

# **Article 6 (3) Appropriate Assessment Screening Report**

Sky Castle Ltd – Moygaddy  
Mixed Use Scheme, Co.  
Meath & Co. Kildare





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# Table of Contents

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	Background.....	1
1.2	Appropriate Assessment.....	1
1.2.1	Screening for Appropriate Assessment.....	1
<b>2.</b>	<b>DESCRIPTION OF THE PROPOSED DEVELOPMENT.....</b>	<b>3</b>
2.1	Site Location.....	3
2.2	Characteristics of the Proposed Development.....	3
2.2.1	Project Description.....	3
2.2.2	Strategic Employment Zone (Site A).....	3
2.2.3	Healthcare Facilities (Site B).....	4
2.2.4	Strategic Housing Development (Site C).....	5
2.2.5	Maynooth Outer Orbital Road (MOOR).....	6
2.2.6	Kildare Bridge Application.....	6
2.2.7	Moyglare Bridge Application.....	7
2.3	Proposed Site Drainage.....	10
2.3.1	Site A.....	10
2.3.2	Site B.....	10
2.3.3	Site C.....	10
2.3.4	MOOR.....	11
2.3.5	Kildare Bridge.....	11
2.3.6	Moyglare bridge.....	11
2.3.7	Operational Phase Sustainable Drainage Systems.....	12
2.3.7.1	Rainwater Harvesting.....	12
2.3.7.2	Attenuation Storage.....	13
2.3.7.3	Limiting Discharge.....	14
2.3.7.4	Permeable Paving.....	14
2.3.7.5	Trapped Road Gullies.....	15
2.3.7.6	Measures to avoid water pollution.....	15
2.4	Proposed Wastewater Infrastructure.....	16
2.4.1	Site A, Site B and Site C.....	16
2.5	Proposed Water Supply.....	16
2.5.1	Site A and Site B.....	16
2.5.2	Site C.....	17
2.6	Description of the Baseline Ecological Environment.....	18
2.6.1.1	Site A- Strategic Employment Zone.....	18
2.6.1.2	Site B- Healthcare Facilities.....	21
2.6.1.3	Site C- Strategic Housing Development.....	24
2.6.1.4	MOOR (Maynooth Outer Orbital Road) Site.....	29
2.6.1.5	Kildare Bridge.....	33
2.6.1.6	Moyglare Bridge.....	34
<b>3.</b>	<b>IDENTIFICATION OF RELEVANT EUROPEAN SITES.....</b>	<b>37</b>
3.1	Identification of the European Sites within the Likely Zone of Impact.....	37
3.2	European Sites with the Potential to be Significantly Affected by the Proposed Development.....	43
3.2.1	Rye Water Valley/Carlton SAC [001398].....	43
3.2.2	South Dublin Bay SAC [000210].....	43
3.2.3	North Dublin Bay SAC [000206].....	43
3.2.4	South Dublin Bay and River Tolka Estuary SPA [004024].....	44
3.2.5	North Bull Island SPA [004006].....	44
3.3	Likely Cumulative Impact of the Proposed Works on European Sites, in-combination with other plans and projects.....	44
<b>4.</b>	<b>ARTICLE 6(3) APPROPRIATE ASSESSMENT SCREENING STATEMENT AND CONCLUSIONS.....</b>	<b>45</b>

4.1	Data Collected to Carry Out Assessment.....	45
4.2	Concluding Statement.....	45
	<b>BIBLIOGRAPHY .....</b>	<b>46</b>

## TABLE OF PLATES

<i>Plate 2-1.Example of Rainwater Harvesting System.....</i>	<i>12</i>
<i>Plate 2-2. Example of Domestic Rainwater Harvesting Butt for Site C.....</i>	<i>13</i>
<i>Plate 2-3. Typical Poly-Tunnel Installation Arrangement.....</i>	<i>14</i>
<i>Plate 2-4. Detail of Type B Pervious Paving (CIRIA C753).....</i>	<i>15</i>
<i>Plate 2-5: Trapped Road Gully (Typical Detail).....</i>	<i>15</i>
<i>Plate 2-6.Agricultural grassland recorded within development site A.....</i>	<i>19</i>
<i>Plate 2-7. Hedgerow habitat along the eastern boundary of site A.....</i>	<i>19</i>
<i>Plate 2-8. R157 located along the eastern boundary of Site A.....</i>	<i>20</i>
<i>Plate 2-9. Agricultural grassland recorded in site B.....</i>	<i>22</i>
<i>Plate 2-10. Hedgerow recorded in eastern section of site B.....</i>	<i>22</i>
<i>Plate 2-11. Rye Water River along recorded along the southern boundary of site B.....</i>	<i>23</i>
<i>Plate 2-12. Improved agricultural grassland in centre of site C.....</i>	<i>25</i>
<i>Plate 2-13.Moygaddy castle, categorized as Buildings and Artificial surfaces in the north section of site C.....</i>	<i>26</i>
<i>Plate 2-14.Hedgerow habitat delineating improved agricultural grassland (GAI) in the centre of the site.....</i>	<i>27</i>
<i>Plate 2-15.Blackhall Little River categorised as eroding upland river in the centre of site C.....</i>	<i>28</i>
<i>Plate 2-16.Mixed Broadleaved woodland planted with Ash, Beech and Sycamore located in the centre of site C.....</i>	<i>28</i>
<i>Plate 2-17. Improved agricultural grassland located within the route of the MOOR application.....</i>	<i>30</i>
<i>Plate 2-18. L2214 categorized as Buildings and Artificial surfaces located within route of the proposed MOOR fringes by mature Treeline habitat.....</i>	<i>30</i>
<i>Plate 2-19. Treeline recorded along the Blackwater Little River within the centre of the MOOR route.....</i>	<i>31</i>
<i>Plate 2-20. Blackwater Little Rive with no flowing water located to the north of the MOOR route.....</i>	<i>31</i>
<i>Plate 2-21. Rye Water River located to the western boundary of the MOOR route.....</i>	<i>32</i>
<i>Plate 2-22. Kildare bridge and R157.....</i>	<i>33</i>
<i>Plate 2-23. Rye River (FW1) fringed by riparian Treeline (WL1).....</i>	<i>34</i>
<i>Plate 2-24. Dry meadows and grassy Verges habitat recorded south of the Rye Water River within Moyglare site.....</i>	<i>35</i>
<i>Plate 2-25. Spoil and bare ground fringed by dry meadows and grassy verges within Moyglare site.....</i>	<i>35</i>
<i>Plate 2-26. Rye Water River categorised as Eroding upland river within Moyglare site.....</i>	<i>36</i>

## TABLE OF FIGURES

<i>Figure 2-1- EIAR Site Location Map.....</i>	<i>8</i>
<i>Figure 2-2. 6 planning application boundaries.....</i>	<i>9</i>
<i>Figure 3-1 European sites within the Likely Zone of Impact.....</i>	<i>38</i>



## TABLE OF TABLES

<i>Table 2-1. Habitats recorded in site A.....</i>	<i>18</i>
<i>Table 2-2. Habitats recorded within development site B.....</i>	<i>21</i>
<i>Table 2-3. Habitats recorded within site C.....</i>	<i>24</i>
<i>Table 2-4. Habitats recorded within the MOOR application site.....</i>	<i>29</i>
<i>Table 2-5. Habitats recorded within the Kildare bridge application site.....</i>	<i>33</i>
<i>Table 2-6. Habitats recorded within the Moyglare bridge site.....</i>	<i>34</i>
<i>Table 3-1 Identification of Designated sites within the Likely Zone of Impact.....</i>	<i>39</i>

# 1. INTRODUCTION

## 1.1 Background

MKO has been appointed to provide the information necessary to allow the competent authority to conduct an Article 6(3) Screening for Appropriate Assessment for the Proposed Moygaddy Mixed Use Scheme. A full description of the Proposed Development is given in Section 2 below.

Screening for Appropriate Assessment is required under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). Where it cannot be excluded that a project or plan, either alone or in combination with other projects or plans, would have a significant effect on a European Site then same shall be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives. The current project is not directly connected with, or necessary for, the management of any European Site and consequently the project has been subject to the Appropriate Assessment Screening process.

The assessment in this report is based on a desk study and multiple field surveys undertaken during July and August 2021 and July and August 2022 respectively. It specifically assesses the potential for the proposed development to result in significant effects on European sites in the absence of any best practice, mitigation or preventative measures.

This Appropriate Assessment Screening Report has been prepared in accordance with the European Commission's Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2021) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018) as well as the Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010).

In addition to the guidelines referenced above, the following relevant documents were also considered in the preparation of this report:

1. *Council of the European Commission (1992) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Communities. Series L 20, pp. 7-49.*
2. *EC (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.*
3. *EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence. Opinion of the commission.*
4. *EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission.*

## 1.2 Appropriate Assessment

### 1.2.1 Screening for Appropriate Assessment

Screening is the process of determining whether an Appropriate Assessment is required for a plan or project. Under Part XAB of the Planning and Development Act, 2000, as amended, screening must be carried out by the Competent Authority. As per Section 177U of the Planning and Development Act, 2000, as amended 'A screening for appropriate assessment shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the

European site'. The Competent Authority's determination as to whether an Appropriate Assessment is required must be made on the basis of objective information and should be recorded. The Competent Authority may request information to be supplied to enable it to carry out screening.

Consultants or project proponents may provide for the competent authority, the information necessary for them to determine whether an Appropriate Assessment is required and provide advice to assist them in the Article 6(3) Appropriate Assessment Screening decision.

Where it cannot be excluded beyond reasonable scientific doubt at the Screening stage, that a proposed plan or project, individually or in combination with other plans and projects, would have a significant effect on the conservation objectives of a European site, an Appropriate Assessment is required.

Where an Appropriate Assessment is required, the Competent Authority may require the applicant to prepare a Natura Impact Statement.

The term Natura Impact Statement (NIS) is defined in legislation<sup>1</sup>. An NIS, where required, should present the data, information and analysis necessary to reach a definitive determination as to 1) the implications of the plan or project, alone or in combination with other plans and projects, for a European site in view of its conservation objectives, and 2) whether there will be adverse effects on the integrity of a European site. The NIS should be underpinned by best scientific knowledge, objective information and by the precautionary principle.

