

- Ensure all site staff shall have current 'safe pass' cards.
- Install adequate site hoarding to the site boundary.
- Maintain site security staff at all times.
- Separate pedestrian access from construction at the main site entrance off the Naas Road and provide a safe walkway for pedestrians along the main access road into the site.
- Ensure restricted access is maintained to the works.

The construction works will be hoarded off or fenced off from the public at all times. A 2.4 m minimum high plywood painted timber hoarding will be provided along the long-term boundaries at the entrance, and at other areas around the site where the perimeter fence/wall is not deemed sufficient for safety and security reasons. Heras type fencing will be used on short term site boundaries where appropriate to suit the works.

Controlled access points to the site, in the form of gates or doors / turnstiles, will be kept locked any time that these areas are not monitored (e.g., outside working hours). During working hours, a gates person will control traffic movements and deliveries at any active site access to ensure safe access and egress to and from site onto the public roads.

A Traffic Management Plan will be prepared by the contractor and agreed with Dublin City Council's Transportation Department and An Garda Siochana, to mitigate any impact of construction on the surrounding road network (Further details are provided in Chapter 13: Material Assets (Transportation) of this EIAR). A Preliminary Construction Traffic Management Plan prepared by Waterman Moylan accompanies each planning application.

As detailed in Chapter 7: Land, Soils & Geology of this EIAR, there is no evidence of a significant soil hazard on site or requirement for dewatering of groundwater.

Chapter 8: Water of this EIAR states that there is no potential for flooding and the proposed design incorporates attenuation measures to ensure development will not result in increased flooding off site. In order to mitigate the potential dust-related health impacts during the construction phase, a dust minimisation plan will be formulated. This plan will draw upon best practice mitigation measures from Ireland, the UK and the USA to ensure the highest level of mitigation possible. Further detail is provided in Chapter 9: Climate (Air Quality & Climate Change) of this EIAR.

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 (2009) Parts 1 and 2 will be complied with. Further details are provided in Chapter 11: Air (Noise & Vibration).

5.6.1.2 Operational Stage

In light of the fact that any of the impacts associated with the operation of the Dublin Central Masterplan on Human Health and Population are either not significant or positive, no further mitigation measures are required. Notwithstanding the lack of need for mitigation measures, Section 11.6.2 of Chapter 11: Air (Noise & Vibration) of this EIAR outlines a number of noise mitigation measures which will further reduce the likely noise impacts arising from entertainment noise and internal building façade noise.

5.6.2 Proposed Development Site 3, 4 & 5

5.6.2.1 Construction Stage

The mitigation measures of the Proposed Development (Sites 3, 4 and 5) are the same as the mitigation measures of the Dublin Central Masterplan described in Section 5.6.1.1.

5.6.2.2 Operational Stage

The mitigation measures of the Proposed Development (Sites 3, 4 and 5) are the same as the mitigation measures of the Dublin Central Masterplan described in Section 5.6.1.2.

5.7 RESIDUAL IMPACT

5.7.1 Dublin Central Masterplan

5.7.1.1 Construction Stage

5.7.1.1.1 Residual Impacts on Business and Residences

Taking into account the mitigation measures outlined in Section 5.6.6.1 it is predicted that there will be no likely significant effect with regard to the construction phase on business and residences.

5.7.1.1.2 Residual Impacts on Human Health from Air Quality

The greatest residual impact on air quality during the demolition and construction phase of the Dublin Central Masterplan is from construction dust emissions and the potential for nuisance dust. Taking into account the mitigation measures in Section 9.4.3 (and Appendix 9.2 'Dust Minimisation Plan' of Chapter 9: Climate (Air Quality & Climate Change) this EIAR, there will be no residual impact to human health arising from air quality impact.

5.7.1.1.3 Residual Impacts on Human Health from Noise & Vibration

Taking into account the mitigation measures and design recommendations outlined in Section 11.6.1 of Chapter 11: Air (Noise & Vibration) of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.1.4 Residual Impacts on Local Amenities and Tourism

It is predicted that there will be no likely significant effect of the residual impacts of the construction of the Dublin Central Masterplan on material assets.

5.7.1.1.5 Residual Impacts from Additional Traffic

Taking into account mitigation measures there will be no residual impact to human health arising from additional traffic.

5.7.1.1.6 Unplanned Events/Impacts on Health and Safety

Taking into account the mitigation measures outlined in Section 5.2.6 it is predicted that there will be no likely significant effect arising from the predicted residual impacts with regard to the construction phase for unplanned events and human health and safety.

5.7.1.2 Operational Stage

5.7.1.2.1 Residual Impacts on Businesses and Residences

Taking into account the mitigation measures outlined in Section 5.2.6 the predicted residual impacts with regard to the operational phase on business and residences is concluded to be **positive and significant**.

5.7.1.2.2 Residual Impacts on Human Health from Air Quality

It is predicted that there will be no likely significant effect of the residual impact of air quality on Human Health.

5.7.1.2.3 Residual Impacts on Human Health from Noise & Vibration

Taking into account the mitigation measures and design recommendations outlined in section 11.6.2 of Chapter 11: Air (Noise & Vibration). of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.2.4 Residual Impacts on Local Amenities and Tourism

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on local amenities and tourism.

5.7.1.2.5 Residual Impacts on Material Assets

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on material assets.

5.7.1.2.6 Residual Impacts from Additional Traffic

Taking into account the mitigation measures and design recommendations outlined in section 13.6.2 of Chapter 13: Material Assets (Transportation) of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.2.7 Unplanned Events/Impacts on Health and Safety

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on unplanned events and human health and safety.

5.7.1.3 Worst Case Effect

The precautionary principle has been applied throughout this assessment.

5.7.2 Proposed Development Site 3, 4 & 5

5.7.2.1 Construction Stage

The residual impacts of the Proposed Development (Sites 3, 4 and 5) are the same as the remedial impacts of the Dublin Central Masterplan described in Section 5.7.1.1

5.7.2.2 Operational Stage

The residual impacts of the Proposed Development (Sites 3, 4 and 5) are the same as the remedial impacts of the Dublin Central Masterplan described in Section 5.7.1.2

5.7.2.3 Worst Case Impact

The precautionary principle has been applied throughout this assessment.

5.7.3 Cumulative

5.7.3.1 Construction Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessments that have contributed to section 5.5 of this EIAR.

5.7.3.2 Operational Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessment that have contributed to section 5.5 of this EIAR.

5.8 MONITORING

5.8.1 Dublin Central Masterplan

5.8.1.1 Construction Stage

A monitoring regime will be put in place to protect neighbours & neighbouring properties with a full and detailed vibration, noise, dust, and groundwater monitoring regime put in place for the duration of the works.

The Contractor will be obligated to work in compliance with the CMP (Construction Management Plan) which is submitted as part of this planning application. The Contractor will appoint a competent person to be referred to as the Surveying, Instrumentation and Monitoring Subcontractor (MSC) and together with them will prepare and maintain and the vibration, noise, dust and groundwater monitoring plan.

The MSC will be responsible for preparing or organizing the preparation of condition surveys of surrounding buildings, walls, hardstanding area etc. prior to the carrying out of any works on site. The condition surveys shall be carried out to a level of detail, suitable to the nature and extent of conditions encountered in order to obtain an understanding of the general structural condition of the property/structure and/or external environments.

Additional monitoring requirements are set out in Chapters 7: Land, Soils & Geology, Chapter 8: Water, Chapters 9: Climate (Air Quality & Climate Change), Chapter 10: Climate (Sunlight & Daylight), Chapter 11: Air (Noise & Vibration) and 13: Material Assets (Transportation) of this EIAR.

5.8.1.2 Operational Stage

5.8.1.2.1 No additional monitoring other than that which is set out in Chapters 7: Land, Soils & Geology, Chapter 8: Water, Chapters 9: Climate (Air Quality & Climate Change), Chapter 10: Climate (Sunlight & Daylight), Chapter 11: Air (Noise & Vibration) and 13: Material Assets (Transportation) of this EIAR required.

5.8.2 Proposed Development Site 3, 4 & 5

5.8.2.1 Construction Stage

The monitoring requirements are the same as those of the Dublin Central Masterplan described in Section 5.8.1.1.

5.8.2.2 Operational Stage

The monitoring requirements are the same as those of the Dublin Central Masterplan described in Section 5.8.1.2.

5.9 REINSTATEMENT

This is not applicable to this chapter.

5.10 DIFFICULTIES ENCOUNTERED

No difficulties were encountered during the drafting of this chapter.

6 BIODIVERSITY

6.1 INTRODUCTION

The Biodiversity Chapter of the Environmental Impact Assessment Report (EIAR) was authored by Siofra Quigley of Scott Cawley Ltd.

It provides an assessment of the potential ecological effects of the development of Dublin Central. Dublin Central is underpinned by a Masterplan (refer to Figure 6.1 below indicating the Dublin Central Masterplan area) which will be assessed as part of the cumulative assessment within this Chapter. The Proposed Development which is the subject of these 3no. planning applications is Site 3, Site 4 and Site 5. A detailed description of the Proposed Development is included in Chapter 3: Description of Proposed Development.

The Dublin Central Masterplan site is located in the 10km Grid Square O13 at O 15785 34695 in Dublin City centre, bounded by O'Connell Street Upper to the east, Parnell Street to the north, Henry Street to the south and Moore Street to the west, with Moore Lane traversing the middle of the site in a north / south direction. The site is urban in nature, composed of hard standing, buildings, and artificial surfaces. The surrounding habitat of inner-city Dublin is largely similar to the Proposed Development site, with retail units, hotels, and transport infrastructure in the immediate environs.

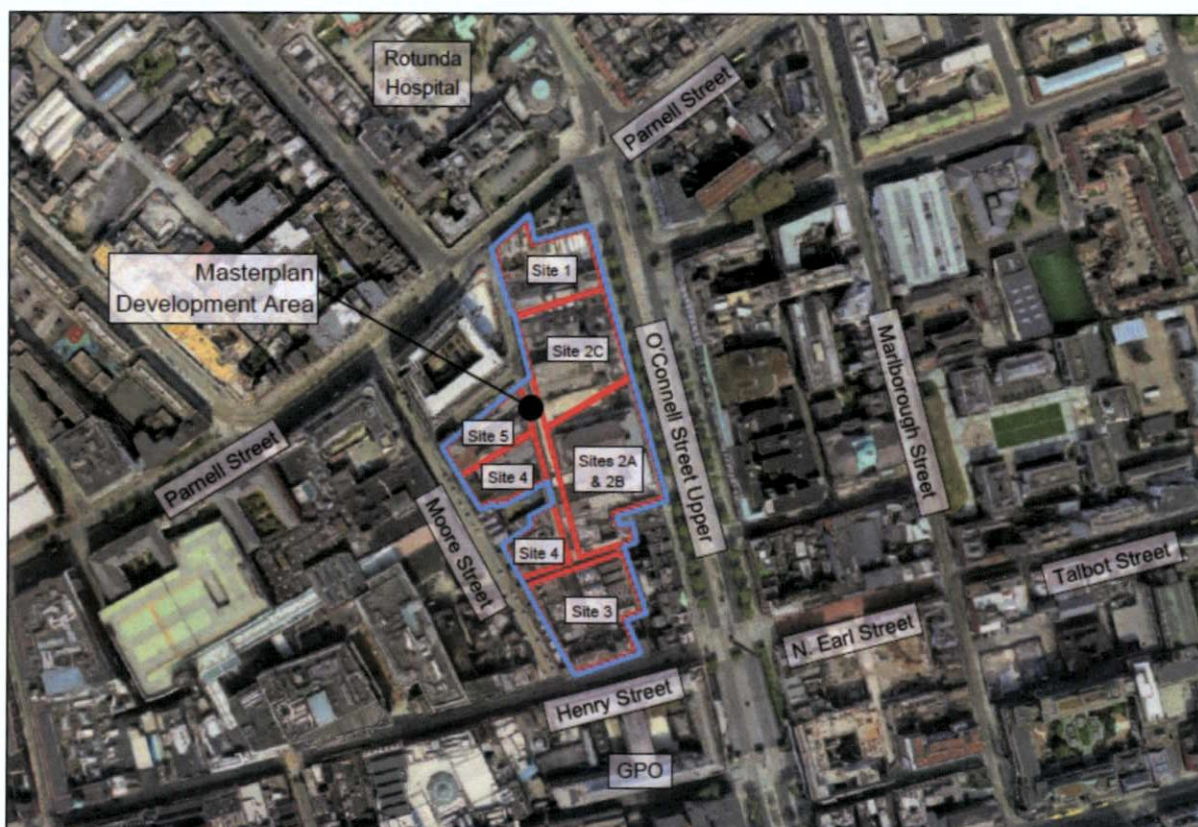


Figure 6.1: Site Location Plan¹ (Source: Google Maps, 2021).

