

# Ecological Impact Assessment Report for a Strategic Housing Development at Frankford Castle, Old Frankfort, Dundrum, Dublin 14

Compiled by OPENFIELD Ecological Services

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For the Pembroke Partnership Ltd.



[www.openfield.ie](http://www.openfield.ie)

August 2021

## **1 INTRODUCTION**

This Ecological Impact Statement has been prepared by Pádraic Fogarty of OPENFIELD Ecological Services. Pádraic Fogarty has worked for 25 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. OPENFIELD is a full member of the Institute of Environmental Management and Assessment (IEMA).

## **2 STUDY METHODOLOGY**

The assessment was carried out in accordance with the following best practice methodology: 'Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland' by the Institute of Ecology and Environmental Management (IEEM, 2018).

Site visits were carried out on the 19<sup>th</sup> of September 2019, the 12<sup>th</sup> of March, June 21<sup>st</sup> and June 28<sup>th</sup> 2021 in fair weather. The site was surveyed on each in accordance with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt's Guide to Habitats in Ireland (Fossitt, 2000).

The nomenclature for vascular plants is taken from *The New Flora of the British Isles* (Stace, 2010) and for mosses and liverworts *A Checklist and Census Catalogue of British and Irish Bryophytes* (Hill et al., 2009).

September and June lie within the optimal survey period for general habitat surveys (Smith et al., 2010) and so it was possible to classify all habitats on the site to Fossitt level 3. March and June lie within the optimal season for surveying breeding birds, amphibians and Badgers. A separate, dedicated bat survey was carried out by Brian Keeley of Wildlife Surveys Ireland during the optimal season in 2019 and again in 2021.

## **3 EXISTING RECEIVING ENVIRONMENT**

### **3.1 Zone of Influence**

Best practice guidance suggests that an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). However some impacts are not limited to this distance and so sensitive receptors further from the project footprint may need to be considered as this assessment progresses. This is shown in figure 1.

There are a number of designations for nature conservation in Ireland including National Park, National Nature Reserve, RAMSAR site, UNESCO Biosphere reserves, Special Protection Areas (SPA – Birds Directive), Special Areas of Conservation (SAC – Habitats Directive); and Natural Heritage Areas. The mechanism for these designations is through national or international legislation. Proposed NHAs (pNHA) are

areas that have yet to gain full legislative protection. They are generally protected through the relevant County Development Plan. There is no system in Ireland for the designation of sites at a local, or county level.