This Article 6(3) Appropriate Assessment Screening Report has been prepared in compliance with the provision of section 177U of the Planning & Development Act 2010 as amended.

## Statement of Authority

A field assessment surveys were undertaken by Julie O'Sullivan (B.Sc., M.Sc.) and Colin Murphy (B.Sc., M.Sc.) across multiple dates in July 2021. Additional follow up surveys were carried out in July 2022. Bat surveys were carried out across various dates in July and August 2021. This report has been prepared by Colin Murphy (B.Sc., M.Sc.). Colin is an experienced ecologist with over two years professional experience in ecological consultancy. This report has been reviewed by Pat Roberts (B.Sc. (Env.)) who has over 16 years' experience in ecological consultancy.

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<sup>1</sup> As defined in Section 177T of the Planning and Development Act, 2000 as amended, an NIS means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own and in combination with other plans and projects, for a European site in view of its conservation objectives. It is required to include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for the European site in view of its conservation objectives

## 2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

### 2.1 Site Location

The Proposed Development site is located on the northern environs of Maynooth town, located in both Co. Meath and Co. Kildare.

The EIAR Site location is shown in Figure 2-1 below.

### 2.2 Characteristics of the Proposed Development

#### 2.2.1 Project Description

Sky Castle Ltd. intends to submit to a total of six planning applications as part of the Moygaddy Mixed Use Development (henceforth referred to as the Proposed Development). A total of three planning applications will be submitted to Meath County Council as the competent authority. The first planning application seeks to provide a Strategic Employment Zone (Biotechnology & Life Sciences Campus), the second planning application for Community Infrastructure which includes a Nursing Home and Primary Care Centre, and the third planning application is for the delivery of the proposed Maynooth Outer Orbital Road (MOOR).

A planning application for a Strategic Housing Development (SHD) will be submitted to An Bord Pleanála under the Strategic Housing Provisions of the Planning and Development (Housing) and Residential Tenancies Act, 2016.

The site location map for the 6 separate planning applications is shown in Figure 2-2.

#### 2.2.2 Strategic Employment Zone (Site A)

The site measures approximately 6.8 hectares and is located in County Meath on the northern edge of Maynooth town. The site consists of a green field currently of agricultural use

The Strategic Employment Zone (**Site A**) will consist of:

- 1) The proposed development comprises 3 no. office blocks and all associated site development works (GFA: 20,633.26 sq.m) as follows:
- 2) Block A: 5 storey office building providing offices, stair and lift cores and plant rooms (GFA: 10,260.42 sq.m)
- 3) Block B: 3 storey office building providing offices, stair and lift cores and plant rooms (GFA: 5,186.54 sq.m)
- 4) Block C: 3 storey office building providing offices, stair and lift cores and plant rooms (GFA: 5,186.30 sq.m)
- 5) The development includes a surface car park which includes 323 no. car parking spaces and 320 no. bicycle car parking spaces (including 16 no. accessible car parking spaces and 12 no. EV charging spaces)
- 6) Undertaking of road upgrade works including the provision of a signalised junction on the R157 Dunboyne Road and the construction of a section of the Maynooth Outer Orbital Route and provision of associated pedestrian and cycle infrastructure, as well



as a realignment of a section of the R157. The works to the R157 adjoin the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).

- 7) Vehicular access to the site will be provided via the R157 Dunboyne Road and provision is made for a secondary vehicular access via the proposed section of the Maynooth Outer Orbital Route.
- 8) Provision of water, foul and surface water drainage infrastructure including pumping station.
- 9) Provision of a new pedestrian & cycle bridge structure at the River Rye Water adjacent to the existing Kildare Bridge.
- 10) Provision of roof mounted solar PV panels on Office Blocks A, B & C.
- 11) Provision of 3 no. ESB Kiosks.
- 12) Provision of bin stores, bike stands, landscaping, boundary treatments and public lighting and all other site development works and services ancillary to the proposed development.

### 2.2.3 Healthcare Facilities (Site B)

Site B measures approximately 6.1 hectares and is located in County Meath on the northern edge of Maynooth town. The site consists of a green field currently of agricultural use.

The Healthcare Facilities (**Site B**) will consist of:

- 1) Construction of a new two-storey Nursing Home of 156 no. bedrooms with a Gross Floor Area (GFA) of 8,576m<sup>2</sup>, including vehicular pick up/drop-off area and service road;
- 2) Construction of a new three-storey Primary Care Centre (PCC) with a Gross Floor Area (GFA) of 3,049m<sup>2</sup>;
- 3) The development includes a shared surface car park providing 161 no. car parking spaces (comprising of 151 no. standard car parking spaces and 10 no. accessible car parking spaces) and 160 no. bicycle parking spaces.
- 4) Provision of foul and surface water drainage including wastewater pumping station.
- 5) Connection to potable water supply at Kildare Bridge.
- 6) Provision of communal (semi-private) and public open space
- 7) Provision of hard and soft landscaping including amenity equipment, fencing and gates.
- 8) Provision of substation and public lighting.
- 9) Proposed road improvement and realignment works including:
  - i. Construction of a new 2-way, 6m-wide access road from the R157 Dunboune Road to include a priority T-junction on the R157,
  - ii. Upgrade works to a section of the R157 from the new site entrance south to Kildare Bridge on the R157 (representing delivery of a 15m-wide portion of the Maynooth Outer Relief Road (MOOR)), including creation of a new 2m-wide footpath, 3m-wide cycle lane and pedestrian and cycle link adacent to the Kildare Bridge,
  - iii. Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556)
- 10) All other site development works and services ancillary to the proposed development.
- 11) A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) will be submitted to the planning authority with the planning application.

2.2.4

## Strategic Housing Development (Site C)

Site C measures approximately 17.6 hectares and is located in County Meath on the northern edge of Maynooth town. The site consists of a green field currently of agricultural use.

The Strategic Housing Development (**SHD: Site C**) will consist of:

- 1) Construction of 360 no. residential homes comprising:
  - 196 no houses (including 19 no. 2 beds, 156 no. 3 beds and 21 no. 4 beds).
  - 102 no. duplexes (including 51 no. 1 beds and 51 no. 2 beds) set out in 6 no. blocks.
  - 62 no. apartments (including 26 no. 1 beds and 36 no. 2 beds) set out in 2 no. blocks.
- 2) Provision of a public park and playground with associated 42 no. car parking spaces adjacent to Moygaddy Castle Towerhouse and pedestrian and cyclist links along the Rye Water River. The overall public open space (including the High Amenity Lands) equates to 7.98 hectares.
- 3) Provision of private open spaces in the form of balconies and terraces is provided to all individual apartments and duplexes to all elevations.
- 4) Development of a two-storey creche facility (514 sqm), outdoor play area and associated parking of 29 no. spaces.
- 5) Provision of a single storey Scout Den facility, including a hall, kitchen, meeting room and ancillary facilities (220sqm) and associated parking of 6 no. spaces.
- 6) Provision of 4 no. bridge structures comprising:
  - iv. an integral single span bridge at Moyglare Hall over the Rye Water River to connect with existing road infrastructure in County Kildare and associated floodplain works and embankments.
  - v. a new pedestrian and cyclist bridge at Kildare Bridge which will link the proposed site with the existing road network in County Kildare.
  - vi. a new pedestrian and cycle bridge across the Blackhall Little Stream on the L6219 adjacent to the existing unnamed bridge.
  - vii. a new pedestrian and cycle bridge over the Blackhall Little Stream linking the proposed residential site with the proposed Childcare Facility, Scout Den and Moygaddy Castle Public Park.
- 7) Provision of 500m of distributor road comprising of 7.0m carriageway with turning lane where required, footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation.
- 8) Proposed road improvement and realignment works including:
  - realignment of a section of the existing L6219 local road, which will entail the demolition of an existing section of the road which extends to circa 2,500 sqm.
  - Provision of pedestrian and cycle improvement measures along the L6219 which abuts the boundary of Moygaddy House which is a Protected Structure (RPS ref 91558).
  - Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
- 9) Provision of 3 no. vehicular and pedestrian accesses from the L6219 local road and an additional vehicular and pedestrian access from the R157 to the Childcare and Scout Den facilities.
- 10) The proposed development will provide 283 no. of bicycle parking spaces, of which 200 no. are long term spaces in secure bicycle stores and 83 no. are short term visitor bicycle parking spaces. 12 no. bicycle spaces are provided for the creche and 12 no. bicycle spaces are provided for the Scout Den.
- 11) A total of 667 no. car parking spaces are provided on site located at surface level. The car parking provision includes 10 no. Electric Vehicle charging and Universally Accessible spaces allocated for the Apartment & Duplex units. All Houses will be constructed with provision for EV Charging.
- 12) Provision of site landscaping, public lighting, bin stores, 3 no. ESB unit substations, site services and all associated site development works.

- 13) A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

## 2.2.5 Maynooth Outer Orbital Road (MOOR)

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

1. Provision of approximately 1,700m of new distributor road (MOOR Arc) comprising of 7.0m carriageway with turning lane where required, footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation.
2. Proposed road improvement and realignment works including:
  - i. realignment of a section of the existing L6219 local road, which will entail the demolition of an existing section of the road which extends to circa 2,500 sqm.
  - ii. Provision of pedestrian and cycle improvement measures along the L6219 and L22143 which abuts the boundary of Moygaddy House which is a Protected Structure (RPS ref 91558).
  - iii. Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
  - iv. Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.
  - v. Provision of a new signalised junction at the realigned junction between the L22143 and R157.
  - vi. Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
  - vii. Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.
  - viii. Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
  - ix. Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
3. Provision of 4 no. bridge structures comprising:
  - i. an integral single span bridge at Moyglare Hall over the River Rye Water to connect with existing road infrastructure in County Kildare and associated floodplain works and embankments.
  - ii. a new pedestrian and cyclist bridge at Kildare Bridge which will link the proposed site with the existing road network in County Kildare.
  - iii. a new pedestrian and cycle bridge across Blackhall Little stream on the L22143 adjacent to the existing unnamed bridge.
  - iv. an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

## 2.2.6 Kildare Bridge Application

Planning Permission is sought by Sky Castle Ltd. for the development of a portion of the Maynooth Outer Orbital Road (MOOR) within Co. Kildare, on the County border to Co. Meath.

