Ecological Impact Assessment of a proposed residential development at Glebe House (A Protected Structure, RPS Ref. 7560) and Coruba House site, St Agnes Road, Crumlin, Dublin 12

Compiled by OPENFIELD Ecological Services

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1 INTRODUCTION

This Ecological Impact Assessment 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).

A site visit was carried out on the 2nd of March 2022 in fair weather. 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).

March lies outside the optimal period for general habitat surveys (Smith et al., 2010) but due to the highly modified nature of the development site it was nevertheless possible to classify all habitats on the site to Fossitt level 3. March lies within the season for surveying breeding birds, amphibians and large mammals.

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. The development site location is shown in figure 1. Hydrological pathways lead to Dublin Bay and there are a number of protected areas for nature conservation in this area.

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.

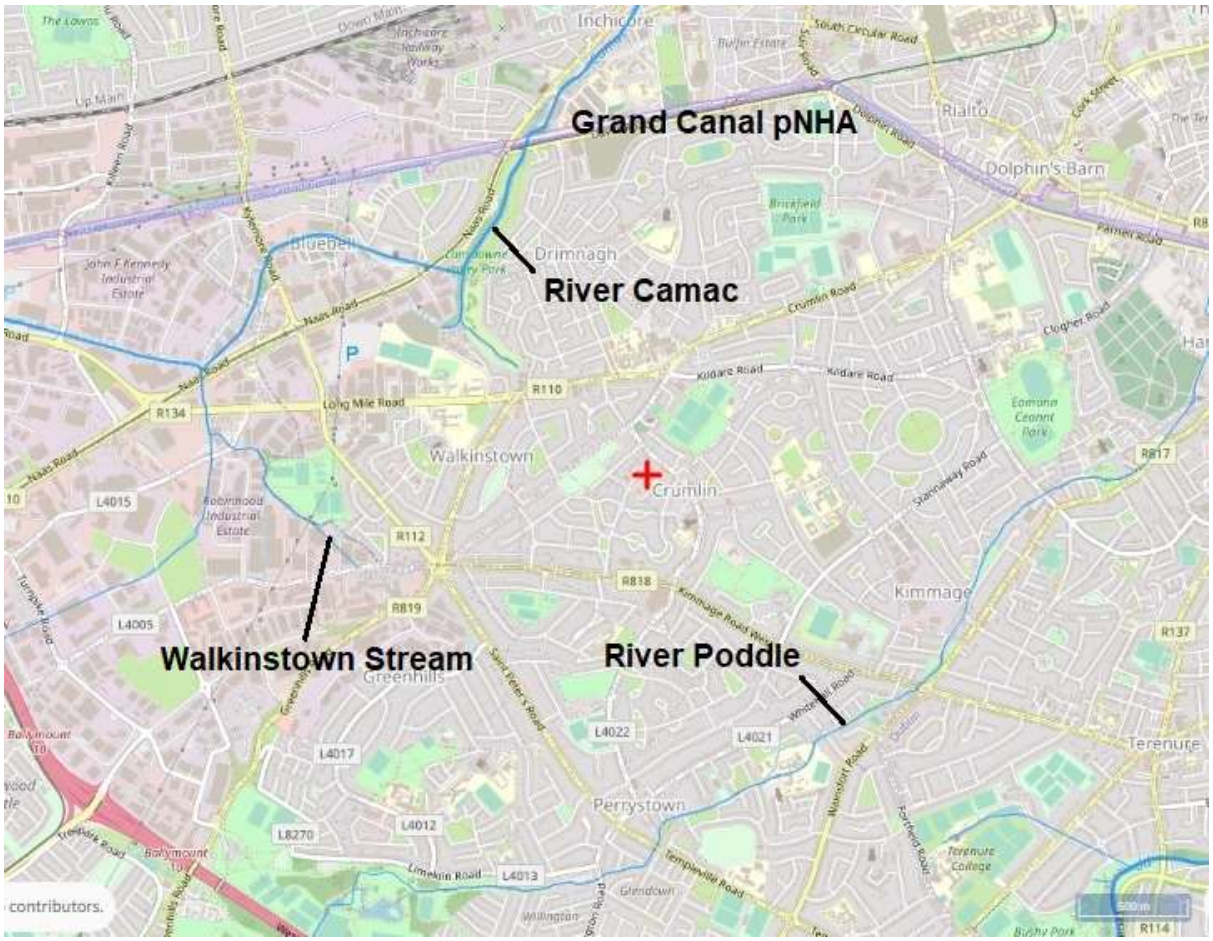

Figure 1 – Location of proposed site (red cross) showing local water courses and the Grand Canal pNHA (purple line). From www.epa.ie

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

Grand Canal pNHA (site code: 2104): The Grand Canal was constructed in the 18th century and links Dublin to the River Shannon. It is a nationally valuable wildlife corridor and is home to a wide range of plants and animals, many of conservation value, including the Otter *Lutra lutra*.

South Dublin Bay SAC/pNHA (side code: 0210; c.850m from the development site) 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.

North Dublin Bay SAC/pNHA (site code: 0206); 6.3km from the development site) is focused on the sand spit on the North Bull island.

South Dublin Bay and Tolka Estuary SPA (side code: 4024; c.850m from the development site) is largely coincident with the SAC boundary with the exception of the Tolka Estuary.

The **North Bull Island SPA** (site code: 0206; c.4.7km from the development site) is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. Table 1 lists the features of interest for these SPAs.

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 (Crowe et al., 2011).

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

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

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 subject site is located within the square O13 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.

