MWP

Ecological Impact Assessment

Residential Development at Broomhill Road, Tallaght, Dublin 24

Garyaron Homes

May 2022

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Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
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1. Introduction

Strategic Housing Development (SHD) applications are applications for planning permission directly to An Bord Pleanála (ABP) for certain housing developments.

Garyaron Homes intends to apply to ABP for a 5 year planning permission for a SHD scheme on lands at Broomhill Road, Tallaght, Dublin 24, D24 XA52 and Unit 51, Broomhill Road, Tallaght, Dublin 24, D24 E124 on a site of approximately 1.4 ha.

Malachy Walsh and Partners Engineering and Environmental Consultants (MWP) have been engaged by John Fleming Architects (JFA), under the appointment of the Applicant, Garyaron Homes Ltd, to prepare an Ecological Impact Assessment (EcIA) report on the proposed works to accompany the application. This report describes the existing biodiversity and ecological characteristics of the proposed development site.

A Stage 1 screening for Appropriate Assessment report and an Environmental Impact Assessment screening report have also been prepared by MWP in relation to the proposal and will be submitted as part of the application.

1.1 Overview of Project

The proposed development will consist of (a) the demolition (total area approx. 4,319.9 sqm) of the existing buildings on site and the existing front boundary treatment; and (b) the construction of a new residential and mixed-use scheme of 242 no. apartment units in 5 no. blocks (Blocks A to E) ranging from 4 to 7 storeys in height.

The proposed development will also include a childcare facility/creche, a café, reception area, resident lounge, letting office, rentable room/studio space, public gym and a public co-working space as well as landscaped open spaces. The development shall be served via a new vehicular access point from Broomhill Road (upgrade works are proposed). The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works; boundary treatment; internal roads and footpaths; waste storage areas and electrical services and all associated site development works.

The site as it currently stands is already developed with a two-storey office/ light industrial unit on the south side and various containers and sheds on a concrete/ tarmacadam surface in the northern end of the site, which is suitable for accommodating container delivery. There are ample parking facilities at the rear of the industrial unit. The site is surrounded by a mixture of office light industrial and warehouse buildings of various ages. The site is part of an on-going regeneration scheme by South Dublin County Council to introduce a residential mix into the general area.

Figure 1. Aerial view of approximate proposed development site in context of surrounding area

1.2 Scope of Assessment

- Identify and document protected habitats and species in the study area through desk top studies
- Undertake baseline ecological surveys at the site
- Evaluate the nature conservation importance of the ecological resources identified using a scientifically robust and objective methodology based on current National and International best practice guidelines
- Predict the potential direct, indirect and cumulative effects of the project on biodiversity
- Prescribe mitigation measures to minimise potential effects on biodiversity
- Identify habitats within the study area that can benefit from ecological management for the purpose of local biodiversity enhancement.

1.3 Statement of Competency

This Ecological Impact Assessment (EcIA) has been prepared by Hazel Dalton (BSc., BBus.). Hazel is a Senior Ecologist with seven years' experience in environmental consultancy. She is experienced in ecological surveying, ecological impact assessment and the appropriate assessment process. She is an appropriately qualified, trained and competent professional. She has undertaken ecological assessments for a wide variety of projects including renewable energy, infrastructure, coastal/marine, housing and various other development projects. She has extensive experience with ecological report writing, including Appropriate Assessment (EcIA, AA, NIS).

She is an experienced field ecologist and has a diverse ecological survey profile. Particular field survey skills include habitats and flora, mammals including badger, otter and bats, birds, invasive species and Kerry slug. She also has experience in biological sampling for freshwater biological water quality assessments. She has held NPWS Licences for small mammal trapping, tape lure/endoscope bird surveys, disturbance of bats and Kerry slug and photographing wild animals.

In relation to bats, the relevant sections of the EcIA including the evaluation, impact assessment, mitigation measures and other relevant sections have been authored by Dr. Tina Aughney. All analysis and reporting in relation to bats has been completed by Dr. Aughney. Data collection and surveying was completed with the assistance of a trained field assistant Mr. Shaun Boyle (NPWS licence DER/BAT 2022-37 - Survey licence, expires 24th March 2025).

Dr. Aughney has worked as a Bat Specialist since 2000 and has undertaken extensive survey work for all Irish bat species including large scale development projects, road schemes, residential developments, wind farm developments and smaller projects in relation to building renovation or habitat enhancement. She is a monitoring co-ordinator and trainer for Bat Conservation Ireland. She is a co-author of the 2014 publication Irish Bats in the 21st Century. This book received the 2015 CIEEM award for Information Sharing. Dr. Aughney is a contributing author for the Atlas of Mammals in Ireland 2010-2015.

Dr Tina Aughney is a licenced bat specialist:

- NPWS licence C13/2020 (Licence to handle bats, expires 31st December 2022)
- NPWS licence 08/2020 (Licence to photograph/film bats, expires 31st December 2022)
- NPWS licence DER/BAT 2022-36 (Survey licence, expires 24th March 2025)

2. Details of Proposed Development

2.1 Site Location and Context

The proposal site is situated within Broomhill Industrial Estate in Tallaght, located approximately 6 km from Dublin City Centre. The subject site is bound to the north by Broomhill Terrace, to the west by Broomhill Road and to the east and south by existing industrial/commercial premises. There are currently two entrances to the site, both off Broomhill Road. The N81 Tallaght Bypass is situated 0.9 km to the south of the site while the M50 Motorway is situated 1.5 km to the north-east (see Figure 2 below).

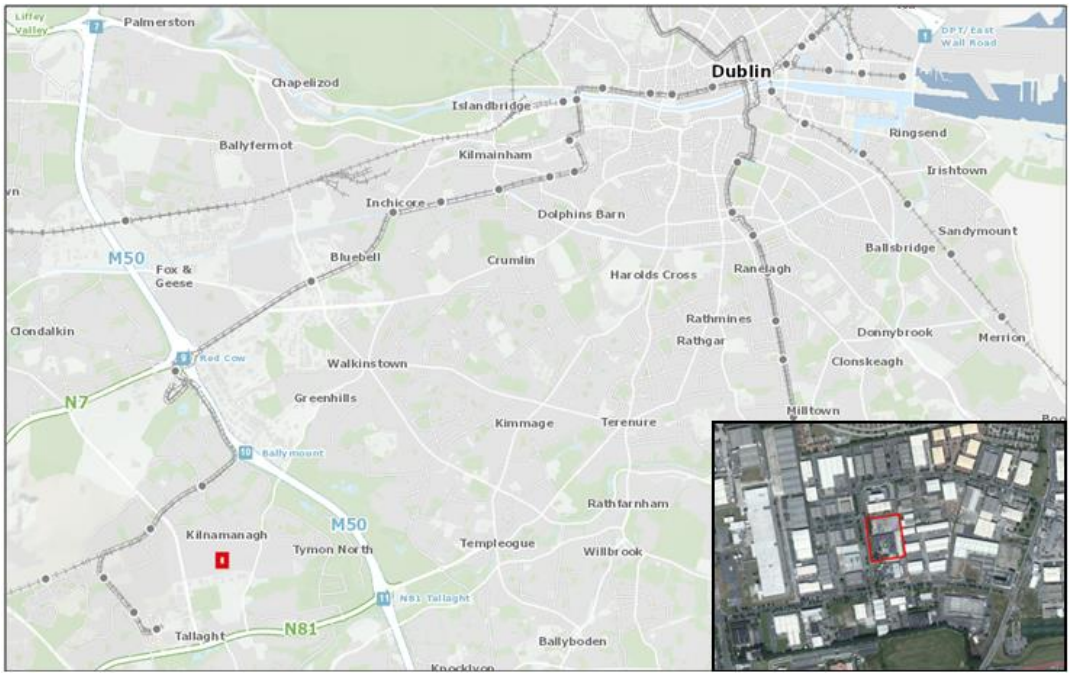

Figure 2. Location of proposed development site

2.2 Characteristics of the Project

Once complete, the proposed development will comprise a total of 242 no. apartment units including 96 no. 1-bed apartments, 141 no. 2-bed apartments, and 5 no. 3-bed apartments distributed over five blocks (Blocks A-E).

The proposed development will consist of:

(a) the demolition of the existing buildings on-site (total area approx. 4,319.9 sqm) and the existing front boundary treatment.

(b) and the construction of a new residential and mixed use scheme of 242 no. apartment units in 5 no. blocks (Blocks A to E) ranging from 4 to 7 storeys in height as follows:

- Block A (5 storeys) comprising 40 no. apartments (4 no. 1 bed, 31 no. 2 bed and 5 no. 3 bed units)
- Block B and C (7 storeys) comprising 102 no. apartments (45 no. 1 bed and 57 no. 2 bed units)
- Block D (5 - 7 storeys) comprising 36 no. apartments (16 no. 1 bed and 20 no. 2 bed units)
- Block E (4 - 5 storeys) comprising 64 no. apartments (31 no. 1 bed and 33 no. 2 bed units)

Block D will accommodate a Childcare Facility/creche of approx. 465 sqm at ground floor level. The proposal will also provide for a café of approx. 50.9 sqm at the ground floor of Block C.

Residential amenity areas will be provided in the form of a reception of approx. 125.1sqm, resident lounge of approx. 45 sqm, a letting office of approx. 11.8 sqm, a rentable room/studio space of 39 sqm, a public gym of approx. 128.5 sqm and a public co-working space of approx. 128.4 sqm, all at the ground floor level of Blocks B & C.

Each residential unit will be afforded with private open space in the form of a balcony or terrace. Communal open space of 1,797.4 sqm is proposed in the form of 2no. roof top terraces at Blocks D and E, courtyard space at ground level, outdoor seating and planting and pedestrian and cyclist links. Public open space of 1,400 sqm is also proposed in the form of outdoor seating, paved areas, a lawn area, play areas and an outdoor seating area to the front of the proposed café at Block C.

A total of 136 no. car parking spaces are provided at ground floor level, including 7 no. Accessible spaces at surface level; and 426 no. bicycle spaces (Visitor and Resident in bike stands and secure stacked bike spaces) are proposed.

The proposed development shall be served via a new vehicular access point from Broomhill Road. Upgrade works are proposed to the vehicular access point to facilitate the proposed development and to provide for improved access and egress for the overall development. New pedestrian and cyclist access points will be provided on to Broomhill Road from the site.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works; boundary treatment; internal roads and footpaths; waste storage areas and electrical services and all associated site development works.

Surface water run-off generated from the proposed development will be routed through a series of on-site Sustainable Urban Drainage System (SuDS) elements which have been incorporated into the project at design stage. SUDS elements are widely used to alleviate detrimental effects of urban stormwater drainage on receiving watercourses. The Greater Dublin Strategic Drainage Study (GDSDS) Final Strategy Report outlines the systematic implementation of best practice stormwater management systems, including SUDS, which are to be employed as standard for all new developments[1].

[1] Microsoft Word - GDSDS Final Strategy Report - April 05.doc (greaterdublindrainage.com) Accessed 07/10/2021

SUDS elements to be employed include use of sedum roofs, permeable paving, bypass petrol interceptor, silt trap and hydro-brake. These elements will utilise runoff interception, detention and infiltration at source before discharging to an on-site attenuation system. A proprietary petrol interceptor and silt trap will be provided on the inlet to the proposed attenuation to improve the quality of the discharge by capturing all possible debris and hydrocarbons pollution from the development. A flow control device or 'hydrobrake' provided on the outfall pipe of the attenuation system will control flow to green field run-off rates. Each of these SUDS mechanisms provides various stormwater treatment, storage and/or attenuation functions by which surface run-off from the development will be managed prior to leaving the site and entering the existing public stormwater drainage system via an existing Local Authority stormwater drain located on Broomhill Road.

The proposed foul sewer, fully separated from the proposed storm water drainage, is designed for sewage and wastewater collection from the proposed buildings. It will discharge to the existing public foul sewer system. The development will connect to Ringsend UWWTP via the public system. Irish Water (IW) has confirmed via a pre-connection enquiry application and a Statement of Design Acceptance (dated May 2022) that the proposed connection is feasible based on the network capacity currently available subject to condition of introducing sewage flow management. This will be achieved via the proposed construction of a pumping station on-site which will store and control discharge from the development to the Local Authority gravity network to ensure that the development will not have a detrimental effect on the capacity of the downstream network. The flow control and storage measures will be installed, owned and operated by the developer until planned public network upgrades (currently at preliminary design stage) are delivered and additional capacity in the network becomes available.

Water supply to the proposed development will be provided through a new 150ø watermain connection to the existing Local Authority located in Broomhill Road to the west of the site.

Please refer to the Drainage Design Report (April 2022) and Drainage Layout Planning Drawing (Drawing Ref: D1679-D1-PL2, April 2022) for the development prepared by Kavanagh Burke Consulting Engineers which accompany the planning application for more information.

A Construction Environmental Management Plan (CEMP) has been prepared by AWN Consulting (AWN) on behalf of the Applicant. The CEMP encompasses construction programming and phasing, excavations, site logistics, construction traffic and site access, construction lighting, air quality, noise and vibration, resource and waste management and surface water management.

3. Methodology

3.1 Legislation and published guidance

This assessment was undertaken with regard to the following publications:

- Guidelines on information to be contained in Environmental Impact Statements (EPA, 2017 (draft))
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland published by the Institute of Ecology and Environmental Management (IEEM, 2006; 2016; 2018)
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009)

The following legislative framework was also considered:

- EU Habitats Directive (92/43/EEC)
- EU Birds Directive (79/409/EEC)

- EU Water Framework Directive (WFD, 2000/60/EC)
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011), as amended
- Planning and Development Act 2000, as amended
- Wildlife Act 1976, as amended
- Flora (Protection) Order, 2015
- European Communities (Quality of Salmonid Waters) Regulations, 1988.

3.2 Desk-top Study

A desktop study was carried out to collate and review available information and documentation relating to the biodiversity of the site and the geographical area extending away from it. The following publications, which include current best practice guidance, current scientific literature, up to-date data and datasets were reviewed:

- OSI Aerial photography and 1:50,000 mapping
- National Parks and Wildlife Service (NPWS) (website and on-line map viewer)
- National Biodiversity Data Centre (NBDC) (on-line map viewer)
- Teagasc soil area maps (NBDC website)
- Geological Survey Ireland (GSI) area maps
- Environmental Protection Agency (EPA) water quality data
- Eastern River Basin District (ERBD) datasets (Water Framework Directive)
- Water Framework Directive Cycle 2 datasets (online)
- Bat Conservation Ireland (BCIreland)
- South Dublin County Council Development Plan 2016 - 2022
- *Draft* South Dublin County Development Plan 2022 – 2028
- Tallaght Town Centre Local Area Plan 2020 - 2026
- Review of requested records from NPWS Rare and Protected Species database
- Review of records of plant species protected under the Flora (Protection) Order of 2015 and the Irish Red Data Book (Wyse *et al*., 2016)
- Other information sources and reports footnoted in the course of the report.

