

# ALTEMAR

Marine & Environmental Consultancy

## Ecological Impact Assessment (EclA) for a proposed residential development at Hayden's Lane, Lucan, Co. Dublin.



19<sup>th</sup> May 2021

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**On behalf of:** Jackie Greene Construction.

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### Document Control Sheet

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## Introduction

### Project Description

The proposed residential development is at Hayden's Lane, Lucan, Co. Dublin (Figures 1-2). The development will consist of 54 no. duplex apartment units within 3 no. 3 storey blocks. The unit mix will comprise of 2 and 3 bedroom units, all with associated private balconies/terraces to the north/south/east/west elevations (Figure 3). The development will also include car parking spaces, cycle parking spaces, public and communal open spaces. Vehicular access is from Hayden's lane. All other site services and works to enable the development of the site will also be provided including bins, boundary treatments and landscaping.

No Natura 2000 sites are within the potential Zone of Influence (ZoI). The ZoI of the proposed project would be seen to be restricted to the site outline with potential for minor localised noise, dust and light impacts during construction. Drainage from site, both foul and surface water, would be seen as the outputs from the site during construction and operation that could potentially extend the potential ZoI. As a result, further information is provided in relation to the proposed drainage strategy. However, it should be noted that the proposed development is not directly hydrologically linked to a Natura 2000 site.

### Drainage

An Engineering Planning Drainage/Water Services Report and Flood Risk Assessment was prepared by Roger Mullarkey & Associates. The report states that *"There are existing drainage and water connections to the public services already on the site, but this application seeks to amend the connections as requested by SDCC. A Confirmation of Feasibility (CoF) letter was obtained from Irish Water relating to the foul sewer and watermain supply available to the site and both connections were noted as "Feasible without infrastructure upgrade by Irish Water", a copy of which is included in the appendix of this report."*

#### **Proposed Surface Water Drainage Summary**

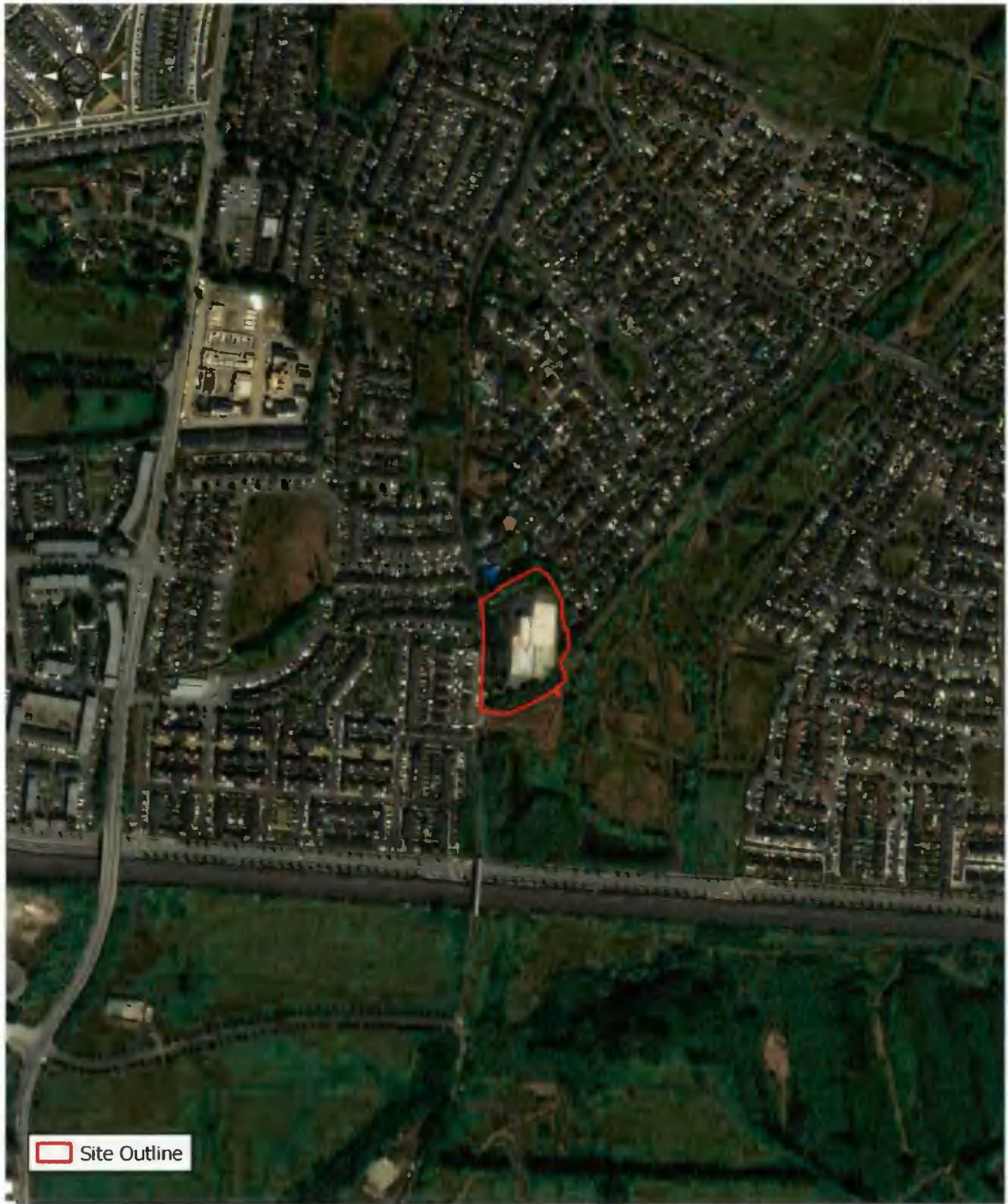
*"The design of the storm water network has been carried out in accordance with and in conjunction with the requirements of the SDCC Water Services and Parks Departments as were ascertained in preplanning meetings/discussions. The proposed surface water network will utilise the existing dry-ditches surrounding the site as part of the overall SuDS strategy and which was specifically requested by the Parks Department. A Site-Specific Flood Risk Assessment (SSFRA) study report was prepared." (Figure 4)*

*"The surface water drainage infrastructure for the development will collect the rainfall on the site and convey the storm water run-off via roadside tree pits, existing surrounding dry-ditches, bio-retention area, rear garden filter drains, permeable paving, gullies, underground pipes, manholes, catchpit manhole and direct the flows to the grassed detention swale area before outfalling via a vortex flow restricting device (Hydrobrake or similar) and a petrol interceptor before to the dry grassed depression in the Park to the SE of the site. The above was agreed in principle with both the Parks and Water Services Department during the pre-planning consultation process."*

*"This application proposes to provide a minimum of 286m<sup>3</sup> attenuation storage using the open grassed attenuation swale to the south of the site. The available volume provided is greater than required and is therefore considered a safe and conservative approach to attenuation provision."*

#### **Foul**

The sites foul drainage system is to outfall into the IW 450mm foul sewer just south of the site in the Griffen park (Figure 4). This ultimately discharges to Ringsend WwTP.



