space provision at podium and roof levels; and
- 4 no. duplex apartments (consisting of 2 no. one bedroom units and 2 no. two bedroom units (4 person) located within Block B01, together with private balconies and terraces.

The development will also consist of non-residential uses (c. 355 sq m), including:

- 1 no. café (c. 58 sq m) and 1 no. office (c. 30 sq m) located at ground floor level of Block B01;
- 1 no. medical unit (c. 59 sq m) and 1 no. betting office (c. 66 sq m) located at ground floor level of Block B02;
- 1 no barber shop (c. 28 sq m) located at ground floor level between Blocks 01 and 02; and
- 1 no. crèche (c. 114 sq m) located at lower ground floor level of Block B01 and associated outdoor play area to the rear.

Vehicular access to the site will be from the existing access off Firhouse Road. The proposal includes minor alterations to the existing access, including the provision of new and enhanced pedestrian infrastructure.

The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, cycle and pedestrian routes, pathways and boundary treatments, street furniture, basement car parking (80 no. spaces in total, including accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections to existing public services, (including relocation of existing surface water sewer and water main from within the application site onto the public roads area along Firhouse Road and Mount Carmel Park); ducting; plant; waste management provision; SuDS measures; stormwater management and attenuation; sustainability measures; signage; changes in levels; public lighting; and all ancillary site development and excavation works above and below ground.

This report describes the ecological surveys carried out to facilitate the planning, design and construction of the proposed scheme. Appendix 1 shows an overall map of the area with the location of the scheme shown.

The purpose of this report is to provide an Ecological Impact Assessment of the proposed development. In order to inform this, a range of studies and surveys were undertaken by the authors. These include:

- Desktop Study of available resources on the ecological features, constraints and records

- A walkover survey of the site under study
- An assessment of the habitat types
- Species composition of habitats occurring within the site
- A mammal survey of the site and adjacent lands
- Bat habitation and habitat surveys
- Invasive species surveys
- Bird nesting activity survey

The results of all of the above surveys have been used to carry out an Ecological Impact Assessment of the proposed project. Arising from this, a number of impact mitigation measures have been recommended. These will assist in formulating the final design of the proposed development.

1.1 Details of Surveys Carried Out

Surveys were carried out in September 2020 and May 2022. Surveys were carried out at various times of year in order to be completed within optimal period. .

Survey	**Date(s) Completed**
Walkover Survey & Habitat Assessment	September – October 2020
Mammal and Tree Surveys	January 2021
Initial Bat Surveys	October 2020
Bat Survey and Assessment of Trees	August 2021
Bat Survey and Search of Buildings	May 2022
Invasive Species Survey	May 2022
Breeding Birds	May 2022

Given the built nature of the habitats to be directly affected by the proposed development, it is not considered that seasonal constraints were significant for the purpose of this assessment.

1.2 Habitats Within Area Under Survey

A relatively limited range of habitats occurs within the immediate area under survey. The proposed development is within a very confined area and this is entirely 'built' habitat. Immediately adjacent this, however, is a mature treeline of both ecological and landscape significance. To the north of this, agricultural grasslands are the dominant habitat type. Adjacent these and extending for many kilometres to the northeast, east and west are the amenity grasslands that make up the Dodder Valley Linear Park. The River Dodder is the only watercourse within the area under study. This is an important ecological feature of the area.

1.3 Notable Flora

No rare, threatened or protected floral species as per the Red Data Book (Curtis and McGough, 1988) were found. No species listed in the Flora Protection Order (2015) were found to be growing within the site. No such species were recorded within the area of works. The area proposed for development is a heavily modified habitat.

1.4 Trees and Treelines

Older and long-established trees were also targeted by the survey. As well as this, older trees that were notable as either 'veteran 'or 'champion' trees were specifically sought. Veteran trees are large specimens of mature trees that offer much habitat of themselves. Champion trees are those that are taller, older or larger than other of their particular species. While there are mature treelines immediately adjacent the site, the proposed works will not involve the loss of any mature trees.

1.5 Notable Fauna

Signs of any protected mammal species were sought. The refugia (resting places such as badger setts) were also sought.

There were no setts or signs of activity of Badgers within area under study. Much of the wider area surveyed would be unsuitable habitat for badger sett location but the Dodder Valley Park would be an important corridor for this species.

No evidence of Otter activity was recorded and no Otter holts occur within close proximity to the proposed development. However, it is very likely that this species would hold territories on the River Dodder. Fox spraints indicated activity of this species close to the proposed site of works. Dedicated surveys for sites suitable for bat roosts (e.g. buildings & large mature trees) was also carried out. Potential bat roost habitat exists within the Firhouse Inn buildings. However, no evidence of bat occupancy was found. The mature trees immediately adjacent the site were also surveyed but these do not offer any potential bat roost habitat and no bat roosts were confirmed here.

All bird species seen and heard during surveys were recorded. The greater majority of the birds recorded were of least conservation concern (Birdwatch Ireland).

1.6 Invasive Species

Mature Sycamore (*Acer pseudoplatanus*) trees occur in the treeline immediately adjacent the Firhouse Inn and also within other treelines outside the site. This species is designated by Invasive Species Ireland as an invasive species of *medium* impact. *Buddleja davidii* is another *medium* impact species that occurs within the site.

1.7 Potential Impacts

No impacts upon any area designated for the conservation of nature are predicted, including the nearby River Dodder pNHA. As the proposed development will be on modified or built habitat, no direct impacts of any significance are predicted upon these. No loss of any other habitat type will occur, so no direct impacts are predicted on these. The River Dodder is an ecologically sensitive area and is within 200m of the proposed development. However, given the confined and limited nature of the development, no direct or indirect impacts to this river are predicted.

This is largely based on the lack of hydrological connectivity between the proposed development and the river.

No habitat suitable for breeding birds will be impacted upon.. No evidence of previous bird nesting was seen within the structure.

A dedicated bat survey did not find any evidence of bat habitation. However, the survey showed suitable gaps in the roof for bat access/egress. The Firhouse building has a number of annexes and extensions, offering potential roost locations for bats.