3.2.1 Database Searches and Data Requests

The study area lies within the Ordnance Survey National Grid hectad O02. Concise and site-specific information on species records available in this hectad was retrieved from the NBDC on-line database and reviewed. A data request for records of any rare or protected flora and fauna within the hectad O02 was also submitted to the National Parks and Wildlife Service (NPWS) on the 8th July 2021.

Data was received from NPWS on the 12th July 2021. Data was provided for an area of 5 km around a centroid of the site with Irish Grid coordinates x: 309290; y:228410.

Information received in response to the NBDC database search and the NPWS data request is incorporated into this report and was used to help inform the impact assessment in relation to the proposal.

3.2.2 Desk-top Review for Bats

3.2.2.1 Bat Conservation Ireland Database

Bat Conservation Ireland acts as the central depository for bat records for the Republic of Ireland. Its' bat database is comprised of >60,000 bat records. The database primarily contains bat records from the following datasets:

- Irish Bat Monitoring Programme
- BATLAS 2020 & 2010
- Ad Hoc Bat Records
- Roost Records

A 1 km and 10 km radius search were requested for the Irish Grid Reference O0927428478.

3.2.2.2 Bat Conservation Ireland Bat Landscape Favorability Model

Bat Conservation Ireland produced a landscape conservation guide for Irish bat species using their database of species records. These records were collated during the 2000 - 2009 survey seasons. An analysis of the habitat and landscape associations of all bat species deemed resident in Ireland was undertaken and reported in Lundy *et al*., 2011. The geographical area suitable for individual species was used to identify the core favourable areas of each species. This model was used as part of the desktop study for this report (Bat Eco Services, 2022).

3.3 Zone of Influence (ZOI)

The study area for the project includes all lands within the red line boundary, as well as the adjacent habitats ecologically connected to them. The following were considered when identifying the potential ZOI at the initial stages of the project:

- The nature, size and location of the project
- Identification of sensitive habitats and species in the study area
- Identification of suitable habitats for high conservation value species within the study area, and extending away from the study area
- Ecological connectivity between the project and the wider landscape
- The sensitivities of the relevant key ecological receptors
- Identification of potential effect pathways to key ecological receptors
- Habitat connectivity and foraging ranges of fauna.

3.4 Key Ecological Receptors (KERs)

A Key Ecological Receptor (KER) is defined as a site, designated site, habitat, ecological feature, assemblage of species or individual protected species that occurs within the vicinity of a proposed project upon which effects are likely (NRA, 2009).

3.5 Field Surveys

The desk top study undertaken by MWP was supplemented by an ecological walkover survey of the proposed development site to determine the scope of the ecological assessment. This survey included habitats, flora and fauna (excluding bats).

The ecological features of interest within and connected to the site were recorded and used to identify the KERs of the development. The following literature was referred to:

- Animal Tracks and Signs (Bang and Dahlstrom, 2006)
- Birds of Conservation Concern in Ireland 4: 2020 – 2026 (Gilbert *et al*., 2021)
- Checklists of protected and threatened species in Ireland (Nelson, *et al*., 2021)

Summaries of MWP field survey methodologies are provided in Section 3.5.1 below.

Bat surveys within the proposal site were undertaken separately by Bat Eco Services (Dr. Tina Aughney) (see Section 3.5.2 below).

3.5.1 Habitats, Flora and Fauna (excluding bats)

The ecological walkover survey was undertaken on 7th July 2021. The walkover survey had regard to 'Best Practice Guidance for Habitat Survey and Mapping' (Smith *et al*., 2011) and 'A Guide to Habitats in Ireland' (Fossitt, 2000). As part of this survey, habitats within and bounding the development site were categorised to Level 3 according to Fossitt (2000). Habitats occurring within the site were assessed for their potential suitability for terrestrial mammal species. Evidence of terrestrial mammals such as tracks, feeding signs and droppings were searched for. Any bird species observed or heard calling during the walkover survey were recorded. Any invasive alien plant species (IAPS) observed within the site during the walkover survey were also recorded.

Following the walkover survey, a habitat map for the development site was prepared (see Section 4.3.1 below).

3.5.2 Bats

The following surveys were undertaken by Bat Eco Services in view of guidance by Marnell *et al*. (2022), Collins (2016) and Kelleher & Marnell (2006):

- Daytime Inspections
- Dusk surveys
- Static surveillance
- Walking transects

A summary of the bat survey methods employed at the subject site are provided below. Please refer Bat Eco Services, 2022 for more detail.

3.5.2.1 Daytime Inspections

One purpose of daytime inspections is to determine the potential of bat roosts within the survey area. Due to the transient nature of bats and their seasonal life cycle, there are a number of different types of bat roosts.

Buildings were assessed to determine their suitability as a bat roost (30th June 2021) and described using the parameters Negligible, Low, Medium or High suitability in view of Table 2 of Marnell *et al*. (2022). The level of suitability informed the level of surveying required.

Evidence of bat usage was in the form of actual bats (visible or audible), bat droppings, urine staining, grease marks (oily secretions from glands present on stonework) and claw marks. In addition, the presence of bat fly pupae (bat parasite) also indicated that bat usage of a crevice, for example, has occurred in the past.

Trees that may provide a roosting space for bats were classified using the Bat Tree Habitat Key (BTHK, 2018) and the classification system adapted from Collins (2016). The Potential Roost Features (PRFs) listed in this guide were used to determine the Potential Bat Roost (PBR) value of trees. Daytime inspections were undertaken of all of the trees within the proposed development site identified as PBRs on the 30th June 2021 for evidence of bat usage.

The survey site was assessed during daytime walkabout surveys (30th June 2021) in relation to potential bat foraging habitat and potential bat commuting routes. Such habitats were classified according to Fossitt, 2000 while hedgerows were classified according to BATLAS 2020 classification (Bat Conservation Ireland, 2015). Bat habitats and commuting routes identified were considered in relation to the wider landscape to determine landscape connectivity for local bat populations through the examination of aerial photographs (Bat Eco Services, 2022).

3.5.2.2 Night-time Bat Detector Surveys

Dusk Emergence Surveys were completed on the 30th June and 2nd July 2021 from 10 minutes before sunset to 110 minutes post sunset. The surveyors positioned themselves within the proposed development site to determine if bats were roosting within the buildings and also to observe general bat activity in the area.

A Passive Static Bat Survey involves leaving a static bat detector unit (with ultrasonic microphone) in a specific location, set to record for a specified period of time (i.e. a bat detector is left in the field, there is no observer present and bats which pass near enough to the monitoring unit are recorded and their calls are stored for analysis post surveying). The bat detector is effectively used as a bat activity data logger. Static units were deployed from 30th June to 5th July 2021 (Bat Eco Services, 2022). The results were then analysed to identify species of bats which had come in range of the static units.

3.6 Assessment Criteria

This section outlines the criteria upon which evaluations of the importance of ecological features and the assessments of the ecological impact of the project on these features are made, referring to relevant legislation and guidelines.

3.6.1 Evaluation

The evaluation outlined in this report and the assessment of the effects of the proposed project follows methodologies set out in 'Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018)' and 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009).

These guidelines set out the context for the determination of value on a geographical basis with a hierarchy (International through to Local) assigned based on the importance of any particular ecological receptor. The guidelines provide a basis for determination of whether any particular site, habitat, or species is of importance on the following adapted scale:

- International
- National
- County
- Local Importance (higher value) and
- Local Importance (lower value)

The NRA Ecological Impact Guidelines (2009) clearly set out the criteria by which each geographic level of importance can be assigned. At the lowest end of the scale, Locally Important (lower value) receptors contain habitats and species that are widespread, of low ecological significance, and are of importance only in the local area. In contrast, Internationally Important sites are either designated for conservation at an international level as part of the Natura 2000 Network (SAC or SPA) or provide the best examples of habitats or internationally important populations of protected flora and fauna.

The criterion used to evaluate the value of ecological resources has been included in Appendix 2. The value of habitats is assessed based on habitat condition, size, rarity, conservation and legal status. The value of fauna is assessed on biodiversity value, legal status and conservation status. Biodiversity value is based on its national distribution, abundance or rarity, and associated trends.

KERs are referred to by NRA (2009) as those ecological features for which detailed assessment is required. KERs are taken to be those features that are evaluated as Locally Important (higher value) or higher. The significance of the ecological effects of the project was assessed on each of the KERs identified.

3.6.2 Impact Assessment

The significance of an effect is determined with the use of EPA criteria for assessing impact. Professional judgement is used.

The criteria for assessing quality of effects and significance of effects are set out in Table 1 and Table 2 below.

Table 1. Criteria for assessing impact quality based on EPA (2017)

Quality of Effect	Criteria
Positive	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral	No effects or effects that are imperceptible within normal bounds of variation or within the margin of forecasting error.
Negative	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).

Table 2. Criteria for assessing impact significance based on EPA (2017)

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
Significant	An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment
Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
Profound	An effect which obliterates sensitive characteristics

The following terms are used when quantifying the duration and frequency of the potential effects:

- Momentary – effects lasting from seconds to minutes
- Brief – effects lasting less than a day
- Temporary – effects lasting less than a year
- Short-term – effects lasting 1 to 7 years
- Medium term – effects lasting 7 to 15 years
- Long term – effects lasting 15 to 60 years
- Permanent – effects lasting over 60 years
- Reversible – effects that can be undone, for example through remediation or restoration
- Frequency – How often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)

Where ecological effects were assessed to be potentially significant, mitigation measures were incorporated into the project design to remove or reduce the effects. The significance of the cumulative effects of the proposed project was also assessed by determining the ecological effects of the proposal in combination with other developments that have planning permission, that are under construction or are in existence in the area. The cumulative impact with existing activities in the area is also considered. The significance of the residual effects after mitigation was then assessed.

3.6.3 Assessment Criteria for Bats

Based on the information collected during the desktop studies and bat surveys, the bat ecologist assigned an ecological value to each bat species recorded based on its conservation status at different geographical scales, which were adapted from CIEEM (2016) guidance (**Table 3** below).

Table 3. Six-scale ecological valuation scheme used in CIEEM (2016)

Ecological Value	Geographic Scale of Importance
International	International or European scale
National	The Republic of Ireland or the island of Ireland scale (depending on the bat species)
Regional	Province scale: Leinster
County	County scale: Dublin
Local	Proposed development and immediate surroundings
Negligible	None, the feature is common and widespread

As well as using EPA (2017) criteria, impact significance of potential impact parameters on specific bat species in relation to particular elements (e.g. roosting sites, foraging area and commuting routes) are assessed with reference to the following:

- Table 4 of Marnell *et al*. (2022) (Figure 1a)
- the known ecology and distribution of the bat species in Ireland
- bat survey results including type of roosts (if any recorded), pattern of bat usage of the survey area, level of bat activity recorded etc.
- and bat specialist experience.

Please refer to Bat Eco Services, 2022 for more information on assessment criteria used in relation to bats.

4. Description of Existing Environment

4.1 Site Overview

The proposed development site is located in a built-up area comprising Broomhill Industrial Estate situated approximately 30 minutes' drive from Dublin City Centre. The site currently comprises mainly built ground accommodating a two-storey office/light industrial unit in the south and various sheds and containers sitting on concrete/tarmacadam in the northern section. It sits a block in from Airton Road and is surrounded by a mixture of office light industrial and warehouse buildings of all ages, most of which are 2/3/4 stories high. The roadways surrounding the site are sporadically lined with deciduous trees on managed grass verge.

The site is part of a regeneration scheme in South Dublin County Council to introduce a residential mix into the area. The site location has Tallaght's leading amenities on its doorstep and is close to public transport including the Luas and bus routes. The site is on the periphery of the M50 close to Tymon Park within 1 km of various schools, fitness centres, parks, Tallaght hospital and town centre.

The development site is located in the townland of Tallaght and the Electoral Division (ED) of Tallaght-Kingswood. During the 2016 census, this ED was found to have a total population of 3,996 person's resident[2]. The main Corine

[2] http://census.cso.ie/sapmap/ [Accessed 24-08-21]

(2018) land cover category for the study area is 'artificial surfaces – industrial and commercial units' with 'artificial surfaces – discontinuous urban fabric' further north and 'artificial surfaces – green urban areas' further south[3].

Bedrock at the site and throughout the greater area is made up of 'Visean limestone and calcareous shale'. Sub-soil at the proposal site and its surrounds comprises 'man made' with areas of mainly 'limestone till (Carboniferous)' further to the south and east, along with smaller pockets of 'Alluvium undifferentiated' and 'Limestone sands and gravels (Carboniferous)'. Soil type at the site and extending away comprises 'urban'.

4.1.1 Hydrology and Hydrogeology

The site is located within the 'Liffey and Dublin Bay' WFD catchment and the 'Dodder_SC_010' WFD sub-catchment. The northern boundary of the proposal site lies immediately south of the boundary with the 'Liffey_SC_090' WFD sub-catchment. The extreme north-western corner of the proposal site is located within the 'Liffey_SC_090' sub-catchment. The site is located within the 'Poddle_010' WFD river sub-basin. The extreme north-western corner of the proposal site lies within the 'Camac_040' WFD river sub-basin.

A review of open street mapping and aerial photography determined that the nearest watercourse to the development site is the 'Tymon River' which travels west to east approximately 0.22 km south of the proposal site. During the ecological walkover survey, this watercourse was determined to comprise a modified stream running along the boundary of a university campus. This stream is separated from the proposal site by intervening built ground comprising various commercial premises, Airton Road (L3001) and existing carparks.