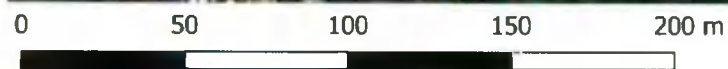
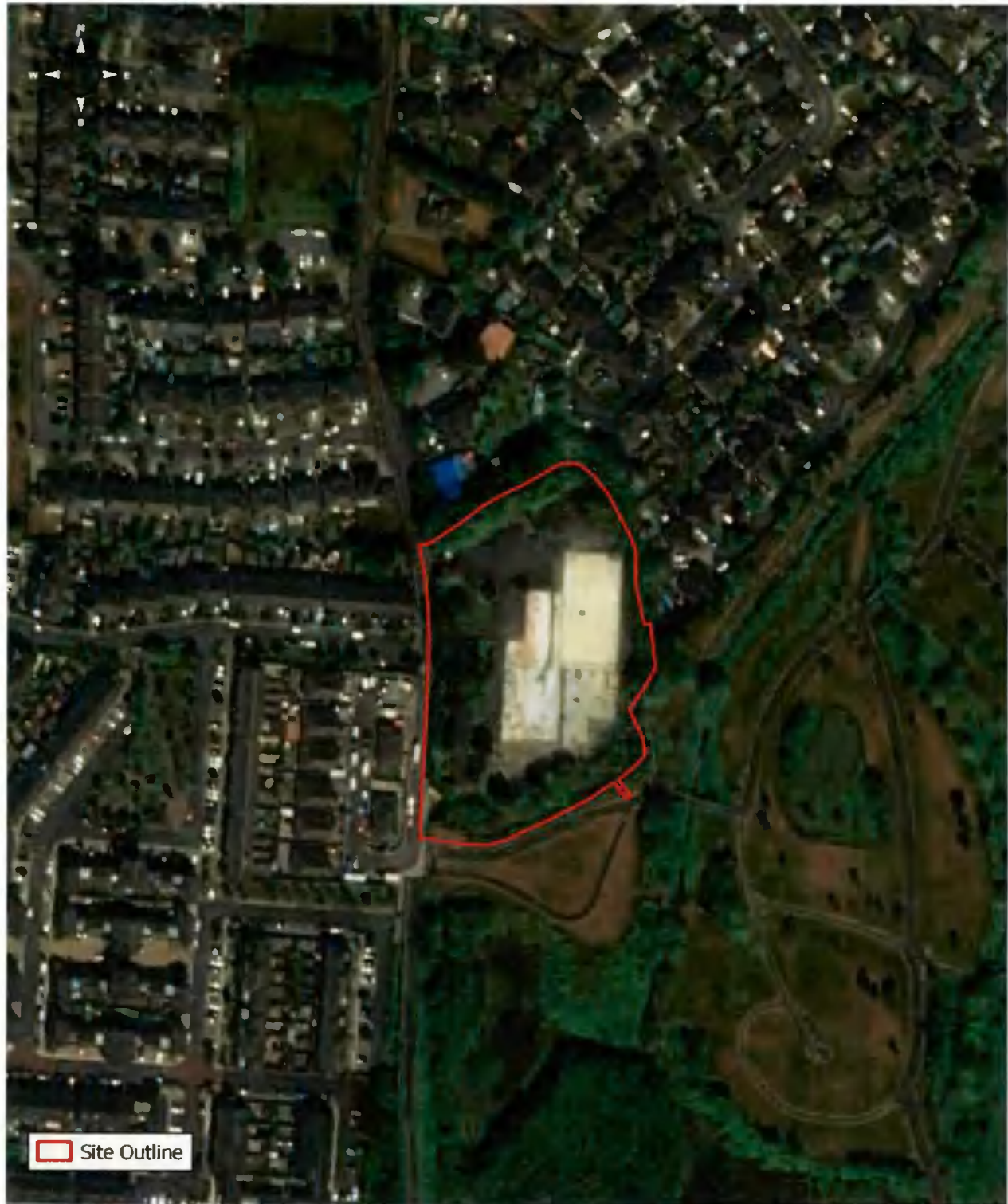
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Figure 1. Proposed site outline



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Figure 2. Outline of proposed site



Figure 3. House Types



Figure 4. Proposed surface water and Foul Layout

Figure 5. Proposed Stormwater Layout



## Ecological Assessment Methodology

### Desk Study

A desk study was undertaken to gather and assess ecological data prior to undertaking fieldwork elements. Sources of datasets and information included:

- The National Parks and Wildlife Service
- National Biological Data Centre
- Satellite, aerial and 6" map imagery
- Bing Maps (ArcGIS)

A provisional desk-based assessment of the potential species and habitats of conservation importance was carried out in April 2021. The potential Zone of Influence (Zoi) would be seen to be restricted to the site outline with potential for minor localised noise and light impacts during construction. However, drainage from site, into both foul and surface water networks, during construction and operation would be seen as the main pathways for impacts beyond the site outline.

### Field Survey

A field survey of the proposed development site was carried out by Altemar Ltd. on the 23<sup>rd</sup> April 2021. The purpose of the field surveys was to identify habitat types according to the Fossitt (2000) habitat classification and map their extent. In addition, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered.

A bat survey was also carried out on the 15<sup>th</sup> April 2021 by Dr Tina Aughney assessed the trees on site for roosting potential and foraging on site. A static bat detector was also placed on site. Bats were identified by their ultrasonic calls coupled with behavioural and flight observations. The bat assessment accompanied this submission.

### Survey Limitations

The surveys covered appropriate seasons for flora and bat assessments. The initial survey was outside the optimal time of year for terrestrial mammal assessments. However, given the nature of the site primarily of built land and easily accessible scrub with clearly visible bases, this not seen as a limiting factor in the ecological assessment.

### Consultation

The National Parks and Wildlife Service (NPWS) were consulted in relation to species and sites of conservation interest. Data of rare and threatened species were acquired from NPWS. The National Biological Data Centre records were consulted for species of conservation significance.

### Spatial Scope and Zone of Influence

IEEM (2006) defined the zone of influence as "*the areas/resources that may be affected by the biophysical changes caused by activities associated with a project*". In order to define the extent of the study area for ecological assessment, all elements of the project were assessed and reviewed in order to identify the spatial scale at which ecological features could be impacted. Due to the limited temporal and geographical scale of the project, within a suburban/industrial environment, it is considered that the impacts of the proposed construction works would not extend beyond the site boundary, with the exception of surface water and foul water drainage connections in addition to mammal and avian activity where the proposed site may form part of a larger territorial range. However, the project would also see construction activity, which may impact beyond the site through disturbance, surface water and light impacts. Operational impacts would not be expected beyond the site outline.

### Ecological Evaluation Criteria

The ecological significance of the potential zone of influence was determined using the site evaluation scheme provided by the National Roads Authority (NRA) Ecological Assessment Guidelines (Table 1) and Impact Matrix (Table 3).

Table 1. Site Evaluation Scheme (NRA, 2006)

Rating	Qualifying Criteria
A	<b>Internationally important</b> Sites designated (or qualifying for designation) as Special Areas of Conservation (SAC) or Special Protection Areas (SPA) under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries.
B	<b>Nationally important</b> Sites or waters designated or proposed as a Natural Heritage Area (NHA) or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (EU Habitats Directive). Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Water bodies with major amenity fishery value.
C	<b>High value, locally important (Regional, County &amp; River Basin District)</b> Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive.
D	<b>Moderate value, locally important (Regional, County &amp; River Basin District)</b> Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (Q-value rating 4-5).
E	<b>Low value, locally important (Regional, County &amp; River Basin District)</b> Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value.

### Impact Assessment Significance Criteria

As outlined in IEEM (2010) "assessment of impacts should be undertaken in relation to the baseline conditions within the zone of influence of the proposed development." Impacts during site preparation, construction and occupation upon ecological receptors were quantified and characterised based on IEEM impact characterisation (IEEM, 2010) (Table 2) Following an evaluation of ecological receptors, the potential impact (positive, neutral or adverse) of the project on the ecological receptors was carried out based on the criteria in an impact significance matrix (based on NRA, 2009) (Table 3).