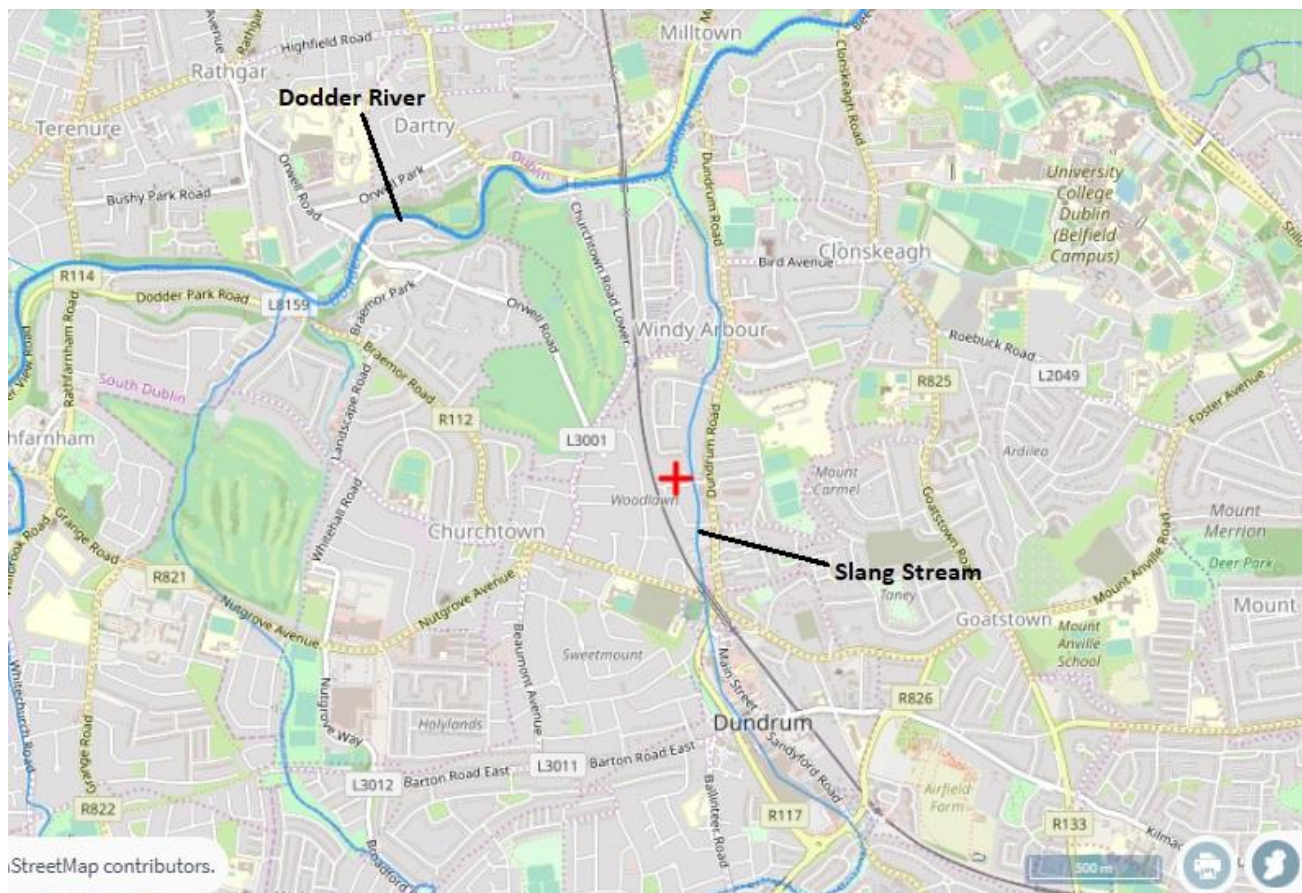


Figure 1 – Site location (red cross) showing local water courses (from [www.epa.ie](http://www.epa.ie)).

Hydrological pathways from this development lead to the River Dodder, via the Slang Stream, and on to Dublin Bay. The following areas were therefore found to be located within the zone of influence of the application site:

**South Dublin Bay SAC** (side code: 0210) is concentrated on the intertidal area of Sandymount Strand. It has one qualifying interest (i.e. feature which qualifies the area as being of international importance) which is mudflats and sandflats not covered by seawater at low tide.

**South Dublin Bay and Tolka Estuary SPA** (side code: 4024) is largely coincident with the SAC boundary with the exception of the Tolka Estuary.. Table 1 lists the features of interest for this SPA.

Table 1 – Features of interest for the South Dublin Bay and Tolka Estuary SPA in Dublin Bay (EU code in square parenthesis)

Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046]
Oystercatcher ( <i>Haematopus ostralegus</i> ) [A130]
Ringed Plover ( <i>Charadrius hiaticula</i> ) [A137]
Grey Plover ( <i>Pluvialis squatarola</i> ) [A140]
Knot ( <i>Calidris canutus</i> ) [A143]
Sanderling ( <i>Calidris alba</i> ) [A144]
Dunlin ( <i>Calidris alpina</i> ) [A149]
Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157]
Redshank ( <i>Tringa totanus</i> ) [A162]
Black-headed Gull ( <i>Croicocephalus ridibundus</i> ) [A179]
Roseate Tern ( <i>Sterna dougallii</i> ) [A192]
Common Tern ( <i>Sterna hirundo</i> ) [A193]
Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]
Wetlands & Waterbirds [A999]

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not separated between the the North Bull Island SPA and the South Dublin Bay and River Tolka Estuary SPA in this area.

Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 2 shows the most recent count data available (Lewis et al., 2015).

**Table 2 – Annual count data for Dublin Bay from the Irish Wetland Birds Survey (IWeBS)**

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Count	27,931	30,725	30,021	35,878	33,486	31,608

There were also internationally important populations of particular birds recorded in Dublin Bay (i.e. over 1% of the world population): Light-bellied brent geese *Branta bernicula hrota*; Black-tailed godwit *Limosa limosa*; Knot *Calidris canutus* and Bar-tailed godwit *L. lapponica* (Crowe et al., 2011)..

**North Dublin Bay pNHA** (site code: 0206). This area stretches north along the Dublin coast as far at Howth Head and east to the waters around (but not including) Bull Island. Much of the pNHA is now within the North

Dublin Bay SAC (site code: 0206) while that portion that falls within the Tolka estuary is within the aforementioned SPA.

### North Dublin Bay SAC

The North Dublin Bay SAC (site code: 0206) is focussed on the sand spit on the North Bull island. The qualifying interests for it are shown in table 3. The status of the habitat is also given and this is an assessment of its range, area, structure and function, and future prospects on a national level and not within the SAC itself.

Table 3 – Qualifying interests for the North Dublin Bay SAC

Code	Habitat/Species	Status
1140	Mudflats and sandflats not covered by seawater at low tide	Inadequate
1320	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate
1210	Annual vegetation of drift lines	Inadequate
2110	Embryonic shifting dunes	Inadequate
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Inadequate
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
2190	Humid dune slacks	Inadequate
1395	<i>Petalophyllum ralfsii</i> Petalwort	Favourable

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.

- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130 – priority habitat).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.
- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

The **North Bull Island SPA** (site code: 0206) is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. Table 4 lists its features of interest.

