Russell Environmental and Sustainability Services Limited

ECOLOGICAL IMPACT ASSESSMENT

WHITEBOX STUDENT CAMPUS, GROODY ROAD, NEWCASTLE, CASTLETROY, LIMERICK

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Executive Summary

This Ecological Impact Assessment has been prepared by Russell Environmental and Sustainability Services Limited (RESS Ltd.) on behalf of Groody Developments Limited in preparation for the planning application for the Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick.

The aim of this report was to identify, quantify and evaluate the impacts of the proposed development on ecosystems and their components, habitats, flora and fauna.

The site is located approximately 3.7Km from Limerick City centre and adjacent to the L5173, Groody Road and the Groody River, the latter which flows into the River Shannon and thus the Lower River Shannon Special Area of Conservation (SAC). The main habitats within the development site are improved grassland, scattered trees, scrub and a treeline on the boundary of the drainage ditch. These habitats are common and widespread in the surrounding area and are of negligible ecological importance. No protected plants or legally restricted invasive species (e.g., Japanese knotweed) were recorded on the site.

Some common bird species were recorded in the site, and it is likely that bird's nest in the scrub and treeline on the site. Impacts on nesting birds will be avoided by scheduling site clearance works outside of the nesting season.

The landscaping plan for the proposed development will include a green belt area that will be kept and enhanced for biodiversity. This will include grassed meadow areas with native species that will utilise the existing soil and retain the current vegetation seed bank, which will be managed by differential mowing to further promote biodiversity. Native and/or pollinator friendly trees will also be planted, together with a number of SuDs (Sustainable urban Drainage systems) measures. In addition, a riparian zone will be kept adjacent to the Groody River, together with a wet grassland area, seeded with native species.

The majority of the existing treeline will be retained, and this will be enhanced with additional native planting to fill in any gaps. Planting of standard native trees will compensate for the loss of the scattered trees and scrub that will be removed for the development. The SuDs measures will create new habitats. Thus, there will be no net biodiversity loss as a result of the proposed development and the biodiversity of the green belt area will be enhanced, hence, there will be an overall net gain for biodiversity.

1.0 Introduction

1.1 Background

This Ecological Impact Assessment (EcIA) relates to the planning application for the large-scale development of student accommodation on a greenfield site.

The aim of this EcIA is to identify, quantify and evaluate the impacts of the proposed development on ecosystems and their components, including habitats, flora, and fauna. It has been prepared in accordance with the Guidelines for Ecological Impact Assessment in the UK and Ireland (2018). The purpose of this document is to:

- Provide an objective and transparent assessment of the potential ecological impacts of the proposed development for all interested parties, including planning authorities and the general public.
- Facilitate objective and transparent determination of the consequences of the development in terms of national, regional and local policies relevant to ecology.
- Propose the steps will be taken to adhere to legal requirements relating to designated sites and legally protected species (CIEEM 2018).

Although the above guidelines provide a framework for EcIA, many processes rely on the professional judgement of an ecologist, including survey design, the valuation of ecological features, and the characterisation of impacts.

1.2 Author of the report

Russell Environmental and Sustainability Services Limited (RESS Ltd.) was contracted to conduct an ecological impact assessment on behalf of Groody Developments Limited, in preparation for the planning application for the Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick. This report details the likely effect of the potential works on the habitats and species of the development site and surrounding environs. The site was surveyed by ecologists from RESS Ltd. on 6th January 2024. The conditions were dry and there were no constraints to the survey.

2.0 Scoping

The objective of this assessment is to identify any ecological features that may pose a constraint to the proposed development. It involves the following steps:

1. Identification of designated sites within an appropriate zone of influence
2. A walkover survey incorporating the following elements:
   i) Classification and mapping of habitats
   ii) A search for rare / protected flora, and for problematic non-native plant species (e.g., Japanese Knotweed)
   iii) A search for field signs of rare or protected fauna (e.g., badgers), and habitat suitability assessments for species that are secretive, nocturnal or seasonal.
   iv) Valuation of ecological features, review of legal considerations, and selection of important ecological features.

       It is accepted that any development will have an impact on the receiving environment, but the significance of the impact will depend on the importance of the ecological features that would be affected. The following is outlined in the CIEEM guidelines:

       "One of the key challenges in an EcIA is to decide which ecological features (habitats, species, ecosystems, and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened, and resilient to impacts from the development, and that will remain viable and sustainable" (CIEEM, 2018).

   v) Assessment of impacts on important ecological features and development of appropriate mitigation strategies.

       Potential direct, indirect, or cumulative impacts on ecological features can be described in relation to their magnitude, extent, duration, reversibility and timing/frequency, as outlined in the CIEEM (2018) guidelines. Depending on the type of impact and the sensitivities of the important ecological feature, the ecologist may determine that the impact would have a 'significant effect'. The following definitions are provided in the CIEEM guidelines:

       "A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project". "For the purpose of EcIA, a 'significant negative effect' is an effect that undermines biodiversity conservation objectives for 'important ecological features', or for biodiversity in general" (CIEEM, 2018).

       Where significant impacts are identified, measures will be taken to avoid, minimise or compensate for impacts (where possible). Based on these measures, any residual impacts are then described.

2.1 Description of the Proposed Development

Groody Developments Limited seeks planning permission for development of a Purpose-Built Student Accommodation (PBSA) scheme on land fronting the Groody Road and Dublin Road, Castletroy, in the townland of Newcastle, Limerick for a period of seven years.

The development consisting of 196 no. Bed Clusters, is distributed across 5 no. separate blocks, ranging in height from 5 - 8 storeys, with a total of 1,400 no. student bedspaces to be delivered in two phases of development including: (i) Block A comprising 8 storeys providing for (a) 28 no. bed clusters and 224 no. bedspaces; (b) Student library; (c) Student union; (d) Plant room; (e) Bin store; (f) Bicycle store; (ii) Block B comprising 7 storeys providing for (a) 52 no. bed clusters and 400 no. bedspaces; (b) Reception and Office; (c) Post room; (d) Laundry room; (e) Student canteen; (f) Maintenance store; (g) Plant room; (h) ESB substation and switch room; (i) Bin Storage; (j) and Bicycle store; (iii) Block C comprising 6 storeys providing for (a) 51 no. bed clusters and 355 no. bedspaces; (b) Student Gym; (c) Maintenance store; (d) Plant room; (e) ESB substation and switch room; (f) Bin Storage; (g) and Bicycle store; (iv) Block D comprising 6 storeys providing for (a) 32 no. bed clusters and 211 no. bedspaces; (b) Reception, Office; (c) Post room; (d) Laundry room; (e) Student canteen; (f) Student supply retail unit (60m2); (g) Plant room; (h) Maintenance store; (i) Bin Storage; and (k) Bicycle Storage; (v) Block E comprising 5 storeys providing for (a) 33 no. bed clusters and 210 no. bedspaces; (b) Reception and Office; (c) Laundry room; (d) Maintenance store; (e) Bicycle store; and (f) Plant room; and (vi) ancillary site development works including car and bicycle parking provision; boundary treatments; roof plant; public lighting; water supply; foul and surface water drainage infrastructure; signage; and a temporary construction access to facilitate Phase 2.

