

Ecological Impact Statement for a Proposed Large Residential Development at the Junction of Sallynoggin Road Lower and Glenageary Avenue, Glenageary, Co Dublin

Compiled by OPENFIELD Ecological Services

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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 (EcIA) 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 14th of September 2020 and January 11th 2023. The site was surveyed 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 lies 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. September lies outside the season for surveying breeding birds while January is the optimal season for large mammals and wintering birds. Given the highly modified nature of the habitats on the site no constraints to a full assessment were encountered.

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.

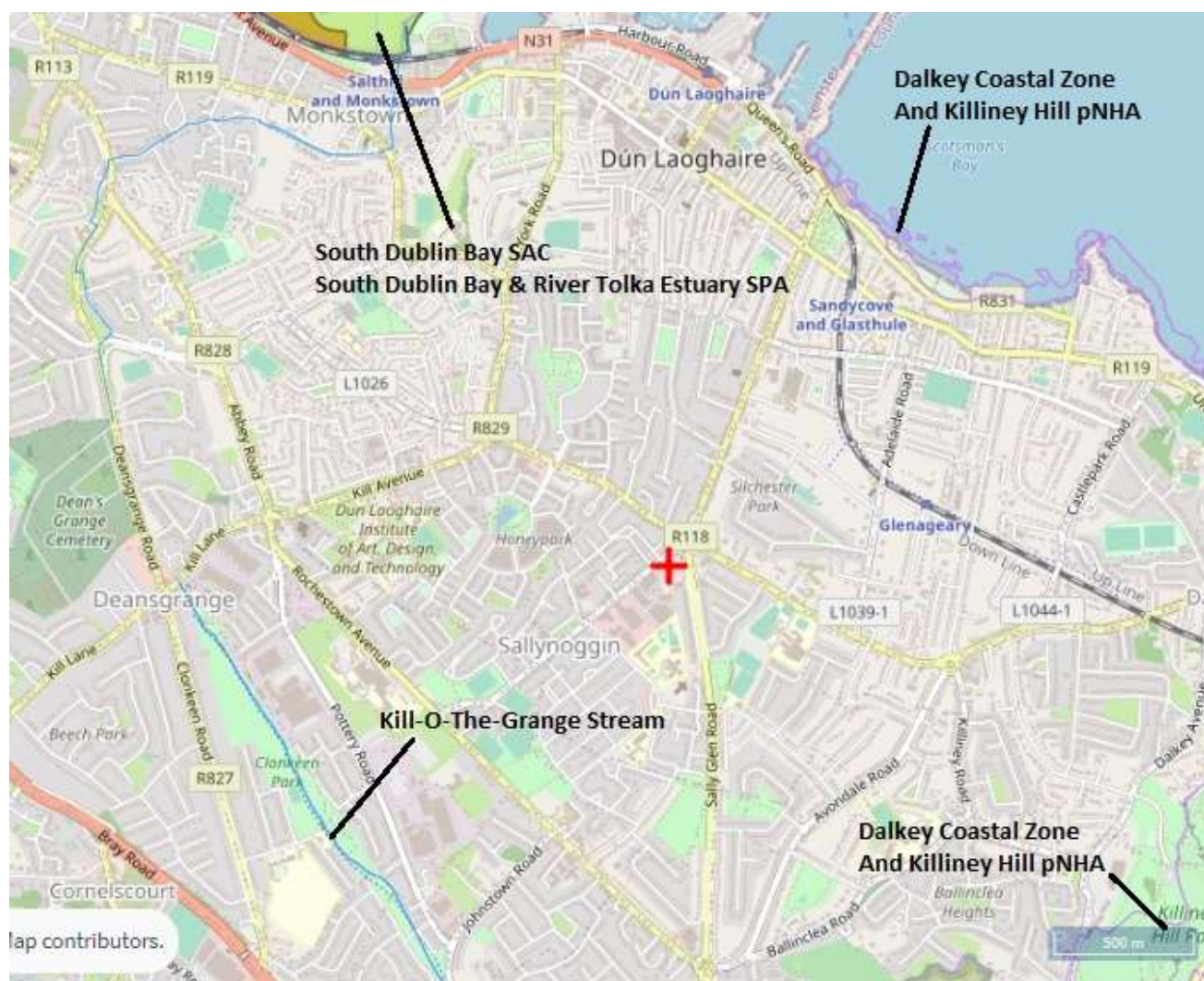


Figure 1 – Site location in South Dublin showing local water courses and areas designated for nature conservation (from www.epa.ie).