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The purpose of the chapter is to :-

- Establish and evaluate the baseline ecological environment, as relevant to the Dublin Central Dublin Central Masterplan and Proposed Development (i.e. Site 3, 4 & 5).

¹ Flood Risk Assessment, Dublin Central Mixed Use Development, O'Connell Street Upper (April 2021). Waterman Moylan Consulting Engineers Limited.

- Identify, describe and assess all potentially significant ecological effects associated with the Dublin Central Dublin Central Masterplan and Proposed Development (i.e. Site 3, 4 & 5).
- Set out the mitigation measures required to address any potentially significant ecological effects and ensure compliance with relevant nature conservation legislation.
- Provide an assessment of the significance of any residual ecological effects.
- Identify any appropriate compensation, enhancement or post-construction monitoring requirements.

An Appropriate Assessment (AA) Screening was prepared to be submitted with the planning applications. It contains information required for the competent authority (in this instance Dublin City Council and / or An Bord Pleanála) to undertake a screening for AA. It provides information on and assesses the potential for the Proposed Development to impact on the Natura 2000 network.

6.1.1 Planning, Policy and Legislation

The collation of ecological baseline data and the preparation of this assessment has had regard to the following legislation and policy documents. This is not an exhaustive list but the most relevant legislative and policy basis for the purposes of preparing this chapter.

The following international legislation is relevant to the Proposed Development: -

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora; hereafter, referred to as the 'Habitats Directive'. The Habitats Directive is the legislation under which the Natura 2000 network was established and Special Areas of Conservation (SACs) are designated for the protection of natural habitat types listed in Annex I, and habitats of the species listed in Annex II, of that directive.
- Directive 2009/147/EEC; hereafter, referred to as the 'Birds Directive'. The Birds Directive is the legislation under which Special Protection Areas (SPAs) are designated for the protection of endangered species of wild birds listed in Annex I of that directive, becoming part of the Natura 2000 Network of protected areas.
- The following national legislation is relevant to the Proposed Development: -
 - Wildlife Act 1976 (as amended); hereafter collectively referred to as the 'Wildlife Acts'. The Wildlife Acts are the principal pieces of legislation at national level for the protection of wildlife and for the control of activities that may harm wildlife. All bird species, 22 other animal species or groups of species, and 86 species of flora are protected under this legislation.
 - Planning and Development Act 2000 (as amended); hereafter collectively referred to as the 'Planning and Development Acts'. This piece of legislation is the basis for Irish planning. Under the legislation, development plans (usually implemented at local authority level) must include mandatory objectives for the conservation of natural heritage and for the conservation of European Sites. It also sets out the requirements in relation to environmental assessment with respect to planning matters, including transposition of the Habitats and Birds Directive into Irish law.
 - European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (as amended); hereafter the 'Birds and Habitats Regulations'. This legislation transposes the Habitats and Birds Directives into Irish law. It also contains regulations (49 and 50) that deal with invasive species (those included within the Third Schedule of the regulations).
 - Flora (Protection) Order, 2015. This lists species of plant protected under Section 21 of the Wildlife Acts.

The following plans and policies are relevant to the Proposed Development: -

- *National Biodiversity Action Plan 2017 – 2021* (Department of Culture Heritage and the Gaeltacht, 2017).
- *Dublin City Development Plan 2016 – 2022* (Dublin City Council, 2016).
- *Dublin City Biodiversity Action Plan 2015 – 2020* (Dublin City Council, 2016).

6.2 ASSESSMENT METHODOLOGY

6.2.1 Author Statement

This Ecological Impact Assessment (EclA) was authored by Síofra Quigley, and reviewed by Niamh Burke of Coiscéim Ecology and Maeve Maher-McWilliams of Scott Cawley Ltd.

Síofra Quigley is a Consultant Ecologist with Scott Cawley. She obtained an honours degree in Zoology, from National University of Ireland Galway, and a Masters in Wildlife Biology and Conservation from Edinburgh Napier University. She has three years' professional experience working in the UK on large to small scale infrastructure projects, with governmental and private clients. Síofra is experienced in carrying out field surveys in several protected species, including bat, otter, badger, red squirrel, reptile, pine marten and mountain hare. She has also been involved in radio tracking mountain hares and bats, bat call analysis, badger bait marking, acting as an Ecological Clerk of Works, Phase 1 habitat surveys and reports, and desk top studies. Since joining Scott Cawley, Síofra's work involves the preparation of reports, including Ecological Impact Assessment and Appropriate Assessment reports for residential, commercial, and infrastructural projects across Ireland.

Niamh Burke is Principal Ecologist with Coiscéim Ecology. She holds a BSc in Natural Sciences with Environmental Science and a PhD in salmonid ecology. She is a Chartered Environmentalist (CEnv) with the Society for the Environment (Soc Env) and a Full Member of the CIEEM. Niamh is a senior scientist with academic research and consulting experience in terrestrial ecology, aquatic ecology and fluvial geomorphology. She is an experienced project manager with a full working knowledge of EIA, the planning process and relevant environmental legislation, both national and European. With a specialism in aquatic habitats, she also has experience of terrestrial species' surveys and mitigation approaches. In her extensive consultancy roles she has acted as reviewer for all ecological reporting and ensured consistency of standards and approach.

Maeve Maher-McWilliams is a Principal Ecologist with Scott Cawley. She holds an honours degree in Biological Sciences from Queens University Belfast and attained a distinction in her Masters in Evolutionary and Behavioural Ecology from University of Exeter. She is an Associate member of CIEEM. She has worked in ecological consultancy for over eight years and has worked on a range of large to small scale projects across Ireland and the UK. Maeve's primary technical specialism is ornithology, however her skills extend to protected mammal and habitat surveys. Her involvement extends from inception to post planning compliance, survey completion, project and survey management, carrying out of Ecological Impact Assessment, and authoring of EIAR Chapters, Appropriate Assessment Screening reports and Natura Impact Statements. She regularly undertakes surveys and prepares AA Screening, NIS and EclA reports.

6.2.2 Scope of the assessment

The study area is defined by the zone of influence of the Proposed Development with respect to the ecological receptors that could potentially be affected.

The Zone of Influence (Zol), or distance over which potentially significant effects may occur, will differ across the Key Ecological Receptors (KERs), depending on the potential impact pathway(s). The results of both the desk study and the suite of ecological field surveys undertaken has established the habitats and species present within, and in the vicinity of, the Proposed Development site. The Zol and study area was then informed and defined by the sensitivities of each of the KERs present, in conjunction with the nature and potential impacts associated with the Proposed Development.

The Zol of habitat loss impacts will be confined to within the Proposed Development boundary.

The Zol of general construction activities (i.e. risk of spreading/introducing non-native invasive species, dust deposition and disturbance due to increased noise, vibration, human presence and lighting) is not likely to extend more than several hundred metres from the Proposed Development.

Excavation spoil and waste material will need to be removed offsite due to limited opportunities for reuse on site. It is anticipated that the surplus material will be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the unlikely event of hazardous material being encountered, be transported for treatment/recovery or exported abroad for disposal at suitable facilities. This could potentially extend the Zol to areas where the material will be deposited, however the waste will be classified in accordance with the EPA publication Waste Classification, with environmental soil analysis carried out prior to removal of the material, in accordance with the requirements for acceptance of waste at landfills².

The Proposed Development site, including the existing (and proposed) surface water drainage network drains to the River Liffey, and therefore, the hydrological Zol extends downstream to Dublin Bay.

6.2.3 Desk Study

A desk study was undertaken on the 21 February 2021 to collate available information on the local ecological environment. The following resources were used to inform the assessment presented in this chapter: -

- Data on European sites, Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHAs) as held by the National Parks and Wildlife Service (NPWS) from <https://www.npws.ie/protected-sites> and <https://www.npws.ie/maps-and-data> – refer to Appendix 6.1 for descriptions and locations of protected sites in the vicinity of the Proposed Development.
- Records of rare and protected species for the 10km grid square(s), as held by the National Biodiversity Data Centre www.biodiversityireland.ie or the NPWS – refer to Appendix 6.2 for all desk study flora and fauna records.
- Spatial information relevant to the planning process including land zoning and planning applications from Department of Housing Planning, Community and Local Government web map portal. Available from <https://myplan.ie/>.
- Ordnance Survey Ireland mapping and aerial photography from <http://map.geohive.ie/>
- Data on waterbodies, available for download from the Environmental Protection Agency (EPA) web map service. Available from <https://gis.epa.ie/EPAMaps/>.
- Information on soils, geology and hydrogeology in the area available from the Geological Survey Ireland (GSI) online Spatial Resources service. Available from <https://www.gsi.ie/en-ie/data-and-maps/Pages/Groundwater.aspx>.
- Information on the conservation status of birds in Ireland from Birds of Conservation Concern in Ireland (Gilbert et. al, 2021)³
- Information on the location, nature and design of the Proposed Development supplied by the applicant's design team.

² Chapter 15: Material Assets (Waste), Awn Consulting (2021).

³ *Birds of Conservation Concern in Ireland 2020–2026*, Gilbert G., Stanbury A., Lewis L., (2021).

6.2.4 Field Survey

Ecological field surveys were carried out following the best practice professional guidelines in June and July 2020. The surveys and survey dates are presented in Table 6.1.

Habitat and flora surveys, terrestrial fauna surveys, ground-level assessment of buildings, and breeding bird checks were undertaken on the 26 June 2020 by Síofra Quigley BSc (Hons) MSc. Internal building inspections for bats were undertaken by Síofra Quigley and Niall McHugh BSc (Hons) MSc on the 13 July 2020, and bat activity survey were undertaken by Niall McHugh, Nicholas Fettes BSc (Hons) MSc, and Adele Goulding Sheehan BSc on the 2 and 24 July 2020.

Survey	Survey Date(s)	Surveyor(s)
Multidisciplinary survey	26 June 2020	Scott Cawley Ltd.
Internal building inspections	13 July 2020	Scott Cawley Ltd.
Bat activity surveys	2 & 24 July 2020	Scott Cawley Ltd.

Table 6.1: Ecological surveys and survey dates.

6.2.4.1 Habitats and Flora

A habitat survey was undertaken of the Proposed Development site on the 26 June 2020 by Síofra Quigley following the methodology described in Best Practice Guidance for Habitat Survey and Mapping⁴. All habitat types were classified using the Guide to Habitats in Ireland⁵, recording the indicator species and abundance using the DAFOR scale⁶ and recording any species of conservation interest. Vascular and bryophyte plant nomenclature generally follow that of The National Vegetation Database⁷, having regard to more recent taxonomic changes to species names after the New Flora of the British Isles⁸ and the British Bryological Society's Mosses and Liverworts of Britain and Ireland: A Field Guide^{9 10}. Invasive species as listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011-2015, were also surveyed for within the lands of the Proposed Development site¹¹.

⁴ Smith, G.F., O'Donoghue, P., O'Hara, K. & Delaney, E. (2011) Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council Church Lane, Kilkenny, Ireland.

⁵ Fossitt, J.A. (2000) A Guide to Habitats in Ireland. Heritage Council, Kilkenny.