Vehicular access to the site will be from the Groody Road with pedestrian access to the Dublin Road. Extensive landscaping proposals, including (a) landscaped courtyards; (b) pedestrian and cycle connections from the Groody Road to the Groody Green Wedge; (c) natural landscaping and public walkways within the Groody Green Wedge; and (d) a Wetland area adjacent to the Groody River are also proposed. Planning permission is also sought for use of the accommodation, outside of student term time, for short-term letting purposes.

2.2 Valuation of Ecological Features

Based on the information from the desktop and walkover surveys, each feature is assigned an ecological importance based on its conservation status at different geographical scales (Table 1) For example a site may be

of ecological importance for a given species if it supports a significant proportion of the national population.

Ecological Value	Geographical Scale of Importance
International	International or European Scale
National	The Republic of Ireland or the island of Ireland
Regional	Munster and/or West of Ireland
County	County Limerick
Local	Limerick City, Castletroy
Negligible	None, the feature is common and widespread.

Table 1 The six-level ecological valuation scheme used in the CIEEM guidelines (CIEEM, 2018)

It is accepted that the proposed development will have an impact on the receiving environment, but the significance of the impact will depend on the importance of the ecological features that would be affected.

2.3 Ecological Impact Assessment

Potential, indirect or cumulative impacts on ecological features can be described in relation to their magnitude, extent, duration, reversibility and timing/frequency, as outlined in the CIEEM (2018) guidelines. Depending on the type of impact and the sensitivities of the important ecological features, it may be determined that the impact would have a significant effect. Where significant impacts are identified, measures will be taken to avoid, minimise or compensate for impacts (where possible). Based on these measures, any residual impacts are then described.

3.0 The Receiving Environment

3.1 Site Description, Location and Topography

The development site is that of a green field which is situated approximately 3.7Km from Limerick City centre and adjacent to the L5173, Groody Road and the Groody River (Figure 1). The Longitude is -8.5800219 and Latitude: 52.6632073 (EPA, 2024).

The site has its highest point to the east of the site at approximately 9m above sea level and the lowest point to the west at 4m above sea level (OSI, 2024).

Figure 1 Location map (OSI, 2024).

3.2 Geology and Soils

The site has bedrock geology of calcareous, basalts and other volcanic rocks (Geological Survey of Ireland (GSI), 2024).

The soil type overlying the bedrock geology on the site is basic deep, poorly drained, mineral soil derived from marine and estuarine sediments (Teagasc, 2024).

3.3 Hydrology

The building footprint of the development is outside of the flood zone. However, adjacent to the River Groody to the west of the site and outside of the redline is within the flood zone (Figure 3) (OPW, 2024). However, it should be noted that this part of Limerick is currently under review for flood mapping.

Running adjacent to the west of the site is the Groody River that discharges directly into the River Shannon and therefore the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SAC downriver (Figure 2).

The most recent Water Framework Directive (WFD) Report on the river Groody states that this river has a 'Moderate' status and is at risk from

achieving its WFD objectives (of 'Good' quality) as a result of agricultural discharge and diffuse urban runoff (EPA, 2024).

To prevent the development contributing to risks associated with diffuse urban runoff, the management of surface water for the development will be via the use of Sustainable Drainage solutions (SuDs) incorporated into the proposed development as detailed in the accompanying engineering reports. These are as follows:

- 1 x Constructed wetland and 1 x attenuation tank complete with hydro-brake flow controls and bypass separators for metals and hydrocarbons
- Green roofs
- Bio-swales
- Rain gardens

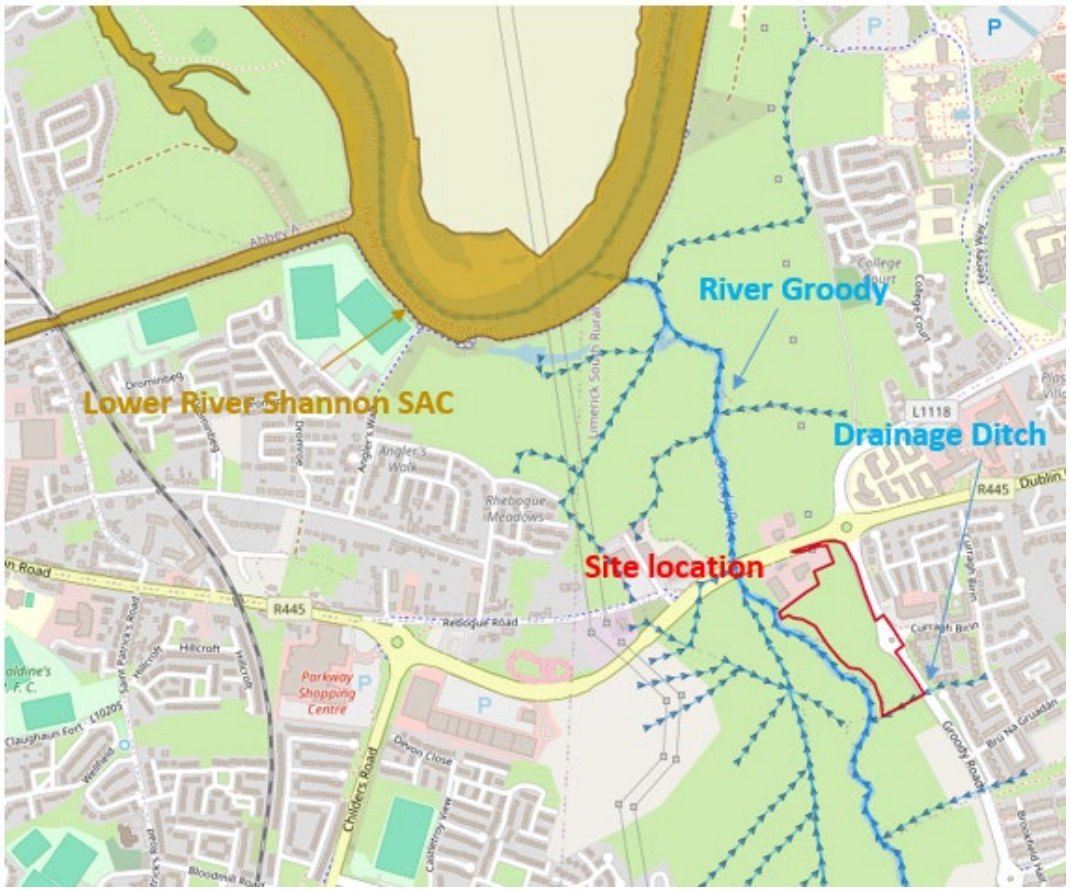

Figure 2 Site location in relation to the flow network (EPA, 2024).

