
Ecological Impact Assessment

Proposed residential development
at East Wall Road, Dublin 3

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Executive Summary

This Ecological Impact Assessment has been prepared by NM Ecology Ltd on behalf of Dublin City Council (the applicant), as part of a planning application at East Wall, Dublin 3. The proposed development will involve the demolition of an administrative building, the clearance of the remainder of the Site, and the construction of up to 68 new residential units. The aim of this report is to identify, quantify and evaluate the impacts of the proposed development on ecosystems and their components, including designated sites, habitats, flora and fauna.

The Site is not within or adjacent to any designated sites. Potential indirect impacts on designated sites were considered within a 5 km radius, but no potential pathways for indirect impacts were identified. A *Screening for Appropriate Assessment* report accompanies this application.

The main habitat within the Site is buildings and artificial surfaces, with some scrub and treelines around the edges of the Site. All habitats are of Negligible ecological importance. No protected plants or problematic invasive species (e.g. Japanese knotweed) were recorded.

The Site may be used by common bird species, but it is highly unlikely to be used by any rare species. Impacts on nesting birds will be avoided by scheduling site clearance and demolition works for the non-breeding season (October – February), or by commissioning a pre-construction survey by a suitably-qualified ecologist. The Site also appears to have some importance for foraging and commuting bats. In response, bat sensitive lighting is proposed in external areas.

Some potential ecological enhancements are proposed, including the planting of native trees and shrubs (to benefit pollinators and birds) and the provision of bird boxes. If the ecological enhancement measures can be implemented, it may be possible to have a positive effect on local biodiversity.

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1 Introduction

1.1 Assessment brief

The aim of this Ecological Impact Assessment (EclA) is to identify, quantify and evaluate the impacts of the proposed development on ecosystems and their components, including designated sites, habitats, flora and fauna. It has been prepared in accordance with the *Guidelines for Ecological Impact Assessment in the UK and Ireland (2018)*, which is the primary resources used by members of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The purpose of this document is to:

- Provide an objective and transparent assessment of the potential ecological impacts of the proposed development for all interested parties, including planning authorities and the general public
- Facilitate objective and transparent determination of the consequences of the development in terms of national, regional and local policies relevant to ecology
- Propose the steps will be taken to adhere to legal requirements relating to designated sites and legally protected species (CIEEM 2018).

Although the above guidelines provide a framework for EclA, many processes rely on the professional judgement of an ecologist, including survey design, the valuation of ecological features, and the characterisation of impacts. An outline of the author's experience, training and accreditation is provided in the following section, which support his competency to make such judgements.

1.2 Statement of authority

The walkover survey and report writing was carried out by Nick Marchant, the principal ecologist of NM Ecology Ltd. He has fourteen years of professional experience, including eleven years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He has an MSc in Ecosystem Conservation and Landscape Management from NUI Galway and a BSc in Environmental Science from Queens University Belfast. He is a member of the Chartered Institute of Ecology and Environmental Management, and operates in accordance with their code of professional conduct.

The bat survey was carried out by Eoin Cussen. He has three year's experience as a consultant ecologist, and a BSc and MSc from University College Cork. He regularly carries out bat surveys for development projects throughout Ireland.

2 Methods

2.1 Scoping

The objective of this assessment is to identify any ecological features that may pose a constraint to the proposed development. It involves the following steps:

- Identification of designated sites within an appropriate zone of influence
- A walkover survey incorporating the following elements:
 - Classification and mapping of habitats
 - A search for rare / protected flora, and for problematic non-native plant species (e.g. Japanese Knotweed)
 - A search for field signs of rare or protected fauna (e.g. badgers), and habitat suitability assessments for species that are secretive, nocturnal or seasonal
- Valuation of ecological features, review of legal considerations, and selection of important ecological features
- Assessment of impacts on important ecological features and development of appropriate mitigation strategies

2.2 Data collection and walkover survey

A desk-based scoping study was carried out using data from the following sources:

- Plans and specifications for the proposed development
- Engineering documents prepared by RPS Group for the proposed development, including the *Hydrogeological and Flood Risk Assessment Report*, *Contaminated Land Assessment*, *Drainage and Watermain Design Report*, *Outline Construction and Demolition Waste Management Plan*, and *Outline Construction Management Plan*
- Bedrock, soil, subsoil, ground water and surface water maps from the Geological Survey of Ireland webmapping service (www.gsi.ie/mapping.htm), the National Biodiversity Data Centre (<http://maps.biodiversityireland.ie/>), and the Environmental Protection Agency web viewer (<http://gis.epa.ie/Envision/>)
- Maps and details of designated sites from www.npws.ie
- Biological records from the National Biodiversity Data Centre online mapping service
- The *Dublin City Development Plan 2016 - 2022*, and details of permitted or proposed developments from the local authority's online planning records

The following resources were used for the walkover surveys:

- Habitat surveys were carried out in accordance with the *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al 2011), and using the classification system of *A Guide to the Habitats of Ireland* (Fossitt 2000)

- Flora were identified using *Webb's An Irish Flora* (8th edition, Parnell & Curtis 2012), *Grasses, Sedges Rushes and Ferns of the British Isles and northwestern Europe* (Rose 1989) and *The Vegetation Key to the British Flora* (Poland & Clement 2009). Nomenclature follows the plant crib of the Botanical Society of the British Isles (BSBI 2007). The abundance and extent of species is described using the DAFOR scale (Dominant, Abundant, Frequent, Occasional, Rare)
- Fauna surveys followed the methods outlined in the *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA 2006), with reference to other species-specific methods as appropriate.

