MWP

Ecological Constraints Report

North Mall Masterplan

University College Cork (UCC) & Mercy University Hospital (MUH)

September 2021

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1. Introduction

Ecologists from Malachy Walsh and Partners (MWP) were commissioned by McCutcheon Halley Chartered Planning Consultants on behalf of University College Cork (UCC) & Mercy University Hospital (MUH), to undertake an ecological constraints study of the North Mall Masterplan at North Mall Campus, Cork City.

The objectives of this report are as follows:

- To document the baseline ecology of the project site using data collected from desktop study and field survey.
- To assess the ecological importance of existing habitats within and/or connected to the project site and identify any ecological constraints present.
- To propose protection and enhancement measures for existing flora and fauna in order to minimise potential ecological impacts as part of the overall North Mall Masterplan.

1.1 Legislation and Guidance

In Ireland, floral and faunal species are protected at a national level by the Wildlife Acts, 1976 to 2000 and European Communities (Birds and Natural Habitats) Regulations 2011, and at a European level by the EC Habitats Directive (92/43/EEC) and EU Birds Directive (79/409/EEC), amended in 2009 as the Directive 2009/147/EC. This ecological constraints study was carried out with regard to the following:

National Level

- The Wildlife Act 1976 as amended by the Wildlife Act 1976 (Protection of Wild Animals) Regulations, 1980, the Wildlife (Amendment) Act 2000, the Wildlife (Amendment) Act 2010, European Communities (Wildlife Act, 1976) (Amendment) Regulations 2017. (The Wildlife Act);
- European Communities (Conservation of Wild Birds) Regulations 1985 (S.I. 291/1985) as amended by S.I. 31/1995;
- European Communities (Natural Habitats) Regulations, S.I. 94/1997 as amended by S.I. 233/1998 & S.I. 378/2005 (The Habitats Regulations);
- Fisheries (Consolidation) Act, 1959 (as amended), hereafter referred to as the Fisheries Act.
- European Communities (Birds and Natural Habitats) Regulations 2015 (S.I. 355/2015);
- The Flora (Protection) Order, 2015 (S.I. No. 356/2015);
- National Biodiversity Action Plan 2017-2021;
- Threat Response Plan: Otter 2009-2011 (DEHLG, 2009);
- The Planning and Development Act (2000) (as amended).

European Level

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (The Habitats Directive);
- Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended) (The Birds Directive);

- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (The Water Framework Directive);
- Directive 2006/44/EC of the European Parliament and of the Council of 6 September 2006 on the quality of fresh waters needing protection or improvement in order to support fish life (The Fish Directive (consolidated)).

1.2 Statement of Authority

Information provided and prepared for this report was compiled by ecologists from Malachy Walsh & Partners. Field work was undertaken by Marie Kearns while the report was compiled by Marie Kearns with contributions from Monica Kane.

Marie Kearns BSc MSc - Marie graduated from University College Cork with a BSc in Zoology and from St Andrews University with an MSc in Marine Mammal Science. She is an experienced terrestrial and marine ecosystem surveyor, with professional experience in the detection and identification of Irish fauna. She has assisted on numerous projects concerning ecological impact assessments and the Appropriate Assessment process as well as other projects such as ecological monitoring and invasive species surveys.

Monica Kane BSc MSc - Monica has 18 years' experience working in environmental consultancy. She is experienced in ecological impact assessment and the appropriate assessment process. She has completed numerous Natura Impact Statements, as well as other forms of ecological assessments, for a variety of projects.

2. Methodology

The baseline ecology of the project site and its connection to habitats and species in the wider environment were documented by carrying out a desk study and an ecological survey at North Mall Campus. With this information, habitats of importance to flora and fauna and the constraints they posed to the North Mall Masterplan were assessed.

2.1 Desk Study

A desk study was carried out of available information concerning the ecology of the project site. This included a review of the following ecological datasets, publications, and resources:

- Ordnance Survey Ireland (OSI) aerial photography and 1:50000 mapping
- National Parks and Wildlife Service (NPWS);
- BirdWatch Ireland;
- Invasive Species Ireland;
- Teagasc Soil area maps (on-line mapping);
- Geological Survey Ireland (GSI) area maps;
- Environmental Protection Agency (EPA) (on-line mapping);
- Water Framework Directive Ireland;
- Other information sources and reports footnoted in the course of the report.