The proposed development will consist of the following:

1. Provision of a new bridge structure comprising the following:
  - a. a pedestrian and cycle bridge structure to be erected adjacent to the upstream/western side of the existing Kildare Bridge, with a 2m clearance, with the infrastructure tying into new infrastructure in Co. Meath.
  - b. This bridge will be a standalone, independent structure that will also support new water main assets
2. New wastewater rising mains to be installed underground adjacent the bridge structure, to the west.
3. New walkways and cycle track will tie-in with new infrastructure to be constructed by Cairn Homes and their Agents.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

## 2.2.7 Moyglare Bridge Application


Planning Permission is sought by Sky Castle Ltd. for the development of a portion of the Maynooth Outer Orbital Road (MOOR) within Co. Kildare, on the county border to Co. Meath.

The proposed development will consist of the following:

1. Provision of approximately 200m of new portion of distributor road comprising of 7.0m carriageway with footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation. This new road section with pedestrian and cycle infrastructure will tie in with existing infrastructure just east of the roundabout which provides access to the Maynooth Community College and Moyglare Hall Estate.
2. Provision of a new bridge structure comprising the following:
  - a. an integral 50m single span bridge at Moyglare Hall over the River Rye Water to connect with existing road infrastructure in County Kildare and associated floodplain works and embankments.
  - b. The bridge will include pedestrian and cycle facilities
  - c. Extension of the water main assets to serve new developments in Maynooth Environs
3. Provision of site landscaping, public lighting, site services and all associated site development works.
4. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.



### Map Legend

 EIAR Site Boundary



Drawing Title

EIAR Site Boundary

Project Title

Sky Castle Ltd - Moynalty Mixed Use Scheme, Co. Meath & Co. Kildare

Drawn By: CM      Checked By: CM

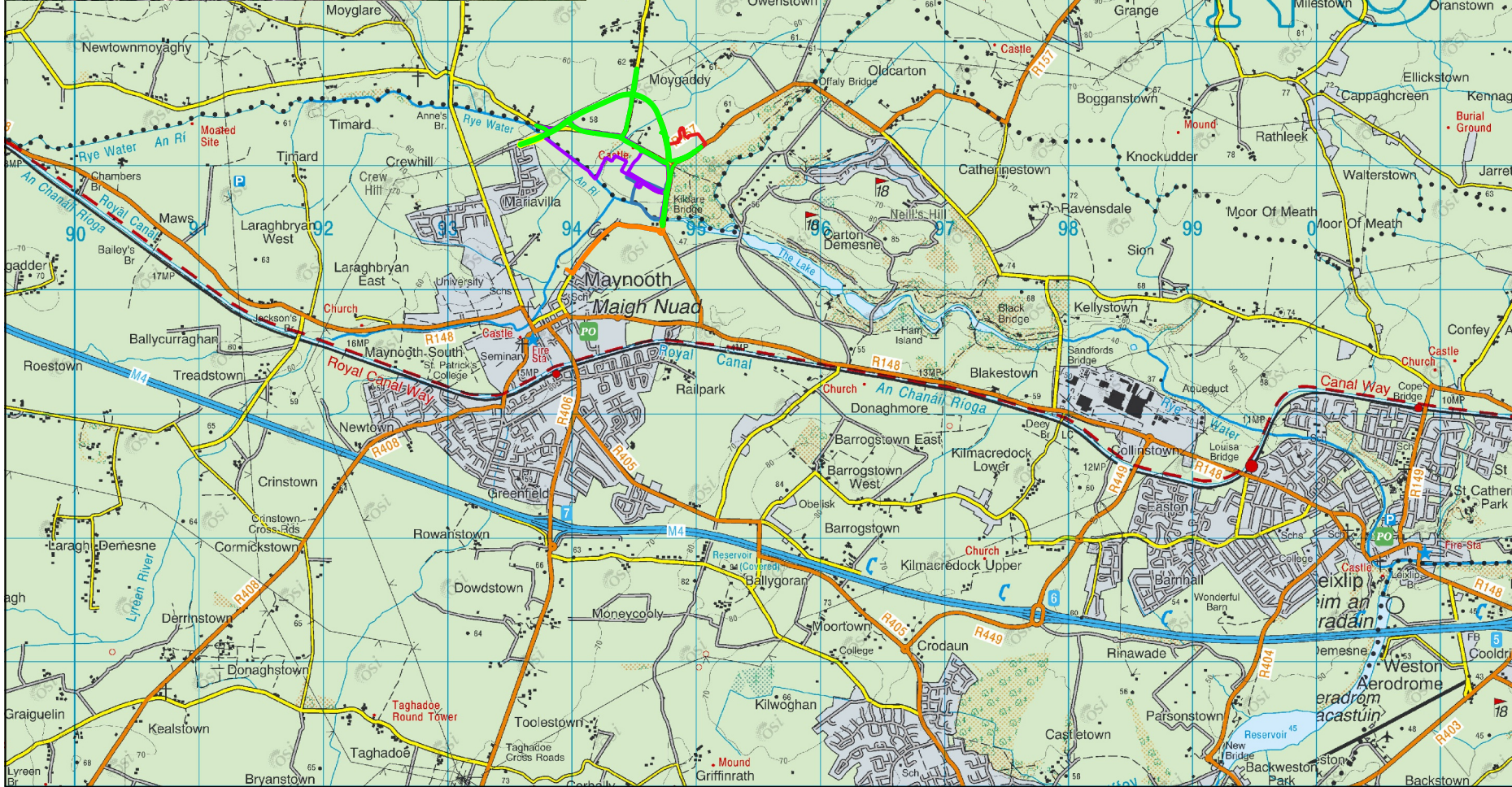
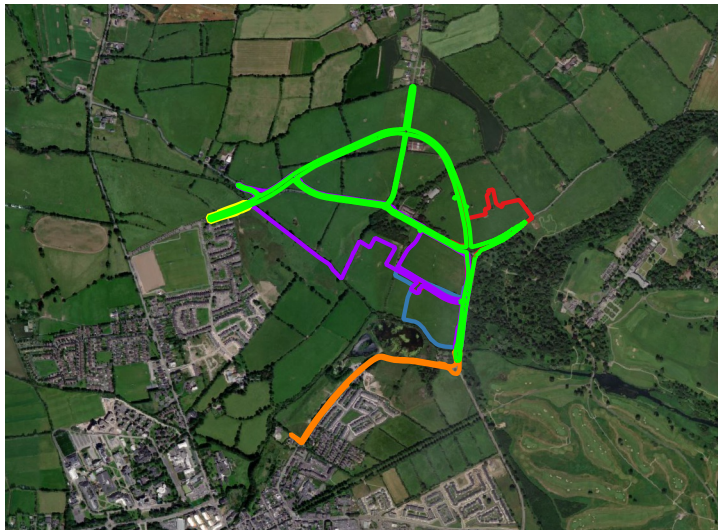
Project No: 210414      Drawing No: Figure 2-1

Scale: 1:49,500      Date: 2022-08-30


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- ### Map Legend
- Site A - Strategic Employment Zone
  - Site B - Healthcare Facilities
  - Site C - Strategic Housing Development
  - MOOR- Maynooth Outer Orbital Road
  - Kildare Bridge
  - Moyglare Bridge



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Drawing Title	
<b>Six Planning Applications Site Boundaries</b>	
Project Title	
Sky Castle Ltd - Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
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CM	CM
Project No.	Drawing No.
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## 2.3 Proposed Site Drainage

Once the drainage systems and the majority of the buildings are constructed, it is proposed to separate the surface water and wastewater drainage networks, which will serve the Proposed Development, and provide independent surface water connections to the adjacent Blackhall Little stream and River Rye and a separate connection to the local wastewater sewer network respectively. The Proposed Development will direct surface water from surfaced areas roads, and roofs, via gravity, infiltration area/attenuation storage, swales, hydrocarbon interceptors and filtration drain to a high-level outfall at the Blackhall Little and at the River Rye, just west of the Kildare Bridge. The remaining areas are considered green space and will be allowed to drain naturally to ground, with negligible impact on the performance of the surface water network, and therefore do not contribute to the surface water drainage networks.

### 2.3.1 Site A

It is proposed that surface water within Site A (from roads, roofs and hardstanding areas) will drain via gravity, and via hydrocarbon interceptors, and infiltration area/attenuation storage areas, to an existing ditch along the southern boundary, which is to be replaced by a new filter trench as part of the upgraded and re-aligned R157. This drain conveys surface water runoff in a southerly direction, ultimately towards the River Rye at the proposed outfall location described below. Underground attenuation will comprise underground poly-tunnel systems, to be provided within proposed green spaces at Site A.

The discharge rates at the proposed surface outfall, which serves Site A, is to be restricted to a low rate less than 10.1 l/s (i.e. 5.61 l/s/ha), which is less than the current greenfield equivalent runoff rate, to ensure that there is no increase in flow rates and volumes to be discharged from the Proposed Development to the receiving infrastructure and waterbodies. Therefore, there will be no adverse impact on the River Rye and other downstream properties

### 2.3.2 Site B

It is proposed that surface water within Site B (from roads, roofs and hardstanding areas) will drain via gravity, and via hydrocarbon interceptors, and infiltration area/attenuation storage (located in the shared carpark at Site B), to a high-level outfall at the River Rye, just west of the Kildare Bridge. The Proposed Development will direct surface water from surfaced areas roads, and roofs, via gravity, infiltration area/attenuation storage, hydrocarbon interceptors and filtration drain to a high-level outfall at the River Rye, just west of the Kildare Bridge. The remaining areas are considered green space and will be allowed to drain naturally to ground, with negligible impact on the performance of the surface water network, and therefore do not contribute to the surface water drainage networks.