Desktop data from internet resources was accessed between May and December 2021. A walkover survey was carried out on the 12th of May 2021. It covered all areas within the Site boundary, while adjacent lands were inspected visually within a 10-20m buffer.

Bat survey

A bat survey was carried out at dusk on the 12th of May, and at dawn on the 13th of May. The aim of the bat survey was to detect any bat roosts in buildings or trees, and to assess the importance of the Site for foraging / commuting bats. Survey methods were developed using *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Bat Conservation Trust, 3rd edition, 2016). Bats were recorded using an Anabat Walkabout detector (Titley Scientific Inc). Weather conditions at the time of survey were suitable for bats, with mild temperatures, light winds and no rain.

2.3 Valuation of ecological features

Based on the information collected during desktop and walkover surveys, the ecologist assigns an ecological importance to each feature based on its conservation status at different geographical scales (Table 1). For example, a site may be of national ecological importance for a given species if it supports a significant proportion (e.g. 5%) of the total national population of that species.

Table 1: The six-level ecological valuation scheme used in the CIEEM guidelines (2019)

Ecological value	Geographical scale of importance
International	International or European scale
National	The Republic of Ireland or the island of Ireland
Regional	Leinster, and/or the east of Ireland
County	County Dublin or Dublin City
Local	Dublin 3
Negligible	None, the feature is common and widespread

It is accepted that any development will have an impact on the receiving environment, but the significance of the impact will depend on the importance of the ecological features that would be affected. The following is outlined in the CIEEM guidelines: *“one of the key challenges in an EclA is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to impacts from the development, and that will remain viable and sustainable.”*

For the purposes of this report we have only assessed impacts on ecological features that are of local importance or higher (refer to Table 1), or those that receive legal protection. These features are termed ‘important ecological features’ and are listed in Section 4.7. Impacts on features of negligible ecological importance (e.g. amenity grasslands) are not considered to be significant, so they are not included in the impact assessment.

2.4 Ecological Impact Assessment

Potential direct, indirect or cumulative impacts on ecological features can be described in relation to their magnitude, extent, duration, reversibility and timing/frequency, as outlined in the CIEEM (2019) guidelines. Depending on the type of impact and the sensitivities of the important ecological feature, the ecologist may determine that the impact would have a ‘significant effect’. The following definitions are provided in the CIEEM guidelines: *“A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project”*. *“For the purpose of EclA, a ‘significant negative effect’ is an effect that undermines biodiversity conservation objectives for ‘important ecological features’, or for biodiversity in general.”* Where significant impacts are identified, measures will be taken to avoid, minimise or compensate for impacts (where possible). Based on these measures, any residual impacts are then described.

3 Development proposals

3.1 Characteristics of the proposed development

The proposed development will consist of up to 68 no. residential units, comprising 1 – 3 bedroom apartments. The primary access point will be from East Wall Road, and it will lead to paved internal roads and parking spaces. Communal outdoor space will be provided.

Contaminated land remediation

Contaminants that are potentially hazardous to human health were found at a number of locations within the Site, including elevated levels of Total Petroleum Hydrocarbons (TPHs), Polycyclic Aromatic Hydrocarbons (PAHs) and asbestos. A disused oil tank is also present.

To avoid negative impacts on human health, and to comply with the Dublin City Development Plan, the contaminated land will be remediated at the start of the construction process. This will involve the removal and off-site disposal of up to 4.00 m of soil / made ground in residential and open space areas, and up to 1.20 m of soil / made ground under the proposed car park. The oil tank will also be removed. Any surface water or groundwater containing these contaminants will either be removed from the site in sealed containers for treatment at a specialist facility, or will be channelled to a soakaway within the Site.

When complete, the excavations will be backfilled with clean material.

Operational foul and surface water management

Foul water will be discharged to a local authority foul sewer on East Wall Road and conveyed to the Ringsend Waste Water Treatment Works.

To comply with the Dublin City Development Plan, surface water from the proposed development will be managed using Sustainable Urban Drainage (SUDS) principles. Green roofs will provide attenuation and evapotranspiration, and permeable paving will be used in some areas to allow soakage to ground. Runoff from roofs and hard surfaces will be collected in gutters and drains, passed through hydrocarbon and silt interceptors, and attenuated in a tank in the north of the Site. It will then be discharged at a controlled rate to a combined sewer via East Wall Road.

3.2 Other developments in the area (potential cumulative effects)

The Site is in an urban setting in Dublin city centre. It is included in zone Z4 of the *Dublin City Council Development Plan 2016 – 2022*, for which the planning objective is “to provide for and improve mixed-services facilities”. It was included on the vacant sites register for Dublin City Council; this signifies that the local authority considers it suitable for housing but it has not yet been put forward for development.

Live and recently approved planning applications in the vicinity of the site were reviewed on the online planning records of Dublin City Council (DCC). An application was submitted in January 2021 at 14D Poplar Row (north-west of the Site) for the demolition of a dwelling and construction of a mixed-use development comprising a commercial unit and a number of one-bedroom apartments (planning reference 2108/21). It was accompanied by an Appropriate Assessment screening report that concluded there was no risk of impacts on Natura 2000 sites, and DCC concurred with this conclusion in the Planner’s Report. There are

a number of other similar residential developments along Poplar Row (e.g. 3900/18, 3601/18) for which similar screening conclusions were reached.