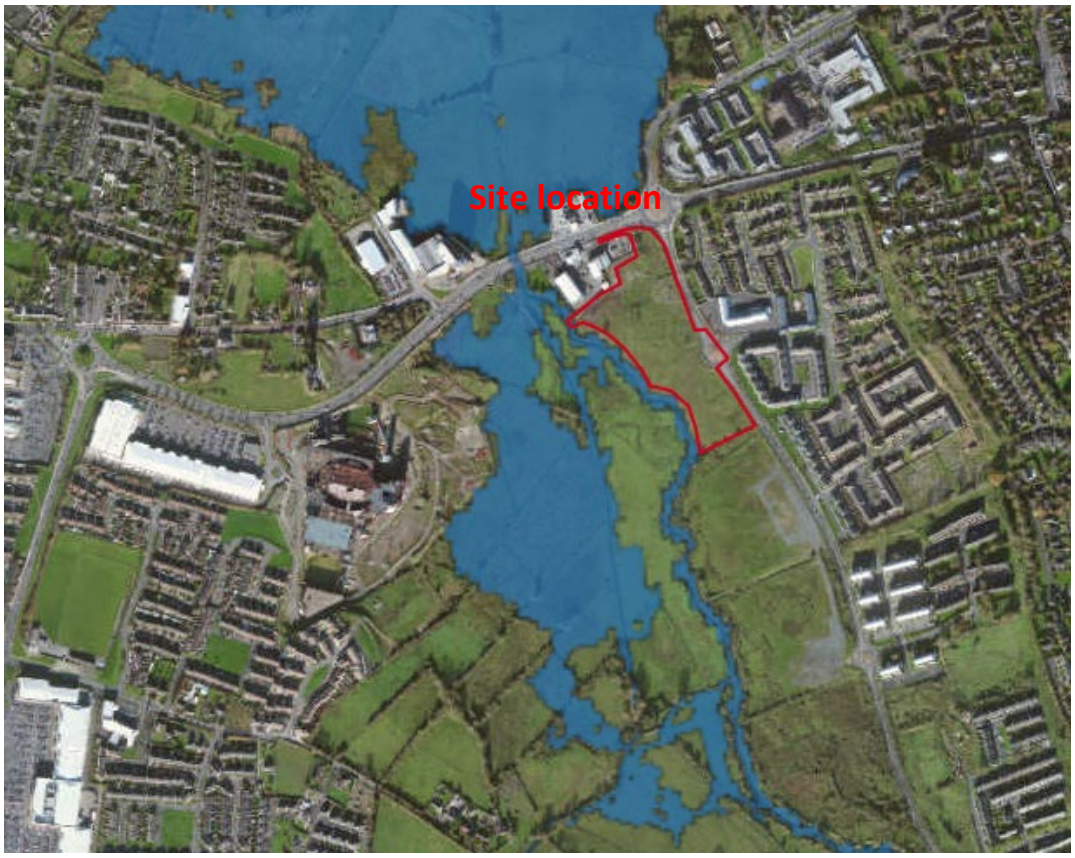

Figure 3 Proximity of the site to the flood plain showing indicative fluvial mapping for High probability, where probability is 1 in 10 for rivers (OPW, 2024).

3.4 Desk Based Survey

A desk-based study was undertaken to determine the proximity of any designated sites within the vicinity of the proposed development site. In addition, relevant legislation, documents and data bases were also reviewed in relation to the proposed housing development.

EU Habitats

Article 6(1) and article 6(2) of Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments." (EEC, 1992). These sites are known as European Sites or Natura 2000 Sites. The development site is not designated as a European Site. There are no other designations for the site.

Although there are a number of sites within the 15km radius of the site as indicated in Figure 4, a more accurate assessment is where the Source-Pathway-Receptor (SPR) model is applied together with the Zone Of Influence (ZOI), which in the case of rivers may be outside of the 15km

radius (OPR, 2021). Therefore, of the five sites identified in the Stage 1 Screening Report, the European Sites where there may be a potential impact as a result of the SPR where further assessment was required, are the Lower River Shannon SAC and River Shannon and the River Fergus Estuaries SPA. These sites are shown in Figure 4.

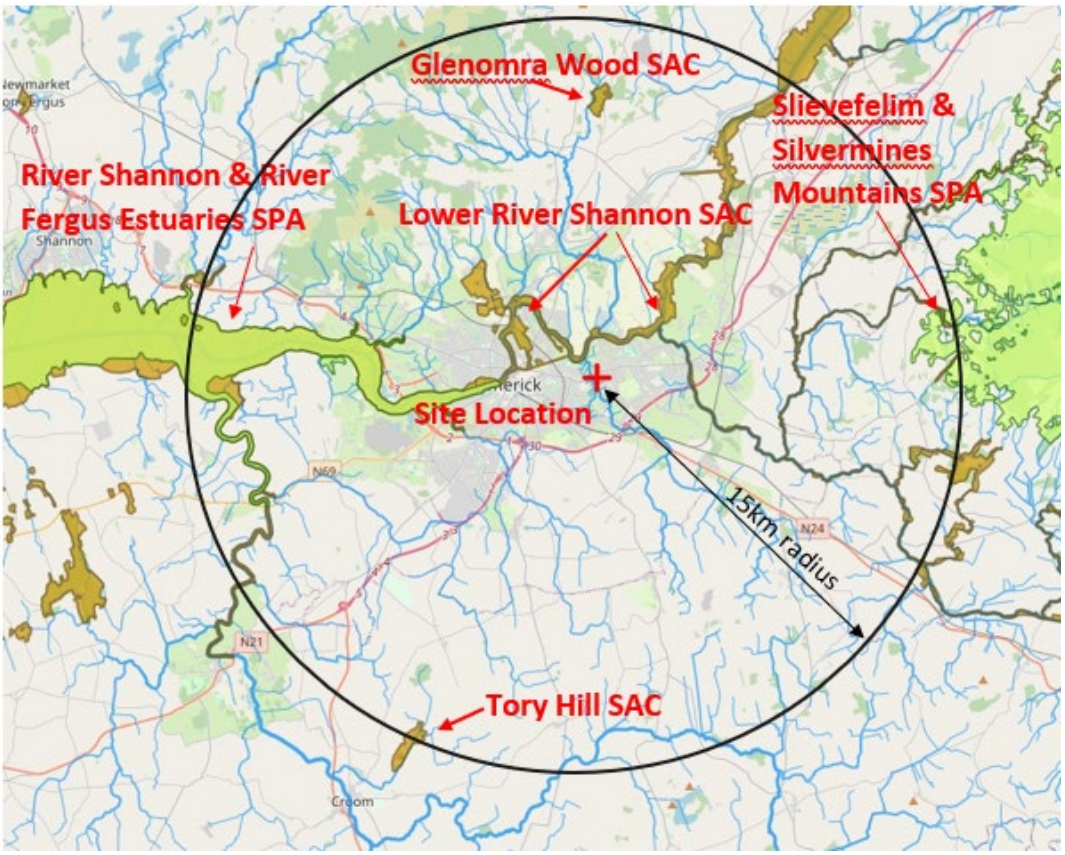

Figure 4 European Sites within 15km of the development site (EPA, 2024)

The European Commission Nature Restoration Law (2022) which has now been adopted in Ireland has the following objectives:

The proposal aims to restore ecosystems, habitats and species across the EU's land and sea areas in order to:

- enable the long-term and sustained recovery of biodiverse and resilient nature.
- contribute to achieving the EU's climate mitigation and climate adaptation objectives.
- meet international commitments.