Table 3 – Known records for protected species within the O13 10km square

Species	Habitat	Current status
Groenlandia densa Opposite-leaved Pondweed	Rivers, canals and estuarine mud	Current
Galeopsis angustifolia Red Hemp-nettle	Calcareous gravels	Record pre-1970
Hordeum secalinum Meadow Barley	Upper parts of brackish marshes, chiefly near the sea	
Puccinellia fasciculata Borrer's salt-marsh grass	Muddy inlets on the coast	
Hypericum hirsutum Hairy St. John's-wort	Woods and shady places	Current
Viola hirta 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." Hairy Violet is recorded from "Calcareous grassland at the Magazine Fort in the Phoenix Park" while Hairy St. John's-wort is recorded from "the River Liffey at Knockmaroon."

Water quality in rivers is monitored on an on-going basis by the Environmental Protection Agency (EPA). The proposed development site is located within the Liffey river system. Natural hydrological pathways have been severely disrupted in this area due to sealing of soil and the installation of networks of sewers. Nevertheless, maps from the EPA show no water courses in the immediate vicinity of the site. The River Camac flows approximately 760m to the north-west, while the River Poddle flows approximately 1.4km to the south-east. The direction of flow of both of these water courses is towards the north and east, where they enter the River Liffey in Dublin City Centre. Both rivers have been assessed as 'poor' status under the Water Framework Directive reporting period 2013-2018.

The meet the Liffey at the Liffey Estuary Upper, a transitional water body which is 'good status' at this point. The transitional waters of the Lower Liffey Estuary and the coastal waters of Dublin Bay are also 'good'. These data are taken from the ENVision mapping tool on www.epa.ie.

3.2 Plans or policies relating to natural heritage

Convention on Biological Diversity (CBD): The protection of biodiversity is enshrined in the CBD to which Ireland is a signatory. As part of its commitment to this international treaty Ireland, as part of a wider European Union initiative, was committed to the halt in loss of biodiversity by the year 2010. This target was not met but in 2010 in Nagoya, Japan, governments from around the world set about redoubling their efforts and issued a strategy for 2020 called 'Living in Harmony with Nature'. In 2017 the Irish Government incorporated the goals set out in this strategy, along with its commitments to conservation biodiversity under national and EU law, in the third national biodiversity action plan (Dept. of Culture, Heritage and the Gaeltacht, 2017). A forth plan is in preparation.