All other recent planning applications in the surrounding area were for small-scale works such as residential modifications / extensions, or changes of use. None of these developments were considered likely to cause in-combination effects.

4 The Receiving Environment

4.1 Environmental setting

Site location and surroundings

The proposed development site (hereafter referred to as the Site) is adjacent to East Wall Road in the east of Dublin City Centre (Figure 1). It formerly contained a concrete production facility, which comprised a number of industrial buildings and concrete-surfaced storage yards. Most of the buildings were demolished in 2009, and the majority of the Site now consists of fragmented concrete surfaces. There were no green areas in the original development, but some parts of the Site have been colonised by ruderal vegetation and scrub in recent years.

The northeastern boundary of the Site is formed by East Wall Road, and the River Tolka is located on the far side of the road, approx. 15 m from the site boundary. The southeastern and southwestern boundaries of the Site are formed by residential gardens, and the north-western boundary by a fire station. The broader surroundings consist mainly of residential developments, with some public open space (Fairview Park) and industrial units.

Geology and soils

The site is underlain by dark limestone and shale, which is a locally-important aquifer. Subsoils and soils are made ground, and parts of the Site consists of damaged concrete surfaces.

Hydrology

The River Tolka is located 15m northeast of the Site, on the far side of East Wall Road. It is estuarine at this location, and subject to tidal movements. It flows to the east and meets the coast at Eastpoint Causeway, approx. 750 m downstream.

Under the Water Framework Directive status assessments 2013 – 2018, the freshwater section of the River Tolka (which is upstream of the Site) is of Poor status, the transitional waters of the River Tolka are of Moderate status, and the coastal waters of Dublin Bay are of Good status.



Figure 1. Site and immediate surroundings

4.2 Site investigations

Ground investigations, groundwater monitoring and contaminant testing was undertaken at the Site in 2021, and the results are presented in the *Hydrogeological and Flood Risk Assessment Report* and *Contaminated Land Assessment* (RPS 2021) that accompany this application. Information relevant to this screening assessment is summarised below.

Groundwater and soils

Potential groundwater connections between the Site and River Tolka are considered in Section 3.2.2 'Hydraulic Connection' of the *Hydrogeological and Flood Risk Assessment Report*. Standpipe data from the Site was compared with tide levels in Dublin Port, as follows:

- *"The observed maximum groundwater levels in BH4 & BH9 are 0.50 and 0.41 mOD respectively, while the maximum tide level at Dublin port is in the order of 1.4 mOD during the recorded period.*
- *This significant level difference between the Dublin Port / Tolka River Water level and the borehole groundwater level suggests no active direct hydraulic connection between these.*
- *Any temporal variations in the groundwater levels during the recorded period can be considered as imperceptible."*

On this basis, it is concluded that *"there does not appear to be a hydraulic connection between groundwater at / in the vicinity of the proposed development site and the Tolka river."*

Contaminated land

Some contaminants have been recorded at the Site, as reported in the *Contaminated Land Assessment* (RPS 2021). Soil chemistry analyses were undertaken in July 2021, and some samples exceeded Landfill Waste Acceptance Criteria Limits, e.g. for total organic carbon, total petroleum hydrocarbons and / or metals. These contaminants will be removed from the Site during the construction of the proposed development.

Existing drainage infrastructure

An underground utility survey of the Site and surrounding area was carried out in 2021; key results are presented in the *Hydrogeological and Flood Risk Assessment Report*. Based on the results of the survey, the engineers have concluded that *“it is likely that all surface water generated on site is infiltrating to ground within the site. There is no evidence of stormwater infrastructure out falling to the Tolka River.”* On this basis, it is assumed that all rainwater on the Site soaks to groundwater.

4.3 Designated sites

The proposed development is not located within or adjacent to any designated sites. Potential indirect impacts were considered within a potential zone of influence of 5km¹. Details of relevant sites are provided in Table 2, and their locations are shown in Figure 2.

¹ For the purposes of this assessment we considered indirect impacts on designated sites within a potential zone of influence of 5km. This distance is considered to be proportionate to the moderate scale of the proposed development and its suburban setting.