Table 4 – Features of interest for the North Bull Island SPA

North Bull Island SPA	National Status
Light-bellied Brent Goose <i>Branta bernicla hrota</i>	Amber (Wintering)
Oystercatcher <i>Haematopus ostralegus</i>	Red
Teal <i>Anas crecca</i>	Amber (Breeding & Wintering)
Pintail <i>Anas acuta</i>	Amber (Wintering)
Shoveler <i>Anas clypeata</i>	Red
Shelduck <i>Tadorna tadorna</i>	Amber
Golden Plover <i>Pluvialis apricaria</i>	Red
Grey Plover <i>Pluvialis squatarola</i>	Red (Wintering)
Knot <i>Calidris canutus</i>	Red (Wintering)
Sanderling <i>Calidris alba</i>	Green (Wintering)
Dunlin <i>Calidris alpina</i>	Red
Black-tailed Godwit <i>Limosa limosa</i>	Red (Wintering)
Bar-tailed Godwit <i>Limosa lapponica</i>	Red (Wintering)
Curlew <i>Numenius arquata</i>	Red
Redshank <i>Tringa totanus</i>	Red

Turnstone <i>Arenaria interpres</i>	Amber (Wintering)
Black-headed Gull <i>Larus ridibundus</i>	Amber
Wetlands & Waterbirds	

- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Teal.** In winter this duck is widespread throughout the country. Land use change and drainage however have contributed to a massive decline in its breeding range over the past 40 years.
- **Pintail.** Dabbling duck wintering on grazing marshes, river floodplains, sheltered coasts and estuaries. It is a localised species and has suffered a small decline in distribution in Ireland for unknown reasons.
- **Shoveler.** Favoured wintering sites for this duck are inland wetlands and coastal estuaries. While there have been local shifts in population and distribution, overall their status is stable in Ireland.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Black-tailed Godwit.** Breeding in Iceland these waders winter in selected sites around the Irish coast, but predominantly to the east and southern halves. Their range here has increase substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country it breeding population here has effectively collapsed. Their habitat has been affected by the destruction of peat bogs, afforestation, farmland intensification and land abandonment. Their wintering distribution also appears to be in decline.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.
- **Turnstone.** This winter visitor to Irish coasts favours sandy beaches, estuaries and rocky shores. It is found throughout the island but changes may be occurring due to climate change.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.

The NPWS web site ([www.npws.ie](http://www.npws.ie)) contains a mapping tool that indicates historic records of legally protected species within a selected Ordnance Survey (OS) 10km grid square. The subject site is located within the square O13 and six species of protected flowering plant are highlighted. These species are detailed in Table 5. It must be noted that this list cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

Table 5 – Known records for protected species within the O13 10km square

Species	Habitat <sup>1</sup>	Current status <sup>2</sup>
<i>Groenlandia densa</i> Opposite-leaved Pondweed	Rivers, canals and estuarine mud	Current
<i>Galeopsis angustifolia</i> Red Hemp-nettle	Calcareous gravels	Record pre-1970
<i>Hordeum secalinum</i> Meadow Barley	Upper parts of brackish marshes, chiefly near the sea	
<i>Puccinellia fasciculata</i> Borrer's salt-marsh grass	Muddy inlets on the coast	
<i>Hypericum hirsutum</i> Hairy St. John's-wort	Woods and shady places	Current
<i>Viola hirta</i> Hairy Violet	Sand dunes, grasslands, limestone rocks	

In summary it can be seen that of the six species only three records remain current. Opposite-leaved Pondweed was recorded as being 'common in the Grand Canal' in the *Flora of County Dublin* (Doogue et al., 1998). This source elaborates that the plant was "scattered along the Grand Canal at Dolphin's Barn from Portobello to Charlemont Bridge, and between Drimnagh and Kilmainham."

Water quality in rivers, canals and estuaries is monitored on an on-going basis by the Environmental Protection Agency (EPA). The subject lands are approximately 20m from the path of the Slang Stream, which is a tributary of the River Dodder. The Dodder flows into the River Liffey at George's Dock. The river is tidally influenced throughout its length in Dublin city centre. The 'ecological potential' of the canals is assessed by the EPA and the Grand Canal is assessed as 'good ecological potential' with the exception of George's Dock, which is assessed as 'moderate ecological potential'.

The Slang Stream downstream of the development site, as well as the River Dodder as far as its confluence with the River Liffey are assessed under the Water Framework Directive reporting period 2015-2018 as 'moderate' status. The estuary of the River Liffey and Dublin Bay are both assessed as 'good' status.

These data were taken from the ENVision mapping tool on [www.epa.ie](http://www.epa.ie) in June 2021.

<sup>1</sup> Parnell et al., 2012

<sup>2</sup> Preston et al., 2002



## 3.2 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has long been a part of the built environment of Dublin City. The immediate vicinity of the site is entirely composed of buildings and artificial surfaces although it is close to the Slang Stream.