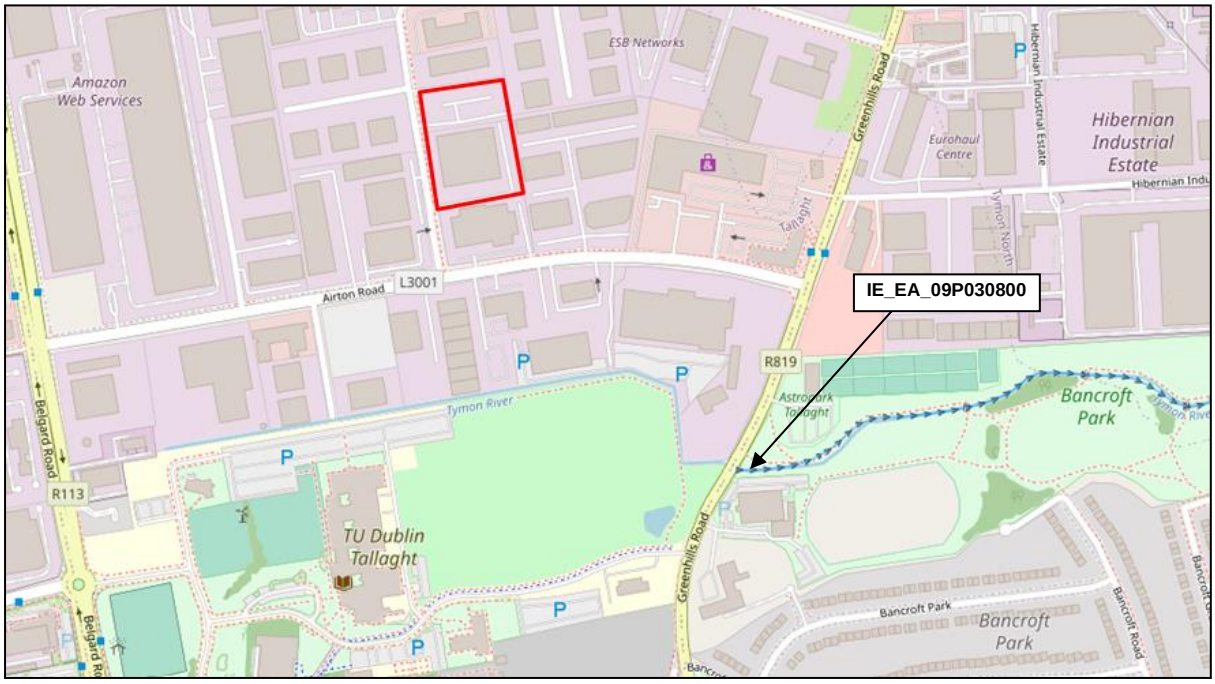

Figure 3. Watercourses in the vicinity of the proposal site (Approximate site outline in red) (Adapted from EPA map-viewer)

From Greenhills Road eastwards, this watercourse is mapped on the EPA map-viewer 'flow network' as a 1st order stream (identified as IE_EA_09P030800), located in Bancroft Park. This particular stretch of the watercourse is located approximately 0.4 km to the south-east of the proposal site at the closest point. The IE_EA_09P030800 stream continues eastwards and northwards eventually forming the 'Poddle' stream (IE_EA_09P030800) just to the south of the Western Parkway Motorway. The 'Poddle' stream continues in a generally northwards direction

[3] EPA Maps [accessed 23/08/21]

towards the city centre, being piped underground for much of its length, eventually discharging to the River Liffey in excess of 7.5 km to the north.

The nearest downstream EPA river water quality monitoring station is located at 'The Priory, Kimmage Road' approximately 5 km downstream of the Greenhills Road crossing where the 'Poddle' stream has been assigned a Q-value of 'Q3', recorded in 2007. The river waterbody WFD status 2013-2018 of the 'Poddle' stream is 'unassigned'.

A review of on-line mapping shows that the site overlies the 'Dublin' groundwater body (GWB) (GWB Code IE_EA_G_008). This GWB has an area of 825 km^2 with a GWB WFD Status 2013-2018 of 'Good' with a GWB risk category currently under review'.

4.2 Designated Sites

This section describes the designated sites considered to be within the ZOI of the proposal, including their qualifying features, distance from the proposed development, and whether it is considered that a source-receptor ecological pathway exists between the proposed development and each designated site.

Designated sites within 15 km of the proposed development are described in this section. With regards to the nature of the project, it is considered that anything beyond this zone is highly unlikely to experience any impact from the proposed works. Therefore, all designated sites within 15 km of the proposed development are considered to be within the ZOI of the proposal. Designated sites beyond 15 km are considered to be outside the ZOI of the proposed development.

4.2.1 Sites of International Importance

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats of wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (79/409/EEC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which form part of Natura 2000, a network of protected sites throughout the European Community. **Table 4** below lists the Natura 2000 sites located within 15 km or the ZOI of the proposal and includes each site's qualifying features of conservation interest.

Table 4. Natura 2000 sites within 15 km or the ZOI of the proposal

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest
Glenasmole Valley SAC (001209)	4 km to S of subject site	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Petrifying springs with tufa formation (*Cratoneurion*) [7220]
Wicklow Mountains SAC (002122)	7.9 km to S of subject site	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with *Erica tetralix* [4010]

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest
		European dry heaths [4030] Alpine and Boreal heaths [4060] Calaminarian grasslands of the *Violetalia calaminariae* [6130] Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] Blanket bogs (* if active bog) [7130] Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] *Lutra* (Otter) [1355]
Rye Water Valley/Carton SAC (001398)	11.3 km to NW of subject site	Petrifying springs with tufa formation (*Cratoneurion*) [7220] *Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]
South Dublin Bay SAC (000210)	10.7 km to NE of subjects site	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] *Salicornia* and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]
Knocksink Wood SAC (000725)	13.4 km to SE of subject site	Petrifying springs with tufa formation (*Cratoneurion*) [7220] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]
North Dublin Bay SAC (000206)	14.3 km to NE of subject site	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110]

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest
		Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] *Petalophyllum ralfsii* (Petalwort) [1395]
Wicklow Mountains SPA (004040)	7.5 km to SE of subject site	Merlin (*Falco columbarius*) [A098] Peregrine (*Falco peregrinus*) [A103]
South Dublin Bay and River Tolka Estuary SPA (004024)	10.7 km to E of subject site	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]
North Bull Island SPA (004006)	13.9 km to NE of subject site	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130]

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest
		Golden Plover (*Pluvialis apricaria*) [A140]
		Grey Plover (*Pluvialis squatarola*) [A141]
		Knot (*Calidris canutus*) [A143]
		Sanderling (*Calidris alba*) [A144]
		Dunlin (*Calidris alpina*) [A149]
		Black-tailed Godwit (*Limosa limosa*) [A156]
		Bar-tailed Godwit (*Limosa lapponica*) [A157]
		Curlew (*Numenius arquata*) [A160]
		Redshank (*Tringa totanus*) [A162]
		Turnstone (*Arenaria interpres*) [A169]
		Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
		Wetland and Waterbirds [A999]

The Natura 2000 sites within 15 km or the ZOI of the proposal are shown on a map in **Figure 4** below.

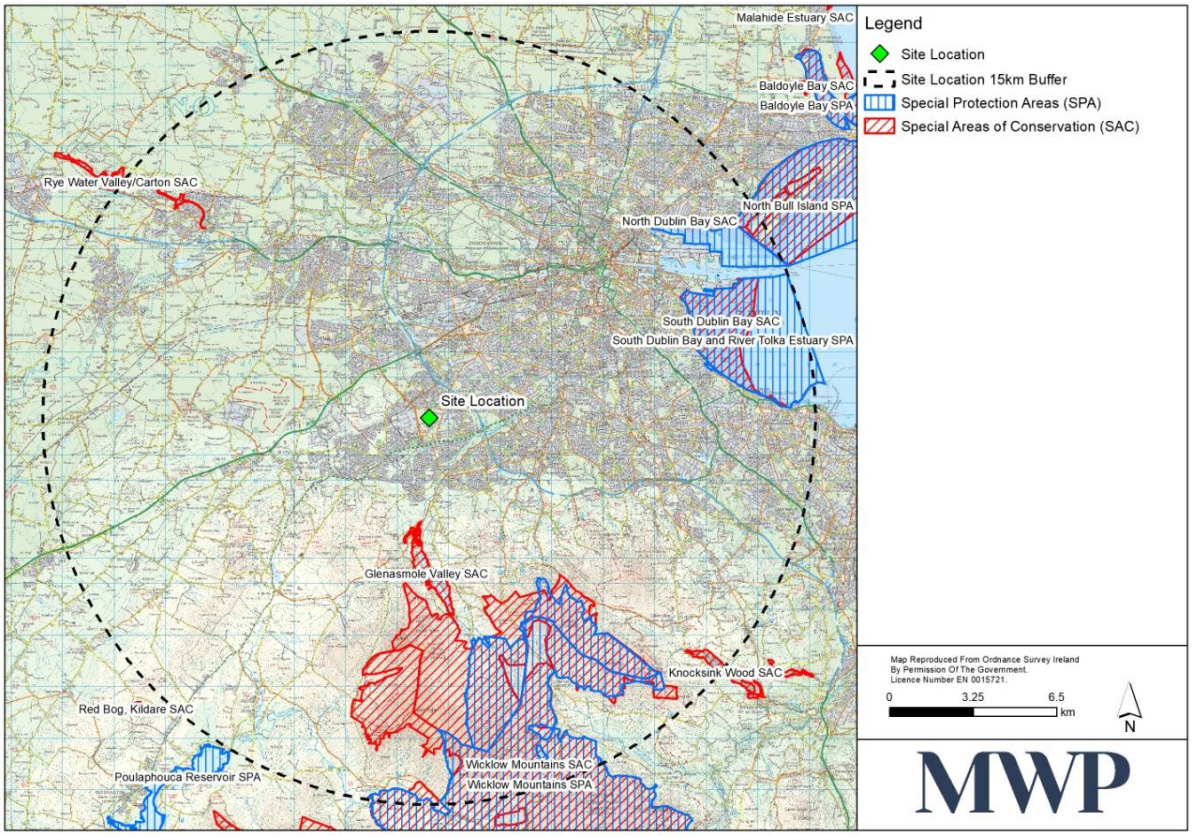

Figure 4. Natura 2000 sites located within the zone of potential impact influence of the proposal

4.2.2 Sites of National Importance

In Ireland, sites of national importance are termed Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). While the Wildlife (Amendment) Act 2000 has been passed into law, pNHAs will not have legal backing until the consultative process with landowners has been completed. This process currently remains ongoing.

Table 5. Designated sites of national importance within 15 km or ZOI of the proposal[4]

Designated Site	Distance from subject site	Features of Interest
Dodder Valley pNHA (000991)	1.6 km to SE of subject site	Natural river bank vegetation
Grand Canal pNHA (002104)	3.7 km to N of subject site	Supports diverse habitats and species including hedgerow, calcareous grassland, reed fringe, scrub, woodland, otter and smooth newt
Glenasmole Valley pNHA (001209) *Overlaps with the Glenasmole Valley SAC*	4 km to S of subject site	As above
Lugmore Glen pNHA (001212)	4 km to SW of subject site	Good example of wooded glen with good representation of woodland plants including rare plant species

[4] Features of interest taken from https://www.npws.ie/sites/default/files/general/pNHA_Site_Synopsis

Designated Site	Distance from subject site	Features of Interest
Slade of Saggart and Crooksling Glen pNHA (000211)	6.4 km to SW of subject site	Good example of wooded river valley and a small wetland system. Rare plant and invertebrate species present with a variety of wildfowl also
Liffey Valley pNHA (000128)	6.4 km to N of subject site	Diversity of habitats ranging from aquatic to terrestrial with a number of rare and threatened plant species
Fitzsimon's Wood pNHA (001753)	8.8 km to SE of subject site	Birch woodland of ecological importance, rare at county level
Royal Canal pNHA (002103)	9.9 km to NE of subject site	Supports diverse habitats and species including hedgerow, tall herb, calcareous grassland, reed fringe, scrub, woodland and otter
Booterstown Marsh pNHA (001205)	10.9 km to E of subject site	Site of local/regional ornithological importance. Used as a high-tide roost by a variety of waders and gulls. Annex I species also occur
South Dublin Bay pNHA (000210) *Overlaps with the South Dublin Bay SAC*	11 km to E of subject site	As above
North Dublin Bay pNHA (000206) *Partially overlaps with the North Dublin Bay SAC*	11 km to NE of subject site	As above. North Bull Island is also designated as a Nature Reserve (S.I. 1988 231)
Rye Water Valley/Carton pNHA (001398) *Overlaps with the Rye Water Valley/Carton SAC*	11.3 km to NW of subject site	As above
Kilteel Wood pNHA (001394)	12.7 km to SW of subject site	Fine example of a largely deciduous woodland
Ballybetagh Bog pNHA (001202)	12.9 km to SE of subject site	Three separate areas of marshland. Examples of marsh and fen species. Site also of historical value
Glencree Valley pNHA (001755)	13.2 km to SE of subject site	Glacial valley containing good example of deciduous woodland, although fragmented. Presence of upland river and boggy flushes adds to the habitat diversity of the site
Dingle Glen pNHA (001207)	13.3 km to SE of subject site	Diverse variety of habitats including regenerating woodland within relatively undisturbed area
Knocksink Wood pNHA (000725) *Overlaps with Knocksink Wood SAC*	13.4 km to SE of subject site	As above. Also designated as a Nature Reserve (S.I. 1994 58)
Santry Demesne pNHA (000178)	13.6 km to NE of subject site	Remnants of former demesne woodland which supports a wide range of herbaceous specie including a legally protected plant species

Nationally designated sites within 15 km or the ZOI of the proposal are shown on a map in **Figure 5** below.