Water Framework Directive

The EU Water Framework Directive (2000/60/EC) required all Member States to protect and improve water quality in all waters so that we achieve good ecological status by 2015 or, at the latest, by 2027. It was given legal effect in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003). It applies to rivers, lakes, groundwater, and transitional coastal waters.

With reference to the SEA within Limerick City Development Plan 2022-2028 (LCC, 2022) the following extract refers specifically to water:

The existing environmental pressures and problems in relation to water in Limerick are listed
below:

1. Quality of both surface and ground water resources in Limerick.

2. Ensuring that there is sufficient capacity in Wastewater Treatment Plants to avoid pollution from these sources and to ensure that their capacity keeps pace with development.

3. Ensuring that there is sufficient potable water resources to serve Limerick's population. It is important to avoid over abstraction as this will have adverse hydrological and ecological effects. Two settlements Adare and Croom have had new bore holes excavated since 2018 to ensure continuity of supply.

4. Ensuring that the issue of water management as a whole is addressed in Limerick. There is a need for water management to take into account not just flooding but variations in supply and demand as demand grows. There is also a need to ensure that the water supply system can function in a climate altered future, in a fashion that will not have adverse ecological and hydrological effects. (SEA, LCDP, 2022).

Hence, considerations are required to address surface water management in proposed developments.

To address the issues of additional surface water created because of the loss of green field site, where natural soakage would usually occur to the ground, Sustainable Urban Drainage Systems (SuDs) are an appropriate way to manage surface and storm water, whilst improving the quality of runoff water. As detailed in Section 3.3, these measures have been incorporated into the design of the proposed development, therefore improving the quality of the diffuse urban runoff from the development before discharging into the River Groody. Thus, the development will not impact on the water quality of the River Groody and may assist in its improvement and the achievement of the WFD objectives, as any surface runoff from the Groody Road at this point will also be captured and filtered through the constructed wetland and other SuDs measures to be implemented as part of the proposed development.

Furthermore, agreement was sought in relation to Uisce Éireann to ensure that there is sufficient supply of potable water for the proposed development, together with capacity for foul water treatment as part of the municipal wastewater treatment system.

National and Local Plans, Directives and Data Bases

The EPA provides the AA Geotool that is a database of the protected sites and associated flow network for water courses within Ireland. The flow network was identified for water courses on or near to the site (Figure 2) (EPA, 2024).

The National Biodiversity Data Centre (Biodiversity Ireland, 2024) provides a national database of biological records from Ireland. The database was consulted with regard to species identified on the site.

The All-Ireland Pollinator Plan (2021-2025) was also reviewed with regard to planting and management of the proposed green areas of the development.

Limerick City's Development Plan 2022-2028 was reviewed with particular reference to Chater 4 Environmental Reports and Chapter 5 Designated Sites, Recoded Monuments and Places.

The Local Area Plan for Castletroy 2019-2025 (LCC, 2019) was reviewed and the area where the proposed development is located is zoned for residential development.

In relation to the above points, SuDs considerations will be applied to this development and site-specific mitigation measures will be carried out to protect the migratory birds and their habitats. Furthermore, the LRD as planned will provide housing to assist in the achievement of the housing supply targets for students.

In line with the EC Nature Restoration Law (2022) and Limerick City and County Council's Development Plan 2022-2028, the Biodiversity Net Loss and Net Gain was assessed for the proposed development.

3.4.1 Designated Sites

Within 5km of the site there are five designated sites which are detailed in Table 3 (the pNHA sites are detailed in Figure 5).

Designated Site	Distance	Qualifying Interests (SAC & SPA)/Features of Interest (NHA)	
		Code	Species/Habitat
Lower River Shannon SAC 002165	780m following water courses	1110	Sandbanks
		1130	Estuaries
		1140	Tidal Mudflats and Sandflats
		1150	Coastal Lagoons*
		1160	Large Shallow Inlets and Bays
		1170	Reefs

		1220	Perennial Vegetation of Stony Banks
		1230	Vegetated Sea Cliffs
		1310	Salicornia Mud
		1330	Atlantic Salt Meadows
		1410	Mediterranean Salt Meadows
		3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
		6410	*Molinia* meadows
		91E0	Alluvial Forests*
		1029	Freshwater Pearl Mussel (*Margaritifera margaritifera*)
		1095	Sea Lamprey (*Petromyzon marinus*)
		1096	Brook Lamprey (*Lampetra planeri*)
		1099	River Lamprey (*Lampetra fluviatilis*)
		1106	Atlantic Salmon (*Salmo salar*)
		1349	Bottle-nosed Dolphin (*Tursiops truncates)*
		1355	Otter (*Lutra lutra*)
River Shannon and River Fergus Estuaries SPA 004077	4.5Km following water courses	A017	Cormorant (*Phalacrocorax carbo*)
		A038	Whooper Swan (*Cygnus cygnus*)
		A046	Light-bellied Brent Goose (*Branta bernicla hrota*)
		A048	Shelduck (*Tadorna tadorna*)
		A050	Wigeon (*Anas penelope*)
		A052	Teal (Anas crecca)
		A054	Pintail (*Anas acuta*)
		A056	Shoveler (*Anas clypeata*)
		A062	Scaup (*Aythya marila*)
		A137	Ringed Plover (*Charadrius hiaticula*)
		A140	Golden Plover (*Pluvialis apricaria*)
		A141	Grey Plover (*Pluvialis squatarola*)
		A142	Lapwing (*Vanellus vanellus*)
		A143	Knot (*Calidris canutus*)
		A149	Dunlin (*Calidris alpina*)
		A156	Black-tailed Godwit (*Limosa limosa*)
		A157	Bar-tailed Godwit (*Limosa lapponica*)
		A160	Curlew (*Numenius arquata*)
		A162	Redshank (*Tringa totanus*)
		A164	Greenshank (*Tringa nebularia*)
		A179	Black-headed Gull (*Chroicocephalus ridibundus*)
		A999	Wetland and Waterbirds
Inner Shannon Estuary South Shore pNHA 000435			Same species and habitats as the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA as these occupy the same location

Fergus Estuary and Inner Shannon North Shore pNHA 002048			Same species and habitats as the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA as these occupy the same location
Knockalisheen Marsh pNHA 002001			Same species and habitats as the Lower River Shannon SAC as this site occupies the same location

Table 3 Designated sites within 5km of the development site. NB pNHA = proposed Natural Heritage Areas

Figure 5 Natural Heritage Area site within a 5km radius (EPA, 2024)

3.5 Walkover Survey

As detailed in section 1.2 a walkover field survey took place by ecologists from RESS Ltd. on the 6th of January 2024. The conditions were dry and there were no constraints to the survey.