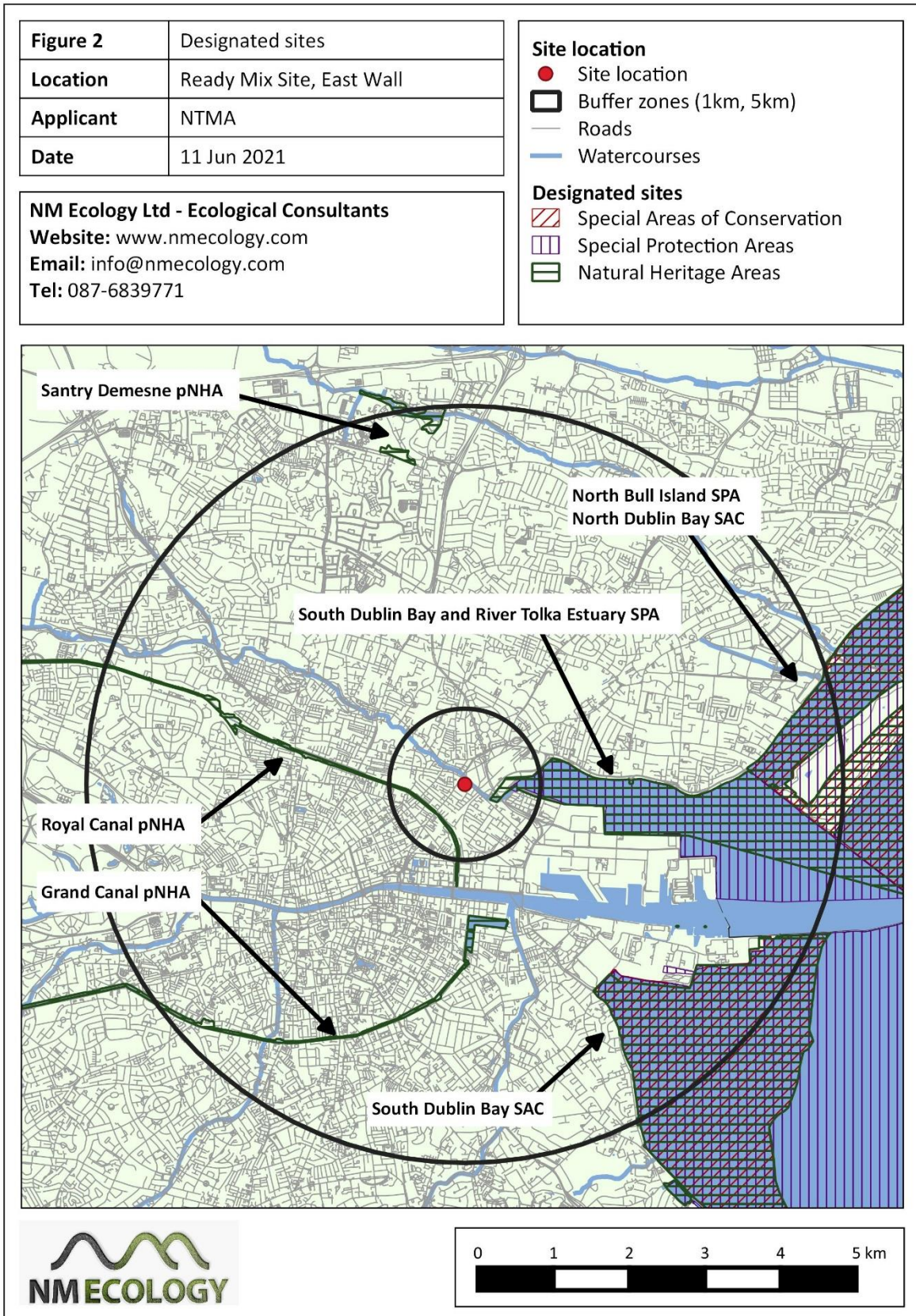


Table 2: Designated sites within 5 km of the Site

Site Name	Distance	Reasons for designation
Royal Canal pNHA (site code 2103)	0.4 km south-west	Extensive freshwater feature of value to a range of biodiversity, and with value as an ecological corridor
South Dublin Bay and River Tolka Estuary SPA (4024)	0.6 km east	Habitats: tidal / coastal wetlands Special conservation interests: light-bellied brent goose, oystercatcher, ringed plover, grey plover, knot, sanderling, dunlin, bar-tailed godwit, redshank, black-headed gull (over-wintering populations), arctic tern, roseate tern (passage migrants), and common tern (breeding populations)
Grand Canal pNHA (2104)	1.7 km south	Extensive freshwater feature of value to a range of biodiversity, and with value as an ecological corridor
South Dublin Bay SAC, pNHA (210)	3.1 km south-east	Annex I habitats: inter-tidal mudflats / sandflats Annex II species: none
North Dublin Bay SAC, pNHA (206)	3.7 km east	Annex I habitats: inter-tidal mudflats / sandflats (including patches of <i>Salicornia</i> and other annuals), <i>Spartina</i> swards, salt marshes, annual vegetation of drift lines, embryonic shifting dunes, white dunes, grey dunes, dune slacks Annex II species: petalwort <i>Petalophyllum ralfsii</i>
North Bull Island SPA (4006)	3.7 km east	Habitats: tidal / coastal wetlands Special conservation interests: light-bellied brent goose, shelduck, teal, pintail, shoveler, oystercatcher, golden plover, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone, black-headed gull (all are over-wintering populations)
Santry Demesne pNHA (178)	4.2km north	Former demesne woodland which contains a protected plant species: Hairy St-John's Wort

Potential pathways for indirect impacts on designated sites

Indirect impacts can occur if there is a viable pathway between the source (the Site) and the receptor (the habitats and species for which a site has been designated). The most common pathway for impacts is surface water, e.g. if a pollutant is washed into a river and carried downstream into a designated site. Other potential pathways are groundwater, air (e.g. airborne dust or sound waves), or land (e.g. flow of liquids, vibration). The zone of effect for hydrological impacts can be several kilometres, but for air and land it is rarely more than one hundred metres. An appraisal of potential pathways for impacts on Natura 2000 sites is provided below.

The *Royal Canal* pNHA is located 0.4 km south-west of the Site, and the *Grand Canal* pNHA is located 1.7 km south; both sites are very similar in character and ecological importance. When considering potential pathways for indirect impacts, it is important to note that both canals are self-contained hydrological units (i.e. not fed by surrounding rivers or drains). This means that there are no surface water or groundwater pathways linking the Site with either canal. Air and land pathways can be ruled out due to the distances involved.