### 3.2.1 Flora

Habitats are described here in accordance with standard classifications (Fossitt, 2000). The site survey found that the lands are composed of **buildings and artificial surfaces – BL3** along with **scattered trees and parklands – WD5** which includes both buildings and garden areas. These contain a number of trees including specimens of Cypress *Cuprocyparis sp.*, Birch *Betula sp.*, Pine *Pinus sp.* and Maple *Acer sp.* Lawns are well mown while shrubs are predominantly non-native with New Zealand Broadleaf *Grisilinea littoralis* and Privet *Ligustrum vulgare*. Along some boundary stretches these make up **treelines – WL1**.

An area of unmanaged land to the south is made up of **scrub – WS1** with a **hedgerow – WL1** surround. There are extensive areas of Brambles *Rubus fruticosus agg.*, Elder *Sambucus nigra*, Butterfly-bush *Buddleja davidii*, Cherry Laurel *Prunus laurocerasus*, Ash *Fraxinus excelsior*, Elm *Ulmus sp.*, and Rosebay Willowherb *Chamerion angustifolia*.

There is an existing vehicle crossing of the Slang Stream. The watercourse itself is narrow and its banksides on either side of the crossing are steep. The vegetation is a combination of native and non-native/horticultural plants and includes Sycamore *Acer pseudacorus*, Ivy *Hedera helix*, Elder, Brambles, Snowberry *Symphoricarpos albus* and Cherry Laurel *Prunus laurocerasus*.

The River Slang flows along the eastern extremity of the development site boundary. There are no other water courses on development site, no bodies of open water other than a small garden pond, and no habitats which could be considered wetlands. There are no plant species which are listed as alien invasive under Schedule 3 of SI No 477 of 2011.

### 3.2.2 Fauna

The site surveys, on each occasion, included incidental sightings or proxy signs (prints, scats etc.) of faunal activity within the development site boundary, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. Table 6 details those mammals that are protected under national or international legislation in Ireland. Cells are greyed out where suitable habitat is not present or species are outside the range of the study area.

Table 6 – Protected mammals in Ireland and their known status within the zone of influence<sup>3</sup>. Those that are greyed out indicate either that suitable habitat is not present or that there are no records of the species from the National Biodiversity Data Centre.

Species	Level of Protection	Habitat <sup>4</sup>	
Otter <i>Lutra lutra</i>	Annex II & IV Habitats Directive; Wildlife (Amendment) Act, 2000	Rivers and wetlands	
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>		Disused, undisturbed old buildings, caves and mines	
Grey seal <i>Halichoerus grypus</i>	Annex II & V Habitats Directive; Wildlife (Amendment) Act, 2000	Coastal habitats	
Common seal <i>Phocaena phocaena</i>			
Whiskered bat <i>Myotis mystacinus</i>	Annex IV Habitats Directive; Wildlife (Amendment) Act, 2000	Gardens, parks and riparian habitats	
Natterer's bat <i>Myotis nattereri</i>		Woodland	
Leisler's bat <i>Nyctalus leisleri</i>		Open areas roosting in attics	
Brown long-eared bat <i>Plecotus auritus</i>		Woodland	
Common pipistrelle <i>Pipistrellus pipistrellus</i>		Farmland, woodland and urban areas	
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>		Rivers, lakes & riparian woodland	
Daubenton's bat <i>Myotis daubentonii</i>		Woodlands and bridges associated with open water	
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>		Parkland, mixed and pine forests, riparian habitats	
Irish hare <i>Lepus timidus hibernicus</i>		Annex V Habitats Directive; Wildlife (Amendment) Act, 2000	Wide range of habitats
Pine Marten <i>Martes martes</i>			Broad-leaved and coniferous forest
Hedgehog <i>Erinaceus europaeus</i>	Wildlife (Amendment) Act, 2000	Woodlands and hedgerows	
Pygmy shrew <i>Sorex minutus</i>		Woodlands, heathland, and wetlands	
Red squirrel <i>Sciurus vulgaris</i>		Woodlands	

<sup>3</sup> From the National Biodiversity Data Centre, excludes marine cetaceans

<sup>4</sup> Harris & Yalden, 2008

Irish stoat <i>Mustela erminea hibernica</i>		Wide range of habitats
Badger <i>Meles meles</i>		Farmland, woodland and urban areas
Red deer <i>Cervus elaphus</i>		Woodland and open moorland
Fallow deer <i>Dama dama</i>		Mixed woodland but feeding in open habitat
Sika deer <i>Cervus nippon</i>		Coniferous woodland and adjacent heaths

Although a number of mammals are known to be present in Dublin city, most notably Fox *Vulpes vulpes*, there are no habitats on the site which are suitable for the majority of these species. Otter may be present along the River Dodder and its tributaries (including the River Slang) although a survey of the River Slang for c. 20m either side of the stream crossing revealed no evidence to confirm their presence (this does not confirm their absence). For the purposes of this study, it is assumed that Otter are present along the River Slang.