⁶ The DAFOR scale is an ordinal or semi-quantitative scale for recording the relative abundance of plant species. The name DAFOR is an acronym for the abundance levels recorded: Dominant, Abundant, Frequent, Occasional and Rare.

⁷ Weekes, L.C. & FitzPatrick, Ú. (2010) The National Vegetation Database: Guidelines and Standards for the Collection and Storage of Vegetation Data in Ireland. Version 1.0. Irish Wildlife Manuals, No. 49. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

⁸ Stace, C. (2019) New Flora of the British Isles. 4th Edition. C&M Floristics.

⁹ Atherton, I., Bosanquet, S. & Lawley, M. (2010) Mosses and Liverworts of Britain and Ireland: A Field Guide. Latimer Trend & Co., Plymouth.

¹⁰ Atherton, I., Bosanquet, S. & Lawley, M. (2010) *Mosses and Liverworts of Britain and Ireland: A Field Guide*. Latimer Trend & Co., Plymouth.

¹¹ *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance*. Transport Infrastructure Ireland, GE-ENV-01105, December 2020.

6.2.4.2 Fauna

6.2.4.2.1 Terrestrial Mammals (Excl. bats)

A terrestrial fauna survey (excluding bats) was undertaken on the 26 June 2020 by Síofra Quigley. The presence/absence of terrestrial fauna species were surveyed through the detection of field signs such as tracks, markings, feeding signs, and droppings, as well as by direct observation. The habitats on site were assessed for signs of usage by protected/red-listed fauna species, and their potential to support these species.

6.2.4.2.2 Bats

A ground-level assessment of structures and buildings within the Proposed Development site, to examine their suitability to support roosting bats and potential to act as important landscape features for commuting/foraging bats, was based on guidelines (see Table 6.2) in Bat Surveys for Professional Ecologists: Good Practice Guidance (Collins ed., 2016) and included inspections of structures and buildings for potential roost features (PRFs), and for signs of bats (staining at roost entrances, droppings, carcasses, insect remains).

Buildings identified as having PRFs from the ground level assessment surveys, or buildings that could not be fully accessed externally, were then examined internally where possible. Seven buildings within the site were accessed internally via roof, attic space/loft, or top floor access and were surveyed for any signs of bats (droppings, staining, etc.) (see Figure 6.2). No other buildings within the Proposed Development site were surveyed internally, due to lack of attic / loft space, and / or lack of PRFs.



Figure 6.2: Locations of buildings accessed internally.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (<i>i.e.</i> unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, <i>i.e.</i> not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>

Table 6.2: Guidelines for assessing the potential suitability of Proposed Development sites for bats, based on the presence of habitat features within the landscape, applied according to professional judgement (Taken from Collins (2016)).

Two separate bat roost emergence / re-entry and activity surveys were undertaken within the lands by surveyors who are experienced in bat surveys. The surveys were designed with reference to methodologies in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn.) (Collins, 2016). Observations of bat activity were recorded, and where necessary, data collected in the field was analysed using specialist software (Elekon BatExplorer) to aid in the identification of bat species by their calls. Data generated from the activity surveys was analysed using Elekon BatExplorer software, whereby calls were identified to species level (where this was possible), through professional judgement and with reference British Bat Calls: A Guide to Species Identification (Russ, 2012).

6.2.4.2.3 Birds

Breeding bird checks were undertaken on the 26 June 2020 by Síofra Quigley using a methodology adapted from the Bird Monitoring Methods - A Manual of Techniques for Key UK Species¹². Due to the urban nature of the site, and the lack of vegetation within the site or in the wider environs, the area was checked for evidence of breeding / nesting birds on rooftops or within attic/loft spaces of the buildings. Birds present were identified by sight and song, and general location and activity were recorded using the British Trust for Ornithology (BTO) species and activity codes.

6.2.5 Ecological Evaluation and Impact Assessment

6.2.5.1 Ecological Evaluation

Ecological receptors (including identified sites of ecological importance) are valued with regard to the ecological valuation examples set out in Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2¹³ and the guidance provided in Guidelines for Ecological Impact Assessment in the UK and Ireland¹⁴ – refer to Appendix 6.3 for examples of how ecological importance is assigned. In accordance with these guidelines, important ecological features within what is referred to as the Zone of Influence (ZoI) of the Proposed Development which are “both of sufficient value to be material in decision making and likely to be affected significantly” are deemed to be ‘Key Ecological Receptors’ (KERs). These are the ecological receptors which may be subject to significant effects from the Proposed Development, either directly or indirectly. KERs are those biodiversity receptors with an ecological value of local importance (higher value) or greater.

6.2.5.2 Impact Assessment

Ecological impact assessment is conducted following a standard source-pathway-receptor model, where, in order for an impact to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potentially significant effect would not occur.

- Source(s) – e.g. pollutant run-off from proposed works.
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats.
- Receptor(s) – e.g. wetland habitats and the fauna and flora species they support.

6.2.5.3 Characterising and Describing the Impacts

The parameters considered in characterising and describing the potential impacts of the Proposed Development are per the EPA’s Guidelines on the Information to be Contained in Environmental Impact Assessment Reports¹⁵ and CIEEM’s Guidelines for Ecological Impact Assessment in the UK and Ireland: whether the effect is positive, neutral or negative; the significance of the effects; the extent and context of the effect; the probability, duration and frequency of effects; and, cumulative effects.

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The following development types are included in considering cumulative effects: -

¹² Gilbert, G., Gibbons, D.W. & Evans, J. (1998) *Bird Monitoring Methods - A Manual of Techniques for Key UK Species*. RSPB: Sandy

¹³ NRA (2009) *Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2*. National Roads Authority.

¹⁴ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

¹⁵ Environmental Protection Agency. (2017) *Guidelines on the information to be contained in Environmental Impact Assessment Reports*. Draft, August 2017. (refer to Table 3.3)

- Existing projects (under construction or operational).
- Projects which have been granted consent but not yet started.
- Projects for which consent has been applied for which are awaiting a decision, including those under appeal.
- Projects proposed at a plan level, if relevant (e.g. future strategic infrastructure such as roads or greenways).

The likelihood of an impact occurring, and the predicted effects, can also be an important consideration in characterising impacts. In some cases it may not be possible to definitively conclude that an impact will not occur. In these cases the evaluation of significant effects is based on the best available scientific evidence but where reasonable doubt still remains then the precautionary principle is applied, and it may need to be assumed that significant effects may occur. Professional judgement is used in considering the contribution of all relevant criteria in determining the overall magnitude of an impact.

Integrity

The term “integrity” may be regarded as the coherence of ecological structure and function, across the entirety of a site that enables it to sustain all of the biodiversity or ecological resources for which it has been valued (NRA, 2009).

The term “integrity” is most often used when determining impact significance in relation to designated areas for nature conservation (e.g. SACs, SPAs or pNHA/NHAs) but can also be the most appropriate method to use for non-designated areas of biodiversity value where the component habitats and/or species exist with a defined ecosystem at a given geographic scale.

An impact on the integrity of an ecological site or ecosystem is considered to be significant if it moves the condition of the ecosystem away from a favourable condition: removing or changing the processes that support the sites’ habitats and / or species; affect the nature, extent, structure and functioning of component habitats; and / or, affect the population size and viability of component species.

Conservation Status

Similar definitions for conservation status given in the EU Habitats Directive 92/43/EEC, in relation to habitats and species, are also used in the CIEEM (2018) and NRA (2009) guidance which are summarised as follows:

For natural habitats, conservation status means the sum of the influences acting on the natural habitat and its typical species, that may affect its extent, structure and functions as well as its distribution, or the long-term survival of its typical species, at the appropriate geographical scale

For species, conservation status means the sum of influences acting on the species concerned that may affect the abundance of its populations, as well as its distribution, at the appropriate geographical scale

An impact on the conservation status of a habitat or species is considered to be significant if it will result in a change in conservation status, having regard to the definitions of favourable conservation status provided in the EU Habitats Directive 92/43/EEC – i.e. into the future, the range, area and quality of habitats are likely to be maintained / increased and species populations are likely to be maintained / increased.

According to the CIEEM methodology, if it is determined that the integrity and/or conservation status of an ecological receptor will be impacted on, then the level of significance of that impact is related to the geographical scale at which the impact will occur (i.e. local, county, national, international). In some cases an impact may not be significant at the geographic scale at which the ecological feature has been valued but may be significant at a lower geographical level. For example, a particular impact may not be considered likely to have a negative effect on the overall conservation status of a species which is considered to be internationally important. However, an impact may occur at a local level on this internationally important species. In this case, the impact on an internationally important species is considered to be significant at only a local, rather than an international level.

6.3 RECEIVING ENVIRONMENT

The receiving environment in terms of biodiversity is the same for the Dublin Central Masterplan and each individual site of the development. Therefore, the following sections detail the existing baseline ecological environment and do not differentiate between the Dublin Central Masterplan development or the individual sites of the development being assessed within this EIAR chapter.

6.3.1 Designated Sites

6.3.1.1 European Sites

Special Areas of Conservation (SAC) are designated under the EC Habitats Directive (92/43/EEC) for the protection of habitats listed on Annex I and / or species listed on Annex II of the Directive. Special Protection Areas (SPAs) are designated under the Birds Directive (2009/147/EC) for the protection of bird species listed on Annex I of the Directive, regularly occurring populations of migratory species (such as ducks, geese or waders), and areas of international importance for migratory birds.

SACs and SPAs are offered additional protection under development plans, as is the case for the Dublin City Development Plan 2016 – 2022 through Policy GI2 and GI24 on Natura 2000 sites which requires that planning authorities give due regard to their protection in planning policies and decisions (Dublin City Council, 2016).

There are thirteen European sites within the vicinity of the Proposed Development. The Proposed Development does not overlap with any European sites. The nearest European site is South Dublin Bay and River Tolka Estuary SPA, located c. 2.3km to the north east of the Proposed Development site in Dublin Bay. South Dublin Bay SAC is the next closest European site, c. 3.5km south east of the Proposed Development. Other nearby sites in Dublin Bay include North Dublin Bay SAC and North Bull Island SPA, both c. 5.3km north east of the Proposed Development site, Howth Head SAC and Howth Head Coast SPA, located c. 11km and c. 13km east, respectively, and Rockabill to Dalkey Island SAC located c. 11.3km east of the site. These European sites are considered to be within the potential zone of influence of the Proposed Development, as all of these sites are located downstream of the Proposed Development site within Dublin Bay. There is no direct surface water hydrological link between the proposed site and these European sites, however surface waters will drain to the existing surface water drainage network ultimately discharging into Dublin Bay, with wastewaters draining via the combined sewer to Ringsend WWTP for treatment prior to discharge into Dublin Bay.

The SAC and SPA sites in the vicinity of the Proposed Development, their distance from the Proposed Development and their qualifying interests / special conservation interests are presented in Appendix 6.1.

The locations of those SAC and SPA sites relative to the Proposed Development are illustrated on Figure 6.3 below.



Figure 6.3: European sites in the vicinity of the Proposed Development.

6.3.1.2 Nationally Designated Sites

Natural Heritage Areas (NHAs) are designated under the Wildlife Acts to protect habitats, species or geology of national importance. In addition to NHAs there are proposed NHAs (referred to as pNHAs), which are also sites of significance for wildlife and habitats and were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. Proposed NHAs are offered protection under county development plans, as is the case for the Dublin City Development Plan 2016 – 2022 through Policy GI24 on Natural Heritage Areas which requires that planning authorities give due regard to their protection in planning policies and decisions (Dublin City Council, 2016). For convenience, these are described as “national sites”.