The *South Dublin Bay and River Tolka Estuary* SPA is located 600m to the east of the Site, or approx. 750 m downstream via the Tolka Estuary. The SPA was designated to protect a range of over-wintering bird species that feed on invertebrates and / or algae in intertidal habitats, as well as some tern species that nest on pontoons in the River Liffey estuary. There is currently no surface water connection between the Site and the River Tolka, because all rainwater on the Site currently soaks to groundwater (refer to Section 4.2). There is no overland pathway between the Site and the River Tolka, because there is a 1 m-high wall between East Wall Road and the river. Groundwater testing demonstrated that there is no groundwater connection between the Site and the River Tolka or coastal waters (refer to Section 4.2), so this can be ruled out as a pathway. A pathway via air can be ruled out due to the distance involved.

The *North Bull Island* SPA, *North Dublin Bay* SAC / pNHA and *South Dublin Bay* SAC / pNHA are located in Dublin Bay, between 3.1 and 3.7 km from the Site. The SPA has been designated for a similar range of over-wintering bird species, and the SACs for a range of coastal and intertidal habitats. As noted above, there are no pathways between the Site and the River Tolka. This, in turn, rules out any hydrological pathways to the other SPA and SACs in Dublin Bay. Pathways via groundwater, land and air can be ruled out due to the distances involved.

The *Santry Demesne* pNHA is located approx. 4.2 km north of the Site. It has been designated for long-established woodland and a protected terrestrial plant species. It is part of a separate river catchment (the Santry River), so a pathway via surface water can be ruled out. Pathways via groundwater, land and air can be ruled out due to distance.

In summary, no potential pathways were identified to any of the designated sites in the surrounding area.

4.4 Phase 1 Habitat Survey

Habitats within the Site were classified using *A Guide to Habitats in Ireland* (Fossitt 2000). An aerial photograph is provided in Figure 3, on which the distribution of habitats is visible.



Figure 3. Aerial photograph of Site, showing extent of built surfaces and vegetated areas

Buildings and artificial surfaces (BL3)

The Site was formerly used as a concrete production facility, comprising a number of industrial buildings and concrete-surfaced storage yards. Most of the buildings were removed in 2009, and the majority of the Site now consists of concrete surfaces. There is a two-storey boarded-up building in the north-east of the Site, and some piles of demolition rubble in the south-west of the Site. The latter could be classified as spoil and bare ground (ED2), but most areas are small in size, so they are included here in the section on buildings and artificial surfaces.

Vegetation has colonised many of the built surfaces, including extensive ivy *Hedera helix* growth on the exterior of the building, dense patches of butterfly-bush *Buddleja davidii* on rubble and in sheltered areas of the Site, and mats of English stonecrop *Sedum anglicum* on the concrete slabs. In sheltered locations the vegetation cover is 100%, but in open areas the vegetation is sparse or absent.

In addition to the above species, other plants were recorded at low density throughout the Site, including Yorkshire-fog *Holcus lanatus*, creeping bent *Agrostis stolonifera*, rough meadow-grass *Poa trivialis*, barren brome *Anisantha sterilis*, fern grass *Catapodium rigidum*, wall barley *Hordeum murinum*, dandelion *Taraxacum officinale*, common ragwort *Senecio*

jacobaea, rue-leaved saxifrage *Saxifraga tridactylites*, willowherbs *Epilobium* spp, grey willow *Salix cinerea*, sycamore *Acer pseudoplatanus*, herb-robert *Geranium robertianum*, round-leaved cranesbill *Geranium rotundifolium*, bramble *Rubus fruticosus*, cleavers *Galium aparine*, smooth sow-thistle *Sonchus oleraceus*, red valerian *Centranthus ruber*, ivy-leaved toadflax *Cymbalaria muralis*, annual mercury *Mercurialis annua*, wood avens *Geum urbanum*, wild teasel *Dipsacus fullonum*, sun spurge *Euphorbia helioscopia*, shepherd's-purse *Capsella bursa-pastoris*, scarlet pimpernel *Anagalis arvensis*, colt's-foot *Tussilago farfara*, winter heliotrope *Petasites fragrans* and butterbur *Petasites hybridus*.

This habitat has a relatively high species diversity, but all species are common and widespread in urban wasteground throughout Dublin. The vegetation would only have been present in small quantities when the Site was occupied, and has only become widespread since the Site has been abandoned. On this basis, it is considered to be of Negligible ecological value.

Scrub (WS1)

Some of the butterfly-bush in the south-west of the Site has formed a dense patch of scrub, as has a fenced area to the east of the building. These areas are dominated by butterfly-bush, with a sparse ground-flora consisting of species listed above.

Butterfly-bush is an invasive non-native species, so it has no botanical value. However, the vegetation is dense and up to 2m in height, and may provide shelter and breeding opportunities for birds and small mammals, so it is considered to be of secondary value for fauna (refer to Section 4.5).

Treeline (WL2) / Hedgerow (WL1)

There is a line of trees and shrubs along the northern boundary (adjoining East Wall Road) that can be considered both a treeline and hedgerow. To the north of the building is a line of semi-mature whitebeam *Sorbus aria* trees, over a dense line of New Zealand broadleaf *Griselinia littoralis* shrubs. To the north-west of the site entrance is a strip of mature New Zealand broadleaf and a small number of immature sycamore and rowan *Sorbus aucuparia* trees. Ivy is dominant at ground level, but there is little or no other ground flora.

These trees and shrubs have all been planted, New Zealand broadleaf and sycamore are non-native, and there is no characteristic ground flora, so the habitat is of Negligible botanical importance. However, it may provide nesting habitat for birds, so it is considered to be of secondary value for fauna (refer to Section 4.5).