While Sycamore and *Buddleja davidii* (both invasive alien plant species) occur immediately adjacent and within the site proposed for development respectively, there is negligible potential for either species to have any significant negative impacts.

1.8 Proposed Mitigation

A schedule of proposed mitigation measures has been drawn up to address the potential impacts predicted. This range of measures includes timing of works, further survey and the avoidance of sensitive areas adjacent the proposed development site and the creation of artificial bird nesting habitat.

2 LEGISLATION AND PLANNING POLICY

2.1 European Council Directives

2.1.1 Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) (The Habitats Directive)

The main aim of the Directive is to promote the maintenance of biodiversity through the conservation of natural habitats and wild species listed on the Annexes of the Directive. Member States are required to take measures to maintain or restore, at favourable conservation status, biodiversity whilst taking account of economic, social, cultural requirements and regional and local characteristics.

It gives effect to site and species protection measures through establishment of the Natura 2000 network and designation of European Sites including Special Areas of Conservation (SAC) and Special Protected Areas (SPA). It also establishes a list of species (other than birds) whose habitats must be protected to secure their survival. These priority species and habitats are subject to a higher level of protection.

The Directive also requires appropriate assessment of any plan or project not directly connected with or necessary to the management of a European Site, but likely to have significant effects upon a European site, either individually or in combination with other plans or projects.

2.2 Council Directive on the Conservation of Wild Birds (2009/147/EC) (The Birds Directive)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It makes provisions for the maintenance of the wild bird populations across their natural range; conserves the habitats for rare or vulnerable species listed in Annex I and of migratory species through the classification of SPAs and provides protection for all wild birds.

2.3 Irish Legislation

2.3.1 The European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015 (S.I. No. 355 of 2015)

The European Communities (Birds and Natural Habitats) (Amendment) Regulations provides that the following shall be construed together as one:

- Wildlife Act 1976
- Wildlife (Amendment) Acts of 2000, 2010 and 2012
- European Communities (Birds and Natural Habitats) (Restrictions of the Use of Poison Bait) Regulations 2010
- European Communities (Birds and Natural Habitats) Regulations 2011
- European Communities (Birds and Natural Habitats) (Amendment) Regulations of 2013, 2015
- Wildlife Amendment Bill 2016 (proposed legislation)

2.3.2 European Communities (Birds and Natural Habitats) Regulations 2011 to 2015

The Regulations give effect to requirements relating to the designation of protected sites under the Birds Directive and Habitats Directive. The Regulations provide for the protection and management of European Sites and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issued under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

2.3.3 Wildlife Acts 1976 to 2012

The Acts provide for *inter alia* the protection of wildlife. The Acts prohibit the intentional killing, taking or injuring of certain wild birds or wild animals; or the intentional destruction, uprooting or picking of certain wild plants.

2.3.4 Wildlife Amendment Bill 2016

The purpose of the Bill is to provide for the implementation of a reconfiguration of the Raised Bog Natural Heritage Area Network arising from (i) the proposals from the Review of Raised Bog Natural Heritage Area Network published in January 2014; (ii) an assessment of the effects on the environment of the proposals arising from the Review and, if required, any other screening for an assessment or as the case may be, assessment, including public consultation undertaken and (iii) observations or submissions received during the course of public consultation.

Taken as a whole, nature conservation legislation is of key importance in undertaking EcIA for proposed development as it shapes planning policy.

2.4 Planning Policy

2.4.1 South Dublin County Development Plan (CDP)

Along with the Liffey Valley, the SDCC Development Plan (2016-2022) describes the Dodder Valley as being a key element of the county's 'Green Infrastructure' network that 'hosts a rich variety of plant and animal species including protected species and numerous mature tree species. The protection and enhancement of such landscape and associated natural and built heritage features is a priority of the County Development Plan. Policy No. 10 of the CDP is to protect and enhance the visual, recreational, environmental, ecological, geological and amenity value of the Liffey Valley and Dodder Valley, as key elements of the County's Green Infrastructure network. Objective 1 of this Policy is to '…ensure that new development [within the Dodder Valley] is related to the area's amenity potential and is designed and sited to minimise environmental and visual impacts.' It also states that development within the valley will not prejudice the future creation and development of uninterrupted and coherent parklands including local and regional networks of walking and cycling routes.

3 DESK STUDY

Prior to the main fieldwork contributing to this assessment, a desktop survey of available information sources was carried out. These included:

- The National Biodiversity Data Centre Online Database
- The National Biodiversity Network Online Atlas
- The OSI Geohive Database
- The NPWS Protected Species Database and Online Mapping
- The Environmental Protection Agency Database
- www.sdcc.ie
- Biology.ie

Desk research also included a review of records available through the National Biodiversity Data Centre mapping system. These included rare and protected species. Records were requested for all species appearing within the study area or immediately surrounding the study area.

Designated sites were identified using the current boundary shapefiles downloaded from the NWPS website. Records of species from within the relevant Km squares were also obtained. Habitat mapping also reviewed included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and Ancient woodland inventory.

4 FIELD STUDY

Field work for this project was carried out between September 2020 and April 2022. The field survey habitat assessments were carried out according to guidelines given by the Heritage Council (2011) and the JNCC (2010). The primary purposes of the field survey were to:

- Identify habitat types within the study area
- Assess for the presence of protected species of flora and fauna
- Identify ecological and environmental constraints to the construction of this development
- Identify ecological sensitivities around and within the study area.

A walkover survey considered a broad area to ensure all other important features that could be impacted by the development were considered (e.g. significant treelines and hedgerows, mammal paths and watercourses). Gross habitat mapping was carried out and was a key output of this survey (See mapping document in Appendix A). The field survey was also used to identify areas of greater environmental/ecological sensitivity. These were recorded as Ecologically Sensitive Areas (ESAs) and at this stage were flagged for further study if required. The survey also established further fieldwork requirements/limitations - e.g. where a site could not be accessed or a significant seasonal restraint exists.