Table 2. Characterisation of the impacts

<b>Direction of impact</b>	Whether the impact benefits (beneficial or positive) or detracts (adverse or negative) from net biodiversity value of the receptor;
<b>Magnitude</b>	level of severity of influence on the receptor; fragmentation and isolation of habitats; disturbance to species from noise, light or other visual stimuli
<b>Extent</b>	Area affected and percent of total area of the receptor; direct loss of wildlife habitats
<b>Complexity</b>	direct or indirect effect
<b>Reversibility</b>	reversible or irreversible
<b>Timing/ Frequency</b>	constant or intermittent and impact on critical life stages
<b>Duration</b>	measured time interval for the activity and predicted duration of the impact on receptor
<b>Confidence</b>	certain/near certain, probably, unlikely or extremely unlikely

Table 3. Impact matrix

Impact level	Site Category				
	A sites Internationally important	B sites Nationally important	C Sites High value, Locally important	D sites Moderate value, locally important	E Sites Low value, locally important
Severe adverse	Any permanent impacts	Permanent impacts on a large part of a site			
Major adverse	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
Moderate adverse	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site	
Minor adverse	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site	
Negligible	No impacts	No impacts	No impacts	No impacts	Permanent impacts on a small part of a site
Minor beneficial				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site
Moderate beneficial			Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site	
Major beneficial		Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site		

## Results

### Proximity to Designated Conservation Sites

Designated conservation sites (National and international) within 15km of the proposed development are seen in Figures 5 to 9. It should be noted that the proposed development site is not within a designated conservation area.

The closest Natura 2000 sites to the proposed development site are the Rye Water Valley/Carton SAC and Glenasmole Valley SAC, located 3.9 km and 10.1 km from the proposed site respectively (Figure 5). The closest National Heritage Area sites are the Grand Canal pNHA and the Liffey Valley pNHA, located (Figure 10). There are no recorded RAMSAR sites identified within 15km of the proposed development site. Details of Natura 2000 sites are seen in Table 4, while details on national conservation sites are in Table 5.

As can be seen from Figure 1, on the eastern edge of the site there is a watercourse that feeds into the Griffeen River. As per the *Engineering Services Report*, it is proposed to discharge controlled storm water into the aforementioned watercourse. This forms an indirect pathway to Natura 2000 sites in the region in and around Dublin Bay, such as the South Dublin Bay SAC and the North Bull Island SPA. However, as these Natura 2000 sites are located more than 15 km away from the proposed development, no significant impact on the conservation objectives of these sites is foreseen. It would be expected that in the absence of mitigation any pollutants or silt produced in the proposed development will settle, disperse, or be diluted prior to reaching the marine environment 15km from the development site. However, the proposed project must comply with Water Pollution Acts, but these measures would be deemed necessary for the protection of the Griffeen Stream but not designated sites. There is an indirect pathway via the foul wastewater networks. However, the foul will be connected to an existing public network which will be treated at Ringsend WWTP. The construction and operation of the proposed development will not impact on the conservation objectives of features of interest of Natura 2000 sites.

Table 4. Distances to NATURA 2000 sites within 15km of the subject site

Site Code	NATURA 2000 Site	Distance
<b>Special Areas of Conservation</b>		
IE0001398	Rye Water Valley/Carton SAC	3.9 km
IE0001209	Glenasmole Valley SAC	10.1 km
IE0002122	Wicklow Mountains SAC	12 km
<b>Special Protection Area</b>		
IE0004024	South Dublin Bay and River Tolka SPA	14.6 km
IE0004040	Wicklow Mountains SPA	14.7 km

Table 5. Distances to National conservation sites within 15km of the subject site

Conservation Site Name	Conservation Type	Distance
Grand Canal	pNHA	640 m
Liffey Valley	pNHA	2 km
Royal Canal	pNHA	3.7 km
Rye Water Valley/Carton	pNHA	3.9 km
Lugmore Glen	pNHA	7.9 km
Slade of Saggart And Crooksling Glen	pNHA	8 km
Dodder Valley	pNHA	8.9 km
Glenasmole Valley	pNHA	10.1 km
Kilteel Wood	pNHA	12.3 km
North Dublin Bay	pNHA	14.4 km
Sentry Demesne	pNHA	14.6 km