The project site lies within the Ordnance Survey National Grid hectad (10km square) W67. Floral and faunal species data recorded within this grid square was downloaded from the National Biodiversity Data Centre (NBDC) database[1]. These records included information on protected flora and fauna, as well as the presence of invasive species.

Ecological surveys and reports that have been previously completed at North Mall Campus have informed this ecological constraints report including:

- The Environmental Impact Assessment Report (EIAR) for the proposed New Tyndall Science Facility at North Mall Campus (2021);
- The Appropriate Assessment Screening Report (AASR) and Natura Impact Assessment (NIS) for the proposed New Tyndall Science Facility at North Mall Campus (2021);
- UCC Biodiversity Action Plan 2018-2023 (Lalor Ecology, 2018);
- Biodiversity Survey of University College Cork Campus 2014 – 2016 Interim Report 2014 (Lalor Ecology, 2014).

2.2 Ecological Survey

An ecological survey was undertaken by MWP ecologists on the 25th of May 2021. The purpose of the survey was to document the baseline ecology of the project site and to identify potential ecological constraints. The survey of habitats was carried out with regard to 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et., al, 2011) and were classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000). Casual species lists of bird and mammal activity were recorded during the survey.

Invasive plant species present within the project site boundary are currently controlled under an ongoing management plan implemented by UCC. A walkthrough of the location and condition of invasive plant species was provided by Lisa Dolan (Ecological Landscape Design) on the 25th of May 2021, the ecologist overseeing the management of invasive plant species at North Mall Campus, during the ecological survey.

2.3 Ecological Constraint Rating

An ecological constraint rating was developed in order to classify the risk of an ecological resources (habitats, features, assemblages, species or individuals that occur in the vicinity of a project and upon which impacts are possible) posing as a constraint to the development of the North Mall Masterplan. In order to determine this risk, the value of the ecological resources was determined using the ecological evaluation guidance given in NRA (2009) as outlined in **Table 1** below. See **Appendix 1** for examples of the NRA (2009) ecological resource evaluation.

Table 1: Predictors of ecological resources value

Habitat	Species
Condition Size Rarity Conservation Status Legal Status	Biodiversity Value Legal Status Conservation Status

The ecological constraint rating is as follows:

[1] https://maps.biodiversityireland.ie/Map

Low: Slightly sensitive potential ecological resource posing little to no risk to future development of the project site. Mitigation, protection and/or enhancement measures can be easily integrated.

Moderate: Moderately sensitive potential ecological resource posing moderate risk to future development of the project site.

High: Highly sensitive potential ecological resource posing high risk to future development of the project site.

3. Site and Project Description

3.1 Site Location and Context

The North Mall Masterplan project site is located to the northwest of Cork City centre, on the banks of the north channel of the River Lee (See **Figure 1** below). The project site encompasses 9.7ha with an estimated elevation of c. 30m (north) to c. 5m (south) above sea level. Vehicular site access is via the North Mall gateway, connecting to Upper Winters Hill to the northeast, with pedestrian access to the project site from this gateway and from the Mardyke Bridge to the west.