5 General Ecology and Habitats

5.1 Introduction

The purpose of the ecology survey was to:

- Classify and map the habitats according to Fossitt (2000) and where appropriate the Habitats Directive (European Commission, 2013) classification scheme.
- Carry out an inventory of flora and fauna, particularly mammals and birds, in each section.
- Identify Ecologically Sensitive Areas in the study area if these exist
- Prepare a GIS database of habitat mapping, rare species records, invasive species and other ecological and management features.

About the authors

The survey and reporting was carried out by ecologists Billy Flynn, Ian Douglas, Aidan Meehan and Seán Meehan. Billy Flynn is project manager, Seán Meehan and Aidan Meehan undertook the bat surveys and assessment. Ian was responsible for the overall GIS habitat mapping. All of the team members are qualified and experienced ecologists.

5.2 Methodology

5.2.1 Desk study and consultations

Designated site data was downloaded from the NPWS website. Other online mapping reviewed included Geohive maps, aerial photography and EPA shapefile datasets[1]. Habitat mapping reviewed included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and the Ancient and long established

[1] www.gis.epa.ie/

Woodland (NPWS shapefiles). Desk research also included review of records available through the National Biodiversity Data Centre mapping system.

5.3 Field surveys

5.3.1 Un-surveyed areas

Access to the site proposed for development was readily achieved in all of the areas under survey.

5.3.2 Habitats and flora

Habitats within the study area were mapped according to level 3 of the Heritage Council classification (Fossitt, 2000) following the Heritage Council's Best Practice Guidance (Smith et al., 2011) and the Joint Nature Conservation Committee's (JNCC) Handbook for Phase 1 Habitat Survey – a technique for environmental audit (JNCC, 2010). The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000) is the standard habitat classification system used in Ireland.

Habitats were also assessed for correspondence to the Habitats Directive Annex I habitat types (European Commission, 2013). Habitats of high species diversity or rarity within the local context and sensitive habitats were classified as Ecologically Sensitive Areas (ESAs).

Habitats and flora field surveys were carried out over a number of days in October 2020. Habitats were mapped by annotating aerial photographs in the field and OSI vector maps in the field and using GPS point.

A list of relevant vascular and other plant species was recorded from each area. Invasive plant species (where found) were recorded using a GPS. No occurrence of Third Schedule Invasive Species was recorded. These are species whose propagation or spreading is strictly controlled by regulations.

The initial survey was carried out in October 2020 which is late in the flowering season, therefore some early flowering plant species may have been missed. However, the area proposed for development is a highly modified one with no natural or semi-natural habitats extant here.

5.3.3 Ecological Impact Assessment Methodologies

This ecological impact assessment has been prepared in accordance with relevant legislation and best practice guidance including:

The Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and Coastal 2nd Edition. CIEEM (2018).

- The EPA's Draft Advice Notes on Preparing Environmental Impact Statements (EPA, 2015a).
- The EPA's Draft Revised guidelines on Information to be Contained in Environmental Impact Statements (EPA, 2015b).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

Ecological features (habitats and species) were evaluated for their conservation importance according to the National Roads Authority's scheme (NRA 2009). For habitats or species, significance of effects was assessed with reference to their conservation status, abundance and distribution. Description of significant effects follows guidance outlined in the EPA Draft Revised Guidelines on the Information to be Contained in EIS (EPA, 2015b). The term 'significant effect' as used in this report follows guidance (CIEEM, 2018) and is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In the case of

designated sites, a negative significant effect would be one that undermines the conservation objectives and targets for that site. The significance of impacts on habitats was determined with reference to the value of the feature being affected and the magnitude of the impact. Impacts are considered ecologically significant at a stated geographic scale or are considered not significant.

6 Results

6.1 Designated Areas

All sites designated for the conservation of nature within 15km of the proposed works are detailed in Table 1 – Table 2.

Table 1: Designated sites with 15km of the Proposed Project Area

Site Code	Site Name	Designation	Distance from the Site
4040	Wicklow Mountains SPA	SPA	5.7km
4024	South Dublin Bay and River Tolka Estuary SPA	SPA	9.9km
4006	North Bull Island SPA	SPA	11.5km
1209	Glenasmole Valley SAC	SAC	3.9km
2122	Wicklow Mountains SAC	SAC	6.0km
210	South Dublin Bay SAC	SAC	9.9km
206	North Dublin Bay SAC	SAC	11.2km
725	Knocksink Wood SAC	SAC	11.4km
1398	Rye Water Valley/Carton SAC	SAC	13.5km
713	Ballyman Glen SAC	SAC	14.0km
991	Dodder Valley	pNHA	180m
1209	Glenasmole Valley	pNHA	3.9km
2104	Grand Canal	pNHA	5.1km
1212	Lugmore Glen	pNHA	5.2km
1753	Fitzsimon's Wood	pNHA	6.6km
128	Liffey Valley	pNHA	7.6km
211	Slade Of Saggart And Crooksling Glen	pNHA	7.8km
1205	Booterstown Marsh	pNHA	9.3km
2103	Royal Canal	pNHA	9.4km
210	South Dublin Bay	pNHA	9.9km
1202	Ballybetagh Bog	pNHA	10.8km
201	Dolphins, Dublin Docks	pNHA	10.9km

1207	Dingle Glen	pNHA	11.2km
725	Knocksink Wood	pNHA	11.4km
1755	Glencree Valley	pNHA	11.5km
206	North Dublin Bay	pNHA	11.5km
1398	Rye Water Valley/Carton	pNHA	13.5km
178	Santry Demesne	pNHA	13.5km
1211	Loughlinstown Woods	pNHA	13.8km
1768	Powerscourt Woodland	pNHA	13.8km
713	Ballyman Glen	pNHA	14.0km
1206	Dalkey Coastal Zone And Killiney Hill	pNHA	14km
1394	Kilteel Wood	pNHA	14.2km

A total of 7 sites designated as SACs and 3 sites designated as SPAs were recorded within 15km of the proposed development. The nearest Natura designated sites were Wicklow Mountains SAC and Wicklow Mountains SPA, around 6 km from the proposed works.

A total of 24 proposed National Heritage Areas (pNHAs) were also recorded with 15km of the proposed development. The closest being River Dodder pNHA, around 180m to the north of the Firhouse Inn site. Given the proximity of the River Dodder to the proposed site of works, potential impacts on this designated site are considered further in this report.