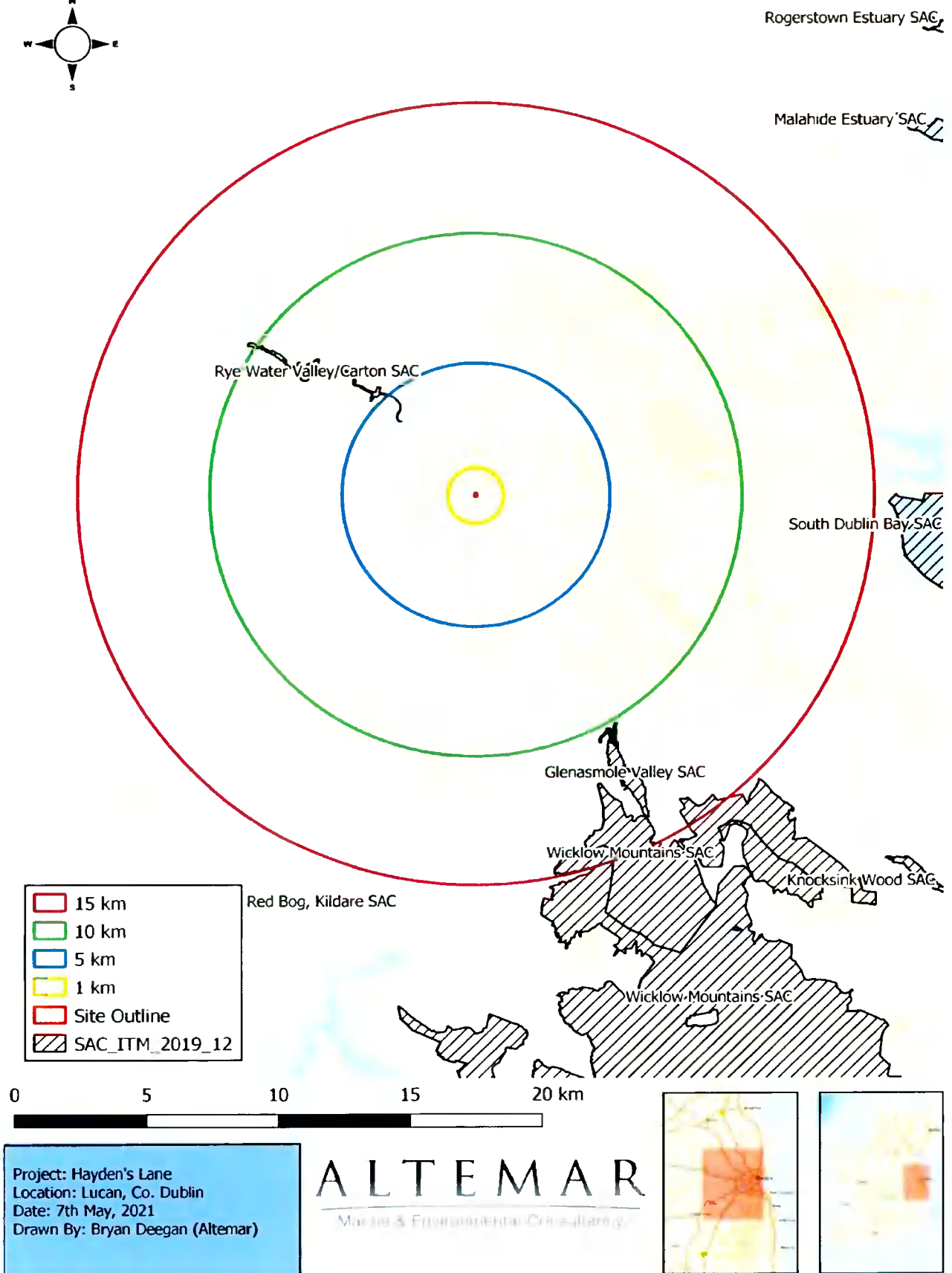
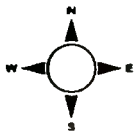
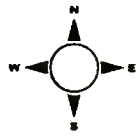
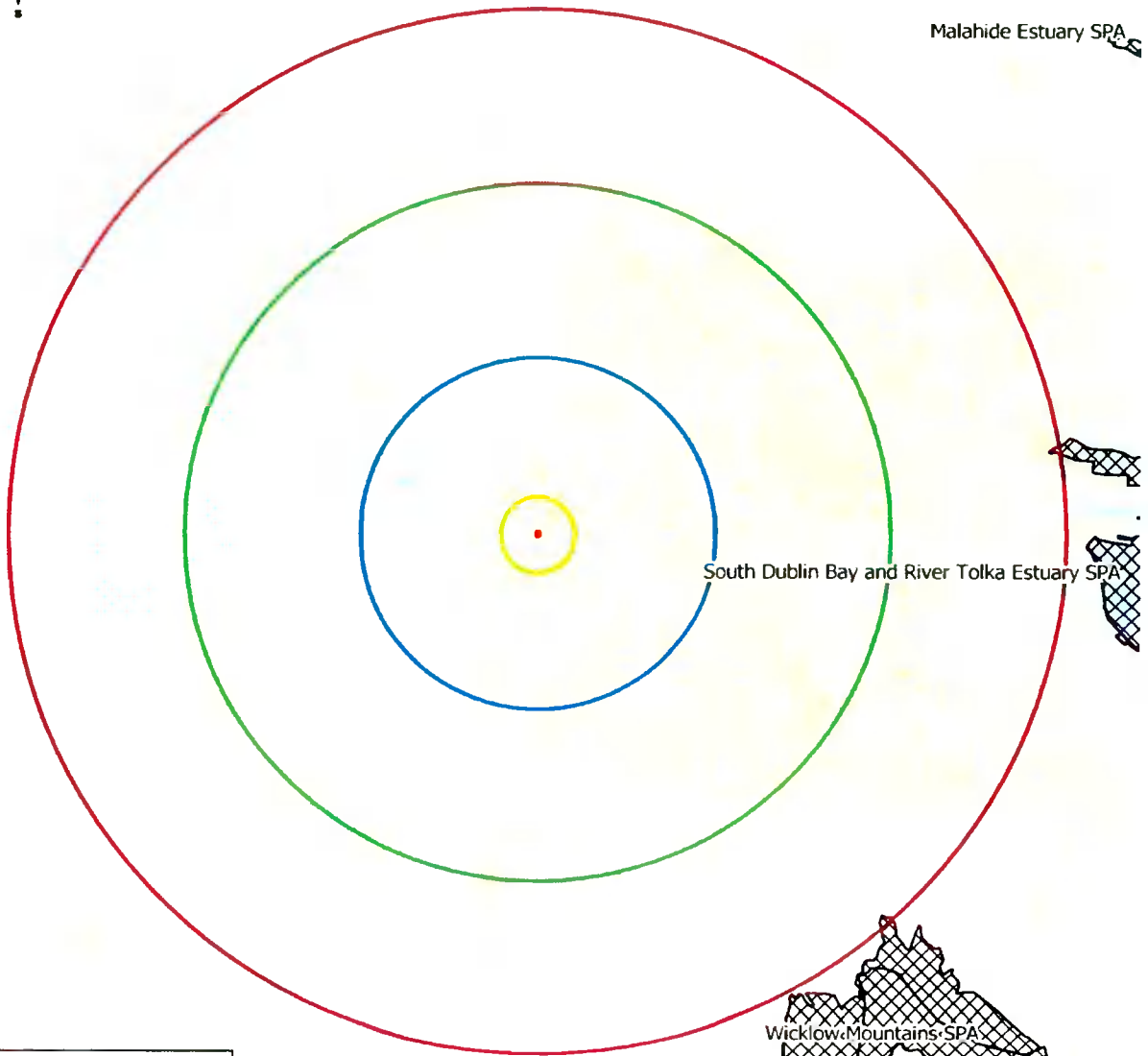


Figure 5. SACs within 15 km of the development



Malahide Estuary SPA



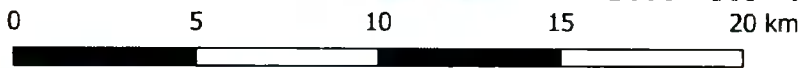
South Dublin Bay and River Tolka Estuary SPA

Wicklow Mountains SPA

- 15 km
- 10 km
- 5 km
- 1 km
- Site Outline
- SPA\_ITM\_2019\_12

Poulaphouca Reservoir SPA

Wicklow Mountains SPA



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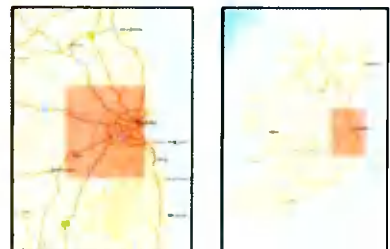