Rare or protected flora

No rare or protected plants were encountered during field surveys.

Invasive plant species

No Japanese knotweed or any other restricted invasive species (as listed on the third schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011*) were recorded during the site inspection.

Two other invasive non-native species were recorded during the site inspection: winter heliotrope and butterfly-bush. These species are not listed on the *European Communities (Birds and Natural Habitats) Regulations 2011*, and thus do not have legal restrictions. They will be removed during site clearance works, and will not pose any significant problems to the proposed development, so they are not considered to be Important Ecological Features.

4.5 Protected fauna

Birds

Common urban and garden birds

A small number of birds were observed during the survey: house sparrow, goldfinch, wren, woodpigeon and jackdaw. It is likely that some other urban birds will use the Site, including corvids, finches, tits and other common passerines. Birds may nest in the treeline and/or scrub habitats, although no nests were observed during the site inspection. It is also possible that swallows may roost in the building.

Urban areas rarely support significant populations of endangered birds, and the Site is considered to be of no more than Local importance for urban species. However, all birds (including nests, eggs and chicks) receive protection under the *Wildlife Act 1976* (as amended).

SPA bird species

The *South Dublin Bay and River Tolka Estuary SPA* and *North Bull Island SPA* support a range of over-wintering bird species. The main habitats of these birds are the coastal mudflats and sandflats of Dublin Bay, but some species also fly inland to feed in terrestrial habitats, including brent geese that feed on grass, and waders (e.g. curlew) that feed on soil invertebrates in grassland areas. These bird species are relatively large and require some time to take flight, so they usually avoid areas with high levels of human disturbance, and are particularly wary of dogs. Therefore, the inland sites with highest levels of SPA bird activity are typically large, open grassy areas that have relatively low levels of human activity.

The Site consists almost entirely of concrete surfaces, with no suitable feeding areas for the SPA bird species. It is also located in an urban area with a high degree of disturbance by humans and dogs. Therefore, we conclude that the Site does not provide a suitable inland feeding area for any SPA bird species.

Terrestrial mammals

A live fox *Vulpes vulpes* was observed during the survey, flushed from the scrub habitat in the south of the Site. There was no sign of a den within the Site. Foxes are not a protected species, and are common and widespread in Dublin city, so they are considered to be of Negligible importance.

No other mammals were observed during field surveys, nor any characteristic field signs of protected species (e.g. badger setts). There are desktop records of otters and hedgehogs in the closest 2 km grid squares (O13S and O13T). The suitability of the habitat for these species is discussed below.

Otters are known to be present along the River Tolka, which is approx. 15 m north-east of the Site. There are high flood defence walls along the river at this location, which would prevent otters entering or leaving the river, so it is highly unlikely that any otters could reach the Site. No otter holts, spraints or other field signs of otter were found within or adjacent to the Site. Therefore, the Site is of Negligible importance for otters.

The scrub could potentially provide habitat for hedgehogs. However, considering the small extent of habitat within the Site, and its lack of connectivity with parks or green areas, the Site is considered to have Negligible importance for hedgehogs.

Bats

Potential roost features

There is a large two-storey building in the north of the Site, that appears to have been an office / administrative building for the concrete processing facility. The exterior of the building is intact and it appears to be weathertight, but it has been boarded up and is currently inaccessible. The walls are constructed of brick and concrete, and it has a flat roof of asbestos. Parts of the external walls have a dense growth of ivy. There is a small wooden hut on the roof of the structure, which may be a capping or control room for an elevator; its walls are constructed of wood, and it appears to have a roof of felt, all of which are in poor condition. There is also a single-storey outbuilding on the south-eastern corner of the building that has a felt roof and rotting wooden fascia panels.

There is currently no active lighting within the Site. However, there are powerful floodlights in the car park of the adjacent fire station, which illuminate most of the western side of the Site. Streetlights along East Wall Road also illuminate parts of the northern boundary.

It was not possible to access the interior of any buildings, as they are sealed to prevent vandalism. However, based on an external inspection of the building, it was considered to have low suitability for roosting bats, in accordance with Collins *et al.* (2016). This is due to

the limited number of the roosting opportunities, and the levels of artificial lighting in the surrounding area.

There are some standing concrete walls in parts of the Site, and a concrete service building in the centre of the Site. None have any obvious crevices or cavities, so they are of negligible suitability for roosting bats. Similarly, none of the trees have any crevices or cavities suitable for bats, so they are considered to be of negligible suitability for roosting bats.

Results of bat survey

A bat survey was carried out at dusk on the 12th of May and dawn on the 13th. Two species were recorded: common pipistrelle and soprano pipistrelle. These are the most common species in Ireland, and are listed as 'least concern' on the Irish red list of terrestrial mammals (Marnell et al 2019).

At dusk, the first bat recorded was a common pipistrelle at 24 minutes after sunset. It did not emerge within the Site, but may have been roosting nearby. It foraged at the south-western corner of the administrative building for c. 15 minutes.

No bats were observed emerging from any structures. Common and soprano pipistrelles were both recorded foraging and commuting during the dusk survey period. The majority of foraging activity was along the southern side of the building, with some bats feeding near the dense ivy on the exterior of the building. Commuting activity was recorded from a number of soprano and common pipistrelles along the eastern perimeter of the Site, with the bats commuting from the south to the north.