The discharge rates at the proposed surface water outfall, which serves Site B, is to be restricted to a flow rate less than 10.1 l/s (i.e. 5.61 l/s/ha), which is less than the current greenfield equivalent runoff rate, to ensure that there is no increase in flow rates and volumes to be discharged from the Proposed Development to the receiving infrastructure and waterbodies. Therefore, there will be no adverse impact on the River Rye and other downstream properties.

### 2.3.3 Site C

It is proposed that surface water within Site C (from roads, roofs and hardstanding areas) will drain via gravity, and via hydrocarbon interceptors, and infiltration area/attenuation storage and swales (located

in the open spaces to the south and east of the site), to a high-level outfall at the Blackhall Little Stream. The remaining areas are considered green space and will be allowed to drain naturally to ground, with negligible impact on the performance of the surface water network, and therefore do not contribute to the surface water drainage networks.

The discharge rates at the proposed surface water outfall, which serves Site C, is to be restricted to a flow rate less than 5.5 l/s/ha, which is less than the current greenfield equivalent runoff rate, to ensure that there is no increase in flow rates and volumes to be discharged from the Proposed Development to the receiving infrastructure and waterbodies. Therefore, there will be no adverse impact on the Blackhall Little Stream or the Rye Water River and other downstream properties.

### 2.3.4 MOOR

It is proposed that surface water run off on the MOOR is to be captured by adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle track shall be intercepted by the dividing tree-lined grass verge, with excess runoff only being collected by the road's gully network. Surface water attenuation will be used to control runoff from all hard surfaces in accordance with the GDSDS, with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent.

The proposed surface water network is to be split into 4 no. catchments, in order to optimise the network based on the natural topography of the site.

It is proposed that surface water from the MOOR is to discharge the treated and attenuated runoff from each catchment to the existing watercourses at the proposed outfall locations, namely the Rye Water River and Blackhall Little Stream.

### 2.3.5 Kildare Bridge

It is proposed that surface water run off on the Kildare Bridge is to be captured by the proposed drainage features proposed as part of the MOOR. Adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle track and bridge shall be intercepted by the dividing tree-lined grass verge, rainfall allowed to percolate to ground and/or flow via subsurface flow to the Rye Water River. Surface water attenuation will be used to control runoff from all hard surfaces in accordance with the GDSDS, with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent.

### 2.3.6 Moyglare bridge

It is proposed that surface water run off on the Moyglare Bridge is to be captured by the proposed drainage features proposed as part of the MOOR. Adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle track shall be intercepted by the dividing tree-lined grass verge, with excess runoff only being collected by the road's gully network. Surface water attenuation will be used to control runoff from all hard surfaces in accordance with the GDSDS, with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent.

It is proposed that surface water from the MOOR and Moyglare Bridge is to discharge the treated and attenuated runoff from each catchment to the existing watercourses at the proposed outfall locations, namely the Rye Water River.



## 2.3.7 Operational Phase Sustainable Drainage Systems

The Proposed Development is to contain a series of measures for Sustainable Drainage Systems as outlined below

### 2.3.7.1 Rainwater Harvesting

#### Site A

**Rainwater Harvesting** will be considered at each of the proposed office facilities, which can re-use the collected rainwater for welfare facilities, or landscaping purposes. Rainwater Harvesting helps to reduce the overall volume of rainfall runoff entering the surface water network.



Plate 2-1. Example of Rainwater Harvesting System

#### Site C

Rainwater harvesting is to be considered at individual residential units in the form of 'Water Butts', which can re-use the collected rainwater for gardening and other domestic watering purposes. Rainwater Butts help to reduce the overall volume of rainfall runoff entering the surface water network.



Plate 2-2. Example of Domestic Rainwater Harvesting Butt for Site C

### 2.3.7.2 Attenuation Storage

Attenuation Storage will be provided at strategic locations, in order to temporarily store excessive surface water, due to the restricted flow rates during rainfall events up to, and including, the design 1% AEP with a 20% additional allowance for climate change. This will allow for the limiting discharge rates at the Proposed Development outfall, as outlined above.

Attenuation will be provided in the form of swales or unlined proprietary poly-tunnel storage units (or similar approved). These poly-tunnel storage units will be underground, in proposed green-spaces for both Site A and Site C and in the car parking area for Site B, for the attenuation of rainfall runoff prior to discharge. Typical poly-tunnel storage systems comprise plastic arch-units with open-graded crushed rock bedding and surround. These units are arranged in rows, with an isolator row for efficient operation and maintenance. These systems also allow for interception of initial rainfall to be provided at the base of the system, by elevating the outlet relative to the systems base. The attenuation systems are to be installed in either the open spaces or the parking areas and was calculated to support a runoff rate that is less than the natural greenfield runoff rate.



Plate 2-3. Typical Poly-Tunnel Installation Arrangement

### 2.3.7.3 Limiting Discharge

The discharge rate from the catchments are to be restricted to a maximum discharge rate of 5.5 l/s/ha, which is less than the equivalent greenfield runoff. The Proposed Development discharge rates are to be restricted by using a flow control device, in a chamber upstream of the outfalls, such as Hydro-Brake Optimum Vortex Flow control unit, or similar approved by Meath and Kildare County Councils, downstream of the proposed attenuation systems as outlined above.

### 2.3.7.4 Permeable Paving

Permeable Paving is to be provided for all in-curtilage car parking space within the Residential Development (Site C), which will have a layer of drainage stone underneath. This will provide at-source treatment, interception, and attenuate rainfall runoff throughout the site, prior to entering the main surface water drainage network. A **Type B** porous asphalt, with a 300mm depth of open graded crushed rock as base course, is to be provided in all car parking spaces that serve the Apartments and Duplex homes in Site C and the Primary Care and Nursing Home in Site B

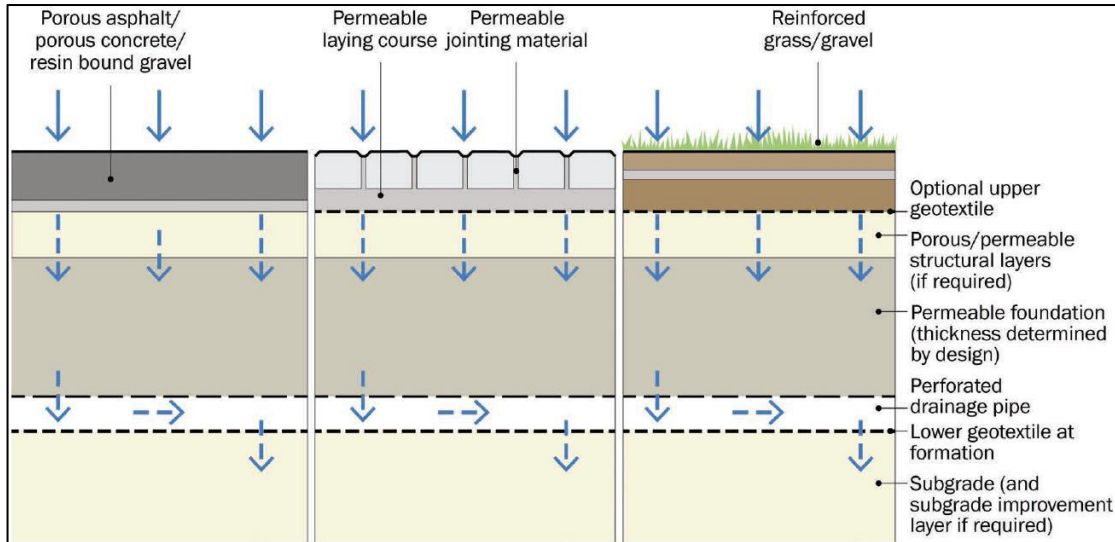


Plate 2-4. Detail of Type B Pervious Paving (CIRIA C753)

### 2.3.7.5 Trapped Road Gullies

**Trapped Road Gullies** will be provided for all road gullies serving the Proposed Development, to help prevent sediment and gross pollutants from entering the surface water network, and thus improving the water quality discharging from site. The road gullies will have grated covers with a minimum load classification of D400, for frequent vehicular traffic, and shall be lockable, as required by MCC.

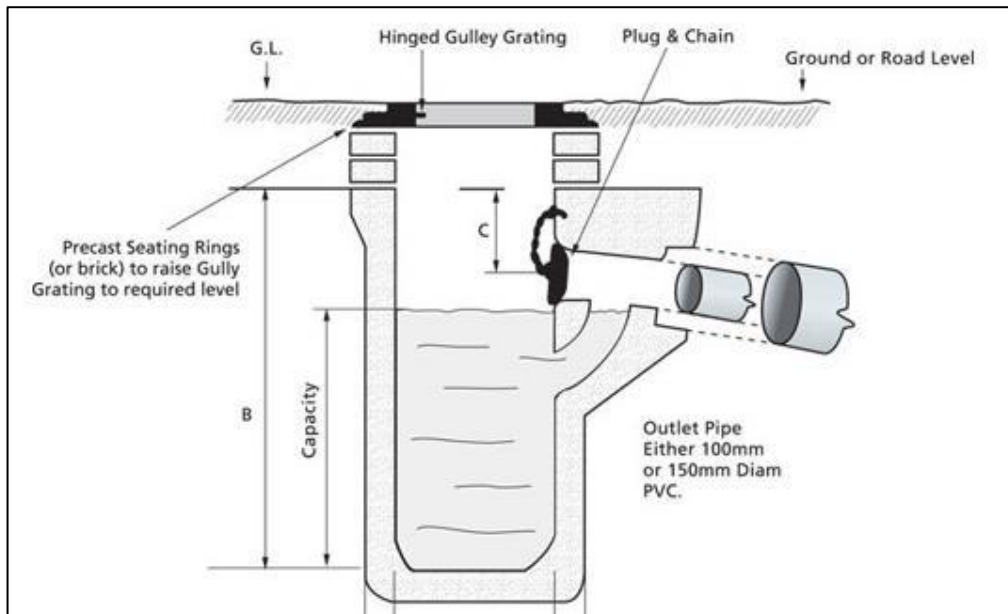


Plate 2-5: Trapped Road Gully (Typical Detail)

### 2.3.7.6 Measures to avoid water pollution

A number of measures are proposed as part of the project design to ensure that water leaving the site is not polluted. Whilst these measures are an integral part of the project design and are listed below for completeness, they have not been considered in this AA screening assessment, as they could be considered to be mitigation.

