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APPROPRIATE ASSESSMENT SCREENING REPORT

ST. JOSEPH'S CONVENT, FERBANE, CO. OFFALY

2025

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REPORT NO:	PE_AA_10223	**REVIEWED:**	Paula Farrell, Bsc.

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1.0 INTRODUCTION

Panther Ecology Ltd. was commissioned by Kenny Lyons Associates Architects on behalf of the client to prepare an Appropriate Assessment Screening Report for a proposed development located at St. Joseph's Convent, Ferbane, Co. Offaly.

The principal aim of this study is to assess whether likely significant effects (LSE) to European sites (the Natura 2000 network) could occur as a result of this project in accordance with Article 6(3) of the Habitats Directive and the Planning and Development (Amendment) Act, 2001, as amended. This report has been prepared with regards to the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), and the later amendment regulations (S.I. No. 233 of 1998; S.I. No. 237 of 2005; S.I. No. 477 of 2011).

A study was undertaken by Ms Soraia Branco who has a Msc in Management and Conservation of Nature from Azores University and a BSc in Biology from Coimbra University, with significant experience in wildlife surveys. This report was reviewed by the Lead Ecologist Ms Paula Farrell who has a BSc in Wildlife Biology from Munster Technological University (formerly IT Tralee) and has experience in elasmobranch, amphibian, bird, invertebrate and floral surveys. This comprised a review of the proposed development, a site visit on the 23rd August 2024 to examine the ecological context of the proposed development, a desk study of the information on European sites within the potential zone of influence of the site and an analysis of the information in the context of the guidance to determine if a Natura Impact Statement is required.

2.0 LEGISLATIVE CONTEXT

The EU Habitats Directive (92/43/EEC) on the conservation of natural habitats and of wild fauna by council directive 97/62/EC, 2006/105/EC, and Regulation EC1882/2003 of September 2003, as transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/11), provides the framework for legal protection for habitats and species of European importance. The Natura 2000 network provides an ecological infrastructure for the protection of sites that are of particular importance for rare, endangered or vulnerable habitats and species within the EU. The Natura 2000 network in Ireland is made up of European Sites which include:

- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)

Article 6(3) of the Habitats Directive establishes the requirement for appropriate assessment when planning new developments that might affect a Natura 2000 site. Article 6(3) of the Habitats Directive states;

"*Any plan or project not directly connected with, or necessary to the management of the site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site, and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will*

not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

3.0 APPROPRIATE ASSESSMENT SCREENING METHODOLOGY

Screening is the first stage in the Appropriate Assessment process and is carried out to determine whether a Stage 2 Appropriate Assessment and a Natura Impact Statement (NIS) is required. Screening addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3);

1. Whether a plan or project is directly connected to or necessary for the management of the European (Natura 2000) site; and

2. Whether a plan or project, alone or in combination with other plans or projects, is likely to have significant effects on a European (Natura 2000) site, in view of its conservation objectives.

Screening should be undertaken without the inclusion of mitigation measures. If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA and an NIS.

The findings and conclusions of the screening process should be documented, with the necessary supporting evidence and objective criteria. This is of particular importance in the cases where the Appropriate Assessment process ends at the screening stage because the conclusion is that no significant effects are likely.

Screening for Appropriate Assessment involves:

- Description of the project and area characteristics (existing environment);
- Identification and description of Natura 2000 sites that could potentially be affected, and compilation of information on their qualifying interests and conservation objectives;
- Assessment of likely effects – direct, indirect and cumulative, undertaken on the basis of availability of objective information as necessary;
- Screening statement with conclusions.

3.1 METHODOLOGY GUIDELINES

This Appropriate Assessment has been carried with reference to the following guidelines:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities*. DoEHLG, 2010.
- Appropriate Assessment Screening for Development Management OPR Practice Note PN01 March 2021
- Circular NPWS 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities

- *Managing Natura 2000 sites – The Provisions of Article 6 of The Habitats Directive 92/43/EEC.* European Commission, 2000.
- Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments 2 September 2008
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, 2021.
- Commission Notice "Managing Natura 200 sites the provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission, 21.11.2018
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

3.2 DESKTOP RESEARCH

Desktop research was carried out to gather information on the ecology of the site and surrounding areas. The locations of the Natura 2000 sites within the zone of influence of the proposed development at St. Joseph's Convent, Ferbane, Co. Offaly were identified from National Parks and Wildlife Service (NPWS) online map viewer. Other Natura sites within the potential zone of influence were also reviewed and considered for the potential for the project to have a negative effect.

Water quality data from the EPA was reviewed for the assessment of biological and environmental data collected on waterbodies in Ireland as per the Water Framework Directive (WFD) Monitoring Programme of River Ecology Monitoring Results (2021).

Information on the characteristics of the Natura 2000 sites within the potential zone of influence was reviewed from the conservation objectives documents, site synopses and Standard Natura 2000 data forms available on the NPWS website.

3.3 SITE SURVEY

A site characterisation assessment was undertaken on the 23rd August 2024 to examine the ecological context of the development site, by systematically walking the site and boundaries and determining the habitats present. The habitat survey was undertaken in accordance with the standard methodology outlined in Fossitt's "*A Guide to Habitats in Ireland*", a hierarchical classification scheme based upon the characteristics of vegetation present. The Fossitt system also indicates when there are potential links with Annex I habitats of the E.U. Habitats Directive (92/43/EEC). Cognisance was also taken of the Heritage Council guidelines, "*Best Practice Guidance for Habitat Survey and Mapping*", (Smith *et al.,* 2011).

Bird species and signs of fauna activity were also noted. Particular attention was given to the possible presence of habitats and/or species which are associated with a Natura 2000 site, which are legally protected under Irish and European legislation and to assessing any potential ecological connectivity with Natura 2000 sites or supplementary or steppingstone habitats of relevance to Natura 2000 sites.

4.0 DESCRIPTION OF PROPOSED DEVELOPMENT AND EXISTING SITE

4.1 PROPOSED DEVELOPMENT

The proposed development is for the relocation of community-based services to the old convent and its grounds with a new build extension and all associated site works at An Siolán Project, St. Joseph's Convent, Ferbane, Co. Offaly (ITM Coordinates: 611497.93, 724466.27)

The proposed development is accessed via the Main Street (N62). The proposed works will include:

- The refurbishment of St. Joseph's Convent;
- The demolition of existing south extension and construction of new extension to the southwest of the convent;
- The restoration of the existing hall building which is to be repurposed as an assembly hall for multipurpose use;
- The demolition of the existing stable building and existing modular classroom buildings;
- The creation of an urban garden and riverbank walk along the River Brosna with the installation of a suspended wood bridge;
- The demolition of an existing shed and the creation of a new site entrance along the Ballycumber Road (R436) and the provision of all groundworks, service connections, site drainage, internal paths, paving, parking, public lighting, public open space, and all associated site development works to complete the development.

The development will include the installation of a raised deck close along the boundary of the River Brosna, which will be concrete free, with screw piles being used to support the structure. The installation of the raised deck will not require excavation works in the river banks. The suspended wooden bridge will be installed over the drainage ditch without the need for excavating the banks or bed of the drainage ditch. The site layout includes the provision of eight Swift next boxes which will be fitted on the North Elevation of the extension to the convent and five bat boxes to be erected in mature trees along the River Brosna. The total area of the development site is 3.25Ha. The estimated duration of the proposed works is 24 to 36 months including demolition, construction and landscaping.

Drinking water will be supplied to the proposed development by public mains. Irish water has confirmed the feasibility of connection without the need for infrastructure upgrades (Doc. Ref.: CDS24007773).

Foul water from the proposed development will be collected by the existing foul drainage network. A new proposed Small Foul Pump Station will be installed close to the north boundary. The foul water from the proposed development will ultimately be directed to the Ferbane WWTP (D0147) which currently has available capacity according to the Offaly County WWTP Capacity Register.

Surface water from the proposed development will be collected by a new proposed network of pipes and will ultimately be discharged into a new proposed soakaway close to the south boundary. A hydrocarbon interceptor will be installed upstream of the soakaway. All soakaways will be constructed to engineers' specification and approval to comply with BRE Digest 365. The proposed development will also include SuDS features such as rain gardens,

attenuation planting and green car park with reinforced cellular grass parking areas that will allow for rainwater to percolate to ground and will reduce the volume of surface water collected by the drainage infrastructure.

The proposed heating system is air to water heat pump.

A lighting plan is being prepared by Callisto Consulting Engineering and it includes 5 different types of luminaires. The proposed lights will be directed towards the buildings, yards and car park, and will be angled away from the woodland and treelines/hedgerows. Lights will be tilted downwards where possible and only LED lights with no UV component will be used. Lighting along the proposed walking pathway will consist of bollards which will be low hight (1m). Light level in the footpath area will not be more that 5lux.

The proposed development will require the removal of trees along the woodland habitats located along the south boundary to allow for the installation of a new proposed woodland walkway. The arborist report prepared by Gary Doherty has flagged 7 trees for removal due to poor structural conditions and 23 trees to be removed to allow for the woodland walkway. Root protection areas for the existing trees to be retained will be applied during construction works.

A Landscape Plan has been prepared by LUC and it includes the planting of native and non-native non-invasive species. Two trees will be relocated along the west boundary and three specimen trees (Yew and Holly) will be retained. The tree species proposed for planting include Alder (*Alnus glutinosa*), Downy Birch (*Betula pubescens*), Crab Apple (*Malus sylvestris*), Wild Cherry (*Prunus avium*), Rowan (*Sorbus aucuparia*), Wild Service Tree (*Sorbus torminalis*), Shadbush (*Amelanchier canadensis*), River Birch (*Betula nigra*), Purple Hazel (*Corylus maxima* 'Purpurea'), Goat Willow (*Salix caprea*), Crack Willow (*Salix fragilis*) and Dog Rose (*Rosa canina*). Ornamental planting will include Anise Hyssop (*Agastache Foeniculum*), Michaelmas Daisy 'Mönch' (*Aster* x *frikartii* 'Mönch'), Purple Coneflower (*Echinacea purpurea*), Common Sneezeweed (*Helenium autumnale*), Cardinal Flower (*Lobelia cardinalis*), Dotted Loosestrife (*Lysimachia punctata*), Bog Myrtle (*Myrica gale*), Jerusalem Sage (*Phlomis fruticosa*), Black-eyed Susan (*Rudbeckia fulgida*), Common Comfrey (*Symphytum officinale*), Globeflower 'Orange Princess' (*Trollius* x *cultorum* 'Orange Princess') and Bilberry (*Vaccinium myrtillus*). The community Orchard will contain Apple (*Malus domestica* 'Cox's Orange Pippin' and 'James Grieve'), Cherry (*Prunus avium* 'Stella' and *Prunus domestica* 'Opal') and Pear (*Pyrus communis* 'Conference'). The landscape plan will incorporate planting within rain gardens onsite as part of the drainage plan SuDS features. The Rain Garden will include Feather Reed Grass 'Karl Foerster' (*Calamagrostis* x *acutiflora* 'Karl Foerster'), Tufted Hair Grass (*Deschampsia cespitosa*), Wavy Hair Grass (*Deschampsia flexuosa*), Male Fern (*Dryopteris filix-mas*), Red Fescue (*Festuca rubra*), Hard Rush (*Juncus inflexus*), Blue Lyme Grass (*Leymus arenarius*), Snowy Wood-rush (*Luzula nivea*), Eulalia (*Miscanthus sinensis*), Purple Moor Grass (*Molinia caerulea*) and Royal Fern (*Osmunda regalis*).

Hard landscape features will include bound and unbound permeable surfaces, paved hardstanding, asphalt roads, grid cellular confinement systems, permeable surfaces and reinforced grass. A Riverside Viewing Platform will be installed along the boundary of River Brosna as noted above.

A bat survey has been carried out by Gannon and Associates to assess the presence of roosting bats onsite. A potential pipistrelle roost was identified in the main convent building. The report

includes the following measure: "*a derogation licence will be required from the National Parks and Wildlife Service (NPWS) for works to roof and attic space of this part of the building***"**. Evidence of a brown long-eared bat roost was recorded within the stone Outbuilding. Based on the evidence collected within this building and given that no brown long-eared bat activity was recorded during the emergence surveys, the report has determined that this is either a maternity roost or a feeding site for brown long-eared bats. Two Soprano Pipistrelle roosts have also been recorded in the Outbuilding. Soprano pipistrelle activity was recorded at these roosts. The bat survey report recommends that the Outbuilding is retained where possible as part of the redevelopment plans given the confirmed presence of the three roosts. Other mitigation measures within the bat survey report include scheduling the demolition works for the winter months as well as the provision of bat boxes and the use of a bat friendly lighting design. The site layout includes the provision of five bat boxes to be erected in mature trees along the River Brosna. Additionally, eight Swift next boxes which will be fitted on the North Elevation of the extension to the convent.

Construction works will be confined to the proposed development footprint and will not necessitate any works within a drainage ditch or watercourse. The proposed development will require the importation of hardcore and gravel and the exportation of materials from demolished buildings. Ground levelling will be required in some areas of the site. During excavation works, soils will be temporarily stored onsite. Any excess soils would be used for landscaping and reinstatement works where possible or exported offsite via a licenced contractor. Any imported materials will be screend and sought from a licensed supplier.

An Asbestos Report has been prepared by CMSE Consultancy and has determined that "*The floor tiles and bitumen adhesive identified in the prefab building contain Chrysotile (white) asbestos fibres. Thermoplastic floor tiles can contain up to 25% asbestos fibres. Bitumen adhesives contain a small quantity of asbestos fibres*". All the materials containing asbestos in the buildings to be demolished will be removed by a licenced asbestos contractor before the start of demolition works.

The closest Natura 2000 site is the Ferbane Bog SAC (Site Code: 000575) located approximately 840m to the northwest of the proposed development (see Figure 2 below). The closest Natura 2000 sites hydrologically connected to the development site are the River Shannon Callows SAC (Site Code: 000216) and Middle Shannon Callows SPA (Site Code: 004096), located approximately 9.9km from the development site.

The following project elements of the proposed development have been examined for relevance to possible effects on the Natura 2000 sites:

- Earthworks & Excavation
- Sediment & Hydrocarbon Runnoff
- Stormwater & Waste Water
- Disturbance to Protected Species
- Impact on Protected Habitats
- Dust and Noise
- Invasive Species

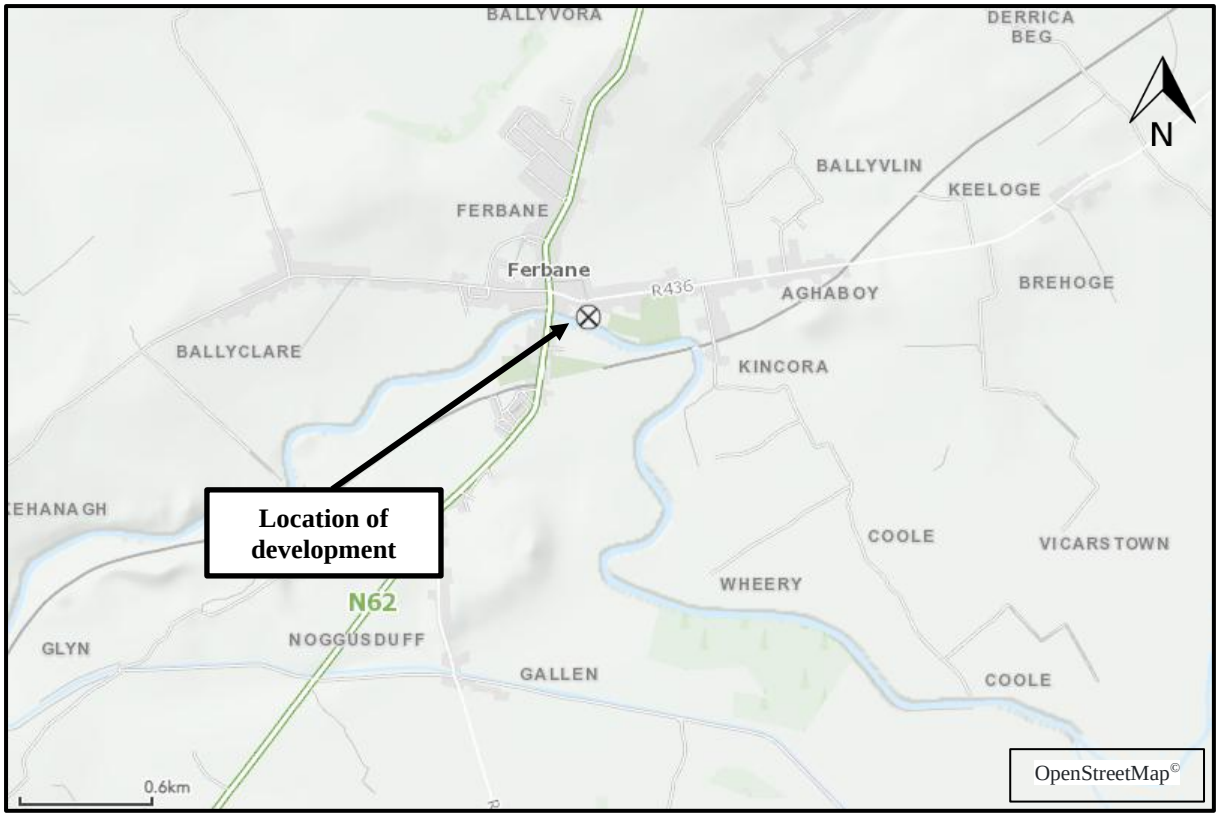

Figure 1. Location of development site at St. Joseph's Convent, Ferbane, Co. Offaly.

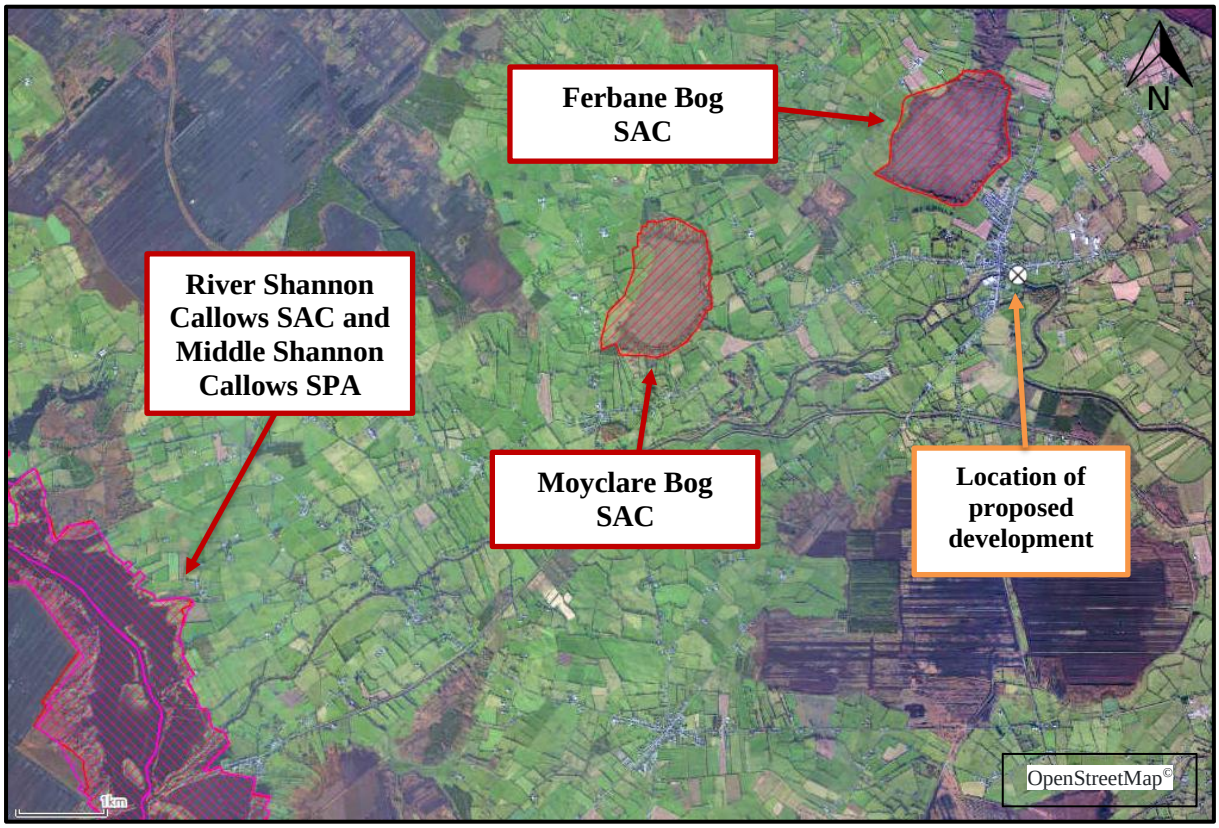

Figure 2. Location of Proposed Development and the nearest Natura 2000 Site.