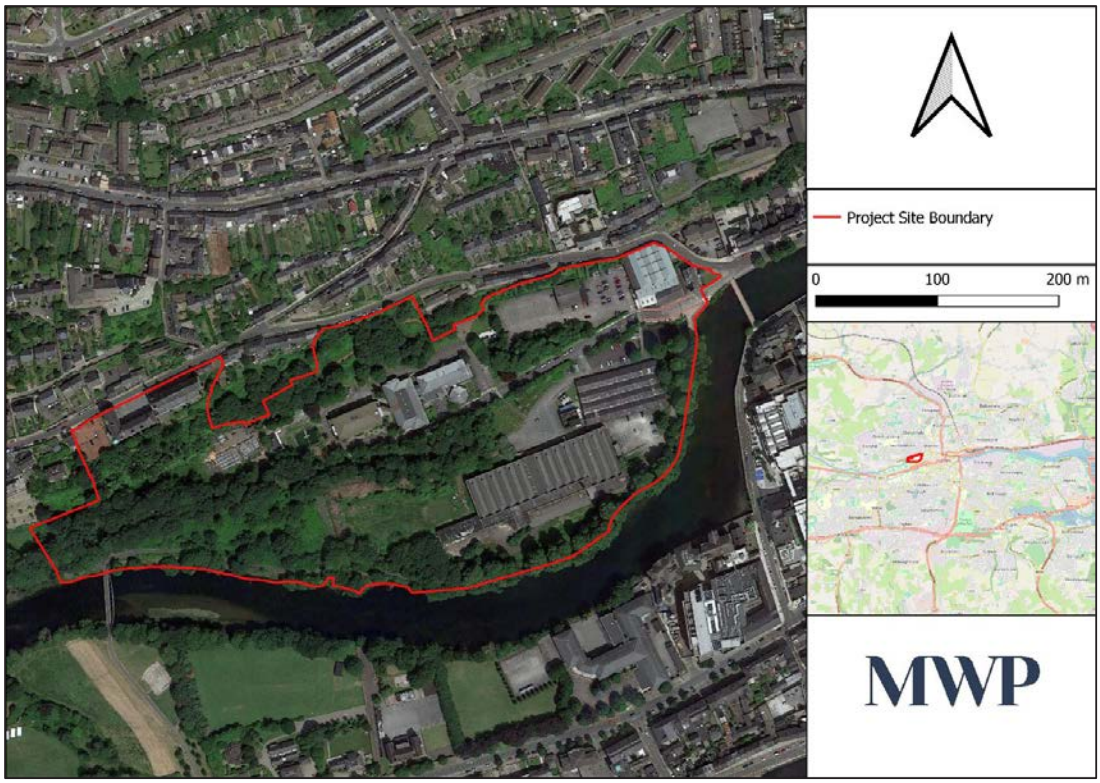

Figure 1: Project site location of the North Mall Masterplan

3.2 Site Description

Situated within an urban environment, the project site is a diverse location containing a variety of habitats. The project site comprises University buildings, the now-derelict bottling plant, hard standing areas, grassland and woodland habitat, with the millrace channel flowing through the centre of the project site.

The recreational riverside walkway known as The River Lee Walk runs within the southern boundary of the project site, connecting the Mardyke Bridge to Upper Winters Hill Road. A large escarpment partially covered in vegetation separates the north boundary of the project site from Sunday's Well Road. UCC's Department of Music and St Vincent's Catholic Church and Presbytery are located to the northwest, separated from the rest of the project site by this escarpment. Woodland, which fringes the millrace channel, dominates in the west and follows the millrace through to the centre of the project site, where the bottling plant, a now derelict structure, is situated to the southeast. This bottling plant is proposed to be demolished as part of the proposed development of the New Tyndall Science Facility (Planning Ref: 2140068). North and northeast of the bottling plant and the millrace channel are several UCC buildings and research facilities including glasshouses, an apiary and a fisheries research pool that is not currently in use. Parking facilities serving UCC and MUH are to the northeast, as are The Cooperage and Distillery House, which are listed as historic buildings. Areas of hardstanding, disturbed ground, scrub and grassland are interspersed throughout the project, particularly to the southwest.

The project site is located within the Lee, Cork Harbour and Youghal Bay catchment area (Lee [Cork] _SC_060 and Kiln_SC_010 sub-catchments), Hydrometric Area 19, within the South Western River Basin District[2]. The millrace channel is connected to the north channel of the River Lee with flow from the River Lee entering the millrace channel directly west of the project site and re-entering the River Lee directly east of the project site. The north channel of the River Lee and the millrace channel are transitional watercourses that form part of the Lee (Cork) Estuary Upper transitional waterbody. Under the Water Frameworks Directive, the water quality of this transitional waterbody is currently considered to be of 'Moderate' status and thus does not meet surface water environmental objectives[1].

According to the GSI database, the rocks in the south Cork region are mostly sedimentary in nature, with the project site underlain by sandstone with mudstone and siltstone. The project site has been characterised by the EPA as an area containing artificial surfaces in a mosaic of urban fabric and green urban areas[3].