Water quality of the surface water, discharging from site, is to be improved with the following provisions:

- Permeable Paving in all private house driveways, as described above;

Intensive landscaping, where practical;  
 Trapped road gullies on all road carriageways, to trap silt and gross pollutants;  
 Traditional gravity pipe and manhole network will be provided, to convey the collected rainfall runoff as far as the development's outfall. Manholes are provided for maintenance access at branched connections, change in pipe size and gradient, and at intervals no greater than 90m distance.  
 Silt traps to be provided on manholes immediately upstream of attenuation systems, as a further preventative measure to trap silt and other gross pollutants;  
 Surface water attenuation storage in the form of poly-tunnel installation at both Site A and Site C (green spaces) and Site B (car parking area);  
 A Class 1 Bypass Fuel/Oil Separator is to be provided as an additional and final mitigation measure, prior to surface water discharge from the Proposed Development sites.

## 2.4 Proposed Wastewater Infrastructure

### 2.4.1 Site A, Site B and Site C

It is proposed to provide an onsite underground wastewater pumping station constructed to IW standards and specifications to the west of the proposed nursing home building at Site B within the Proposed Development. Both Site A to the north and Site B to the east and Site C to the west of the proposed pumping station, will drain by gravity to the Pumping Station where it will then be pumped along the R157 and L1013 Local Road towards the existing Irish Water network at Maynooth Municipal Wastewater Pumping Station in County Kildare, approximately 1km south of the proposed pumping station. All wastewater is to discharge to the public infrastructure, this is subject to agreement with Irish Water through the PCE process. In order to achieve this, a new gravity wastewater network is to be installed across the River Ryewater, as part of the proposed bridge structure. The wastewater from the proposed crèche facility is to discharge to the main wastewater network that is to be provided within the residential development, via independent packaged pump system.

Individual buildings will connect to the 225mm diameter foul drains via individual 100mm diameter connections, as per Irish Water Code of Practice for Wastewater Infrastructure. The wastewater discharge from each dwelling is to connect, via a private outfall chamber, to the new development's gravity wastewater network, which is to be designed in accordance with the Irish Water Code of Practice for Wastewater Infrastructure. A Pre-Connection Enquiry Form has been submitted to Irish Water for review, for both the Proposed Development, as well as the masterplan development for the LAP lands. Irish Water (IW) issued a Confirmation of Feasibility Letter (Refer to Appendix 4-9 in Volumes 3a, 3b & 3c of this EIAR) for the Proposed Development, subject to upgrade works being carried out.

The foul sewers will be sealed and there will be no discharge of wastewater to ground within the Proposed Development. Wastewater will be pumped from the Proposed Development to the Maynooth pumping station, and onwards from Maynooth pumping station to the Leixlip Wastewater Treatment Plant.

## 2.5 Proposed Water Supply

### 2.5.1 Site A and Site B

A proposed new connection to one of the existing watermains local to **Site A** and **Site B** will be made for the Proposed Development. There is an existing 200mm watermain to the south of the **Site B**, in County Kildare, just south of the Kildare bridge. An extension from the existing 200mm watermain will be provided along/within the existing R157 Regional Road, to the connection point at the Proposed

Development. It is anticipated that a metered 150mm high density polyethylene connection will be required. Internal distribution network of 150mm HDPE watermain will be provided to serve the proposed Nursing Home and Primary Care Centre and Biotechnology & Life Sciences Campus.

The Proposed Development will be subject to a New Connection Agreement with Irish Water, with all details in accordance with their requirements.

There is no proposed extraction of groundwater at the site for drinking water purposes.

## 2.5.2 Site C

A proposed new connection to one of the existing watermains local to Site C (SHD) will be made for the Proposed Development. It is proposed to provide an extension to the existing 200mm ductile iron watermain at Moyglare Close, with a metered 200mm high density polyethylene connection provided to serve the Proposed Development. Internal distribution networks of 100mm and 150mm HDPE watermain will be provided to serve the proposed residential units. An extension from the Proposed Development's watermain will be provided to serve the proposed crèche facility, adjacent.

The Proposed Development will be subject to a New Connection Agreement with Irish Water, with all details in accordance with their requirements.

There is no proposed extraction of groundwater at the site for drinking water purposes.

## 2.6 Description of the Baseline Ecological Environment

A dedicated habitat survey of the proposed development site was undertaken on the 6<sup>th</sup> of July 2021 by Julie O’Sullivan and Colin Murphy, with follow up surveys carried out in July 2022. All habitats within the development site were readily identifiable during the site visit. The habitat classifications and codes correspond to those described in ‘A Guide to Habitats in Ireland’ (Fossitt, 2000).

The following section describes the habitats found within the 6 separate planning application sites (Site A, Site B, Site C, MOOR, Kildare bridge and Moyglare Bridge).

### 2.6.1.1 Site A- Strategic Employment Zone

Table 2-1. Habitats recorded in site A

Habitat (Fossitt)	Code
Improved Agricultural Grassland	GA1
Hedgerows	WL1
Treeline	WL2
Buildings and Artificial Surfaces	BL3

**Improved Agricultural Grassland (GA1)** is the dominant habitat within the development site. This habitat had a low species diversity and a low sward height, and during the survey was being grazed by sheep and horses. Species recorded in this habitat included abundant perennial rye-grass (*Lolium perenne*), clovers (*Trifolium* spp.), broadleaved plantain (*Plantago major*), frequent ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), annual meadow grass (*Poa annua*), daisy (*Bellis perennis*), cock’s-foot (*Dactylis glomerata*), crested dogs tail (*Cynosurus cristatus*), meadow foxtail (*Alopecurus pratensis*), Yorkshire fog (*Holcus lanatus*), nettle (*Urtica dioica*), dandelion (*Taraxacum officinale* agg.), broad-leaved dock (*Rumex obtusifolius*), mouse-ear chickweed (*Cerastium fontanum*), creeping thistle (*Cirsium arvense*) and germander speedwell (*Veronica chamaedrys*). See Plate 2.6.

Field boundaries are delineated by mature **Treelines (WL2)** and **Hedgerows (WL1)**. Species recorded in the treelines (WL2) include oak, ash, sycamore, hawthorn and beech and was recorded along the southern boundary of the site. Species recorded in the hedgerows (WL1) and hedgerow understory included elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus*), willows (*Salix* spp.), holly (*Ilex aquilifolium*), ash (*Fraxinus excelsior*) and ivy (*Hedera helix*). Species recorded in the field margins and hedgerow understory included common sorrel (*Rumex acetosa*), meadow buttercup (*Ranunculus acris*), herb Robert (*Geranium robertianum*), harts tongue fern (*Asplenium scolopendrium*), dandelion (*Taraxacum officinale* agg.), primrose (*Primula vulgaris*), vetch (*Vicia* spp.), lesser celandine (*Ficaria verna*), lords and ladies (*Arum maculatum*) and creeping cinquefoil (*Potentilla reptans*). See plate 2.7.

Remnant dried up former drainage ditches occur in parts of the site bordering hedgerows and treelines in the north-west of the site. These former drainage ditches had dried up, had no flow and were heavily vegetated with dense bramble and nettles.

The R157 located along the eastern boundary of the proposed development site is categorized as Buildings and Artificial Surfaces (BL3). See Plate 2.8.

There are no Annex I habitats listed under the EU Habitats Directive present within the Proposed development site boundary. No botanical species protected under the Flora (protection) Order (1999, as amended 2015), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the site and no suitable habitat occurs within the site. All species recorded are common in the Irish landscape.



*Plate 2-6. Agricultural grassland recorded within development site A.*



*Plate 2-7. Hedgerow habitat along the eastern boundary of site A*





Plate 2-8. R157 located along the eastern boundary of Site A.

## 2.6.1.2 Site B- Healthcare Facilities

Table 2-2. Habitats recorded within development site B.

Habitat (Fossitt)	Code
Improved Agricultural Grassland	GA1
Hedgerows	WL1
Treeline	WL2
Eroding/upland Rivers	FL2
Buildings and Artificial Surfaces	BL3

**Improved Agricultural Grassland (GA1)** is the dominant habitat within the development site. This habitat had a low species diversity and a low sward height, and during the survey was being grazed by sheep and horses. Species recorded in this habitat included abundant perennial rye-grass (*Lolium perenne*), clovers (*Trifolium* spp.), broadleaved plantain (*Plantago major*), frequent ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), annual meadow grass (*Poa annua*), daisy (*Bellis perennis*), cock's-foot (*Dactylis glomerata*), crested dogs tail (*Cynosurus cristatus*), meadow foxtail (*Alopecurus pratensis*), Yorkshire fog (*Holcus lanatus*), nettle (*Urtica dioica*), dandelion (*Taraxacum officinale* agg.), broad-leaved dock (*Rumex obtusifolius*), mouse-ear chickweed (*Cerastium fontanum*), creeping thistle (*Cirsium arvense*) and germander speedwell (*Veronica chamaedrys*). See Plate 2.9.

Field boundaries are delineated by mature **Treelines (WL2)** and **Hedgerows (WL1)**. Species recorded in the treelines (WL2) include oak, ash, sycamore, hawthorn and beech and was recorded along the southern boundary of the site. Species recorded in the hedgerows (WL1) and hedgerow understory included elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus*), willows (*Salix* spp.), holly (*Ilex aquilifolium*), ash (*Fraxinus excelsior*) and ivy (*Hedera helix*). Species recorded in the field margins and hedgerow understory included common sorrel (*Rumex acetosa*), meadow buttercup (*Ranunculus acris*), herb Robert (*Geranium robertianum*), harts tongue fern (*Asplenium scolopendrium*), dandelion (*Taraxacum officinale* agg.), primrose (*Primula vulgaris*), vetch (*Vicia* spp.), lesser celandine (*Ficaria verna*), lords and ladies (*Arum maculatum*) and creeping cinquefoil (*Potentilla reptans*). See plate 2.10.