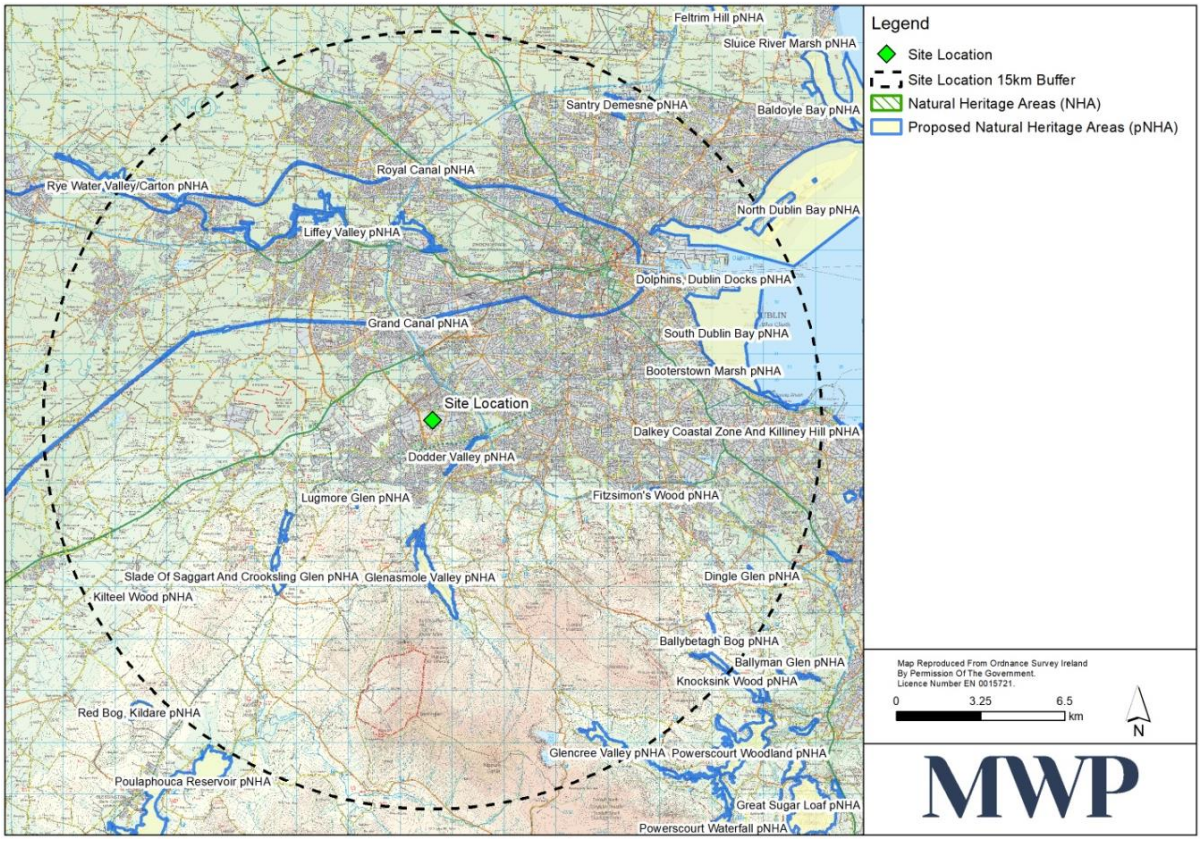

Figure 5. Nationally designated sites within the zone of potential impact influence of the proposal

4.2.3 Additional Sites

The Convention on Wetlands of International Importance especially as Waterfowl Habitat, more commonly known as the Ramsar Convention, was ratified by Ireland in 1984 and came into force for Ireland on 15th March 1985. Ireland presently has 45 sites designated as Wetlands of International Importance, with a surface area of 66,994 Ha. There are two Ramsar sites located within 15 km of the proposed development site. These are 'Sandymount Strand/Tolka Estuary' (Ramsar Site No. 832) located 10.7 km to the east and 'North Bull Island' (Ramsar Site No. 406) located 12 km to the north-east[5].

The Important Bird and Biodiversity Areas (IBAs) Programme, overseen by Birdlife International, aims to identify, conserve and protect those areas throughout the world considered to be of the greatest significance to bird populations[6]. Bird Life International has produced a compendium of Important Bird Areas (IBAs) in Europe. The IBA programme of BirdWatch Ireland is a worldwide initiative aimed at identifying and protecting a network of critical sites of importance for birds. There are 105 IBA's on the island of Ireland in which the majority support wintering water birds.

'Dublin Bay' IBA (IE109) is located 10.7 km to the east of the proposal site and overlaps with both of the Ramsar sites mentioned above. It is a wetland of international importance for waterfowl, regularly supporting over 20,000 wintering birds. Species wintering in numbers of national importance include *Tadorna*, *Anas penelope*, *Anas crecca*, *Anas acuta*, *Anas clypeata*, *Pluvialis squatarola*, *Calidris alba* and *Limosa*.

The 'Wicklow Mountains' IBA (IE106) is located 10.8 km to the south of the proposal site. The IBA website describes this site as follows: 'The nationally scarce *Falco columbarius* and *F. peregrinus* as well as *Lagopus* breed

[5] Available at: https://rsis.ramsar.org/
[6] Available at: http://www.birdlife.org/worldwide/programmes/important-bird-and-biodiversity-areas-ibas

within the extensive areas of bog and moorland. This is also one of the most important sites in Ireland for *Phoenicurus phoenicurus*, which breed in the *Quercus* woodlands, and for *Turdus torquatus*, which breed in open, rocky areas.'[7].

Wicklow Mountains National Park is situated 7.6 km to the south-east. This is largely encompassed within the Wicklow Mountains SAC (002122) (see **Table 5** above).

4.2.4 Evaluation of Designated Sites as Ecological Receptors

A screening for Appropriate Assessment report has been undertaken to determine whether the project, alone or in combination with other plans or projects, is likely to result in significant effects on nearby Natura 2000 sites considered to be within the ZOI of the proposal in view of the site's Conservation Objectives. This screening for Appropriate Assessment report concluded that significant effects on these Natura 2000 sites as a result of the proposal are not likely. Therefore, these designated sites, as listed in **Table 5** above, will not be considered further in this evaluation. Please refer to the screening for Appropriate Assessment report (MWP, 2022) which has been submitted with the planning application for the proposed development for more information.

Due to the fact that several of the nationally designated sites identified to be within the zone of potential impact influence of the project, namely Glenasmole Valley pNHA, South Dublin Bay pNHA, North Dublin Bay pNHA, Rye Water Valley/Carton pNHA and Knocksink Wood pNHA, spatially overlap with some of the Natura 2000 Sites, as outlined in **Table 4** above, it is considered that potential impacts on these pNHAs arising from the project have been fully considered as part of the screening for Appropriate Assessment report which has concluded that significant effects are not likely to occur. Therefore, these pNHAs will not be considered further in this evaluation.

With regard to the remaining nationally designated sites identified to be within the zone of potential impact influence of the project, namely Dodder Valley pNHA, Grand Canal pNHA, Lugmore Glen pNHA, Slade of Saggart and Crooksling Glen pNHA, Liffey Valley pNHA, Fitzsimon's Wood pNHA, Royal Canal pNHA, Booterstown Marsh pNHA, Kilteel Wood pNHA, Ballybetagh Bog pNHA, Glencree Valley pNHA, Dingle Glen pNHA and Santry Demesne pNHA, it is considered that due to the intervening distances between these sites and the subject site and the absence of potential impact pathways (see **Table 5** above), significant effects on these sites as a result of the proposal are not envisaged. These sites are therefore not considered to comprise KERS of the project and will not be considered further in this evaluation.

[7] Available at: http://datazone.birdlife.org/site/mapsearch

4.3 Habitats and Flora

4.3.1 Habitat Identification

4.3.1.1 Buildings and artificial surfaces (BL3)

This is the dominant habitat occurring within and extending away from the site and comprises the existing modern commercial/light-industrial premises and associated paved surfaces including tarmac/concreted yards, pathways/road surface.

Plate 1. 'Buildings and artificial surfaces (BL3)' habitat within the site comprising existing commercial premises

4.3.1.2 Amenity grassland (improved) (GA2)

Minor pockets of 'amenity grassland (GA2)' are located in the west of the site adjacent to the boundary with Broomhill Road. As is typical of this habitat-type, this habitat is managed, having been recently mown at the time of the survey. It is likely that herbicides are regularly applied. This habitat was found to be species-poor with some common broad-leaved herbs such as daisy (*Bellis perennis*), dandelion (*Taraxacum* spp.) and clover (*Trifolium* spp.) noted. A small number (3-4) of immature lime (*Tilia* sp.) trees are scattered along the roadside edge.

Plate 2. 'Amenity grassland (GA2)' habitat within the site adjoining Broomhill Road

4.3.1.3 Dry meadows and grassy verges (GS2)

Minor pockets of neglected grassy verge (GS2) are associated with the grounds of the existing commercial premises located in the southern section of the site. Vegetation here comprises mainly rank grasses and ruderal species with a minor broadleaved herb component. Species noted included ox-eye daisy (*Leucanthemum vulgare*), cocksfoot (*Dactylis glomerata*), sweet vernal-grass (*Anthoxanthum odoratum*), dandelion, Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*), creeping buttercup (*Ranunculus repens*), nettle (*Urtica dioica*), willowherbs (*Epilobium* spp.), thistle (*Cirsium* sp.), tufted vetch (*Vicia cracca*), red clover (*Trifolium pratense*) and dock (*Rumex* sp.).

4.3.1.4 Scattered trees and parkland (WD5)

A minor grassed area with some scattered planted trees (WD5) occurs in the south-western corner of the site adjacent to Broomhill Road. This area comprises a mix of native and non-native species and is managed, having been recently mown at the time of the survey. Species recorded included mountain ash (*Sorbus aucuparia*), ash (*Fraxinus excelsior*), lime (*Tilia* sp.), birch (*Betula* spp.) and larch (*Larix europaea*).

Plate 3. 'Scattered trees and parkland (WD5)' habitat along the western side of the site

4.3.1.5 Ornamental/non-native shrub (WS3)/Scrub (WS1)

A minor area of 'ornamental/non-native shrub (WS3)/scrub (WS1)' occurs in the south-western corner of the site immediately inside the gates of the existing commercial premises where several old storage tanks are located. Several willow (*Salix* sp.) and silver birch (*Betula pendula*) saplings were observed together with dog rose (*Rosa canina*). This area also contains several garden escapes including wall cotoneaster (*Cotoneaster horizontalis*) and prince's feather (*Persicaria orientalis*).

4.3.1.6 Treeline (WL2)

A short (30 m) 'treeline (WL2)' of planted Lawson cypress *(Chamecyparis lawsoniana)* occurs in the north-western corner of the site on the grass verge adjacent to Broomhill Road.

Plate 4. Conifer 'Treeline (WL2)' habitat within the north-western corner of the site

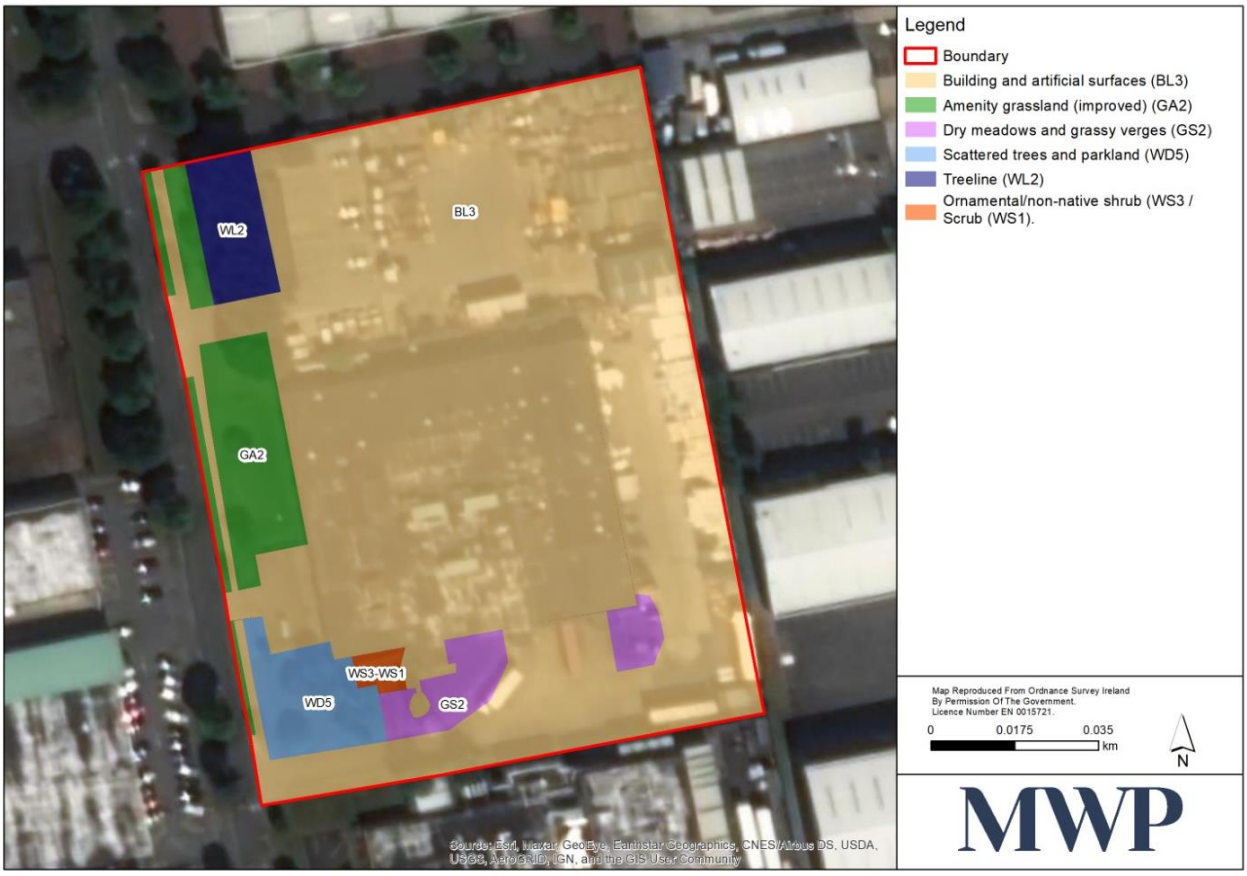

Figure 6. Habitat map of proposed development site

4.3.2 Records of Rare and Protected Flora

An on-line search of the NBDC database for species of conservation interest recorded within the hectad O02 was carried out. Results of a data request from NPWS for the hectad were also reviewed.

A total of five Flora (Protection) Order (FPO) species have been previously recorded within the hectad. These are red hemp nettle (*Galeopsis angustifolia*), small white orchid (*Pseudorchis albida*), narrow-leaved helleborine (*Cephalanthera longifolia*), heath cudweed (*Gnaphalium sylvaticum*) and hairy violet (*Viola hirta*). These species are afforded legal protection in Ireland.

Other species of conservation concern listed by NPWS include green-winged orchid (*Orchis morio*), mountain pansy (*Viola lutea*), autumn gentian (*Gentianella amarelle* subsp. *Hibernica*), spiked sedge (*Carex spicata*), henbane (*Hyoscyamus niger*) and upright brome (*Bromopsis erecta*). Additionally, there are records for blue fleabane (*Erigeron acris*)[8] and *Lamiastrum galeobdolon* subsp. *Montanum* held by the NBDC, both also listed in Curtis and McGough (1988), as outlined in **Table 6** below.