3.3 Brief Project Description

The North Mall Masterplan comprises the development of nine new buildings, car parking facilities and ancillary works in order to expand North Mall Campus into an academic and healthcare campus for UCC and MUH (See **Appendix 2**). The proposed development of the New Tyndall Science Facility which has been submitted for planning, and the proposed development of the pedestrian and cycle bridge spanning the north channel of the River Lee, which is currently at pre-planning stages, are part of this Masterplan. Crucially, the development of flood defence infrastructure will be incorporated into the masterplan which will comply with the Lower Lee (Cork City) Flood Relief Scheme.

[2] https://gis.epa.ie/EPAMaps/Water
[3] https://gis.epa.ie/EPAMaps/

4. Constraints Study Results

4.1 Overview

The constraint study assesses the existing ecological constraints imposed on the proposed North Mall Campus Masterplan and considers designated Natura 2000 sites, habitats and fauna, within the receiving environment, first describing the existing environment and then determining the associated constraint rating. It also examines the constraints arising from invasive species. Please see **Appendix 3** for an overview of the constraints map.

4.2 Designated Natura 2000 Sites

Natura 2000 sites are protected under European legislation and are divided into two types. Special Areas of Conservation (SACs) and are protected under the Habitats Directive 92/43/EEC and the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. Special Protection Areas (SPAs) are protected under the Birds Directive 2009/147/EC and European Communities (Birds and Natural Habitats) Regulations 2011, as amended.

Designated sites within 15km a proposed development are considered to be within the Zone of Influence (ZoI), however, sites that may be connected beyond this distance were also considered. The project site does not overlap with or lie adjacent to any designated Natura 2000 site. However, the project site is within the 15km of two designated sites: Great Island Channel SAC 001058 and Cork Harbour SPA 004030 (See **Figure 2** below). In this case, both Great Island Channel SAC 001058 and Cork Harbour SPA 004030 are hydrologically connected to the project site via the north channel of the River Lee and the millrace channel. Cork harbour SPA is designated for twenty-three species of waterbird and Great Island Channel SAC is designated for habitats comprising Tidal Mudflats and Sandflats and Atlantic Salt Meadows.

As was the case with the proposed development of the New Tyndall Science Facility in North Mall Campus, a Screening for Appropriate Assessment to identify potential impacts on these designated Natura 2000 sites arising from the development of the North Mall Masterplan will be required. Pending the conclusion of the AASR, it is likely that a Natura Impact Statement will also be required.

The main ecological risk to the SAC and SPA downstream of the North Mall Campus is a reduction in water quality of the River Lee as a result of the construction or operation of the various developments, which could have negative indirect ecological consequences on the qualifying interests of the SAC and the SCI of the SPA. Appropriate water quality protection measures will be required in order to avoid/ minimize impacts on water quality. The risk posed by these Natura 2000 sites in the absence of water quality controls and mitigation to the North Mall Masterplan as an ecological constraint is **Moderate**, however with controls and mitigation in place it is considered **Low**.