Figure 6. SPAs within 15 km of the development

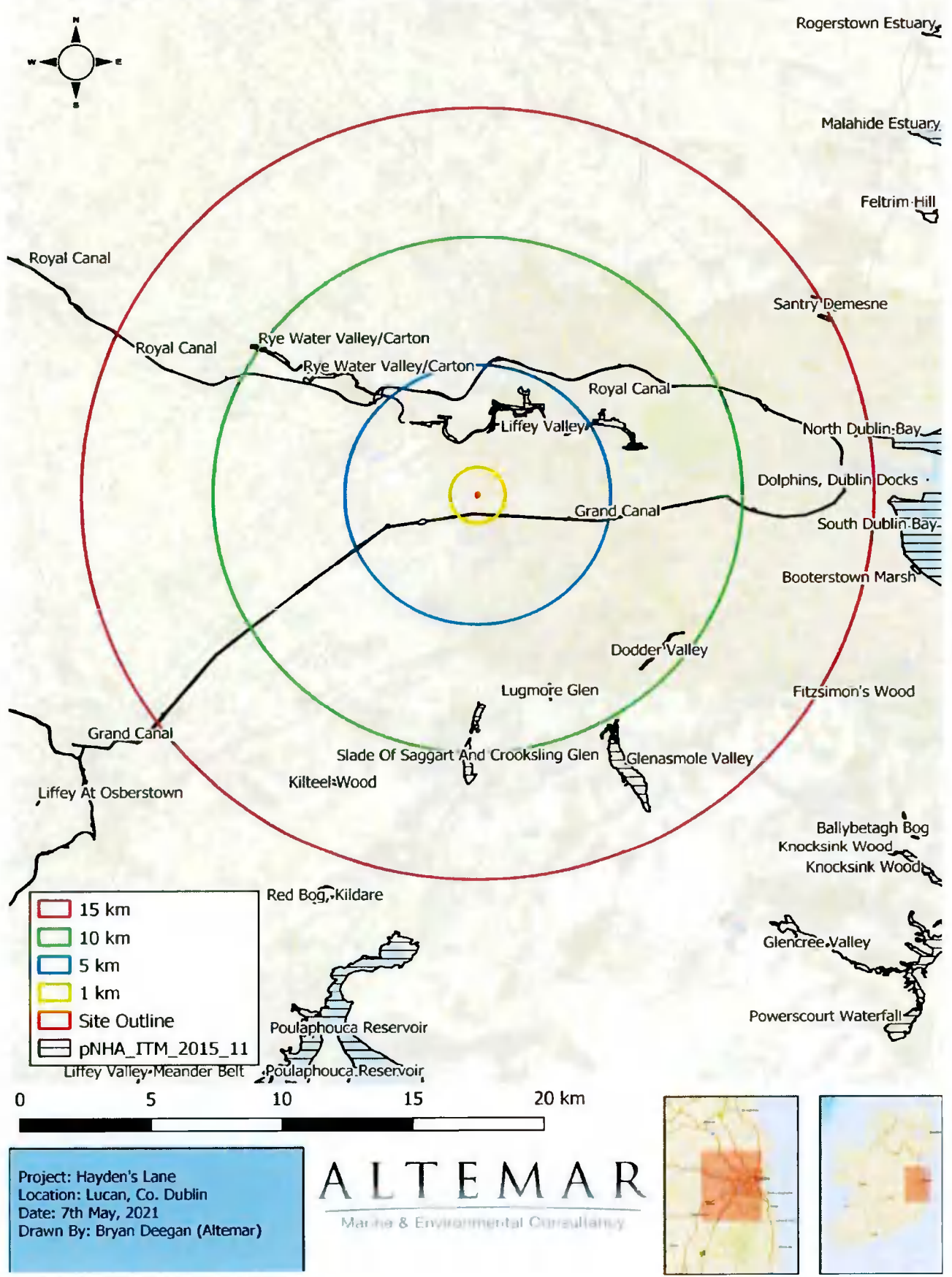


Figure 7. NHAs within 15 km of the development



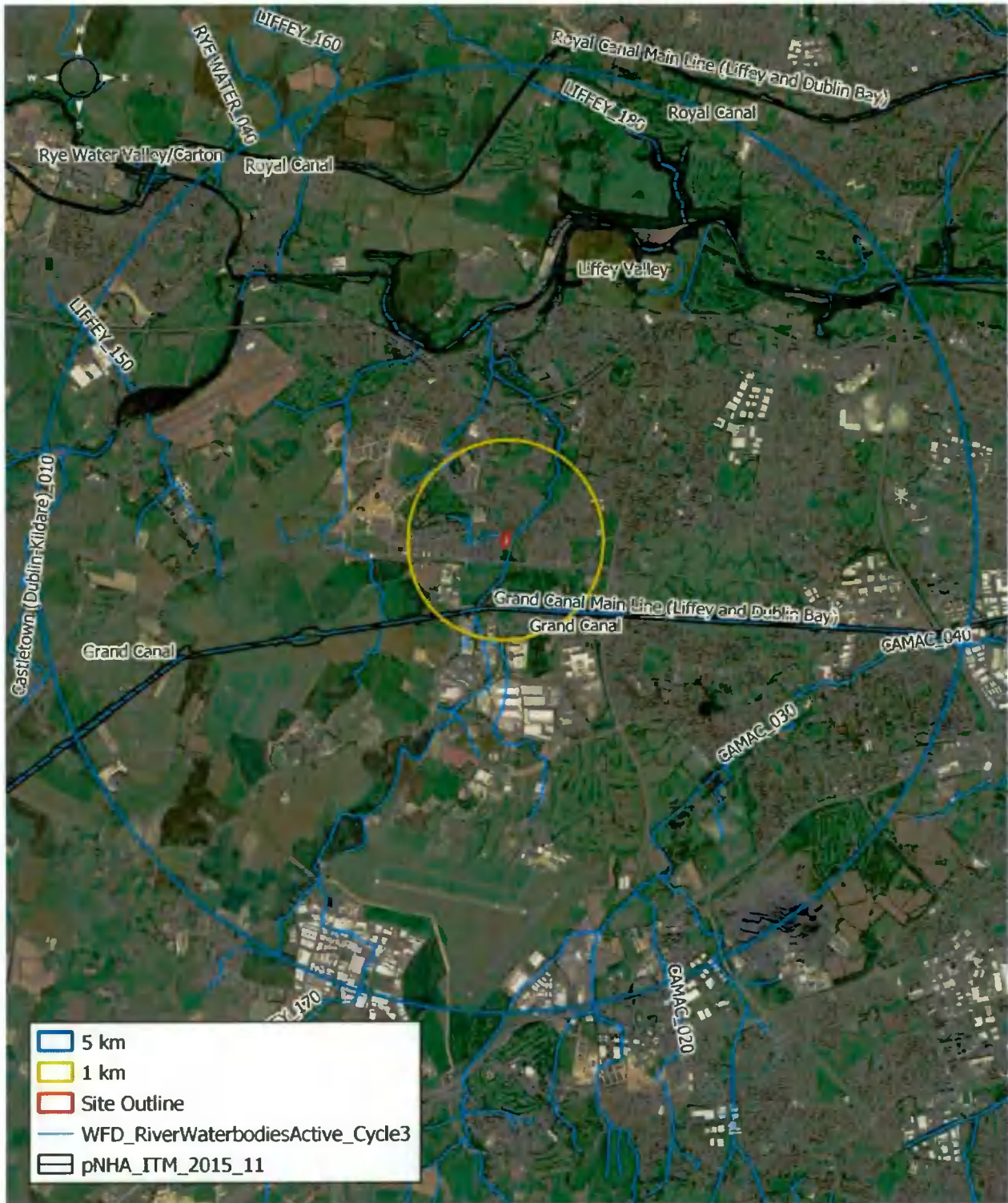
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Figure 8. pNHAs and watercourses within 1km.





0 1 2 3 4 5 km

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Figure 9. Waterbodies and pNHAs within 5 km of the development

## Habitats and Species

A Fossitt habitat map is seen in Figure 10. Species encountered on site are listed for each habitat.



Figure 10. Fossitt Habitat Map



#### **BL3- Built Land**

As seen in figure 10 the majority of the proposed development site that consists of built land. This brownfield site consists of roads and hard standing areas that have been previously built and there are no existing dwellings on site. This area is relatively intact but is becoming colonised with opportunistic species such as butterfly bush (*Buddleja* sp. )



#### **GS2-Dry Meadows and Grassy Verges**

This small area of grassland were dominated by thistles (*Cirsium arvense*, *C. vulgare*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum* spp.), docks (*Rumex* spp.), common vetch (*Vicia sativa*), daisy (*Bellis perennis*), clover (*Trifolium repens*), plantains (*Plantago* spp.), Cow Parsley (*Anthriscus sylvestris*), nettle (*Urtica dioica*) Hawthorn (*Crataegus monogyna*)(saplings), Dog-rose (*Rosa canina*) and Bramble (*Rubus fruticosus* agg.).



**WS1- Scrub/WS3 Ornamental/Non-native Scrub**

What initially appears initially as a linear feature around the site (e.g. hedgerow or treeline) has been classed as WS1- Scrub/WS3 Ornamental/Non-native Scrub. This is primarily as it contains primarily large specimens of ornamental species mixed with some native species. This habitat may have become an over grown (BC4) Flower beds and border, due to a lack of maintenance. The north of the site is dominated by Cherry Laurel (*Prunus laurocerasus*) which has a very sparse understory. It should be noted that it appears that based on historic mapping that a watercourse is located at the north and eastern perimeter of the site. No such watercourse is present. Other species within this habitat include elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), gorse (*Ulex europaeus*), holly (*Ilex aquifolium*), dog-rose (*Rosa canina*), bramble (*Rubus fruticosus agg.*) ivy (*Hedera helix*), honeysuckle (*Lonicera periclymenum*), hedge bindweed (*Calystegia sepium*), cleavers (*Galium aparine*), lords and ladies (*Arum maculatum*), fuchsia (*Fuchsia magellanica*), butterfly-bush (*Buddleja davidii*), Cherry blossom (*Prunus sp.*), snowberry (*Symphoricarpos albus*), cotoneaster (*Cotoneaster spp.*), willow (*Salix sp.*) and ornamental conifer. A small area of recolonising bare ground is located on the eastern edge of hardstanding area beside the scrub. Species in this area included nettle (*Urtica dioica*), dandelion (*Taraxacum spp.*), Pineappleweed (*Matricaria discoidea*), Cat's-ear (*Hypochoeris radicata*), Shepherd's-purse (*Capsella bursa-pastoris*), Butterfly-bush (*Buddleja davidii*), Ivy (*Hedera helix*) and bramble(*Rubus fruticosus agg.*) and ground-ivy (*Glechoma hederacea*).