Dublin City Biodiversity Action Plan 2015 – 2020: This plan was adopted in 2015 and identifies four themes: Strengthen the knowledge base for the conservation and management of biodiversity, and protect species and habitats of conservation value within Dublin City, Strengthen the effectiveness of regional collaboration for biodiversity conservation in the greater Dublin region, Enhance opportunities for biodiversity conservation through green infrastructure, and promote ecosystem services in appropriate locations throughout the City and Develop greater awareness and understanding of biodiversity, and identify opportunities for engagement with communities and interest groups. A draft Biodiversity Action Plan 2021-2025 was opened for public consultation in June 2021.

Dublin City Development Plan 2016 – 2022: It consists of a number of themes, including: climate change; green infrastructure, open space, and recreation; and culture and heritage.

River Basin Management Plan (RBMP) 2018-2021 : Under the Water Framework Directive (Directive 2000/60/EC) all Irish waters must achieve 'good ecological status' by 2015 or, with exemptions, by 2027 at the latest. The EPA website has assessed Dublin Bay as being of 'moderate' status. A third RBMP will be published later in 2022.

3.3 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has been within the built fabric of Dublin for many decades. It lies close to busy transport links within an area of extensive urban and residential development.

3.3.1 Flora

The development site is predominantly composed of **buildings and artificial surfaces – BL3** which includes yard areas, locations of former buildings, existing buildings and boundary walls. Vegetation in this area is ruderal in nature and includes Dandelions *Taraxacum sp.,* Canadian Fleabane *Conyza canadensis,* Winter Heliotrope *Petasites fragrans,* Butterfly bush *Buddleja davidii,* Sow-thistle *Sonchus*

sp. etc. There are very occasional individual trees such as a Sycamore *Acer pseudoplatanus* near the main entrance and 2-3 small Elder *Sambucus nigra* to the south-east of Glebe House.

There is a short **treeline – WL2** running parallel with St. Agnes Road which is composed of pollarded Horse Chestnut *Aesculus hippocastanum* and Sycamore along with some Elder*,* Brambles *Rubus fruticosus agg.,* Lesser Celandine *Ficaria verna* and Spanish Bluebells *Hyacynthoides hispanica.* The latter is an alien invasive species as listed in SI No. 477 of 2011.

To the south-east there is a small open area open **dry grassland – GS2** which is dominated by Docks *Rumex sp.,* Common Couch *Elytrigia repens*, Creeping Buttercup *Ranunculus repens* and some Hogweed *Heracleum sphondylium*.

These are highly modified habitats with a high proportion of non-native species. They are, at most, of low local value for biodiversity. There are no water courses, bodies of open water or habitats which could be described as wetlands.

3.3.2 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 1 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 1 – Protected mammals in Ireland and their known status within the O13 10km grid square[1]. Those that are greyed out indicate either that there are no records of the species from the National Biodiversity Data Centre.

Species	**Level of Protection**	**Habitat[2]**
Otter *Lutra lutra*	Annex II & IV Habitats Directive; Wildlife (Amendment) Act, 2000	Rivers and wetlands
Lesser horseshoe bat *Rhinolophus hipposideros*		Disused, undisturbed old buildings, caves and mines
Grey seal *Halichoerus grypus*	Annex II & V Habitats Directive; Wildlife (Amendment) Act, 2000	Coastal habitats
Common seal *Phocaena phocaena*		

[1] From the National Biodiversity Data Centre, excludes marine cetaceans
[2] Harris & Yalden, 2008

