Ecological Impact Assessment for residential development, Greenhills Road, Tallaght, Dublin 24

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 24th of March 2021 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. 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. The following areas were found to be located within the zone of influence of the application site:

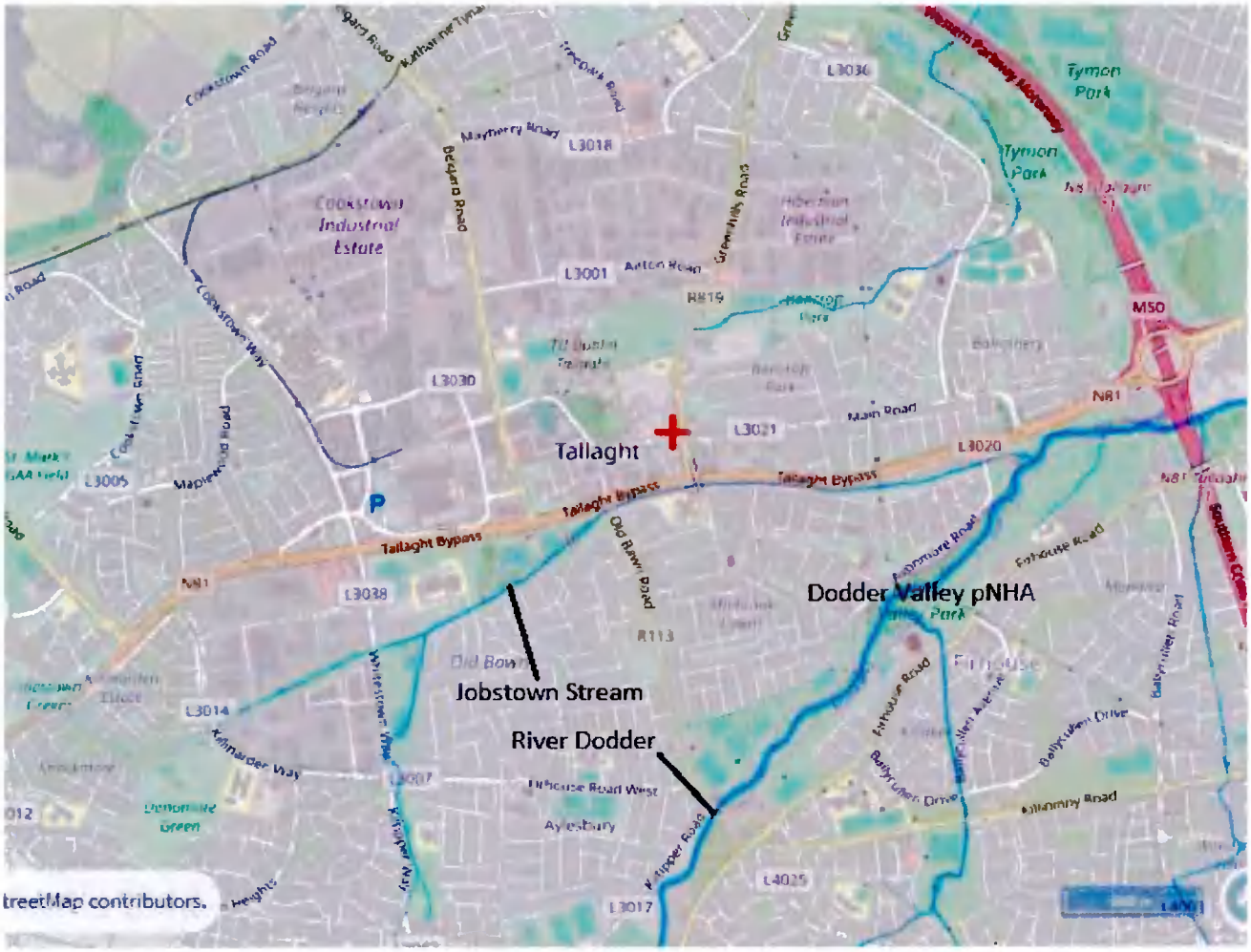

Figure 1 – Location of proposed site (red cross) showing local water courses and the Dodder Valley pNHA (purple line). From www.epa.ie

Dodder Valley pNHA (site code: 0991)

Little information is available on the current status of features of conservation value at this site. A short site synopsis has been published and is reproduced here in full:

"This stretch of the River Dodder extends for about 2 kilometres between Firhouse bridge and Oldbawn bridge in the south-west of Dublin city.