#### **FW4- Drainage Ditches**

As outlined above there are drainage ditches to the north and east of the site. These are beneath a dense canopy and are of poor biodiversity value. To the south of the site is a larger drainage ditch with similar species outlines in the GS2-Dry Meadows and Grassy Verges habitat above. No water was noted in any of the ditches on site.

#### **Evaluation of Habitats**

No rare or protected habitats were noted.

#### **Plant Species**

The plant species encountered at the various locations on site are detailed above. No rare or plant species of conservation value were noted during the field assessment. Records of rare and threatened species from NPWS were examined. No rare or threatened plant species were recorded in the vicinity of the proposed site. No invasive species e.g. Japanese knotweed, giant rhubarb, Himalayan balsam or giant hogweed were noted on site.

#### **Mammals**

No signs of terrestrial mammals of conservation importance were noted on site..

#### **Amphibians**

The common frog (*Rana temporaria*) was not observed on site. No standing water was noted on site. The drainage ditches may form a seasonal frog habitat.

#### **Bats**

A bat survey was carried out. As outlined in the bat assessment report "Five species of bat were recorded foraging and commuting within the proposed development area. No bats roosts were recorded. For a small survey area, this is a high level of bat biodiversity but this reflects that fact that the proposed development site is located adjacent to Griffeen Valley Park.

Three of the bat species recorded were common pipistrelle, Leisler's bat and soprano pipistrelle and these are the three most common bat species in Ireland (Roche et al., 2014). The remaining two bat species are considered to be less common but widespread. Overall a low level of bat activity was recorded within and adjacent to the proposed development area. A low-medium level of bat activity was recorded within the adjacent park and this reflects the wider array of bat habitats available for local bat populations.

Two trees were identified as have a Potential Bat Roosts (PBR) value but not bats were recorded roosting within." "There is a Low level of bat activity within the proposed development area. The potential impact of the proposed development is, overall, considered to have a scale of impact of Minor-Moderate Negative on named bat species." A derogation licence is not required. However, mitigation is proposed.

## Birds

No rare or bird species of conservation value were noted during the field assessment. The following bird species were noted on site:

**Table 6:** Bird Species noted in the vicinity of the proposed development.

Common Name	Scientific Name
Wren	<i>Troglodytes troglodytes</i>
Robin	<i>Erithacus rubecula</i>
Blackbird	<i>Turdus merula</i>

The proposed works would be on a brownfield site with build land as a primary habitat. This site would not be of importance to the qualifying interests of nearby designated sites.

## Assessment of Biodiversity Records

The National Biodiversity Data Centre's online viewer was consulted in order to determine the extent of biodiversity and/or species of interest in the area. First, an assessment of the site specific area was carried out by generating a report based on the site outline, however it recorded no species of interest in the site area. Following this a 2 km<sup>2</sup> grid, reference number O03G (Figure 11), based on the Ordnance Survey Ireland (OSI) Irish Grid classification system was assessed. Table 7 provides a list of all species recorded in the species report generated for this grid that possess a specific designation, such as Invasive Species or Protected Species.

*Table 7. Table of species, NBDC*

Date of Record	Species Name	Designation
16/09/2017	Barn Swallow ( <i>Hirundo rustica</i> )	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Coot ( <i>Fulica atra</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Kingfisher ( <i>Alcedo atthis</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Redshank ( <i>Tringa totanus</i> )	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
16/09/2017	Common Starling ( <i>Sturnus vulgaris</i> )	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Wood Pigeon ( <i>Columba palumbus</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
31/12/2011	House Martin ( <i>Delichon urbicum</i> )	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species:

		Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	House Sparrow ( <i>Passer domesticus</i> )	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Little Egret ( <i>Egretta garzetta</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
31/12/2011	Mallard ( <i>Anas platyrhynchos</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
16/09/2017	Peregrine Falcon ( <i>Falco peregrinus</i> )	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
16/09/2017	Black Currant ( <i>Ribes nigrum</i> )	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
06/05/1977	Andrena ( <i>Melandrena nigroaenea</i> )	Threatened Species: Vulnerable
06/05/1977	Trimmer's Mining Bee ( <i>Andrena (Hoplodrena) trimmerana</i> )	Threatened Species: Critically Endangered
26/03/2003	Globular Pea Mussel ( <i>Pisidium hibernicum</i> )	Threatened Species: Near threatened
26/03/2003	Jenkins' Spire Snail ( <i>Potamopyrgus antipodarum</i> )	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
26/03/2003	<i>Pisidium pulchellum</i>	Threatened Species: Endangered
31/08/2009	Brown Long-eared Bat ( <i>Plecotus auritus</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
14/08/2012	Brown Rat ( <i>Rattus norvegicus</i> )	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
26/08/2014	Daubenton's Bat ( <i>Myotis daubentonii</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
18/09/2015	Eastern Grey Squirrel ( <i>Sciurus carolinensis</i> )	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> EU Regulation No. 1143/2014    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
14/08/2012	Eurasian Pygmy Shrew ( <i>Sorex minutus</i> )	Protected Species: Wildlife Acts
04/05/1980	European Otter ( <i>Lutra lutra</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
06/02/2014	European Rabbit ( <i>Oryctolagus cuniculus</i> )	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
31/08/2009	Lesser Noctule ( <i>Nyctalus leisleri</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
31/08/2009	Pipistrelle ( <i>Pipistrellus pipistrellus sensu lato</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
31/08/2009	Soprano Pipistrelle ( <i>Pipistrellus pygmaeus</i> )	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts



Figure 7. Species survey grid reference 003G, NBDC

An assessment of files received from the NPWS (Code No. 2020\_185) which contain records of rare and protected species and grid references for sightings of these species was carried out as part of this EclA for the proposed development at Hayden's Lane. There are no recorded sightings within the site itself, however the following table (Table 8) provides a summary of the species identified, the year of identification/sample, survey name and data ID of sightings locations in the areas surrounding the proposed development.

Table 6. Species survey, NPWS

Data ID.	Species	Survey Name	Sample Year
9067	Common Frog ( <i>Rana temporaria</i> )	National Frog Survey 2011	2011
25173	Hairy St John's-wort ( <i>Hypericum hirsutum</i> )	Miscellaneous NPWS Records	2005
25175	Green Figwort ( <i>Scrophularia umbrosa</i> )	Miscellaneous NPWS Records	2005



## Analysis of the Potential Impacts

The proposed development will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations and the construction of roads, dwellings and associated services. The project also proposes to undertake works within a drainage ditch, adjacent to a stream which has an indirect pathway to the River Liffey. Foul and surface water systems for the site will be separate and are designed in accordance with the recommendations of the Greater Dublin Strategic Drainage Study (GSDSDS).

### Construction Phase

In the absence of mitigation, the construction of the proposed development, would impact on the existing ecology of the site and the surrounding area. These construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development including the works proximate to and within the drainage ditch. There is potential for the project to impact on the Griffeen Stream in the absence of control measures.

Construction phase mitigation measures are required on site particularly as the hard standing area is to be removed, significant reprofiling of the site is proposed which will remove existing terrestrial habitats and can lead to silt laden and contaminated runoff.