Remnant dried up former drainage ditches occur in parts of the site bordering hedgerows and treelines in the north-west of the site. These former drainage ditches had dried up, had no flow and were heavily vegetated with dense bramble and nettles.

The Rye Water River flows along the southern boundary of the site and is categorised as Eroding/upland River. The river is fringed by a mature treeline on its northern banks, which also forms part of the development boundary. See plate 2.11.

The R157 located along the eastern boundary of the proposed development site is categorized as Buildings and Artificial Surfaces (BL3).

There are no Annex I habitats listed under the EU Habitats Directive present within the Proposed development site boundary. No botanical species protected under the Flora (protection) Order (1999, as amended 2015), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the site and no suitable habitat occurs within the site. All species recorded are common in the Irish landscape.



*Plate 2-9. Agricultural grassland recorded in site B.*



*Plate 2-10. Hedgerow recorded in eastern section of site B.*



*Plate 2-11. Rye Water River along recorded along the southern boundary of site B.*

### 2.6.1.3 Site C- Strategic Housing Development

Table 2-3. Habitats recorded within site C

Habitat (Fossitt)	Code
Improved Agricultural Grassland	GA1
Buildings and Artificial Surfaces	BL3
Mixed broadleaved woodland	WD1
Eroding upland River	FW1
Hedgerows	WL1
Treeline	WL2

**Improved Agricultural Grassland (GA1)** is the dominant habitat within the site C. This habitat had a low species diversity and a low sward height, and during the survey was being grazed by sheep and horses. Species recorded in this habitat included abundant perennial rye-grass (*Lolium perenne*), clovers (*Trifolium* spp.), broadleaved plantain (*Plantago major*), frequent ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), annual meadow grass (*Poa annua*), daisy (*Bellis perennis*), cock's-foot (*Dactylis glomerata*), crested dogs tail (*Cynosurus cristatus*), meadow foxtail (*Alopecurus pratensis*), Yorkshire fog (*Holcus lanatus*), nettle (*Urtica dioica*), dandelion (*Taraxacum officinale* agg.), broad-leaved dock (*Rumex obtusifolius*), mouse-ear chickweed (*Cerastium fontanum*), creeping thistle (*Cirsium arvense*) and germander speedwell (*Veronica chamaedrys*). See Plate 2.12.

Moygaddy castle in the northern section of the site is classified as **Buildings and Artificial Surfaces (BL3)**. See plate 2.13.

Field boundaries are delineated by mature **Treelines (WL2)** and **Hedgerows (WL1)**. Species recorded in the treelines (WL2) include oak (*Quercus* sp.), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*) and beech (*Fagus sylvatica*) and was recorded along the southern boundary of the site. Species recorded in the hedgerows (WL1) and hedgerow understory included elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus*), willows (*Salix* spp.), holly (*Ilex aquilifolium*), ash (*Fraxinus excelsior*) and ivy (*Hedera helix*). Species recorded in the field margins and hedgerow understory included common sorrel (*Rumex acetosa*), meadow buttercup (*Ranunculus acris*), herb Robert (*Geranium robertianum*), harts tongue fern (*Asplenium scolopendrium*), dandelion (*Taraxacum officinale* agg.), primrose (*Primula vulgaris*), vetch (*Vicia* spp.), lesser celandine (*Ficaria verna*), lords and ladies (*Arum maculatum*) and creeping cinquefoil (*Potentilla reptans*). See plate 2.14.

Remnant dried up former drainage ditches occur in parts of the site bordering hedgerows and treelines in the north-west of the site. These former drainage ditches had dried up, had no flow and were heavily vegetated with dense bramble and nettles.

The Blackhall Little River, classified as **Eroding/upland river (FW1)** flows through the site, in a southerly direction ((See plate 2-15), discharging to the Rye Water River which flows in an easterly direction outside the southern site boundary. The Rye Water River is designated as part of the Rye Water Valley/Carlton SAC, downstream of the proposed development site.

The Blackhall Little is characterized by a rocky substrate, with some pool, riffle and glide areas. The river is approximately 1-2m in the southern section of the site. At the time of the field survey, the river had a low flow and the water was slightly turbid. The river is fringed by mature treeline/hedgerow on its eastern bank and improved agricultural grassland on its western bank. The western embankment of the river had a low profile and had evidence of cattle poaching in places. Emergent vegetation included watercress (*Nasturtium officinale*), wild angelica (*Angelica sylvestris*), marsh marigold (*Caltha palustris*), meadow buttercup (*Ranunculus acris*) and fools water cress (*Apium nodiflorum*). Willow (*Salix* spp.) and bramble (*Rubus fruticosus*) occur along the embankment.

**Mixed broadleaved woodland (WD1)** occurs on either side of the Blackhall Little River in the centre of the site. This woodland has been planted and is approximately 20-25 years old. The topography of the wooded area, slope down toward the river. See plate 2.16.

The mixed broadleaved woodland (WD1) on the eastern shore of the river, is dominated by mature beech trees, and had a low diversity of species in the ground flora. The woodland on the western shoreline of the watercourse was recently planted with ash, beech and oak, with sycamore also present. The ground flora included abundant nettle, hogweed, herb Robert, ground elder, ivy and wood avens with frequent *poa trivialis*, goosegrass, *ranunculus repens*, foxtail, dock, and cow parsley.

There are no Annex I habitats listed under the EU Habitats Directive present within the Proposed development site boundary. No botanical species protected under the Flora (protection) Order (1999, as amended 2015), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the site and no suitable habitat occurs within the site. All species recorded are common in the Irish landscape.



Plate 2-12. Improved agricultural grassland in centre of site C.



*Plate 2-13. Moygaddy castle, categorized as Buildings and Artificial surfaces in the north section of site C.*



*Plate 2-14. Hedgerow habitat delineating improved agricultural grassland (GAI) in the centre of the site.*





*Plate 2-15. Blackhall Little River categorised as eroding upland river in the centre of site C.*



*Plate 2-16. Mixed Broadleaved woodland planted with Ash, Beech and Sycamore located in the centre of site C.*

## 2.6.1.4 MOOR (Maynooth Outer Orbital Road) Site

Table 2-4. Habitats recorded within the MOOR application site.

Habitat (Fossitt)	Code
Improved Agricultural Grassland	GA1
Buildings and Artificial Surfaces	BL3
Eroding upland River	FW1
Hedgerows	WL1
Treeline	WL2

**Improved Agricultural Grassland (GA1)** is the dominant habitat within the MOOR application site boundary. This habitat had a low species diversity and a low sward height, and during the survey was being grazed by sheep and horses. Species recorded in this habitat included abundant perennial ryegrass (*Lolium perenne*), clovers (*Trifolium* spp.), broadleaved plantain (*Plantago major*), frequent ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), annual meadow grass (*Poa annua*), daisy (*Bellis perennis*), cock's-foot (*Dactylis glomerata*), crested dogs tail (*Cynosurus cristatus*), meadow foxtail (*Alopecurus pratensis*), Yorkshire fog (*Holcus lanatus*), nettle (*Urtica dioica*), dandelion (*Taraxacum officinale* agg.), broad-leaved dock (*Rumex obtusifolius*), mouse-ear chickweed (*Cerastium fontanum*), creeping thistle (*Cirsium arvense*) and germander speedwell (*Veronica chamaedrys*). See Plate 2-17.

The R157 located to the east of the site and the L2214 located within the centre of the site are both categorized as **Buildings and Artificial Surfaces (BL3)**. See plate 2.18.

The MOOR application intersects multiple fields that are delineated by mature **Treelines (WL2)** and **Hedgerows (WL1)**. Species recorded in the treelines (WL2) include oak (*Quercus* sp.), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*) and beech (*Fagus sylvatica*) and was recorded along the southern boundary of the site. Species recorded in the hedgerows (WL1) and hedgerow understory included elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus*), willows (*Salix* spp.), holly (*Ilex aquifolium*), ash (*Fraxinus excelsior*) and ivy (*Hedera helix*). Species recorded in the field margins and hedgerow understory included common sorrel (*Rumex acetosa*), meadow buttercup (*Ranunculus acris*), herb Robert (*Geranium robertianum*), harts tongue fern (*Asplenium scolopendrium*), dandelion (*Taraxacum officinale* agg.), primrose (*Primula vulgaris*), vetch (*Vicia* spp.), lesser celandine (*Ficaria verna*), lords and ladies (*Arum maculatum*) and creeping cinquefoil (*Potentilla reptans*). See plate 2.19.

The proposed MOOR route intersects the Rye Water River to the east of the route and the Blackhall Little stream to the north of the route. Both watercourses are categorized as **Eroding Upland River (FW1)**. It should be noted that during the 2022 site survey, the Blackhall Little stream had largely dried up and there was no flowing water present. See plate 2-20 and 2-21.



*Plate 2-17. Improved agricultural grassland located within the route of the MOOR application.*



*Plate 2-18. L2214 categorized as Buildings and Artificial surfaces located within route of the proposed MOOR fringes by mature Treeline habitat*



*Plate 2-19. Treeline recorded along the Blackwater Little River within the centre of the MOOR route*



*Plate 2-20. Blackhall Little Rive with no flowing water located to the north of the MOOR route*



*Plate 2-21. Rye Water River located to the western boundary of the MOOR route*

### 2.6.1.5 Kildare Bridge

The habitats described below refer to the habitats recorded within the boundary of the Kildare bridge application.

Table 2-5. Habitats recorded within the Kildare bridge application site.

Habitat (Fossitt)	Code
Buildings and Artificial Surfaces	BL3
Treeline	WL2
Eroding upland River	

The Kildare bridge, R157 and the Dunboyne Road are all categorized as Buildings and artificial (BL3). See plate 2-22.



Plate 2-22. Kildare bridge and R157

The Rye River located at the bridge is categorized as Eroding upland River (FW1) and is fringed by riparian Treeline (WL1) with Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Willow (*Salix sp.*) and *Leyandii* cypress occurring here. See Plate 2-23.



Plate 2-23. Rye River (FW1) fringed by riparian Treeline (WL1).

### 2.6.1.6 Moyglare Bridge

The habitats described below refer to the habitats recorded with the Moyglare hall application site.