Whiskered bat *Myotis mystacinus*	Annex IV Habitats Directive; Wildlife (Amendment) Act, 2000	Gardens, parks and riparian habitats
Natterer's bat *Myotis nattereri*		Woodland
Leisler's bat *Nyctalus leisleri*		Open areas roosting in attics
Brown long-eared bat *Plecotus auritus*		Woodland
Common pipistrelle *Pipistrellus pipistrellus*		Farmland, woodland and urban areas
Soprano pipistrelle *Pipistrellus pygmaeus*		Rivers, lakes & riparian woodland
Daubenton's bat *Myotis daubentonii*		Woodlands and bridges associated with open water
Nathusius' pipistrelle *Pipistrellus nathusii*		Parkland, mixed and pine forests, riparian habitats
Irish hare *Lepus timidus hibernicus*	Annex V Habitats Directive; Wildlife (Amendment) Act, 2000	Wide range of habitats
Pine Marten *Martes martes*		Broad-leaved and coniferous forest
Hedgehog *Erinaceus europaeus*	Wildlife (Amendment) Act, 2000	Woodlands and hedgerows
Pygmy shrew *Sorex minutus*		Woodlands, heathland, and wetlands
Red squirrel *Sciurus vulgaris*		Woodlands
Irish stoat *Mustela erminea hibernica*		Wide range of habitats
Badger *Meles meles*		Farmland, woodland and urban areas
Red deer *Cervus elaphus*		Woodland and open moorland
Fallow deer *Dama dama*		Mixed woodland but feeding in open habitat
Sika deer *Cervus nippon*		Coniferous woodland and adjacent heaths

Relatively few mammals are recorded from this 10km and development site presents very few opportunities for these species. There was no evidence of Badger or deer activity and there are no

Badger setts. There is no suitable habitat for these species. There is no suitable habitat for Otter. There was no evidence that Irish Hare is present while habitat is not available for Pine Marten or Red Squirrel.

Small mammals such as the Irish Stoat, Hedgehog and Pygmy Shrew are considered widespread in the Irish countryside, including on disused land in urban areas (Lysaght & Marnell, 2016). No direct evidence of any mammal was recorded although Fox *Vulpes vulpes* and Rabbit *Oryctolagus cuniculus* are common in Dublin along with Brown Rat *Rattus norvegicus,* House Mouse *Mus domesticus* and Field Mouse *Apodemus sylvaticus.* These species are not protected.

Features on the site are of very low suitability for roosting bats with little natural vegetation to provide foraging resources. Dedicated bat surveys were carried out by Altemar in 2020 and 2021 which found no evidence for roosting bats on the site. No foraging activity was noted on site in 2021. However, a single Leisler's bat *Nyctalus leisleri* was noted on site in 2020.

March lies within the optimal season for surveying breeding birds. The purpose of the survey was to identify all birds which were nesting or displaying nesting behaviour (singing/holding territory, carrying nesting or feeding material). Species which were noted from the site were: Collared Dove *Streptopelia decaocto*, Wood Pigeon *Columba palumbus,* Robin *Erithaceus rubecula* and Magpie *Pica pica.* These are all species which are listed as 'low conservation concern' (green list) (Gilbert et al., 2021).

There are no suitable habitats for amphibians or fish.

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 urban 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, it has been seen that the development site is artificial land within a built-up area with small areas of open or green space. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. Spanish Bluebell, a species listed as alien invasive as per SI 477 of 2011, was found in one location. There are no locally high value habitats and features are of limited value even for common and widespread species.

Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 4.

Table 4 Evaluation of the importance of habitats and species on the proposed development site

Buildings and artificial surfaces – BL3	Negligible ecological value
Treeline – WL1 Dry meadow – GS2	Local biodiversity value

Figure 2 – Site boundary and habitats

4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development will see site clearance and a construction phase to include access roads, new homes, and all associated infrastructure as shown in figure 3. Post construction the land will be landscaped. The project is described thus, as per the planning application:

A residential development of 150 no. apartments consisting of 74 one beds, 72 two beds and 4 three bed residential units, a creche and café. The proposed scheme has an overall Gross Floor Area of 15,767 sq.m.