4.2 EXISTING ENVIRONMENT

The existing site is mostly comprised of grassland and built structures, bordered by treelines/hedgerows and a small stretch of woodland. The surrounding area mainly consists of residential dwellings with schools and commercial activities in the wider area. The River Brosna borders the south boundary of the site.

4.2.1 Flora and habitats

A site characterisation assessment was conducted on 23rd August 2024 to examine the ecological context of the proposed development site.

The **Buildings and artificial surfaces (BL3)** habitat comprises the existing buildings and concrete yards, and surrounding walls. Species present within this habitat include Ivy (*Hedera helix*), Moss (Bryophyta), Wall Rue (*Asplenium ruta-muraria*), Bindweed (*Calystegia* spp.), Nipplewort (*Lapsana communis*). Ribwort Plantain (*Plantago lanceolata*), Ragwort (*Senecio jacobaea*), Dandelion (*Taraxacum* agg.), Pearlwort (*Sagina procumbens*), Willowherb (*Epilobium* spp.), Cat's Ear (*Hypochaeris* spp.), Annual Meadow Grass (*Poa annua*), Common Sowthistle (*Sonchus oleraceus*), Sycamore (*Acer pseudoplatanus*) and Elder (*Sambucus nigra*).

The **Amenity Grassland (GA2)** habitat is present in the gardens adjacent to the existing buildings and in the greenfields to the east. These grasslands are managed and most of these had been recently mowed by the time this assessment took place. The species composition includes Yorkshire Fog (*Holcus lanatus*), False Oat-grass (*Arrhenatherum elatius*), White Clover (*Trifolium repens*), Selfheal (*Prunella vulgaris*), Creeping Buttercup (*Ranunculus repens*), Dandelion (*Taraxacum* agg.), Ribwort Plantain (*Plantago lanceolata*), Daisy (*Bellis perennis*), Ryegrass (*Lolium* spp.), Creeping Cinquefoil (*Potentilla reptans*), Common Hogweed (*Heracleum sphondylium*), Silverweed (*Potentilla anserina*), Red Clover (*Trifolium pratense*), Meadowsweet (*Filipendula ulmaria*), Rhubarb (*Rheum* spp.) and Bush Vetch (*Vicia sepium*).

The **Dry meadows and grassy verges (GS2)** habitat is mostly present along the borders of the amenity grasslands forming strips of unmanaged grassland. The species composition is dominated by tall tussocky grasses such as False Oat-grass (*Arrhenatherum elatius*), Cock's Foot (*Dactylis glomerata*), Yorkshire Fog (*Holcus lanatus*), Common Couch Grass (*Elymus repens*), and Timothy (*Phleum pratense*). The broadleaved herb component includes Creeping Buttercup (*Ranunculus repens*), Creeping Thistle (*Cirsium arvense*), Common Nettle (*Urtica dioica*), Silverweed (*Potentilla anserina*), Dock (*Rumex* spp.), Ragwort (*Senecio jacobaea*), Meadowsweet (*Filipendula ulmaria*), Creeping Cinquefoil (*Potentilla reptans*), Bindweed (*Calystegia* spp.) and Meadow Vetchling (*Lathyrus pratensis*).

The **Recolonising bare ground (ED3)** habitat is mostly present around the existing buildings in areas of bare ground and gravel that currently have over 50% of vegetation cover. The species composition includes Mosses (Bryophyta), Selfheal (*Prunella vulgaris*), Daisy (*Bellis perennis*), Broadleaved Plantain (*Plantago major*), Lesser Trefoil (*Trifolium dubium*), Creeping Buttercup (*Ranunculus repens*), Mouse-ear (*Cerastium fontanum*), White Clover (*Trifolium repens*), Yorkshire Fog (*Holcus lanatus*), Cock's Foot Grass (*Dactylis glomerata*), Dandelion (*Taraxacum* agg.), Fescue (*Festuca* spp.), Ribwort Plantain (*Plantago lanceolata*), Bindweed (*Calystegia* spp.), False Oat-grass (*Arrhenatherum elatius*), Dock (*Rumex* spp.),

Creeping Cinquefoil (*Potentilla reptans*), Forget-me-not (*Myosotis* spp.), Timothy (*Phleum pratense*), Red Clover (*Trifolium pratense*), Ryegrass (*Lolium* spp.), Creeping Bent (*Agrostis stolonifera*), Groundsel (*Senecio vulgaris*) and Knotweed (*Polygonum aviculare*).

A **Riparian Woodland (WN5)** habitat is present along the borders of the River Brosna to the east of the drainage ditch. Species composition is dominated by Willow (*Salix* spp.) with occasional Alder (*Alnus glutinosa*), Hawthorn (*Crataegus monogyna*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Elm (*Ulmus* spp.) and Elder (*Sambucus nigra*). The field layer includes species such as Bramble (*Rubus fruticosus*), Ivy (*Hedera helix*), Horsetail (*Equisetum* spp.), Cleavers (*Galium aparine*), Wild Angelica (*Angelica sylvestris*), Bittersweet (*Solanum dulcamara*), Knapweed (*Polygonum aviculare*), Yellow Iris (*Iris pseudacorus*), Polypody (*Polypodium* spp.), Forget-me-not (*Myosotis* spp.), False-brome (*Brachypodium sylvaticum*), Pendulous Sedge (*Carex pendula*), Common Nettle (*Urtica dioica*), Hart's Tongue Fern (*Asplenium scolopendrium*), Nipplewort (*Lapsana communis*), Mosses (Bryophyta), Dock (*Rumex* spp.) and Reed Canary Grass (*Phalaris arundinacea*).

A **(Mixed) Broadleaved woodland (WD1)** borders the River Brosna to the west of the drainage ditch. The species composition includes Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Hawthorn (*Crataegus monogyna*), Willow (*Salix* spp.) and Elder (*Sambucus nigra*). The understorey includes Ivy (*Hedera helix*), Bramble *(Rubus fruticosus*) and Butterfly Bush (*Budleja davidii*).

Hedgerows (WL1) habitat is present along part of the borders of the fields to the east and along the borders of the drainage ditch. The species composition includes Blackthorn (*Prunus spinosa*), Elder (*Sambucus nigra*), Hawthorn (*Crataegus monogyna*), Bramble (*Rubus fruticosus*), Rose (*Rosa* spp.), Elm (*Ulmus* spp.), False Oat-grass (*Arrhenatherum elatius*), Bindweed (*Calystegia* spp.), Ivy (*Hedera helix*), Ground Ivy (*Glechoma hederacea*), Common Nettle (*Urtica dioica*), Oxeye Daisy (*Leucanthemum vulgare*), Meadow Vetchling (*Lathyrus pratensis*) and Sedges (*Carex* spp.).

The **Treeline (WL2)** habitat borders part of the site's boundaries and includes tree species such as Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Cypress (*Chamaecyparis* spp.), Yew (*Taxus baccata*). The understorey contains Hawthorn (*Crataegus monogyna*), Blackthorn (Prunus spinosa), Ivy (*Hedera helix*), Bramble (*Rubus fruticosus*), Lords and Ladies (*Arum maculatum*), False Oat-grass (*Arrhenatherum elatius*) and Herb Robert (*Geranium robertianum*).

There are a few patches of **Scrub (WS1)** between the grasslands and the treeline/woodland habitats. The species composition is dominated by Bramble (*Rubus fruticosus*) with Creeping Thistle (*Cirsium arvense*), Common Nettle (*Urtica dioica*), Common Hogweed (*Heracleum sphondylium*), Cleavers (*Galium aparine*), Meadowsweet (*Filipendula ulmaria*) and Bindweed (*Calystegia* spp.).

There is a **Drainage ditch (FW4)** between the two grasslands to the east which flows in a north to south direction into the River Brosna. The drainage ditch had a regular flow of water which was up to 20cm deep. The drainage ditch is approximately 1m wide and the banks are up to 0.5m tall. The water was clear, and the substrate is silty/muddy with a few medium calibre stones. No vegetation was present within the drainage ditch. Vegetation present in the banks of the drainage ditch include Ivy (*Hedera helix*), Mosses (Bryophyta), Harts' Tongue Fern

(*Asplenium scolopendrium*), Bramble (*Rubus fruticosus*), False-brome (*Brachypodium sylvaticum*) and Wild Angelica (*Angelica sylvestris*).

Ornamental/non-native shrub (WS3) habitat is present to the rear of the main building and includes species such as Rose (*Rosa* spp.), Cherry Laurel (*Prunus laurocerasus*), Holy (*Ilex* spp.), Tutsen (*Hypericum androsaemum*), Boxwood (Buxus sempervirens), Fuchsia (*Fuchsia magellanica*), Hawthorn (*Crategus monogyna*), Sycamore (*Acer pseudoplatanus*), Rhododendron (*Rhododendron* spp.) and Japanese Spirea (*Spiraea japonica*).

The **Flower beds and borders (BC4)** habitat is present to the rear of the main building and contains species such as *Hylotelephium* spp., *Crocosmia* spp., Sage (*Salvia* spp.) and Lavender (*Lavandula* spp.).

Habitats of note outside of the red line boundary include the **Depositing/ lowland River (FW2)** adjacent to the south boundary of the site. The river was turbid, slow and sluggish during the site assessment Vegetation present within the river included Willow (*Salix* spp.) and Water-lily (*Nuphar* spp.).

The identified habitats at the proposed development site, as per the Fossitt habitat classification scheme, are summarised in Table 1 below. See Appendix D for Photo Log of the site.

Table 1. Summary of Habitats Identified at the Development Site and surrounding areas.

HABITAT CLASSIFICATION HIERARCHY		
LEVEL 1	**LEVEL 2**	**LEVEL 3**
G – Grassland and marsh	**GS** – Semi-natural grassland	**GS2** – Dry meadows and grassy verges
	GA – Improved grassland	**GA2** – Amenity grassland
B – Cultivated and built land	**BL –** Built land	**BL3 –** Buildings and artificial surfaces
	BC – Cultivated land	**BC4** – Flower beds and borders
E- Exposed rock and disturbed ground	**ED** – Disturbed ground	**ED3** – Recolonising bare ground
F - Freshwater	**FW -** Watercourses	**FW4** – Drainage ditch
		FW2 – Depositing/ lowland rivers
W – Woodland and scrub	**WL** – Linear woodland/ scrub	**WL1** - Hedgerows
		WL2 - Treelines

HABITAT CLASSIFICATION HIERARCHY		
LEVEL 1	**LEVEL 2**	**LEVEL 3**
	WS – Transitional woodland/ scrub	**WS1** - Scrub
	WN – Semi-natural woodland	**WN5 –** Riparian woodland
	WD – Highly modified/ non-native woodland	**WD1** – (Mixed) Broadleaved woodland

Bird species noted during the site walkover included Rook (*Corvus frugilegus*), Wren (*Troglodytes troglodytes*), Wood Pigeon (*Columba palumbus*), Swallow (*Hirundo rustica*), Blackbird (*Turdus merula*), Pied Wagtail (*Motacilla alba*), Robin (*Erithacus rubecula*) and Magpie (*Pica pica*). None of the recorded species is red listed. Swallow is amber listed. None of the bird species recorded are listed under Annex I of the E.U. Birds Directive.

There were no sightings of Otter (*Lutra lutra*) or evidences or Otter holts onsite. There was a footprint present at the border of the river which could potentially be an Otter footprint given the shape and size (Couzens et al., 2021; Rhyder, 2021; Muir & Morris, 2013). There are limited areas of tall vegetation on site that could be suitable for Otter Couches. The banks of the River Brosna could contain prey of interest for Otter. The woodland habitat could offer suitable habitat for Badger. However, no setts or any other evidence of Badger such as latrines, droppings or footprints was found. The woodland along the river could offer suitable habitat for mammals in general. There were tracks/paths throughout the hedgerow, treeline, scrub and woodland habitats suggesting passage of mammals between the development site and adjacent sites. Two small burrows were found within the Riparian woodland habitat: one of them was less than 10cm wide and the other has an entrance greater than 20cm wide which narrows to approximately 10cm wide inside. These burrows have most likely been dug by small mammals such as rabbits (Muir & Morris, 2013). Due to the presence of cobwebs and dead foliage at the entrance, it is likely that these burrows are currently inactive. No evidence of recent use such as droppings and footprints were found in the area. The woodland and treeline habitats onsite would offer limited rooting opportunities for bats. The existing buildings onsite would offer roosting opportunities for bats. No other fauna or evidence of fauna was observed at the site. Fauna typical of that found throughout the rest of Ireland which would be expected to be found in the area would include Badger (*Meles meles*), Otter (*Lutra lutra*), Pine Marten (*Martes martes*), Rabbit (*Oryctalagus cuniculus*), Fox (*Vulpes vulpes*) Stoat (*Mustela erminea hibernica*), American Mink (*Mustela vison*), Irish Hare (*Lepus timidus hibernicus*), Hedgehog (*Erinus europaeus*), Red Squirrel (*Sciurus vulgaris*), Grey Squirrel (*Sciurus carolinensis*), Wood Mouse (*Apodemus sylvaticus*), Bank Vole (*Myodes glareolus*) and Pygmy Shrew (*Sorex minutus*).

In addition to the site walkover, flora and fauna records were reviewed on the National Biodiversity Data Centre (NBDC) website for the proposed development site and vicinity. One protected plant species under the Flora (Protection) Order, 2022 (S.I. No. 235 of 2022) was recorded within the 10km square (Tetrad – N12) in which the proposed development site is located: Large White-moss (*Leucobryum glaucum*).

One invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Amendment (S.I. No. 355 of 2015) of Regulations 2011-2015 was recorded within the 10km square (Tetrad – N12): Nuttall's Waterweed (*Elodea nuttallii*).

Protected fauna species of note recorded within the NBDC 10km square (Tetrad – N12) include the protected species Common Frog (*Rana temporaria*), Smooth Newt (*Lissotriton vulgaris*), White-clawed Crayfish (*Austropotamobius pallipes*), Marsh Fritillary (*Euphydryas aurinia*), Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Badger (*Meles meles*), Pygmy Shrew (*Sorex minutus*), Red Squirrel (*Sciurus vulgaris*), Otter (*Lutra lutra*), Lesser Noctule (*Nyctalus leisleri*), Pine Marten (*Martes martes*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Hedgehog (*Erinaceus europaeus*).

High impact invasive species listed include American Mink (*Mustela vison*), Fallow Deer (*Dama dama*) and Zebra Mussel (*Dreissena* (*Dreissena*) *polymorpha*).

Bird species of note include Barn Owl (*Tyto alba*), Barn Swallow (*Hirundo rustica*), Bewick's Swan (*Cygnus columbianus* subsp. *bewickii*), Black-headed Gull (*Larus ridibundus*), Common Coot (*Fulica atra*), Common Goldeneye (*Bucephala clangula*), Grasshopper Warbler (*Locustella naevia*), Common Greenshank (*Tringa nebularia*), Kestrel (*Falco tinnunculus*), Kingfisher (*Alcedo atthis*), Linnet (*Carduelis cannabina*), Pheasant (*Phasianus colchicus*), Pochard (*Aythya ferina*), Common Redshank (*Tringa totanus*), Sandpiper (*Actitis hypoleucos*), Snipe (*Gallinago gallinago*), Starling (*Sturnus vulgaris*), Swift (*Apus apus*), Wood Pigeon (*Columba palumbus*), Corn Crake (*Crex crex*), Dunlin (*Calidris alpina*), Curlew (*Numenius arquata*), Teal (*Anas crecca*), Wigeon (*Anas penelope*), Woodcock (*Scolopax rusticola*), Golden Plover (*Pluvialis apricaria*), Gadwall (*Anas strepera*), Great Black-backed Gull (Lar*us marinus*), Great Cormorant (*Phalacrocorax carbo*), Great Crested Grebe (*Podiceps cristatus*), Greater White-fronted Goose (*Anser albifrons*), Grey Partridge (*Perdix perdix*), Grey Plover (Pluvialis squatarola), Hen Harrier (*Circus cyaneus*), Herring Gull (*Larus argentatus*), House Martin (*Delichon urbicum*), House Sparrow (*Passer domesticus*), Jack Snipe (Lymnocryptes minimus), Lesser Black-backed Gull (*Larus fuscus*), Little Grebe (*Tachybaptus ruficollis*), Mallard (*Anas platyrhynchos*), Merlin (*Falco columbarius*), Mute Swan (*Cygnus olor*), Northern Lapwing (*Vanellus vanellus*), Northern Pintail (*Anas acuta*), Northern Shoveler (*Anas clypeata*), Pink-footed Goose (Anser brachyrhynchus), Red Grouse (*Lagopus lagopus*), Ringed Plover (*Charadrius hiaticula*), Ruff (*Philomachus pugnax*), Sand Martin (*Riparia riparia*), Sky Lark (*Alauda arvensis*), Spotted Flycatcher (*Muscicapa striata*), Stock Pigeon (*Columba oenas*), Tufted Duck (*Aythya fuligula*), Water Rail (*Rallus aquaticus*), Whooper Swan (*Cygnus cygnus*) and Yellowhammer (*Emberiza citrinella*).

4.3 WATER QUALITY

The proposed development is located within the Brosna_SC_060 sub-catchment (ID: 25A_8) which is part of the Lower Shannon Catchment (ID: 25A). The nearest EPA mapped watercourse is the River Brosna (EPA Code: 25B09 – Order 6) which runs adjacent to the south boundary of the development site. The River Brosna flows for approximately 12.3km in a westerly direction until it joins the River Shannon (EPA Code: 25S01 – Order 6). The Shannon discharges into the sea to the west of Limerick. Other watercourses of note in the area include the Ferbane stream (EPA Code: 25F31 – Order 1) which joins the River Brosna approximately 20m to the southeast of the development site's boundary. The Moyclare stream (EPA Code: 25M74 – Order 1) and the Holy Well Clongawny (EPA Code: 25H29 – Order 1) are located

approximately 1.7km and 1.9km to the northwest of the development site. See Figure 4.3 for mapped watercourses within the area of the development site.

There is a drainage ditch onsite between the two grasslands which flows directly into the River Brosna.