Table 2-6. Habitats recorded within the Moyglare bridge site

Habitat (Fossitt)	Code
Spoil and Bare ground	ED2
Dry Meadows and grassy verges	GS2
Eroding upland River	FW1

The area to the south of the Rye Water River is dominated by rank grassland categorised as Dry Meadows and grassy verges (GS2). The species diversity here was low and dominated by tussocky vegetation composing of Broad-leaved dock (*Rumex obtusifolius*), Ragwort (*Jacobaea vulgaris*), Creeping thistle (*Cirsium arvense*), Yorkshire fog (*Holcus lanatus*) and Cock’s foot (*Dactylis glomerata*). See Plate 2-24. A small section of Spoil and bare ground (ED2) habitat was recorded to the south of the Moyglare Bridge-Kildare application boundary, in the area adjacent to the Moyglare Hall Estate. See Plate 2-25.

The Rye Water River occurs at the northern boundary of the Moyglare Bridge-Kildare application site and is categorised as Eroding upland River (FW1). See Plate 2-26.



Plate 2-24. Dry meadows and grassy Verges habitat recorded south of the Rye Water River within Moyglare site



Plate 2-25. Spoil and bare ground fringed by dry meadows and grassy verges within Moyglare site





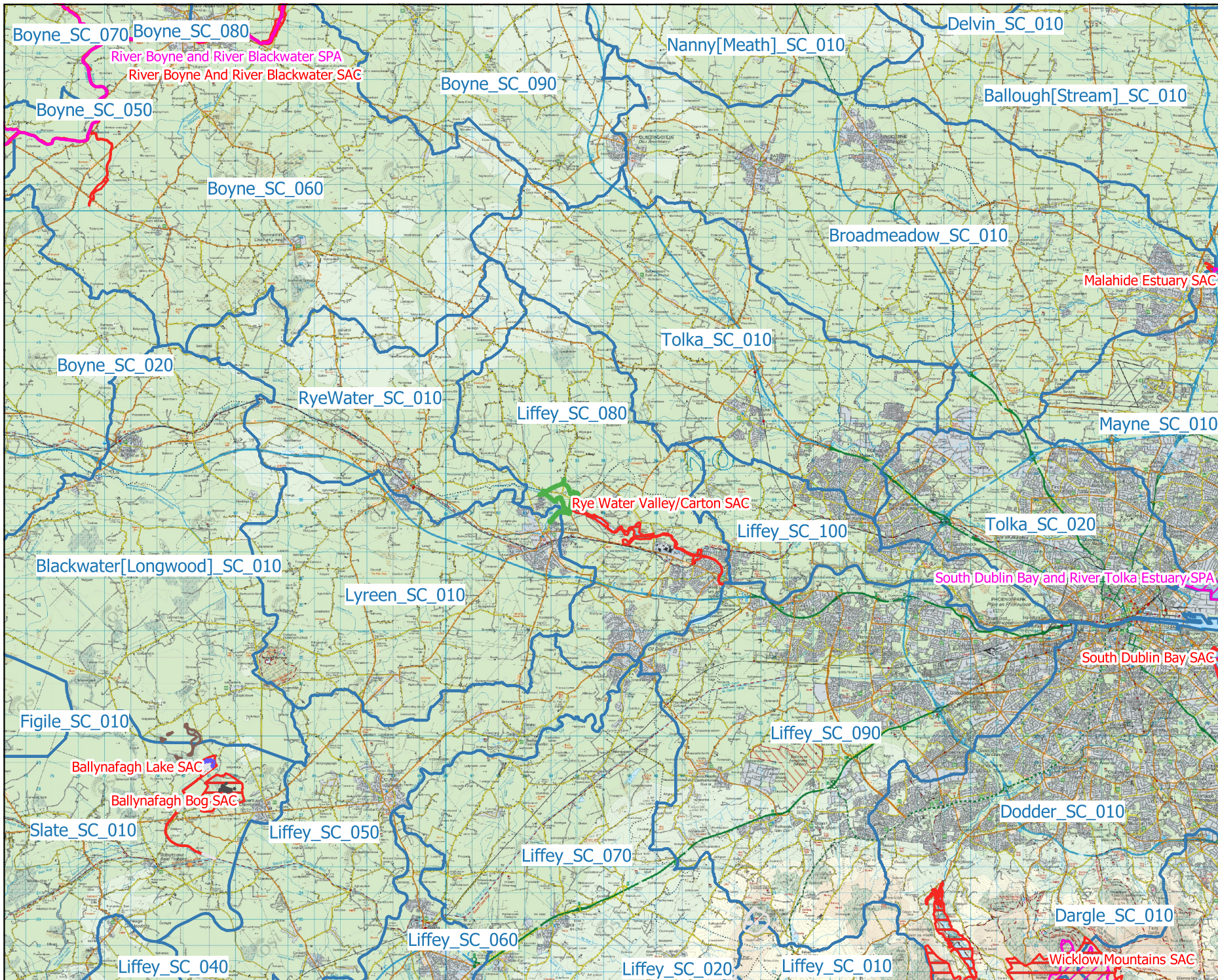
*Plate 2-26. Rye Water River categorised as Eroding upland river within Moyglare site.*

### 3. IDENTIFICATION OF RELEVANT EUROPEAN SITES

#### 3.1 Identification of the European Sites within the Likely Zone of Impact

The following methodology was used to establish which European Sites are within the Likely Zone of Impact of the proposed development:

- Initially the most up to date GIS spatial datasets for European designated sites and water catchments were downloaded from the NPWS website ([www.npws.ie](http://www.npws.ie)) and the EPA website ([www.epa.ie](http://www.epa.ie)) on the 01/12/2021. The datasets were utilized to identify European Sites which could feasibly be affected by the Proposed Development.
- All European Sites that could potentially be affected were identified using a source-pathway - receptor model. To provide context for the assessment, European Sites within a distance of 15km surrounding the development site are shown on Figure 3.1. Information on these sites according to the site-specific conservation objectives is provided in Table 3-1. Sites that were further away from the proposed development were also considered and in this case a potential source-pathway-receptor chain for European Sites that are further than 15km from the proposed development was identified and these sites have been fully considered in this assessment.
- The catchment mapping was used to establish or discount potential hydrological connectivity between the site of the Proposed Development and any European Sites. The hydrological catchments are also shown in Figure 3-1.
- In relation to Special Protection Areas, in the absence of any specific European or Irish guidance in relation to such sites, the Scottish Natural Heritage (SNH) Guidance, 'Assessing Connectivity with Special Protection Areas (SPA)' (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development and Special Protection Areas. The guidance takes into consideration the distances species may travel beyond the boundary of their SPAs and provides information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects.
- Table 3-1 provides details of all relevant European Sites as identified in the preceding steps and assesses which are within the likely Zone of Impact. The assessment considers any likely direct or indirect impacts of the Proposed Development, both alone and in combination with other plans and projects, on European Sites by virtue of the following criteria: size and scale, land-take, distance from the European Site or key features of the site, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction and operation were considered in this screening assessment
- The site synopses and conservation objectives of these sites, as per the NPWS website ([www.npws.ie](http://www.npws.ie)), were consulted and reviewed at the time of preparing this report 01/12/2021.
- Where potential pathways for Significant Effect are identified, the site is included within the Likely Zone of Impact and further assessment is required.



### Map Legend

-  EIAR Site Boundary
-  EPA Hydrological Sub Catchments
-  Special Area of Conservation (SAC)
-  Special Protection Area (SPA)

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Drawing Title	
European Sites within Zone of Impact	
Project Title	
Sky Castle Ltd - Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
Drawn By	Checked By
CM	CM
Project No.	Drawing No.
210414	Figure 3-1
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Table 3-1 Identification of Designated sites within the Likely Zone of Impact

European Sites and distance from proposed development	Qualify Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, <a href="http://www.npws.ie">www.npws.ie</a> on the 01/09/2021	Conservation Objectives	Likely Zone of Impact Determination
<b>Special Areas of Conservation (SAC)</b>			
<p>Rye Water Valley/Carton SAC [001398]</p> <p><b>Distance:</b> 0m (directly adjacent to southern section of development boundary)</p>	<ul style="list-style-type: none"> <li>➤ [7220] Petrifying springs with tufa formation (<i>Cratoneurion</i>)*</li> <li>➤ [1014] Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>)</li> <li>➤ [1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)</li> </ul>	<p>Detailed conservation objectives for this site, (Version 1, December 2021), were reviewed as part of the assessment and are available at <a href="http://www.npws.ie">www.npws.ie</a></p>	<p>The River Rye Water flows along southern boundary of the development site. A potential pathway for indirect effects on water dependent Qualifying Interests (QIs) was identified in the form of deterioration of surface water and groundwater quality resulting from pollution, associated with the construction and operational phases of the development. The River Rye water flows into this SAC, Pollution of surface water and groundwater may result in adverse impacts on the following downstream aquatic or groundwater influenced QI habitats within the SAC in the absence of mitigation:</p> <ul style="list-style-type: none"> <li>➤ [7220] Petrifying springs with tufa formation (<i>Cratoneurion</i>)*</li> <li>➤ [1014] Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>)</li> <li>➤ [1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)</li> </ul> <p><b>The SAC is in the Likely Zone of Impact and further assessment is required.</b></p>
<p>South Dublin Bay SAC [000210]</p> <p><b>Distance:</b> 25km</p> <p>31km (Surface water distance)</p>	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> </ul>	<p>Detailed conservation objectives for this site, (Version 1, August 2013), were reviewed as part of the assessment and are available at <a href="http://www.npws.ie">www.npws.ie</a></p>	<p>This site is 25km west of the Proposed Development site, therefore direct impacts upon this SAC can be excluded.</p> <p>Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the development via the Rye Water River and the River Liffey. The SAC is located approx. 31km downstream of the proposed development site. On an extremely precautionary basis effects on the following aquatic receptors are considered:</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p>