There are 20 national sites within the vicinity of the Proposed Development, all of which are pNHAs. The Proposed Development does not overlap with any national sites. The nearest national sites are the Royal Canal pNHA, located c. 1.3km north east, and the Grand Canal pNHA located c. 1.6km south east of the Proposed Development. The Proposed Development is not hydrologically or otherwise connected to these National sites. South Dublin Bay pNHA, located c. 3.5km east, Dolphins, Dublin Docks pNHA located, 4.4km east and North Dublin Bay pNHA located 5.3km north east, are potentially within the zone of influence of the Proposed Development, as all of these National sites are located downstream of the Proposed Development in Dublin Bay. There is no direct surface water hydrological link between the proposed site and these National sites, however surface waters will drain to the existing surface water drainage network ultimately discharging into Dublin Bay, with wastewaters draining via the combined sewer to Ringsend WWTP for treatment prior to discharge into Dublin Bay.

The pNHA sites in the vicinity of the Proposed Development, their distance from the Proposed Development and their qualifying interests / special conservation interests are presented in Appendix 6.1.

The locations of those pNHA sites relative to the Proposed Development are illustrated on Figure 6.4 below.

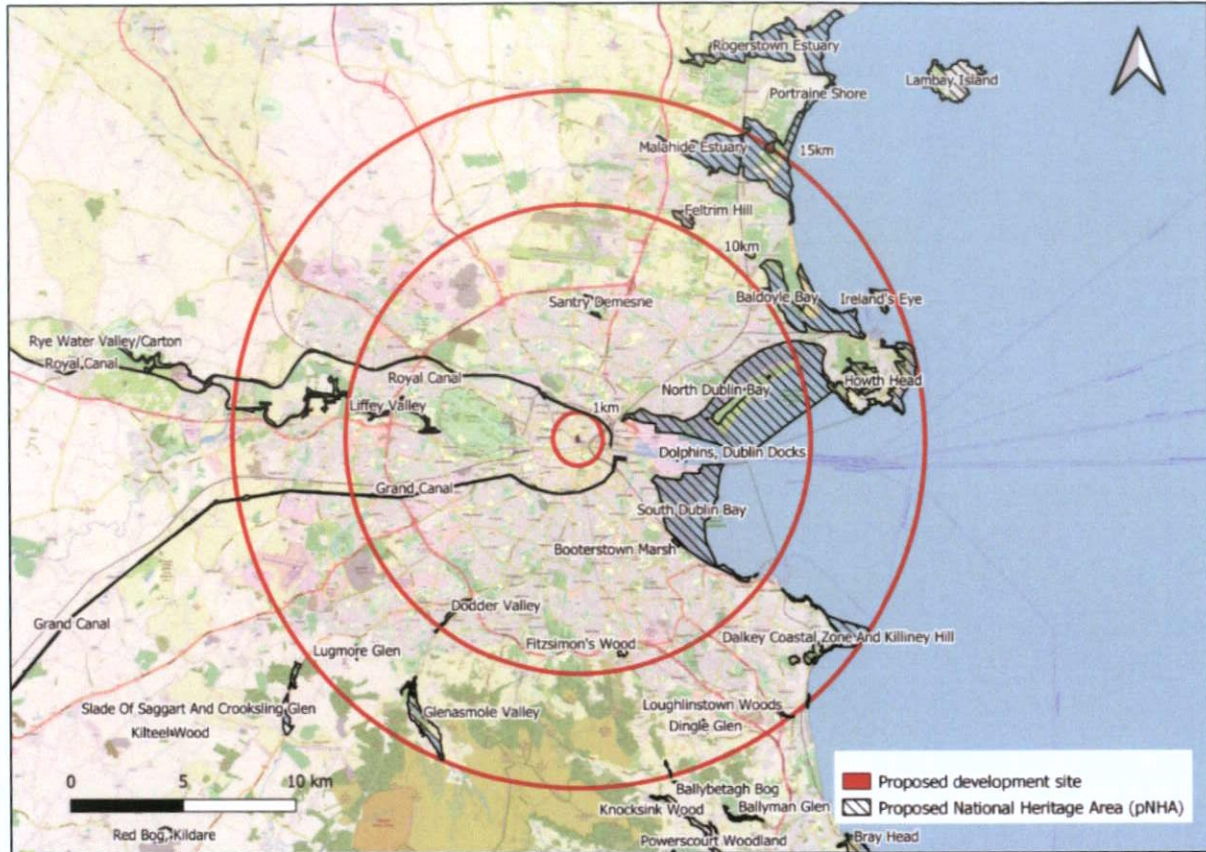


Figure 6.4: National Sites in the vicinity of the Proposed Development.

6.3.2 Habitats and Flora

6.3.2.1 Habitats

Due to the urban nature of the site, the only habitats identified within the Proposed Development were buildings and artificial surfaces (BL3), with small, isolated areas of ornamental / non-native scrub (WS3) growing on built surfaces (which have not been mapped but are shown in the photograph in Figure 6.5). The buildings and artificial surfaces habitat encompassed the majority of the site, and included; all buildings within the site, roads going through the site (Moore Land and Henry Place), and paths along O'Connell Street and Henry Street. Also found sporadically throughout the site was ornamental / non-native scrub, comprising of butterfly bush *Buddleia davidii*, mainly growing from the sides of buildings or on rooftops in isolated areas.

As these areas have little to no ecological value due to the lack of vegetation and urbanised environment, the habitats within the Proposed Development site are valued as being of local importance (lower value).



Figure 6.4: Habitat map of the Proposed Development (Site 3, Site 4 and Site 5).

6.3.2.2 Flora

The NBDC holds three records for protected and/or rare plant species within 2km of the Proposed Development site; *Centaurea cyanus*, *Hordeum secalinum*, and *Groenlandia densa*. *Centaurea cyanus* is listed as 'Regionally Extinct', while the latter listed species are listed as 'Vulnerable' on the Flora Protection Order. There is no habitat for these species within the Proposed Development site however, as it is mostly hard standing and buildings.

With regards to invasive non-native species, there were records of five species on NBDC database for species listed on Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 within c. 2km of the Proposed Development; *Azolla filiculoides*, *Crassula helmsii*, *Elodea canadensis*, *Heracleum mantegazzianum*, *Fallopia japonica*, *Impatiens glandulifera*, *Elodea nuttallii*, and *Allium triquetrum*. Although records of these invasive species are within c. 2km of the proposed site, none of the aforementioned species are located in the immediate or nearby vicinity of the site, with the closest (*Allium triquetrum*) located c. 200m east of the Proposed Development site.

No protected and / or rare species listed in the Flora Protection Order or in Red Lists, nor invasive non-native species listed on Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 were found to be present onsite at the time of the survey. One non-scheduled non-native invasive species, *Buddleja davidii* was recorded within the Proposed Development site boundary in single strands, mostly on rooftops or growing from the sides of buildings.

6.3.3 Fauna

6.3.3.1 Terrestrial Fauna (excluding bats)

6.3.3.1.1 Badger

Badger *Meles meles*, and their breeding and resting places, are protected under the Wildlife Acts. The NBDC data search and NPWS identified one record of badger c. 2km of the site from 2009.

No evidence of badgers, such as setts, snuffle holes or scat, was found onsite.

The habitats found within the Proposed Development site, buildings and artificial surfaces, provide no suitable habitat for badgers.

The local badger populations are valued to be of local importance (lower value).

6.3.3.1.2 Small mammals

Small mammals, pygmy shrew *Sorex minutus* and red squirrel *Sciurus vulgaris* are protected under the Wildlife Acts. The NBDC database search identified one record of pygmy shrew and red squirrel, c. 2km of the site.

No evidence of any of the small mammal species were found onsite. There was no suitable habitat for pygmy shrew or red squirrel on the Proposed Development site due to the urban environment, and as both species are typically found in woodlands.

The local small mammal populations are valued to be of local importance (lower value).

6.3.3.2 Birds

All wild birds, and their nests and eggs, are protected under the Wildlife Acts. Some bird species are also listed on Annex I of the EU Birds Directive. The following birds were observed within or in the vicinity of the Proposed Development: herring gull *Larus argentatus*, feral pigeon *Columba livia f. domestica*, and rook *Corvus frugilegus*. Feral pigeon and rook are green-listed (i.e. of low conservation concern) in the most recent evaluation of bird populations in Ireland in Birds of Conservation Concern in Ireland (Gilbert et al., 2021) and commonly occupy urban environments. Herring gull are amber-listed (of medium conservation concern), due to short term declines in populations on a national level, and have been forced by anthropogenic pressures to occupy and breed in urban environments.

Breeding birds use various habitats, including trees, structures and scrub, for nesting. Three juvenile herring gulls were identified on a building roof off Henry Street within the Proposed Development site, with other potential nests noted from the presence of adolescent herring gulls on other rooftops within the Proposed Development site. No herring gull nests were observed, however. From the internal building inspection surveys, the majority of the buildings surveyed were run-down and partially dilapidated. Feral pigeons were identified using these spaces as potential nesting sites, with droppings and carcasses present in many of the buildings. The older buildings provide good shelter and protection so are ideal for urban nesting sites.

The breeding birds within the Proposed Development site are considered to be of local importance (higher value).

6.3.3.3 Bats

Bats, and their breeding and resting places, are protected under the Wildlife Acts. All bat species are also listed on Annex IV of the EU Habitats Directive (with the lesser horseshoe bat also listed on Annex II) and are afforded strict protection under the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations, 2011.

The NBDC and NPWS hold records of the following bat species in the vicinity of the Proposed Development site: common pipistrelle *Pipistrellus pipistrellus*, nine records from the NBDC recorded within c. 2km of the site from 2009; lesser noctule *Nyctalus leisleri*, 11 records from the NBDC recorded within c. 2km of the site from 2016; soprano pipistrelle *Pipistrellus pygmaeus*, 13 records from the NBDC recorded within c. 2km of the site from 2009; and Nathusius's pipistrelle *Pipistrellus nathusii*, two records from the NBDC recorded within c. 2km of the site from 2009.

In total, two passes of a single bat species was recorded during the dusk survey carried out on the 2nd July 2020; Leisler's bat, recorded on Henry Street (Figure 6.5). This was recorded as very brief passes by a Leisler's bat, likely commuting over the site to suitable foraging habitat, no other activity or any emergences or re-entries at the buildings were recorded during bat surveys.

Seven buildings within the Proposed Development boundary were deemed as having low suitability for roosting bats and during external building surveys. There were a number of potential roost features evident from external checks, however due to the surrounding urban environment and lack of connecting habitat to more suitable foraging/commuting areas, the buildings were assessed as low suitability for the likelihood of supporting roosting bat species. No bat evidence was noted during external building surveys. The remaining buildings within the Proposed Development had negligible suitability for roosting bats from ground assessments, and the surrounding habitat was deemed to have negligible suitability for commuting and foraging bats.

The seven buildings that were identified as having low potential for roosting bats, were assessed internally for evidence of bats with roof / loft access (Appendix 6.4). No evidence of bats was noted in any of the buildings surveyed or adjacent to these properties. A number of PRFs were identified on these buildings, providing access into attic spaces in some (Buildings 2, 5 and 6), while others provided access into the buildings or had PRFs on external walls with crevices / gaps suitable for roosting bats (Buildings 1, 3, 4 and 7) (see Figure 6.2 for building locations).



Figure 6.5: Location of Leisler's bat identified during activity surveys.

From internal and external building inspections, and bat activity surveys undertaken in June and July 2020, it can be concluded that the Proposed Development site, while it does contain potential roost features within the aforementioned buildings, there is no suitable habitat for bats connecting this site to other suitable habitat. The heavily urbanized environment surrounding the site, with constant light and noise disturbance from O'Connell Street, together with the lack of vegetation and surrounding habitat deem this site unsuitable for roosting bats. The two bat calls identified during surveys, and no emergences or re-entries of bats from or into the building confirms this conclusion.

Therefore, the local bat population is valued as being of local importance (lower value).

6.3.4 Summary of Ecological Evaluation

Table 6.3 below summarises the ecological evaluation of all receptors taking into consideration legal protection, conservation status and local abundance, and identifies the Key Ecological Receptors (KERs). Species, habitats and features not qualifying as KERs are not subjected to impact assessment in line with current best practice of assessing the impacts on what are determined to be important ecological or biodiversity features: CIEEM and TII guidelines (CIEEM, 2018 and National Roads Authority, 2009).

