Ecological Impact Assessment for proposed development at Old Greenhills Road, Tallaght, Dublin 24

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA

For St. Mary's Medical (Tallaght) Ltd

www.openfield.ie

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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 over 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 surveys were carried out on the 18th of December 2020, the 18th of May 2021, the 27th of August 2021 and the 16th of December 2021. 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).

May and August lie within the optimal 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. May lies within the optimal season for surveying breeding birds. August is also within the bird nesting season but is sub-optimal. December is optimal for wintering birds and large mammals such as Badger and Otter. May is optimal for amphibians.

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.

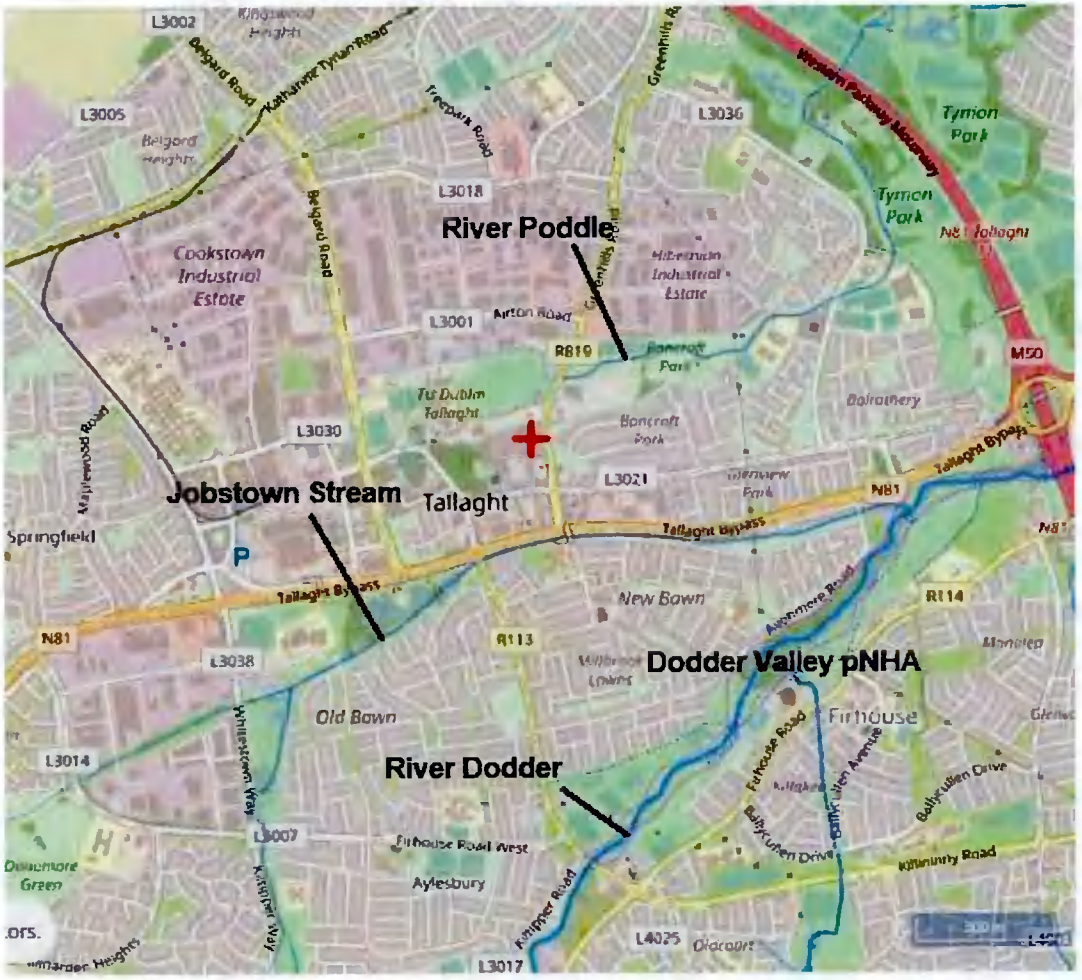

Figure 1 – Location of proposed site (red cross) showing local water courses and the Dodder Valley pNHA (purple line). From www.epa.ie

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:

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 development site. The Tymon Stream (also the River Poddle) flows approximately 180m to the north. This water course flows through Dublin city and enters the River Liffey at Ushers Quay. The Jobstown Stream flows approximately 300m 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, slight pollution was measured in 2019. Along the Tymon/Poddle River, a monitoring station at The Priory, Kimmage Road recorded moderate pollution in 2007. The River Dodder downstream of Tallaght is assessed as 'moderate' or 'poor' under the Water Framework Directive reporting period 2015-2018. The Tymon/Poddle is assessed as 'poor'. Both rivers are affected by water quality but also physical modifications which can include culverting, embankments, weirs and other barriers to fish movement.