3.5.1 Flora and Fauna Survey

The flora and fauna survey that took place was based on the Best Practice Guidance for Habitat Surveying and Mapping (Smith *et al.*, 2011). The habitats were classified according to Fossitt (2000). In addition, the

habitats mapped, and their species were compared with Annex species and habitats of the E.U. Habitats Directive.

Both the common name and the Latin names have been provided for the main plant and animal species identified. The Latin names are in italics. The letter and number codes i.e., GA1 for *Improved grassland* are the standard codes for habitat classification in Ireland (Fossitt, 2000).

In addition, the site was surveyed for invasive species.

4.0 Results

4.1 Flora and Fauna Survey

Flora

This report presents the results of a site visit by ecologists from RESS Ltd. on 6th of January 2024 when the site was surveyed.

Within the site (and adjacent to it), there were six vegetation habitats identified (Fossitt, 2000). These are detailed in Appendix i and the species present are as follows:

GA1 Improved Agricultural Grassland

This type of habitat occupies the majority of the site and is typical of a heavily grazed grass sward of Perennial ryegrass *Lolium perenne*, Common bent *Agrostis tenuis,* Creeping bent *Agrostis stolonifera* and Yorkshire Fog *Holcus lanatus.* The predominant broadleaved species present is predominantly Creeping buttercup *Ranunculus repens* with Bartsia *Odontites vernus*, Broadleaf plantain *Plantago major*, Clover (white) *Trifolium repens,* Clover (red) *Trifolium pratense,* Daisy (Common) *Bellis perennis*, Dandelion *Taraxacum officinale*, Dock *Rumex acetosa,* Knapweed *Centaurea nigra,* Meadow buttercup *Ranunculus acris,* Meadow sweet *Filipendula ulmaria*, Nipplewort *Lapsana communis*, Ragwort *Jacobaea vulgaris,* Ribwort plantain *Plantago lanceolata,* Teasel *Dipsacus fullonum,* Square stalked St John's wort *Hypericum tetrapterum*, Tormentil *Potentilla erecta* and Yarrow *Achillea millefolium* (Figure 6).

At the northern boundary of the site Buddleia *Buddleja davidii*, Butterbur *Petasites pyrenaicus* and occasional Dogwood *Cornus sanguinea* are also present.

There are also some small wet areas where Bulrush *Typha latifolia* is present.

In addition, there are a number of large boulders present with Delicate fern moss *Thuidium delicatulum* and Silvergreen bryum moss *Bryum argenteum.*

Figure 6 Improved Agricultural Grassland

FW2 Depositing Lowland River and FW4 Drainage Ditch

To the south of the site is a drainage ditch which flows directly into the Groody River which flows adjacent to the western boundary of the site. Bulrush *Typha latifolia* Common reed *Phragmites australis*, Rush (Conglomerate) *Juncus conglomeratus,* Rush (Hard) *Juncus inlfexus* and Pendulous sedge *Carex pendula* are present on the banks and at the edges of the river and drainage ditch (Figure 7). In the drainage ditch itself Common Water-starwort *Callitriche stagnalis* and Greater spearwort *Ranunculus lingua* are present. The water in the River Groody at the time had a relatively fast flow compared with the drainage ditch which at the time of surveying was not flowing. The banks of the River Groody in this location were quite steep (Figure 8). There were clear riparian zones in both water courses.

Figure 7 FW2 Depositing Lowland River

Figure 8 FW4 Drainage Ditch

WD5 Scattered Trees

There are occasional scattered immature trees that are predominantly Grey willow *Salix cinerea.* Just outside of the redline boundary for the site is one mature White willow *Salix alba* and a small stand of Silver birch *Betula pendula* to the north-west.

WS1 Scrub

There are occasional scrub areas with Grey willow *Salix cinerea* and Gorse *Ulex europaeus* (Figure 9).

Figure 9 WS1 Scrub and Treeline outside of boundary fence.

WL2 Treeline

The drainage ditch is bordered on both sides by trees which are predominantly Grey willow *Salix cinerea* and Goat willow *Salix caprea*. Also present are Bramble *Rubus fruiticosus agg.,* Dog rose *Rosa canina* and Nettle *Urtica dioica.*

There were no invasive species (e.g., Himalayan Balsam or Japanese Knotweed) present on the site at the time of surveying.

Fauna

The site is currently grazed extensively by horses and ponies.

Avifauna

The bird species identified at the time of surveying were Blackbird *Tardus merula,* Goldfinch *Carduelis carduelis*, Great tit *Parus major*, Magpie *Pica,* Robin *Erithacus rubecula,* Song thrush *Turdus philomelos,* Starling *Sturnus*

vulgaris, Willow warbler *Phylloscopus trochilus* and Wren *Troglodytes troglodytes.*

No overwintering waterfowl species were identified on the site.

No rare or Annex species were recorded on the site at the time of surveying.

Mammals

No other mammals were recorded at the time of surveying, but small mammals are likely to be found on the site such as Shrew *Sorex spp.* and Rat *Rattus rattus.* Considering that all habitats within the site boundary are well-represented elsewhere in the county and with more superior diversity, they are considered to be of Negligible importance for these taxa.

No evidence of Otters was recorded (spraint or tracks) on the site at the time of surveying.

The only location likely for bat roosts was the one mature White willow tree, located just outside of the subject site, which will remain as part of the development, hence a bat survey was not carried out. There were no buildings on the site. Therefore, it was not deemed necessary to complete a dawn or dusk survey. The treeline adjacent to the drainage ditch may be used for foraging, but there were no suitable trees for roosting in this treeline. This treeline will remain undisturbed as part of the development.

Amphibians

There was no evidence, at the time of surveying, of reptiles and amphibians, especially as there are no areas of permanent standing water.

Considering that all habitats within the site boundary are well-represented elsewhere in the county and with more superior diversity, they are considered to be of Negligible importance for these taxa.

The habitats within the development site are common in peri-rural/urban landscapes in Ireland, so the site is considered to be of Negligible importance for invertebrates.

4.2 Identification of Important Ecological Features

Based on the desk-based survey and walkover surveys, Table 5 details a summary of ecological features on the development site together with their importance and legal/conservation status and duration of impact.

Ecological Feature	Valuation	Legal Status *	Important Feature?
GA1 Improved Grassland	Negligible	-	No
WL2 Treeline	High Local	-	Yes, habitat for birds and foraging for bats
WD5 Scattered Trees	High local	-	No- Immature trees. Yes- Mature trees
WS1 Scrub	Negligible	-	Yes – some value as food source for birds and insects
FW2 Depositing Lowland River and FW4 Drainage Ditch	High local and national	EU Habitat and Birds Directive	Yes – connection with SAC, SPA and NHA
Birds	Negligible	Wildlife Act (WA)*	No
Terrestrial Mammals	Negligible	Wildlife Act (WA)*	No
Reptiles and Amphibians	Negligible	Wildlife Act (WA)*	No
Invertebrates	Negligible	-	No

Table 5 Assessment of ecological features within the site (CIEEM 2018) * Wildlife [Amendment] Act 2000.