Ecological Receptor	Ecological Valuation	KER?
Designated Sites		
North Dublin Bay SAC	International	Yes
South Dublin Bay SAC	International	Yes
Rockabill to Dalkey Island SAC	International	Yes
Howth Head SAC	International	Yes
North Bull Island SPA	International	Yes
South Dublin Bay and River Tolka Estuary SPA	International	Yes
Howth Head Coast SPA	International	Yes
All other SAC/SPA sites	International	No
North Dublin Bay pNHA	National	Yes
South Dublin Bay pNHA	National	Yes
Royal Canal pNHA	National	Yes
Dolphins, Dublin Docks pNHA	National	Yes
Grand Canal pNHA	National	Yes
All other NHA/pNHA sites	National	No
Habitats		
Building and artificial surfaces (BL3)	Local Importance (lower value)	No
Ornamental/non-native scrub (WS3)	Local importance (lower value)	No
Fauna Species		
Bats	Local importance (lower value)	No
Breeding birds	Local Importance (higher value)	Yes
Badgers	Local importance (lower value)	No
Other mammal species	Local importance (lower value)	No

Table 6.3: Summary of the ecological evaluation.

6.4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

6.4.1 Dublin Central Masterplan

The Dublin Central project is an expansive (c.2.2 Ha) and complex regeneration project. It needs to be delivered in stages to overcome site and project constraints.

A site wide cumulative masterplan has been prepared by 'the Applicant' to set out the overall development vision for the Dublin Central project.

The Dublin Central Masterplan area encompasses almost entirely three urban blocks. The area is bounded generally by O'Connell Street Upper and Henry Place to the east, Henry Street to the south, Moore Street to the west, and O'Rahilly Parade and Parnell Street to the north. Moore Lane extends south from Parnell Street through the centre of the Dublin Central Masterplan area, as far as its junction with Henry Place.

The Proposed Development is split over 6 no. Sites (Figure 6.6), broadly outlined as follows: -

- Site 1 – Generally bounded by Parnell Street, Moore Lane and O'Connell Street.
- Site 2AB – Generally bounded by O'Connell Street, Moore Lane.
- Site 2C – Generally bounded by O'Connell Street, Moore Lane.
- Site 3 – Generally bounded by Moore Street and Moore Lane.
- Site 4 – Generally boundary by Moore Street and Moore Lane, with a National Monument No. 14 – 17 of Moore Street (indicated in blue on Figure 6.6) in the centre of Site 4 not forming part of the proposals.
- Site 5 – Generally bounded by Moore Street, O'Rahilly Parade and Moore Lane.

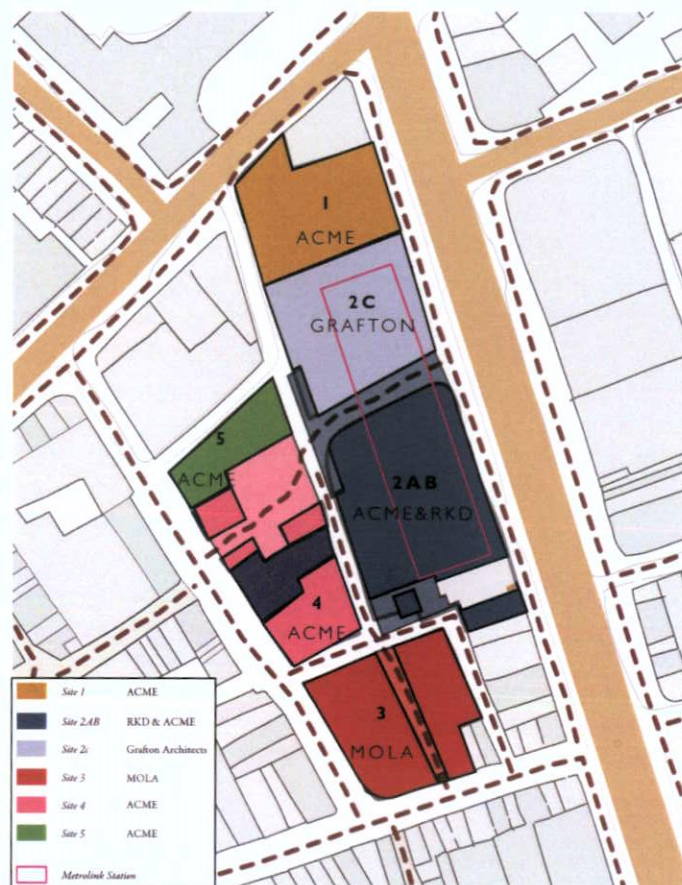


Figure 6.6: Dublin Central Masterplan.

The subject site is currently 100% hardstanding with surface water drains on each site draining to the existing surrounding combined sewer network. The development of this site will provide a significant gain to Dublin City Council in reducing surface water runoff to the combined sewers and ultimately to the Ringsend Waste Water Treatment Plant (WWTP).

The surface water runoff for the subject site is 278l/s unrestricted flow. Dublin City Council require that surface water discharge from the site is restricted to 2l/s/ha. With the overall site area of 2.23 Ha, the allowable outfall from the entire development is 4.46 l/s. Therefore, it is proposed that each Site will attenuate to 2l/s, with attenuation storage within each Site provided at roof level and below ground level. This discharge from each Site will be to a common internal surface water network which would run along Moore Lane and the other internal roads/pedestrian areas. The runoff from the internal road/pedestrian areas would drain direct to this common network and then discharge to the public sewer at the permitted restricted rate. Attenuation would be provided in an underground tank beneath the main internal square for the common areas, including the surplus attenuation arising from the fact that each Site is discharging 2l/s into the common network.

Green and blue roofs are also proposed within the remit of the development. Blue roofs will involve the attenuation of surface water by way of using storage cells under roof terraces/podium/green roofs. At least 37% of the roof area in each Site is proposed to include blue roof attenuation, with between 5 – 43% green roof cover proposed.

Blue roofs comprise of a combined drainage and attenuation void within the roof structure and a roof outlet system designed to release the attenuated water at a controlled discharge rate via a restrictor chamber. Rainwater will discharge from the blue roofs at a controlled rate, with water accumulating at the roofs only when this rate is exceeded. A secondary emergency drainage outlet will be provided as a method of drainage to facilitate the removal of excess rainfall if the designed capacity is exceeded.

Green sedum roofing will act as a source control device. The substrate and the plant layers in a sedum roof absorb large amount of rainwater and release it back into the atmosphere by transportation and evaporation. They also filter water as it passes through the layers, so the run-off, when it is produced, has fewer pollutants. Rainfall not retained by green roofs is detained, effectively increasing the time to peak and slowing peak flows.

It is an objective of the Greater Dublin Strategic Drainage Study, and the Dublin City Development Plan 2016-2022, to incorporate Sustainable Urban Drainage Systems (SUDS) within new developments. The SUDS features associated with the Proposed Development are not included within the design to avoid or reduce any potential harmful effects to any European sites. Therefore, they have not been considered, and are not necessary, in reaching the conclusion of this assessment as to the potential for the Proposed Development to result in significant effects on any European sites.

Foul water drainage will discharge to existing combined sewer which run around and through the Dublin Central site. These will simply be a connection from the building direct to the combined sewer. Waste water from this development will discharge to the combined sewers and ultimately end up at Ringsend WWTP for treatment prior to discharge into Dublin Bay. The estimated foul water per day for the Proposed Development is calculated as 803,386, with a peak flow of 55.791l/s.

6.4.2 Proposed Development Site 3, 4 & 5

6.4.2.1 Site 3

Located in the south west corner of the Dublin Central Masterplan area, Site 3 is bounded by Henry Street to the south, Moore Street to the west and Henry Place to the north and east. Site 3 includes Nos. 36 – 41 Henry Street, Nos. 1 – 9 Moore Street and Nos. 3 – 13 Henry Place.

Site 3 lies within the O'Connell Street ACA.

The Proposed Development comprises a mixed-use scheme accommodating a hotel, residential units and associated amenities, cultural, retail and café / restaurant uses (c. 15,842 sq. m gross floor area) in 2no. blocks ranging in height from 1 – 9 storeys over 2no. new independent single storey basements. Provision of a new passageway linking Henry Street with Henry Place / Moore Lane.

Surface Water

The existing drainage network comprises of combined sewers which convey surface water and wastewater. Surface water currently discharges uncontrolled and unattenuated to the combined sewer network. The surrounding combined drains in the vicinity of the site include a 300mm vitrified clay sewer on Henry Place, connected to a 2,160mm x 1,230mm brick sewer in Moore Street. This in turn discharges to a 1,860mm x 730mm brick sewer draining eastwards along Henry Street towards O'Connell Street. In addition to this combined network, there are also some separated surface water sewers in the vicinity of the site; a 225mm concrete sewer in Parnell Street, and a 375mm concrete surface water sewer in Henry Street approximately 110m west of the Site 3 boundary¹⁶.

It is proposed to drain surface water from the development to the existing combined water sewer adjacent to the site in Moore Lane. Surface water will be discharged at a controlled rate of 2l/s (the same for all Sites of the development), which has been agreed with the Dublin City Council Drainage Division. Excess surface runoff during storm events will be attenuated using a combination of blue roofs and an underground concrete attenuation tank. Green roofs will also be used in Site 3 as a source control device. Block A has a total green roof area of 44m², while Block B has a total green roof area of 182m², giving a cumulative green roof area of 226m² for Site 3. It is also proposed to provide blue roofing at some of the roof areas. Block A has a total blue roof area of 510m², while Block B has a total blue roof area of 410m², giving a cumulative blue roof area of 920m² for Site 3.

Foul Water

The surrounding drainage network consists of combined foul and surface water sewers, and includes a 300mm vitrified clay sewer on Henry Place, connected to a 2,160mm x 1,230mm brick sewer on Moore Street. This in turn discharges to a 1,860mm x 730mm brick sewer draining eastwards along Henry Street towards O'Connell Street.

It is proposed to provide two new 225mm connections to the existing public network, one for Block A and one for Block B. The Block A connection will be made to the existing sewer in Henry Street, to the south of the site, while the Block B connection will be to the 300mm sewer to the north. A new manhole will be constructed at each of the two connection points. Although the existing drainage infrastructure consists of combined foul and surface water sewers, private foul and surface water drainage will be drained on completely separate systems throughout the development. Domestic wastewater loads have been calculated based on 2.7 persons per unit with a per capita wastewater flow of 150 litres per head per day along with a 10% unit consumption allowance. The total daily load of Site 3 is calculated at 134,816 l/day, with a peak flow of 9.362 l/s.

6.4.2.2 Site 4

Located in the west of the Dublin Central Masterplan area, Site 4 is bounded by Moore Street to the west, Moore Lane to the east, Henry Place to the south and Site 5 to the north. Site 4 includes Nos. 10 – 13 and Nos. 18 – 21 Moore Street, Nos. 5 – 8 and Nos. 10 – 12 Moore Lane.

Site 4 excludes the site of the National Monument and its protection zone at 14-17 Moore Street (protected structures) and the open area to the rear at Nos. 8 & 9 Moore Lane.

The Proposed Development comprises a mixed-use scheme accommodating residential units and associated amenities, retail and café / restaurant uses (c. 3,290 sq. m gross floor area) in 2no. parts located north and south of the Nos. 14 – 17 Moore Street (a National Monument / Protected Structures) ranging in height from 1 – 3 storeys including retained independent single storey basements. Provision of a part of the new public plaza and archway onto the new public plaza.

¹⁶ *Engineering Assessment Report, Dublin Central Mixed Use Development – Site 3.* Water Moylan Consulting Engineers Ltd. April 2021.

Surface Water

Surface water currently discharges uncontrolled and unattenuated to the combined sewer network. The surrounding combined drains in the vicinity of the site include a 300mm concrete sewer draining into a 300mm vitrified clay sewer on O'Rahilly Parade, connected to a 2,300mm x 1,200mm brick sewer in Moore street. This in turn discharges to a 1,860mm x 730mm brick sewer draining eastwards along Henry Street towards O'Connell Street. There is a 300mm vitrified clay combined sewer in Moore Lane, draining south and then west to the brick sewer in Moore Street.