An Appropriate Assessment Screening exercise was carried out in order to determine the potential for the proposed development to have significant effects on Natura 2000 sites (SACs and SPAs) within 15km of the proposed works. It was determined that no such significant effects were considered likely.

No risks to the conservation objectives of any other sites listed in table 1 are considered likely due one or more of the following:

- Lack of connectivity between the proposed development and the designated area.

- Significant buffer between the proposed works area and the designated area
- No impact or change to the management of the designated area or;
- No change to chemical or physiological condition of the designated site as a result of the proposed development.

6.2 Overview of habitats and classification

An overview of the main habitats recorded within the study area and the classification applied is provided here. More detail is provided in the description of habitats within each section.

6.2.1 Built Areas (BL3)

All of the site proposed for development would conform to this habitat type. All of this area has been heavily modified and there are no semi-natural or natural habitats present. The extant buildings do hold potential habitat for bat species and a limited number of bird species. This is dealt with in Section 11 of this report.

6.2.2 Treelines (WL2)

There are no trees or treelines within the site proposed for development. However, there are several mature treelines within the wider area under survey. These include a mature mixed treeline immediately adjacent the site. This is dominated by large mature Sycamores (*Acer pseudoplatanus*). There is also Beech (*Fagus sylvatica*) and Horse Chestnut (*Aesculus hippocastanum*). Sycamore is the most numerous of the three species. The trees are large (up to 20m in height and with a canopy spread of up to 8m).

6.2.3 Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 meters. Scrub develops as a precursor to woodland or as a result of recent disturbance and was often

found in less accessible riverside locations and in marginal areas such as on woodland edges. Scrub was only occasional within most of the study area.

6.2.4 Improved Agricultural Grassland (GA1)

The lands immediately adjacent to the existing Firhouse Inn would conform to this category. This is a relatively species-poor habitat type that is dominated by a few agricultural grasses such as Cocksfoot (*Dactylis glomerata*) and Bent grasses (*Agrostis* spp.). Other abundant plants here include Creeping Buttercup (*Ranunculus repens*) and White Clover (*Trifolium repens*). These lands have been grazed in recent times.

6.2.5 Mixed Broadleaved woodland (WD1)

Fossit describes this general category of woodlands as areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. Mixed broadleaved woodland is used in situations where woodland stands cannot be classified as semi-natural or are clearly planted. These plantings appear to have replaced the riparian woodland (WN5) that would be expected to be found in a river valley such as this. A broad mixture of species that includes Hazel (*Corylus avelana*), Hawthorn (*Crataegus monogyna*) and Elder (*Sambuccus nigra*) is found. In smaller numbers, some Holly (*Ilex aquilifolium*) and Cherry Laurel (*Prunus laurocerasus*) also occurs. There is some Bramble scrub occurring within and on the edge of some of these areas.

6.2.6 Amenity Grassland (GA2)

This habitat type occurs in the lands to the north of the site and the agricultural grassland described above. This habitat type makes up much of the Dodder Valley Linear Park which is within around 100m of the site proposed for development. This grassland type is also rather species-poor and dominated by a few grass species such as Bent grasses and

Meadow grasses. Clovers (*Trifolium* spp.) are abundant here and Plantains (e.g. *Plantago lanceolata*) and Thistles (*Cirsium* spp.) are occasional.

6.2.7 Eroding upland Rivers (FW1)

The River Dodder is one of the three major rivers of Dublin City and it flows from its headwaters on Kippure Mountain along a course of 26km before it reaches its confluence with the River Liffey at Ringsend. It has a predominantly urban catchment and is thus vulnerable to storm-water and street runoff as well as sewage misconnections. Although the river is slower and wider where it passes close to the site at Firhouse, it retains the characteristics of an upland/eroding river. The banks of the River Dodder hold some areas of riparian woodland (see 6.2.9), an important habitat type that is unusual in urban areas as well as scrub (see 6.2.3 above). There are also some areas of semi-natural grassland. The Dodder valley is important 'corridor' habitat for a range of species, including Badger (*Meles meles*) a protected mammal species. Otter (*Lutra lutra*) is another protected mammal species that has been recorded in several locations on the Dodder (Roughan O'Donovan, 2017, Ní Lamhna, 2008). These are dealt with further in Section 7 of this report.

6.2.8 Scattered Trees and Parkland (WD5)

This category describes situations where scattered trees stand alone or in small clusters cover less than 30% of the total area under consideration but are a prominent structural or visual feature of the habitat. This describes some areas of the Dodder Valley Park where amenity grassland is scattered with trees of a range of species.

6.2.9 Riparian Woodland (WN5)

This woodland type includes wet woodlands of river margins and wooded islands within rivers. Tree species here are generally dominated by Willows (*Salix* spp.) and Alder (*Alnus glutinosa*) may also occur. It is an unusual habitat type for an urban area. Some of this habitat type occurs within the River Dodder Valley but only in limited areas. It does not occur within the area under survey.

Table 2: Other Habitats noted around the site

Habitat Types	Fossit Code	Note
Mixed Broadleaved/Conifer Woodland	WD2	This habitat type occurs within parkland in Dodder Valley Park.

6.3 Habitats Evaluation

Within the broader study area, a number of habitats occur. However, within the proposed for development, only Buildings and Artificial Surfaces occur. This is owing to the highly modified nature of the railway line and path/laneway/roadway proposed for development as Greenway. There are no designated conservation areas within the area proposed for development. There are no watercourses within this site and none that connect the site of proposed works and other more sensitive areas.

The table below gives a summary of the significance of the habitat types found within the survey area.

Table 3: Ecological significance of habitats within the site.

Ecological feature	Fossitt code	Evaluation	Rationale
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Improved agricultural grassland	GA1	Low Local	Relatively low species-poor habitat type.
Amenity Grassland	GA2	Low local	Relatively low species-poor habitat type.
Mixed Broadleaved woodland	WD1	Moderate local, low regional	Areas of value to local wildlife.
Upland/Eroding River	FW1	High Regional/National	Freshwater habitat. Ecological corridors for birds and mammals. Part of site is pNHA.