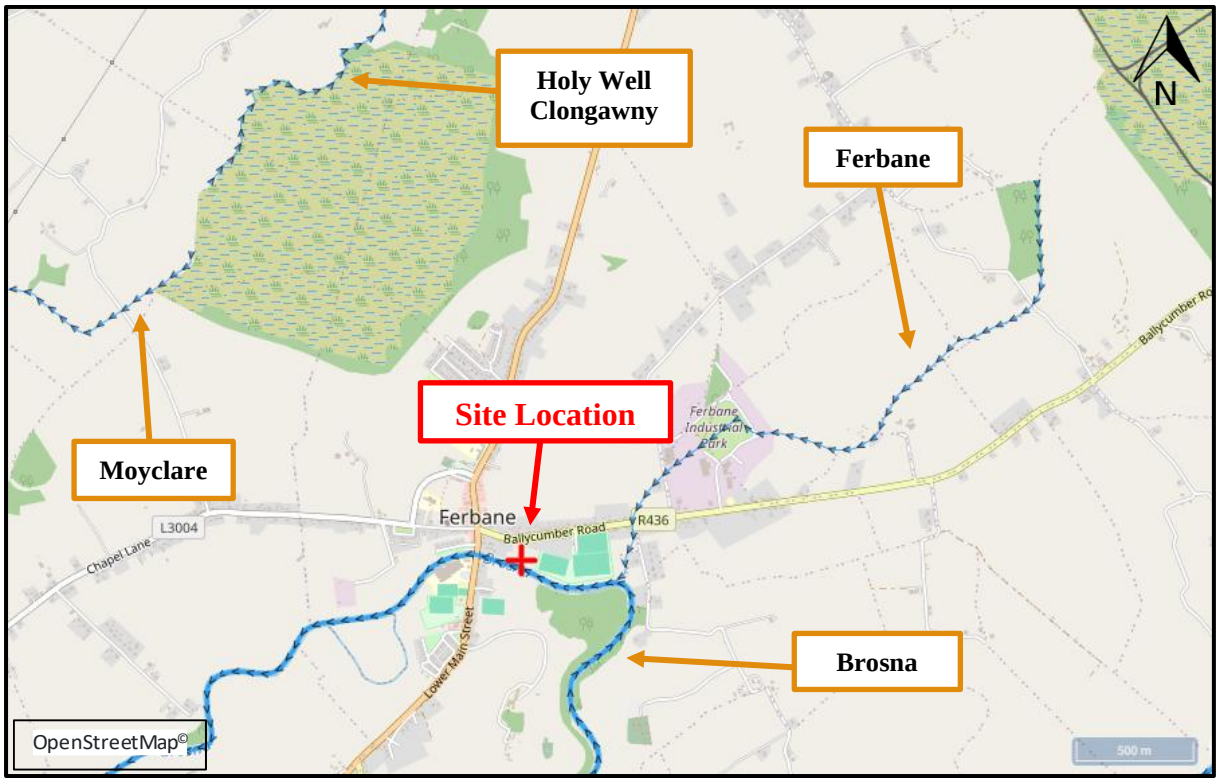

Figure 3. Mapped Watercourses surrounding the development site.

The Environmental Protection Agency (EPA) undertakes surface water monitoring along the River Brosna upstream of the development site. The available monitoring results for the period 2008 – 2023 are summarised in Figure 4 below.

Table 2. Monitoring Stations on the River Brosna within the vicinity of the development

STATION NO.	STATION LOCATION	EASTING	NORTHING	APPROX. LOCATION RELATIVE TO DEVELOPMENT SITE
RS25B090800	BROSNA - Br nr Kilcolgan	214983	223751	6.1km upstream
RS25B090950	Ferbane Br	211539.59	224405	Adjacent downstream
RS25B091000	Bellmount d/s Ferbane	207385	222255	downstream

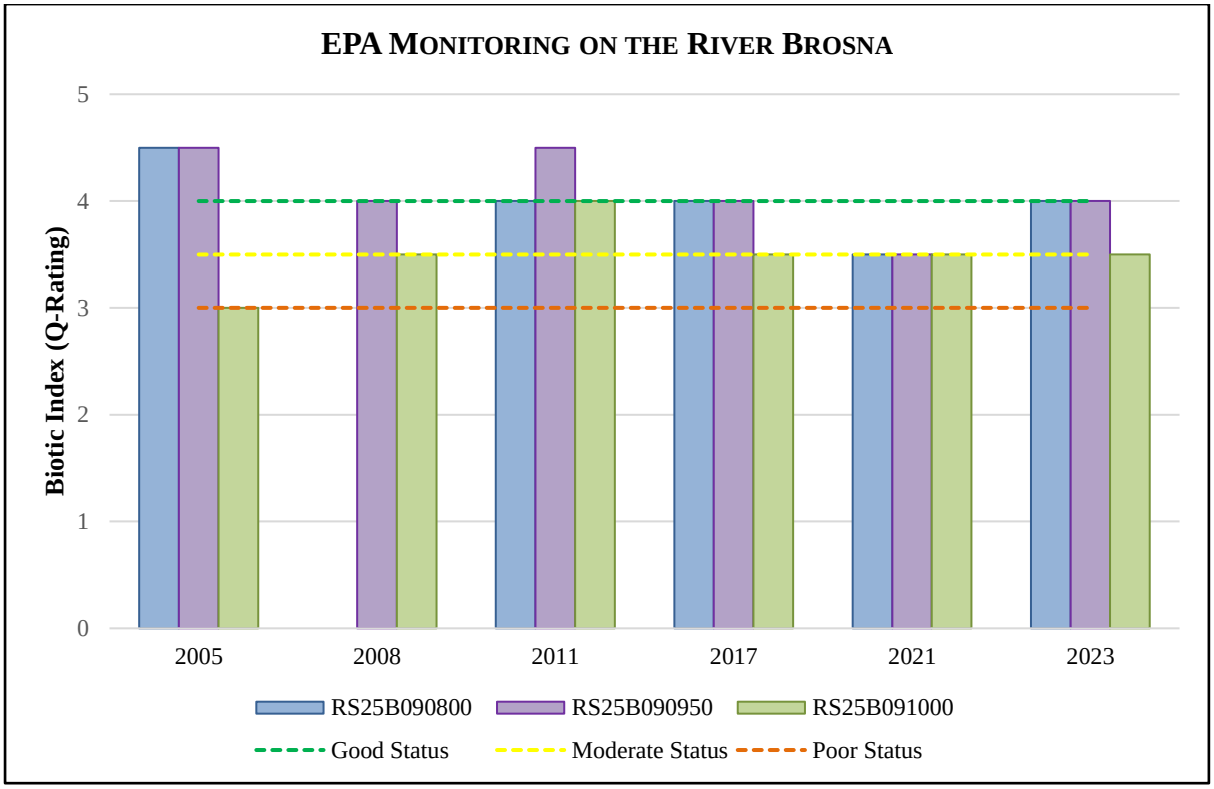

Figure 4. EPA Ecological Monitoring of the River Brosna 2005 - 2023

As can be seen in Figure 4.3 above, the River Brosna is achieving a water quality status between Q3 (Poor) and Q4.5 (High) upstream and downstream of the development site.

EPA comments on the most recent monitoring results for the Brona River are as follows: "*Eight stations were surveyed on the Brosna in 2023, of which only three (0800, 0950, 1100) stations were in a satisfactory ecological condition. Station 0800 and 0950 improved to Good ecological quality however low dissolved oxygen was noted at 0950 on the survey day. The lowermost station (1100) maintained its Good ecological quality. Station 0760 declined to Moderate and the remaining stations were also Moderate ecological quality*".

According to the Preliminary Flood Risk Assessment (PFRA) Mapping tool by the OPW, the development site is located within an area of low to moderate risk of fluvial or pluvial flooding, indicative of 1% AEP (100-yr) event or 0.1% AEP (1000-yr) event. However, it should be noted that this map is based on broad-scale simple analysis and may not be accurate for a specific location. There is no history of flooding at the development site, the nearest flooding event was approximately 2km to the northeast of the development site.

5.0 EUROPEAN SITES (NATURA 2000 SITES) WITHIN ZONE OF INFLUENCE

In assessing the zone of influence of this project upon European sites, the following factors must be considered:

- Potential impacts arising from the project
- The location and nature of European sites
- Pathways between the development and European sites

The project impact sources, environmental pathways and protected site characteristics were screened to identify European sites potentially within the zone of influence of the project.

Four Special Protection Areas (SPA) and nine Special Areas of Conservation (SAC) occur within the potential zone of influence of the proposed development and are shown in the following table:

Table 3. Special Areas of Conservation and Special Protection Areas potentially within the zone of influence

SITE NAME	DESIGNATION	SITE CODE	DISTANCE
Ferbane Bog	SAC	000575	840m NW
Moyclare Bog	SAC	000581	3.2km W
Fin Lough (Offaly)	SAC	000576	9km NW
Pilgrim's Road Esker	SAC	001776	9.2km NW
Mongan Bog	SAC	000580	9.7km NW
Mongan Bog	SPA	004017	9.8km NW
River Shannon Callows	SAC	000216	9.9km SW
Middle Shannon Callows	SPA	004096	9.9km SW
Clara Bog	SAC	000572	11.3km NE
Lough Derg, North-east Shore	SAC	002241	30.8km SW
Lough Derg (Shannon)	SPA	004058	49.3km SW
Lower River Shannon	SAC	002165	65.6km SW
River Shannon and River Fergus Estuaries	SPA	004077	86.6km SW

Maps detailing European sites within potential zone of influence (ZoI) of the development site are included as Appendix C.

For this assessment, the site considered to be within the zone of influence of the proposed development is the Ferbane Bog SAC (Site Code: 000575) due to the close proximity, and the River Shannon Callows SAC (Site Code: 000216) and Middle Shannon Callows SPA (Site Code: 004096) due to the hydrological connection.

The Moyclare Bog SAC (Site Code: 000581) is located approximately 3.2km from the development site. The site is mostly comprised of amenity grassland with no peat forming habitats, therefore the site does not contain any links to the bog habitats and *Rhynchosporion* depressions [7150] for which the SAC has been designated. Some of the habitats for which this SAC has been designated are sensitive to water quality deterioration. However, Moyclare Bog SAC is located upstream of the development site and in a different catchment (Shannon[Lower]_SC_030). Therefore, given the lack of direct hydrological connection, the distance between the development site and the SAC and the absence of works within a watercourse or drainage ditch, it is not considered that the proposed development would have the potential to affect the qualifying interests of the Moyclare Bog SAC due to a deterioration in water quality. Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SAC has been screened out.

The Fin Lough (Offaly) SAC (Site Code: 000576) is located approximately 9km from the development site. No wetlands are present onsite and therefore the development site does not contain the fens [7230] and the Geyer's Whorl Snail [1013] for which the SAC has been designated. Alkaline fens are sensitive to water quality deterioration. However, the Fin Lough (Offaly) SAC is located upstream of the development site and in a different catchment (Shannon[Lower]_SC_030). Therefore, given the lack of direct hydrological connection, the distance between the development site and the SAC and the absence of works within a watercourse or drainage ditch, it is not considered that the proposed development would have the potential to affect the qualifying interests of the Fin Lough (Offaly) SAC due to a deterioration in water quality. Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SAC has been screened out.

The Pilgrim's Road Esker SAC (Site Code: 001776) is located approximately 9.2km from the development site. The grassland habitats present onsite do not contain the species associated with the habitat Calcareous grassland [6210] for which the SAC has been designated. The Pilgrim's Road Esker SAC is located a good distance upstream of the development site. There are no water quality objectives set for the qualifying interests of this SAC. Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SAC has been screened out.

The Mongan Bog SAC (Site Code 000580) is located approximately 9.7km from the development site. The site is mostly comprised of amenity grassland with no peat forming habitats, therefore the site does not contain any links to the bog habitats and *Rhynchosporion* depressions [7150] for which the SAC has been designated. Some of the habitats for which this SAC has been designated are sensitive to water quality deterioration. However, Mongan Bog SAC is located upstream of the development site and in a different catchment (Shannon[Lower]_SC_030/ Shannon[Lower]_SC_010). Therefore, given the lack of direct hydrological connection, the distance between the development site and the SAC and the absence of works within a watercourse or drainage ditch, it is not considered that the proposed development would have the potential to affect the qualifying interests of the Mongan Bog SAC due to a deterioration in water quality. Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SAC has been screened out.

The Mongan Bog SPA (Site Code 004017) is located approximately 9.7km from the development site. The Greenland White-fronted Goose [A395] for which the SAC has been designated forages mostly on wetlands and dune grasslands and occasionally on agricultural grassland. The development site contains grassland. However, due to the urban nature of the contexts where the development site is located, it is unlikely that the Greenland White-fronted Goose would forage within the site's boundaries. This species would find more suitable habitat closer to the SPA. The site would not offer suitable breeding ground for this species. There are no water quality objectives set for this qualifying interest within the Conservation Objectives document of the SPA. Additionally, this SPA is located a considerable distance upstream of the development site and in a different catchment (Shannon[Lower]_SC_030/ Shannon[Lower]_SC_010). Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SPA has been screened out.

Clara Bog SAC is located approximately 11.3km from the development site. The site is mostly comprised of amenity grassland which does not contain the species associated with the protected Calcareous grassland [6210] habitat. There are also no peat forming habitats onsite, therefore the development site does not contain any links to bogs and *Rhynchosporion* depressions [7150]. Some of the habitats for which this SAC has been designated are sensitive to water quality deterioration. However, the Clara Bog SAC is located upstream of the development site and in a different catchment (Brosna_SC_040). Therefore, given the lack of direct hydrological connection, the distance between the development site and the SAC and the absence of works within a watercourse or drainage ditch, it is not considered that the proposed development would have the potential to affect the qualifying interests of the Clara Bog SAC due to a deterioration in water quality. Therefore, in the absence of a source- pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats, this SAC has been screened out.

The Lough Derg, North-east Shore SAC (Site Code: 002241), the Lough Derg (Shannon) SPA (Site Code: 004058), the Lower River Shannon SAC (Site Code: 002165) and the River Shannon and River Fergus Estuaries SPA (Site Code: 004077) are hydrologically connected to the development site. The development site does not contain freshwater habitats and it is located a good distance from the tidal stretches of any watercourse. Therefore, qualifying interests of these protected sites associated with aquatic, estuarine and coastal environments would not be present onsite. Some of the qualifying interests of these protected sites are sensitive to water quality deterioration. However, due to the distance from the site to these SACs and SPAs downstream, and the absence of works within a watercourse or drainage ditch, it is not considered that the development site would have the potential to significantly affect these protected sites due to a deterioration in water quality. In the absence of a source-pathway- receptor relationship, the nature and scale of the development, and absence of associated habitats these SACs and SPAs have been screened out.

5.1 FERBANE BOG SAC (SITE CODE: 000575)

Ferbane Bog is a relatively large, domed, raised bog located about 10 km east of Shannonbridge in Co. Offaly. It is underlain by low permeability Waulsortian limestone and clay-rich tills. The site is a SAC selected for the following habitats listed on Annex I and species listed on Annex II of the E.U. Habitats Directive:

Table 4. Qualifying interests of the Ferbane Bog SAC.

ANNEX I HABITATS	
CODE	**DESCRIPTION**
7110	Active raised bogs
7120	Degraded raised bogs still capable of natural regeneration
7150	Depressions on peat substrates of the Rhynchosporion

* *denotes a priority habitat*

The conservation objectives for the SAC site are to maintain or restore the favourable conservation condition of the qualifying interests. An excerpt from the Natura 2000 Data Form

for Ferbane Bog SAC is included below, while further details are available within the site's site synopsis (NPWS, 2013).

Active raised bog comprises areas of high bog that are wet and actively peatforming, where the percentage cover of bog mosses (Sphagnum spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog where hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The *Rhynchosporion* habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species: Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*) and Carnation Sedge (*Carex panicea*). Much of the surface of the bog is very wet and spongy and the cover of bog mosses and lichens is generally high. A wet, quaking area to the east occurs in a depression and is characterised by a dominant growth of Hare's-tail Cottongrass (*Eriophorum vaginatum*), while another very wet quaking area on the western side of the site has well-developed inter-connecting pools. It is in these wettest portions of the high bog that *Rhynchosporion* vegetation is best developed. Here there are extensive lawns of *Sphagnum magellanicum* and *S. cuspidatum*, accompanied by vascular plant species such as White Beak-sedge, Common Cottongrass (*Eriophorum angustifolium*), Great Sundew (*Drosera anglica*) and Bogbean (*Menyanthes trifoliata*). Lawns of *S. magellanicum* and hummocks of *S. papillosum*, *S. capillifolium* and *S. imbricatum* occur in slightly drier areas surrounding these wettest zones. Carnation Sedge is present in abundance throughout the site, but particularly so on sloping areas. Purple Moorgrass (*Molinia caerulea*) and Bog-myrtle (*Myrica gale*) occur in scattered patches throughout the bog. Bog-rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinum oxycoccos*) are also found. A flushed area occurs on the northern part of the site.

Degraded raised bog occurs on the drier margins of the high bog dome. The vegetation is typical of degraded raised bog habitat in Ireland, with more robust species such as Heather (*Calluna vulgaris*), Deergrass, Carnation Sedge, Bog Asphodel and Cross-leaved Heath (*Erica tetralix*) tending to predominate. Along the driest margins of the high bog there is invasion by shrub species such as Scots Pine (*Pinus sylvestris*), Rhododendron (*Rhododendron ponticum*), Downy Birch (*Betula pubescens*) and Gorse (*Ulex europaeus*). Sphagnum cover is low in degraded areas of raised bog, typically covering less than 30% of the ground, and conversely the cover of lichens (*Cladonia* spp.) tends to be locally high.

The vegetation of the older cut-away areas to the west, north and east of the site is dominated by Downy Birch and Gorse, with areas of Bracken (*Pteridium aquilinum*), willow (*Salix* sp.), Bilberry (*Vaccinium myrtillus*), Scots Pine and Rhododendron also found.

Drainage is extensive at this site and has caused significant drying out. Past peatcutting and some active peat-cutting have also speeded up water loss. However, although the high bog has suffered some water loss, it is still in restorable condition.

Ferbane Bog is a good example of a raised bog and is of considerable conservation significance. Active raised bogs are becoming increasingly rare in Ireland, and Europe, and are listed as a priority habitat on Annex I of the E.U. Habitats Directive.

