Appropriate Assessment Screening & Natura Impact Statement

Ballinacurra Mills LRD, Co. Cork.

December 2025

Prepared for:

Ballinacurra Project Limited Partnership

O'DONNELL ENVIRONMENTAL

CIEEM REGISTERED PRACTICE 2025-2026

QUALITY I.S. EN ISO 9001:2015 NSAI Certified

Summary

Project: Proposed Residential Development at Ballinacurra Mills, Co. Cork.

Coordinates: W 88861 71652 (IG); 588813 571691 (ITM).

Company Profile: O'Donnell Environmental is an independent environmental consultancy established by Tom O'Donnell in 2019. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice', which demonstrates our commitment to high professional standards, accountability and the delivery of the best outcomes for biodiversity and our Clients. O'Donnell Environmental maintains an ISO 9001:2015 certified Quality Management System, ensuring consistent quality and customer focus.

Project Reference: 2023/10			
Document Rev. No.	**Status**	**Contributor**	**Date**
A	Draft Issue	TO'D, CB	30.10.2024
B	Draft Issue	TO'D, CB	27.01.2025
1	Final Issue	TO'D, CB	20.03.2025
2	Final Issue	TO'D, CB	09.04.2025
3	Final Issue	TO'D, CB	22.10.2025
4	Final Issue	TO'D, CB	11.12.2025
5	Final Issue	TO'D, CB	22.12.2025

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Executive Summary

Ballinacurra Project Limited Partnership proposes to develop a residential and commercial development on a brownfield site in Ballinacurra, Co. Cork.

This report has been prepared in support of the Appropriate Assessment process and presents relevant information in relation to the proposed project in the context of the Natura 2000 network. The purpose of the current report is to inform the Local Authority's decision as to whether significant effects on the conservation objectives of any Natura 2000 site are likely to occur.

This assessment consists of two stages, namely AA Screening (Stage 1) and Natura Impact Statement (Stage 2).

Mitigation applied at NIS stage consists of an avoidance measure in relation to the potential for the occupation of the proposed development to result in a deterioration of water quality in Cork Harbour by exacerbating a capacity issue at Midleton WWTP.

Provided the mitigation measures referred to herein are fully implemented, it is objectively concluded that the proposed project, either individually or in combination with other plans or projects, is not likely to have significant adverse effects on the Great Island Channel SAC, Cork Harbour SPA, or any other Natura 2000 site.

It is objectively concluded that the proposed project, either individually or in combination with other plans or projects, is not likely to have significant effects on Great Island Channel SAC, Cork Harbour SPA or any other Natura 2000 site.

1 Introduction

O'Donnell Environmental Ltd. was commissioned by Ballinacurra Project Limited Partnership to undertake an Appropriate Assessment (AA) in relation to the proposed large-scale residential development (LRD) on a brownfield site in Ballinacurra, Co. Cork. This Appropriate Assessment screening report represents the product of the Appropriate Assessment process.

The proposed works involve the renovation or redevelopment of existing structures on the former mills site, and the development of a mixed residential and commercial development. A site location map is presented in **Figure 1.1**. A detailed project description is proposed in **Section 1.5** below.

This report is informed by the following documents which are submitted as part of the current planning application including:

- Arboricultural Impact Assessment Report – dated 28/10/2025 (Holly Arboriculture, 2025a)
- Tree Constraints Plan – dated 12/07/2025 (Holly Arboriculture, 2025b)
- Tree Protection Plan (Holly Arboriculture, 2025c) – dated 31/10/2025
- Green Infrastructure and Landscape Strategy (Fourem, 2025)
- Construction and Environmental Management Plan (CEMP) – dated 09/12/2025 (MHL, 2025a) (see **Appendix B**)
- Engineering Design Report – dated 12/2025 (MHL, 2025b) (see **Appendix C**)
- Drainage Impact Assessment Report – dated 05/12/2025 (MHL, 2025c)
- Outdoor Lighting Report – dated 27/10/2025 (Lighting Reality, 2025)
- Natura Impact Statement (O'Donnell Environmental, 2025a).
- Environmental Impact Assessment Screening Report (O'Donnell Environmental, 2025b).

O'Donnell Environmental consulted with Cork County Council Ecologist Joy Barry during the Section 32B pre-planning process.