Scattered Trees & Parkland	WD5	Moderate Local	Areas supporting woody vegetation some of local importance to wildlife
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and invertebrates. Commonly important for bird species.
Riparian Woodland	WN5	High Regional	Habitat type has declined in recent years. Unusual in urban areas.

7 Ecological Impact Assessment

7.1 Introduction and Context

The impacts which may be expected from the development of the proposed route are assessed below. These possible impacts have been assessed under the CIEEM (2018) and the National Roads Authority guidelines (NRA, 2006). Criteria for assessment of duration of impacts used Environmental Protection Agency guidelines (EPA 2002). These provide guidance on assessing impact significance upon features of sites proposed for works. Impact significance must be given in context of their respective ecological value of the site and features under study.

The 'ecological value' of an area or feature therefore is defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 16, below:

Table 4: Ecological Value Criteria

Ecological Value	Criteria
International	'European Sites' including Special Areas of Conservation (SAC) & Special Protection Areas (SPA). Sites that satisfy the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). Features essential to maintaining the coherence of the Natura 2000 Network. Sites containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. Resident or regularly occurring populations (assessed to be important at the national level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. Ramsar Sites

Ecological Value	Criteria
	World Heritage Sites (Convention for the Protection of World Cultural & Natural Heritage, 1972). Sites hosting significant species populations under the Bonn Convention Sites hosting significant populations under the Berne Convention
National	Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA). National Nature Reserves (NNR). Marine Nature Reserves (MNR). Area of Outstanding Natural Beauty (AONB). Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). Resident or regularly occurring populations (important at the national level) of the following: Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or Species listed on the relevant Red Data list. Sites containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.
Regional	Sites of Local Nature Conservation Importance (SLNCI). Areas subject to a Tree Preservation Order. Resident or regularly occurring populations (assessed to be important at the Regional level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or Species listed on the relevant Red Data list. Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance. Regionally important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared. Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region. Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

Ecological Value	Criteria
Local	Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared; Resident or regularly occurring populations (assessed to be important at the Local level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or Species listed on the relevant Red Data list. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; Sites or features containing non-native species that are of some importance in maintaining habitat links.

Ecological Impact Assessment must also consider the significance of effects that may be expected arising from a proposed development. CIEEM guidelines (2018) define a significant effect as:

"an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'... or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local".

It also states that:

"an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect is a positive or negative ecological effect that should be given

weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring".

The criteria for assessment of significance of effects is given in the following table. It should be noted that significant effects may also include beneficial effects.

Table 5: Criteria for Assessing Significance of Effects

Impact Significance		Criteria
Significant Negative Effect	**Major Adverse**	Loss of, permanent damage to or adverse impact on any part of a site of international or national importance; Loss of a substantial part or key feature of a site of regional importance; Loss of favourable conservation status (FCS) of a legally protected species; Loss of or moderate damage to a population of nationally rare or scarce species.
	Moderate Adverse	Temporary disturbance to a site of international or national importance, but no permanent damage; Loss of or permanent damage to any part of a site of regional importance; Loss of a key feature of local importance; A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable; Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.
No Significant Effect	**Minor Adverse**	Temporary disturbance to a site of regional value, but no permanent damage; Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation; A minor impact on legally protected species but no significant habitat loss or reduction in FCS; A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.

Impact Significance		Criteria
	Negligible	No impacts on sites of international, national or county importance; Temporary disturbance or damage to a small part of a feature of local importance; Loss of or damage to land of negligible nature conservation value; No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity. Beneficial and adverse impacts balance such that resulting impact has no overall affect upon feature.
	Minor Beneficial	A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.
Significant Positive Effect	**Moderate Beneficial**	Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.
	Major Beneficial	Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.

The duration of impact must also be considered when assessing overall ecological impacts. Criteria for assessment of duration of impacts uses (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year
- Short-term: from 1-7 years
- Medium-term: 7-15 years
- Long-term: 15-60 years
- Permanent: over 60 years

The likelihood of impacts should also be defined. Assessment of likelihood of impact followed CIEEM guidelines. These assesses likelihood as follows:

- Almost Certain: probability estimated at greater than 95%
- Probable or Likely: probability estimated between 50% and 95%
- Unlikely: probability estimated between 5% and 50%
- Extremely Unlikely: probability estimated at less than 5%

In the case of the development being considered, most effects may be defined as likely as the area proposed for development is clearly defined.

The following section gives the evaluation of habitat areas encountered within the project. These are given per habitat type. A rationale for selection is also given.

7.2 Site Habitat Evaluation

The more valuable of these areas in terms of biodiversity are defined as Ecologically Sensitive Areas (ESAs). These are shown in the Maps.

Ecologically Sensitive Areas (ESA) have been identified in the following locations and are depicted on the accompanying habitat and constraints maps in Appendix A and as a table in Appendix B.

Table 6: Ecologically Sensitive Areas recorded within the survey area.

id	Habitat Type	Detail	Distance from Firhouse Inn
1	River Dodder	Part of this is Dodder Valley pNHA	180m
2	Treelines	Mature treelines of broadleaved trees. Bird nesting habitat and potential bat roost habitat.	Within 10m

3	Riparian Woodland	Woodland beside Dodder	>200m
4	Mixed Broadleaved Woodland	Within Dodder Valley Linear Park	c. 400m

It should be noted that no impacts are predicted on any of the Ecologically Sensitive Areas.

7.3 Ecological Impact Assessment

The potential impacts on the ecological features identified are given in the following table.