The treeline that borders the drainage ditch is considered an important feature as a valuable habitat for birds and foraging bats. Although it is worth noting that there are no, notable vegetation species present in this boundary, it is its potential as a food source and linear wildlife corridor that gives rise to its value.

There will be a short-term impact on this habitat due to the cutting back of overgrown vegetation.

5.0 Predicted Impacts of the Proposed Development

Designated Sites

As identified in the Stage 1 Screening Report there is a source-pathway for potential impact on the receptors of the European Sites due to the proximity of a drainage ditch and the Groody River, both of which are adjacent to the site and hydrologically connected to the Lower River

Shannon SAC and down river, the River Shannon and River Fergus Estuaries SPA.

Although the habitats as identified in Table 5 are mostly valued as negligible, mitigating measures are required to ensure that any species occupying these habitats are protected in line with the EC Nature Restoration Law, and retained, where possible. The potential impacts and their nature are summarised in Table 6.

Avifauna

Disturbance of nesting birds and or breeding fauna may occur during the removal of scrub and overgrown vegetation. If site clearance works are carried out during the bird nesting season (between March and August, inclusive), it is possible that active nests could be destroyed. The killing of any birds, or the disturbance of their nesting sites, would constitute an offence under the Wildlife Act 2000 (as amended). Therefore, removal of any trees, scrub or treeline encroachment should be completed outside of this time period.

Habitats

Three of the habitats will be lost/partially as a result of the development, such as the improved grassland, scattered tees and scrub. The latter two habitats cover a minimal area, but do provide vegetation for nesting birds, mammals and invertebrates and if lost, then may result in the loss of species in the area, unless compensatory measures are implemented.

Bats

An initial assessment was carried out during the EcIA site survey on 6th of January 2024, for the suitability of habitats onsite to support bat roosting, foraging and commuting. All trees on site were inspected in accordance with guidance (Kelleher & Marnell, 2006).

During the ecological site survey, the treeline adjacent to the drainage ditch was surveyed for suitable trees for bat roosts and it was deemed that there were no trees suitable as bat roosts. However, the trees adjacent to this drainage ditch (at the southern boundary of the site) will remain undisturbed as part of the development.

In addition, there was only one mature tree which is located outside of the redline boundary of the site suitable as a bat roost. This is a White Willow *Salix alba,* which will remain undisturbed as part of the blue/green area for the development. Therefore, it was not deemed necessary to carry out a bat survey (Figure 10).

Bats are undoubtedly using the site for foraging as there are records for a number of bat species (Common Pipistrelle, Soprano Pipistrelle, Daubenton's Bat and Lesser Noctule Bat) in the tetrad grid for the site, Grid R65D.

According to best practice guidelines (Kelleher & Marnell, 2006) bat surveys are only required when potential roosing features are present and such roosting features are to be interfered with and as the trees on the boundary and the large free standing White willow are not to be interfered with, (the latter not within the site boundary), it was deemed that no further surveys were necessary.
All measures in relation to bats within the development site are precautionary/enhancement measures.

Therefore, any small tree removal or undergrowth cutting back should take place during the bat hibernation period (1st November to 1st May). In addition, 'Bat-sensitive lighting' should be implemented for this development and during construction all lighting should be directed away from the treelines and watercourses.

Figure 10 Potential roost site in the mature White willow and distance for the development footprint (EPA, 2024).

Ecological Feature	Nature of Impact	Duration & Likelihood	Mitigation Measures
GA1 Improved Grassland	Removal of this habitat	Permanent Likely	None
WS1 Scrub	Removal of this habitat	Permanent Likely	Removal of vegetation during

			appropriate time
WD5 Scattered Trees	Removal of this habitat	Permanent Likely	Removal of vegetation during appropriate time
WL2 Treeline	Vegetation cutting back/Tree removal	Short term Likely	Removal of diseased trees during appropriate time of year Cutting back of overgrown vegetation at appropriate time of year.
FW2 Depositing Lowland River and FW4 Drainage Ditch	None provided mitigation measures implemented	None	Erection of silt fencing to prevent any runoff into either watercourse
Birds	Vegetation cutting back/Tree removal	Short term Likely	Removal of vegetation during appropriate time
Bats	None	None as hibernation roosts unlikely to be in treeline	Removal of vegetation during appropriate time
Terrestrial mammals	Vegetation cutting back	Short term Likely	Removal of vegetation during appropriate time
Reptiles and amphibians	None	None	None
Invertebrates	Vegetation cutting back/Tree removal	Short term likely	Removal of vegetation during appropriate time within the development

Table 6 Summary of potential impacts and mitigation measures

6.0 Proposed Mitigation and Compensatory Measures

As per the CIEEM Guidelines for EcIA (2018), protective measures are designed to preserve existing ecological features and mitigate any potential harm before it occurs.

Avifauna

Birds should be protected during site clearance works as under Section 22 of the Wildlife Act 1976 (as amended 2000), it is an offence to kill or injure a protected bird, or to disturb their nests. Most birds nest between March and August (inclusive), so it is strongly recommended that all scrub removal, tree removal, cutting back of vegetation and site clearance works are carried out between September and February (inclusive), i.e., outside the nesting season.

If this is not possible, an ecologist will survey the affected areas in advance in order to assess whether any breeding birds are present. If any are encountered, vegetation clearance will be delayed breeding has been completed, i.e., after chicks have fledged and a nest has been abandoned.

To minimise disturbance of birds and to avoid the nesting season, the optimal time for ground clearance works to take place would be between 1st September and 28th February.

Any tree removal or tree surgery works should take place between 1st September until the 28th of February to minimise impact on bird and bat species.

Provision of 'Bat-sensitive lighting'

Bats are highly sensitive to artificial lighting and may be displaced from the site if lights are particularly intense. However, if 'bat-sensitive' lighting techniques are incorporated into the lighting plan, bats should continue to use the site.

'Bat-sensitive lighting' for this development would have the following design principles, which are taken from the Bats and Lighting guidelines (BCT 2018):

- Zero-UV LEDs or low / high pressure sodium lamps will be the preferred bulb type, as they have least effect on bats. Mercury or metal halide bulbs will not be used.
- All external lights will be fitted with directional hoods and/or luminaires to direct the light onto targeted areas and to prevent unnecessary light-spill.
- No lights will be directed towards the hedgerows/treelines.
- Where lighting is required for pedestrian safety (e.g., at site entrances and internal paths), lights will be installed at a low level, e.g., on lighting poles of up to one metre in height.
- Lights will be directed onto ground level, with no light spill above the horizontal. Lux levels will be the minimum required for pedestrian safety.
- External lights at site entrances will be fitted with motion sensors and timers in order to provide light only when required.

All works to be completed during daylight hours so as to minimise disruption to nocturnal animals.

These measures will apply both to temporary lighting during the construction of the proposed development, and to permanent lighting during the operation of the development. In order to ensure that these techniques are effective, and that bat mitigation measures can be balanced with public safety requirements, the developer's ecologist will liaise with the contractor on the lighting design.