This Appropriate Assessment has been undertaken in accordance with the following guidance documents:

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – European Commission Methodical Guidance on the provisions of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (European Commission, 2021).
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009).
- Environmental Assessments and Planning in Ireland (Office of Planning Regulator, 2021).

1.1 APPROPRIATE ASSESSMENT PROCESS

The 'Appropriate Assessment' process that consists of up to four stages, carried out consecutively. This process is summarised as follows:

- Stage 1: A screening assessment is undertaken to identify whether in view of best scientific knowledge and in light of the conservation objectives of the Natura 2000 site(s), significant impacts on a Natura 2000 site(s) are likely to arise from the project or plan in question (individually or in combination with other plan or projects), in the absence of mitigation. If the likelihood of significant impacts cannot be ruled out, or if uncertainty exists, then the process moves on to Stage 2.

- Stage 2: Carried out when a screening assessment determines impacts on the Natura 2000 sites(s) are likely to arise from the project or plan, or where uncertainty exists, and considers potential mitigation measures to avoid or reduce adverse impacts. The outcome of a Stage 2 and higher assessment is presented in a report known as a Natura Impact Statement (NIS). The NIS is intended to assist the competent authority to conduct the appropriate assessment.
- Stage 3: Carried out to assess alternative solutions when it is considered that mitigation measures will not be able to adequately avoid or minimise potential adverse impacts on a Natura 2000 site(s).
- Stage 4: Carried out to consider compensatory measures when no alternative solutions exist but the proposed activity or development is deemed to be of Imperative Reasons of Overriding Public Interest (IROPI).

1.2 LEGISLATIVE CONTEXT

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (79/409/EEC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). These designations form part of Natura 2000, a network of key conservation sites throughout the European Community. Article 6(3) of the Habitats Directive requires member states to carry out an 'appropriate assessment' of the implications of plans and projects on the Natura 2000 network. The Habitats Directive has been transposed into Irish law and the relevant Regulations are the European Communities (Birds and Natural Habitats) Regulations 2011.

The EU Court of Justice has ruled in case C-721/21 that Article 6(3) of Directive 92/43 must be interpreted as meaning that: in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site.

1.3 STATEMENT OF AUTHORITY

O'Donnell Environmental Ltd. is an independent environmental consultancy established by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM in 2019. Since then, O'Donnell Environmental has established itself as a provider of quality, Client-focused ecological and environmental services to public and private sector Clients nationwide. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards and accountability.

Tom O'Donnell is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Environmental and Earth System Science [Applied Ecology] in 2007 and an MSc in Ecological Assessment in 2009, both from UCC. Tom has 17 years professional experience in the environmental industry, including working on projects such as windfarms, overhead power lines, roads, cycleways and residential developments. Tom is licensed by NPWS for roost disturbance (Ref: DER/BAT 2023-16) and to capture bats (C25/2023).

Colm Breslin BSc (Hons) is a Qualifying member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Biological, Earth and Environmental Sciences [Ecology and Environmental Biology] in 2023 from UCC. Colm has experience in habitat mapping, bat activity surveys and preliminary roost assessments for a variety of windfarm and residential developments. Colm is licenced by NPWS for roost disturbance (Ref: DER/BAT 2025-108) and to capture bats (C03/2025).

1.4 DO NOTHING SCENARIO

If the proposed development does not proceed, the 'do nothing' scenario is that the existing environment within the site boundary is likely to remain as described herein in the short term at least. The existing brownfield site would remain disused, with structures onsite continuing to deteriorate in condition. The habitats onsite will continue to be encroached by marginal scrub as vegetation succession proceeds.

1.5 DESCRIPTION OF THE PROPOSAL

Ballinacurra Project Limited Partnership seek permission for development on lands measuring 3.63 hectares at the former Ballinacurra Mill Buildings (Protected Structure Ref. 523), Rosehill House (Protected Structure Ref. 520), and Eastville House (NIAH Ref. 20907636), Ballinacurra, Midleton, Co. Cork.