7.3.1 Impact Assessment

Table 7: Impact Assessment:

Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Buildings and artificial surfaces	BL3	Loss of this habitat type	Negligible	Permanent/Likely
Treelines	WL2	None predicted	None	None
Improved agricultural grassland	GA1	None predicted	None	None
Amenity Grassland	GA2	None predicted	None	None
Mixed Broadleaved woodland	WD1	None predicted	None	None
Upland/Eroding River	FW1	None predicted	None	None
Scattered Trees & Parkland	WD5	None predicted	None	None
Scrub	WS1	None predicted	None	None
Mixed broadleaved/conifer woodland	WD2	None predicted	None	None
Riparian Woodland	WN5	None predicted	None	None

8 Mitigation of Impacts

8.1 Impact on Habitats

Impacts are only predicted on one habitat type. This is habitat loss of Built Areas and will be of *Permanent* duration. As there are no natural or semi-natural habitats or vegetation communities here, this impact is predicted as being of *Negligible* significance. No impacts on any other habitat types are predicted as likely.

8.1.2 Habitat Impact Mitigation

No mitigation is required here as no significant habitat area will be impacted upon.

8.2 Impacts on Bats

8.2.1 Bats

All bat species are protected by law in Ireland under the Bonn Convention (1992), the Bern Convention (1982) the EU 'Habitats' Directive (92/43/EC; transposed into Irish law by S.I. No. 94 of 1997) and the Wildlife Acts 1976 and 2000. Lesser Horseshoe Bats are listed as Annex II species of the Habitats Directive (afforded special protection). All other Irish bat species are listed in Annex IV (general protection) of this Directive.

Two surveys of all potential bat roosting habitats was undertaken. Such habitat areas include the existing buildings and the mature trees near the site. The majority of Irish bat species are known to use linear semi-natural landscape features like rivers and hedgerows for feeding and navigation particularly in areas of intensive agriculture. As such the Dodder Valley is an important area for local bat populations. The bat surveys (reported separately) found that while there was no evidence of bat habitation within the Firhouse Inn buildings, some of these buildings would offer suitable habitat for bat species and that some areas of these buildings were accessible. It was noted also that the mature trees immediately adjacent the site proposed for development could also provide roosting habitat for bats. However, a later survey (August 2021) found no potential roost features

in these trees and a further survey undertaken in April 2022 found no evidence of bat habitation within these trees or any of the structures on the site.

8.2.2 Impacts Upon Bats

The proposed development may be predicted as having some possible *minor adverse* impact upon bat populations. Of greatest significance is the loss of potential roost habitat when the existing Firhouse Inn buildings are removed. As noted in the accompanying bat survey, that while no bat roosts were found on the most recent survey, there is a possibility that roosts will occur here in the future. Preconstruction surveys carried out by appropriately qualified specialists should be conducted before any works at this site. Correctly carried out, direct impacts from construction works should therefore be *Negligible.*

The lighting scheme of the proposed development may have a significant impact on bats. Lighting can severely impact on bat roosting behaviour, foraging behaviour and commuting behaviour with knock-on effects on accessing feeding areas. Many species of bats forage along dark corridors like rivers and hedgerows and are known to stay clear of well-lit areas. If the development is inappropriately lit, this can impact upon bats' home ranges. Bat vision is an important sense during dusk and dawn as bats begin to move to and from the roosting sites. Excessive luminance particularly around roosting sites can lead to bats being disorientated and can also lead to abandonment of roosts. Lighting can also impact feeding behaviour as prey species are drawn towards lights leading to a localised decrease in prey populations as most bat species will avoid well-lit areas.

8.2.3 Mitigation of Impacts upon Bat Populations

The recommendations as given in the accompanying bat report (April 2022) are to be followed. Namely, prior to works commencing, emergence (dusk) and re-entry (dawn) watches should be undertaken to ensure no bats are present. These should be carried out during the appropriate season, May to September. If bats are not confirmed exiting or

entering the buildings, a further internal survey is required before demolition works involving roofs can commence, under the supervision of an ecologist. During the period October to April inclusive, a pre-works internal survey is required, and demolition works involving the roofs supervised by an ecologist.

If bats are confirmed, works cannot proceed until an NPWS derogation licence is obtained.

It is recommended that an ecologist has input into the external lighting plan for the future development to ensure the correct positioning and models of lighting columns are installed and the mature treeline habitats around the development are not impacted by light overspill.

Lights should face down or be masked to avoid light hitting potential roosting areas in the adjacent trees. Internal and external louvres may be used to reduce light spillage.

8.3 Impacts on Mammals

No evidence of the activity of any protected mammal species was found during survey. The National Biodiversity Data Centre database shows records of 8 no. terrestrial mammal species of which 5 no. are protected. These species are Otter (*Lutra lutra*), Badger (*Meles meles*), West European Hedgehog (*Erinaceous europaeus*), Pygmy Shrew (*Sorex minutus*) And Eurasian Red Squirrel (*Sciurus vulgaris*). However, no impacts are predicted on any of these as:

- No suitable habitat for these species will be lost.
- No direct impacts are foreseeable as no protected species utilise the site proposed for development.
- The operational phase of the proposed project (the occupied buildings) will not have any impacts on these species.

The non-protected mammal species recorded in the relevant tetrad are: Red Fox (*Vulpes vulpes*), American Mink (*Mustela vison*) and Eastern Grey Squirrel (*Sciurus carolinensis*).

8.3.1 Mammal Impact Mitigation

No mitigation is deemed necessary as no impacts are expected on any protected mammal species.

8.4 Impacts on Birds

No evidence of any bird nesting activity was found during site surveys. No bird nesting habitat such as trees, shrubs or scrub occurs within the site proposed for development. However, the existing buildings could offer nesting habitat to a number of bird species such as House Martin (*Delchicon urbicon*) or Swallow (*Hirundo rustica*). These migratory species make use of accessible building space such as open or broken windows and open roof space. Construction activity could cause injury or death to birds that are nesting at this site. These birds are protected by law. It should be noted that no bird species have been recorded utilising the site.

The Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC) provide legal protection for all bird species, selected habitats and the wider environment in the EU. The Wildlife Act 1976 (Revised, Updated to 20 December 2018) infers in Section 22, (5), that it is an offence for a person to intentionally kill or to injure a protected wild bird or to intentionally to destroy, injure or mutilate the eggs or nest of a protected wild bird.