The vegetation consists of woodland scrub mainly of Willow (Salix spp.), but up to 13 species of tree have been recorded. Understorey vegetation contains Early Purple Orchid (Orchis mascula) and Bugle (Ajuga reptans). Along the banks there are wild flower meadows with a good diversity of plant species. There is also a pond in the river bed at Firville which has flourished greatly since the floods of 1986.

Forty-eight species of bird have been recorded recently in the area including Little Grebe, Kingfisher, Dipper and Grey Wagtail. Part of the river bank supports a Sand Martin colony of up to 100 pairs.

This site represents the last remaining stretch of natural river bank vegetation of the Dodder in the built up Greater Dublin Area." (NPWS, unknown year)

The web site of the National Biodiversity Data Centre (www.biodiversityireland.ie) contains a mapping tool that indicates records of legally protected species within a selected Ordnance Survey (OS) 10km grid square. The proposed development site is located within the square O02 and no species of protected flowering plant are highlighted. It must be noted that this list cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

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 Dodder river system, which places it within the wider catchment of the River Liffey. Maps from the EPA show no water courses in the immediate vicinity of the site. The Jobstown Stream flows approximately 200m to the south. The direction of flow is towards the east, where this stream meets the River Dodder near the M50 motorway. The nearest downstream EPA monitoring station is along the Dodder at Templeogue Bridge and here, moderate pollution was measured in 2002. The River Dodder downstream of this point is assessed as 'moderate' under the Water Framework Directive reporting period 2015-2018.

The Tymon Stream flows approximately 315m to the north and is part of the River Poddle system. It is not assessed under the WFD but is highly modified along its length. The Poddle enters the River Liffey in Dublin city centre. The River Liffey is 'good status' at this point. The transitional waters of the Lower Liffey Estuary is and the marine area of Dublin Bay are also 'good'. These data are taken from the ENVision mapping tool on www.epa.ie.

3.2 Stakeholder Consultation

Because of the relatively low ecological sensitivity of the subject lands, third party observations were not sought.

3.3 Plans or policies relating to natural heritage

South Dublin Development Plan 2016 – 2022: Chapter 8 of this plan discusses Green Infrastructure while Chapter 9 looks at Heritage, Conservation and Landscapes, including natural heritage. Green Infrastructure is described as "waterways, wetlands, woodlands, wildlife habitats, greenways, parks and conservation lands, forests and other open spaces that adjoin and are threaded through urban areas". It is an objective of the Plan to develop a Green Infrastructure strategy and a number objectives relate to the preservation and enhancement of existing features. G3 Objective 2 states that "biodiversity protection zone of not less than 10 metres from the top of the bank of all watercourses" will be preserved. While G3 Objective 4 is: "To uncover existing culverts and restore the watercourse to acceptable ecological standards and for the passage of fish, where possible". With regard to developments such as the current proposal Policy HCL may be relevant and states:

It is the policy of the Council to protect and promote the conservation of biodiversity outside of designated areas and to ensure that species and habitats that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992 are adequately protected.

It is supported by the following objectives:

HCL15 Objective 1: To ensure that development does not have a significant adverse impact on rare and threatened species, including those protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992.
HCL15 Objective 2: To ensure that, where evidence of species that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992 exists, appropriate avoidance and mitigation measures are incorporated into development proposals as part of any ecological impact assessment.
HCL15 Objective 3: To protect existing trees, hedgerows, and woodlands which are of amenity or biodiversity value and/ or contribute to landscape character and ensure that proper provision is made for their protection and management in accordance with Living with Trees: South Dublin County Council's Tree Management Policy 2015-2020.

3.4 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has been within the built fabric of Tallaght for many decades. It lies on the edge of Dublin city, and lies close to busy transport links.

3.4.1 Flora

The survey found that the lands are predominantly composed of buildings and artificial surfaces (BL3) which includes the large apartment building, paved surfaces and small areas of horticultural/ornamental planting. To the north there is a small section of **amenity grassland - GA2** and this is bordered by a short stretch of **hedgerow - WL1**. The hedgerow has some mid-aged Ash *Fraxinus excelsior* along with Elder *Sambucus nigra,* Ivy *Hedera helix,* Brambles *Rubus fruticosus agg.* and Cleavers *Galium aparine.* Following guidelines from the Heritage Council this hedgerow is assessed as 'lower significance' based upon its poor structure, low species diversity and lack to connection to wider countryside features. Nevertheless, it provides an area of semi-natural vegetation in a highly urbanised landscape.