Two apartment buildings are proposed ranging in height from 4 – 6 storeys and linked by a carpark at ground floor and a podium at first floor level comprising the following:

- *Block A is 5-6 storeys and consists of 79 apartments and includes 35 no. one beds and 44 no. two beds units, ESB substation/switch room/metering room of 85sqm, 42 no. secure bicycle storage and bin storage of 44sqm*

- *Block B is 4-5 storeys and consists of 66 apartments and includes 38 no. one beds, 25no. two beds and 3 no. three beds, a Creche of 147 sqm at ground floor level with associated outdoor area, ground floor plant rooms of 74sqm, ESB substations/switch room/metering room/telecoms of 89sqm, 188 no. secure bicycle storage spaces in two locations, 6 no. motorbike spaces and bin storage of 75sqm.*

Two no.three storey pavilion buildings either side of Glebe House to accommodate:

- *One number two storey duplex 2 bed apartment above one number 1 bed apartment at ground floor in the north west pavilion and,*
- *One number two storey duplex 2 bed apartment above a 55 sqm ground floor café, in the south east pavilion.*

The repair of fire damaged elements (following a fire 21st April 2022) and the refurbishment of Glebe House, a protected structure, into two apartments, one number 2 bed unit at lower ground floor and one number 3 bed unit at upper ground and first floor;

- *Repair of fire damaged elements including the replacement of all roof coverings and structure, replacement of all first floor timber stud walls, replacement of first floor rear return joists, replacement/repair of floor joists at first floor level, replacement of internal render to kitchen/dining area in rear return building and replacement/repair of stair from upper ground to first floor level,*

- *the refurbishment of Glebe House including the removal of extensions to the rear and sides of the building, restoration of the façade, replacement of pvc windows with sliding sash windows and associated works to the interior and to the curtilage of Glebe House.*

- *Lowering the front boundary wall and return boundary wall to the front of Glebe House.*

Demolition of all workshops, offices and sheds to the rear and sides of Glebe House Demolition of boundary walls around the Coruba land on Somerville Drive, the front entrance and between Coruba and the Glebe lands. Demolition of non-original brick column's at St Agnes Road entrance to Glebe House (1,636 sqm).

75 car parking spaces are proposed:

- *66 no. car parking spaces (includes 2 Go Car spaces) in ground floor car park below podium and partly in Block A and 4 No. visitor car parking spaces in front of Glebe House all with vehicular access from St Agnes's Road*
- *5 No. assigned car parking spaces on the eastern side of Block B with vehicular access from Somerville Drive.*

The development provides 905 sqm of Public Open Space to the front and side of Glebe House, and within the southeast public plaza. with a pedestrian route to the side of the Café at Pavilion B and 1,632 sqm of Communal Open Space located at podium level and to the rear of Block A.

76 no. visitor bicycle parking spaces are provided in the public accessible areas of the site.

The application also includes the provision of a new footpath along the south-eastern boundary at Somerville Drive, a new controlled gate between Somerville Drive and St Agnes Road allowing public access through the site within daylight hours and a new pedestrian access from the public open space onto St. Agnes Road, boundary treatment, landscaping, Solar Panels on the roof of Blocks A and B, provision of 4 no. Microwave link dishes to be mounted on 2 No. steel support posts affixed to the lift shaft overrun on Block A, lighting, services and connections, waste management and other ancillary site development works to facilitate the proposed development.