Table 6. Records of rare and protected species of flora within the hectad O02

Species Name	Level of Protection	Conservation Status[9]	Habitat requirements (Curtis & McGough, 1988)	Species Records
Red hemp nettle *Galeopsis angustifolia*	Flora (Protection) Order 2015	Red List (Vulnerable); Irish Red Data Book (Vulnerable)	A species of eskers, arable fields and waste places. Apparently declining due to cleaner crop husbandry and exploitation of its sandpit and esker habitats due to extraction of sands and gravels.	Closest record located approximately 1.9 km south of the subject site.
Small white orchid *Pseudorchis albida*	Flora (Protection) Order 2015	Red List (Vulnerable); Irish Red Data Book (Vulnerable)	Species of upland pastures and heaths. Increased pressure on hill pastures from overgrazing, reclamation and the associated application of artificial fertilizers seem likely to have led to its decline.	Historical records held for the Glenasmole area, located in excess of 6 km south of the subject site.
Narrow-leaved helleborine *Cephalanthera longifolia*	Flora (Protection) Order 2015	Red List (Vulnerable); Irish Red Data Book (Vulnerable)	Species of damp woods and scrub. Apparently declining due to woodland disturbance and overgrazing.	Historical records held for the Glenasmole area, located in excess of 6 km south of the subject site.
Blue fleabane *Erigeron acris*	N/a	Irish Red Data Book (Vulnerable)	A slender annual or biennial herb which occurs on eskers, in dry grassland, sandy pastures and on walls - especially on calcium-rich substrates. It is now apparently a rare and local species, confined mostly to central and south-eastern Ireland.	The closest record is located approximately 1.4 km to the east.
Lamiastrum galeobdolon	N/a	Irish Red Data Book (Rare)	Found in hedges and woods in the south-east of Ireland, with an outlying site in Westmeath. Some of its Dublin	The closest record is located approximately

[8] Formally known as *Erigeron acer*
[9] Red List (Nelson *et al*, 2021); Irish Red Data Book (Curtis & McGough, 1988)

Species Name	Level of Protection	Conservation Status[9]	Habitat requirements (Curtis & McGough, 1988)	Species Records
subsp. *montanum*			sites in hedge banks have been destroyed through building development and road widening.	4.2 km to the south-west.
Green-winged orchid *Orchis morio*	N/a	Red List (Vulnerable); Irish Red Data Book (Vulnerable)	Occurs in meadows, pastures and sandhills. Has suffered a catastrophic decline in numbers, apparently due to land reclamation and especially fertilizing of the old pasture sites in which it occurred.	The closest record is located approximately 3 km to the south.
Mountain pansy *Viola lutea*	N/a	Red List (Vulnerable)	Associated with unimproved, weakly basic to weakly acid soils and most commonly encountered in unimproved upland pastures, rocky ledges, and more rarely in calaminarian grassland and dune slacks[10].	The closest record is located approximately 4 km to the south-west.
Autumn gentian *Gentianella amarella* subsp. *hibernica*	N/a	Red List (Near threatened)	Mainly found on calcareous soil, by sand dunes, grassy meadows and in dry banks.	The closest record is located approximately 2 km to the south.
Heath cudweed *Gnaphalium sylvaticum*	Flora (Protection) Order 2015	Red List (Endangered); Irish Red Data Book (Rare)	Species of upland pastures and damp sandy places.	The closest record is located approximately 6 km to the south-west.
Hairy violet *Viola hirta*	Flora (Protection) Order 2015	Red List (Vulnerable); Irish Red Data Book (Vulnerable)	Dry banks, rocky ground and scrub on limestone soils in the southern half of Ireland. Apparently decreasing, possibly due to quarrying and overgrazing of its limestone grassland sites.	The closest record is located approximately 2 km to the north-east.
Spiked sedge *Carex spicata*	N/a	Red List (Near threatened)	Perennial herb of rough grasslands, roadsides, railway embankments, hedge banks, woodland rides and clearings, open scrub and waste ground[11]	The closest record is located approximately 2 km to the south.
Henbane *Hyoscyamus niger*	N/a	Red List (Near threatened); Irish Red Data Book (Rare)	Grows in sandhills, sandy open areas and waste ground. This species has undergone a dramatic decline and within the island of Ireland is now extant only in Wicklow, Wexford, Dublin, Louth, Kilkenny, Galway and Down.	The closest record is located approximately 1 km to the south.
Upright brome *Bromopsis erecta*	N/a	Red List (Near threatened)	Perennial herb of dry, relatively infertile calcareous soils, growing in ungrazed or undergrazed chalk and limestone grasslands. It also occurs on calcareous sand dunes, roadside banks, quarry spoil and occasionally waste ground, but avoids wet or arable sites[10].	The closest record is located approximately 1.5 km to the east.

[10] Viola_lutea_species_account.pdf (bsbi.org) [accessed 17/09/21]
[11] https://www.brc.ac.uk/plantatlas/plant/carex-spicata

4.3.3 Non-native/ Invasive Flora

NBDC on-line records of non-native/invasive species of flora previously recorded in hectad O02 are listed in **Table 7** below.

Table 7. Records of non-native/invasive species of flora within the hectad O02

Species Common Name	Scientific name
Douglas Fir	*Pseudotsuga menziesii*
American Skunk-cabbage	*Lysichiton americanus*
Black Current	*Ribes nigrum*
Butterfly-bush	*Buddleja davidii*
Cherry Laurel	*Prunus laurocerasus*
Curly Waterweed	*Lagarosiphon major*
Fringed Water-lily	*Nymphoides peltata*
Giant Hogweed	*Heracleum mantegazzianum*
Giant Knotweed	*Fallopia sachalinensis*
Indian Balsam	*Impatiens glandulifera*
Japanese Knotweed	*Fallopia japonica*
New Zealand Pigmyweed	*Crassula helmsii*
Rhododendron	*Rhododendron ponticum*
Sycamore	*Acer pseudoplatanus*
Three-cornered Garlic	*Allium triquetrum*
Turkey Oak	*Quercus cerris*
Wild Parsnip	*Pastinaca sativa*

The only non-native species of flora recorded on-site during the ecological walkover survey was butterfly-bush (*B. daviddii*). Three individual plants occur along an existing fenceline within the site.

4.4 Fauna

4.4.1 Terrestrial Mammals

NBDC species lists, and distribution maps generated on-line and data received from NPWS were examined to assess the distribution of rare and protected terrestrial mammal species within the hectad O02. Table 8 below lists protected mammal species which have been previously recorded and summarises their legal and conservation status in Ireland with regards to national and international legislation, and the most recent Irish Red List for Mammals (2019)[12].

Table 8. Records of rare and protected terrestrial mammal species within the hectad O02

Species	Distribution	Conservation/Legal Status[11]
Hedgehog *Erinaceus europaeus*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Irish stoat *Mustela erminea*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Otter *Lutra lutra*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive Annex II and IV; Wildlife Acts; CITES Appendix 1
Red squirrel *Sciurus vulgaris*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pygmy shrew *Sorex minutus*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Badger *Meles*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pine marten *Martes*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive [92/43/EEC] Annex V; Wildlife Acts
Irish hare *Lepus timidus* subsp. *Hibernica*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts; EU Habitats Directive Annex V
Red deer *Cervus elaphus*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts

NBDC species lists generated on-line were also examined to assess the distribution of invasive terrestrial mammal species within the hectads O02. The following invasive species have been recorded; American mink (*Mustela vison*), Eastern grey squirrel (*Sciurus carolinensis*), European rabbit (*Oryctolagus cuniculus*), fallow deer (*Dama dama*), sika deer (*Cervus nippon*), greater white toothed shrew (*Crocidura russula*), house mouse (*Mus musculus*) and brown rat (*Rattus norvegicus*).

No evidence of terrestrial mammals was recorded on-site during the ecological walkover survey.

[12] https://www.npws.ie/sites/default/files/publications/pdf/Red%20List%20No.%2012%20Mammals.pdf

4.4.2 Bats

No bat records are listed within a 1 km radius of the proposed development on the Bat Conservation Ireland database. The 5 km square within which the proposed development is located has a Medium favorability for bats as per the BCIreland Bat Landscape Favourability Model (Lundy *et al*., 2011) for all bat species.

4.4.2.1 Survey Results

Daytime Inspections

No evidence of bat usage was recorded in any of the accessible buildings or on the external walls of the inaccessible buildings. The suitability of the buildings as bat roosts were assessed with consideration to the location of the survey area in an urban setting with little bat habitat present in the immediate vicinity of the proposed development area. As a consequence, all of the buildings were deemed to have a Low roosting value for bats.

In relation to trees and Potential Bat Roosts (PBRs) vegetation was examined in relation to potential bat roosting value. There is no tall vegetation within the proposed development site considered to have a Potential Bat Roost (PBR) value.

The habitat types, with reference to Fossit (2000), were recorded both within the survey area and adjacent to the survey area. This proposed development site is predominately building structures with hard surfaces. There some small sections of individuals trees and shrubs but there is little bat habitat present within the proposed development site. There are some small park areas located south of the proposed development site (e.g. TU Dublin Tallaght and Sean Walsh Memorial Park). However, overall, this is a highly urban zone with extensive street lighting and as a consequence has a low level of suitable bat habitat.

Night-time Bat Detector Surveys

The buildings within the proposed development area are considered to have a Low suitability for bat roosts and therefore one dusk or dawn survey was required. However due to large number of warehouse buildings, additional surveys were undertaken. As a consequence two dusk surveys (30th June and 2nd July 2021) were completed along with two walking transects to ensure that the proposed development site was adequately surveyed.

No bats were recording emerging from buildings during dusk surveys. A single common pipistrelle was recorded at 23:04 hrs commuting through the survey area on 2nd July 2021. No other bat activity was recorded during the dusk surveys. No bats were recorded foraging or commuting within or adjacent to the proposed development site during the two walking transects (also completed on 30th June and 2nd July 2021).

Four static units were deployed for five nights. Three were located within buildings and one was located on a tree within the grounds of the proposed development site (on tree adjacent to the main gate entrance). A total of three species of bat was recorded during the static surveillance: common pipistrelle, soprano pipistrelle and Leisler's bat. This activity was recorded on one of the four static units deployed (unit located externally to the buildings). On this static unit, common pipistrelles and Leisler's bats were recorded on two of the five nights of surveillance. Soprano pipistrelles were only recorded on one night. No bats were recorded on any of the three static units located inside the buildings.

Over the course of the surveillance period, a low level of bat activity was recorded on the static units for all three species of bats. Bat activity was also only recorded on two nights of the five nights of surveillance.

Overview of Bat Findings

A low level of bat activity was recorded for three species: Leisler's bat, soprano pipistrelle and common pipistrelle. No bat roosts were recorded in buildings. The proposed development site is predominately building structures with hard surfaces. There is little bat habitat present within the proposed development site and consequently there is little suitable bat foraging and commuting habitat present. This is reflected by the low level of bat activity recorded during the bat surveys.

The proposed development site is used, at a low level, as a foraging and commuting habitat for local bat populations. The level of bat activity and the number of bat encounters indicate that the proposed development site is not an important area for local bat populations. There is some landscape connectivity for local bat populations to move to and from the proposed development site to small areas of parkland to the south; however, overall, this is a highly urban zone with extensive street lighting and as a consequence has a low level of suitable bat habitat (Bat Eco Services, 2022).

Please refer to Bat Eco Services (2022) for more information on bat survey results.

4.4.3 Birds, Fish, Amphibians, Reptiles and Invertebrates

Reviews of the species list generated via the NBDC on-line mapping tool and data received from NPWS for rare and protected bird species were carried out. A wide variety of bird species, including some species of conservation concern, have been previously recorded within the hectad O02. These species are considered typical of the habitats in the general vicinity of the subject site and the surrounding area.

During the on-site survey, the following bird species were recorded; blackbird (*Turdus merula*), chaffinch (*Fringilla coelebs*), goldcrest (*Regulus regulus*), pied wagtail (*Motacilla alba*) and rook (*Corvus frugilegus*). Overall, the habitats occurring within the site and surrounds are not of any great ecological value for birds comprising mainly buildings and artificial surfaces within a built-up area. In general, species occurring within the vicinity of the subject site are likely to comprise species typical of urban settings.

Brown/sea trout (*Salmo trutta*) and freshwater white-clawed crayfish (*Austropotamobius pallipes)* are known from O02. There are no watercourses draining the subject site.

NBDC records within O02 exist for common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*) and common lizard (*Zootoca vivipara*), although none of these species were recorded on-site. Common frog has a widespread distribution in Ireland. Smooth newt is widespread in Ireland but locally distributed. Newts and frogs are amphibious, breeding in freshwater and utilising woodland, damp grassland, marsh and scrub for foraging. The habitats within the proposed development site are not considered suitable for either species.

Common lizards are primarily found in areas of bog, heath, coastline and along the fringes of coniferous woodland, but may also occupy other habitats, such as non-intensive grassland, gardens and built-up areas (NRA, 2008). None of the typical primary habitat-types for common lizard occur within the proposal site. Common lizard was not recorded during surveys.

NBDC records from the hectad indicate documented records for butterflies and moths (Lepidoptera), beetles (Coleoptera), bees (Hymenopteran) and other terrestrial invertebrate groups.

5. Identification and Evaluation of Habitats, Flora and Fauna as Key Ecological Receptors

The habitats and associated flora, fauna and other ecological features or resources identified in Section 4.3 and 4.4 are now evaluated on the basis of their local, national and international conservation importance using the evaluation criteria described in Section 3.6 above and Appendix 2.

On the basis of these evaluations an assessment will then be made as to which of these habitats or species are considered key ecological receptors (KERs) that may be impacted upon by the project i.e. which habitat or species has potential to be significantly impacted during the construction or operational phase of the proposed project (see Table 9 and Table 10 below).

With regard to designated sites, please refer to Section 4.2.4 above.

5.1 Habitats

The following table (Table 9) presents an evaluation of the importance value of the habitats identified within the receiving environment of the proposed development, and rationale for inclusion, or exclusion as a KER.

Table 9. Evaluation of habitats within the study area

Habitat type	Ecological value relative to study area (NRA, 2009)	Area of Loss (Ha)	Key Ecological Receptor (Y/N)	Rationale
Buildings and artificial surfaces (BL3)	Local importance (lower value)	1.2	No	Artificial habitat of limited biodiversity value.
Amenity grassland (improved) (GA2)	Local importance (lower value)	0.08	No	Modified and intensively managed habitat. Species-poor.
Dry meadows and grassy verges (GS2)	Local importance (lower value)	0.035	No	Modified/previously disturbed habitat comprising mainly rank grasses and ruderal species.
Scattered trees and parkland (WD5)	Local importance (lower value)	0.05	No	Modified and managed habitat with a non-native component. Of some local biodiversity value for range of fauna such as birds and invertebrates.
Ornamental/non-native shrub (WS3)/Scrub (WS1)	Local importance (lower value)	0.001	No	Disturbed habitat with non-native component. Of some local biodiversity value for range of fauna such as birds and invertebrates.
Treeline (WL2)	Local importance (lower value)	0.028	No	Managed, planted treeline of non-native species. Of some local biodiversity value for range of fauna such as birds and invertebrates.