Both the Dodder and the Poddle enter the River Liffey in Dublin city centre. The River Liffey is 'good status' at this point. The transitional waters of the Lower Liffey Estuary 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

The biodiversity officer for South Dublin County Council was contacted for the preparation of this report and in particular with regard to the presence of Herons in this vicinity.

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.

The Priory Lands are highlighted in the South Dublin County Development Plan/Tallaght Town Centre Local Area Plan (2020). A key objective of this plan (VL9) is to: "protect and preserve the Heronry located on Priory lands and extending into TUD lands." However the exact location of the Heronry is not identified. No information is available on the size of the Heronry or its possible linkage to feeding areas.

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. The development site lies within the grounds of the St. Mary's Priory which was established in the mid-1800s. The surrounds include open gardens, amenity grassland with scattered trees and a surface car park. Currently, the Priory Lands are bounded to the south, east and west by urban development while to the north lies Tallaght Technical University with buildings but also open areas of grassland and hedgerows.

3.4.1 Flora

The site is an expanse of **scattered trees and parkland – WD5** with grassy meadow (although this is not a parkland in the general sense of the word). The species here include Nettle *Urtica dioica,* Cock's-foot *Dactylis glomerata,* False Oat *Arrhenatherum elatius,* Cow Parsley *Anthriscus sylvestris* and Willowherbs *Epilobium sp.* There are occasional saplings of Grey Willow *Salix cinerea* while large trees include Sycamore *Acer pseudoplatanus,* Monterey Cypress *Cupressus macrocarpa,* Horse Chestnut *Aesculus hippocastanum* and ornamental Willow *Salix sp.*

The south-eastern boundary, parallel to the Old Greenhills Road, is characterised by a tall **treeline – WL2** composed of the non-native Lombardy Poplar *Populus nigra* var. *Italica.* Stretches of **hedgerow – WL2** can be found along boundaries to the south and west. These include a line of Cherry *Prunus sp.*, with Ivy *Hedera helix,* Elder *Sambucus nigra,* Ash *Fraxinus excelsior* and Leyland Cypress *Cuprocyparis leylandii.* These features of are local value to biodiversity.

There are no water courses on the development site, no bodies of open water or habitats which can be classified as wetlands. There are no alien invasive plant species as listed 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*		

[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

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. Winter surveys (December) were optimal for surveying Badgers and no signs of their activity were recorded (trails, prints, snuffle holes, latrines etc.). There are no setts on the site.

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).

Rabbit *Oryctolagus cuniculus* was observed during the site surveys while Fox *Vulpes vulpes* (although not observed) are also common in Dublin along with Brown Rat *Rattus norvegicus,* House Mouse *Mus domesticus* and Field Mouse *Apodemus sylvaticus*. These species are not protected.

There are no buildings on the site which may provide suitable roost opportunities for bats. Larger trees do provide roost potential while potential foraging habitats is available in open green spaces surrounding the Priory and into the university lands. The timing of this study did not allow for a dedicated bat survey (Hundt, 2013).

May lies within the optimal season for surveying breeding birds. August is also within the breeding bird season but is suboptimal as some species have ceased nesting. On both occasions the purpose of the survey was to identify all specimens of breeding birds on the site by observation of breeding behaviour (singing/holding territory or carrying nesting or feeding material). During the May 2021 survey the following birds were recorded: Magpie *Pica pica*, Wood Pigeon *Columba palumbus* and Wren *Troglodytes troglodytes*. During the August 2021 survey Wood Pigeon and Blue Tit *Parus caeruleus* were recorded. These species are assessed as of 'low conservation concern' (green list; Gilbert et al., 2021).

There are no nesting Heron *Area cinerea* on the development site. Herons are large, conspicuous and noisy birds that build large nest structures that are maintained from one year to the next. These are visible even outside the nesting season. Herons can also establish communal roosts where no nesting is occurring and again, these trees tend to be stained with droppings and so are conspicuous. On no occasion were Herons observed on the development site and no trees were noted to have any signs of Heron occupancy.