To the south of the main apartment building there is a small strip of **recolonising bare ground - ED3**. This is mostly hard surfacing but has a lot of ruderal vegetation particularly the non-native Butterfly-bush *Buddleja davidii* and Red Valerian *Centranthus ruber.*

These features are of low biodiversity value. There are no water courses on the site and there are no plant species which are listed as alien invasive on SI No. 477 of 2011.

3.4.2 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 O02 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*		
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

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

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

Although a number of mammals are known to be present in this 10km, there are no habitats on the site which are suitable for the majority of these species. There was no evidence of Badger or deer activity. 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. For these reasons a dedicated bat survey was not considered necessary (Hundt, 2013).

March lies within the optimal season for surveying breeding birds. No birds were recorded while nesting habitat is very limited, confined to the short hedgerow along the northern boundary.

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 sites which are intensively farmed. Other protected invertebrates are confined to freshwater and wetland habitats and so are not present on this site.

3.5 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 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. There are no species listed as alien invasive as per SI 477 of 2011 or as 'most unwanted' by Invasive Species Ireland. 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 Amenity grassland – GA2	Negligible ecological value
Hedgerow – WL1	Local biodiversity value

Figure 2 – Site boundary

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:

The development will consist of: the demolition of 3 no. existing apartment units (c. 239 sqm) and bin store (c. 18 sq m) and the construction of a residential development arranged in 2 no. building blocks, (Block A and Block B) ranging from 3 to 6 no. storeys in height over basement level (c. 3728 sq m, including basement). Block A comprises 11 no. residential apartments (c. 1256 sq m) in a 5 to 6 storey building, and including a ground floor level café (c. 93 sq m) at the building's southeastern corner. Block B comprises 15 no. residential apartments (c. 1393 sq m) in a 3 to 5 storey building. The proposed development will comprise 26 no. new residential units (5 no. studio apartments, 6 no. 1-bedroom apartments, 7 no. 2-bedroom apartments and 8 no. 3-bedroom apartments), with associated balconies and terraces. The proposed development will comprise a total of 40 no. apartment units derived from 26 no. new apartments and 14 no. existing apartments.

The development will also consist of: Relocation of existing basement access on Old Greenhills Road and the upgrade and extension of the existing basement level; provision of internal footpaths; landscaped communal open space (including outdoor gym equipment, children's play area and 'working from home' area); public open space; 13 no. car parking spaces and 74 no. long-stay bicycle parking spaces and 1 no. motorcycle parking spaces at basement level; 2 no. shared car parking spaces and 20 no. short-stay bicycle parking spaces at surface level (15 no. car parking spaces, 94 no. cycle parking spaces and 1 no. motorcycle parking in total); all piped infrastructure and ducting; elevation treatments; plant room; lift access and stair cores; hard and soft landscaping and boundary treatments; changes in level; waste management areas; attenuation tank; backup generator; solar photovoltaic panels; lighting; and all associated site development and excavation works above and below ground.