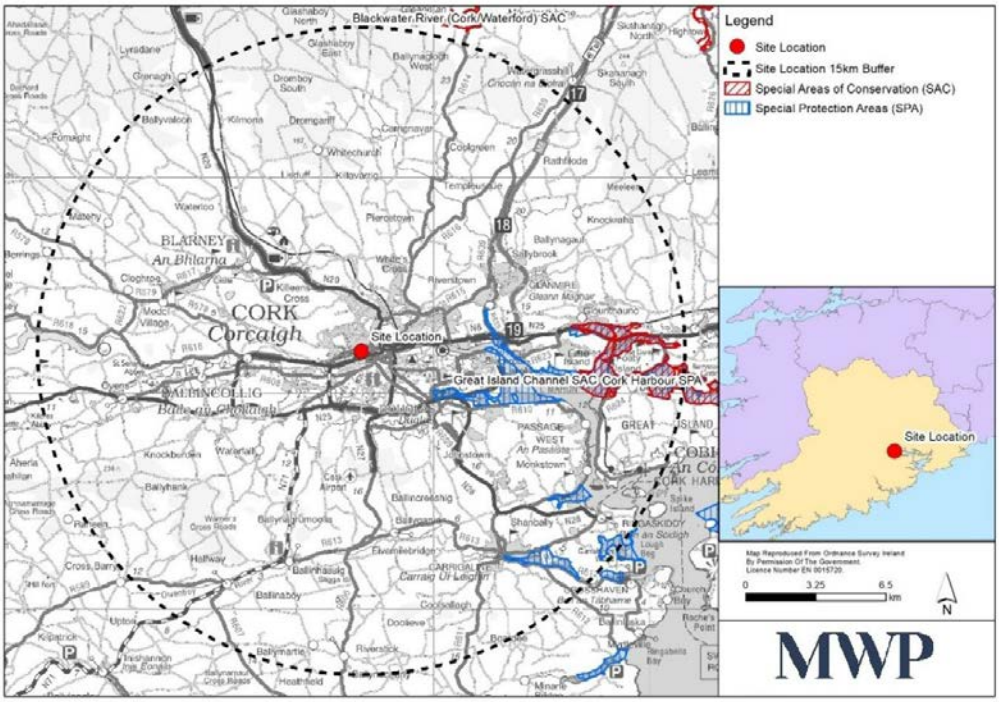

Figure 2: Natura 2000 sites within 15km of the North Mall Masterplan site.

4.3 Habitats

The habitats recorded during the ecological survey are presented in **Figure 3** below. It is considered that the project site comprises a mosaic of semi-natural and artificial habitats of differing value. Each habitat is described in turn in the following sections along with their ecological value and associated constraint rating.

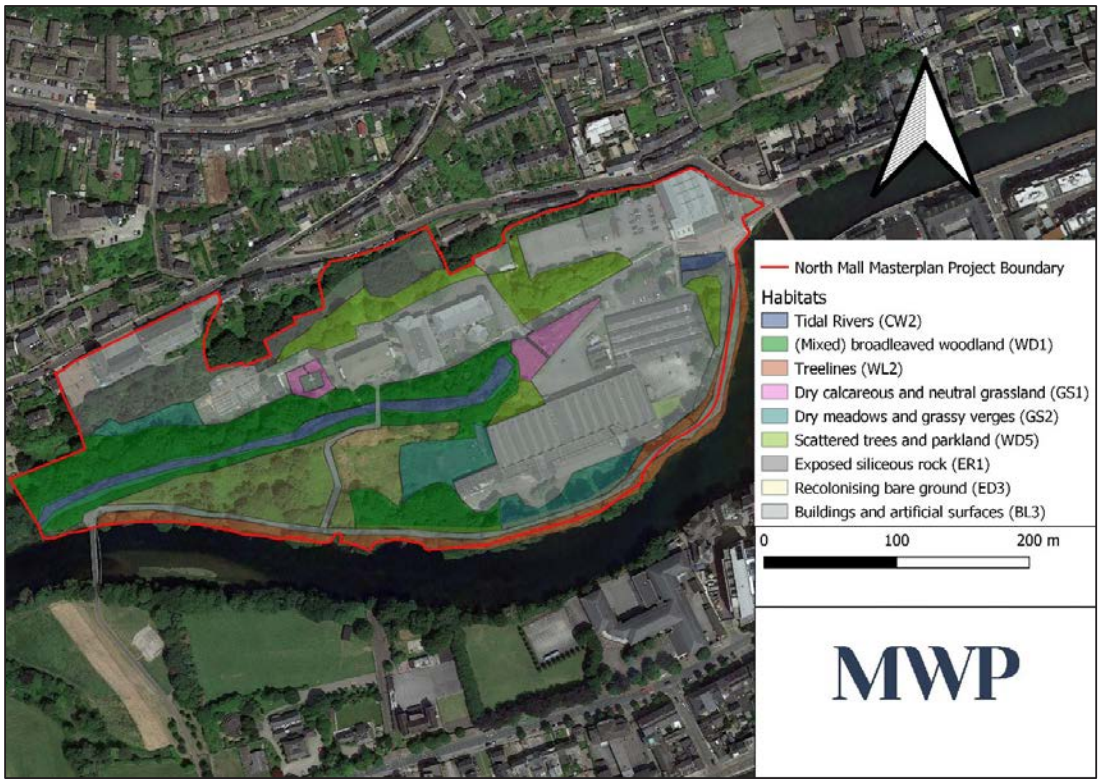

Figure 3: Map of habitats identified within the North Mall Masterplan project site.