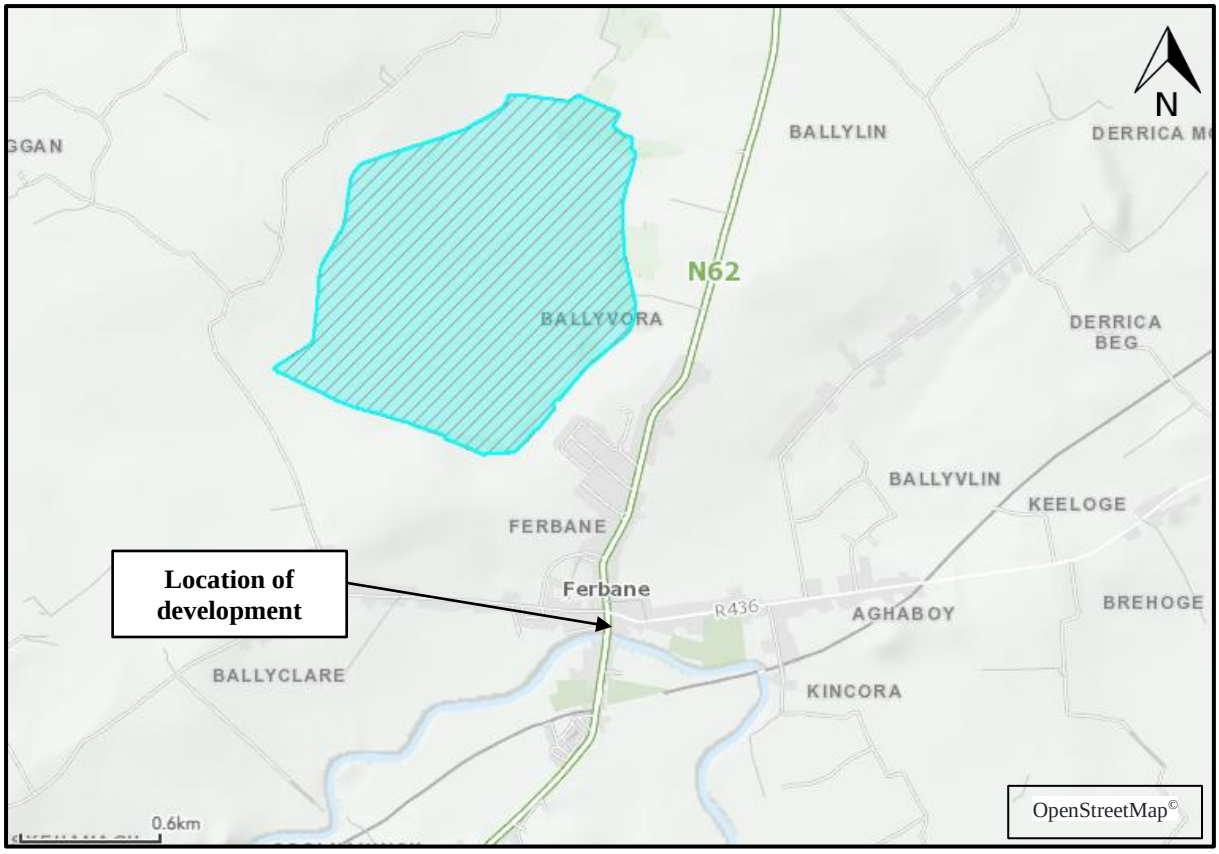

Figure 5. Ferbane Bog SAC

Ferbane Bog SAC Conservation Objectives

The Habitats Directive requires the Appropriate Assessment process to assess the potential impacts of the development "in view of the site's conservation objectives". Site specific conservation objectives (SSCOs) for the qualifying interests of the Ferbane Bog SAC are provided in the Table 5.3 below, where available from the NPWS document "*Conservation Objectives: Ferbane Bog SAC 000575*" (NPWS, 2015).

Table 5. Ferbane Bog SAC Conservation Objectives

FERBANE BOG SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
[7110] Active raised bogs			
Habitat area	Hectares	Restore area of active raised bog to 43.5ha, subject to natural processes	Active Raised Bog (ARB) habitat was mapped at 32.6ha. The total potential ARB on the HB is therefore estimated to be 43.5ha. Both central and sub-central ecotopes occur at Ferbane Bog. For ARB, mean water level needs to be near or above the surface of the bog lawns for most of the year. Seasonal fluctuations should not exceed 20cm, and should only be 10cm below the surface, except for very short periods of time. Open water is often characteristic of soak systems. ARB depends on mean water levels being near or above the surface of bog lawns for most of the year. Long and gentle slopes are the most favourable to achieve these conditions. Changes to flow directions due to subsidence of bogs can radically change water regimes and cause drying out of high quality ARB areas and soak systems. The total area of cutover bog within the Ferbane Bog SAC is estimated to be circa 21ha. Change in air quality can result from fertiliser drift; adjacent quarry activities; or other atmospheric inputs. The critical load range for
Habitat distribution	Occurrence	Restore the distribution and variability of active raised bog across the SAC.	
High bog area	Hectares	No decline in extent of high bog necessary to support the development and maintenance of active raised bog.	
Hydrological regime: water levels	Centimetres	Restore appropriate water levels throughout the site	
Hydrological regime: flow patterns	Flow direction; slope	Restore, where possible, appropriate high bog topography, flow directions and slopes. See map 4 for current situation	
Transitional areas between high bog and adjacent mineral soils (including cutover areas)	Hectares; distribution	Restore adequate transitional areas to support / protect the raised bog ecosystem and the services it provides	
Vegetation quality: central ecotope, active flush, soaks, bog woodland	Hectares	Restore 21.8ha of central ecotope/active flush/soaks/bog woodland	
Vegetation quality: microtopographical features	Percentage cover	Restore adequate cover of bog moss (*Sphagnum*) species to ensure peatforming capacity	
Typical ARB species: flora	Occurrence	Restore, where appropriate, typical active raised bog flora	
Typical ARB species: fauna	Occurrence	Restore, where appropriate, typical active raised bog fauna	

FERBANE BOG SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Elements of local distinctiveness	Occurrence	Maintain features of local distinctiveness, subject to natural processes	ombrotophic bogs has been set as between 5 and 10kg N/ha/yr. The latest N deposition figures for the area around Ferbane Bog suggests that the current level is approximately 13.4kg N/ha/yr. Water chemistry within raised bogs is influenced by atmospheric inputs (rainwater). However, within soak systems, water chemistry is influenced by other inputs such as focused flow or interaction with underlying substrates. Water chemistry in areas surrounding the high bog varies due to influences of different water types (bog water, regional groundwater, and run-off from surrounding mineral lands)
Negative physical indicators	Percentage cover	Negative physical features absent or insignificant	
Vegetation composition: native negative indicator species	Percentage cover	Native negative indicator species at insignificant levels	
Vegetation composition: nonnative invasive species	Percentage cover	Non-native invasive species at insignificant levels and not more than 1% cover	
Air quality: nitrogen deposition	kg N/ha/year	Air quality surrounding bog close to natural reference conditions. The total N deposition should not exceed 5kg N/ha/yr	
Water quality	Hydrochemical measures	Water quality on the high bog and in transitional areas close to natural reference conditions	
[7120] Degraded raised bogs still capable of natural regeneration			
The conservation objective for this habitat is inherently linked to that of Active raised bogs (7110) and a separate conservation objective has not been set in Ferbane Bog SAC.			
[7150] Depressions on peat substrates of the *Rhynchosporion*			
Depressions on peat substrates of the *Rhynchosporio*n is an integral part of good quality Active raised bogs (7110) and thus a separate conservation objective has not been set for the habitat in Ferbane Bog SAC.			

Ferbane Bog SAC Conservation Status

According to the Habitat's Directive, favourable conservation status of a habitat is achieved when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined below.

The conservation statuses for the qualifying interests of Ferbane Bog SAC are outlined below.

Table 6. Conservation status of the Qualifying interests of Ferbane Bog SAC

CODE	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS*
7110	Active raised bogs	Bad
7120	Degraded raised bogs	Bad
7150	*Rhynchosporion* depressions	Bad

**Sourced from the Status of EU Protected Habitats in Ireland (NPWS, 2019)*

5.2 RIVER SHANNON CALLOWS SAC (SITE CODE: 000216)

The River Shannon Callows is a long and diverse site consisting of seasonally flooded, semi-natural, lowland wet grassland, along the river between the towns of Athlone and Portumna. It is approximately 50km long and averages about 0.75km wide. Along much of its length the site is bordered by raised bogs, esker ridges and limestone-bedrock hills. This site is closely associated with the River Suck Callows and Little Brosna Callows. The site is a SAC selected for the following habitats and species listed on Annex I / II of the E.U. Habitats Directive:

Table 7. Qualifying interests of the River Shannon Callows SAC - Habitats

ANNEX I HABITATS	
CODE	**DESCRIPTION**
6410	*Molinia* Meadows
6510	Lowland Hay Meadows
7230	Alkaline fens
8240	Limestone Pavement*
91E0	Alluvial Forests*

** denotes a priority habitat*

Table 8. Qualifying interests of the River Shannon Callows SAC - Species

ANNEX II SPECIES		
CODE	**COMMON NAME**	**SCIENTIFIC NAME**
1355	Otter	*Lutra lutra*

The conservation objectives for the SAC site are to maintain or restore the favourable conservation condition of the qualifying interests. This site is the largest area of semi-natural floodplain grassland in Ireland and Britain and has very many features of a natural ecosystem. It has been placed among the most 'natural' floodplains in western Europe. It is subject to regular and prolonged annual winter flooding. Wooded alluvial islands which flood regularly occur at one location. A number of Red Data Book and scarce plant species occur on the site, the scarce species including Summer Snowflake (*Leucojum aestivum*), Great water-parsnip (*Sium latifolium*) and Gibbous Duckweed (*Lemna gibba*). In addition, the site contains a very wide variety of native plant species. A small area of limestone pavement at Clorhane is of particular importance as it is the only example of this habitat in the region.

Along with its tributary the Little Brosna (designated separately) this is one of the great waterfowl sites in Ireland, with huge numbers of a wide range of species occurring in winter. A small flock of Greenland White-fronted Goose regularly use a few locations on the site and these are part of the Internationally Important flocks of both the Little Brosna and the River Suck. It is one of very few significant inland sites in Britain or Ireland for Dunlin (*Calidris alpine*). It is the top site in the country for Mute Swan (*Cygnus olor*) and close to that for Whooper Swan, Lapwing and Golden Plover. The E.U. Birds Directive Annex I species, Hen Harrier (*Circus cyaneus*), regularly uses the site for hunting in autumn and winter. Perhaps even more important are its nesting Corncrake, Quail and breeding waders. In 1987, 1204 pairs of breeding waders were recorded (including adjacent parts of the Shannon), mainly Lapwing, Snipe (*Gallinago gallinago*), Curlew (*Numenius arquata*) and Redshank (*Tringa totanus*). Corncrake has one of its last strongholds here with 70 and 66 calling birds present in 1998 and 1999 respectively. The Shannon Callows is one of the few areas in Ireland where Quail breeds. There are high populations of ground-nesting passerines, such as Skylark (*Alauda arvensis*), Meadow Pipit (*Anthus pratensis*), Grasshopper Warbler (*Locustella naevia*) and Reed Bunting (*Emberiza schoeniclus*) on the site. The River Shannon Callows is a breeding site for two Red Data Book waterbird species: Black-tailed Godwit and Shoveler. The Red Data Book species Pintail has also bred on the site though its current status is unknown. The E.U. Birds Directive Annex I species Merlin, bred on the site in 1996. Large rivers flowing unfettered through lowland floodplains are now rare anywhere in Europe. This river, and its associated habitats, are of the highest conservation importance.

The main site vulnerabilities, including any key pressures or trends within and around the River Shannon Callows SAC that have been identified as impacting upon the site, may be summarised as human induced changes in hydraulic conditions, lack of grazing, abandonment of cultivation, lack of mowing and the use of biocides, hormones and chemicals.

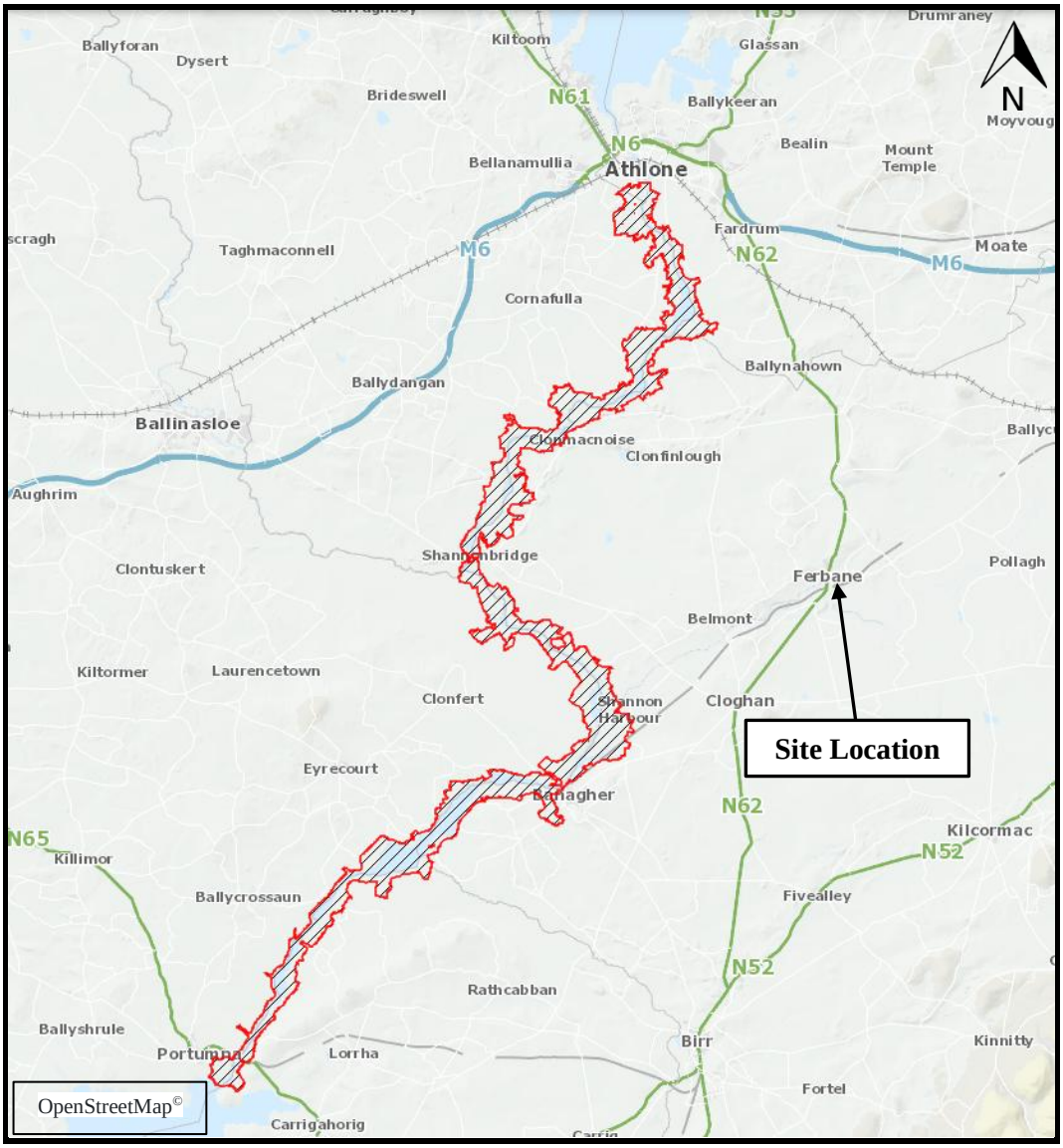

Figure 6. River Shannon Callows SAC

Table 9. River Shannon Callows SAC Conservation Objectives

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
[6410] *Molinia* Meadows			
Habitat area	Hectares	Area stable or increasing, subject to natural processes	River Shannon Callows SAC encompasses a large area of seasonally flooded, semi-natural, lowland wet grassland habitats, including the habitat Molinia meadows which occurs in association with Lowland hay meadows (Annex I habitat code 6510) and other grassland habitats.
Habitat distribution	Occurrence	No decline, subject to natural processes	It should be noted that the habitat's area and distribution in the continuum/mosaic of grassland habitats in River Shannon Callows SAC can depend on such factors as the annual fluctuation of the water levels in the River Shannon and duration of flooding, and also on management practices such as grazing and mowing. The habitat is widely distributed all along this large SAC, and at both sides of the river channel. Note that further unsurveyed areas of the habitat may be present within the SAC.
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops.	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least one 'high quality' positive indicator species present in the stop or within 20m of stop	Purple moor-grass (*Molinia caerulea*) is a positive indicator species and should be present in at least one monitoring stop, or within 20m of a monitoring stop.
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation composition: nonnative species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	
Vegetation composition: moss species	Percentage cover at a representative number of 2m x 2m monitoring stops	Hair mosses (*Polytrichum* spp.) not more than 25% cover	
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species and bracken (*Pteridium aquilinum*) not more than 5% cover.	
Vegetation structure: broadleaf herb:grass ratio	Percentage at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	Broadleaf herb component of vegetation between 30% and 40% may be allowed to pass on expert judgement
Vegetation structure: sward height	Percentage at a representative number of 2m x 2m monitoring stops	At least 30% of sward between 10cm and 80cm tall	
Vegetation structure: litter	Percentage cover at a representative number of 2m x 2m monitoring stops	Litter cover not more than 25%	High litter cover, usually a result of abandonment, or infrequent management, has been recorded in places in this SAC, and is detrimental to plant species diversity.

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Physical structure: bare ground	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 10% bare ground	
Physical structure: grazing or disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m²	
[6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)			
Habitat area	Hectares	Area stable or increasing, subject to natural processes	This SAC encompasses a large area of seasonally flooded, semi-natural, lowland grassland habitats, including Lowland hay meadows (6510) which can occur in association with Molinia meadows (6410) and other grassland habitats.
Habitat distribution	Occurrence	No decline, subject to natural processes	It is important to note that further unsurveyed areas may be present within the SAC
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops; within 20m surrounding area of monitoring stops	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least one 'high quality' positive indicator species present in stop or within 20m of stop	Of particular note, meadow barley (*Hordeum secalinum*) was recorded by the ISGS in Moystown Demesne and Bullock Island (site code 109) in the SAC. This species is listed as Vulnerable, Green-winged orchid (*Anacamptis morio)* and the Near Threatened moonwort (*Botrychium lunaria*) were also recorded.

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	During the GMS, it was found that an area of 6510 habitat within the sub-site Long Island (site code 111) had been agriculturally improved since the site was surveyed by the ISGS in 2007, with the negative indicator species perennial rye-grass (*Lolium perenne*) and white clover (*Trifolium repens*) common in places. Agricultural intensification was also found to have led to the loss of an area of the Annex I 6510 habitat in the subsite Cappaleitrim
Vegetation composition: nonnative species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species and bracken (*Pteridium aquilinum*) not more than 5%	
Vegetation structure: broadleaf herb:grass ratio	Percentage cover at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	A marginal failure result (35-39%) in the percentage broadleaf herb component may be allowed to pass on expert judgement. The broadleaf herb to grass ratio can be badly affected by agricultural improvement actions, such as fertiliser use, re-seeding, etc., which all favour grass growth over herb growth. This has been found to be an issue at a number of sites in this SAC.
Vegetation structure: sward height	Percentage cover at a representative number of 2m x 2m monitoring stops	At least 50% of sward between 10cm and 50cm tall	

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation structure: litter	Percentage cover at a representative number of 2m x 2m monitoring stops	Litter cover not more than 25%	
Physical structure: bare soil	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 5% bare soil	
Physical structure: disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or other disturbance less than 20m²	
[7230] Alkaline fens			
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Alkaline fen in River Shannon Callows SAC occurs south of Portumna Bridge and south-east of the town of Portumna in an area of low-lying terrestrial land west of the river. The fen area corresponds largely to a former small bay at the northern end of Lough Derg that was cut off from the lake when the embankment was originally constructed as part of the Shannon Hydroelectric Scheme in the late 1920s. The area of alkaline fen in the SAC has been mapped as c.15ha.
Habitat distribution	Occurrence	No decline, subject to natural processes	It is important to note that further unsurveyed areas of the habitat may be present within the SAC

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat.
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or restore where necessary, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Fen habitats require high groundwater levels (i.e. water levels at or above the ground surface) for a large proportion of the calendar year (i.e. duration of mean groundwater level). Fen groundwater levels are controlled by regional groundwater levels in the contributing catchment area (which sustain the hydraulic gradients of the fen groundwater table). Regional abstraction of groundwater may affect fen groundwater levels. In this SAC, the fen may partly be fed by springs, and there is some evidence of base-rich flushing on sloping ground with outcropping rock to the west of the fen.
Ecosystem function: water quality	Various	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat.	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus, with the latter tending to be the limiting nutrient under natural conditions. Water supply should also be relatively calcium-rich.