It is proposed to drain surface water from Site 4 of the development to the existing public combined water sewer adjacent to the site in Moore Street¹⁷. Two surface water connections are proposed to the existing combined sewer; one for the portion of the site south of the National Monument and another for the portion of the site to the north of the National Monument. Surface water will be discharged at a controlled rate of 2 l/s. Excess surface water runoff during storm events will be attenuated using a combination of blue roofs and an underground attenuation tank.

Permeable paving in the private courtyard area will also infiltrate surface water from paved areas, with the added benefit of improving water quality by trapping suspended solids and filtering pollutants in the substrata layers. The total area of green roofing proposed for Site 4 of the development is 476m². Planter boxes and planted areas with trees can also help control storm water runoff, by slowing rain from reaching the ground and capturing and storing rainfall to be released later.

Foul Water

The surface and foul water network are a combined network, as such, foul waters currently discharge from the site through the existing network as described above.

It is proposed to provide two new 225mm connections to the existing public network, one for each block. The main block will connect to the existing 300mm vitrified clay sewer to the south of the site. The smaller northern block will discharge wastewater to the existing brick sewer on Moore Street via a new connection. A new manhole will be constructed at each of the two connection points. Domestic wastewater loads have been calculated based on 2.7 persons per unit with a per capita wastewater flow of 150 litres per head per day along with a 10% unit consumption allowance. The total daily load of Site 3 is calculated at 23,617 l/day, with a peak flow of 1.640 l/s.

6.4.2.3 Site 5

Located in the west of the Dublin Central Masterplan area, Site 5 is bounded by Moore Street to the west, Moore Lane to the east, O'Rahilly Parade to the north and Site 4 to the south. Site 5 includes Nos. 22 – 25 Moore Street, Nos. 1 – 8 O'Rahilly Parade and Nos. 13 – 15 Moore Lane.

The Proposed Development comprises a mixed-use scheme accommodating office and café / restaurant uses (c. 6,478 sq. m gross floor area) in a single building ranging in height from 2 – 6 storeys (top floor set back) over new single storey localised basement. Provision of a part of the new public plaza.

Surface Water

As with Sites 3 and 4, the existing drainage network comprises of combined sewers which convey surface water and wastewater. The existing surface drainage network for Site 5 use the same drainage network as previously described for Site 4¹⁸.

¹⁷ *Engineering Assessment Report, Dublin Central Mixed Use Development – Site 4.* Waterman Moylan Consulting Engineers Ltd. April 2021.

¹⁸ *Engineering Assessment Report, Dublin Central Mixed Use Development – Site 5.* Waterman Moylan Consulting Engineers Ltd. April 2021

The proposed surface water drainage for Site 5 will include new surface water drains. Laid along O'Rahilly Parade towards Moore Street, continuing north along Moore Street to the existing sewer in Parnell Street. The discharge from Site 5 will be limited to 2 l/s, via the same flow control device as Site 4. Permeable paving and planted areas will infiltrate and help control excess storm water, with blue roofs also used for attenuation proposed on some roof areas of Site 5. The remainder of the attenuation storage required for the 1-in-100 year storm event will be provided in an underground concrete tank with a Hydrobrake or similar approved flow control device to limit the discharge rate to 2 l/s.

Foul Water

The existing foul water sewers for Site 5 use the same drainage network as previously described for Site 4.

It is proposed to provide one new 225mm connection to the existing public network in O'Rahilly Parade. A new manhole will be constructed at the connection point. Wastewater loads have been calculated with a 10% unit consumption allowance, with the total daily load of Site 5 calculated as 66,036 l/day, and a peak flow of 4.586 l/s.

A full project description is provided in Chapter 3: Description of Proposed Development.

6.5 POTENTIAL IMPACTS

6.5.1 Dublin Central Masterplan

As per the relevant guidelines, likely significant effects have only been assessed for KERs, as listed in Table 6.3. An impact is considered to be ecologically significant if it is predicted to affect the integrity or conservation status of a KER at a specified geographical scale. All impacts are described in the absence of mitigation.

6.5.1.1 Potential Impact on Designated Sites During Construction Stage

This section describes and assesses the potential for the Dublin Central Masterplan (including Site 3, 4 & 5) to result in likely significant effects on European sites that lie within the Zol of the Dublin Central Masterplan. In the context of European sites this is focussed on the habitats and species for which the sites are selected (QIs for SACs and SCIs for SPAs) and the conservation objectives supporting their conservation status in each site. The assessment required under the Habitats Directive is presented in the Appropriate Assessment Screening Report for the Proposed Development (i.e. Site 3, Site 4 & Site 5) that accompanies this planning application.

In the case of NHAs and pNHAs the assessment considers whether the integrity of any such site would be affected by the development of the Dublin Central Masterplan with reference to the ecological features for which the site is designated, or is proposed.

6.5.1.1.1 European Sites

This section describes and assesses the potential for the Dublin Central Masterplan (including Site 3, 4 & 5) to result in likely significant effects on European sites that lie within the Zol of the Dublin Central Masterplan. In the context of European sites this is focussed on the habitats and species for which the sites are selected (QIs for SACs and SCIs for SPAs) and the conservation objectives supporting their conservation status in each site. The assessment required under the Habitats Directive is presented in the Appropriate Assessment Screening Report for the Proposed Development (i.e. Site 3, Site 4 & Site 5) that accompanies this planning application.

The assessment presented in the Appropriate Assessment Screening Report concluded that the potential impacts associated with the development of the Dublin Central Masterplan do not have the potential to affect the receiving environment and, consequently, do not have the potential to affect the conservation objectives supporting the qualifying interests or special conservation interests of any European sites; either alone or in combination with any other plans or projects.

As the Dublin Central Masterplan does not traverse any European sites there is no potential for habitat fragmentation to occur.

There are no plant species listed on the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations, 2011* on the Dublin Central Masterplan site. The Dublin Central Masterplan site is hydrologically connected European sites in Dublin Bay through the combined surface and foul water drainage network, however, due to the absence of Third Schedule non-native invasive species within the Dublin Central Masterplan site, there is no risk of non-native invasive species spreading from the Dublin Central Masterplan site to any European site.

Herring gulls are an SCI species of nearby European sites, and are known to nest on flat roof tops in urban areas. The development of the Dublin Central Masterplan may therefore temporarily remove suitable ex-situ breeding habitat for this species. However there will not be any permanent impacts on herring gulls as the current roofs will be replaced by similar structures, and as the construction programme will be on a phased basis, the demolition of buildings will be gradual. The installation of green and blue roofs in some areas may also increase suitability for a wider range of bird species, including; skylark, oystercatcher, ringed and little plovers, common tern and lapwings¹⁹.

¹⁹ Biodiversity and Green Roofs – Green Roof Services, Living Roofs. Accessed here: <https://livingroofs.org/biodiversity-and-wildlife/>

Construction-related disturbance and displacement of fauna species could potentially occur within the vicinity of the Dublin Central Masterplan. For birds, disturbance effects would not be expected to extend beyond a distance of c. 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance²⁰. There are no European sites within the disturbance Zol; the next nearest European site to the Dublin Central Masterplan is c. 2.4km away.

There is some potential for contaminants arising from the construction phase of the development of the Dublin Central Masterplan to enter the downstream receiving environment via the existing surface water mains. Notwithstanding the location of the aforementioned designated sites in the downstream receiving environment, there is not considered to be any potential for significant effects arising from the construction or operation of the development of the Dublin Central Masterplan. This is because: -

- South Dublin Bay SAC (000210) (which overlaps with South Dublin Bay pNHA) is located to the east along c. 5.4km of the River Liffey channel from the Dublin Central Masterplan, and South Dublin Bay and River Tolka Estuary SPA (004024) is located to the east along c. 4.7km of the River Liffey channel. There is therefore a large freshwater and estuarine water buffer separating the designated sites from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.
- North Bull Island SPA (004006) (which partially overlaps with North Dublin Bay pNHA) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay) from the Dublin Central Masterplan, and North Dublin Bay SAC (000206) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large freshwater and estuarine water buffer separating the designated sites from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.
- Rockabill to Dalkey Island SAC (003000) (which partially overlaps with Dalkey Coastal Zone And Killiney Hill pNHA) is located c. 11.3km from the Dublin Central Masterplan along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.
- Howth Head SAC (000202) (which overlaps with Howth Head Coast SPA) is located c. 11km north east of the Dublin Central Masterplan site along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.

Any discharge of silt laden water to gravels or stormwater would not result in any exceedances within the Liffey as settlement would occur in the gravel deposits or stormwater lines close to the site boundary²¹. Furthermore, it is an objective of the Greater Dublin Strategic Drainage Study, and the Dublin City Development Plan 2016 – 2022, to incorporate Sustainable Urban Drainage Systems (SUDS) within new developments.

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²⁰ The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

²¹ Hydrological & Hydrogeological Qualitative Risk Assessment for Dublin Central Project, Dublin 1, Awn Consulting (2021).

The SUDS features associated with the Proposed Development are not included within the design to avoid or reduce any potential harmful effects to any European sites. Therefore, they have not been considered, and are not necessary, in reaching the conclusion of this assessment as to the potential for the Proposed Development to result in significant effects on any European sites.

Due to the above reasons, there are no hydrological or hydrogeological risks associated with the development of the Dublin Central Masterplan, and therefore there are no European sites at risk of habitat degradation.

6.5.1.1.2 National Sites

In the case of NHAs and pNHAs the assessment considers whether the integrity²² of any such site would be affected by the development of the Dublin Central Masterplan with reference to the ecological features for which the site is designated, or is proposed.

The Dublin Central Masterplan does not overlap with any nationally designated sites.

As outlined within Section 6.5.2 of this chapter, the zone of influence of the Dublin Central Masterplan in relation to designated sites extends to NHAs / pNHAs and European sites downstream of the Dublin Central Masterplan in Dublin Bay. Therefore, the only nationally designated sites within the potential zone of influence of the Dublin Central Masterplan are; South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000201), and North Dublin Bay pNHA (000206). These designated sites are in the downstream receiving environment within Dublin Bay, to which the surface waters from the lands ultimately discharge via the River Liffey. There is not considered to be any potential for significant effects arising from construction of the Dublin Central Masterplan for the same reasons as European sites above. Dolphins, Dublin Docks pNHA, is designated for nesting terns, and as noise from the development is not predicted to extend more than a few hundred metres¹² from the site, no significant effects are predicted on this National site.

Grand Canal pNHA (002104) located c. 1.6km south and the Royal Canal pNHA (002103) located c. 1.3km north of the Dublin Central Masterplan site, are not hydrologically connected or otherwise to the Dublin Central Masterplan site, therefore no significant effects are predicted on these National sites.

As the implementation of the Dublin Central Masterplan will not result in significant effects on nationally designated sites on its own, there is no potential for cumulative effects arising from the proposal in-combination with other plans or projects.

6.5.1.2 Potential Impact of the Masterplan Proposal on Habitats during Construction Stage

There are no habitats of importance within the Dublin Central Masterplan site, or in the immediate environs. Landscaping plans for the Dublin Central Masterplan will enhance the urban nature of the site. Therefore the implementation of the Dublin Central Masterplan will not result in significant effects on habitats at any geographical scale.

6.5.1.3 Potential Impact of the Masterplan Proposal on Birds during Construction Stage

6.5.1.3.1 Effects on Mortality and Disturbance

There is considered to be temporary displacement of nesting herring gull and pigeon habitat (as well as the potential for bird injury/mortality) on the roof tops of the buildings if works are undertaken during the breeding bird season (*i.e.* 1st March to 31st August, inclusive). Feral pigeon are a green-listed species in Ireland and are commonly occurring within urban environments. Herring gull although a red-listed species in Ireland have been forced by anthropogenic pressures to occupy and breed in urban environments.