The proposed development consists of:

- The demolition of 1,165sq.m of structures associated with the former Mill, 3 no. vacant dwellings and an extension to the rear of Rosehill House.
- The provision of 128 residential units (103 dwellings and 25 no. apartments) as follows:
    - 92 no. new dwelling houses ranging from 2 to 3 storeys in height (comprising of 39 no. 2 bedroom houses, 36 no. 3 bedroom houses and 17 no. 4 bedroom houses)
    - The conversion/change of use of existing structures to 11 no. dwelling houses (including 1 no. 4 bedroom dwelling in Rosehill House, 1 no. 3 bedroom dwelling in Rosehill outbuildings, 1 no. 2 bedroom dwelling and 1 no. 3 bedroom dwelling in Eastville House, and 3 no. 2 bedroom dwellings and 4 no. 3 bedroom dwellings in the Mill Buildings),
    - The conversion/change of use of existing mill building structures ranging from 3 to 4 storeys in height to 25 no. apartments (comprising of 1 no. ground floor Studio and 10 no. 1 bedroom apartments and 14 no. 2 bedroom apartments in existing Mill buildings from first to third floor),
    - Also, the construction of 1 no. single storey creche, 1 no. single storey café, 2 no. ground floor retail units, 1 no. ground floor commercial office unit, 1 no. ground floor medical centre unit, 1 no. ESB substation.

Ancillary works including provision of roads, footpaths, public open space, communal open space, private open spaces, 214 car park spaces, 114 cycle spaces, EV charging spaces, drainage infrastructure, 2 no. access points (one off Rose Lane and one off Cloyne Road, R629) and all associated site works including play area, landscaping and boundary treatments.

It is also proposed to carry out new car parking arrangements along part of Rose Lane to the north of the site measuring 0.057 hectares (bringing gross site area to 3.687 ha).


Eastville House
Former Residence
Mill Buildings Complex
Rosehill House
0
25
50 m
Figure 1.1
Study Site Location
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 09/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Fire Damage
Site Boundary
Passive Bat Monitor
Underground Service Tunnel
Watercourses [EPA]

2 Methodology

This Appropriate Assessment was informed by desk-based and site-based assessments.

2.1 DESK STUDY

A desk study was carried out to collate relevant available information including the following:

- National Parks and Wildlife Service (NPWS) – Maps and Data webpage[1].
- National Biodiversity Data Centre (NBDC) (online)[2].
- The Environmental Protection Agency (EPA) website[3].

2.2 SITE VISIT

This Appropriate Assessment is informed by multiple ecological surveys carried out by qualified and experienced Ecologists on dates between 2023 and 2025. Surveys were carried out by Tom O'Donnell, Colm Breslin and Claire McCarthy.

In addition to breeding birds, bespoke winter bird surveys were carried out monthly by Colm Breslin from December 2024 to February 2025 whereby brief observations were made from suitable vantages in the hinterland surrounding the proposed site. The aim of these surveys was solely to identify if the proposed development and hinterland surrounding the proposed site was being used by significant numbers of SCI species, or if significant flightlines occurred through the proposed development. The surveys were carried out in suitable weather conditions and in a range of tidal conditions.

Surveys evaluated the ecological importance of the site in terms of habitats and botany, bats, birds, terrestrial mammals and other taxa. The ecological surveys are detailed in the Ecological Impact Assessment Report (EcIA) that accompanies this planning application (O'Donnell Environmental, 2025).

[1] https://www.npws.ie/maps-and-data Accessed 22/10/2025
[2] https://maps.biodiversityireland.ie/Map Accessed 22/10/2025
[3] https://gis.epa.ie/EPAMaps/ Accessed 22/10/2025

3 Appropriate Assessment Screening

The proposed development occurs within a brownfield, peri-urban landscape that experiences relatively low levels of light pollution. The proposed development is adjoined by residential and agricultural land uses. The proposed development is not necessary for the management of any Natura 2000 site.

Information on the conservation objectives of all Natura 2000 site is available at: https://www.npws.ie/protected-sites.

3.1 DESCRIPTION OF THE NATURA 2000 SITES

The development site is not located within a Natura 2000 site. Four designated Natura 2000 Sites are present within 15km of the proposed site boundary (see **Figure 3.1**; **Table 3.1**). All Natura 2000 sites within 15km of the proposed development have been reviewed for this report and the potential for impacts considered. It is important to note that this arbitrary distance of 15km is used for illustrative purposes only and all potential pathways for impact on designated sites have been included for both within and outside the 15km zone.

No sites beyond the standard 15km search area are considered to be relevant to the current assessment due to the nature and scale of the proposed project and the lack of a viable source-receptor pathway between the proposed site and any other Natura 2000 sites.