### Designated Conservation sites within 15km

The nearest designated conservation site is the Grand Canal pNHA which is 640 m from the proposed development site (Figure 9). There is no direct or indirect hydrological pathway to this conservation site. There is, however, a direct hydrological pathway to the Liffey Valley pNHA located 2 km from the proposed development site. This proposed National Heritage Area is hydrologically connected to the proposed development site via a drainage ditch running alongside the proposed development site that feeds into the River Liffey (Figure). Further, there is an indirect hydrological pathway to areas of international and national interest located downstream in Dublin Bay. These include South Dublin Bay and River Tolka Estuary SPA and North Dublin Bay pNHA. However, given the substantial distance between the proposed development site and these conservation sites (14.6 km and 14.4 km respectively), any silt or pollutants produced in either construction or operational phases of development will settle, be dispersed, or diluted prior to reaching the marine environment and will not have a significant impact on these conservation sites. It should be noted that the proposed project will have to comply with the Water Pollution Acts and will have to prevent impact on the Griffeen stream proximate to the site. These measures are not necessary for the protection of Natura 2000 sites.

Having taken into consideration the effluent discharge from the proposed development works, the scale of the development, the distance between the proposed development site to designated conservation sites, lack of direct hydrological pathway or biodiversity corridor link to conservation sites and the dilution effect with other effluent, it is concluded that this development would not give rise to any significant effect on designated Natura 2000 sites. Compliance with Water Pollution Acts is required to prevent local biodiversity impacts on the Griffeen Stream and Liffey Valley pNHA.

*Impacts: Neutral/Imperceptible/Temporary/localised/unlikely. Compliance with water pollution Acts required for protection of Liffey Valley pNHA*

### Terrestrial Ecology

During the site visits no flora, bird or terrestrial mammal species of conservation importance were recorded on site or in NPWS or NBDC records.

Common mammalian species. Loss of habitat and habitat fragmentation may affect some common mammalian species and there is expected to be mortality during construction.

Amphibians and reptiles. Frogs and reptiles were not observed on site. Frogspawn was noted on site. The proposed development will reprofile the area in the vicinity of the drainage ditch. Some mortality may occur during construction. Ecological supervision and pre-construction surveys are required for frogs on site.

**Bat Fauna.** As outlined in the bat assessment report *“Overall in consideration of the level of bat activity and presence of suitable bat habitats in the immediate area, the potential impact quality and significance of the proposed development is considered to be Negative but Slight”*. Mitigation measures are proposed.

#### **Operational Phase**

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS and discharge to the drainage ditch. The biodiversity value of the site would be expected to improve as the landscaping matures. It would be expected that the ecological impacts in the long term would be positive once landscaping has established.

#### **Designated Conservation sites within 15km**

The development must comply with County Council drainage requirements and the Water Pollution Acts. Measures will be in place to prevent downstream impacts. No significant impacts on designated sites are likely during operation.

#### **Terrestrial Ecology**

As the landscaping elements improve with maturity it would be expected that the biodiversity value of the site to birds and flora would also increase.

#### **Indirect Impacts**

The construction of new drainage networks will have to comply with SUDS requirements and as a result would have negligible/slightly positive impact on habitats and species surrounding proposed development site. No indirect negative impacts are likely.

#### **Terrestrial and avian Ecology**

The impact of the development during the demolition and construction phases will be a loss of existing habitats and species. During the site visits no flora, bird or terrestrial mammal species of conservation importance were recorded on site or in NPWS or NBDC records. Bats were noted on site (Appendix I).

Loss of habitat and habitat fragmentation may affect some common mammalian species and there is expected to be mortality during construction. Small mammals such as long-tailed field mouse, house mouse, brown rat, and protected species such as pygmy shrew and hedgehog may be directly impacted. There are limited ways to protect such species and these species are common in Ireland.

In relation to amphibians and reptiles, frogs and reptiles were not observed on site. However, it is likely that frogs are present on site. No invasive species were noted on site.

Impacts: Neutral/ Negligible / Short-term, localised, unlikely.

#### **Bat Fauna**

As outlined in the bat survey assessment *“the operational impacts of the proposed development will likely be long-term (as per the duration of the operation of the proposed development).”* Mitigation measures are proposed.

Impacts: Minor/Minor to Moderate /localised/permanent.

## Avoidance and Remedial Measures

### *Mitigation by Avoidance*

Direct negative impacts upon the existing vegetation within the site are not regarded as being significant due to the absence of species of conservation importance and as a result do not require mitigation. However, a preconstruction bat assessment will be carried out and if required an appropriate derogation licence acquired from NPWS.

Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will be followed e.g. do not remove trees or shrubs during the nesting season (1<sup>st</sup> March to 31<sup>st</sup> August).

### *Mitigation by Remedy*

Materials excavated will need to be exported off-site. Dewatering of excavations may be necessary particularly. Appropriate monitoring of groundwater levels during site works will be undertaken. In order to prevent "downstream impacts" appropriate mitigation measures will be developed including filtering of excess water for suspended solids prior to discharge, if required. Compliance with Water Pollution Acts are deemed to be of paramount importance. Silt and pollution control procedures will be in place and ensure that the works will be carried out with appropriate ecological supervision and that there are no downstream impacts from onsite drainage during works.

### **Mitigation for Birds**

Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds needs to be followed e.g. do not remove trees or shrubs during the nesting season (1<sup>st</sup> March to 31<sup>st</sup> August). Re-planting will be done sympathetically with the aim of increasing local biodiversity.

### **Mitigation for bats**

As outlined in the bat survey "the following mitigation measures are recommended to be fully implemented. Phase 2 Tree Survey & Tree Felling

Minimise the removal of mature trees, where possible. Retain the two trees identified as PBRs and incorporate into landscape plans.

If the two trees identified as PBRs are required to be felled, then a 2nd assessment will be undertaken prior to tree removal. This will be undertaken in consultation with the tree surgeons.

Where possible, trees, which are to be removed, should be felled on mild days during the autumn months of September, October or November or Spring months of February and March (felling during the spring or autumn months avoids the periods when the bats are most active).

An assessment of trees according to their PBR value determines the methodology of felling. Trees with PBR Category High and Moderate are suitable for roosting bats and require particular procedures prior to felling. The trees identified within the survey area are PBR Category Moderate. The procedure to fell these is as follows:

- Category 2 (Moderate): Trees with roosting features (dead wood, tree holes etc.) should be checked prior to felling. It is recommended that they are physically checked (using an endoscope and high power torch) or a dusk/dawn surveys are completed to determine if bats are roosting within. A tree felling plan will be required in consultation with the tree surgeons. A bat box scheme will need to be erected prior to felling and in consultation with the bat specialist. Any trees showing crevices, hollows, etc., should be removed while a bat specialist is present to deal with any bats found. Such animals should be retained in a box until dusk and released on-site. Large mature trees will be felled carefully, essentially by gradual dismantling by tree surgeons, under supervision of a bat specialist. Care will be taken when removing branches as removal of loads may cause cracks or crevices to close, crushing any animals within.

- A bat box scheme is required to be erected prior to any tree felling. The number of bat boxes will be determined by the category and number of trees proposed to be felled. In principle this will follow the following:

For every three Category 2 trees (i.e. Moderate) to be felled – one bat box is required

#### 5.1.2 Bat Box Scheme

The total number of bat boxes required to mitigate for the tree felling (n=19 PBRs) and for general conservation of local bat populations:

- 4 summer bat boxes (Schwegler Woodcrete 1FF bat box) to be erected within Griffeen Valley Park under consultation with the park's management team and local authority.

Bat boxes scheme be sited carefully and this will be undertaken by a bat specialist. Bat boxes will be erected prior to construction works. The bat specialist will erect the bat boxes with assistance from the contractor.