The site was surveyed for Badgers activity in March 2021, which is within the optimal season. No evidence of Badger activity was noted and no setts are present on the site.

A detector-based bat survey was carried by Brian Keeley on August 21/22 2019, May 7<sup>th</sup>/8<sup>th</sup> 2021, May 31<sup>st</sup>/June 1<sup>st</sup> 2021 which are all dates within the optimal flight period. The bat report states:

*There is a maternity roost of common pipistrelles within the attic of 97A Highfield Park (one of the houses that would be demolished to facilitate this development). 20 bats emerged from the house on 31st May 2021 and bats were seen to return to the house prior to sunrise on 1st June 2021.*

*These bats dispersed over the area and were only occasionally noted within the Frankfort Castle gardens or the garden surrounding the roost.*

*No bats were seen or heard to emerge from Frankfort Castle or the neighbouring derelict building. No bat droppings or other indications of bat occupancy were noted in any of the three attics examined (all available attics).*

#### *Roost potential*

*The house offers some roost potential given its age and the extent of the attics overall. There was no evidence of bat usage of the buildings.*

*There were two residents with whom bats were discussed at the time of survey. One was a recent occupant but had not encountered bats within the summer period. The second resident had lived within the house for over 20 years and had not encountered bats within this entire period. This would rule out the possibility of a*

large number of bats and of maternity roosts. Individual bats may go unnoticed for a considerable time or indefinitely.

There are a small number of trees with roost potential within the site due to loose bark or cavities. All tree cavities, loose bark and limb damage were devoid of evidence of bats based on a ground evaluation of the trees.

Three species of bat were recorded foraging: Common Pipistrelle, Soprano Pipistrelle and Leisler's Bat.

The September 2019 survey was outside the suitable season for surveying breeding birds. Wood Pigeon *Columba palumbus*, Wren *Troglodytes troglodytes* and Magpie *Pica pica* were all noted at that time.

In March 2021 a breeding bird survey was carried out and aimed to identify all nesting birds within the red line development boundary. This noted Blue Tit *Parus caeruleus*, Wood Pigeon, Blackbird *Turdus merula* and Magpie.

In June 2021 a repeat survey was undertaken which noted Blue Tit, Wood Pigeon, Blackbird, Wren, Great Tit and Bullfinch *Pyrrhula pyrrhula*. All recorded species, across all survey dates, are common and widespread species which are listed by BirdWatch Ireland as being of 'low conservation concern' (Gilbert et al., 2021).

The habitats on the site are not suitable for regularly occurring populations of wetland/wading/wintering birds which may be associated with coastal Natura 2000 sites. March is within the optimal season for surveying winter birds and no such species were recorded. No expanses of amenity grassland, which are sometimes used as feeding sites for wetland birds, are present on the development site or in the immediate vicinity.

There is a small garden pond which provides potential habitat for breeding amphibians. Although March is within the optimal season for spawn surveys, no Frog *Rana temporaria* or Smooth Newt *Lissotriton vulgaris* spawn was noted. There are no suitable habitats on the development site for fish.

The River Slang is a part of the Dodder River system and is of salmonid status with Atlantic Salmon *Salmo salar*, Trout *S. trutta* as well as the critically endangered European Eel *Anguilla anguilla*. Most habitats, even highly altered ones, are likely to harbour a wide diversity of invertebrates. In Ireland only one insect is protected by law, the Marsh Fritillary butterfly *Euphydryas aurinia*, and this is not to be found on built-up sites. Other protected invertebrates are confined to freshwater and wetland habitats and so are not present on this site.

### 3.4 Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site

In summary, the development site is within a built-up area of Dublin city. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are no species listed as alien invasive as per SI 477 of 2011.

Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). These are reproduced in table 7. From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 8.



Figure 2 – Habitat map of the subject site.

Table 7 Site evaluation scheme taken from NRA guidance 2009

<b>Site Rating</b>	<b>Qualifying criteria</b>
A - International importance	<p>SAC, SPA or site qualifying as such. Sites containing 'best examples' of Annex I priority habitats (Habitats Directive).</p> <p>Resident or regularly occurring populations of species listed under Annex II (Habitats Directive); Annex I (Birds Directive); the Bonn or Berne Conventions.</p> <p>RAMSAR site; UNESCO biosphere reserve;</p> <p>Designated Salmonid water</p>
B - National importance	<p>NHA. Statutory Nature Reserves. Refuge for Flora and Fauna. National Park.</p> <p>Resident or regularly occurring populations of species listed in the Wildlife Act or Red Data List</p> <p>'Viable' examples of habitats listed in Annex I of the Habitats Directive</p>
C - County importance	<p>Area of Special Amenity, Tree Protection Orders, high amenity (designated under a County Development Plan)</p> <p>Resident or regularly occurring populations (important at a county level, defined as &gt;1% of the county population) of European, Wildlife Act or Red Data Book species</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the county</p>
D - Local importance, higher value	<p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the locality</p> <p>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.</p>
E - Local importance, lower value	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links.</p>