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation composition: community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	Two main communities in the habitat in the SAC based on relevé data. The first was *Carex lasiocarpaMenyanthes* trifoliata vegetation where C. *lasiocarpa*, C. *acutiformis* and M. *trifoliata* were constant, while C. *lasiocarpa* was slightly less abundant where *Schoenus nigricans* was present towards the north of the fen area. *Utricularia intermedia* was a component of this type and calcium carbonate accretions were common among the mosses. The second type was a *Briza mediaCarex disticha-Festuca rubra* community which was rich in small sedges, and also orchid-rich. *Cirsium dissectum*, while widespread over the whole fen, was commonest in this community
Vegetation composition: typical brown mosses	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical brown moss species	Typical brown moss species recorded in the habitat in the SAC include *Bryum pseudotriquetrum, Campylium stellatum, Scorpidium cossonii* and S. *scorpioides*
Vegetation composition: typical vascular plants	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical vascular plant species	Typical species recorded in the habitat in the SAC include slender sedge (*Carex lasiocarpa*), carnation sedge (*Carex panicea*), fewflowered spike-rush (*Eleocharis quinqueflora*), purple moor-grass (*Molinia caerulea*) and meadow thistle (*Cirsium dissectum*). The high quality indicator species early marsh-orchid (*Dactylorhiza incarnata*) and marsh helleborine (*Epipactis palustris*) have been recorded within the fen in the SAC.
Vegetation composition: native negative indicator species	Percentage cover at a representative number of monitoring stops	Cover of native negative indicator species at insignificant levels	Negative indicators include species not characteristic of the habitat and species indicative of undesirable activities such as overgrazing, undergrazing, nutrient enrichment, agricultural improvement or impacts on hydrology. Native negative indicators may include *Anthoxanthum odoratum*, *Epilobium hirsutum*, *Holcus lanatus*, *Juncus effusus*, *Phragmites australis* and *Ranunculus repens*. See O'Neill et al. (in prep.). *Phragmites australis* and *Ranunculus repens* were recorded in a number of relevés, but at relatively low cover

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation composition: nonnative species	Percentage cover at a representative number of monitoring stops	Cover of non-native species less than 1%	Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	Scrub and trees will tend to invade if fen conditions become drier
Vegetation composition: algal cover	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of algae less than 2%	Algal cover is indicative of nutrient enrichment from multiple sources
Vegetation structure: vegetation height	Percentage cover at a representative number of monitoring stops	At least 50% of the live leaves/flowering shoots are more than either 5cm or 15cm above ground surface depending on community type	While grazing may be appropriate in this habitat, excessive grazing can reduce the ability of plant species to regenerate reproductively and maintain species diversity, especially if flowering shoots are cropped during the growing season.
Physical structure: tufa formations	Percentage cover in local vicinity of a representative number of monitoring stops	Disturbed proportion of vegetation cover where tufa is present is less than 1%	Tufa formation recorded at the base of brown mosses in areas of the habitat in the SAC.
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	Of note is the presence of marsh pea (*Lathyrus palustris*) in the habitat in the SAC. This species is extremely scarce in Ireland, with half of its distribution occurring along the River Shannon

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Transitional areas between fen and adjacent habitats	Hectares; distribution	Maintain adequate transitional areas to support/protect the alkaline fen habitat and the services it provides	In many cases, fens transition to other wetland habitats. It is important that the transitional areas between fens and other habitats are maintained in as natural condition as possible in order to protect the functioning of the fen. Alkaline fen represents about a third of the terrestrial land that is within the part of the SAC south of Portumna Bridge and west of the river. The rest of this terrestrial area is unimproved/semi-improved grassland and there is c.2ha of reedswamp vegetation within the fen itself.
8240 Limestone pavements*			
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Limestone pavements* in River Shannon Callows SAC occurs at Clorhane, which represents the only area of limestone pavement in Co. Offaly and one of relatively few located east of the Shannon. The limestone pavement is predominantly wooded with mature hazel (*Corylus avellana*), interspersed with some exposed pavement and calcareous grassland and scrub
Distribution	Occurrence	No decline. Map 5 shows the indicative distribution, including mosaics with other habitats	This habitat can be split into exposed pavement and wooded pavement. In River Shannon Callows SAC, the majority of the habitat present is wooded pavement.
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	Positive indicator species occurring in the open pavement in the SAC include the ferns hart's tongue (*Asplenium scolopendrium*), wall-rue (A. *ruta-muraria*) and maidenhair spleenwort (A. *trichomanes*). Positive indicator species occurring in the wooded pavement include hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus* agg.), primrose (*Primula vulgaris*), common dog-violet (*Viola riviniana*), wood sorrel (*Oxalis acetosella*), herb-robert (*Geranium robertianum*) and the mosses *Neckera crispa* and *Hylocomium brevirostre.*

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Vegetation composition: bryophyte layer	Percentage at a representative number of monitoring stops	Bryophyte cover at least 50% on wooded pavement	
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Collective cover of negative indicator species on exposed pavement not more than 1%	Negative indicator species for wooded pavement overlap with non-native species
Vegetation composition: nonnative species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration	European larch (*Larix decidua*), Sitka spruce (*Picea sitchensis*) and Norway spruce (*Picea abies*) have been planted sparsely throughout the Clorhane Wood sub-site.
Vegetation composition: scrub	Percentage at a representative number of monitoring stops	Scrub cover no more than 25% of exposed pavement	
Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken (*Pteridium aquilinum*) cover no more than 10% on exposed pavement	
Vegetation structure: woodland canopy	Percentage at a representative number of monitoring stops	Canopy cover on wooded pavement at least 30%	
Vegetation structure: dead wood	Occurrence in a representative number of monitoring stops	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Physical structure: disturbance	Occurrence in a representative number of monitoring stops	No evidence of grazing pressure on wooded pavement	

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	The Vulnerable green-winged orchid (*Anacamptis morio*) has been recorded in open pavement on short grassy turf in the SAC.
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*			
Habitat area	Hectares	Area stable or increasing, subject to natural processes.	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)* is present in River Shannon Callows SAC. Alluvial woodland has been identified at numerous locations along the Shannon from the islands below the ESB weir at Meelick to Madden's Island upstream. A small area of Alluvial woodland (1.1ha) has been mapped on two river islands at Madden's Island. However, with the exception of Madden's Island, the habitat has not been mapped in detail and thus the current total habitat area within the SAC is unknown. The habitat is found on riverbanks and alluvial islands which are prone to periodic flooding. It is important to note that further areas of the habitat may be present elsewhere within the SAC and other documented areas of wet woodland, e.g. around Bishop's Island, Banagher and Clonburren may also correspond to this priority Annex I woodland type.
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes on habitat area above. It is important to note that further unsurveyed areas may be present within the SAC
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	The target areas for individual woodlands aim to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions. In some cases, topographical constraints may restrict expansion.

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Woodland structure: cover and height	Percentage; metres; centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	The target aims for a diverse structure with a canopy containing mature trees, shrub layer with semi-mature trees and shrubs, and well-developed field layer (herbs, graminoids and dwarf shrubs) and ground layer (bryophytes).
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy	The target species for 91E0* are alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) and willows (*Salix* spp.).
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Periodic flooding is essential to maintain alluvial woodlands along river and lake floodplains, but not for woodland around springs/seepage areas. The riverbanks and alluvial islands where the habitat is known to occur in the SAC are prone to periodic flooding
Woodland structure: dead wood	Number per hectare	At least 19 stems/ha of dead wood at least 20cm diameter	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem. Dead wood comprises old senescent trees, standing dead trees, fallen dead wood (including large branches) and rotten stumps of any tree species.
Woodland structure: veteran trees	Number per hectare	No decline	Veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local distinctiveness	Occurrence; population size	No decline in distribution and, in the case of red listed and other rare or localised species, population size	Includes ancient or long-established woodlands, archaeological and geological features as well as red listed and other rare or localised species. Buckthorn (*Rhamnus cathartica*) is present within Alluvial woodland in the Meelick area, with some individuals being remarkably large

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Woodland structure: indicators of overgrazing	Occurrence	All five indicators of overgrazing absent	There are five indicators of overgrazing within 91E0*: topiary effect on shrubs and young trees, browse line on mature trees, abundant dung, severe recent bark stripping, and trampling
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy	The target species for 91E0* are alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) and willows (*Salix* spp.)
Vegetation composition: typical species	Occurrence	At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present	A variety of typical native species should be present, depending on woodland type. The target species for 91E0* are alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) and willows (*Salix* spp.).
Vegetation composition: negative indicator species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent	Negative indicator species (i.e. any non-native species, including herbaceous species) should be absent or under control. In general, the following are the most common non-native invasive species in 91E0* woodlands: sycamore (*Acer pseudoplatanus*), beech (*Fagus sylvatica*) and horse-chestnut (*Aesculus hippocastanum*)
Vegetation composition: problematic native species	Percentage	Cover of common nettle (*Urtica dioica*) less than 75%	Common nettle (*Urtica dioica*) is a positive indicator species for 91E0* but, in some cases, it may become excessively dominant. Increased light and nutrient enrichment are factors which favour proliferation of common nettle.
1355 Otter *Lutra lutra*			
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. Favourable Conservation Status (FCS) target, based on 1980/81 survey findings, is 88% in SACs. Current range is estimated at 93.6%
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 282.1ha	No field survey. Areas mapped to include 10m terrestrial buffer along shorelines and river banks identified as critical for otters
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 146.7km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance

Table 5.4.3: River Shannon Callows SAC Conservation Objectives			
Attribute	**Measure**	**Target**	**Selected Notes**
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater
Barriers to connectivity	Number	No significant increase	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary. It is important that such commuting routes are not obstructed

River Shannon Callows SAC Conservation Status

According to the Habitat's Directive, favourable conservation status of a habitat is achieved when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined below.

According to the Habitat's Directive, favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The conservation statuses for the qualifying interests for the River Shannon Callows SAC are outlined below.

Table 10. Conservation status of the Qualifying interests of River Shannon Callows SAC

Conservation Status: River Shannon Callows SAC		
Code	**Qualifying Interest**	**Conservation Status***
6410	*Molinia* Meadows	Bad
6510	Lowland Hay Meadows	Bad
7230	Alkaline fens	Bad
8240	Limestone pavements	Inadequate
91E0	Alluvial Forests*	Bad
1355	Otter *Lutra lutra*	Favourable

**Sourced from the Status of EU Protected Habitats and Species in Ireland (NPWS, 2019a and 2019b)*

5.3 MIDDLE SHANNON CALLOWS SPA (SITE CODE: 004096)

This SPA is a long and diverse site which extends for approximately 50km from Athlone to Portumna. Water levels are greatly influenced by the small fall between Athlone and Portumna and by the weir at Meelick. The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. Other habitats which occur along the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. The diversity of semi-natural habitats present and the sheer size of the site attract an excellent diversity of bird species, including significant populations of several.

The site is a SPA under the E.U. Birds Directive, of special conservation interest for the species listed in the table below. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular

attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Table 11. Qualifying interests of the Middle Shannon Callows SPA

MIDDLE SHANNON CALLOWS SPA QUALIFYING INTERESTS		
CODE	COMMON NAME	SCIENTIFIC NAME
A038	Whooper Swan	*Cygnus cygnus*
A050	Wigeon	*Anas penelope*
A122	Corncrake	*Crex crex*
A140	Golden Plover	*Pluvialis apricaria*
A142	Lapwing	*Vanellus vanellus*
A156	Black-tailed Godwit	*Limosa limosa*
A179	Black-headed Gull	*Chroicocephalus ridibundus*
A999	Wetlands	-

The conservation objectives for the SPA site are to maintain or restore the favourable conservation condition of the bird species and habitat listed as Special Conservation Interests for this SPA. An excerpt from the site's Natura 2000 Data Form is included below.

This site is the largest area of semi-natural floodplain grassland in Ireland and has very many features of a natural ecosystem. Along with its main tributaries the River Suck and River Brosna, it represents one of the most important wetland systems in the country. It is of International Importance for wintering waterfowl as numbers regularly exceed the 20,000 threshold. Of particular note is the presence of an Internationally Important population of Whooper Swan. A further five species have populations of national importance: Mute Swan, Wigeon, Golden Plover, Lapwing and Black-tailed Godwit.

The Shannon callows are also of high importance for breeding birds. In particular, it has the largest concentration of Corncrake in Ireland. Quail, a very rare species in Ireland, also breeds in the grasslands. Several wader species, notably Lapwing, Snipe and Redshank, have important breeding populations though these have declined substantially since the 1980s. The scarce breeding species, Shoveler, nests in small numbers each year. The callows is one of the very few sites in Ireland where Black-tailed Godwit has bred. The habitats also support a range of ground nesting passerine species, notably Grasshopper Warbler and Skylark. In autumn and winter, Hen Harrier is a regular visitor.

The main site vulnerabilities, including any key pressures or trends within and around the Middle Shannon Callows SPA that have been identified as impacting upon the site, may be summarised as grazing, nautical sports and human habitation.

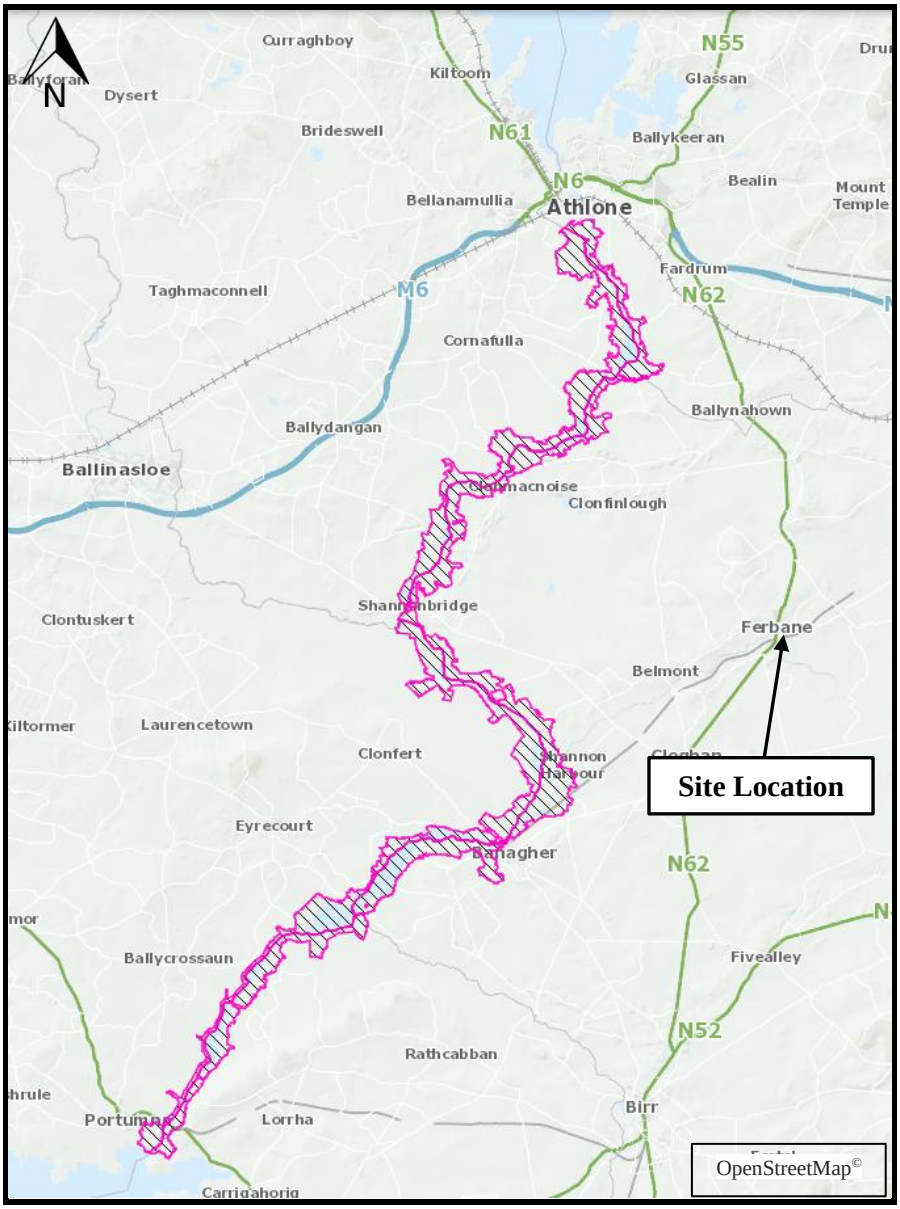

Figure 7. Middle Shannon Callows SPA

Table 12. Middle Shannon Callows SPA Conservation Objectives

MIDDLE SHANNON CALLOWS SPA CONSERVATION OBJECTIVES		
ATTRIBUTE	**MEASURE**	**TARGET**
[A038] Whooper Swan		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation
[A050] Wigeon		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation
[A122] Corncrake		
"The status of corncrake as a Species of Conservation Interest for the Middle Shannon Callows SPA is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this species"		
[A140] Golden Plover		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation
[A142] Lapwing		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation
[A156] Black Tailed Godwit		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
[A179] Black-headed Gull		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.

MIDDLE SHANNON CALLOWS SPA CONSERVATION OBJECTIVES		
ATTRIBUTE	**MEASURE**	**TARGET**
[A999] Wetlands		
Wetland habitat area	Hectares	No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation
Wetland habitat quality and functioning	Quality and function of the wetland habitat	No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation

Middle Shannon Callows SPA Conservation Status

According to the Habitat's Directive, favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Table 13. Conservation status of the Qualifying Interests of the Middle Shannon Callows SPA.

CONSERVATION STATUS		
CODE	**SPECIAL CONSERVATION INTEREST**	**NATIONAL CONSERVATION STATUS***
A004	Little Grebe	Amber List
A038	Whooper Swan	Amber List
A122	Corncrake	Red List
A140	Golden Plover	Red List
A142	Lapwing	Red List
A156	Black-tailed Godwit	Red List
A179	Black-headed Gull	Amber List
A999	Wetland and Waterbirds	

** Birds of Conservation Concern in Ireland 2020-2026 (G. Gilbert, A. Stanbury & L. Lewis, 2021*

6.0 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

6.1 DISTURBANCE TO PROTECTED HABITATS AND SPECIES

The proposed development does not directly impinge on any part of a European site, and as such would not be expected to impact upon a protected site through destruction of habitat, fragmentation of habitat, disturbance of habitat or direct reduction in species density. The River Brosna runs adjacent to the south boundary of the development site. There is a drainage ditch that crosses the site from north to south between the two grassland fields that flows into the River Brosna.

The habitats that will be removed to allow for the proposed development are mostly buildings and artificial surfaces and amenity spaces. The amenity areas are of low ecological value for protected fauna and therefore its loss would not be considered significant. The buildings to be demolished are of low ecological value for most protected fauna species, however these are of high ecological value for Swifts and Bats as these could use the buildings for nesting. The bat survey by Gannon & Associates has recorded some bat roosting activity within the buildings onsite and the report includes recommendations and mitigation measures to minimise any impacts on bats. The site layout includes the provision of swift nest boxes and bat boxes to compensate for the loss of this habitat. There will be removal of trees within the woodland

habitat to the south. However, trees to be removed are mostly non-native and its removal would not be expected to significantly affect the overall structure of the woodland. The woodland habitat onsite would offer limited roosting conditions for bats. The landscape plan includes the planting of native trees. Therefore, it is considered that any potential impact on protected fauna in the area due to tree removal would be temporary until the planting schedule becomes established.

It is not considered that the development site would contain the species and habitats for which the Ferbane Bog SAC has been designated as most of the site is comprised of grassland, buildings and artificial surfaces, and no peat-forming habitats are present. The nearest mapped examples of the Active raised bog habitat within the SAC is located approximately 1km the northwest. The habitats of the Ferbane Bog SAC are sensitive to water quality deterioration. Bogs are mostly fed by rainwater. However, these can be influenced by other inputs such as surface water runoff from surrounding areas (NPWS, 2015). Although the Ferbane Bog SAC is located less than 1km from the development site (ground distance), the hydrological distance via surface water is approximately 33km, being the SAC located upstream of the development site and in a different subcatchment (Shannon[Lower]_SC_030). Therefore, given the lack of direct hydrological connection, it is not anticipated that the proposed development would have the potential to affect the SAC due to a deterioration in water quality.