²² Refer to Section 4.5.2.2 for definition and impact assessment methodology.

If site clearance works were to be undertaken during the bird breeding season (March to August, inclusive) it is likely that nesting sites holding eggs or chicks will be destroyed and birds killed. Mortality of birds at the scale of the Dublin Central Masterplan (given the relatively low area of vegetation roof cover in the wider context that will be lost), over what is likely to be a single breeding bird season in terms of completing site clearance works, could only have a short-term effect on local breeding bird population abundance. However, in the longer-term this would be unlikely to affect the abundance or distribution of the breeding bird species recorded in the study area nor would it be likely to affect the long-term viability of the local populations. The landscape planting proposed as part of the design may also serve to provide additional nesting and foraging opportunities, and upon the completion of the development the rooftops would continue to provide nesting opportunities for herring gulls.

The noise, vibration, increased human presence and the visual deterrent of construction traffic associated with site clearance and construction will disturb breeding bird species and is likely to displace breeding birds from habitat areas adjacent to the Dublin Central Masterplan boundary. Although it is not possible to quantify the magnitude of this potential impact (or the potential effect zone) it could potentially extend for several hundred metres from the Dublin Central Masterplan site. Given the abundance of rooftops and buildings in the surrounding environs, disturbance or displacement effects will also be over the short-term and are therefore not likely to affect the conservation status of the local breeding bird populations.

Overall, the site clearance and physical disturbance associated with the implementation of the Dublin Central Masterplan is not likely to result in long-term effects on local breeding bird populations, however will result in a likely short-term significant negative effect, at a local geographic scale. Following mitigation measures proposed in Section 6.6.3.2, this impact will not result in a significant effect at any geographical scale.

6.5.1.4 Operational Stage

6.5.1.5 Potential Impacts of the Masterplan Proposal on Habitats during Operational stage

No operational phase impacts are predicted on habitats as a result of the Dublin Central Masterplan proposal.

6.5.1.6 Potential Impacts of the Masterplan Proposal on Birds during Operational Stage

6.5.1.6.1 Disturbance

It is possible that birds using the site and environs may be temporarily disturbed as a result of increased noise and human activity levels during operation of the Dublin Central Masterplan. This could potentially result in the temporary disturbance and displacement of birds until they habituate to the increased levels of noise and human activity. Birds recorded within the Dublin Central Masterplan site are typical urban species which are considered to tolerate increased levels of disturbance providing suitable habitat remains which birds use as a refuge. The increase in vegetation and planting, will also provide habitat for other local bird species, in what is a heavily urbanised environment. Overall, the disturbance during operation is unlikely to result in a significant effect at any geographic scale.

6.5.1.7 Cumulative Assessment

The Dublin Central Masterplan site is currently zoned as Z5 "City / Town / Village Centre, Central Area" with the zoning objective "to consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity" within the Dublin City Development Plan 2016 – 2022.

This section of the chapter assesses the potential for any other Proposed Developments to act cumulatively with the development of the Dublin Central Masterplan, to give rise to likely significant effects on biodiversity.

Based on a search of active or recent planning applications in the immediate environs of the Dublin Central Masterplan site²³, most applications relate to minor additions or amendments to existing buildings, including installation of platform lifts, improved access facilities etc. The exception to this is the planning application directly east of the site, on Moore Lane / Parnell Street, which will consist of the provision of additional nine bedrooms to the existing hotel. Planning permission for construction of the building was granted in July 2019, and works on this development are currently ongoing.

Potential cumulative impacts may arise during construction and operation, as a consequence of the development of the Dublin Central Masterplan acting in-combination with other plans and projects, on water quality in the downstream surface water environment, and on disturbance and habitat loss to birds.

There is potential for cumulative impacts to arise with other local developments that would also result in increased noise, vibration, and human presence. However, as any disturbance effects from other such local developments are likely to be of a minor nature, temporary, localised and over a short-duration, they are not likely to cumulatively affect the local breeding bird populations in conjunction with the implementation of the Dublin Central Masterplan.

Considering the predicted impacts associated with the implementation of the Dublin Central Masterplan, the mitigation measures proposed to protect the local biodiversity resource and the receiving environment, and the protective policies and objectives on the land-use plans that will direct future development locally, significant cumulative negative effects on biodiversity are not predicted.

6.5.1.8 Do-Nothing Impact

Under the do-nothing scenario, the site would continue to degrade and provide habitat for nesting gull species, and feral pigeons. The minor areas of non-native ornamental scrub would likely continue to grow and spread across the site, potentially providing nesting opportunities for bird species, and invertebrate populations.

6.5.2 Proposed Development Site 3, 4 & 5

As per the relevant guidelines, likely significant effects have only been assessed for KERs, as listed in Table 6.3. An impact is considered to be ecologically significant if it is predicted to affect the integrity or conservation status of a KER at a specified geographical scale. All impacts are described in the absence of mitigation.

6.5.2.1 Potential Impact of the Proposed Development on Designated Sites during Construction Stage

This section describes and assesses the potential for the Proposed Development (i.e. Site 3, 4 and 5) to result in likely significant effects on European sites that lie within the ZoI of the Proposed Development. In the context of European sites this is focussed on the habitats and species for which the sites are selected (QIs for SACs and SCIs for SPAs) and the conservation objectives supporting their conservation status in each site. This assessment is directly related to the assessment methodology for European sites required under the Habitats Directive, which is presented in the Appropriate Assessment Screening Report for the Proposed Development that accompanies this application.

In the case of NHAs and pNHAs the assessment considers whether the integrity of any such site would be affected by the Proposed Development with reference to the ecological features for which the site is designated, or is proposed.

²³ Planning applications accessed via myplan.ie on 23 February 2021. Only planning applications that have been granted permission within the last five years were considered.

6.5.2.1.1 European Sites

This section describes and assesses the potential for the Proposed Development to result in likely significant effects on European sites that lie within the Zol of the Proposed Development. In the context of European sites this is focussed on the habitats and species for which the sites are selected (QIs for SACs and SCIs for SPAs) and the conservation objectives supporting their conservation status in each site. The assessment required under the Habitats Directive is presented in the Appropriate Assessment Screening Report for the Proposed Development that accompanies this application.

The assessment presented in the Appropriate Assessment Screening Report concluded that the potential impacts associated with the Proposed Development do not have the potential to affect the receiving environment and, consequently, do not have the potential to affect the conservation objectives supporting the qualifying interests or special conservation interests of any European sites; either alone or in combination with any other plans or projects.

As the Proposed Development does not traverse any European sites there is no potential for habitat fragmentation to occur.

There are no plant species listed on the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations, 2011* on the Proposed Development site. The Proposed Development site is hydrologically connected European sites in Dublin Bay, however, due to the absence of Third Schedule non-native invasive species within the Proposed Development site, there is no risk of non-native invasive species spreading from the Proposed Development site to any European site.

Construction-related disturbance and displacement of fauna species could potentially occur within the vicinity of the Proposed Development. For birds, disturbance effects would not be expected to extend beyond a distance of c. 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance²⁴. There are no European sites within the disturbance Zol; the next nearest European site to the Proposed Development is c. 2.4km away.

There is some potential for contaminants arising from the construction phase of the Proposed Development to enter the downstream receiving environment via the existing surface water mains. Notwithstanding the location of the aforementioned designated sites in the downstream receiving environment, there is not considered to be any potential for significant effects arising from the construction or operation of the Proposed Development. This is because: -

- South Dublin Bay SAC (000210) (which overlaps with South Dublin Bay pNHA) is located to the east along c. 5.4km of the River Liffey channel from the Proposed Development, and South Dublin Bay and River Tolka Estuary SPA (004024) is located to the east along c. 4.7km of the River Liffey channel. There is therefore a large freshwater and estuarine water buffer separating the designated sites from the Proposed Development over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.
- North Bull Island SPA (004006) (which partially overlaps with North Dublin Bay pNHA) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay) from the Proposed Development, and North Dublin Bay SAC (000206) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large freshwater and estuarine water buffer separating the designated sites from the Proposed Development over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.

²⁴ The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

- Rockabill to Dalkey Island SAC (003000) (which partially overlaps with Dalkey Coastal Zone And Killiney Hill pNHA) is located c. 11.3km from the Proposed Development along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Proposed Development over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.
- Howth Head SAC (000202) (which overlaps with Howth Head Coast SPA) is located c. 11km north east of the Proposed Development site along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Proposed Development over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.

Due to the above reasons, there are no hydrological or hydrogeological risks associated with the Proposed Development, and therefore there are no European sites at risk of habitat degradation.

Excavation spoil and waste material will need to be removed offsite due to limited opportunities for reuse on site. It is anticipated that the surplus material will be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the unlikely event of hazardous material being encountered, be transported for treatment/recovery or exported abroad for disposal at suitable facilities. This could potentially extend the Zol to areas where the material will be deposited, however the waste will be classified in accordance with the EPA publication Waste Classification, with environmental soil analysis carried out prior to removal of the material, in accordance with the requirements for acceptance of waste at landfills². Therefore there will be no impact associated with this on European sites.

There are no plant species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 on the Proposed Development site. The Proposed Development site is hydrologically connected European sites in Dublin Bay, however, due to the absence of Third Schedule non-native invasive species within the Proposed Development site, there is no risk of non-native invasive species spreading from the Proposed Development site to any European site.

6.5.2.1.2 National Sites

In the case of NHAs and pNHAs the assessment considers whether the integrity of any such site would be affected by the Proposed Development with reference to the ecological features for which the site is designated, or is proposed.

The Proposed Development does not overlap with any nationally designated sites.

As outlined within Section 6.5.2 of this chapter, the zone of influence of the Proposed Development in relation to designated sites extends to NHAs/pNHAs and European sites downstream of the Proposed Development in Dublin Bay. Therefore, the only nationally designated sites within the potential zone of influence of the Proposed Development are; South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000201), and North Dublin Bay pNHA (000206). These designated sites are in the downstream receiving environment within Dublin Bay, to which the surface waters from the lands ultimately discharge via the River Liffey. There is not considered to be any potential for significant effects arising from construction of the Proposed Development for the same reasons as European sites above. Dolphins, Dublin Docks pNHA, is designated for nesting terns, and as noise from the development is not predicted to extend more than a few hundred metres¹⁰ from the site, no significant effects are predicted on this National site.

Grand Canal pNHA (002104) located c. 1.6km south and the Royal Canal pNHA (002103) located c. 1.3km north of the Proposed Development site, are not hydrologically connected or otherwise to the Proposed Development site., therefore no significant effects are predicted on these National sites.

As the Proposed Development will not result in significant effects on nationally designated sites on its own, and as all other developments within the area will be subject to the environmental protective policies and objectives of the Dublin City Development Plan 2016-2022, there is no potential for cumulative effects arising from the proposal in-combination with other plans or projects.

6.5.2.2 Potential Impact of the Proposed Development on Habitats during Construction Stage

There are no habitats of importance within the Proposed Development site, or in the immediate environs. Landscaping plans for the Proposed Development will enhance the urban nature of the site. Therefore, the Proposed Development will not result in significant effects on habitats at any geographical scale.

6.5.2.3 Potential Impact of the Proposed Development on Birds during Construction Stage

6.5.2.3.1 Effects of Mortality and Disturbance

There is considered to be temporary displacement of nesting herring gull and pigeon habitat (as well as the potential for bird injury/mortality) on the roof tops of the buildings if works are undertaken during the breeding bird season (i.e. 1 March to 31 August, inclusive). Feral pigeon are a green-listed species in Ireland and are commonly occurring within urban environments. Herring gull although a red-listed species in Ireland have been forced by anthropogenic pressures to occupy and breed in urban environments.