5.2 Rare and Protected Flora Species

There are no records for rare and protected plant species within the subject site and none were recorded during the ecological walkover. The habitats which occur are not considered suitable for the vast majority of these

species. None of the species outlined in **Section 4.3.2** above are considered to comprise KERs for the project and so will not be considered further in this evaluation.

5.3 Fauna

The following table (**Table 10**) presents an evaluation of the importance value of the faunal species identified within the receiving environment of the proposed development and rationale for inclusion, or exclusion as a KER.

Table 10. Evaluation of faunal species within the study area

Species	Ecological value relative to study area (NRA, 2009)	Description at the site	Key Ecological Receptor (Y/N)	Rationale
Hedgehog *Erinaceus europaeus*	Local importance (higher value)	Not recorded during surveys.	**Yes**	No evidence of this species recorded within the site; however, potentially suitable habitat occurs and species records exist in the general area. Precautionary principle.
Irish stoat *Mustela erminea*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats not considered suitable.
Otter *Lutra*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats not considered suitable.
Red squirrel *Sciurus vulgaris*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats within the subject setting not considered suitable.
Pygmy shrew *Sorex minutus*	Local importance (higher value)	Not recorded during surveys.	**Yes**	No evidence of this species recorded within the site. No records from the area. Minor areas of potentially suitable habitat. Precautionary principle.
Badger *Meles*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats not considered suitable.
Pine marten *Martes*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats within the subject setting not considered suitable.
Irish hare *Lepus timidus* subsp. *Hibernica*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats within the site not considered suitable.
Red deer *Cervus elaphus*	Local importance (lower value)	Not recorded during surveys.	**No**	No evidence of this species recorded within the site. No records from the area. Habitats within the site not considered suitable.
Birds	Local importance (higher value)	Small number of bird species typical of	**Yes**	Habitats within the site of limited value to birds although may provide

Species	Ecological value relative to study area (NRA, 2009)	Description at the site	Key Ecological Receptor (Y/N)	Rationale
		habitats occurring recorded during the survey.		potential foraging and breeding habitat for a range of species, likely comprising mainly passerines.
Amphibians and Reptiles	Local importance (lower value)	Not recorded during surveys.	No	No evidence recorded within the site. No records from the area. Habitats within the site not considered suitable.
Bats	Local importance (higher value)	Three species (Leisler's bat, soprano pipistrelle and common pipistrelle) recorded during surveys.	Yes	No bat roosts recorded. A low level of bat activity (foraging and commuting) recorded.

6. Do-nothing Scenario

The proposed development site comprises mainly existing buildings and other artificial surfaces located within an urban, built-up setting comprising an industrial estate. Very minor areas of modified/managed/semi-natural habitat occur in mosaic with the artificial surfaces.

If the proposed development does not progress beyond the planning application stage, it is likely that the current land-use practices will continue at the site and the commercial/industrial businesses/premises will continue to operate.

7. Potential Impacts of the Project

There is potential for the proposed development to impact on the natural environment (habitats, flora, fauna and water quality). This section will identify the ecological impacts of the construction, operational and decommissioning phases of the proposed development on the local natural environment. For the project, the construction phase is likely to have the most potential for effects on biodiversity.

The potential impacts of the proposed project were considered and assessed to ensure that all effects on KERs are adequately addressed, and no significant residual effects are likely to remain following the implementation of mitigation measures, and best practice construction methodology.

7.1 Construction Phase

The construction phase effects associated with the proposed development are considered to be/may comprise the following:

Table 11. Construction phase effects potentially associated with the project

Construction Phase Effect	Source
Direct habitat loss and alteration	Construction of temporary site compound, felling of trees/vegetation clearance, demolition works, excavations for structure foundations, ancillary site development works, landscaping and installation of services. Construction works also pose a risk of spreading of invasive species

Construction Phase Effect	Source
Indirect surface or ground water quality effects/Indirect habitat alteration	Construction phase run-off/connection to existing storm network. Sediment/pollutant laden run-off may arise from exposed areas during groundworks and excavations, from material storage areas or from construction vehicles/plant. On-site temporary toilets and washing facilities. Leaching of fuels/oils etc to groundwater in the event of accidental spillage.
Direct species disturbance/displacement	Increased activity and human presence, noise/vibration/lighting associated with construction works.
Indirect species disturbance/displacement	Via indirect water quality effects, indirect impacts on prey biomass or indirect alteration of foraging, breeding or commuting habitat (e.g. within receiving waters of the public foul sewer/stormwater system). Uncontrolled run-off of sediment, silt or other polluting substances from works areas could affect the ability of some species to hunt by reducing underwater visibility, cause smothering effects and/or have adverse impacts on aquatic life within receiving waters.

7.2 Operational Phase

The operational phase effects associated with the proposed development are considered to be/may comprise the following:

Table 12. Operational phase effects potentially associated with the project

Operational Phase Effect	Source
Indirect surface water quality effects/Indirect habitat alteration	Via storm water/wastewater discharges to the public system which could lead to secondary effects such as alteration of aquatic habitat.
Direct/indirect species disturbance/displacement	Due to increased lighting/noise, indirect water quality effects, indirect impacts on prey biomass, indirect alteration of foraging, breeding or commuting habitat (e.g. within receiving waters of the public foul sewer/stormwater system). Uncontrolled run-off of sediment, silt or other polluting substances e.g. fuel residues from the operational development could have adverse impacts on aquatic life.

8. Assessment of Potentially Significant Effects

8.1 Construction Phase

8.1.1 Direct habitat loss/alteration

The habitats occurring within the subject site comprise mainly man-made/artificial and/or managed habitats which are considered to be of low ecological value. The dominant habitat comprises 'Buildings and artificial surfaces BL3'. The areas of remaining habitats within the subject site are relatively very minor.

All of the habitats occurring were evaluated as 'Local importance (lower value)' and thus are not considered to comprise KERS for the project (loss of these areas of habitat to facilitate the project will not result in any effects greater than permanent not significant negative effects).

8.1.2 Impacts to water quality/Indirect habitat alteration

In general, construction activity has the potential to result in adverse impacts to water quality. Excavation works and movement of plant and machinery can result in soil erosion and run-off. Use of fuel and oils, concrete and cementitious material and other such substances also generally pose a risk to the aquatic environment.

Such impacts may occur via uncontrolled overland flow, the proposed construction phase drainage connection to the existing public storm water drain on Broomhill Road or via leaching to groundwater in the event of accidental spillage/leakage of fuel/oil etc.

There are no watercourses within or in the vicinity of the subject site; therefore, there will be no direct impacts on water quality as a result of construction of the proposed development.

With regard to potential indirect water quality impacts associated with the project during the construction phase, it is noted that temporary W/C utilities used on site will be maintained accordingly by an approved and permitted contractor who will remove effluent to a licenced facility for disposal.

With regard to site run-off generated during construction, this will be managed and controlled at source by the appointed contractor on-site as per construction industry best practice guidelines (Construction Industry Research and Information Association – CIRIA guidance) and the CEMP which has been prepared for the development prior to discharge to the existing public storm water network. Construction run-off will be intercepted via temporary drainage and treated via silt traps and settlement tanks prior to discharge to the storm drain. Wheel-wash facilities will also be present for vehicles leaving site.

Bearing the above in mind, it is considered that the project has some potential to result in **Temporary to Short-term, Slight Negative Effects** on water quality.

Based on the precautionary principle, standard best practice construction phase water quality protection measures are included in **Section 9.3** below.

8.1.3 Impacts to faunal species

The following table (**Table 13**) describes the potential construction phase effects on faunal KERS at the proposed development site, and the significance of the impact.

In terms of potentially significant disturbance/displacement of species, it is considered that habitat loss, noise and increased human activity required for construction of the development, and potential water quality impacts, have the most potential for disturbance/displacement effects to faunal KERS. Mobile species, such as birds, are expected to temporarily leave the area once works begin owing to noise and human activity.

Table 13. Potential impacts on faunal species identified as KERs during the construction phase and the significance of the impact

KER	Ecological value relative to study area	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2017)
Hedgehog	Local importance (higher value)	No evidence of hedgehog on-site. There will be loss of very minor areas of potentially suitable habitat for hedgehog; however, overall, there will be a net gain as the area of potentially suitable habitat will ultimately increase within the subject site through the provision of green areas.	Potential habitat effects on hedgehog assessed as **Long-term Slight Positive effects**.

KER	Ecological value relative to study area	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2017)
		Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity. It is noted that the site currently comprises an active commercial/industrial site within an urban setting.	Potential direct disturbance/ displacement effects on hedgehog assessed as **Short-term Not Significant Negative Effects.**
Pygmy shrew	Local importance (higher value)	No evidence of pygmy shrew on-site. There will be loss of very minor areas of potentially suitable habitat for pygmy shrew; however, overall, there will be a net gain as the area of potentially suitable habitat will ultimately increase within the subject site through the provision of green areas.	Potential habitat effects on pygmy shrew assessed as **Long-term Slight Positive effects**.
		Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity. It is noted that the site currently comprises an active commercial/industrial site within an urban setting.	Potential direct disturbance/ displacement effects on pygmy shrew assessed as **Short-term Not Significant Negative Effects**.
Birds	Local importance (higher value)	There will be loss of minor areas of potentially suitable nesting/foraging habitat for birds including some mature trees; however, overall, there will be a net gain as the area of potentially suitable habitat will ultimately increase within the subject site through the provision of green areas.	Potential habitat effects on birds assessed as **Long-term Slight Positive effects**.
		Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity. It is noted that the site currently comprises an active commercial/industrial site within an urban setting.	Potential direct disturbance/ displacement effects on birds assessed as **Short-term Not Significant Negative Effects**.
		Indirect disturbance/displacement effects on birds could potentially ensue via indirect water quality/habitat effects.	Potential indirect disturbance/ displacement effects on birds assessed as **Temporary to Short-term Slight Negative Effects.**
Bats	Local importance (higher value)	A low level of bat activity (foraging and commuting) recorded on-site. No bat roosts recorded.	
		Direct/indirect disturbance/displacement effects on bats could potentially ensue via noise/lighting disturbance, loss or alteration of foraging/commuting habitats. However, there is little bat habitat present within the proposed development site and consequently there is little suitable bat foraging and commuting habitat within the proposed development site.	Potential direct/indirect effects on bats assessed as **Short-term Imperceptible Negative Effects**.

8.2 Operational Phase

8.2.1 Impacts to water quality/Indirect habitat alteration

During the operational phase of the development, surface run-off from roads, carparks and other paved areas will discharge to the public stormwater network, and wastewater will discharge to the public foul sewer system.

These are the most likely sources of indirect water quality/habitat alteration impacts during the operational phase, which could potentially result in secondary effects on receiving aquatic habitats and/or species.

There is a theoretical risk to surface water quality in receiving watercourses via storm run-off from built areas which has the potential to result in ingress of fuel and oil residues, sediment/silt to the aquatic environment. This risk is heightened during periods of heavy rainfall. In the absence of appropriate mechanisms to control both the rate and quality of storm run-off from the operational development, storm water generated could therefore impair water quality within receiving watercourses which could impact on aquatic species/habitats. However, management of surface water during the operational phase of the development has been considered in detail at project design stage.

The proposal has incorporated a number of standard construction industry best-practice mechanisms known as Sustainable Urban Drainage Systems (SUDS). SUDS elements are widely used to alleviate detrimental effects of urban stormwater drainage on receiving watercourses. The Greater Dublin Strategic Drainage Study (GDSDS) Final Strategy Report outlines the systematic implementation of best practice stormwater management systems, including SUDS, which are to be employed for all new developments[13]. The proposed development has incorporated SUDS at design stage including use of sedum roofs, attenuation tanks, permeable paving, bypass petrol interceptor and hydro-brake. Each of these SUDS mechanisms provides various stormwater treatments, storage and/or attenuation functions by which surface run-off from the development will be managed prior to leaving the site and entering the public system. Use of a proprietary petrol interceptor and silt trap on the inlet to the proposed attenuation tanks will improve the quality of the discharge by capturing all possible debris and hydrocarbons pollution from the development. Please refer to the Drainage Design Report and proposed drainage layout drawing prepared by Kavanagh Burke Consulting Engineers which accompany the planning application for more information.

Bearing the above in mind, it is considered that generation of stormwater during operation could result in **Long-term, Not Significant Negative Effects** on water quality.

It is proposed that wastewater from the operational development will discharge to the existing public foul system and from there to Ringsend UWWT plant (Licence No. D0034). This UWWT plant discharges treated effluent (following secondary treatment) into the estuarine waters of the River Liffey which drains into Dublin Bay. The latest EPA plant compliance for Ringsend UWWT plant is 'Fail'[14].

S.I. No. 272 of 2009 (as amended) / S.I. No. 77 of 2019 has set physio-chemical standards for 'High' and 'Good' status in transitional and coastal waterbodies which must be complied with outside of the allocated mixing zone a licenced discharge[15]. A review of the latest Annual Environmental Report (AER) 2020 for Ringsend UWWT plant (D0034-01) available on the EPA website determined that while the primary discharge from the facility does have an observable negative impact on water quality in the vicinity of the outfall point, an observable negative impact on the WFD status of the Liffey Estuary was not recorded. Marine monitoring undertaken in 2020 for Ringsend UWWT plant at various sampling points within transitional and coastal waters determined that overall there was compliance with ELV's as per the wastewater discharge licence and that no other impacts on regulated coastal and Irish Sea water quality were recorded during the survey period[7].

The AER outlines in detail planned phased upgrade works for the plant including timeframes for completing the work. These upgrade works will increase the capacity of the plant on a phased basis. There are four key elements to planned upgrade works comprising provisions of additional secondary treatment facility capacity with nutrient reduction, upgrading of the existing secondary treatment tanks to provide additional capacity and nutrient reduction, provision of a new phosphorus recovery process and expansion of the plants sludge treatment

[13] Microsoft Word - GDSDS Final Strategy Report - April 05.doc (greaterdublindrainage.com) Accessed 07/10/2021
[14] https://gis.epa.ie/EPAMaps/ Accessed 07/10/2021
[15] Ringsend UWWTP AER 2020 090151b2807d3b9b.pdf (epa.ie) Accessed 07/10/2021

facilities[7]. The new additional 400,000 population equivalent (PE) capacity wastewater treatment plant had an expected completion date of 2021[16].