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. The following areas were found to be located within the zone of influence of the application site:

Dalkey Coastal Zone and Killiney Hill pNHA (site code: 1206): This area is subdivided into a number of discrete patches and was originally highlighted for designation for its geological features. The offshore zone is notable for its marine life while the Dalkey Islands are now within an SPA for its important bird colonies. Killiney Hill contains good examples of native oak woodland and heath and may be the last refuge of the Red Squirrel in South Dublin (NPWS, 1995).

South Dublin Bay and Tolka Estuary SPA (side code: 4024) is concentrated on the intertidal area of Sandymount Strand, to the south of the city, as well as the Tolka Estuary. 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 1 lists the qualifying interests for these SPAs.

The **North-West Irish Sea SPA** (site code: 4236) is a large SPA that was designated in July 2023 and extends for 2,333km² from Dublin Bay in the south to the southern tip of Dundalk Bay in the north. It encompasses marine and coastal areas while bordering a number of other SPAs in this region. Table 2 gives the qualifying interests of this SPA.

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not specific to any particular portion of the Bay. Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 1 shows the most recent count data available¹.

Table 1 – Mean count of bird species (qualifying interests of SPAs) for Dublin Bay from the Irish Wetland Birds Survey (IWeBS) from 2010 - 2020

Species	Mean
Light-bellied Brent Goose	3,453
Sanderling	500
Dunlin	5,951
Knot	5,093
Black-headed Gull	3,340
Ringed Plover	176
Oystercatcher	3,419
Bar-tailed Godwit	1,965
Grey Plover	328
Roseate Tern	0
Common Tern	23
Arctic Tern	0
Redshank	2,050
Teal	1,335
Pintail	184
Shoveler	101
Black-tailed Godwit	2,038
Curlew	882
Turnstone	272

¹ <https://fl.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

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*.

South Dublin Bay pNHA (site code: 0210). This area is coincident with the SAC, indeed the SAC designation would supersede this older designation.

Table 2 – Qualifying interests for the North-West Irish Sea SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Little Tern (<i>Sterna albifrons</i>) [A195]
Common Scoter (<i>Melanitta nigra</i>) [A065]
Red-throated Diver (<i>Gavia stellata</i>) [A001]
Great Northern Diver (<i>Gavia immer</i>) [A003]
Fulmar (<i>Fulmarus glacialis</i>) [A009]
Manx Shearwater (<i>Puffinus puffinus</i>) [A013]
Shag (<i>Phalacrocorax aristotelis</i>) [A018]
Cormorant (<i>Phalacrocorax carbo</i>) [A017]
Little Gull (<i>Larus minutus</i>) [A177]
Kittiwake (<i>Rissa tridactyla</i>) [A188]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Common Gull (<i>Larus canus</i>) [A182]
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]
Herring Gull (<i>Larus argentatus</i>) [A184]
Great Black-backed Gull (<i>Larus marinus</i>) [A187]
Puffin (<i>Fratercula arctica</i>) [A204]
Razorbill (<i>Alca torda</i>) [A200]
Guillemot (<i>Uria aalge</i>) [A199]

The NPWS web site (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 Glenageary Road site is located within the square O22 and six species of protected flowering plant are highlighted. These species are detailed in Table 3. It must be noted that this list cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

In summary, it can be seen that of the five species none remains current according to the Botanical Society of the British Isles.

Table 3 – Known records for protected species within the O22 10km square

Species	Habitat ²	Current status ³
<i>Cinopodium acinos</i> Basil Thyme	Field margins and sandy or gravelly places	Record pre-1970
<i>Galeopsis angustifolia</i> Red Hemp-nettle	Calcareous gravels	
<i>Puccinellia fasciculata</i> Borrer's salt-marsh grass	Muddy inlets on the coast	
<i>Misopates orontium</i> Lesser Snapdragon	Arable fields	
<i>Viola hirta</i> Hairy Violet	Sand dunes, grasslands, limestone rocks	
<i>Cervus nippon</i> Sika Deer	Coniferous woodland and adjacent heaths	Current
<i>Lutra lutra</i> Otter	Rivers, coasts and wetlands	Current
<i>Sciurus vulgaris</i> Red Squirrel	Woodlands	Current