Habitats

The individual habitats are discussed in more detail in Sections 6.1 and 6.2, however as there will be site clearance as a result of this development, it is imperative that the removal of vegetation impact as little as possible on any fauna occupying the habitats on site and therefore site clearance works should take place between 1st September and 28th February, outside of the majority of breeding seasons for mammals and other taxa. In addition, soil from site clearance should be retained and re-used in the landscaped areas to promote the naturalisation of the grassed areas and encourage locally native species as detailed in the habitat survey in Section 4.1.

Sustainable Drainage System (SuDs)

As mentioned above the proposed SuDs measures include:

- 1 x Constructed wetland and 1 x attenuation tank complete with hydro-brake flow controls and bypass separators for metals and hydrocarbons
- Green roofs
- Bio-swales
- Rain gardens
- Permeable paving

The purpose of SuDs measures is to mimic natural drainage, which is now reduced due to the creation of man-made surfaces in the form of buildings, impermeable footpaths and roadways as part of the development. SuDs measures will therefore assist with the slowing down of runoff, thus reducing the potential for flooding and aid to improve the water quality of surface water and storm water runoff in line with the Water Framework Directive (2000). Furthermore, a riparian zone will be maintained adjacent to the Groody River as per the Inland Fisheries Ireland Guidelines (n.d.).

Construction Mitigation Measures

As the movement around the site will involve the use of large construction vehicles, then care should be taken with re-fuelling and dust suppression on the site as detailed below.

Good site management will assist with the maintenance of the quality of any water flowing from the site during storms and rainfall etc.

It is essential that a silt net is placed around the site, secured with posts and sandbags at the base. This should be checked on a daily basis and repaired if any holes appear, to ensure that there is no runoff into adjacent watercourses (See NIS and OCEMP for specifications). This will need to be at least 10m from the River Groody and the drainage ditch to protect the riparian zone and any areas of seasonal flooding as per the Inland Fisheries Ireland Guidelines (n.d). Further details of the silt netting are available in the OCEMP (Garlands, 2025 Section 3.1.1.1) and the NIS (RESS Ltd, 2025, Section 4.5).

It is also suggested that a berm be constructed at the western boundary of the site to prevent any flow of surface water into the River Groody during construction.

Any cutting back or removal of any trees or scrub should be carried out outside of the nesting season (1st March – 31st August).

Construction site works should take place only during daylight hours to minimise nocturnal animal activities and any lighting should be directed away from the drainage ditch and rivers where bats may be foraging.

To further ensure that the potential impact is reduced the following best practice measures will be implemented during the construction phase.

Mitigation Measure	**How Measure Will Avoid/Reduce Adverse Effects**	**Implementation of Mitigation Measure and Likely Success**	**Monitoring scheme to prevent mitigation failure**
Timing of the clearance works - 1st September – 28th February Should any active nests be encountered during the development work, then work will be ceased immediately, and the site inspected by an ecologist.	The clearance of the site should not take place during the spring or summer so as to avoid disruption to any nesting birds on the site. Should any active nests be encountered during the development work, then work will be stopped immediately, and the site visited by an ecologist.	Mitigation measure will be implemented by the Client	The Client will ensure that a suitably qualified person will be appointed by the Client to ensure that the CEMP is finalised prior to the development works and the measures detailed in the CEMP and this document

All works to be carried out during daylight hours	Avoidance of disturbance to any nocturnal animal activities	Mitigation measure will be implemented by the Client	implemented for the duration of the construction phase*.
A silt trap around the site for the duration of the construction phase will be erected with the use of wooden stakes, woven geotextile fabric and sandbags before the development works take place	This will ensure that any run-off of particulate matter or pollutants during construction will be contained on the site (see specifications in the NIS and OCEMP)	Mitigation measure will be implemented by the Client	
Removal of any construction material shall take place each day with no accumulation of material to take place on the site	Avoidance of any waste material remaining within the adjacent habitat	Mitigation measures will be implemented by the Client	
During the construction phase good construction practices such as dust suppression of on-site access roads and regular plant maintenance are required	This will ensure minimal risk of any pollutants and foreign matter entering the European Sites	Mitigation measure will be implemented by the Client	
All plant and machinery will be serviced before being mobilised to site. No plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed where applicable. If this isn't possible then a bund/container shall be used as part of the development works	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	Mitigation measure will be implemented by the Client	
There will be no fuel stored on site. All refuelling will take place off-site Procedures and contingency plans will be set up to deal with emergency accidents or spills. An emergency spill	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	The Client will appoint a member of staff to act as a 'spotter' to check for spills or leaks from vehicles whilst in operation. Should any spills/leaks be	

kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill		identified a spill kit will be used and the vehicle concerned will be removed from the site.	
If there is heavy rainfall then no works shall take place e.g. >20mm of rain). Any works at any time where water levels may cause inundation of the works area will be avoided.	This will ensure that there is no surface water runoff.	Mitigation measures will be implemented by the Client	
Overnight parking of machinery is prohibited in the construction site, an area away from the site will be allocated for the storage of vehicles overnight	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	Mitigation measures will be implemented by the Client	
No soil shall be imported from outside of the site.	This will prevent the colonisation of species not native to the site	Mitigation measures will be implemented by the Client	
All waste generated on site must be removed on a daily basis and recycled where appropriate	This will ensure that no waste is blown into nearby habitats or the marine environment	Mitigation measures will be implemented by the Client	

Table 7 Site specific mitigation measures

* The contractor will assign a member of the site staff as the Environmental Manager/ ECoW with the responsibility for ensuring the environmental measures prescribed are adhered to. The following will be carried out by the appointed staff member.

- A checklist will be filled in on a weekly basis to show how the measures above have been complied with.
- A 'tool-box' talks shall be held with all construction employees to make them aware of their roles and responsibilities and the importance of no direct impact due to their work activities to the European sites.
- Any environmental incidents or non-compliance issues will immediately be reported to the project manager.
- The site manager will be continuously monitoring the works and will be fully briefed and aware of the environmental constraints and protection measures to be employed.

Following completion of the works, the ecologist will complete a final audit report to show how the works complied with the environmental provisions described in this document.

This audit report may be forwarded to Limerick CC for their records if required.

6.1 Biodiversity Net Loss/Net Gain

Table 8 details the habitats that will be lost and the compensation measures that will be put in place as part of the proposed development. These were identified within the area occupied in the red line boundary for the proposed development. See accompanying biodiversity landscape plan. The species found within the habitats are in Part 1 Section 2.5 and Appendix i.