Based on planned upgrade works, it is anticipated that the plant will be producing effluent in compliance with parameters set out in the discharge licence by late 2023 (based on a load of 2.1m PE), with the overall plant upgrade works expected to take until 2025 to complete[7]. Once complete, the plant will have an increased capacity of 2.4 million PE[8].

With regard to potential indirect water quality impacts which may arise as a result of generation of wastewater and the proposal to discharge to Ringsend UWWT plant, it is noted that the latest WFD Transitional Waterbody status 2013 – 2018 of the 'Liffey Estuary Lower' is 'Good' and the latest WFD Coastal Waterbody status 2013 – 2018 of 'Dublin Bay' is 'Good'[17], as outlined in **Section 3.2.4.2** above.

It is noted that results of a pre-connection enquiry to Irish Water in relation to the development, in which IW has considered the capacity currently available in the network, indicate that IW has confirmed that a wastewater connection is feasible subject to use of sewage flow management. Irish Water have also issued the Applicant with a Statement of Design Acceptance in relation to the development. Sewage flow management will be achieved via the proposed construction of a pumping station on-site which will control discharge of wastewater from the development to the Local Authority gravity network. This will prevent any detrimental impact on the downstream network. The flow control and storage measures will be installed, owned and operated by the developer until the public network upgrade (currently at preliminary design stage) is delivered and additional capacity in the network becomes available.

Bearing in mind that the proposal will connect to the existing public foul system and considering the degree of mixing and dilution of final treated effluent which will naturally occur within the Liffey Estuary following discharge from Ringsend UWWT plant, initially within the estuary channel and then the greater Dublin Bay area, it is considered that generation of wastewater during operation of the development could result in **Long-term, Not Significant Negative Effects** on water quality.

8.2.2 Impacts to faunal species

No significant disturbance or displacement impacts are expected to birds or to terrestrial mammals selected as KERS during the operational phase of the project. Once the construction phase ceases, any KERS temporarily displaced during construction works are expected to utilise the habitats in the vicinity of the development within a short period of time.

During the operational phase, there may be some disturbance to terrestrial mammals and birds owing to increased noise, traffic and human activity associated with the day-to-day operation of the development. With regard to terrestrial mammals, it is expected that human activity will be greatest during the day with relatively low levels at night, during which time many mammal species are more active. It is also considered that on-going land-uses at the site and its surrounds currently comprise existing commercial/industrial activity, and as such terrestrial mammals and birds are expected to be habituated to human activity within/around the site to some degree.

It is considered that any potential disturbance or displacement impacts to mammals and birds as a result of the operational phase of the proposed development would be **Long-term, Not Significant Negative Effects**.

While there may be an increase in human activity (noise and light levels) as a result of the proposed development during operation, due to the low bat biodiversity and low bat activity, it is not considered that this will impact on

[16] EPA Site Visit Report Dec 2020 090151b2807a0a61.pdf (epa.ie) Accessed 07/10/2021
[17] EPA Maps Accessed 07/10/2021

local bat populations. Therefore, the potential impacts of the proposed development on bats are, overall, considered to be **Long-term, Imperceptible Negative Effects** on named bat species (according to criteria set out in Tables 2c, d Section 1.2.2 of Bat Eco Services, 2022).

Bat mitigation measures are presented in **Section 9.4** below in order to ensure that the lighting scheme for the proposed development has a neutral residual impact on local bat populations and that landscaping will have a positive residual impact on local biodiversity.

9. Mitigation

9.1 Construction Environmental Management Plan (CEMP)

A Construction Environmental Management Plan (CEMP) has been prepared by AWN Consulting (AWN) on behalf of the Applicant. The CEMP encompasses construction programming and phasing, excavations, site logistics, construction traffic and site access, construction lightings, air quality, noise and vibration, resource and waste management and surface water management.

A detailed final CEMP will be developed and implemented by the appointed contractor before commencing work on-site. The CEMP will manage the environmental commitments of the project. The implementation of proposed mitigation measures, as well as the monitoring and supervision of these measures, will be managed through the CEMP. Mitigation measures will be monitored for compliance in-line with the requirements of the Planning Consent.

The finalised CEMP will take cognisance of the following Best Practice Guidance:

- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams *et al*., 2001)
- CIRIA C648 – Control of Water Pollution from Linear Construction Projects: Technical Guidance (Murnane *et al*., 2006)
- CIRIA C753 – The SUDS Manual
- CIRIA C698 – Site handbook for the construction of SUDS
- CIRIA C692: Environmental Good Practice on Site, (Audus *et al*., 2010)
- Bat Conservation Trust (2018). Guidance Note 08/18. Bats and Artificial Lighting in the UK - Bats and the Built Environment Series.

The CEMP will also include the following elements:

- Noise, Vibration, Dust and Air Control Plan
- Construction and Demolition Waste Management Plan
- Water Quality/Sediment and Erosion Control Plan
- Fuel Management Plan
- Emergency Response Plan (in the event of a spill of chemical, fuel or other hazardous wastes, a fire, or non-compliance incident with any permit of license issues).

9.2 Environmental Officer

Regular routine inspections of construction activity will be carried out by contractor staff to ensure all controls to prevent environmental impact are in place. Only suitably trained staff will undertake environmental inspections at the site.

9.3 General Protection of Water Quality during Construction

The contractor will appoint a suitably qualified person to oversee the implementation of generic measures for the prevention of pollution to the aquatic environment. The following construction industry best practice measures will be put in place to avoid or minimise negative effects to water quality as a result of the project during the construction phase.

9.3.1 Site Compound

- Adequate parking facilities will be made available within the Construction Compound for all site workers during the course of construction.
- A designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water.

9.3.2 Excavated Materials, Soil and Surface Water Management

- Measures will be implemented throughout the construction stage to reduce and attenuate site run-off and protect the existing drainage network from excessive silt load.
- Topsoil on-site will be preserved where possible. All topsoil stripping will be scheduled to be carried out during dry weather and all stockpiling will be kept as far away as possible from drains.
- To reduce potential increases in flows into the existing drainage system during construction, the period of exposure of bare areas and uncontrolled runoff will be limited as much as possible. Early covering/seeding/planting of exposed surfaces will be undertaken once opened areas have been reinstated.
- Excavated material will be deposited in designated material deposition areas.
- The scheme drainage system will be inspected daily during construction, or after storm events, to check for blockages/drainage issues. Where any drainage issues are identified, these will be addressed on the same day to ensure water quality protection.

9.3.3 Dewatering of Excavations

- The contractor shall develop an appropriate dewatering scheme to keep the basement/excavations free from water and ensure the quality of water leaving site is high.
- Any excavations that need to be pumped clear of groundwater should be pumped to a settlement tank with sufficient retention time before the water is allowed to discharge to the drainage network. Water will only be discharged following treatment.
- Discharge of water will be regularly monitored visually for hydrocarbon sheen and suspended solids.

9.3.4 Storage of Construction Materials

- Construction materials should only be stored in designated material storage areas.
- Material stockpiles should be kept to a minimum size. Material stockpiles should be stored away from watercourses and drains, on an impermeable base and away from moving plant and machinery.

9.3.5 Storage of Fuels/Oils and other Hazardous Materials

- The storage of oils, chemicals and hydraulic fluids is to take place in secure, designated areas within the site compound.
- All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks/containers with the capacity to hold 110% of the volume of chemicals and fuels contents.
- Bunds will be located on flat ground a minimum distance of 50 m from any watercourse or drain
- Spill kits will be kept on site at all times and all staff trained in their appropriate use.

9.3.6 Refuelling of Construction Plant

- All plant will be refuelled at designated refuelling locations within the site compound. Rigid and articulated vehicles will be fuelled off site as will all site vehicles (jeeps, cars and vans).
- Designated fuel filling points will have appropriate oil and petrol interceptors to provide protection from accidental spills.
- Only designated trained and competent operatives will be authorised to refuel plant on site.
- All plant used should be regularly inspected for leaks and fitness for purpose.

9.3.7 Spill Control Measures

- Measures will be implemented throughout the construction stage to prevent contamination of the soil and drainage network from oil and petrol leakages.
- Spill kit containment equipment will be stored at all work areas for use in the event of an emergency. The contents of the spill kit will be replenished if used and they will be checked on a scheduled basis during environmental inspections and audits. All crews will be trained in the use of spill kit equipment.
- An Emergency Response Plan will be implemented in the event of any environmental incidents such as spillage of oil/fuel during the construction/operational phase of the project.
- All emergency procedures and equipment will be in place prior to the commencement of any works.
- The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

9.3.8 Use of Concrete

- Wet concrete is silty and very alkaline (high pH) and can have a serious effect on watercourses and aquatic life if ingress occurs. Concrete should not enter site water.

- Pouring of cementitious materials will be carried out in the dry. A designated trained operator, experienced in working with concrete, will be employed during any concrete pouring.
- The use of concrete close to drainage features will be carefully controlled to avoid spillage.
- Washout of mixing trucks and plant is to be carried out in designated, contained, impermeable areas.
- Any small volumes of incidental wash generated from cleaning hand tools, cement mixers or other plant, will be trapped on-site to allow sediment to settle out and reach neutral pH before clarified water is released to the drainage network or allowed to percolate into the ground. Settled solids will need to be appropriately disposed of off-site.

9.3.9 Construction Wheel-wash Facilities

- Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving site will be required to drive through these wheel wash areas.
- The wheel wash area will be cleaned regularly so as to avoid build-up of residue.
- Vehicle washdown water will discharge to the drainage system for treatment and attenuation.

9.3.10 Weather/Flood Risk

- The works will only commence when a suitable weather window is forecast and in agreement with the relevant local authority representative.

9.4 Protection of Bats

9.4.1 Lighting

The three bat species recorded commuting and foraging within the survey area are Light Tolerant or Semi-tolerant bat species. It is still important that strict lighting guidelines are required to reduce the potential impact of the proposed development on local bat populations as standard best practice. Potential impacts to local bat populations have been taken into consideration at design stage with regard to the lighting plan which is proposed for the development.

The following measures should be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).

- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.

- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

Any external lighting for the proposed development should strictly follow the above guidelines and these should be strictly implemented during the construction and operational phases of the proposed development.

The lighting contractors have confirmed that the lighting plan will adhere to the above guidelines.

In addition, during construction, all temporary lighting to facilitate construction should be turned off after daytime working periods to ensure that there is no residual lighting during the hours of darkness.

9.4.2 Landscaping

It is recommended that native tree, shrub and plant species are included in the landscaping plan. It is recommended that night-scented planting is also undertaken to encourage foraging areas for local bat populations.

9.5 General Protection of Fauna

- Construction materials and wastes are to be kept in designated areas to reduce risk of accidental injury/entrapment of any wildlife on-site.
- Removal of vegetation will only be undertaken outside the bird breeding and nesting season (March 1st to August 31st inclusive), in accordance with Section 40 of the Wildlife Acts.
- All temporary construction lighting is to be turned off after daylight hours.
- Should any resting or breeding place of any protected species be discovered within the site during construction works, works will cease immediately, the area will be cordoned off and the advice of NPWS sought.

9.6 Management of Invasive Species, Site Bio-security

- Construction personnel involved in works should be trained in basic invasive species prevention and management measures.
- Vehicles, machinery, equipment/tools and PPE should arrive to site clean.
- Invasive species management methodologies and plans outlining Best Available Techniques (BAT) will be sourced from current best practice and will have regard to 'The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads' (NRA 2010).
- Management and treatment of any invasive plant species found on-site e.g. *Buddlija*, will be overseen by a suitably-experienced and qualified person. Best-practise protocols will be implemented to ensure the proper removal and disposal of the plant(s) in question in line with NRA (2010).

- In the event that the use of pesticides/herbicides is required, these should be applied strictly in accordance with the manufacturer's recommendations, by a registered Professional Pesticides User, and fully in compliance with the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. 155 of 2012).

9.7 General Protection of Water Quality during Operation

For the SUDS strategy to work as designed it is important that the entire drainage system is well maintained. It will be the responsibility of the site management team to ensure the drainage system is maintained.

The surface water network must be regularly maintained and where required cleaned out. The recommended programme of maintenance for the attenuation tank, permeable paving, swale/soakaway and areas of sedum roofs should be adhered to.

10. Cumulative Impacts

10.1 Plans

With regards to the potential for cumulative or in-combination impacts, the South Dublin County Council Development Plan (2016 – 2022), the draft South Dublin County Development Plan (2022 – 2028) and the draft Tallaght Town Centre Local Area Plan (2020 – 2026) were considered. The site is zoned 'Objective Regen' to facilitate enterprise/or residential led regeneration.

In general, County Development Plans and Local Area Plans have a range of environmental and natural heritage policy safeguards in place. These safeguards to protect the natural environment will also apply to the proposal described in this report. No significant cumulative impacts are predicted with the South Dublin County Council Development Plan (2016 – 2022), the draft South Dublin County Development Plan (2022 – 2028) or the draft Tallaght Town Centre Local Area Plan (2020 – 2026).

10.2 Permitted and Proposed Developments in the Locality

A search of South Dublin County Council's online planning enquiry system[18] for recent granted or on-going planning applications located within the vicinity of the proposed development site was undertaken. These comprise permissions for mainly relatively minor modifications to existing buildings and/or change of use within the surrounding built-up/industrial area. Grant of planning also exists for the conversion of an existing vacant two storey office building in the nearby vicinity into 38 residential accommodation units along with various on-site amenities and all associated site works.

With regard to cumulative species disturbance/displacement impacts to bats due to increased light levels, implementation of the recommended mitigation measures, as outlined in Section 9.4.1 above, will avoid any significant residual disturbance/displacement effects. Therefore, no significant cumulative disturbance/ displacement impacts to bats are envisaged as a result of potential interaction between the proposal and permitted developments elsewhere within the site with regard to lighting.

No significant cumulative water quality impacts are envisaged as a result of potential interaction between the proposal and permitted developments elsewhere.

[18] https://www.sdcc.ie/en/services/planning/planning-applications/ [Accessed 20/04/2022]

No significant cumulative species disturbance/displacement impacts due to interaction between the proposal and the permitted developments elsewhere in relation to increased noise or human activity are envisaged.

10.3 EPA Licenced Facilities

A review of the EPA mapping tool determined that there are several EPA licenced facilities within the greater area surrounding the subject site (see **Table 14** below). There are no Urban Wastewater Treatment (UWWT) plants or sewerage treatment plants in the surrounding area.