It is not considered that the development site would contain the species and habitats for which the River Shannon Callows SAC has been designated. No fens are present onsite. The nearest mapped example of Alkaline fens [7230] within the SAC is located approximately 32.4km (over 35km hydrologically downstream) to the southwest of the development site at the southern end of the SAC. There are water quality objectives set for this qualifying interest within the Conservation Objectives document. However, the Alkaline fens of the River Shannon Callows SAC are located a considerable distance downstream. Additionally, no works will take place within a drainage ditch or watercourse, and there are densely vegetated areas between the development site and the watercourse which would act as natural physical barriers/ infiltration areas, further preventing any potential surface water runoff from the development site into the watercourse during the construction phase. A buffer zone of 10m between the River Brosna and the construction works will be kept where possible. Drainage networks will be in place during the operational phase with no discharge into the watercourse as the surface water will be directed to a soakaway onsite. Therefore, it is not considered that the proposed development would have the potential to affect this qualifying interest of the River Shannon Callows SAC due to water quality deterioration.

The grasslands present onsite do not contain the key species associated with the *Molinia* meadows [6410] and Lowland hay meadows [6510] habitats. The nearest mapped examples of *Molinia* meadows and Lowland hay meadows are located approximately 11km (12.5km hydrologically downstream) and 10km (11km hydrologically downstream) to the southwest, respectively. No water quality objectives have been set for these habitats within the Conservation Objectives document of the SAC. These meadow habitats are terrestrial and therefore a potential deterioration in water quality would not be anticipated to significantly affect these habitats. Additionally, is not considered that the proposed development would have the potential to cause deterioration in water quality within the River Brosna and the SAC due to the absence of in-stream work, the proposed buffer zone of 10m from the river where possible, the presence of vegetation between the proposed works and the River, and the proosed drainage systems.

No Limestone pavements [8240] were present onsite. The nearest mapped example of this habitat within the SAC is located approximately 12.8km (25.5km upstream) to the northwest of the development site. No water quality objectives have been set for these habitats within the Conservation Objectives document of the SAC, and this habitat is not located in the borders of the watercourse.

There is a strip of woodland bordering the south boundary of the site which has been classified as riparian woodland to the east where Willow dominates, and mixed broadleaved woodland to the west where Ash and Sycamore dominate. Although there are a few species onsite that are typically associated with Alluvial forests [91E0], such as Ash (*Fraxinus excelsior*), Willow (*Salix* spp.), Alder (*Alnus glutinosa*), Hawthorn (*Crataegus monogyna*) and Yellow Iris (*Iris pseudacorus*), the site does not contain this protected habitat. There are less than 6 positive indicator species and there is one negative indicator species present: Sycamore (*Acer pseudoplatanus*) as per Perrin (2008). These are common species found throughout Ireland within riparian habitats. The nearest mapped example of Alluvial forests within the SAC is located approximately 16.2km (19km hydrologically downstream). A potential deterioration in water quality would not be anticipated to have a significant effect on this habitat.

While no sightings of Otter (*Lutra lutra*), or evidence of Otter holts, slides and spraints were recorded during the site walkover. There was evidence of a mammal footprint at the border of the river that was approximately 6-7cm long. This footprint was not clearly outlined but it comprised 4 toes with a potential 5th toe on the side. Given the shape and size of the footprints and given the location, it is most likely that of Otter (Couzens et al., 2021; Rhyder, 2021; Muir & Morris, 2013). Given that the proposed development site is adjacent to River Brosna, it is possible Otters forage in the general area where the site is located. NBDC has only one old record of Otter droppings in Ferbane, approximately 140m to the west (downstream) of the development site on the River Brosna (Chapman & Chapman, Otter Survey of Ireland 1982). Most of the Otter records along the Brosna River upstream and downstream of the development site date back to the 1980's. The borders of the River Brosna at its closest to the development site could potentially offer suitable conditions for Otter holts. However, Otter are more likely to choose areas of the river further away from the urban settlement to breed. Additionally, the proposed development will not require any excavation works in the banks of the River Brosna. There is limited tall vegetation onsite that could be suitable for Otter couches. Therefore, the proposed development would not have the potential to significantly affect Otter due to habitat loss or fragmentation. A potential deterioration in water quality could indirectly affect Otter by directly affecting their preys. However, as previously discussed, it is not considered that the proposed development would have the potential to have a significant impact on the water quality of the Lower Shannon catchment given the absence of works within a watercourse or drainage ditch, the presence of densely vegetated areas between the development site and the watercourse and the proposed drainage system.

It is not considered that the proposed development site would contain the bird species for which the Middle Shannon Callows SPA has been designated. The only freshwater habitat present onsite is a drainage ditch of low ecological value. Although the development site is located adjacent to a watercourse, it is mostly comprised of buildings, artificial surfaces and amenity grassland, and therefore would not offer suitable habitat for wetland and waterbirds. Given the availability of more suitable habitat in the general area, and given that the proposed buildings will replace areas that are already modified, it is not considered that the proposed development would significantly affect the qualifying interests of the SPA due to habitat loss or fragmentation. No water quality objectives have been set for these bird species. Most of these birds feed on aquatic vegetation or invertebrates, and therefore a potential deterioration in water

quality could indirectly affect these qualifying interests by directly affecting their diet. There is a strip of woodland between the area where works will take place and the River Brosna which would act as a physical barrier/ infiltration area, which would help minimise any potential surface water runoff from the proposed development into the watercourse during the construction phase. No works will take place within this watercourse or the drainage ditch. A buffer zona of 10m from the River Brosna will be kept where possible. Additionally, given the nature of the proposed works and the proposed drainage network, it is not anticipated that the proposed development would significantly affect the bird populations of the Middle Shannon Callows SPA due to a deterioration in water quality.

It is not envisaged that protected species would be significantly affected by the proposed development due to noise generated by the proposed development or by noise generated from the associated site traffic, given that the proposed development is located within a context that is already urban in nature, with other residential dwellings in the immediate vicinity. While there would be increased noise emissions during the construction phase, these would not be considered to pose a significant risk as fauna within the area would be accustomed to noises associated with residential, commercial and vehicular activities.

The potential disturbance on protected habitats and species due to dust during demolition works would not be considered significant due to the distance between the development site and the nearest Natura 2000 sites. Dust from demolition works have the potential to increase sedimentation within watercourses. However, a buffer zone of 10m from the watercourse will be kept where possible and there is strip of forest with tall vegetation between the buildings to be demolished and the watercourse, which would further prevent any dust from the demolition works from reaching the watercourse. The potential disturbance on protected habitats and species due to dust during the construction works would not be considered significant given the limited soil disturbing works required for the proposed development. It is not considered that the operational phase of the development would have the potential to significantly affect designated sites due to air emissions given the nature of the development.

The proposed lighting will be sensitive to nocturnal species with luminaires angled away from trees/hedgerows and from the watercourse. Therefore, it is not considered that the proposed development would have the potential to have a significant impact on protected species due to light spillage.

Materials containing asbestos have been found in the buildings to be removed. Mammals have been demonstrated to be susceptible to airborne Asbestos the same way humans are (Wagner, 1963; Holt, 1974). The ecological significance of asbestos released in water is yet unclear. However, fish have been reported to bioaccumulate asbestos fibres (Marengo et al., 2022). According to the Asbestos report prepared by CMSE Consultancy, any materials containing asbestos will be removed by a licensed asbestos contractor before demolitions works commencing and all asbestos removal works will comply with the S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. Therefore, the proposed development would not be anticipated to have a significant impact on the qualifying interests of the SAC/SPA due to airborne or waterborne asbestos.

It is therefore considered that the proposed development would not result in any significant risk to the protected habitats and species of the Ferbane Bog SAC, River Shannon Callows SAC or Middle Shannon Callows SPA due to habitat fragmentation or loss, disturbance or reduction in species density or diversity.

6.2 INVASIVE SPECIES

Under Regulation 49(2) of the European Communities Birds and Natural Habitats) Amendment (S.I. No. 355 of 2015) of Regulations 2011-2015, save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to any plant which is included in Part 1 of the Third Schedule shall be guilty of an offence. Materials containing invasive species such as Japanese Knotweed are considered "controlled waste", and, as such, there are legal restrictions on their handling and disposal. Under Regulation 49(7) of the European Communities Birds and Natural Habitats) Amendment (S.I. No. 355 of 2015) of Regulations 2011-2015, it is a legal requirement to obtain a license to move "vector materials" listed in the Third Schedule, Part 3.

Table 14. National Biodiversity Data Centre records of high impact invasive species within 10km Square (N12) of the proposed development

INVASIVE FLORA SPECIES
Nuttall's Waterweed (*Elodea nuttallii*)

The spread of invasive plant and animal species can negatively impact on the conservation objectives of certain Annex I/II habitats and species designated within the SACs/SPAs.

There are no Third Schedule invasive species within or adjacent the site boundary. One young individual of the *Rhododendron* genus has been identified within the Ornamental shrub habitat to the south of the existing buildings. According to the Northern Ireland Environment Agency (2020), the third schedule invasive species *Rhododendron ponticum* is "*Relatively easy to identify by its distinctive flowers but can be confused with Cherry Laurel and horticultural varieties of Rhododendron. However, horticultural varieties of Rhododendron are relatively rarely found in the wild".* The species found onsite was not in flower and it was considered to be a garden variety as it was present in an area of ornamental shrubs and given that no other individuals were found in the area. There are also no NBDC records of this species within the 10km tetrad where the proposed development site is located.

Therefore, there would be no significant risk to protected habitats and species as a result of spread of invasive species from the site. The risk of invasive species being introduced onto the site during the operational phase of the project is considered to be low, with no import of materials with the potential to contain invasive flora species. Any imported materials will be thoroughly checked and screened before being imported into the site.

The Landscape Plan prepared by LUC includes the planting of native and non-native non-invasive species. Therefore, there is no risk of invasive species being introduced onto the site during landscaping works.

6.3 POTENTIAL IMPACTS ON WATER QUALITY

The proposed development is located within the Brosna_SC_060 sub-catchment (ID: 25A_8) which is part of the Lower Shannon Catchment (ID: 25A). The nearest EPA mapped

watercourse is the River Brosna (EPA Code: 25B09 – Order 6) which runs adjacent to the south boundary of the development site. Although the Ferbane Bog SAC is located less than 1km from the development site (ground distance), the hydrological distance via surface water is approximately 33km, being the SAC located upstream of the development site and in a different subcatchment (Shannon[Lower]_SC_030). Therefore, there is no direct hydrological connection between the development site and the Ferbane Bog SAC. The River Shannon Callows SAC and Middle Shannon Callows SPA are located approximately 11km downstream from the development site.

There is a drainage ditch that crosses the site from north to south between the two grasslands which is hydrologically connected to the River Brosna forming a direct hydrological connection to the River Shannon Callows SAC and Middle Shannon Callows SPA.

During the construction phase of projects, a deterioration in water quality can arise through the release of suspended solids during soil disturbance works, the release of uncured concrete and the release of hydrocarbons (fuels and oils). The risk of water quality deterioration as a result of uncured concrete would be reduced, given that precast concrete / blockwork and shuttering would be used where possible and surplus concrete would be returned to the batching plant. Construction works would be confined to the proposed development footprint, with no works taking place within a watercourse or drainage ditch.

In the event suspended solids become entrained in surface water run-off during the construction phase, there is considered to be no significant risk of impact on water quality as suspended solids would percolate to the ground. The presence of the existing vegetated areas between the development site and the River Brosna would act as physical barriers/ infiltration areas, minimizing any potential surface water runoff from the development site into the watercourse.

The closest construction works to the River Brosna will be for the installation of a new raised deck along the boundary of the River. It will be installed with screw piles to support the structure. No concrete will be used. No excavation works of the river banks will be necessary for the installation of the raised deck therefore there would be no significant risk to water quality due to a release of suspended solids. All other construction works will be greater than 10m from the River Brosna as per the site layout. A new bridge will be placed over the existing drainage ditch onsite. No excavation works will be required for the installation of this bridge. The proposed bridge will be cemented in place away from the banks of the drainage ditch. Shuttering will be used to form the base and prevent any cement from entering the drainage ditch or watercourse. Given the absence of instream works, the design of the new deck and bridge, and distance of proposed construction works, it is not considered that the proposed development would have any significant impact on any Natura 2000 site downstream due to a deterioration in water quality during the construction phase.

During the operational phase, surface water comprised of rainwater runoff from roofs and hardcore areas will be collected by a new proposed network of pipes and will ultimately be discharged into a new proposed soakaway close to the south boundary. A hydrocarbon interceptor will be installed upstream of the soakaway.

Foul water from the proposed development will be collected by the existing foul drainage network. A new proposed Small Foul Pump Station will be installed close to the north boundary. The foul water from the proposed development will ultimately be directed to the Ferbane WWTP (D0147) which currently has available capacity according to the Offaly County WWTP Capacity Register. According to the most recent environmental report from

2023, the ambient monitoring results of the Ferbane WWTP (D0147) do not meet the required ELVs for Ammonia. However, the report determined that the "*discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status*".

The development site is partly located within an area of low to medium risk of flooding. However, no past flood events have been recorded onsite. The proposed development is located in an area that is already occupied by built structures. Therefore, it is not expected that the proposed development would have the potential to alter the hydrological regime of the Lower Shannon Catchment. Additionally, due to the nature of the proposed development, it is highly unlikely that floodwaters would come in contact with any significant hazardous or polluting substances onsite which could affect water quality. The materials containing asbestos onsite will be removed by a licensed contractor prior to demolition works commencing, according to the Asbestos report. The demolition waste will be removed by a licenced contractor. Therefore, the development site would not be anticipated to pose a significant risk upon a Natura 2000 site as a result of floodwaters.

It is therefore considered that, due to the nature of the development with no works within a watercourse or drainage ditch, the presence of vegetation areas between the development site and the watercourse, the distance between the proposed works and the watercourse, and the proposed surface/foul water drainage network, the proposed development would not pose a significant risk upon the Ferbane Bog SAC, River Shannon Callows SAC or Middle Shannon Callows SPA due to a deleterious effect on water quality during either the construction or operational phases.

6.4 IN COMBINATION EFFECTS

The following plans and projects were reviewed and considered for in-combination effects with the proposed development:

- Offaly Development Plan 2021-2027.
- Proposed and permitted developments in the area available on the Offaly County Council planning system.

The development site is located approximately close to the centre of Ferbane. According to the Offaly Development Plan 2021-2027 Ferbane is a smaller town of Offaly County. The site is accessed from the Main Road (N62) and it will also be accessed from the Ballycumber Road to the north via a new proposed entrance. The N62 provides connection to Athlone to the north and Birr to the south. The area surrounding the development site mainly consists of residential premises and amenity areas, with the River Brosna to the south. The following plans and projects were reviewed and considered for in-combination effects with the proposed development.

Table 15. Recent planning applications close to the development site.

APPLICATION NO.	DEVELOPMENT TYPE	OUTCOME	APPROXIMATE DISTANCE
21479	upgrade of upstairs into a self-contained apartment unit, to include access from main street, reconfiguration of stair access, wc	Granted – Conditional	Adjacent

APPLICATION NO.	DEVELOPMENT TYPE	OUTCOME	APPROXIMATE DISTANCE
	upgrade, new shower room and general reconfiguration and all ancillary works		
2215	extension and modification of existing public licenced premises to include: creating access from existing licenced premises to attached unused shop unit, change of use of shop unit from drapery retail to licenced premises use, reconfiguration and upgrade of existing ladies and gents toilets, upgrade and configuration of former ground floor living space into kitchen and preparation area with storage & staff facilities and all ancillary works	Granted – Conditional	Adjacent
18198	construction of an extension to the existing dwelling house and all ancillary site works	Granted – Conditional	Adjacent
17107	change of use of pub to physiotherapy clinic and sports injury clinic and alterations and extensions to same	Granted – Conditional	15m W
20394	construction of a two storeyed semi-detached house block (2 houses), new entrances and connection to existing foul and surface water sewer	Granted – Conditional	38m W
23347	internal and external works carried out in the last 20 years to the building. retention permission is sought for the alterations to the two no. windows and existing entrance on the east elevation, the construction of two no. windows on the north elevation, and to retain the construction of the rear extension (73 sq m) along the west elevation, as well as the internal block walls and partition walls as shown on the existing floor plans lodged with the application. permission is also sought for the change of use from existing public house and restaurant to residential units. the proposed development will consist of a total of eight no. residential units, two no. 2-bedroom units and three no. 1 bedroom units on the ground floor, and two no. 2-bedroom units and one no. 1-bedroom unit on the first floor. permission is also sought for the demolition of the existing rear extension and all associated site works. (the proposed development consist of works to a protected structure ref 20-06)	Granted – Conditional	50m NW
17409	work to the protected structure formally flemings shop, namely; demolition of the existing circa 1980's single storey extension, construction of a two-storey extension to the rear, restoration of the stone slate roof, renovation and preservation of the existing protected structure and any required ancillary works	Granted – Conditional	94m NW

APPLICATION NO.	DEVELOPMENT TYPE	OUTCOME	APPROXIMATE DISTANCE
21405	proposed alterations to existing north elevation, consisting of, the removal of 3 no emergency exit doors and 1 window to existing demonstration room and replacement with new windows and rendered walls, planning permission for proposed construction of a new wall to north elevation at existing exit 4 and installation of a new roof vent, planning permission for proposed internal alterations, consisting of, the construction of 3 store rooms and the reconfiguration of the existing demonstration room to provide a general classroom, and all associated site works	Granted – Conditional	86.9m SW
2178	erection of 18m lighting poles with lights at top to provide illumination for games on the existing soccer pitch, associated ducting and wiring and all ancillary works	Granted – Conditional	224m SW
2069	the refurbishment of the existing two storey dwelling including application of external insulated render to full external façade, alterations to roof at southern façade, glazing and velux window to western elevation	Granted – Conditional	184m S

Most of the recent planning applications in the vicinity of the development site are for amendments/extensions to existing buildings, and the majority of these have been granted permission subject to conditions.

The proposed heating system for this development is air to water heat pump. Air emissions would be typical of a community centre being primarily from heating and therefore low impact in-and-of-itself. In-combination residential impacts would be controlled by national energy policies, grant schemes and motor fuel emission targets. During construction works the potential impact on air quality would not be significant due to the nature of the proposed works. It is considered that there would be no cumulative air quality impacts which would pose a significant risk to designated sites.

Continued implementation of the Water Framework Directive would result in achieving, or maintaining, improvements to water quality in the Lower Shannon Catchment. Developments such as this proposed development could act in combination with existing environmental pressures on the Lower Shannon Catchment including agriculture, anthropogenic, domestic and urban waste water, urban run-off, industry (including extractive) and forestry. However, as noted in Section 6.3, it is not considered that the development would pose a significant risk upon the Ferbane Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA or any other Natura 2000 site due to a deleterious effect on water quality, during either the construction or operational phase.

As discussed in Sections 6.1 – 6.3 above, it is considered that there would be no significant risk to any Natura 2000 site owing to the proposed development. As there are no anticipated significant risks from the development and proposed works and given the nature of the

activities in the area, it is considered that there would be no cumulative water, noise or air impacts which would pose a significant risk to designated sites or species.