Following the dusk emergence survey, the adjacent section of the Tolka Estuary was surveyed. One soprano pipistrelle was recorded, but no Daubenton's bats or any other species. This is probably due to the high levels of artificial lighting along the river banks, which may displace bats from the area.

There was very little bat activity at dawn, with a total of two passes by common pipistrelle bats. One was foraging at the south-west corner of the building, and the other was commuting across the Site from south to north. No swarming or re-entry activity was recorded during the dawn survey.

In summary, no bats were observed roosting within the Site, and there was no sign of a roost in the immediate vicinity (i.e. within 20 m of the Site). Therefore, the Site is of negligible importance for roosting bats. Some foraging and commuting activity of common bat species was recorded at dusk, focussed around the building. Considering that most of the surrounding area is built-up and has limited opportunities for bats, the Site may be of Local value for foraging / commuting bats.

Reptiles and amphibians

No reptiles or amphibians were observed during the survey. Considering the lack of wetland breeding sites for amphibians, and that all habitats within the Site boundary are well-represented in the surrounding landscape, the Site is considered to be of Negligible importance for these taxa.

Terrestrial invertebrates

The habitats within the Site are common in urban landscapes in Ireland, so the Site is considered to be of Negligible importance for invertebrates.

4.6 Potential limitations and information gaps

The site inspection was carried out in the ideal survey season for most flora and fauna, so this assessment is not considered to have any information gaps.

4.7 Identification of important ecological features

Table 3 provides a summary of all ecological features identified on the Site, including their importance and legal / conservation status. For the purposes of this impact assessment, any features that are of Local ecological importance, or that receive legal protection, are considered to be 'important ecological features', and will be addressed in the impact assessment.

Table 3: Important ecological features within the Site

Ecological feature	Valuation	Legal status*	Important feature?
South Dublin Bay / River Tolka Estuary SPA	International	HR / WA	No
Other designated sites	International	HR / WA	No
Scrub (WS1)	Negligible	-	Yes, secondary importance for fauna
Treeline (WL1)	Negligible	-	
Buildings and artificial surfaces (BL3)	Negligible	-	No
Rare and protected flora	Negligible	-	No
Invasive species	Negligible	-	No
Bats	Local	HR, WA	Yes
Birds	Local	WA	Yes
Other terrestrial mammals	Negligible	-	No
Reptiles and amphibians	Negligible	-	No
Invertebrates	Negligible	-	No

* HR – EC (Birds and Natural Habitats) Regulations 2011; WA – Wildlife Act 1976

In summary, the important ecological features that will be included in the impact assessment are: scrub, treeline, bats and birds.

5 Predicted Impacts of the Proposed Development

5.1 Potential direct or indirect impacts on designated sites (construction phase)

There is no risk of direct impacts on any designated sites. Potential pathways for indirect impacts (e.g. from pollution) were discussed in Section 4.3, but all potential pathways were screened out. As outlined in Section 4.5, the habitats within the Site are unsuitable for any of the bird species from *South Dublin Bay and River Tolka Estuary* SPA, or any other Natura 2000 sites. On this basis, the proposed development poses no risk of direct or indirect impacts on any designated sites. A stand-alone *Screening for Appropriate Assessment* report accompanies this application.

5.2 Disturbance of nesting birds / breeding fauna (construction phase)

The treeline and scrub may provide habitat for nesting birds. If the trees / shrubs are cleared during the bird nesting season (between March and August, inclusive), it is possible that active nests could be destroyed. The killing of any birds or the disturbance of their nests would constitute an offence under the *Wildlife Act 1976* (as amended), and could have a significant negative impact.

5.3 Displacement / disturbance of bats (all phases)

Low to moderate levels of foraging / commuting activity by common pipistrelles and soprano pipistrelles were recorded within the Site. It is expected that bats will continue to feed on the Site after the development is complete, particularly in landscaped areas and gardens. However, bats typically avoid brightly lit areas, so if lighting is extensive, it could substantially reduce the areas available for feeding bats. This could have a slight negative impact on local bat populations, which are of Local importance.

5.4 Potential cumulative impacts with other developments (all phases)

A number of recent planning applications along Poplar Row were reviewed (refer to Section 3.2), but all developments were much smaller in scale than the proposed development. Impacts on Natura 2000 sites were ruled out at the screening stage, and no other significant impacts were identified. Therefore, there is not considered to be any risk of cumulative impacts.

6 Proposed mitigation measures

6.1 Protection of birds and small mammals during site clearance works

Under Section 22 of the *Wildlife Act 1976* (as amended), it is an offence to kill or injure any birds, or to disturb their nests. Most birds nest between March and August (inclusive), so it is strongly recommended that all tree felling, building demolition and other site clearance works are carried out between September and February (inclusive), i.e. outside the nesting season. If this is not possible, an ecologist will survey the affected areas in advance in order to assess whether any nesting birds are present. If any are encountered, vegetation clearance or demolition will be delayed until the breeding attempt has been completed, i.e. after chicks have fledged and a nest has been abandoned.

6.2 Bat-sensitive lighting

Bats are highly sensitive to artificial lighting, and they may be displaced from the Site if lights are of high intensity, or if they are directed towards trees. However, if 'bat-sensitive' lighting techniques are incorporated into the lighting plan, they would avoid or minimise any potential impacts.