Table 8 Evaluation of the importance of habitats and species on the subject site

Buildings and artificial surfaces – BL3	Negligible value
Scrub – WS1 Scattered trees and parkland – WD5 Treeline – WL2 Hedgerow – WL1	Low local value
The Slang Stream	High local value



#### 4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development will see the demolition of the existing building as shown in figure 2, and construction of a residential apartment complex. There will be post construction landscaping in areas of green space. The project is described here as per the planning application:

*The proposed development will consist of 115 no. residential units comprising 45 no. one-bed units and 70 no. two-bed units. The proposed units will be accommodated in the partially retained Frankfort Castle building and in 3no. blocks with a maximum height of 5 storeys. Additional works proposed include the provision of a childcare facility (80sqm), car and cycle parking at surface and basement levels, hard and soft landscaping, surface water drainage infrastructure and attenuation tank, and all associated site development and infrastructure works.*



Figure 3 – Development overview



## 5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

This section provides a description of the potential impacts that the proposed development may have on biodiversity in the absence of mitigation. Methodology for determining the significance of an impact has been published by the NRA. This is reproduced in table 9 and is based on the valuation of the ecological feature in question (table 8) and the scale of the predicted impact. In this way it is possible to assign an impact significance in a transparent and objective way. Table 10 summaries the nature of the predicted impacts.

### 5.1 Construction Phase

The following potential impacts are likely to occur during the construction phase in the absence of mitigation:

1. The removal of habitats including the buildings and gardens with trees. These are low value habitats with predominantly non-native vegetation. According to the bat survey report “There are a small number of trees with roost potential within the site due to lose bark or cavities. All tree cavities, loose bark and limb damage were devoid of evidence of bats.”



Figure 4 – Trees to be retained and new landscape planting.

No structural works are planned to the crossing of the Slang Stream. No works will be undertaken at the riparian zone. No effects to Otters to Otter habitats will arise during the construction phase.

An arboricultural study has shown that a number of trees are to be removed due to their condition and/or conflict with the design of the scheme. These include 1 (out of 2) 'A' category trees (best quality), 24 (out of 32) 'B' category trees (moderate quality), 24 (out of 33) 'C' category trees (low quality) and 1 'U' category trees (worst quality). This represents 73.4% of the total tree stock currently on the site. There are no trees on the site assessed by the arborist as 'veteran'. According to this report:

"One tree is being removed due to its condition, a diseased mature Grey poplar. Seven of the trees being removed are in poor condition which is 10% of the tree population. There are also two over mature trees included in those being removed, an apple and a Cherry, which 3% of the tree population.

Of the existing tree population 73.4% of the trees are being removed, of those 58.8% are either young, early mature, overmature or category U.

The planting of 74 new trees will provide a sustainable tree cover into the future."

Although a large number of trees are to be removed, the impact to local wildlife from this loss of these habitats will be minor negative, principally as the trees in question are predominantly non-native and so of limited value to biodiversity. New landscape planting will ensure that long-term habitat for common plants and animals will be retained and so the long term effect will be neutral.

2. The direct mortality of species during demolition. This impact is most acute during the bird breeding season which can be assumed to last from March to August inclusive. Garden and scrub vegetation is suitable for nesting birds and mitigation will be required during the construction phase as all birds' nests and eggs are protected.

A bat roost was identified in 97A Highfield Park and a derogation licence has been applied for by the bat ecologist. As some of trees, as well as the buildings, are suitable for roosting bats, mitigation will be required to ensure protection of these species at the construction phase.

3. Pollution of water courses through the ingress of silt, oils and other toxic substances. The distance from the Slang Stream means that there is a buffer between potential pollution sources and this sensitive receptor No structural works are planned to the bridge over the Slang Stream and no instream works will be undertaken. Work in this area is limited to re-surfacing of the bridge to alter the traffic configuration. There will be no change to the existing cross-section of the bridge structure. The Dodder system holds populations of Brown Trout *Salmo trutta* and this species is sensitive to

pollutants (Hendry & Craig-Hine, 2003). Nevertheless there are no direct pathways to the Dodder during the construction phase and so at worst the impact is considered to be minor negative.