Of the Natura 2000 sites considered, three sites have been identified where a possible source-receptor pathway exists between the proposed project location and the designated site (see green in **Table 3.1**). These are discussed in further detail below. The Qualifying Interests (QI) / Special Conservation Interests (SCI) of these five Natura 2000 sites are summarised below.

The remaining sites outlined in **Table 3.1** are not considered relevant to the current assessment due to the lack of a viable source-receptor pathway between the proposed development and the designated site.

3.1.1 Cork Harbour SPA

Cork Harbour SPA is the most proximal designated site to the proposed development, located 200m west at its nearest point. The proposed development presents a viable hydrological pathway via the West Ballynacora Stream which flows approximately 10m north of the site and discharging into Cork Harbour. In addition, a viable ex-situ disturbance pathway exists between the proposed development and the bird species associated with Cork Harbour SPA.

Cork Harbour SPA is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it (NPWS, 2014b). Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.

3.1.2 Great Island Channel SAC

The Great Island Channel SAC is similarly located 200m west at its nearest point. The proposed development presents a viable hydrological pathway via the West Ballynacora Stream which flows approximately 10m north of the site and discharging into Cork Harbour.

Within Cork Harbour, the Great Island Channel SAC is of importance for the two habitats listed on Annex I of the E.U. Habitats Directive (see **Table 3.1**). This site extends from Little Island to Midleton and bounded to the south by Great Island, containing both the Owenacurra and Dungourney Rivers. The site is composed largely of the eastern extent of the Cork Harbour basin and remains relatively undisturbed. The primary habitat within the Great Island SAC are tidal flats composed predominantly of soft muds which support a range of macroinvertebrates and have been colonised in places with Cordgrass (*Spartina* spp.). Following this, saltmarsh habitat is scattered throughout the site. Overall, the site is extremely important for wintering waterfowl and shares a large portion of its land area in conjunction with Cork Harbour SPA (see above).

3.1.3 Ballycotton Bay SPA (4022)

Ballycotton Bay SPA is located 10.6km southeast of the proposed development. Considerable marine environments buffer this site, with no viable hydrological pathway present. A remote ex-situ disturbance pathway exists between the proposed development and the bird species associated with Ballycotton Bay SPA which may be utilising Cork Harbour.

Ballycotton Bay SPA consists of an approximately 2km coastline and comprises two sheltered inlets with principally inter-tidal sand and mudflats habitat. This site is of major ornithological significance, being of international importance for the total numbers of wintering bird species (see **Table 3.1**). While relatively small in area, Ballycotton Bay supports an excellent diversity of wintering waterbirds and has nationally important populations of eleven species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Ballycotton Bay is also a Ramsar Convention site and part of the Ballycotton Bay SPA is a Wildfowl Sanctuary.

3.1.4 Ballymacoda (Clonpriest and Pillmore) SAC (0077)

Ballycotton (Clonpriest and Pillmore) SAC is located 14.7km east of the proposed development. Considerable marine environments buffer this site, with no viable hydrological pathway present. As such, no viable source-receptor pathway exists between this site and the proposed development and is thus not considered further within this report.

Ballycotton (Clonpriest and Pillmore) SAC is of importance for five marine and interidal habitats listed on Annex I of the E.U. Habitats Directive (see **Table 3.1**). This site extends north-east from Ballymacoda to within about 6 km of Youghal, Co. Cork. Intertidal mudflats and sandflats, which form part of the overall estuarine habitat, are well represented. The sediment types vary from muds to muddy sands in the inner part, to fine rippled sands in the outer exposed part. The macro-invertebrate fauna of the intertidal flats is well-developed. The main channel is flanked by saltmarshes and wet fields, much of the latter being improved for agriculture. A large area of well-developed Mediterranean salt meadows is found on the island at Clonpriest East and The Duck. A rarer sub-type of Mediterranean salt meadow with Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) as an indicator species is present at this site. This is a very notable population of this rare species, which is listed on the Flora (Protection) Order, and is also listed in the Red Data book. Part of the site is also a Special Protection Area (SPA) for birds; the main interest of the area lies in its waterfowl, with flocks of up to 20,000 regularly present during