Habitat	Component of the site	Compensation measure	Overall net gain or net loss
GA1 Improved Agricultural Grassland	Main site component, grazed and low value for nature conservation	Wildflower meadow green areas sown with native species and planted with native trees. Grassland areas to be managed with differential mowing	Although reduction in habitat area, the biodiversity potential is greater than the existing habitat, therefore net gain in biodiversity
WL2 Treelines	This habitat will be retained and enhanced with the planting of native species	Additional native trees will be planted to fill gaps	Overall net gain as more trees are to be planted
WD5 Scattered trees	These will be removed	Mature native or pollinator friendly trees will be planted as part of the landscaping plan	No net loss
WS1 Scrub	This habitat will be lost as a result of the development	However, there will be habitat creation for SuDs and additional tree planting as part of the landscaping	No net loss

Table 8 Habitat evaluation of net loss/net gain and compensation measures

Overall, although there is reduction in the area of habitats, the planned landscaping aims to improve the overall biodiversity by species rich habitat creation utilising native species planting and planting for pollinators and management of grassland with differential mowing. Therefore, the proposed development will provide an increase in biodiversity and net gain in the conservation value of the proposed habitats to be created. In addition, a riparian zone of ≥10m will be maintained adjacent to the Groody River.

6.2 Compensatory measures

The accompanying landscape plan details the proposals for green areas and planting. All trees in the green areas will be planted as standards and native and/or pollinator friendly species.

The grassed areas will utilise soil retained from the site to encourage naturalisation and deferential mowing will be used to encourage wildflower growth from the seed bank, which will provide a valuable habitat for pollinators, birds and other fauna. Any additional seeding will be with native species.

Any additional planting in flower beds will be with native and/or pollinator friendly species.

Any gaps in the existing hedgerows/treelines will be filled with native hedgerow species.

In addition, there will be new habitats created as part of the Sustainable Drainage System (SuDs) to include a bio-swale, constructed wetland, wet grassland, green roofs and rain gardens.

Thus, overall, there will be no net biodiversity loss as a result of the proposed development due to the biodiversity measures as a result of the landscaping of the finished development, but there will be an overall net gain for biodiversity.

7.0 Residual Impacts

Tree removal, cutting back of encroaching vegetation or scrub, and other site clearance works will take place outside the season of peak nesting activity in birds, or the area will be surveyed by an ecologist to confirm that no protected fauna are present. As a result, there will be no impact on nesting birds, and no legal offence under the Wildlife Act 1976 (as amended).

Bat-sensitive lighting will be utilised throughout construction and implemented in the development.

Site based measures during the construction phase will ensure that there is not surface runoff of particulate matter or other pollutants into the drainage system or nearby watercourses.

Landscaped areas will be managed for biodiversity (as detailed in Section 6.0 to compensate for the loss of habitats, together with native species/pollinator friendly planting.

Subject to the successful implementation of these measures, it can be

concluded that the proposed development will not cause any significant negative impacts on the habitats, legally protected species, designated sites, or any other features of ecological importance.

This assessment has been undertaken on the basis of the best scientific knowledge in the field and the Precautionary Principle.

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References and Bibliography

Bat Conservation Trust (2023) *Guidance Note GN08/23 Bats and Artificial Lighting At Night. Institute of Lighting Professionals*. Warwickshire. UK

Biodiversity Ireland (2024) Accessed 10/08/2024 http://maps.biodiversityireland.ie/#/Map

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

Croft, P.S. (2012) *Key to Major Groups of British Freshwater Invertebrates*. Field Studies Council.

Department of Arts, Heritage, and the Gaeltacht (2013) *Statues of EU Protected Habitats and Species in Ireland.* Department of Arts, Heritage, and the Gaeltacht.

Dodds, W. K. (2002) *Freshwater Ecology: Concepts and Environmental Applications*, Elsevier Science & Technology.

EC (2022) Nature Restoration Law Accessed 10/11/23 [

EEC (1992) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora. Belgium.

EPA (2024) Accessed 10/08/2024 [http://www.epa.ie/terminalfour/AppropAssess/index.jsp]

EPA (2024) Cycle 3 HA 25D Lower Shannon and Mulkear Catchment Report , Environmental Protection Agency. Wexford

EU (2000) Water Framework Directive (2000/60/EC) Accessed 10/06/2024 [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32000L0060&from=EN]

Fitzpatrick, E.A. (1995) *An Introduction to Soil Science*. Longman. Essex

Floodinfo.ie (2024) Accessed 10/06/2024 [https://www.floodinfo.ie/map/floodplans/]

Fossitt, J. (2000) *A Guide to Habitats in Ireland*. The Heritage council. Kilkenny.

Geological Survey of Ireland (2017) Description of Irish Aquifer Categories. Ground water programme. GSI. Dublin.

Geological Survey Ireland (GSI) (2024) Geological Survey Ireland. Accessed 10/06/2024 [https://www.gsi.ie/en-ie/more-on-us/visit-us/Pages/default.aspx]

Government of Ireland (1976) Wildlife Act 1976. Government of Ireland. Dublin**.**

Government of Ireland (2000) Wildlife [Amendment] Act 2000. Government of Ireland. Dublin.

Hubbard, C.E. (1992) *Grasses. A guide to their Structure, Identification, uses and Distribution in the British Isles.* Penguin Books. Middlesex.

Hughes, J. (2019) *Freshwater Ecology and Conservation: Approaches and Techniques.* Oxford University Press. Oxford.

Inland Fisheries Ireland (n.d.) *Planning for Watercourses in the Urban Environment.* IFI. Dublin

Jahns, H. M. (1987) *Collins Guide to the Ferns Mosses and Lichens of Britain and Northern and Central Europe*. Collins. London.

Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. *Irish Wildlife Manuals*, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Kingston, N. (2012) *Checklist of protected and rare species in Ireland*. Unpublished National Parks and Wildlife Service Report.

Limerick City Council (2019) Castletroy Local Area Plan 2019-2025. Limerick. LCC.

Limerick City Council (2022) Limerick City Council's Development Plan 2022-2028. Limerick. LCC.

Mitchell, A. (2001) *Collins Field Guide to Trees of Britain and Northern Europe.* Collins London.

National Biodiversity Data Centre (2021) The All-Ireland Pollinator Plan 2021-2025. NBDC. Waterford.

NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by D. Lynne and F. O'Neill.

NRA (n.d.) *Guidelines for the Treatment of Bats During Construction of national Road Schemes.* NRA. Dublin

Office of the Planning Regulator (2021) OPR Practice Note PN01 Appropriate Assessment Screening for Development Management. OPR. Dublin.

Smith, G.F., P. O'Donohue, K. O'Hora, E. Delaney (2011) *Best Practice Guidance for Habitat Survey and Mapping*. The Heritage Council. Kilkenny.

Stace, C. (2005) *New Flora of the British Isles*. Second Edition. Cambridge University Press. Cambridge.

Appendices


Appendix i Habitat Map
N
Dublin Road
R445
R445
R445
Dublin Road
Dublin Road
Curragh Birin
Groody Student Park
Groody Student Park
Brú na Gruada
Legend
WD5 Scattered Trees
WL2 Treeline
FW4 Drainage Ditch
FW2 Lowland River
WS1 Scrub
GA1 Improved Agricultural Grassland
Boundary
Russell Environmental and Sustainability Services Limited
0 0.020.04 0.09 Kilometers
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