## Operation Phase

The following potential impacts are likely to occur during the operation phase in the absence of mitigation:

4. Pollution of water from foul wastewater arising from the development. Wastewater will be sent to the municipal treatment plant at Ringsend. Upgrade works are needed as the plant is not currently meeting its requirements under the Urban Wastewater Treatment Directive. Pollution effects are most acute in freshwater systems where the capacity for dilution is low and the consequent risk of eutrophication is high. The Ringsend WWTP discharges into Dublin Bay which is currently classified as 'unpolluted' by the EPA despite long-running compliance issues at the plant. A separate screening report for Appropriate Assessment specifically examines the impacts of this project on Natura 2000 sites in Dublin Bay however the evidence suggests that non-compliance issues at the WWTP are not having negative effects to features of high ecological value (e.g. wading birds or intertidal habitats). In April 2019 Irish Water was granted planning permission to upgrade the Ringsend plant. Contractors for the upgrade work to the plant comprising a new 400,000 population equivalent extension were appointed in February 2018. The work on this 25% increase in capacity is scheduled to be completed by 2021. In addition, it is stated that Irish Water is working on infrastructure to achieve a population equivalent of two million by the end of 2022. The upgrade to use of aerobic granular sludge (which allows for a greater amount of wastewater to be treated to a higher standard within the current plant) and other phased upgrades to achieve a population equivalent of 2.4 million is expected to be completed by 2025.
5. Pollution of water from surface water run-off. The Greater Dublin Strategic Drainage Study (2005) identified issues of urban expansion leading to an increased risk of flooding in the city and a deterioration of water quality. This arises where soil and natural vegetation, which is permeable to rainwater and slows its flow, is replaced with impermeable hard surfaces. The proposed development will increase the area of hard standing and this may affect the pattern of run-off. SUDS measures are included in the project design in order to maintain run-off at a 'greenfield' rate. This will include green roofs, water storage butts, permeable paving, low water usage appliances, tree pits and an attenuation tank with controlled release to the sewer. There is a public surface water sewer available and so foul and surface systems will be entirely separate. An outfall to the Slang Stream already exists and so no works are required to this water course.
6. Artificial lighting. The bat report states that "The reduction in cover and the increase in lighting will have a long-term to permanent negligible negative impact on the bat population of the region." Nevertheless, measures can be taken to ensure a more bat-friendly environment.

No impacts are predicted to occur to any area designated for nature conservation. Impacts to Natura 2000 sites (SACs or SPAs) in Dublin Bay are not predicted to occur, principally due to the separation distance between the site and these areas. A full assessment of potential effects to these areas is contained within a separate Screening Report for Appropriate Assessment.

Table 9: Determination of significance matrix taken from NRA guidance Appendix 4 (2006)

<b>Impact Level</b>	<b>Site category</b>				
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>Severe negative</b>	Any permanent impact	Permanent impact to a large part of the site			
<b>Major negative</b>	Temporary impact to a large part of the site	Permanent impact to a small part of the site	Permanent impact to a large part of the site		
<b>Moderate negative</b>	Temporary impact to a small part of the site	Temporary impact to a large part of the site	Permanent impact to a small part of the site	Permanent impact to a large part of the site	
<b>Minor negative</b>		Temporary impact to a small part of the site	Temporary impact to a large part of the site	Permanent impact to a small part of the site	Permanent impact to a large part of the site
<b>Neutral (Negligible)</b>	No impact	No impact	No impact	No impact	Permanent impact to a small part of the site
<b>Minor positive</b>				Permanent beneficial impact to a small part of the site	Permanent beneficial impact to a large part of the site
<b>Moderate positive</b>			Permanent beneficial impact to a small part of the site	Permanent beneficial impact to a large part of the site	
<b>Major positive</b>		Permanent beneficial impact to a small part of the site	Permanent beneficial impact to a large part of the site		

Table 10 – Nature of predicted impacts in the absence of mitigation

	Impact	Direct/ Indirect	Cumulative	Duration <sup>5</sup>	Reversible?	Positive/ Negative
<b>Construction Phase</b>						
1	Habitat loss	Direct	Yes	Temporary	No	Negative
2	Species Mortality	Direct	No	Permanent	No	Negative
3	Pollution of water courses	Indirect	Yes	Temporary	Yes	Negative
<b>Operation Phase</b>						
4	Wastewater	Indirect	Yes	Permanent	Yes	Neutral
5	Surface water run-off	Indirect	Yes	Permanent	Yes	Neutral
6	Artificial lighting	Indirect	Yes	Temporary	Yes	Minor negative

Table 11: Significance level of likely impacts in the absence of mitigation

Impact	Significance	
<b>Construction phase</b>		
1	Loss of habitat	Minor negative
2	Mortality to animals during construction	Moderate negative – impact to features with legal protection
3	Pollution of water during construction phase	Minor negative
4	Wastewater pollution	Neutral
5	Surface water pollution	Minor positive
6	Artificial lighting	Minor negative

Overall it can be seen that one potential moderate negative impact is predicted to occur as a result of this project in the absence of mitigation.