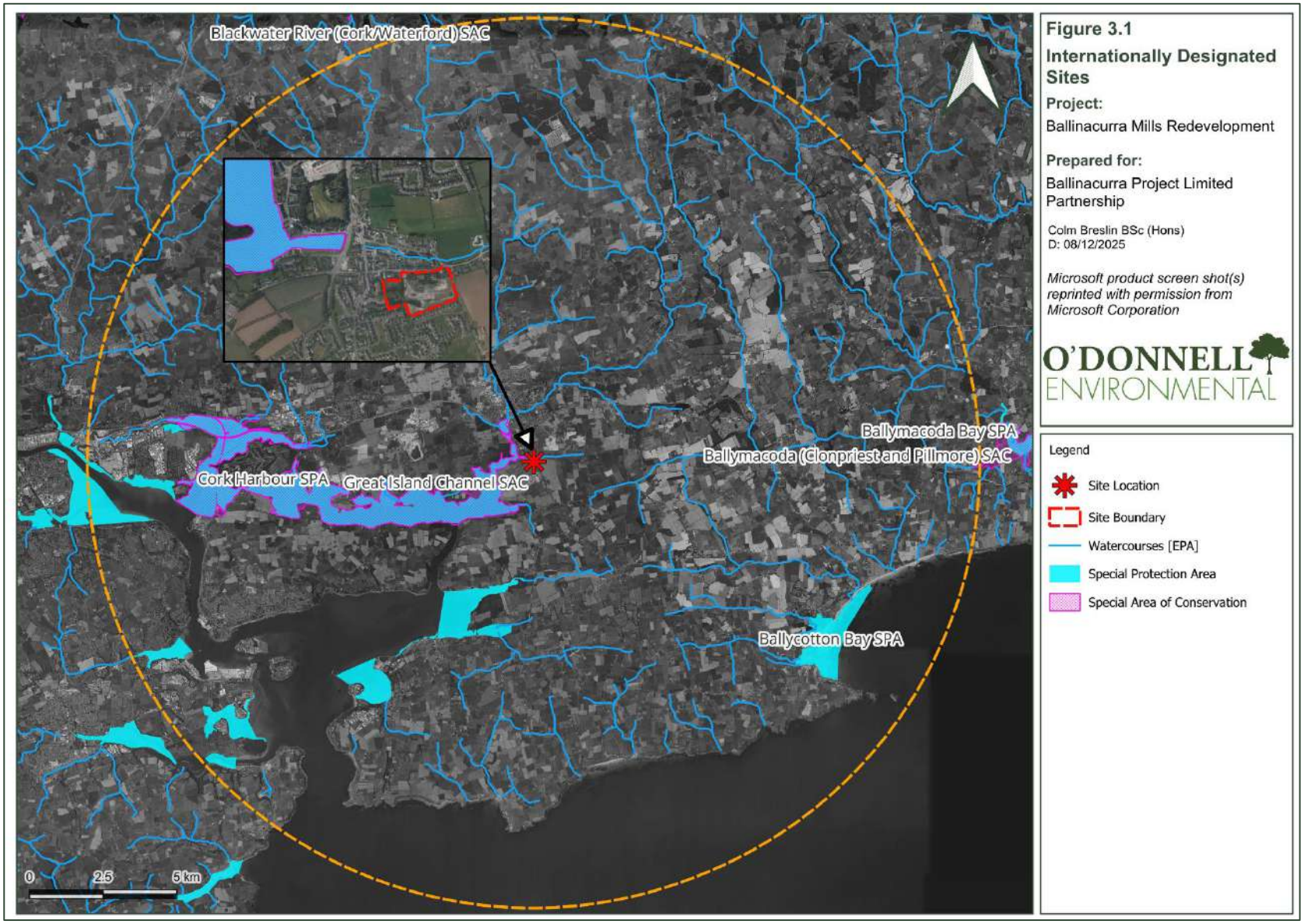
winter, particularly an internationally important population of Black-tailed Godwit. In addition, it supports nationally important populations of a further 15 species

Table 3.1 – Relevant Natura 2000 Site Details.