The Heronry was located in a large Cypress *Cupressus sp.* to the east of the vehicle entrance off Main St (see figure 2). It was estimated that there may be six nests in this tree however it is also used as a habitual roost and a number of birds were present in December 2021. Birds were noted to be flying in a southerly direction and may be commuting to the ponds and wetlands at the Sean Memorial Park which is approximately 300m to the south-west of the roost. The Heronry is located c.130m from the boundary of the development site at its closest point. It should be noted that Herons are not a bird of conservation concern and have been placed on BirdWatch Ireland's '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

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 rough grassland with scattered, non-native trees 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 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. Mature trees have roost potential for bats while the protected Herony is located c.130m to the south-west.

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

Scattered trees and parkland – WD5 Treeline – WL2 Hedgerow – WL1	Low, local biodiversity value

Figure 2 – Site boundary showing habitats and Heronry to the south-west

4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development will comprise:

(a) construction of a 4 storey Nursing Home consisting of (i) 106 no. bedrooms (with ensuite); (ii) associated residents welfare facilities; (iii) administration areas and staff facilities and Pharmacy at ground floor level.
(b) construction of 3 no Apartment Blocks (for Older People) part 4 and part 5 storey comprising 60 no. apartments in total plus private amenity spaces (balconies and terraces)
(c) communal Open Spaces and landscaping (including new tree planting and tree retention), new access road and vehicular parking
(d) new vehicular and pedestrian access through existing boundary wall to the east
(e) site development works including new boundary treatment (walls & railings to western and southern boundaries), ESB substation, SuDS drainage and ancillary underground services

Figure 3 – Site layout showing trees to be retained

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 grassland and selected trees. This includes c.80m of Poplar treeline and six other trees. These are of low biodiversity value. The hedgerow, along with a number of other trees in the north-west corner of the site, are to be retained. The impact of this loss to local plant and animal species is minor negative. New landscape planting will compensate for the loss of this resource in the medium to longer term. Figure 3 shows the trees to be retained.
2. The direct mortality of species during construction and site preparation. This impact is most acute during the bird breeding season which can be assumed to last from March to August inclusive. There may also be a risk to bats where trees with roost potential are to be felled. All bird and bat species are protected by law. Without mitigation this impact is moderate negative.
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. At worst however the potential impact is minor negative.
4. Impact to Heronry. The Heronry is too far from the construction zone for any direct impacts to occur. Indirect impacts, from disturbance effects (noise and movement of people and machines) are unlikely as there is no direct visual path between the Heronry and the site. The two features are separated by an expanse of open car park, a small, wooded area along the Old Greenhills Road and a band of open grassland. This area is already subject to human disturbance associated with St. Mary's Church. The Herons themselves are not using the development lands in any way (e.g. feeding or roosting). Consequently, there can be no direct or indirect impact to the Heronry.

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 undertaking 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. A new surface water drainage system is to be installed in accordance with the GDSDS. The surface water run-off from the development will be attenuated using an underground storage tank and discharged at a restricted rate to the public surface water sewer. Additional measures to reduce volumes entering the sewer include green roofs, swales and permeable paving. As such, there will be no impact to the run-off characteristics from the site. No negative effect arising to the quantity or quality of surface run-off will occur.

7. Artificial lighting. The use of artificial lighting can affect a range of species however the available research is mostly focussed on bats. Different bat species have different sensitivities to lighting however given this urbanised location any species present will be used to some level of background light. Nevertheless, the use of lighting can result in an effective loss of habitat and any negative impacts should be avoided. This impact is potentially moderate negative.

8. 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 sites (SACs or SPAs) in Dublin Bay are not predicted to occur, principally due to the separation distance between the development 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	Minor negative
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	Heronry	Neutral – no impacts
Operational phase		
5	Wastewater pollution	Neutral
6	Surface water pollution	Neutral – no impacts
7	Artificial lighting	Moderate negative
8	Protected areas	Neutral – no impacts

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. In addition, best practice site management should be employed to avoid pollution during construction.

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 two moderate negative impacts and therefore mitigation is needed to reduce the severity of these potential effects.

6.2 Mitigation Measures Proposed

The following mitigation measures are proposed for the development

Construction Phase

1: 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.

2: Disturbance to bats

Tree felling should only occur during September, October, November or February. Alternatively, trees can be inspected for bat and bird nesting prior to felling by a suitably qualified ecologist.

A minimum of three bat boxes should be installed on trees to be retained as part of this development.

These measures will ensure that no negative effects to bats will arise during construction.

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. Artificial lighting

In the first instance, external lighting should be minimised to the greatest extent possible. Where lighting points are required the use of timers, or sensor triggering should be used so that lighting is used when needed only. Trees and vegetation should not be directly illuminated. Low-level bollard lighting should be used in preference to lamp stands. Light sources should use directional cowels to prevent light spill.

With this mitigation in place, no negative effects to bats will arise from lighting.

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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