4.3.1 Riverine Habitat

Both the north channel of the River Lee and the millrace channel have been classified as Tidal River (CW2) habitat using Fossitt (2000) criteria. An aquatic survey carried out in November 2020, as part of the EIAR for the proposed development of the New Tyndall Science Facility, determined that the species recorded in the River Lee during the current survey were representative of estuarine conditions, with reduced biotic diversity. However, the north channel of the River Lee and the millrace channel are assessed as being of national importance given that the River Lee supports Annex II listed species (Otter, Atlantic Salmon, Sea Lamprey, *etc*.) and that these watercourses act as a hydrological link to the designated Natura 2000 sites; Great Island Channel SAC and Cork Harbour SPA.

Appropriate water quality protection measures will be required in order to avoid/ minimize impacts on this habitat. The risk posed in the absence of water quality controls and mitigation by this habitat to the North Mall Masterplan as an ecological constraint is **moderate to high**, however with controls and mitigation in place it is considered **low to moderate**.

4.3.2 Woodland, Treeline and Parkland Habitat

4.3.2.1 Woodland

There are two woodland areas present within the project site; one which encases the millrace channel and one directly southwest of the bottling plant. These areas of woodland have been classified as (Mixed) broadleaved woodland (WD1) using Fossitt (2000) criteria. During the ecological survey, a number of mature trees that made up the canopy were noted. The dominant species was Sycamore (*Acer pseudoplatanus*) although Ash (*Fraxinus*

excelsior), Lime (*Tilia* spp.), Horse-chestnut (*Aesculus hippocastanum*) and Alder (*Alnus glutinosa*) were also recorded. The understory, shrub and ground layer comprised of species such as Willow (*Salix* spp.), Elder (*Sambucus nigra*), Bramble (*Rubus fruticosus agg*.) Ivy (*Hedera helix*), Wood Avens (*Geum urbanum*), Pendulate sedge (*Carex pendula*), Herb-robert (*Geranium robertianum*), Tutsan (*Hypericum androsaemum*) and Cow Parsley (*Anthriscus sylvestris*). Numerous non-native invasive plant species were recorded within this habitat, including Winter Heliotrope (*Petasites fragrans*), Himalayan Balsam (*Impatiens glandulifera*) and Japanese Knotweed (*Fallopia japonica*). The infestations of Japanese Knotweed and Himalayan Balsam were primarily associated with the woodland encasing the millrace channel.

The dominance of Sycamore as the mature tree species, the few floral species recorded overall, and the encroachment of invasive plant species indicates that the condition of this habitat is sub-optimal. However, given the maturity of the trees present, the value of this habitat for a range of faunal species within an urban landscape, and the connection of this habitat to continuous woodland extending west of the project site, it is considered that this habitat is of high local value. The permanent loss of this existing woodland habitat from the southwest of the bottling plant has the potential to result in long-term ecological impacts on species that utilise this high value habitat. While the planting of a new native woodland mix elsewhere within the project site would offset this permanent loss to a degree and potentially increase the biodiversity of the project site, this offset will be limited by where this new woodland planting can take place and will take many years to replace the loss of mature trees within an established woodland habitat, particularly one in a predominantly urban environment.

The risk posed by this habitat to the North Mall Masterplan as an ecological constraint is **moderate**.

4.3.2.2 Treeline

Two mature treeline habitats flank The River Lee Walk, bounding the southern edge of the project site. These treelines consist of a mix of broadleaved species including Sycamore, Lime, Ash, Horse-chestnut, Alder, Elm (*Ulmus* spp.) and Beech (*Fagus sylvatica*). During the ecological survey, it was noted that the location of these treelines provides an ecological corridor for faunal species such as birds and bats.

The risk posed by this habitat to the North Mall Masterplan as an ecological constraint is **low - moderate**.

4.3.2.3 Parkland

Habitat identified as Scattered trees and parkland (WD5) using Fossitt (2000) criteria was documented throughout the project site under differing degrees of maintenance. Tree species included a mix of native and non-native species.

The risk posed by this habitat to the North Mall Masterplan as an ecological constraint is **low**.

4.3.3 Grassland Habitat

Areas of grassland interspersed throughout the project site are currently managed for wildlife as part of UCC's Biodiversity Action Plan 2018 – 2023 (Lalor Ecology, 2018). This involves reduced use of herbicide, a planting programme for wildflower meadows and only require mowing once or twice a year. These grassland areas have been identified as Dry calcareous and neutral grassland (GS1) and Dry meadows and grassy verges (GS2) using Fossitt (2000) criteria.