8.4.1 Bird Impact Mitigation

In order to avoid any impacts to bird species, it is recommended that the buildings are made secure following the bird nesting season (March-August inclusive). This is in order to prevent birds carrying out nesting activity at this site. If works are to take place within the bird nesting season, it is also recommended that a preconstruction survey is carried

out by an appropriately qualified ecologist. This is in order to ensure that no bird nesting has taken place since the last survey (April 2022).

8.5 Impacts on Other Habitats or Species

No impacts are predicted on any other habitats or species / groups (e.g. invertebrates, reptiles, amphibians). This is primarily due to the lack of any suitable habitat for these species/groups within the site proposed for development. No further mitigation is therefore required.

8.6 Invasive Species

Sycamore and *Buddleja davidii* are classified as non-native invasive species of Medium Impact risk.. However, it is not considered that either species will impact on the project. No impacts are predicted as a result of other invasive species (e.g. Knotweeds) at this site as none were recorded here. It is highly unlikely that any other invasive species will become established here prior to the development of the site. No mitigation is therefore required.

9 Conclusion

Ecological surveys were carried out at the site proposed for development at Firhouse. These were completed within suitable time for habitat and other assessment of the site and adjacent areas. Surveys included mammal, bird, bat habitat and invasive species. An extensive desktop survey was carried out which used available data from suitable sources which included online databases (e.g. National Parks and Wildlife Service and National Biodiversity Data Centre) and previous surveys (e.g. for the Dodder Greenway).

A very limited range habitats was recorded during survey. The site proposed for development contains only built habitat areas, a highly modified site. Surveys of the adjacent areas found No habitats listed on Annex I of the EU Habitats Directive were found within the survey area. No plants subject to the Flora Protection Order (2015) were found to occur within the area surveyed.

Four areas surveyed were described in the habitat survey as Environmentally Sensitive Areas (ESAs), being of greater sensitivity due to the habitats or species occurring here. These included the River Dodder and mixed broadleaved woodland within the river valley. No impacts on these ESAs may reasonably be predicted.

No protected mammal species were found to occur within the area proposed for development. It was noted that suitable habitat for some protected mammal species occurs within the ESAs as described above and that 5 no. protected mammal species have been recorded within 2km of the proposed development site. However, there is no suitable habitat for these species here.

A dedicated survey of at the existing buildings found no evidence of bat habitation. However, the same survey showed that there is suitable habitat here for bat roosts. A further preconstruction bat survey immediately prior to development is therefore recommended.

No bird species were recorded as nesting in the existing built habitat at the site. No negative impacts on bird species are therefore predicted. However, it is recommended that a further bird survey is carried out of the buildings immediately prior to development as bird nesting may take place here in the interim period.

A targeted survey for invasive species was carried out. No invasive species of anything higher than *medium* impact were found at the site proposed for development. No significant effects are expected to arise from the presence of these.

An evaluation of habitats showed that the site proposed for development is of Low Local value. The significance of impacts here may be described as being of *negligible* significance. In terms of habitat evaluation, the Dodder Valley pNHA was the only site within the survey area being of *national* importance. No potential impacts to this designated site were predicted given the location and nature of works. Indeed no other significant effects are predicted for any other habitat type within the survey area.

It is recommended that the above mitigation measures are fully implemented in order to minimise any potential for ecological impacts.

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Appendix A: Area Under Survey

Fig. i. Area under survey shown. Blue lines indicate watercourses. River Dodder shown. Area proposed for development shown in red outline.