Water quality in rivers, canals and estuaries is monitored on an on-going basis by the Environmental Protection Agency (EPA). They assess the pollution status of a stretch of river by analysing the invertebrates living in the substrate as different species show varying sensitivities to pollution. They arrive at a 'Q-Value' where Q1 = grossly polluted and Q5 = pristine quality (Toner et al., 2005). The Kill-o-the-Grange Stream runs c.1.5km to the south-west of the site. This is a very short water course that runs from Deansgrange to the Irish Sea at Loughlinstown. Monitoring from 2020 at the Meadowvale Footbridge showed polluted conditions (Q3). The EPA have assessed it as 'poor' status under the Water Framework Directive. These data are taken from the ENVision mapping tool on www.epa.ie.

² Parnell et al., 2012

³ www.bsbi.com

3.2 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has been within the urban fabric of Dublin since historical times.

3.2.1 Flora

The site is entirely composed of a large expanse of **dry meadow – GS2**. There are a range of grassland species including signs that these have been added to by planting ‘wildflower’ seeds (Cornflower *Centaurea cyanus*, Oxeye Daisy *Leucanthemum vulgare* and Common Fleabane *Pulicaria dysenterica* are occasional). There are Clovers *Trifolium sp.*, Docks *Rumex sp.*, Vetches *Vicia sp.*, Ragwort *Senecio jacobaea* among others. Grasses include Perennial Rye *Lolium preenne*, Creeping Bent *Agrostis stolonifera* and Cock’s-foot *Dactylis glomerata*.

There are no water courses on the site, bodies or open water or habitats which could be considered as wetlands. There are no alien invasive plant species as listed under Schedule 3 of SI no. 477 of 2011. Overall the lands can be described as being of low local biodiversity value.

The Kill-o-the-Grange Stream can be found approximately 1.5km to the south-west of the site. The stream flows to the south-east through Clonkeen Park which is a public amenity. The development site is physically separated from the development by extensive areas of built development.

3.2.2 Fauna

The site survey included incidental sightings or proxy signs (prints, scats etc.) of faunal activity, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. Table 4 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 4 – Protected mammals in Ireland and their known status within the O22 10km grid square⁴. Those that are greyed out indicate either that there are no records of the species from the National Biodiversity Data Centre. Since the site is not coastal the two Seal species are greyed out.

Species	Level of Protection	Habitat ⁵
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

⁴ From the National Biodiversity Data Centre, excludes marine cetaceans

⁵ 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

The nature of the habitat on the site means there is little or no suitable habitat for the majority of mammals which can be found in this part of Dublin. There is no suitable habitat for Badgers, Deer, Otter or other large animals.

The lands were assessed for their potential for roosting or foraging bats. There are no features on the development site suitable for bat roosting. The potential of the habitats for foraging bats is low due to the highly built up nature of the surrounding lands with no semi-natural connectivity and high levels of artificial light.

September lies outside the optimal season for surveying breeding birds. No birds were noted during the survey and only very limited nesting habitat is available for common garden birds. Due to the high level of human disturbance in this area it is unlikely that habitats are utilised for nesting. During the January 2022 survey, which is within the optimal period for wintering birds, no birds were noted. The vegetation is not composed of short turf amenity grassland which is preferred by the Light-bellied Brent Goose (Benson, 2009) while the level of human disturbance is too high on this small site to support regularly occurring wintering bird numbers.

There is no suitable habitat for breeding Common Frog *Rana temporaria* or Smooth Newt *Lissotriton vulgaris*. Common Lizard *Zootoca vivipara* is considered widespread.

The status of fish in the Kill-O-the-Grange Stream is not known although it is considered unlikely to be of salmonid value. Its fish status is not assessed as part of its evaluation under the WFD.

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 in this area. Other protected invertebrates are confined to freshwater and wetland habitats and are not present on this site.

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

In summary, it has been seen that the application site is entirely composed of low local biodiversity grassland within a built-up area. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are no plant 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 5. From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 6.