On the condition that these habitats are replanted and managed for wildlife as part of the North Mall Masterplan landscape proposal, the risk posed by these habitats to the North Mall Masterplan as an ecological constraint is **low**.

4.3.4 Artificial and Exposed Rock Habitats

4.3.4.1 Artificial Habitats

The project site contains a number of heavily-modified artificial habitats, including Recolonising bare ground (ED3) and Buildings and artificial surfaces (BL3). The large areas of Recolonising bare ground located to the southwest are as a result of the ongoing treatment of Japanese knotweed as part of UCC's invasive species management plan. Areas of Buildings and artificial surfaces habitat comprise of the buildings outlined in Section 3.2 above, as well as car parking facilities, the access road into the project site and The Lee Walk.

It is considered that the majority of areas containing these habitats are of little to no intrinsic ecological value. However, certain buildings such as the bottling plant and Distillery House may have some roosting potential for bat species.

Dedicated bat surveys will be required during the optimal survey period (late May – early September). Protection and enhancement measures that specifically target bats can be incorporated into project design. Refer to Section 4.5.1 for faunal species. The risk posed by artificial habitat to the North Mall Masterplan as an ecological constraint is low.

4.3.4.2 Exposed Rock

The escarpment bounding the northern edge of the project site was identified as Exposed siliceous rock (ER1). The rock face is partially covered in vegetation consisting primarily of Travellers Joy (*Clematis vitalba*), Sycamore, Ash, Willow, Ivy and Fern spp. Given the presence of vegetation, this area could provide an ecological corridor for faunal species such as birds and bats.

The risk posed by this habitat to the North Mall Masterplan as an ecological constraint is low - moderate.

4.4 Invasive Species

Non-native invasive plant species (also referred to as invasive alien species) have the potential to threaten indigenous biodiversity to the detriment of the environment, economy and human health. Ireland has obligations for the management of non-native invasive species under national legislation and under the EU Habitats Directive (NRA, 2010). High impact invasive species are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended), where it is an offense to disperse, spread or otherwise cause to grow in any place.

Japanese knotweed and Himalayan balsam were recorded within the project site during previous ecological surveys carried out as part of the proposed development of the New Tyndall Science Facility and during the most recent ecological survey carried out as part of this ecological constraints report. Both of these species are listed on the Third Schedule of the 2011 European Communities (Bird and Natural Habitats) Regulations. As mentioned in Section 2.2, a walkthrough of areas infested with invasive species, namely Japanese knotweed and Himalayan balsam, was given as part of the ecological survey. Please see Appendix 4 for an overview of these infestation areas as provided by Ecological Landscape Design.

Provided that the current invasive plant species management plan continues to be successfully implemented, it is likely that all previously infested areas within the project site will be eradicated. Therefore, the risk posed by Japanese knotweed and Himalayan balsam to the North Mall Masterplan as an ecological constraint is low.

The presence of invasive plant species within the project site has the potential to limit where new native woodland mix can be planted and when. For example, the Recolonising bare ground (ED3) habitat present in the southwest area of the project site is currently being managed for the presence of Japanese knotweed. During the ecological

survey, stands of knotweed were visible at this location. Depending on the stage of treatment, planting in this area could potentially be delayed.

4.5 Fauna

4.5.1 Mammals

The ecological constraints rating and the level of legislative protection afforded to mammal species recorded in the NBDC 10km grid square (W67) is outlined in **Table 2** below.

During the ecological survey of the project site, a potential otter holt was recorded on the south bank of the millrace channel (See **Figure 4** below). Signs of recent otter activity, namely otter spraint, was recorded at the entrance to the holt (See **Plate 1** below).

Where the loss or damage to breeding and resting places of protected species, particularly otter in this case, is unavoidable, a derogation licence issued by the NPWS will be required in advance.

Table 2: The ecological constraints rating for protected mammal species recorded within the NBDC W67 grid square encompassing the project site.