Site Name & Code	Qualifying Interests	Distance (km)	Source-receptor Pathway
Great Island Channel SAC (1058)	• Mudflats and sandflats not covered by seawater at low tide [1140] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	0.20	Yes
Cork Harbour SPA (4030)	• Little Grebe (*Tachybaptus ruficollis*) [A004] • Great Crested Grebe (*Podiceps cristatus*) [A005] • Cormorant (*Phalacrocorax carbo*) [A017] • Grey Heron (*Ardea cinerea*) [A028] • Shelduck (*Tadorna tadorna*) [A048] • Wigeon (*Anas penelope*) [A050] • Teal (*Anas crecca*) [A052] • Pintail (*Anas acuta*) [A054] • Shoveler (*Anas clypeata*) [A056] • Red-breasted Merganser (*Mergus serrator*) [A069] • Oystercatcher (*Haematopus ostralegus*) [A130] • Golden Plover (*Pluvialis apricaria*) [A140] • Grey Plover (*Pluvialis squatarola*) [A141] • Lapwing (*Vanellus vanellus*) [A142] • Dunlin (*Calidris alpina*) [A149] • Black-tailed Godwit (*Limosa limosa*) [A156] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata*) [A160] • Redshank (*Tringa totanus*) [A162] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Common Gull (*Larus canus*) [A182] • Lesser Black-backed Gull (*Larus fuscus*) [A183] • Common Tern (*Sterna hirundo*) [A193] • Wetland and Waterbirds [A999]	0.20	Yes
Ballycotton Bay SPA (4022)	• Teal (*Anas crecca*) [A052] • Ringed Plover (*Charadrius hiaticula*) [A137] • Golden Plover (*Pluvialis apricaria*) [A140] • Grey Plover (*Pluvialis squatarola*) [A141] • Lapwing (*Vanellus vanellus*) [A142] • Black-tailed Godwit (*Limosa limosa*) [A156] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata*) [A160]	10.60	Yes

Site Name & Code	Qualifying Interests	Distance (km)	Source-receptor Pathway
	• Turnstone (*Arenaria interpres*) [A169] • Common Gull (*Larus canus*) [A182] • Lesser Black-backed Gull (*Larus fuscus*) [A183] • Wetland and Waterbirds [A999]		
Ballymacoda (Clonpriest and Pillmore) SAC (0077)	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] • Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	14.70	No

Note: Information on the conservation objectives of all Natura 2000 site is available at: https://www.npws.ie/protected-sites


Blackwater River (Cork/Waterford) SAC
Cork Harbour SPA
Great Island Channel SAC
Ballymacoda Bay SPA
Ballymacoda (Clonpriest and Pillmore) SAC
Ballycotton Bay SPA
0
2.5
5 km
Figure 3.1
Internationally Designated Sites
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 08/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Location
Site Boundary
Watercourses [EPA]
Special Protection Area
Special Area of Conservation

3.2 HYDROLOGICAL CONTEXT

The proposed development does not contain any watercourses. No surface water pathways were visible at the time of surveys, and it appears drainage currently discharges to ground. A height differential between the south-west and north-east portions of the development footprint was visible. Due to the high degree of impermeable surfaces onsite, there is likely a degree of overland flow also.

The proposed site is located in the Lee, Cork Harbour and Youghal Bay catchment (ID 19), sub-catchment Farrannamanagh_SC_010. The EPA undertakes survey of the water quality of river systems. The site does not contain any watercourses but is bordered to the north by the West Ballynacora Stream (IE_SW_19K630910) at approximately 10m distance from the site boundary. The EPA categorises the water quality of this stream as having a 'Good' status (River Waterbody WFD Status 2019-2024) and is risk-assessed as 'Review' (River Waterbodies Risk 2021).

The West Ballynacora Stream flows westwards and discharges directly into the Owenacurra Estuary (IE_SW_060_0400) which comprises a portion of the wider Cork Harbour SPA and Great Island Channel SAC. Owenacurra Estuary is categorised as having a 'Moderate' status (Transitional Waterbody WFD Status 2019-2024) and is risk-assessed as 'At Risk' (Transitional Waterbodies Risk 2021). The West Ballynacora Stream provides a viable source-receptor pathway to the Owenacurra Estuary and therefore the Great Island Channel SAC and Cork Harbour SPA.

The EPA categorise the groundwater quality of the area (EPA Code: IE_SW_G_058) as "Good" (Ground Waterbody WFD Status 2019-2024) and risk- assessed as "Review" (Ground Waterbodies Risk 2021). The national groundwater vulnerability database from Geological Survey Ireland (GSI) details the underlying characteristics of the proposed development and the susceptibility of the receiving environment to groundwater contamination[4]. The proposed development is located within an area of high to extreme (due to the presence of bedrock at the surface) groundwater vulnerability, and high permeability of a regionally important karstified bedrock aquifer.