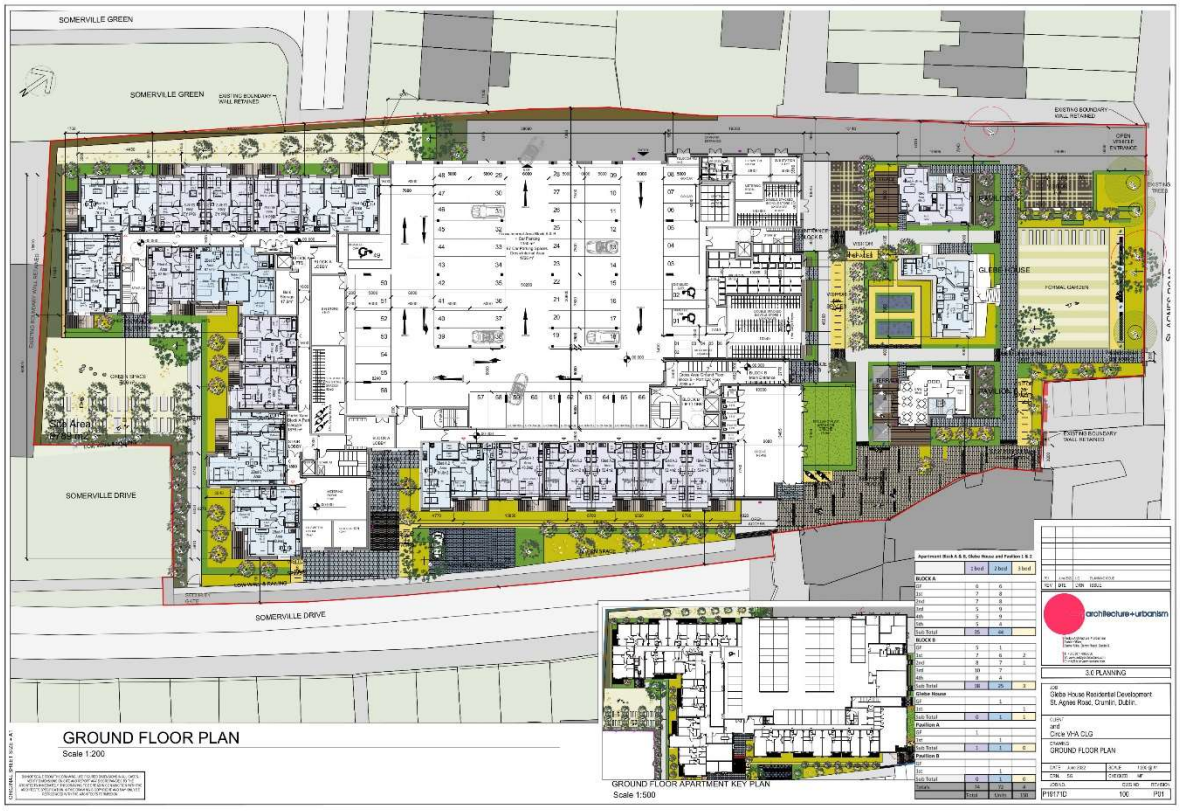

Figure 3 – Development overview

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 based on the valuation of the ecological feature in question (table 4) 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 5 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 artificial surfaces, trees (x2) and dry meadow. These are of low biodiversity value. The impact of this loss to local plant and animal species is considered to be minor negative at worst. New planting will take place as part of the landscaping strategy and which will provide some new habitats for urban wildlife. The overall impact to biodiversity will be minor negative in the short term, and neutral in the medium to long-term.
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. The risk of this impact is low due to the lack of suitable nesting habitat but may affect birds nesting in the ruderal vegetation or buildings. No bats are roosting on the site and only one foraging bat was encountered over two surveys. No negative impacts to bats can arise from this development.
3. Pollution of water courses through the ingress of silt, oils and other toxic substances. There is no sensitive fisheries habitat adjacent to the site boundary, however silt can nevertheless be carried to the local water courses via the public surface sewer system. The Liffey system holds populations of Brown Trout *Salmo trutta* and Atlantic Salmon *S. salar* and these species are highly sensitive to pollutants (Hendry & Craig-Hine, 2003). Although there is a lack of direct pathways to these water courses, best practice mitigation measures should be employed. The risk to water quality during construction is, at worst, minor negative.
4. Spanish Bluebells. There is an onus on the development to prevent the spread of alien invasive species. With mitigation therefore this is a potentially moderate negative impact.