Figure 2 – Boundary of the development site superimposed on an aerial photograph (photo from www.bing.com)

Table 5 Site evaluation scheme taken from NRA guidance 2009

Site Rating	Qualifying criteria
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 >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 6 Evaluation of the importance of habitats and species on the Glenageary Road site

Dry meadow – GS2	Low local biodiversity value
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4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development includes:

a) Construction of 138 no. residential apartment units (37 no. 1-bedroom units, 68 no. 2-bedroom (4 person units), 6 no. 2-bedroom (3 person units) and 27 no. 3-bedroom units) in 2 no. interlinked blocks at third to fifth floor level (ranging in height from four to seven storeys over basement level) consisting of:

i. Block A (5-6 storeys) comprising 41 no. apartments (8 no. 1-bedroom units, 17 no. 2-bedroom (4 person) units, 2 no. 2-bedroom (3 person) units and 14 no. 3-bedroom units).

ii. Block B (4-7 storeys) containing 97 no. apartments (29 no. 1-bedroom units, 51 no. 2-bedroom (4 person) units, 4 no. 2-bedroom (3 person) units and 13 no. 3-bedroom units).

Each residential unit has associated private open space in the form of a balcony/terrace.

b) Residential amenity areas of approx. 342 sqm are proposed in the form of resident support services, concierge services, co-working space, social/activity spaces and gym at the ground floor level of Blocks A and B.

c) Open Space (approx. 2,806.6 sqm) is proposed in the form of (a) public open space (c. 1,848.4 sqm) in the form of a public plaza accommodating outdoor seating, planting, pedestrian footpaths and cyclist links and (b) residential/communal open space (approx. 958.2 sqm) including c. 750.6 sqm at surface level (incl. playground), roof terrace at fifth floor level of link between Blocks A and Block B (c. 151 sqm) and roof terrace (c. 56.6 sqm) at fifth floor level of Block B. 1.8 m opaque screens are proposed around both roof gardens.

d) Commercial and retail uses at ground floor level of Blocks A and B (c. 996 sqm) to include (a) 2 no. restaurants (c. 267 sqm and 295 sqm) in Block A, (b) a retail – clothing unit (c. 142 sqm), (c) retail - florist unit (c. 66 sqm), (d) retail - pharmacy unit (c. 126 sqm) and (e) hairdresser unit (c. 100 sqm) all in Block B.

e) Childcare facility (c. 263 sqm) with dedicated open space and children's play area (c. 39.5 sqm) at ground floor level of Block B.

f) Basement areas (total approx. 3,411 sqm) are proposed on one level and include car and bicycle parking areas, waste management and plant areas. An ESB substation (approx. 31.7 sqm) is proposed at surface level at the top of the basement ramp accessed off Glenageary Avenue. Commercial bin stores (c. 47.9 sqm) are proposed to be located at ground floor level of both Blocks A and B.

g) A total of 80 no. car parking spaces at basement level are proposed to include 3 no. accessible parking spaces, 2 no. GoCar spaces and 17 no. EV charging spaces. 5 no. motorcycle parking spaces are also proposed at basement level.

h) A set down area/loading bay is proposed at surface level at Sallynoggin Road and 2 no. set down areas/loading bays including 1 no. accessible car parking space are proposed at surface level at Glenageary Avenue.

- i) A total of 310 no. bicycle parking spaces to include 254 no. bicycle parking spaces at basement level including 10 no. cargo bicycle spaces and 56 no. bicycle parking spaces including 16 no. cargo bicycle spaces at surface level.
- j) The development shall be served via a new vehicular access point to the basement level from Glenageary Avenue. New pedestrian and cyclist access points will be provided onto Sallynoggin Road and Glenageary Avenue from the site.
- k) Removal of existing cycle path and footpath and dropped kerb pedestrian crossing at Glenageary Avenue to be reinstated by soft landscaping and replaced by a new shared cyclist and pedestrian raised table crossing point located on Glenageary Avenue linking to the existing signalised crossing on the R118. Existing 1.2 m pedestrian crossing on Glenageary Avenue to be widened to 2 m.
- l) Emergency services/servicing access is proposed from Sallynoggin Road and Glenageary Avenue.
- m) All associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposal; permeable paving; all landscaping works; green roofs; roof plant room and general plant areas; photovoltaic panels; landscaped boundary treatment; footpaths; public lighting; and electrical services.