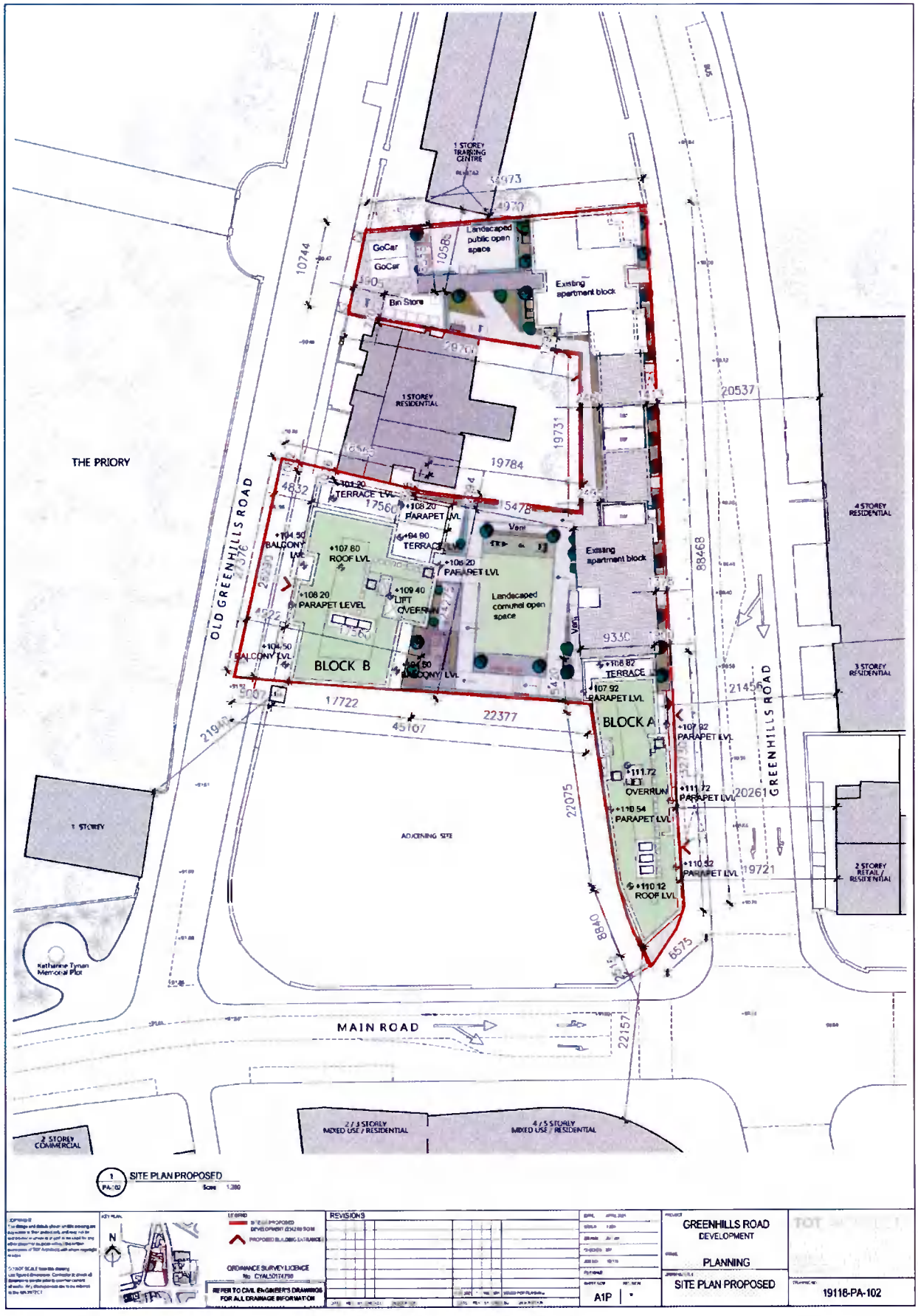

Figure 3 – Development overview

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. These are of negligible biodiversity value. The impact of this loss to local plant and animal species is considered to be imperceptible. The small stretch of hedgerow along the northern boundary is to be removed but will be replaced by new native hedgerow planting. 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 very low due to the lack of suitable nesting habitat but may affect birds nesting in the ruderal vegetation.
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 Dodder/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.

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 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.

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. This will comprise of attenuation storage and SUDS principles, including attenuation tank, green roofs, permeable paving, petrol interceptors and controlled release to the surface water sewer. No negative effect arising to the quantity or quality of surface run-off will occur.

No impacts are predicted to occur to the status of Dodder River Valley pNHA as there is no pathway to this area. Impacts to Natura 2000 areas (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 5: Significance level of likely impacts in the absence of mitigation

Impact		Significance
Construction phase		
1	Loss of habitat	Neutral -no effect
2	Mortality to animals during construction	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	Wastewater pollution	Neutral
5	Surface water pollution	Neutral

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.

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 no negative effect to surface water quality.

6 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES

This report has identified one moderate negative impact and therefore mitigation is needed to reduce the severity of this potential effect. This may arise where clearance works are undertaken during the nesting season. All birds' nests, eggs or hatchlings are protected under the Wildlife Act. Disturbance to any nest can only be done under licence from the National Parks and Wildlife Service (NPWS). Minor negative effects are also likely, and mitigation for these is also given in line with best practice standards.

6.2 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.

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.

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.

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