7.0 SCREENING STATEMENT AND CONCLUSIONS

This report identified the presence of European sites (Natura 2000) within the potential zone of influence of the proposed development and noted that the development site is approximately 840m from Ferbane Bog SAC (Site Code: 000575) and 9.9km from the River Shannon Callows SAC (Site Code: 000216) and Middle Shannon Callows SPA (Site Code: 004096). The potential for impacts to European sites as a result of the proposed development such as potential water quality impacts, introduction of invasive species, habitat destruction and impacts from noise and dust were considered and the level of risk posed assessed.

This report presents a Stage 1 Appropriate Assessment Screening for the Proposed Development, outlining the information required for the competent authority to screen for appropriate assessment and to determine whether or not the Proposed Development, either alone or in combination with other plans and projects, in view of best scientific knowledge, is likely to have a significant effect on any European or Natura 2000 site.

During Stage 1 Screening for Appropriate Assessment, it was considered that there would be no potential for a significant impact upon the qualifying interests / special conservation interests of the Ferbane Bog SAC, River Shannon Callows SAC or Middle Shannon Callows SPA during both the construction and operational phase of the proposed development.

Accordingly, having carried out the Stage 1 Appropriate Assessment Screening, the competent authority may determine that a Stage 2 Appropriate Assessment of the Proposed Development is not required as it can be excluded, on the basis of objective scientific information following screening under this Regulation 42 of the European Communities Birds and Natural Habitats) Amendment (S.I. No. 355 of 2015) of Regulations 2011-2015, that the Proposed Development, individually or in combination with other plans or projects, will not have a significant effect on any European site.

It can be objectively concluded that no significant effects arising from the proposed development are likely to occur in relation to the Ferbane Bog SAC, River Shannon Callows SAC or Middle Shannon Callows SPA or indeed any other Natura 2000 site in the wider hinterland.

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APPENDIX A

ALL QUALIFYING INTERESTS

FERBANE BOG SAC POTENTIAL IMPACTS			
QUALIFYING INTEREST	**LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
[7110] Active raised bogs	The proposed development is located within the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2021). The nearest examples of these qualifying interests are located approximately 1km (33km hydrologically upstream) to the northwest of the development site (NPWS, 2015). There are water quality objectives set for this habitat within the Conservation Objectives document of the SAC. However, the SAC is located a considerable distance upstream of the development site in a different sub-catchment. Therefore, the proposed development does not have the potential to significantly affect this qualifying interest due to water quality deterioration.	No	No
[7120] Degraded raised bogs	The proposed development is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2021). This habitat is currently unmapped within the Conservation Objectives document of the SAC but according to the Site Synopsis it occurs on the drier margins of the high bog dome (NPWS, 2013). This habitat is located at least 840m (33km hydrologically upstream) to the northwest of the development site. This habitat is sensitive to water quality deterioration. However, the SAC is located a considerable distance upstream of the development site in a different sub-catchment. Therefore, the proposed development does not have the potential to significantly affect this qualifying interest due to water quality deterioration.	No	No
[7150] *Rhynchosporion* depressions	The proposed development is located within the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2021). This habitat is currently unmapped within the Conservation Objectives document of the SAC. According to the Site Synopsis it occurs in wet depressions, pool edges and erosion channels (NPWS, 2013). This habitat is located at least 840m (33km hydrologically upstream) to the	No	No

FERBANE BOG SAC POTENTIAL IMPACTS			
QUALIFYING INTEREST	**LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
	northwest of the development site. This habitat is sensitive to water quality deterioration. However, the SAC is located a considerable distance upstream of the development site on a different sub-catchment. Therefore, the proposed development does not have the potential to significantly affect this qualifying interest due to water quality deterioration.		

RIVER SHANNON CALLOWS SAC POTENTIAL IMPACTS			
QUALIFYING INTEREST	**LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
[6410] *Molinia* meadows	The development is located outside the current known distribution and favourable reference range of these qualifying interests (NPWS, 2019a). The nearest examples of these qualifying interests are located approximately 11km (12.5km hydrologically downstream) southwest from the proposed development (NPWS, 2022). Given the considerable distance it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests. In addition, Molinia meadows are a terrestrial habitat, therefore a potential deterioration in water quality during construction works would not be anticipated to significantly affect this habitat.	No	No
[6510] Lowland hay meadows	The development is located outside the current known distribution and favourable reference range of these qualifying interests (NPWS, 2019a). The nearest examples of these qualifying interests are located approximately 10km (11km hydrologically downstream) southwest of the proposed development (NPWS, 2022). Given the considerable distance it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests. In addition, Lowland hay meadows are a terrestrial habitat,	No	No

RIVER SHANNON CALLOWS SAC POTENTIAL IMPACTS			
QUALIFYING INTEREST	**LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
	therefore a potential deterioration in water quality during construction works would not be anticipated to significantly affect this habitat.		
[7230] Alkaline Fens	The proposed development is located within the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The full extent of these qualifying interests has not yet been mapped (NPWS, 2022). 32.4km (over 35km hydrologically downstream) to the southwest of the development site at the southern end of the SAC. However, further unsurveyed areas may be present along the SAC. There are water quality objectives set for this habitat within the Conservation Objectives document of the SAC.	Yes	Yes
[8240] Limestone Pavement	The development is located outside the current known distribution and favourable reference range of these qualifying interests (NPWS, 2019a). The nearest examples of these qualifying interests are located approximately 12.8km (25.5km upstream) to the northwest of the development site (NPWS, 2022). Given the considerable distance and terrestrial nature of this habitat it is not anticipated that the development would have the potential to significantly affect these qualifying interests.	No	No
[91E0] Alluvial Woodland	The proposed development is located within the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located approximately 16.2km (19km hydrologically downstream) to the southwest of the development site. The full extent of these qualifying interests has not yet been mapped (NPWS, 2022). However, water quality is not listed as a conservation objective for this qualifying interest. Therefore, a potential deterioration in water quality would not be anticipated to significantly affect this qualifying interest.	No	No
[1355] Otter (*Lutra lutra*)	The development is located within the current known distribution and favourable reference range of these qualifying interests (NPWS, 2019a). Otter is widespread in the River Shannon Callows SAC (NPWS, 2022). NBDC has only one old record of Otter droppings in Ferbane, approximately 140m to the	Yes	Yes

RIVER SHANNON CALLOWS SAC POTENTIAL IMPACTS			
QUALIFYING INTEREST	**LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
	west (downstream) of the development site on the River Brosna (Chapman & Chapman, Otter Survey of Ireland 1982). Most of the Otter records along the Brosna River upstream and downstream of the development site date back to the 1980's. A potential deterioration in water quality could indirectly affect this qualifying interest by causing a reduction in prey populations and availability.		

MIDDLE SHANNON CALLOWS SPA POTENTIAL IMPACTS			
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT**	**LISTED FOR FURTHER EXAMINATION IN APPENDIX B**
[A038] Whooper Swan (*Cygnus cygnus*)	Wintering species favours lakes, estuaries and sheltered coasts, marshes, flooded lands, brackish lagoons and coastal bays. Diet includes plant material such as leaves, stems and roots of aquatic plants, grasses, sedges and horsetails. May also may also supplement their diet with marine and freshwater mussels. Water quality would have an impact on this species.	Yes	Yes
[A050] Wigeon (*Anas Penelope*)	Wintering species shows a preference for coastal saltmarshes, freshwater, brackish and saline lagoons, flooded grasslands, estuaries, intertidal mudflats and other sheltered marine habitats. Its diet is leaves, seeds, stems and root bulbs of pond weeds and fine grasses. Water quality would have an impact on this species.		
[A140] Golden Plover (*Pluvialis apricaria*)	Wintering species frequents freshwater wetlands, moist grasslands, pastures, agricultural land and highland steppe also foraging on tidal shores, coastal rocky outcrops, intertidal flats and saltmarshes, shallow bays and estuaries. Its diet consists predominantly of insects, crustaceans and some plant material. Water quality would have an impact on this species.		
[A142] Lapwing (*Vanellus vanellus*)	Wintering species found on riverbanks, lake shores, fresh and saline marshes, drainage ditches, estuaries and mudflats. Its diet consists of adult and larval		

	insects, spiders, snails, earthworms, frogs. Water quality would have an impact on this species.		
[A156] Black-tailed Godwit (*Limosa limosa*)	Wintering species in sheltered estuaries and lagoons with large intertidal mudflats, sandy beaches, saltmarshes and salt-flats. Its diet consists of adult and larval insects (especially beetles), annelid and polychaete worms, molluscs, ragworms, crustaceans, spiders, fish eggs, and the spawn and tadpoles of frogs. Water quality would have an impact on this species.		
[A179] Black-headed Gull (*Chroicocephalus ridibundus*)	Wintering species is most common in coastal habitats and tidal inshore waters, showing a preference for inlets or estuaries with sandy or muddy beaches, and generally avoiding rocky or exposed coastlines. It may also occur inland during this season, frequenting ploughed fields, moist grasslands, urban parks, sewage farms, refuse tips, reservoirs, ponds and ornamental waters. Its diet consists predominantly of aquatic and terrestrial insects, earthworms and marine invertebrates (e.g. molluscs, crustaceans and marine worms) although it may also take fish (usually dead or sick), rodents, and agricultural grain. During the non-breeding season, the species may rely heavily on artificial food sources provided by man, especially in Western Europe and often scavenges from refuse tips during this period. Water quality would have an impact on this species.		
[A122] Corncrake	Summer visitor from April to September. Breeding is from mid May to early August. Nests on the ground in tall vegetation. Most nests are in hay fields. Corncrakes eat about four-fifths animal food and one-fifth vegetable matter. The animal part consists mainly of insects, but slugs, snails and earthworms are also eaten. Plant material taken includes seeds of grasses and sedges, eaten in larger quantities in the autumn. Water quality would not impact this species.	No	No

APPENDIX B

QUALIFYING INTERESTS WITHIN THE PROJECT ZONE OF INTEREST

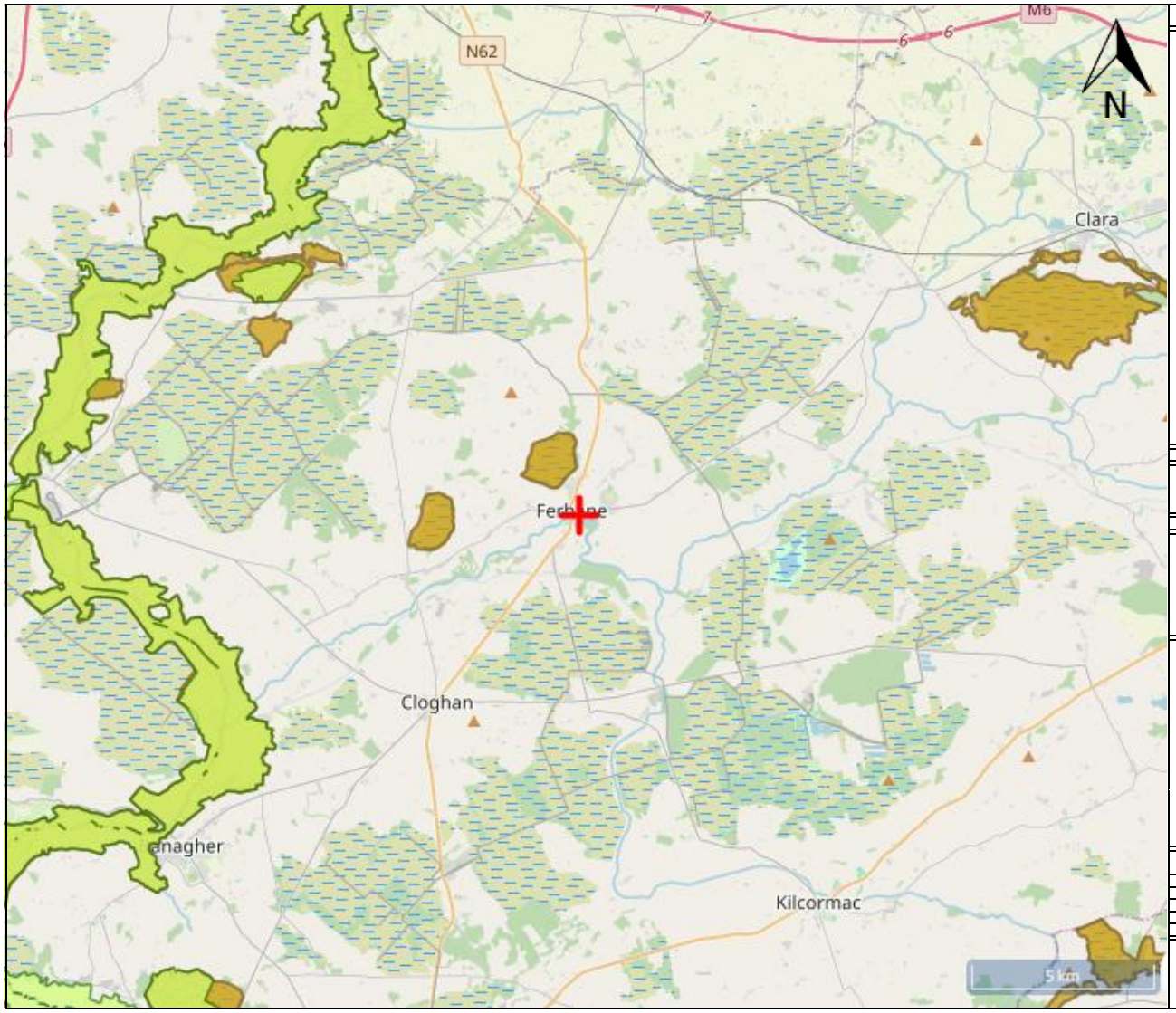
SPECIES	STATUS THREATS AND PRESSURES	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
[7230] Alkaline fens	• Abandonment of grassland management. • Intensive grazing or overgrazing by livestock. • Drainage. • Modification of hydrological flow. • Natural succession resulting in species composition change. • Mixed source pollution to surface and ground waters. • Abstraction from groundwater, surface water or mixed water. Agricultural activities generating diffuse pollution to surface or ground waters. • Droughts and decrease in precipitation due to climate change. Increases or changes in precipitation due to climate change.	<u>Key Conservation Measures</u> Some sites have had boardwalks installed to help encourage members of the public to engage with the area (and thus potentially to get involved in its conservation), and also to manage public use of the sites. Signage at sites also has a similar function. • Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures. • Adapt mowing, grazing and other equivalent agricultural activities. • Stop mowing, grazing and other equivalent agricultural activities. • Reduce diffuse pollution to surface or ground waters from agricultural activities. • Reduce impact of mixed source pollution. • Reduce impact of multi-purpose hydrological changes. • Restore habitats impacted by multi-purpose hydrological changes. Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes.	No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the proposed site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.

SPECIES	STATUS THREATS AND PRESSURES	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
[1355] *Lutra lutra* (Otter)	None listed	A significant impact on water quality could indirectly impact upon this qualifying interest by causing a reduction in prey populations and availability. <u>Key Conservation Measures</u> • The network of mammal underpasses on new roads are examples of positive measures that have been taken to reduce otter roadkill. • Diffuse and point-source pollution of freshwaters and coastal waters is likely to impact otters indirectly through changes to prey abundance.	No potential for a significant impact on water quality as there is no potential for groundwater contamination or significant runoff from the proposed site that would enter any watercourse that is hydrologically connected to the SAC
[A038] Whooper Swan (*Cygnus cygnus*) [A050] Wigeon (*Anas Penelope*) [A140] Golden Plover (*Pluvialis apricaria*) [A142] Lapwing (*Vanellus vanellus*)	• Deterioration & loss of habitat • Hunting • Overfishing of food source • Impact on water quality • Disturbance of nesting birds • Residential or recreational activities and structures generating marine pollution	A significant impact on water quality could indirectly impact upon this qualifying interest by causing a reduction in prey populations and availability. <u>Key Conservation Measures</u>	No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or

SPECIES	STATUS THREATS AND PRESSURES	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
[A156] Black-tailed Godwit (*Limosa limosa*) [A179] Black-headed Gull (*Chroicocephalus ridibundus*)		• Reduce/eliminate marine pollution from marine aquaculture; • Protect from hunting and disturbance; • Protect habitat for foraging and nesting birds Reduce/eliminate point source pollution to surface or ground waters from industrial, commercial, residential and recreational areas and activities	hydrocarbons) from the proposed site that would enter any watercourse or drainage system that is hydrologically connected to the SPA.

APPENDIX C

PROTECTED SITES AND SITE PLANS



Notes

– Location of Development

- SAC

- SPA

Project Title:

Protected Sites Map

Client Name:

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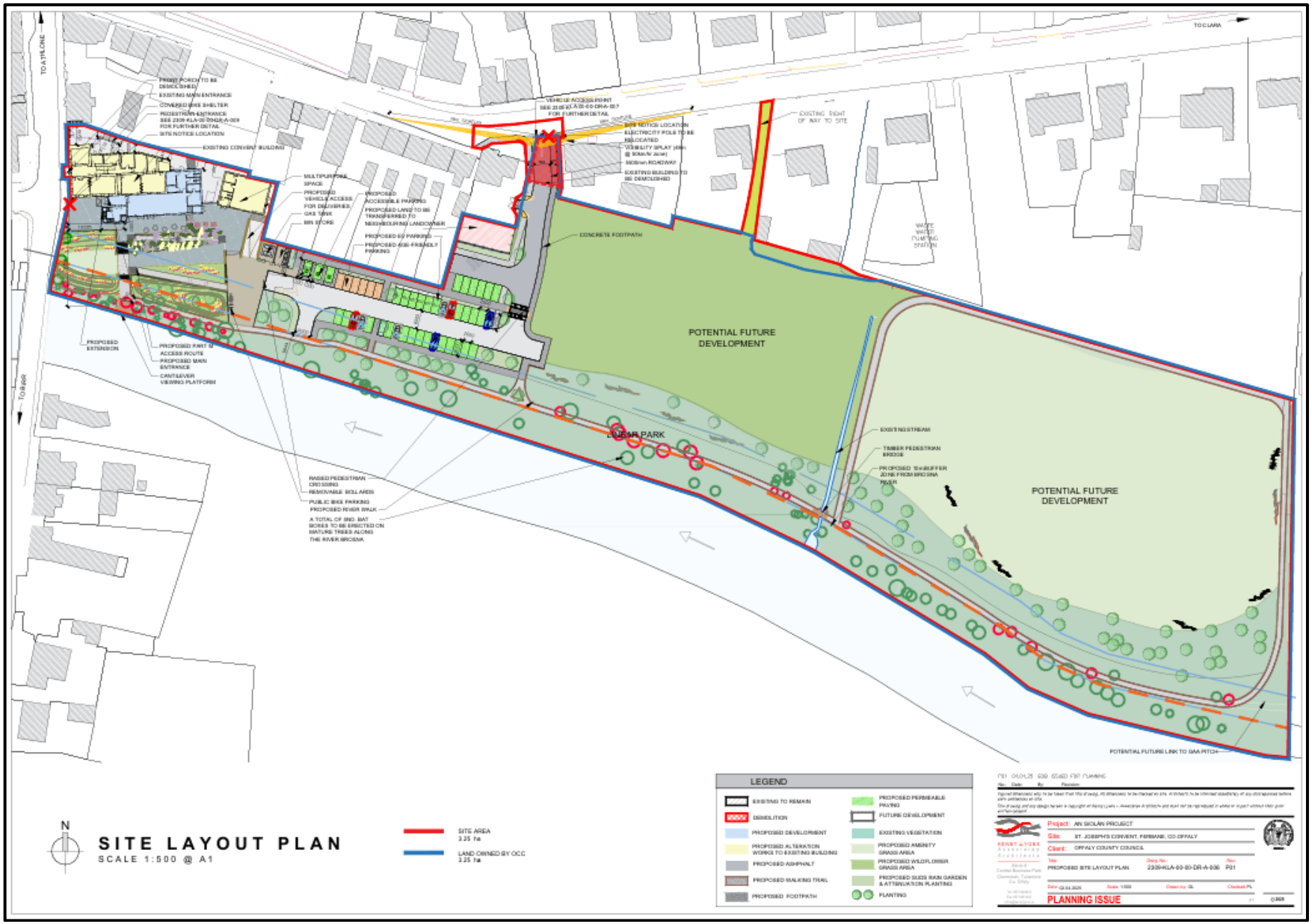
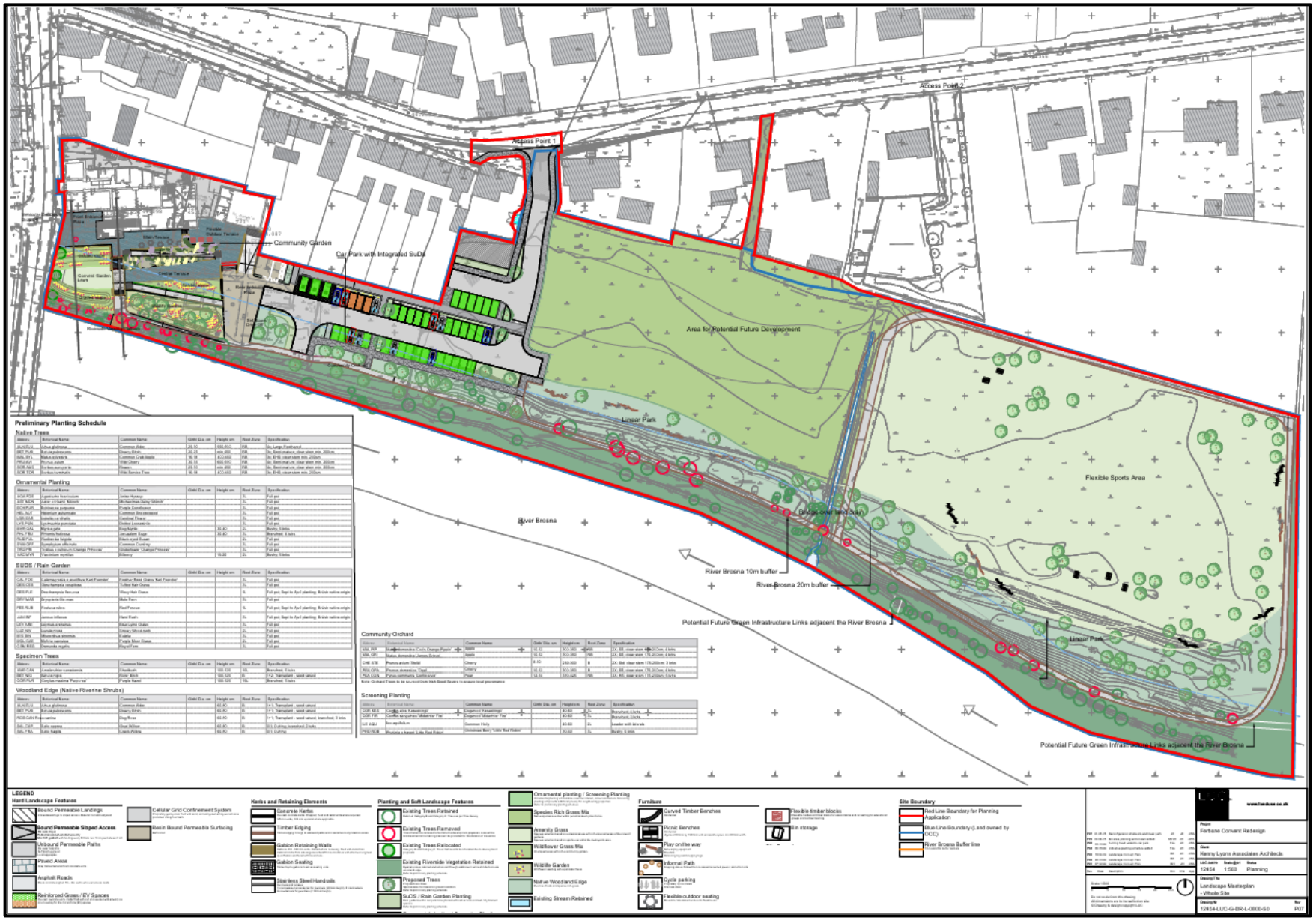
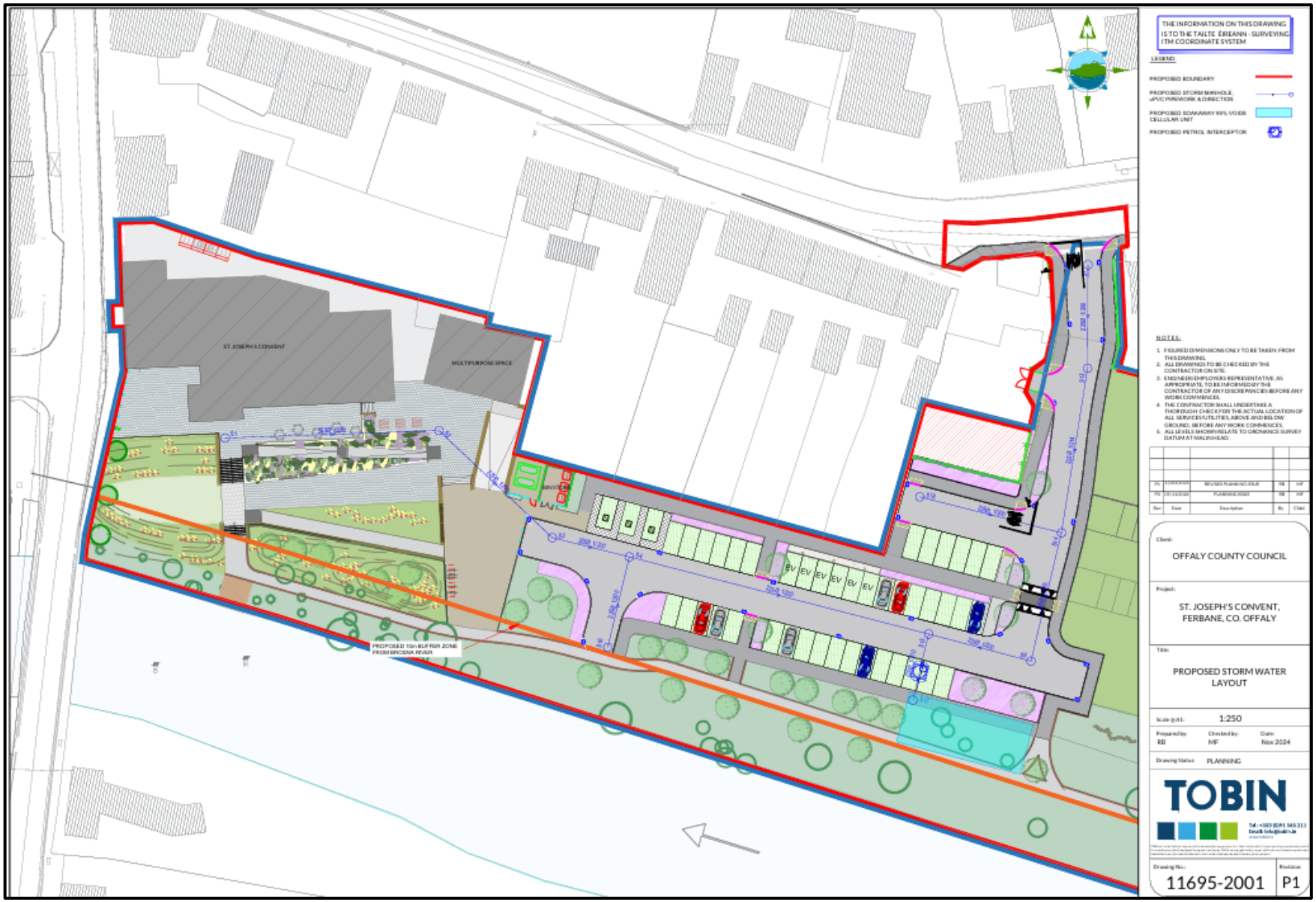
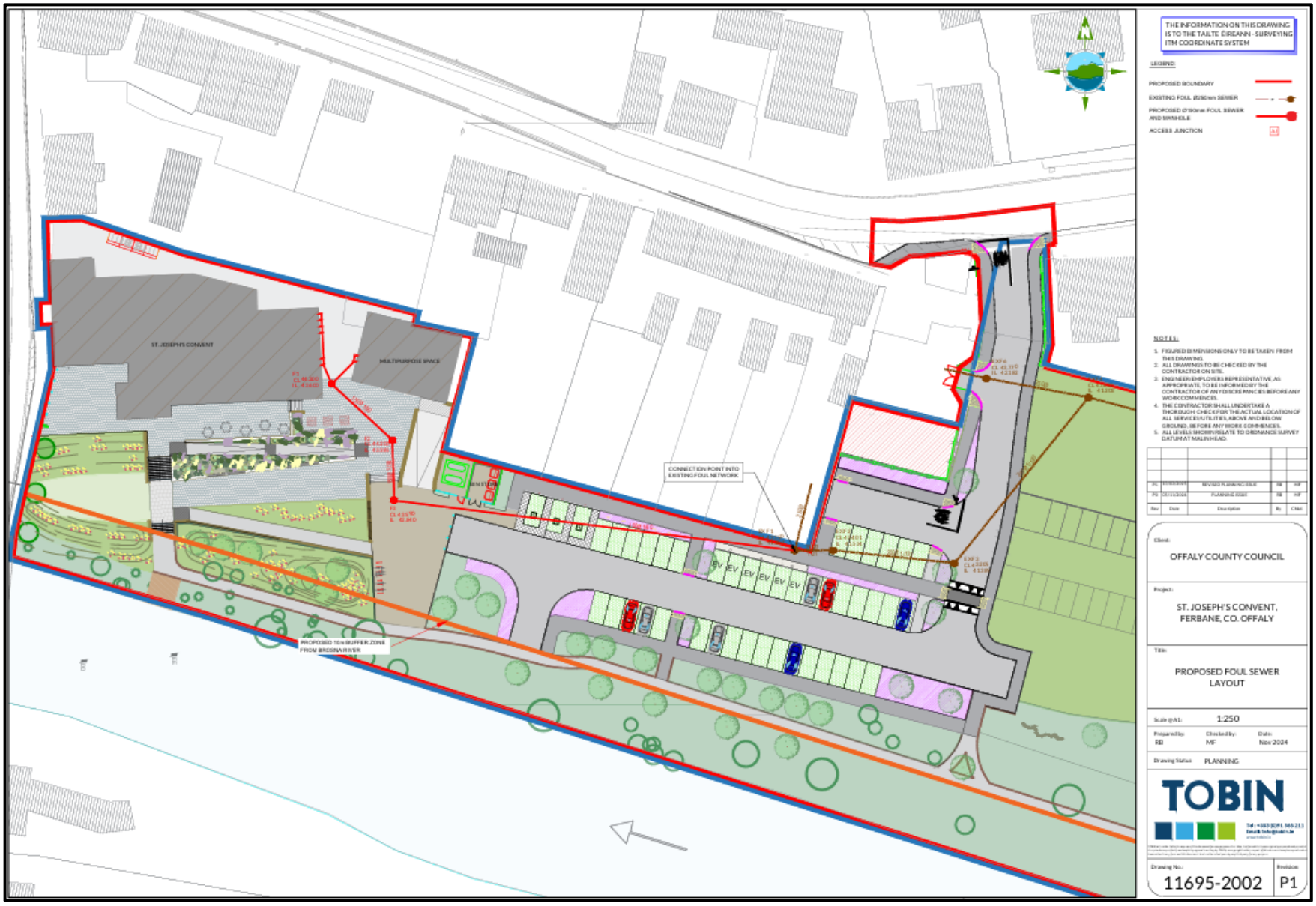
Drawing Status:	**Scale:**	NTS	A4
Report	**Datum:**		EPA Maps
Drawing Number:	**Drawn:**		PE
AA_10223	**Checked:**		MF
Revision:	**Approved:**		-
	Date:		22/08/2024


TO ATHLONE
TO TIMAHOE
TO CLARA
EXISTING CONVENT BUILDING
EXISTING MAIN ENTRANCE
COVERED BIKE SHELTER
SITE NOTICE LOCATION
EXISTING RIGHT OF WAY TO SITE
CONCRETE FOOTPATH
MULTIPURPOSE SPACE
PROPOSED VEHICLE ACCESS FOR DELIVERIES
GAS TANK
BIN STORE
PROPOSED ACCESSIBLE PARKING
PROPOSED LAND TO BE TRANSFERRED TO NEIGHBOURING LANDOWNER
PROPOSED 60 PARKING
PROPOSED AGE-FRIENDLY PARKING
EXISTING BUILDING TO BE DEMOLISHED
POTENTIAL FUTURE DEVELOPMENT
PROPOSED EXTENSION
PROPOSED PART M ACCESS ROUTE
PROPOSED MAIN ENTRANCE
CANTILEVER VIEWING PLATFORM
RAISED PEDESTRIAN CROSSING
REMOVABLE BOLLARDS
PUBLIC BIKE PARKING
PROPOSED RIVER WALK
EXISTING STREAM
TIMBER PEDESTRIAN BRIDGE
POTENTIAL FUTURE DEVELOPMENT
POTENTIAL FUTURE LINK TO GAA PITCH
N
SITE LAYOUT PLAN
SCALE 1:500 @ A1
SITE AREA 3.25 ha
LAND OWNED BY OCC 3.25 ha
LEGEND
EXISTING TO REMAIN
DEMOLITION
PROPOSED DEVELOPMENT
PROPOSED ALTERATION WORKS TO EXISTING BUILDING
PROPOSED ASHPHALT
PROPOSED WALKING TRAIL
PROPOSED FOOTPATH
PROPOSED PERMEABLE PAVING
FUTURE DEVELOPMENT
EXISTING VEGETATION
PROPOSED AMENITY GRASS AREA
PROPOSED WILDFLOWER GRASS AREA
PROPOSED SUDS RAIN GARDEN & ATTENUATION PLANTING
PLANTING
Project: AN SCOLAN PROJECT
Site: ST. JOSEPH'S CONVENT, FERBANE, CO.OFFALY
Client: OFFALY COUNTY COUNCIL
PROPOSED SITE LAYOUT PLAN
2339-KLA-00-00-DR-A-006 P01
PLANNING ISSUE


Access Point 2
Access Point 1
Community Garden
Car Park with Integrated SuDs
Area for Potential Future Development
Linear Park
River Brosna
Flexible Sports Area
River Brosna 10m buffer
River Brosna 20m buffer
Potential Future Green Infrastructure Links adjacent the River Brosna
Linear Park
Potential Future Green Infrastructure Links adjacent the River Brosna
Preliminary Planting Schedule
Native Trees
Ornamental Planting
SUDS / Rain Garden
Specimen Trees
Woodland Edge (Native Riverine Shrubs)
Community Orchard
Screening Planting
LEGEND
Hard Landscape Features
Bound Permeable Landings
Bound Permeable Sloped Access
Unbound Permeable Paths
Paved Areas
Asphalt Roads
Reinforced Grass / EV Spaces
Cellular Grid Confinement Systems
Resin Bound Permeable Surfacing
Kerbs and Retaining Elements
Concrete Kerbs
Timber Edging
Gabion Retaining Walls
Gabion Seating
Stainless Steel Handrails
Planting and Soft Landscape Features
Existing Trees Retained
Existing Trees Removed
Existing Trees Relocated
Existing Riverside Vegetation Retained
Proposed Trees
SuDS / Rain Garden Planting
Ornamental planting / Screening Planting
Species Rich Grass Mix
Amenity Grass
Wildflower Grass Mix
Wildlife Garden
Native Woodland Edge
Existing Stream Retained
Furniture
Curved Timber Benches
Picnic Benches
Play on the way
Informal Path
Cycle parking
Flexible outdoor seating
Flexible timber blocks
Bin storage
Site Boundary
Red Line Boundary for Planning Application
Blue Line Boundary (Land owned by OCC)
River Brosna Buffer line
Project
Ferbane Convent Redesign
Client
Kenny Lyons Associates Architects
Drawing Title
Landscape Masterplan
- Whole Site
Drawing Nr
12454-LUC-G-DR-L-0600-S0
Rev
P07


THE INFORMATION ON THIS DRAWING IS TO THE TAILTE ÉIREANN - SURVEYING ITM COORDINATE SYSTEM
LEGEND:
PROPOSED BOUNDARY
PROPOSED STORM MANHOLE, uPVC PIPEWORK & DIRECTION
PROPOSED SOAKAWAY 95% VOIDS CELLULAR UNIT
PROPOSED PETROL INTERCEPTOR
NOTES:
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE.
3. ENGINEER/EMPLOYERS REPRESENTATIVE AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES.
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES.
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD.
ST. JOSEPH'S CONVENT
MULTIPURPOSE SPACE
EV
Client: OFFALY COUNTY COUNCIL
Project: ST. JOSEPH'S CONVENT, FERBANE, CO. OFFALY
Title: PROPOSED STORM WATER LAYOUT
Scale @ A1: 1:250
Prepared by: RB
Checked by: MF
Date: Nov 2024
Drawing Status: PLANNING
TOBIN
Drawing No.: 11695-2001
Revision: P1


THE INFORMATION ON THIS DRAWING IS TO THE TAILTE ÉIREANN - SURVEYING ITM COORDINATE SYSTEM
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PROPOSED BOUNDARY
EXISTING FOUL Ø150mm SEWER
PROPOSED 0150mm FOUL SEWER AND MANHOLE
ACCESS JUNCTION
NOTES:
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE.
3. ENGINEER/EMPLOYERS REPRESENTATIVE AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES.
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES.
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD.
Rev Date Description By Chkd
P1 06/11/2024 PLANNING ISSUE MF MF
Client: OFFALY COUNTY COUNCIL
Project: ST. JOSEPH'S CONVENT, FERBANE, CO. OFFALY
Title: PROPOSED FOUL SEWER LAYOUT
Scale @A1: 1:250
Prepared by: RB
Checked by: MF
Date: Nov 2024
Drawing Status: PLANNING
TOBIN
Drawing No.: 11695-2002
Revision: P1
ST. JOSEPH'S CONVENT
MULTIPURPOSE SPACE
CONNECTION POINT INTO EXISTING FOUL NETWORK
PROPOSED 10m BUFFER ZONE FROM BROSNA RIVER
EV

APPENDIX D
PHOTO LOG

Plate 1: Façade of the Convent (BL3)

Plate 2: One of the buildings to be demolished (BL3)

Plate 3: Amenity grasslands (GA2) to the east.

Plate 4: Amenity grassland with Ornamental shrubs (WS3)

Notes:

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CO. OFFALY

APPENDIX C
PHOTO LOG

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file location:		scale: N/A	A4
drawing status:	REPORT	datum:	N/A
		drawn:	PE
drawing no.	rev	checked:	RDS
AA_10223	A	approved:	-
		date:	23/08/2024

Plate 5: Riparian woodland (WN5)

Plate 6: Drainage ditch (FW4)

Plate 7: River Brosna (FW2) adjacent to the site

Plate 8: Tracks/paths through the hedgerow (WL1) habitat

Notes:

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APPENDIX C
PHOTO LOG

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file location:		scale: N/A	A4
drawing status:	REPORT	datum:	N/A
		drawn:	PE
drawing no.	rev	checked:	RDS
AA_10223	A	approved:	-
		date:	23/08/2024