Species	Legislative Protection	Rationale	Ecological Constraints Risk
Otter *Lutra lutra*	Annex II, IV, Wildlife (Amendment) Act (2000)	Construction works cannot take place within 150m of a holt in which breeding females and/or cubs are present. Surveys will be required to identify otter activity and the status of any holts located along the millrace channel.	Moderate
Badger *Meles meles*	Wildlife (Amendment) Act (2000)	Suitable habitat, particularly the (mixed) broadleaved woodland habitat, exists for these species within the project site boundary. Dedicated mammal surveys will be required to determine the presence/absence of these species and their level of site usage.	Low
Hedgehog *Erinaceus europaeus*			
Irish Stoat *Mustela erminea hibernica*			
Pygmy Shrew *Sorex minutus*			
Red Squirrel *Sciuris vulgaris*			
Irish Hare *Lepus timidus hibernicus*	Annex V, Wildlife (Amendment) Act (2000)	While suitable habitat in the form of grassland areas exist within the project site, these habitats are not considered sizable enough to support this species	Low
Common Dolphin *Delphinus delphis*	Annex IV & Wildlife (Amendment) Act (2000)	No significant habitat for these species occurs within the project site	Low
Harbour seal *Phoca vitulina*	Annex II, IV & Wildlife (Amendment) Act (2000).		
Grey seal *Halichoerus grypus*			
Leisler's bat *Nyctalus leisleri*	Annex IV, Wildlife (Amendment) Act (2000)	Within the project site, there are numerous potential roosting locations in the form of mature trees, historic buildings and derelict structures. The watercourses (the north channel of the River Lee and the millrace channel), the woodland habitat and the treeline associated with The Lee Walk are important foraging and commuting habitats for bats. Detailed surveys to determine the level of bat activity within the project site and the suitability of available roosting sites will be required.	Low - Moderate
Common Pipistrelle *Pipistrellus pipistrellus*			
Soprano Pipistrelle *Pipistrellus pygmaeus*			
Brown Long-eared Bat *Plecotus auritus*			
Daubenton's bat *Myotis daubentonii*			
Natterer's bat *Myotis nattereri*			

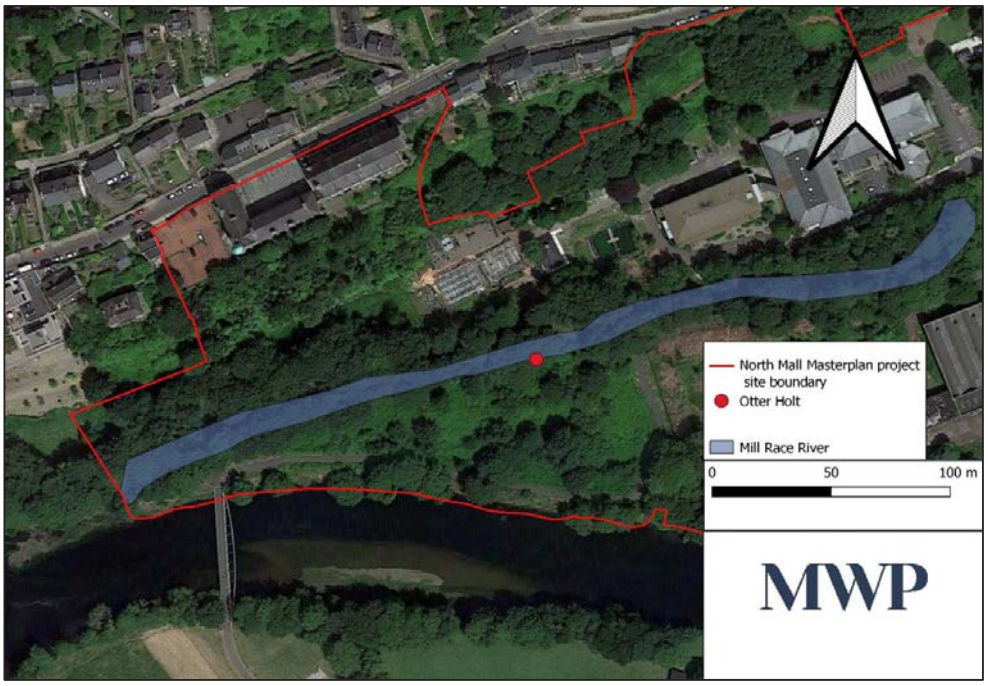

Figure 4: Location of otter holt on the millrace channel within the project site.

Plate 1: Otter Holt (Left). Otter spraint directly in front of holt entrance (right)