A 'Flood Risk Assessment' (MHL, 2025b) was carried out and determined that there is no risk associated with coastal or fluvial flooding, and the proposed development location is appropriate from a flood risk perspective in that it meets the requirements of the Flood Risk Management Planning guidelines (2009).

3.3 ECOLOGICAL CONTEXT

The site is dominated by habitats of typically low ecological value such as artificial surfaces and built structures with portions of scrub and woodland along the southern and western borders.

No Annex I habitats listed under the EU Habitats Directive or those associated with surrounding SACs are present within the proposed works area, and the dominant habitats present (consisting mostly of buildings and artificial surfaces) are of low botanical value. No botanical species protected under the Flora (Protection) Order 2022[5], listed in Annex II or IV of the EU Habitats Directive (9/3/EEC), or Red listed in Ireland (Wyse Jackson et al., 2016) were recorded. No invasive plant species listed on Third

[4] https://gsi.geodata.gov.ie/portal/apps/webappviewer/index.html?id=d333a8a9b6ab44378411fc0d973db4ef Accessed 23/10/2025
[5] https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e

Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) were identified during the course of surveys or through desk study[6]. The most proximal records for Schedule III plant are limited to Japanese knotweed and Indian balsam located approximately 1.6km northwest of the proposed development within Midleton town.

No evidence of underground dwellings attributed to any protected non-volant mammal species was identified onsite. No evidence of otter was observed onsite, with the proposed development considered generally unsuitable for this species. The site contains two confirmed bat roosting locations within buildings alongside some localised suitable foraging and commuting habitat; but the Annex II species Lesser horseshoe bat was not recorded or likely to be present based on the species known distribution.

Please refer to the Ecological Impact Assessment Report accompanying the current planning application for full details on the ecological context of the proposed development not directly relevant for the Appropriate Assessment process (O'Donnell Environmental, 2025).

3.4 ORNITHOLOGICAL CONTEXT

Desk based and site-based assessment has been carried out to understand the ornithological context and surrounding areas, in order to fully understand the potential effects of the proposed development on birds.

3.4.1 Breeding Birds

Dawn/dusk surveys during the bird breeding season were carried out by Noel Linehan BSc on 2nd June, 29th June, and 24th July 2023. The purpose of the surveys was to identify the presence of nesting birds within the development boundary, the likely importance of the existing structures and trees for breeding birds, and the significance of interaction of bird species with the site. In total, 42 species of bird were recorded, of which 35 were identified to be interacting with the development site.

Five bird species listed as special conservations interests (SCIs) of surrounding SPAs were recorded during the course of surveys, of which none were recorded interacting with the site of the proposed development. Black-headed Gull, Cormorant and Curlew were all recorded on a single occasion and comprised a single individual respectively flying over and not interacting with the site. Lesser Black-backed Gull was recorded in small numbers (maximum four individuals) and were noted to not be interacting with the site. A small portion of this species was recorded offsite also. Grey Heron, the final listed species, was recorded as a single individual offsite.

3.4.2 Wintering Birds

The proposed site is considered to be of negligible value to waterbirds. Due to the proximity of the proposed site to neighbouring SPAs, most notably Cork Harbour SPA, consideration was given to the possibility of significant aggregations of birds associated with Cork Harbour SPA to occur proximal to the proposed site. Were that to occur ex-situ effects or other indirect effects may occur.

Bespoke winter surveys were carried out by means of observation from suitable vantages surrounding the site over the winter of 2024/2025. The aim of these surveys was to identify any significant aggregations of waterbirds proximal to the proposed site, for example utilising nearby tillage fields.

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

The hinterland associated with the proposed development consists primarily of intensive agricultural grassland alongside arable crops to the north, east and south. Urban land-uses dominate to the west. High levels of anthropogenic disturbance exist in the form of quarries to the south and northeast.

On a number of occasions small numbers of Lesser Black-backed gulls were observed approximately 1km south of the proposed development commuting towards Cork Harbour. In December 2024 a single Kestrel was observed in the large arable field to the east of the site and the individual then flow into the mills building complex. In January 2025 a single Curlew was heard calling 600m east of the proposed development but no flightline was observed.