Operation Phase

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

5. 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 and found that no significant effects are likely to arise to these areas. Irish Water is to undertake upgrading works on a phased basis and that compliance issues will comprehensively addressed.

6. 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.

Currently there is no attenuation of surface water and this percolates to ground or discharges to existing street drains. The inclusion of SUDS in this project design will reduce the volumes of surface water entering the combined foul sewer. According to the Water Services & Flood Risk Assessment prepared by CORA Consulting Engineers:

It is proposed to provide green roof surfaces on the roofs of the new apartment structures in order to reduce the volume of surface water discharging from the building footprint. Surface water run-off from the green roofs and impervious areas shall be collected via a new gravity pipe network and directed to an attenuation storage tank where the discharge rate to the public system will be controlled at 2.0 litres/second […]

On occasions of significant storm events, where storage/consumption is exceeded, discharge shall flow to attenuation storage provided within the site. 3no. separate storage volumes will be provided across the site to cater for run off from Block A, Block B and Glebe House & Pavilion Buildings. The attenuation will be provided through Wavin Aquacell's with a 90% voided volume. The Aquacell's will be wrapped in a geotextile material and will allow discharge to the ground during smaller rainfall events. The discharge from the storage volumes shall be limited to 2.0l/s through the use of a hydro-slide control valve located in a surface water manhole.

As such, there will be a slight positive impact to the run-off characteristics from the site.

7. No impacts are predicted to occur to the status of the Grand Canal pNHA as there is no pathway to this area. 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. There are no effects that can occur to any site that is designated for nature conservation.

Table 5: Significance level of likely impacts in the absence of mitigation

Impact		Significance
Construction phase		
1	Loss of habitat	Minor negative
2	Mortality to animals during construction (birds)	Moderate negative – permanent impacts to species of high local value/or species with legal protection
3	Pollution of water during construction phase	Minor negative
4	Spanish Bluebells	Moderate negative
5	Wastewater pollution	Neutral
6	Surface water pollution	Neutral
7	Protected areas	Neutral

Overall it can be seen that two potential moderate negative impacts 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.

In this instance, the incorporation of SUDS attenuation measures will result in a positive effect to surface water quality.

6 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES

This report has identified two moderate negative impacts and therefore mitigation is needed to reduce the severity of these potential effects. In addition, there are two potentially minor negative impacts which can be mitigated so measures are included here.

6.1 Mitigation Measures Proposed

The following mitigation measures are proposed for the development

Construction Phase

1: Habitat loss

New planting in areas to be landscaped should be focussed on native or other species which are of greater wildlife value.

2: 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, site clearance works should proceed outside the nesting season, i.e. from September to February inclusive. If this is not possible, vegetation must first be inspected by a suitably qualified ecologist. 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. With this mitigation in place no negative effects to water quality downstream are likely to occur.

3: Pollution during construction

Any loss of sediment from the site should be avoided. Any surface water leaving the site must first pass through. a silt trap or detention basin. Dangerous or toxic substances, such as oils, fuels etc., should be stored in bunded areas only. These recommendations are in accordance with guidance from Inland Fisheries Ireland (2016).

With this mitigation in place no negative effects to water quality downstream are likely to occur.

4: Spanish Bluebell

Visible growths of Spanish Bluebell will be treated with standard herbicide during the 2022 growing season. This is usual sufficient to kill the plant. Should the plant reappear, or new locations be noted, further treatment will be required.

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.

No long-term negative impacts to biodiversity are predicted to arise from this development.

No negative impacts to bats are likely to arise. Nevertheless, the bat report recommends that planting and roost boxes (x2) be installed to enhance the resources on the site for bats. See the Altemar report for full details.

8 MONITORING

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. Monitoring will be required throughout the construction phase to ensure that pollution prevention measures are implemented. Monitoring will also be required to ensure that any re-emergence of Spanish Bluebell is treated in a timely manner.

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