<sup>5</sup> Temporary: up to 1 year; Short-term: 1-7 years; Medium-term: 7-15 years; Long-term: 15-60 years; Permanent: >60 years (NRA, 2006)

## **5.2 Cumulative impacts**

A number of the identified impacts can also act cumulatively with other impacts from similar developments in this area of Dublin. Following a planning search there were found to be no developments in the near vicinity of the development site under construction or in the planning system. These primarily arise through the additional loading to the Ringsend Wastewater Treatment Plant. It is considered that this effect is not significant due to the planned upgrading works that will bring it in line with the requirement of the Urban Wastewater Treatment Directive.

Cumulative effects can also arise from increases in soil sealing, which can in turn affect patterns of surface water run-off. In this instance the incorporation of SUDS attenuation measures into a city centre brown-field site is contributing to the cumulative positive effective of reducing rainwater run off to the municipal treatment plant.

Effects to water quality can also arise where multiple construction projects are underway at the same time. In this case there are no known projects underway or at planning stage in this vicinity.

No cumulative effects will arise which could result in negative effects to biodiversity.

## **6 DO NOTHING IMPACT**

The site can be considered to have minimal ecological value. This will not change in the absence of this project.

Water quality may improve throughout the Liffey and Dodder catchments with the implementation of the Water Framework Directive however its target of 'good ecological status' for all water bodies by 2016 has not be met.

## 7 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES

This report has identified one impact that was assessed as 'moderate negative' and therefore mitigation is needed to reduce the severity of this potential effect.

### 7.1 Mitigation Measures Proposed

The following mitigation measures are proposed for the development

#### Construction Phase

##### Disturbance of birds' nests

Deliberate disturbance of a bird's nest is prohibited unless under licence from the National Parks and Wildlife Service. If possible demolition and vegetation clearance works should proceed outside the nesting season, i.e. from September to February inclusive. If a nest is encountered then works must stop until such time as nesting has ceased. Otherwise, a derogation licence must be sought from the NPWS to allow the destruction of the nest.

##### Disturbance to bats

A derogation has been acquired from NPWS and an updated derogation will be required prior to any work on the building that would affect bats. The derogation includes the following measures:

- Survey of the building prior to demolition.
- Exclusion of bats by a bat specialist licensed to capture and handle bats.
- Provision of alternative roost options
- Monitoring of alternative roost success

The building will be examined for the presence of bats in advance of demolition by a licensed bat specialist.

Bats shall be excluded using one-way valves if required or if bats are inactive, supervision of demolition and removal of bats by the bat specialist by hand shall be undertaken and bats kept safely until demolition is complete.

97A Highfield Park must not be demolished in the period May to the end of August unless it has been proven to be devoid of bats

Bat boxes A large colony heated bat roost box shall be installed within the substation / Refuse Cycle building. Large Colony Box: Height: 78cm, Width: 35cm, Depth: 13cm, Weight: 8kg, Heating: 50W ceramic heating, Material: FSC certified exterior grade plywood. This box must be switched on during the months May to the end of August and must not be switched off during this period. This can be checked during the monitoring visit.

2 x Treble crevice bat boxes (or equivalent) shall be attached to mature trees or buildings to provide alternative roost sites for bats (Treble Crevice Bat Box: Size: 33cm Height x 16cm Width x 13cm Depth,

Weight: 2.0kg). One of these shall face a southerly direction and the other westerly. These should be unlit to be successful.

Checking Frankford Castle and remaining buildings prior to demolition

All remaining buildings or sections of buildings and especially attics shall be assessed for bat occupancy prior to demolition.

Checking mature trees prior to felling

All trees with roost potential, as determined by a bat specialist, shall be examined by a bat specialist for bat occupancy prior to felling or major surgery.

#### Pollution during construction

Although the effect to water quality during construction is predicted to be minor negative, best practice site management will be deployed to ensure that pollution is avoided. Dangerous substances such as oils and fuels will be stored in bunded areas. Surface water falling on the site is likely to percolate to ground and any discharges to surface drains will first pass through a suitably-sized silt trap. Site-specific pollution prevention measures have been incorporated into an Outline Construction and Environmental Management Plan which has been prepared by CS Consulting Group.

#### Operational phase

The following measures are taken from the bat report:

##### Lighting

Lighting shall be used in a targeted manner to ensure that there is no unnecessary light spillage. This should allow for areas where vegetation is unlit and where the roof level of houses is not illuminated.

Lighting should be controlled to avoid light pollution of vegetation and should be targeted to areas of human activity and for priority security areas. Motion-activated sensor lighting is preferable to reduce light pollution. It is recommended that lights are not continually lit at night. Bat boxes shall remain unlit. The developer has confirmed that these mitigation measures will be included in the final project design.



## **8 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT**

With the full implementation of all mitigation measures, no negative effects to biodiversity are predicted to arise from this development which are moderate negative or greater in magnitude.

## **9 MONITORING AND CONCLUSION**

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. Table 11 summaries the likely impacts arising from this project.

After mitigation no effects are likely to arise as a result of this development to biodiversity which are moderate negative or greater in magnitude and so monitoring is not required.

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