If site clearance works were to be undertaken during the bird breeding season (March to August, inclusive) it is likely that nesting sites holding eggs or chicks will be destroyed and birds killed. Mortality of birds at the scale of the Proposed Development (given the relatively low area of vegetation and roof cover that will be lost), over what is likely to be a single breeding bird season in terms of completing site clearance works, will probably have a short-term effect on local breeding bird population abundance. However, in the longer-term this would be unlikely to affect the abundance or distribution of the breeding bird species recorded in the study area nor would it be likely to affect the long-term viability of the local populations. The landscape planting proposed as part of the design may also serve to provide additional nesting and foraging opportunities, and upon the completion of the development the rooftops would continue to provide nesting opportunities for herring gulls.

The noise, vibration, increased human presence and the visual deterrent of construction traffic associated with site clearance and construction will disturb breeding bird species and is likely to displace breeding birds from habitat areas adjacent to the Proposed Development boundary. Although it is not possible to quantify the magnitude of this potential impact (or the potential effect zone) it could potentially extend for several hundred metres from the Proposed Development. Given the abundance of rooftops and buildings in the surrounding environs, disturbance or displacement effects will also be over the short-term and are therefore not likely to affect the conservation status of the local breeding bird populations.

Overall, the site clearance and physical disturbance associated with the Proposed Development is not likely to result in long-term effects on local breeding bird populations, however will result in a likely short-term significant negative effect, at a local geographic scale. Following mitigation measures proposed in Section 6.7.3.2, this impact will not result in a significant effect at any geographical scale.

6.5.2.4 Potential Impacts of the Proposed Development on Habitats during Operational Stage

No operational phase impacts are predicted on habitats as a result of the Proposed Development.

6.5.2.5 Potential Impacts of the Proposed Development on Birds during Operational Stage

6.5.2.5.1 Disturbance

It is possible that birds using the site and environs may be temporarily disturbed as a result of increased noise and human activity levels during operation of the Proposed Development. This could potentially result in the temporary disturbance and displacement of birds until they habituate to the increased levels of noise and human activity. Birds recorded within the Proposed Development site are typical urban species which are considered to tolerate increased levels of disturbance providing suitable habitat remains which birds use as a refuge. The increase in vegetation and planting, will also provide habitat for other local bird species, in what is a heavily urbanised environment. Overall, the disturbance during operation is unlikely to result in a significant effect at any geographic scale.

6.5.2.6 Do-Nothing Impact

Under the do-nothing scenario, the site would continue to degrade and provide habitat for nesting gull species, and feral pigeons. The little areas of non-native ornamental scrub would likely continue to grow and spread across the site, potentially providing nesting opportunities for bird species, and invertebrate populations.

6.5.3 Cumulative

The Dublin Central Masterplan site, and subsequently the Proposed Development, is currently zoned as Z5 "City / Town / Village Centre, Central Area" with the zoning objective "to consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity" within the Dublin City Development Plan 2016 – 2022.

This section of the chapter assesses the potential for any other Proposed Developments to act cumulatively with the development of the Proposed Development, to give rise to likely significant effects on biodiversity.

Based on a search of active or recent planning applications in the immediate environs of the Dublin Central site, most applications relate to minor additions or amendments to existing buildings, including installation of platform lifts, improved access facilities etc. The exception to this is the planning application directly east of the site, on Moore Lane / Parnell Street, which will consist of the provision of additional nine bedrooms to the existing hotel. Planning permission for construction of the building was granted in July 2019 and works on this development are currently ongoing.

Potential cumulative impacts may arise during construction and operation, as a consequence of the development of the Proposed Development acting in-combination with other plans and projects, on water quality in the downstream surface water environment, and on disturbance and habitat loss to birds.

There is potential for cumulative impacts to arise with other local developments that would also result in increased noise, vibration, and human presence. However, as any disturbance effects from other such local developments are likely to be of a minor nature, temporary, localised and over a short-duration, they are not likely to cumulatively affect the local breeding bird populations in conjunction with the development of the Proposed Development.

Considering the predicted impacts associated with the development of the Proposed Development, the mitigation measures proposed to protect the local biodiversity resource and the receiving environment, and the protective policies and objectives on the land-use plans that will direct future development locally, significant cumulative negative effects on biodiversity are not predicted.

6.5.3.1 Do-Nothing Impact

Under the do-nothing scenario, the site would continue to degrade and provide habitat for nesting gull species, and feral pigeons. The minor areas of non-native ornamental scrub would likely continue to grow and spread across the site, potentially providing nesting opportunities for bird species, and invertebrate populations.

6.6 MITIGATION MEASURES (AMELIORATIVE, REMEDIAL OR REDUCTIVE MEASURES)

6.6.1 Dublin Central Masterplan

This section presents the mitigation measures that will be implemented during construction and operation to avoid the potential impacts of the Proposed Development on KERs as outlined above. All of the mitigation measures will be implemented in full. They are in accordance with best practice, and tried and tested, effective control measures to protect the receiving environment.

6.6.1.1 Mitigation Measures for Designated Sites during Construction Stage

6.6.1.1.1 European Sites

As set out in the Appropriate Assessment Screening Report, in concluding that the Proposed Development is not likely to have a significant effect on any European sites, mitigation measures intended to avoid or reduce any harmful effects of the Proposed Development on European sites were not required or taken into account.

6.6.1.1.2 National Sites

As there is no risk of the Proposed Development to affect the integrity of any nationally designated site, mitigation measures intended to avoid or reduce any harmful effects of the Proposed Development on nationally designated sites were not required or taken into account.

6.6.1.2 Mitigation Measures for Birds during Construction Stage

Bird species are protected under the Wildlife Acts and it is an offence to disturb birds while on their nests, or to wilfully take, remove, destroy, injure or mutilate their eggs or nests. There is potential for direct impacts on nesting birds and/or mortality of birds (including birds of local importance (higher value)) arising from the Proposed Development. This scenario would be most likely if works were to occur during the time of year when birds are likely to be nesting (which is from 1 March to 31 August, inclusive).

Where feasible, vegetation (e.g. scrub) will not be removed, between the 1 March and the 31 August, to avoid direct impacts on nesting birds. Where the construction programme does not allow this seasonal restriction to be observed, then these areas will be inspected by a suitably qualified ecologist for the presence of breeding birds prior to clearance. Areas found not to contain nests will be cleared within 3 days of the nest survey, otherwise repeat surveys will be required.

Measures to prevent herring gulls nesting on the rooftops of the buildings may also be undertaken well in advance of breeding bird season. This includes measures such as: -

- Kite hawks to discourage birds from the site.
- A specialist bird proof net to restrict access and prevent gulls from nesting.²⁵

These measures must be undertaken by a specialist, and before any birds begin to nest on the buildings.

²⁵ Sullivan, I. & Lusby, J. (2021). Wildlife in Buildings: Linking our built and natural heritage. BirdWatch Ireland.

6.6.1.3 Operational Stage

6.6.1.4 Mitigation Measures for Birds during Operational Stage

Mitigation measures are not required as operational phase impacts predicted on bird species as a result of the Proposed Development will be short-term and not significant.

6.6.2 Proposed Development Site 3, 4 & 5

This section presents the mitigation measures that will be implemented during construction and operation to avoid the potential impacts of the Proposed Development on KERs as outlined above. All of the mitigation measures will be implemented in full. They are in accordance with best practice, and tried and tested, effective control measures to protect the receiving environment.

6.6.2.1 Mitigation Measures for Designated sites during Construction Stage

6.6.2.1.1 European Sites

As set out in the Appropriate Assessment Screening Report, in concluding that the Proposed Development is not likely to have a significant effect on any European sites, mitigation measures intended to avoid or reduce any harmful effects of the Proposed Development on European sites were not required or taken into account.

6.6.2.1.2 National Sites

As there is no risk of the Proposed Development to affect the integrity of any nationally designated site, mitigation measures intended to avoid or reduce any harmful effects of the Proposed Development on nationally designated sites were not required or taken into account.

6.6.2.2 Mitigation measures for Birds during Construction Stage

Bird species are protected under the Wildlife Acts and it is an offence to disturb birds while on their nests, or to wilfully take, remove, destroy, injure or mutilate their eggs or nests. There is potential for direct impacts on nesting birds and/or mortality of birds (including birds of local importance (higher value) arising from the Proposed Development. This scenario would be most likely if works were to occur during the time of year when birds are likely to be nesting (which is from 1 March to 31 August, inclusive).

Where feasible, vegetation (e.g. scrub) will not be removed, between the 1 March and the 31 August, to avoid direct impacts on nesting birds. Where the construction programme does not allow this seasonal restriction to be observed, then these areas will be inspected by a suitably qualified ecologist for the presence of breeding birds prior to clearance. Areas found not to contain nests will be cleared within 3 days of the nest survey, otherwise repeat surveys will be required.

Measures to prevent herring gulls nesting on the rooftops of the buildings may also be undertaken well in advance of breeding bird season. This includes measures such as:

- Kite hawks to discourage birds from the site.
- A specialist bird proof net to restrict access and prevent gulls from nesting.²⁶

These measures must be undertaken by a specialist, and before any birds begin to nest on the buildings.

²⁶ Sullivan, I. & Lusby, J. (2021). Wildlife in Buildings: Linking our built and natural heritage. BirdWatch Ireland

6.6.2.3 Mitigation measures for birds Operational Stage

Mitigation measures are not required as operational phase impacts predicted on bird species as a result of the Proposed Development will be short-term and not significant.

6.7 RESIDUAL IMPACT

6.7.1 Dublin Central Masterplan

6.7.1.1 Designated Sites

6.7.1.1.1 European Sites

The assessment presented in the Appropriate Assessment Screening Report concluded that there was no risk of the Proposed Development resulting in a likely significant effect on any European site, either alone or in combination with other plans or projects. Therefore, the Proposed Development is not likely to have significant residual effects on any European sites.

6.7.1.1.2 National sites

There is no risk of the Proposed Development to affect the integrity of any nationally designated site, either alone or in combination with other plans or projects. Therefore, the Proposed Development is not likely to have significant residual effects on any nationally designated sites.

6.7.1.2 Birds

The effects of the Proposed Development on breeding birds have been considered within Section 6.6.2.5 of this chapter. Measures to avoid, reduce and mitigate effects on breeding birds have been provided in Section 6.6.3.2 of this chapter. Following the implementation of these measures, residual effects on breeding birds arising from the Proposed Development will be reduced to levels not considered to be significant.

6.7.1.3 Worst Case Impact

Construction and operational activities are assessed under the best and worst-case operating conditions, to determine all potential impacts associated with the Dublin Central Masterplan.

6.7.2 Proposed Development Site 3, 4 & 5

6.7.2.1 Designated Sites

6.7.2.1.1 European Sites

The assessment presented in the Appropriate Assessment Screening Report concluded that there was no risk of the Proposed Development resulting in a likely significant effect on any European site, either alone or in combination with other plans or projects. Therefore, the Proposed Development is not likely to have significant residual effects on any European sites.

6.7.2.1.2 National Sites

There is no risk of the Proposed Development to affect the integrity of any nationally designated site, either alone or in combination with other plans or projects. Therefore, the Proposed Development is not likely to have significant residual effects on any nationally designated sites.

6.7.2.2 Birds

The effects of the Proposed Development on breeding birds have been considered within Section 6.7.2.3 of this chapter. Measures to avoid, reduce and mitigate effects on breeding birds have been provided in Section 6.7.3.2 of this chapter. Following the implementation of these measures, residual effects on breeding birds arising from the Proposed Development will be reduced to levels not considered to be significant.

6.7.2.3 Worst Case Impact

Construction and operational activities are assessed under the best and worst-case operating conditions, to determine all potential impacts associated with the Proposed Development.

6.8 MONITORING

This heading is not considered relevant to this Chapter as monitoring is not proposed or required within this assessment.

6.9 REINSTATEMENT

This heading is not considered relevant to this Chapter.

6.10 DIFFICULTIES ENCOUNTERED

It was not possible to fully survey all of the buildings within the Proposed Development boundary internally due to access issues as a result of the Covid 19 pandemic. This is not considered to be a limitation however as the buildings not surveyed internally were not deemed to have any potential for roosting bats. Secondly, the coverage during bat activity surveys was sufficient enough to identify if there were any bats roosting on site.