European Sites and distance from proposed development	Qualify Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, <a href="http://www.npws.ie">www.npws.ie</a> on the 01/09/2021	Conservation Objectives	Likely Zone of Impact Determination
<b>Special Areas of Conservation (SAC)</b>			
			This SAC is therefore <b>within the likely zone of impact</b> , due to the potential for pollutants to be transmitted to it indirectly via surface water.
<p>North Dublin Bay SAC [000206]</p> <p><b>Distance:</b> 25km</p> <p>31km (Surface water distance)</p>	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ Annual vegetation of drift lines [1210]</li> <li>➤ salicornia and other annuals colonising mud and sand [1310]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> <li>➤ Embryonic shifting dunes [2110]</li> <li>➤ Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</li> <li>➤ Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</li> <li>➤ Humid dune slacks [2190]</li> <li>➤ <i>Petalophyllum ralfsii</i> (Petalwort) [1395]</li> </ul>	<p>Detailed conservation objectives for this site, (Version 1, 6<sup>th</sup> November 2013) were reviewed as part of the assessment and are available at <a href="http://www.npws.ie">www.npws.ie</a></p>	<p>This European Site is located 25km west of the Proposed Development. Given the distance between the site of Proposed Development and this SAC, direct effects upon the SAC can be excluded.</p> <p>No potential pathway for effect on any of the terrestrial habitats for which the SAC is designated was identified,</p> <ul style="list-style-type: none"> <li>➤ Embryonic shifting dunes [2110]</li> <li>➤ Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</li> <li>➤ Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</li> <li>➤ Humid dune slacks [2190]</li> </ul> <p>Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the development via the Rye Water River and the River Liffey. The SAC is located approx. 31km downstream of the Proposed Development. On an extremely precautionary basis effects on the following aquatic receptors are considered:</p> <ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ Annual vegetation of drift lines [1210]</li> <li>➤ Salicornia and other annuals colonising mud and sand [1310]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> </ul>

European Sites and distance from proposed development	Qualify Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, <a href="http://www.npws.ie">www.npws.ie</a> on the 01/09/2021	Conservation Objectives	Likely Zone of Impact Determination
<b>Special Areas of Conservation (SAC)</b>			
			This SAC is therefore <b>within the likely zone of impact</b> , due to the potential for pollutants to be transmitted to it indirectly via surface water.
<b>Special Protection Areas (SPAs)</b>			
South Dublin Bay and River Tolka Estuary SPA [004024]  <b>Distance:</b> 25km  31km (Surface water distance)	<ul style="list-style-type: none"> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>➤ Ringed Plover (<i>Charadrius hiaticula</i>) [A137]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>➤ Knot (<i>Calidris canutus</i>) [A143]</li> <li>➤ Sanderling (<i>Calidris alba</i>) [A144]</li> <li>➤ Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>➤ Redshank (<i>Tringa totanus</i>) [A162]</li> <li>➤ Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]</li> <li>➤ Roseate Tern (<i>Sterna dougallii</i>) [A192]</li> <li>➤ Common Tern (<i>Sterna hirundo</i>) [A193]</li> <li>➤ Arctic Tern (<i>Sterna paradisaea</i>) [A194]</li> <li>➤ Wetland and Waterbirds [A999]</li> </ul>	Detailed conservation objectives for this site, (Version 1, 9 <sup>th</sup> March 2015) were reviewed as part of the assessment and are available at <a href="http://www.npws.ie">www.npws.ie</a>	This site is 25km west of the Proposed Development, therefore direct impacts upon this SPA can be excluded.  Disturbance to SCI species can be ruled out due to the distance of 25km between the development and this SPA.  Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Special Conservation Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the development via the Rye Water River and the River Liffey. The SPA is located approx. 31km downstream of the proposed development site. Potential effects on all SCI species are considered under Wetland and waterbirds [A999].  This SPA is <b>within the likely zone of impact</b> , due to the potential for pollutants to be transmitted to it indirectly via surface water.
North Bull Island SPA [004006].	<ul style="list-style-type: none"> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> </ul>	Detailed conservation objectives for this site,	This site is 23km west of the Proposed Development, therefore direct impacts upon this SPA can be excluded.

European Sites and distance from proposed development	Qualify Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, <a href="http://www.npws.ie">www.npws.ie</a> on the 01/09/2021	Conservation Objectives	Likely Zone of Impact Determination
<b>Special Areas of Conservation (SAC)</b>			
<p><b>Distance:</b> 23km</p> <p>31km (Surface water distance)</p>	<ul style="list-style-type: none"> <li>&gt; Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>&gt; Teal (<i>Anas crecca</i>) [A052]</li> <li>&gt; Pintail (<i>Anas acuta</i>) [A054]</li> <li>&gt; Shoveler (<i>Anas clypeata</i>) [A056]</li> <li>&gt; Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>&gt; Golden Plover (<i>Pluvialis apricaria</i>) [A140]</li> <li>&gt; Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>&gt; Knot (<i>Calidris canutus</i>) [A143]</li> <li>&gt; Sanderling (<i>Calidris alba</i>) [A144]</li> <li>&gt; Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>&gt; Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</li> <li>&gt; Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>&gt; Iew (<i>Numenius arquata</i>) [A160]</li> <li>&gt; Redshank (<i>Tringa totanus</i>) [A162]</li> <li>&gt; Turnstone (<i>Arenaria interpres</i>) [A169]</li> <li>&gt; Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]</li> <li>&gt; Wetland and Waterbirds [A999]</li> </ul>	<p>(Version 1, 9<sup>th</sup> March 2015) were reviewed as part of the assessment and are available at <a href="http://www.npws.ie">www.npws.ie</a></p>	<p>Disturbance to SCI species can be ruled out due to the distance of 23km between the development and this SPA.</p> <p>Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Special Conservation Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the development via the Rye Water River and the River Liffey. The SPA is located approx. 31km downstream of the proposed development site. Potential effects on all SCI species are considered under Wetland and waterbirds [A999].</p> <p>This SPA is <b>within the likely zone of impact</b>, due to the potential for pollutants to be transmitted to it indirectly via surface water.</p>

## 3.2 European Sites with the Potential to be Significantly Affected by the Proposed Development

The European Sites within the likely zone of impact are:

- Rye Water Valley/Carton SAC [001398]
- South Dublin Bay SAC [000210]
- North Dublin Bay SAC [000206]
- South Dublin Bay and River Tolka Estuary SPA [004024]
- North Bull Island SPA [004006].

### 3.2.1 Rye Water Valley/Carton SAC [001398]

The River Rye Water flows along the southern boundary of the development Sites B, C and the MOOR and along the northern boundary of the Kildare Bridge and Moygaddy Bridge sites. A potential pathway for indirect effects on water dependent Qualifying Interests (QIs) was identified in the form of deterioration of water quality resulting from pollution, associated with the construction and operational phases of the Proposed Development. The Blackhall Little stream is a tributary of the River Rye and the River Rye water flows into this SAC, Pollution of surface water and groundwater may result in adverse impacts on the following downstream aquatic or groundwater influenced QI habitats within the SAC in the absence of mitigation:

- [7220] Petrifying springs with tufa formation (*Cratoneurion*)\*
- [1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*)
- [1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)

### 3.2.2 South Dublin Bay SAC [000210]

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the Proposed Development via the Rye Water River and the River Liffey. The SAC is located approx. 31km downstream of the Proposed Development. On an extremely precautionary basis effects on the following aquatic receptors are considered:

- Mudflats and sandflats not covered by seawater at low tide [1140]

### 3.2.3 North Dublin Bay SAC [000206]

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the Proposed Development via the Rye Water River and the River Liffey. The SAC is located approx. 31km downstream of the Proposed Development. On an extremely precautionary basis effects on the following aquatic receptors are considered:

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Annual vegetation of drift lines [1210]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]



- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

### 3.2.4 **South Dublin Bay and River Tolka Estuary SPA [004024]**

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Special Conservation Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the development via the Rye Water River and the River Liffey. The SPA is located approx. 31km downstream of the proposed development site. Potential effects on all SCI species are considered under Wetland and waterbirds [A999].

### 3.2.5 **North Bull Island SPA [004006].**

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Special Conservation Interests of this European Site has been identified in the form of deterioration in water quality due to the release of polluting materials during the construction and operational phases of the Proposed Development via the Rye Water River and the River Liffey. The SPA is located approximately 31km downstream of the Proposed Development. Potential effects on all SCI species are considered under Wetland and waterbirds [A999].

## 3.3 **Likely Cumulative Impact of the Proposed Works on European Sites, in-combination with other plans and projects**

Where potential pathways for effect have been identified in Table 3-1, the potential for cumulative effects resulting from the Proposed Development when considered in combination with other plans and projects, cannot be discounted at this stage and further assessment is required. Where no pathway for any effect on designated sites is identified, there is no potential for the Proposed Development to result in any cumulative effects. Cumulative effects are assessed in the NIS where potential pathways for effect have been identified.

## 4. ARTICLE 6(3) APPROPRIATE ASSESSMENT SCREENING STATEMENT AND CONCLUSIONS

The findings of this Screening Assessment are presented following the European Commission's Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018) as well as the Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010).

### 4.1 Data Collected to Carry Out Assessment

In preparation of the report, the following sources were used to gather information:

- Review of NPWS Site Synopses, Conservation Objectives for the European Sites
- Review of 2019, 2013 and 2007 EU Habitats Directive (Article 17) Reports.
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), EPA, Water Framework Directive (WFD), Geological Survey of Ireland (GSI).
- Review of OS maps and aerial photographs of the site of the proposed project.
- Review of relevant databases including National Biodiversity Ireland Database and available literature of previous surveys conducted in the area.
- Review of other plans and projects within the area.
- Site walkover survey conducted by Colin Murphy (B.Sc., M.Sc.) and Julie O Sullivan (B.Sc., M.Sc.) on the 6<sup>th</sup> of July 2021 with follow up surveys undertaken across 2022.

### 4.2 Concluding Statement

It cannot be excluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the Proposed Development, individually or in combination with other plans and projects, would be likely to have a significant effect on Rye Water Valley/Carton SAC, South Dublin Bay SAC [000210], North Dublin Bay SAC [000206], South Dublin Bay and River Tolka Estuary SPA [004024] and North Bull Island SPA [004006].

As a result, an Appropriate Assessment is required, and a Natura Impact Statement shall be prepared in respect of the proposed development.

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