Figure 3 – Development overview including landscaping

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 based on the valuation of the ecological feature in question (table 6) 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 7 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 dry grassland habitat. This habitat is of low local biodiversity value. Its loss will result in negative impacts to plants and invertebrates which are common and widespread. New landscaping will enhance habitat on the site and this includes native and non-native trees as well as pollinator-friendly planting as shown in figure 3.
2. The direct mortality of species during demolition. There is minimal suitable nesting habitat and the risk of impacting nesting birds is negligible. There are no features suitable for roosting bats. This impact is therefore **neutral**.
3. Pollution of water courses through the ingress of silt, oils and other toxic substances. There is no direct pathway to any watercourse from this site. The Kill-o-the-Grange Stream is of low fisheries value and so this is, at worst, a potentially **minor negative** impact. Nevertheless, best practice should be adhered to avoid pollution during construction.

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 areas in Dublin Bay however there is currently no evidence that non-compliance issues at the WWTP are having negative effects to features of high ecological value (e.g. wading birds or intertidal habitats). Irish Water are currently

undertaking upgrading works on a phased basis that will address compliance issues by and expected date of 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. A new surface water drainage system is to be installed in accordance with the GDSDS. No negative effect arising to the quantity or quality of surface run-off will occur. According to the services report prepared for this development application by AECOM: "Green roof and bioretention provide treatment for the impermeable surfaces on the roofs, steps and footpath areas which drain to these SuDS features. The road carriageway and parking, external to the undercroft car park, are proposed as permeable paving, to treat the runoff at source.

All surface water from the site will discharge to the public network after flowing through the proposed petrol interceptor, where hydrocarbons are removed."

This will ensure that the flow leaving the site will be maintained at a 'greenfield rate' and so there can be no negative effect on the current run-off characteristics.

6. Artificial light. Artificial lighting can result in effective habitat loss for a range of species. This is generally poorly understood with most studies centred on nocturnal mammals, especially bats. This vicinity is already heavily impacted by artificial light sources while the development site is of negligible value to foraging bats. This impact is therefore **neutral**.
7. Impact to areas designated for nature conservation. There are no pathways for effects to occur to the Dalkey Coast and Killiney Hill pNHA and so no impact can arise to this area. There is a pathway to Natura 2000 sites in Dublin Bay via wastewater discharges from the Ringsend wastewater treatment plant. A separate Screening Report for Appropriate Assessment has concluded that no significant effects to Natura 2000 sites are likely to arise from this development. The impact on this to biodiversity is **neutral**.

Table 7: Significance level of likely impacts in the absence of mitigation. This table refers to general ecological impacts and is not related to European sites.

Impact		Significance
Construction phase		
1	Loss of habitat	Minor negative
2	Mortality to animals during construction, particularly nesting birds	Neutral
3	Pollution of water during construction phase	Minor negative

Operational phase		
4	Wastewater pollution	Neutral
5	Surface water pollution	Neutral
6	Artificial lighting	Neutral
7	Protected areas	Neutral

Overall it can be seen that no potential negative impacts which are moderate negative or greater are predicted to occur as a result of this project in the absence of mitigation.

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. 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 conversion of open ground to hard surfaces. In this instance, the incorporation of SUDS attenuation measures will ensure that no negative effect to surface water quality will arise.

Increasing urbanisation of Dublin, and in particular land use change from agricultural to urban uses, is resulting in the loss of habitat for common species of plants and animals. In this case, no high value habitats are to be lost while post-construction landscaping will provide additional resources for wildlife.

6 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES

This report has identified no impacts that were assessed as 'moderate negative' or greater and therefore no mitigation is required. Landscaping is predicted to offset any effect arising from the loss of grassland habitat. While the risk of water pollution is very low, best practice site management should nevertheless be followed at all times.

6.1 Mitigation Measures Proposed

The following mitigation measures are proposed for the development

Construction Phase

1: Pollution during construction

Although the risk of pollution from this site is low, best practice management should be followed to ensure pollution does not occur.

A construction management plan should be prepared which details how pollution from the site will be prevented. This should be prepared in accordance with guidelines from Inland Fisheries Ireland (2016). This should include storing of hazardous substances in bunded area and ensuring that silt-laden run-off is not pumped to surface drains which lead to water courses. Any water leaving the site should first pass through a suitably-sized silt trap.

7 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied.

After mitigation, no residual effects are likely to arise to biodiversity arising from this project which are moderate negative or greater.

8 MONITORING

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be moderate negative. In this case no negative effects greater than minor negative are likely to arise, and so additional monitoring is not required.

9 REFERENCES

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