Base mapping from Environmental Protection Agency gis.epa.ie

Appendix B: Site and Dodder Valley pNHA

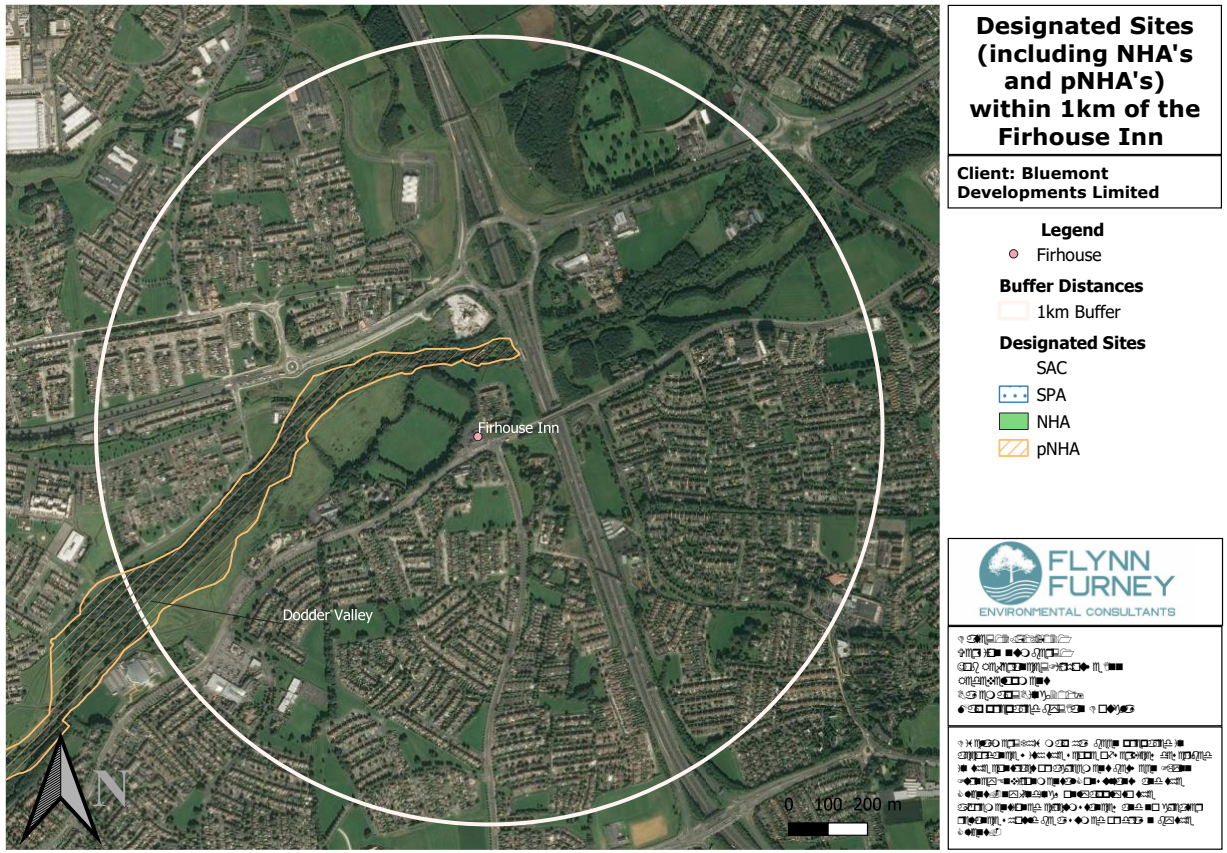
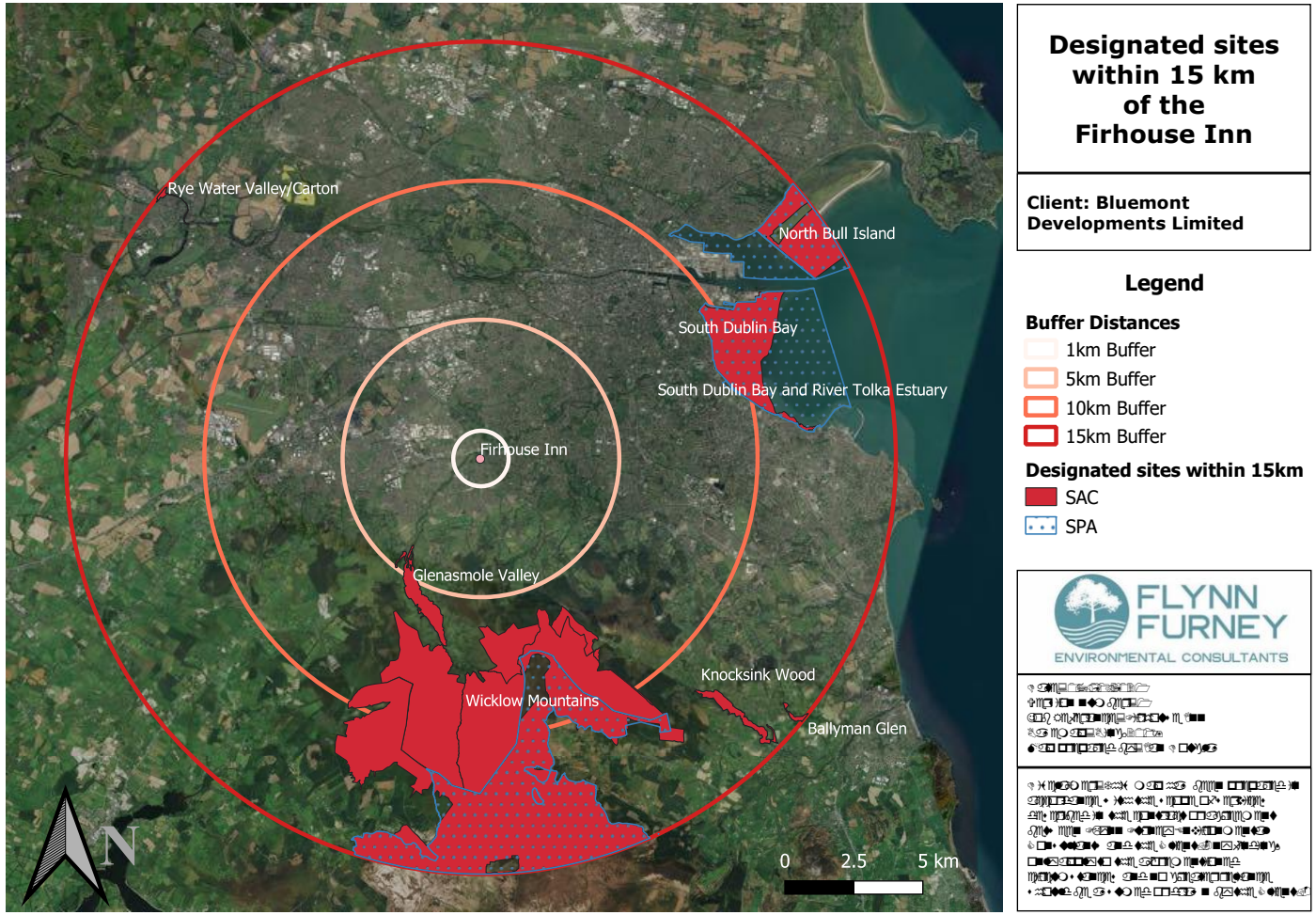


Fig. ii. Site and Dodder Valley proposed Natural Heritage Area shown. White line indicates 1km radius from Firhouse Inn.

Appendix B. (2) Protected Sites within 15km of Site



Designated sites within 15 km of the Firhouse Inn

Client: Bluemont Developments Limited

Legend

Buffer Distances

- 1km Buffer
- 5km Buffer
- 10km Buffer
- 15km Buffer

Designated sites within 15km

- SAC
- SPA

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Appendix B.(3) Habitats within Survey Area

Habitats sourounding Firhouse Inn

Client: Bluemont Developments Limited

Legend

Site Boundary

Firhouse Inn and Car Park

Habitats

Buildings and artificial surfaces
(Mixed) broadleaved woodland
Amenity grassland
Eroding/upland rivers
Hedgerows
Improved agricultural grassland
Scrub
Treelines

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Appendix C: Some Photographs of Site

Fig. 1 View of Firhouse Inn eastern elevation.

Fig. 2 Boundary wall of Inn car park with mature broadleaved trees shown.

Fig. 3 Agricultural grasslands to northwest of Firhouse Inn with mature treelines shown.

Fig. 4 River Dodder to north of site shown with amenity grassland (left) and mixed broadleaved woodland (right) shown.

Fig. 5 Mature beech trees to north of site. These are part of an important habitat area.

Fig. 6 Junction adjacent to Firhouse Inn with trees and some scrub shown.

Fig. 7 Looking to the east (toward M50) with Firhouse Inn on left hand side.