Table 14. List of EPA licenced facilities within the area surrounding the proposed development

Name	Licence Sub-category	Licence No.	Licence Status	Proximity to Subject Site
Safety Kleen Ireland Ltd.	IE	W0099	Licenced	0.17 km to S of site
Bimeda Animal Health Limited	IPC	P0357	Licenced	0.3 km to SW of site
Microprint	IPC	P0659	Licenced	0.3 km to SW of site
Print & Display Limited	IPC	P0116	Licenced	0.8 km to NW of site
INX International Ink Company Limited	IPC	P0252	Licenced	0.9km to W of site
The Adelaide & Meath Hospital, Dublin	IE	P0160	Licenced	1.1 km to SW of site
Tonge Industries Limited	Waste	W0239	Licenced	1.04 km to NW of site
Starrus Eco Holdings Limited	Waste	W0079	Licenced	0.91 km to W of site

It has been concluded that there is some limited potential for water quality impacts within receiving waterbodies from construction/operational site drainage. These aspects of the project could potentially act in combination with other facilities discharging to the public system.

However, general construction industry standard best practice water quality protection measures designed to ameliorate any significant water quality effects which may arise during either the construction or operational phases of the project have been included as part of the project design. With the implementation of these measures, as outlined in **Section 5.6.3** above, it is considered that any residual cumulative water quality impacts due to interaction with EPA licenced activity in the greater area will not be significant, and will comprise **Short-term to Long-term, Slight Negative Effects.**

10.4 Existing Land-use and On-going Activities

The site currently comprises mainly built ground accommodating a two-storey office/light industrial unit in the south and various sheds and containers sitting on concrete/tarmacadam in the northern section. With regard to

the surrounding land-use, the site is surrounded by a mixture of office, commercial, light industrial and warehouse buildings of all ages, most of which are 2/3/4 stories high. Several other industrial estates and business parks are located nearby.

The site sits a block in from Airton Road which connects Belgard Road (R113) to the west with Greenhills Road (R819) to the east. Extending further away from the site, Technological University (TU) Dublin Tallaght is located to the south of Airton Road. Bancroft Park, sports grounds and the local athletics club are situated immediately east of Greenhills Road.

It has been concluded that there is some limited potential for water quality impacts within receiving waterbodies from construction/operational site drainage. These aspects of the project could potentially act in combination with existing land-use activity (i.e. other built ground/artificial surfaces, other discharges to the public system etc).

However, general standard best practice water quality protection measures designed to ameliorate any significant water quality effects which may arise during either the construction or operational phases of the project have been included as part of the project design. With the implementation of these measures, as outlined in **Section 5.6.3** above, it is considered that any residual cumulative water quality impacts due to interaction with existing land-use activities in the greater area will not be significant, and will comprise **Short-term to Long-term, Slight Negative Effects.**

11. Residual Effects

Residual effects are from impacts that remain, once mitigation has been implemented or, impacts that cannot be mitigated.

Table 15 below provides a summary of the predicted residual effects for the KERS identified which are the most ecologically valuable at the site.

Table 15. Predicted residual effects for KERs

Receptor	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation Measures	Residual Effects
Hedgehog	Potential habitat effects on hedgehog assessed as **Long-term Slight Positive effects**. Potential direct disturbance/ displacement effects on hedgehog assessed as **Short-term**	Potential disturbance or displacement impacts assessed as **Long-term, Not Significant Negative Effects**	CEMP Best practice	Potential residual habitat effects on hedgehog assessed as **Long-term Slight Positive effects**. Potential residual disturbance/displacement effects on hedgehog assessed as **Long-term Imperceptible Negative effects**. **No significant residual effects.**

Receptor	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation Measures	Residual Effects
	Not Significant Negative Effects.			
Pygmy shrew	Potential habitat effects on pygmy shrew assessed as **Long-term Slight Positive effects**. Potential direct disturbance/ displacement effects on pygmy shrew assessed as **Short-term Not Significant Negative Effects.**	Potential disturbance or displacement impacts assessed as **Long-term, Not Significant Negative Effects**	CEMP Best practice	Potential residual habitat effects on pygmy shrew assessed as **Long-term Slight Positive effects**. Potential residual disturbance/displacement effects on hedgehog assessed as **Long-term Imperceptible Negative effects**. **No significant residual effects.**
Birds	Potential habitat effects on birds assessed as **Long-term Slight Positive effects**. Potential direct disturbance/ displacement effects on birds assessed as **Short-term Not Significant Negative Effects**. Potential indirect disturbance/	Potential disturbance or displacement effects assessed as **Long-term, Not Significant Negative Effects**.	CEMP Best practice Compliance with Wildlife Acts regarding vegetation removal Surface Water Network Design and Controls Foul Water Network Design and Controls	Potential residual habitat effects on birds assessed as **Long-term Slight Positive effects**. Potential residual disturbance/displacement effects on birds assessed as Temporary **to Long-term Not Significant to Imperceptible Negative effects**. **No significant residual effects.**

Receptor	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation Measures	Residual Effects
	displacement effects on birds assessed as **Temporary to Short-term Slight Negative Effects**.			
Bats	Potential direct/indirect effects on bats assessed as **Short-term Imperceptible Negative Effects**.	Potential disturbance or displacement effects assessed as **Long-term, Imperceptible Negative Effects**.	CEMP Best practice	**No significant residual effects.** Bat mitigation measures are presented in order to ensure that the lighting scheme for the proposed development has a neutral impact on local bat populations and that landscaping will have a positive impact on local biodiversity.
Water Quality	Potential uncontrolled release of site run-off could result in **Temporary to Short-term, Slight Negative Effects**.	Potential water quality effects assessed **as Long-term Not Significant Negative Effects**.	CEMP Best practice Surface Water Network Design and Controls Foul Water Network Design and Controls	Potential residual water quality effects assessed as **Temporary to Long-term Not Significant to Imperceptible Negative effects**. **No significant residual effects.**

12. Enhancement Opportunities

12.1 Landscaping

Extensive soft landscaping is proposed as part of the project. Planting of mature and semi-mature trees, amenity planting and hedgerow will enhance biodiversity by providing valuable habitat for a wide variety of fauna, of value within an urban environment. The proposed planting will compensate for loss of low-value semi-natural habitat within the site and will result in an overall increase in vegetation cover and tree/shrub species diversity within the site.

It is recommended that native tree, shrub and plant species are utilised as much as possible as part of site landscaping. The planting list should incorporate a diverse range of pollinator/bee-friendly tree/plant species as

much as possible to support local biodiversity. Pollinator-friendly, native tree species include willow, hawthorn, blackthorn, wild cherry, and crab apple.

It is noted that the Landscape and Visual Impact Assessment (LVIA) for the project makes reference to an overall use of native species for planting and species which are recommended as per the All Ireland Pollinator Plan 2021-2025.

12.2 Other measures

Bird boxes can be installed in appropriate locations within the site (taking target species size, height above ground, and aspect into consideration).

The proposed use of sedum green roofs on flat roofs of buildings will enhance biodiversity within the site while also serving other functions such as assisting with insulation and drainage/ quantity and quality of run-off.

13. Conclusion

Residual impacts on biodiversity including impacts to designated sites, habitats, flora, fauna and water quality are not considered significant provided best practice methodologies and mitigation measures are employed during the construction and/or operational phases.

Provided that the proposed project is constructed and operated in accordance with the design, and that construction industry best practice measures and other mitigation described within this report are adhered to, significant effects on KERS are not anticipated at any geographical scale.

The application of construction and operational phase mitigation and protection measures will ensure that no significant residual ecological impacts, either alone or cumulatively with other plans or projects, will arise from the project.

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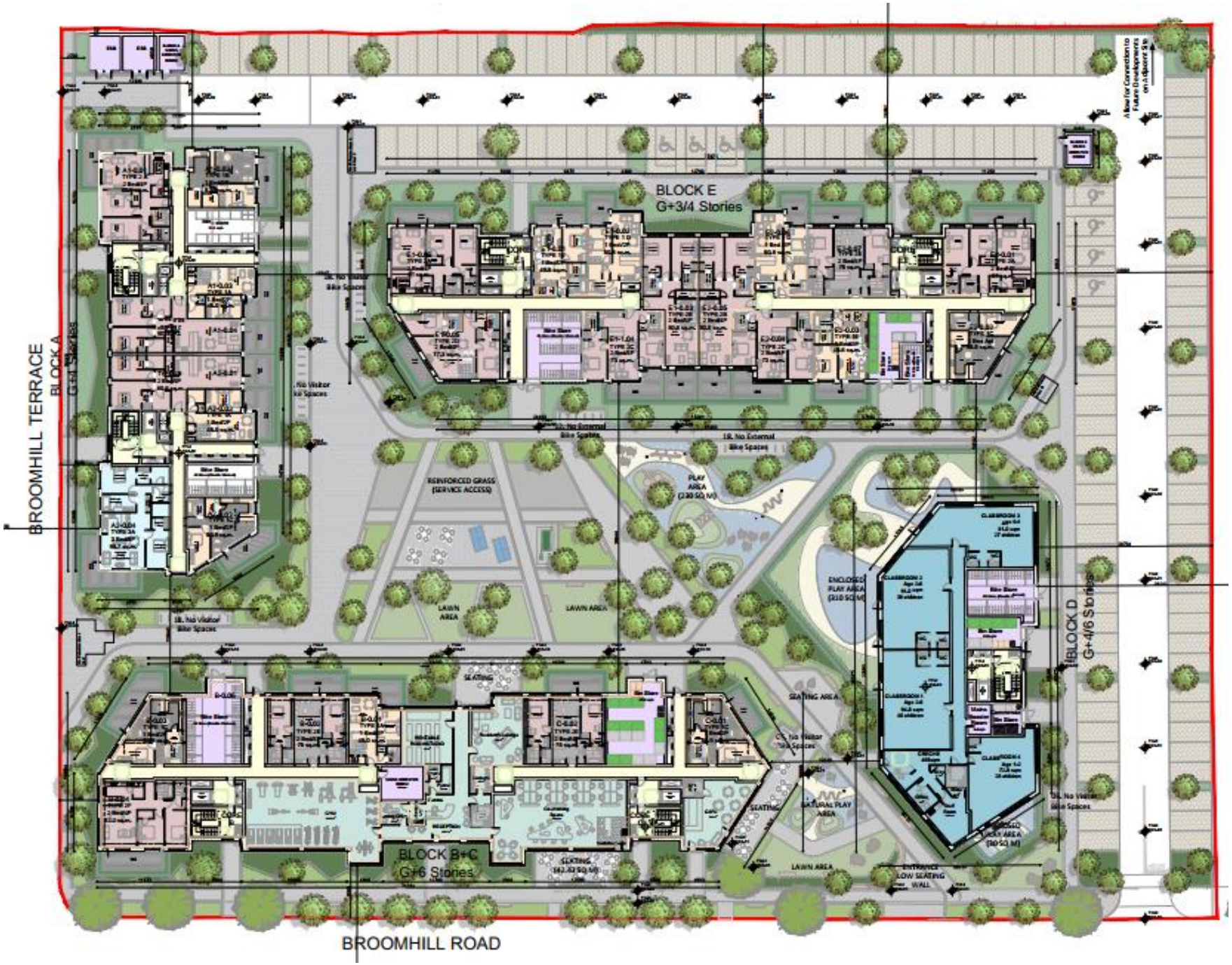
Appendix 1

Site Layout Plan (Ground floor)


BROOMHILL TERRACE
BLOCK A
G+1 Stories
BLOCK E
G+3/4 Stories
BLOCK D
G+4/6 Stories
BLOCK B+C
G+6 Stories
BROOMHILL ROAD
REINFORCED GRASS (SERVICE ACCESS)
PLAY AREA (230 SQ.M)
ENCLOSED PLAY AREA (210 SQ.M)
LAWN AREA
LAWN AREA
SEATING AREA
NATURAL PLAY AREA
ENCLOSED PLAY AREA (150 SQ.M)
LOW SEATING WALL
SEATING
SEATING
SEATING
18. No Visitor Bike Spaces
18. No External Bike Spaces
A Row for Connection to Future Developments on Adjacent Site

Appendix 2

NRA Ecological Evaluation Criteria

International Importance	'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. Proposed Special Protection Area (pSPA). Site that fulfils the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). Features essential to maintaining the coherence of the Natura 2000 Network.1 Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. Resident or regularly occurring populations (assessed to be important at the national level)2 of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). Biosphere Reserve (UNESCO Man & The Biosphere Programme). Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). Biogenetic Reserve under the Council of Europe. European Diploma Site under the Council of Europe. Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).[3]
National Importance	Site designated or proposed as a Natural Heritage Area (NHA). Statutory Nature Reserve. Refuge for Fauna and Flora protected under the Wildlife Acts. National Park. Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park. Resident or regularly occurring populations (assessed to be important at the national level)4 of the following: Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing 'viable areas'5 of the habitat types listed in Annex I of the Habitats Directive.
County Importance	Area of Special Amenity.[6] Area subject to a Tree Preservation Order. Area of High Amenity, or equivalent, designated under the County Development Plan. Resident or regularly occurring populations (assessed to be important at the County level)[7] of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance. County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP,[8] if this has been prepared. Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

Locally Important (higher level)	Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; Resident or regularly occurring populations (assessed to be important at the Local level)[9] of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value
Locally Important (lower level)	Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; Sites or features containing non-native species that are of some importance in maintaining habitat links.

(Adapted from NRA, (2009))

[1]See Articles 3 and 10 of the Habitats Directive.

[2] It is suggested that, in general, 1% of the national population of such species qualifies as an internationally important population. However, a smaller population may qualify as internationally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

[3] Note that such waters are designated based on these waters' capabilities of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*).

[4] It is suggested that, in general, 1% of the national population of such species qualifies as a nationally important population. However, a smaller population may qualify as nationally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

[5] A 'viable area' is defined as an area of a habitat that, given the particular characteristics of that habitat, was of a sufficient size and shape, such that its integrity (in terms of species composition, and ecological processes and function) would be maintained in the face of stochastic change (for example, as a result of climatic variation).

[6] It should be noted that whilst areas such as Areas of Special Amenity, areas subject to a Tree Preservation Order and Areas of High Amenity are often designated on the basis of their ecological value, they may also be designated for other reasons, such as their amenity or recreational value. Therefore, it should not be automatically assumed that such sites are of County importance from an ecological perspective.

[7] It is suggested that, in general, 1% of the County population of such species qualifies as a County important population. However, a smaller population may qualify as County important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

[8] BAP: Biodiversity Action Plan

[9] It is suggested that, in general, 1% of the local population of such species qualifies as a locally important population. However, a smaller population may qualify as locally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.