Some general points that will be follow include:

- Straight limb trees (or telegraph pole) with no crowding branches or other obstructions for at least 1 metre above and below position of bat box.
- Diameter of tree should be wide and strong enough to hold the required number of boxes.
- Locate bat boxes in areas where bats are known to forage or adjacent to suitable foraging areas. Locations should be sheltered from prevailing winds.
- Bat boxes should be erected at a height of 4-5 metres to reduce the potential of vandalism and predation of resident bats.
- Locations for bat boxes should be selected to ensure that the lighting plan for the proposed site does not impact on the bat boxes.

#### Lighting Plan

This element of the proposed planning application is important aspect in relation to local bat populations. All European bat species, including Irish bat species, are nocturnal. They usually hide in roosts during the daytime, while fly to feeding areas or drinking sites using commuting routes during the night. Annually bats will hibernate in the winter, swarm in the autumn and give birth in the summer months. In all aspects of the bat lifestyle, Artificial Light at Night (ALAN) may significantly change their natural behaviour in relation to roosting, commuting and feeding. While bats are naturally exposed only to very low lighting levels produced by moonlight, starlight and low intensity twilight, light levels greater than natural light levels can impact on the lifestyle of bats.

Rydell (2006) divides bats into four categories in terms of their characteristic behaviours at street lamps. The four categories are based on bat size, wing morphology and echolocation call characteristics which were highlighted by Norberg and Rayner (1987) to determine flight speed, manoeuvrability, and prey detection capabilities of bats. Rydell (2006) stated that the large, fast flying bats, which are confined to open airspace, fly high over lit areas and are rarely observed near ground level. None of these bat species are found in Ireland. The second category are the medium-sized fast flying species, including the *Nyctalus* species, which patrol the street well above the lights and can be seen occasionally as they dive for prey into the light cone. This group includes the Leisler's bat, which is found in Ireland. Rydell's third category describes the small but fast flying bats that are manoeuvrable enough to forage around light posts or under the lights, and includes the small *Pipistrellus* species recorded within the survey area. The fourth category includes broad-winged slow flyers, most of which are seldom or never observed at lights. Slow flying bat species may be more vulnerable to predation by diurnal birds of prey and this may restrict their exploitation of insects around artificially illuminated areas. There are also the concerns that some bat species are more light sensitive and therefore actively avoid lit up areas. This is particularly relevant for the four remaining bat species recorded within the survey area. Therefore from this, we can categorise the suite of Irish bats species as follows (please note that the sensitivity category is the author's description):

Bats are light sensitive bats species, hence their nocturnal activities. Of the three bat species recorded foraging and commuting within the survey area, two species are Semi-tolerant and the third species is Tolerant. However as artificial lighting is a barrier to nocturnal wildlife, strict lighting guidelines are required to reduce the potential impact of the proposed development on local bat populations.

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select.

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

- o All luminaires used will lack UV/IR elements to reduce impact.
- o LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- o A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- o Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- o Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- o Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- o Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- o Any external security lighting will be set on motion-sensors and short (1min) timers.
- o 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.

The lighting plan for the proposed development should strictly follow the above guidelines and these should be strictly implemented during construction and operation phase of the proposed development.

#### Landscaping plan

It is important to ensure that there is boundary landscape planting to provide suitable bat commuting and foraging habitat. It is also recommended that the trees identified as PBRs are retained as part of the proposed landscape master plan.

Any planting should include native deciduous trees and shrubs.

In general, the following should also be followed:

Any semi-natural habitats will be protected from potential damage construction phase and post-construction.

- The use of chemicals (weed killers, etc.) will be kept to a minimum within the development zone and will not be used in near woodlands.

#### 5.1.5 Monitoring

Monitoring is recommended post-construction works. This monitoring should involve the following aspects:

- Inspection of bat boxes within one year of erection of bat box scheme/rocket box. Register bat box scheme with Bat Conservation Ireland. This should be undertaken for a minimum of 2 years.
- Monitoring of any bat mitigation measures. All mitigation measures should be checked to determine that they were successful. A full summer bat survey is recommended post-works."

#### Mitigation for downstream impacts

Appropriate monitoring of groundwater levels during site works will be undertaken. In order to prevent "downstream impacts" appropriate mitigation measures will be developed including filtering of excess water for suspended solids prior to discharge, if required. If soil is to be removed from site there is potential for runoff with suspended material entering local watercourses from the surrounding roads. Sufficient onsite cleaning of vehicles prior to leaving the site will be carried out, particularly during groundworks.

### Indirect Impacts

Soil and material removed from the site, if required, will have to comply with the policies of the County Council and would need to be disposed of in an appropriate manner. Additional measures will be required be taken to prevent movement of dust and surface water into adjacent habitats during demolition. The construction of new drainage networks will have to comply with SUDS and CC requirements and as a result would have negligible impact on habitats and species surrounding proposed development site. No indirect impacts are likely.

### Cumulative Impacts

There are several proposed developments located in the area immediately surrounding the subject site. The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Map Viewer' portal:

Planning Ref.	Address	Proposal
SD15A/0084/EP	'The Bungalow', Hayden's Lane, Lucan, Co. Dublin.	Demolition of an existing single storey house and garage (145.30sq.m) and the erection of 6 no. 2 storey houses with converted attics (140sq.m each) in 2 terraced blocks of 3 houses, with dormer windows to the front, 'Velux' windows to the rear and associated site development and drainage works including a new vehicular access for each house fronting onto the public roadway and new front boundary wall and brick piers.
SD15A/0301	Hayden's Lane, Lucan, Co. Dublin.	Demolition of existing 2 storey industrial/factory building (2,691sq.m) and construction of residential nursing home on lands at the former factory building, Hayden's Lane. The development will comprise 124 bedrooms (147 bed spaces) with associated ancillary/common facilities and office/administration areas. The new building will range in height from 1 storey to part 2 storey and part 3 storey. The development will also include car parking, site works, landscaping, retention of and modification to one existing access and removal of one secondary access plus boundary treatment, upgrade to footpath along Hayden's Lane.
SD14A/0271	Hayden's Lane, Lucan, Co. Dublin	Demolition of the two storey industrial/factory building (2,691sq.m) and the construction of a Residential Nursing Home; the development will comprise a 120 bedroom residential nursing home ranging in height from 1 storey to part 3 storey with associated ancillary/common facilities and office/administration areas; the development also provides for the utilisation of existing car parking and 1 existing vehicular access (and removal of existing second access), landscaping, boundary treatments, upgrades to existing footpath along Hayden's Lane and all associated site development and engineering works.
SD10A/0331/EP	Lucan Newlands Road, Dublin 22.	A lawn cemetery comprising 3,461 plots; a single storey management building (93sq.m.); a toilet building (23sq.m.); a storage building (68sq.m.); columbarium wall (2m in height); 40 car parking spaces (includes 3 disabled parking spaces); 1 new vehicular entrance off Lucan Newlands Road and vehicular pathways, realignment and partial culverting of underground drainage pipe to enhance the existing watercourse; provision of a water feature and contemplative area; landscaping works including boundary treatment; all other necessary site development, excavation works and associated development on site south of new Esker burial grounds close to Cherbury Park and abutting the N4 Lucan By-Pass and Vesey Park, Lucan.

Based on a review of the planning application viewer there are no developments of significance proposed in proximity of the proposed development. Given this, it is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development alone or combination with other projects.

**No significant cumulative impacts are likely in relation to the proposed development.**

#### **Residual Impacts and Conclusion**

No significant ecological impacts would be likely outside the immediate vicinity of the proposed development. Impacts in the vicinity of the housing development, would be considerable due to the removal of the majority existing habitats. But, due to the fact that the site is poor in species diversity and no species of conservation importance were found these impacts would be limited, localised and reversible depending on the planting regime. Mitigation is required in relation to downstream impacts, birds and bats. Following the implementation of the mitigation measures no significant environmental impacts are likely in relation to the construction or operation of the proposed development.