'Bat-sensitive lighting' for this development would have the following design principles, which are taken from the *Bats and Lighting* guidelines (BCT & ILP 2018):

- Low-UV LEDs or low / high pressure sodium lamps will be the preferred bulb type, as they have least effect on bats. Mercury or metal halide bulbs will not be used. Lights will have a 'warm' tone, with minimal blue / UV content
- All external lights will be fitted with directional hoods to direct the light downwards onto targeted areas and to prevent unnecessary light-spill
- No lights will be directed towards any trees or landscaped areas
- Lights in pedestrian areas will be installed at a low level, e.g. bollards of up to one metre in height. Lights will be directed onto ground level, with no light spill above the horizontal. Lux levels will be the minimum required for pedestrian safety
- External lighting on new residences will be fitted with motion sensors and timers in order to provide light only when required. Constant, overnight lights will not be permitted.

These measures will apply both to temporary lighting during the construction of the proposed development, and to permanent lighting during the operation of the development. In order to ensure that these techniques are effective, and that bat mitigation measures can be balanced with public safety requirements, the developer will employ an ecologist to liaise with the contractor on the lighting design.

7 Opportunities for Ecological Enhancement

7.1 Planting native vegetation

The proposed development will have some landscaped areas. If these areas can be planted with a diverse mixture of predominantly native plants, there will be an opportunity to increase the number of plant species on the Site, and thus to increase its ecological value. The planting of native vegetation is also likely to increase the value of the Site for fauna, particularly pollinators and birds.

Comprehensive guidance on landscaping schemes of greatest value for native invertebrates is outlined in the *All-Ireland Pollinator Plan 2015-2020*. The plan includes a 'Pollinator-friendly Planting Code'², with recommendations for trees, shrubs, climbers and herbaceous plants that are of greatest value to Irish pollinators. Most species are native to Ireland, but selected non-native flowering plants of value to pollinators are also included. Appropriate species could be selected from this list by the landscape architects for the development, with advice from the project ecologist as required.

If the landscaping scheme resulted in an increase in the number of species at the Site, it may be possible to achieve a net positive effect on the value of the Site for habitats and flora. To achieve maximum value, the species composition should include a significant proportion of native Irish plant species and species from the 'Pollinator-friendly Planting Code'.

7.2 Installation of nesting boxes

At present the Site has some nesting opportunities for birds. If nesting boxes are installed in landscaped areas, this may compensate for nesting opportunities lost in other parts of the Site. Nest boxes for common urban birds such as robins, finches and tits are widely available. Nest boxes for swallows and house martins could also be attached to the exterior of new buildings.

One innovative option for this development would be to provide nesting boxes for Swifts. Swift populations have declined by more than 40% in Ireland in the last twenty years, and they are included on the amber list of *Birds of Conservation Concern in Ireland*. They nest in urban areas, typically in the eaves of old buildings; the main reason for their decline is the lack of suitable nesting sites in modern buildings. Swift nesting boxes can be purchased in a range of designs, which can be incorporated into brickwork, or bolted to the exterior of a structure. Swifts produce little waste, and the boxes do not need to be maintained. Swifts

² Pollinator-friendly Planting Code, available online at pollinators.ie/app/uploads/2018/04/Planting-Code-2018-WEB.pdf

have been recorded in the area in recent years, so it is likely that they would be attracted to the new development if nest boxes were provided.

In either case, the installation of nesting boxes provides opportunities to attract new fauna to the Site, and to increase the overall number of species above the baseline levels.

8 Residual Impacts

Tree felling and other site clearance works will take place outside the season of peak nesting activity, or the area will be surveyed by an ecologist to confirm that no nesting birds are present. As a result, there will be no impact on local bird populations, and no legal offence under the *Wildlife Act 1976* (as amended).

Bat-sensitive lighting techniques will be incorporated into the lighting plan in order to avoid light-spill into areas that are likely to be used by bats. As a result, there should be no significant reduction in bat activity within the Site.

Subject to the successful implementation of these measures, it can be concluded that the proposed development will not cause any significant negative impacts on designated sites, habitats, legally protected species, or any other features of ecological importance.

There are some opportunities to improve the ecological value of the Site, including the planting of native plant species, and the provision of nesting boxes for birds. If the ecological enhancement measures can be implemented, it may be possible to have a positive effect on local biodiversity.

9 References

Bat Conservation Trust and Institution of Lighting Professionals, 2018. *Guidance Note 08/18: Bats and artificial lighting in the UK*. Available online at <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting>

Botanical Society of the British Isles, 2007. *Plant species nomenclature checklist*. Botanical Society of the British Isles, Southampton.

Chartered Institute of Ecology and Environmental Management, 2019. *Guidelines for Ecological Impact Assessment in the U.K and Ireland: Terrestrial, Freshwater and Coastal* (2nd Edition). C.I.E.E.M., Hampshire, England.

Collins, J. (ed.), 2016. *Bat surveys for professional ecologists: good practice guidelines* (3rd edn). The Bat Conservation Trust, London.

Marnell, F., Kingston, N., Looney, D., 2009. *Ireland Red List No. 3 – Terrestrial Mammals*. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Poland, J., Clement, E., 2009. *The Vegetation Key to the British Flora*. John Poland and the Botanical Society of the British Isles, Southampton.

Rose, F., 1989. *Grasses, Sedges Rushes and Ferns of the British Isles and northwestern Europe*. Penguin Books Ltd, London.

Rose, F., 2006. *The Wildflower Key*. Penguin Books Ltd, London.

Stace, C., 2010. *New Flora of the British Isles*, 3rd Edition. Cambridge University Press