Overall, based on desk-based study of available information as well as project-specific surveys, there was no evidence of significant aggregations of wintering waterbirds within the development site or in surrounding the based on desk study and targeted surveys in the winter of 2024/2025.

3.4.3 Surrounding Developments

Ecological data collected in relation to nearby proposed residential developments on greenfield (intensive agriculture) sites within 1km was reviewed in order to further assess the likelihood of surrounding agricultural habitats being used by wintering waterbirds. Surveys targeting wintering birds were carried out for the Castleredmond LRD (planning ref. 23/5707). Surveys were undertaken on five separate occasions in the winter of 2022/2023 and no evidence of target species using the Site as ex-situ foraging habitat (i.e., waterbirds associated with the nearby SPAs) was found. A number of Gull species, namely Black-headed Gull, Herring Gull, Great black-backed Gull, Lesser black-backed Gull and a firstwinter Kittiwake were observed in flight over the Site (Enviroguide, 2023). Winter bird surveys were not carried out in relation to the permitted Maple Woods LRD (planning ref. 23/4450), or the four phases of the Lakeview LRD (planning refs: 21/7428; 22/4753; 22/6688; 23/5703).

3.4.4 Ornithological Context Conclusion

The proposed site is not likely to be of any significant value to relevant bird populations associated with Cork Harbour SPA or any other Natura 2000 sites. Equally, the surrounding lands (where indirect or ex-situ impacts could occur) are not likely to be of significant importance to any relevant bird species.

3.5 IDENTIFICATION OF POTENTIAL IMPACTS ON NATURA 2000 SITES

Consideration is given here to identifying any aspects of the proposal which are likely to impact on the relevant Natura 2000 sites (identified above), and to identifying if uncertainty exists as to likelihood of occurrence.

The likelihood of effects is assessed considering a number of indicators including:

- Habitat loss.
- Habitat alteration.
- Habitat or species fragmentation.
- Disturbance and/or displacement of species.
- Water quality and resource.

3.5.1 Potential Construction Phase Impacts

The potential for direct and indirect impacts on any Natura 2000 site during the construction phase is discussed below.

3.5.1.1 Direct Impacts

The proposed works are not located within a Natura 2000 site and therefore no direct habitat loss will occur.

3.5.1.2 Indirect Impacts

Deterioration of the ecological status of designated sites can occur from the indirect effects of contaminated run-off or discharge into the aquatic environment, through siltation, nutrient release and/or contamination. Should habitat loss or deterioration of the ecological status of the relevant Natura 2000 sites occur, adverse effects on the qualifying interests of the relevant designated sites may result.

3.5.1.3 Surface Water

No surface water pathways are visible, and it appears drainage currently discharges to ground with some surface water flow on areas of hardstand intercepted by the municipal drain network of surrounding public roads. The site does not contain any watercourses but is bordered to the north by the West Ballynacora Stream (IE_SW_19K630910) at approximately 10m distance from the site boundary. The Ballynacora Stream flows westwards and discharges directly into the Owenacurra Estuary (IE_SW_060_0400) which comprises a portion of the wider Cork Harbour SPA and Great Island Channel SAC.

The site is mostly categorised as 'High' in terms of groundwater vulnerability, with an area of 'Extreme' vulnerability located on the northeast of the proposed site, according to Geological Survey Ireland (GSI) 'Groundwater Vulnerability' dataset.

The CEMP (MHL, 2025a; see **Appendix B**) outlines appropriate and reliable standard surface water and groundwater control measures during the construction phase of the proposed development following best practice outlined in CIRA (2010; 2015), ISO 14001:2015, and C741 Environmental good practice on site guide (4th edition).

The risk of surface water emissions associated with the proposed development is considered low during the construction phase and imperceptible during the post construction phase. It is noted that silting up or accretion are natural processes in estuarine and marine environments, with estuarine/marine habitats experiencing fluctuations in sediment on a daily basis. Sediment movement is a natural process that occurs within the marine environment and associated marine organisms will be adapted to the natural processes of sediment movement, erosion and deposition, including the increased levels of sediment movement reached during storms. Therefore, the habitats as a whole will naturally adjust or reach equilibrium in response to any minor local changes.

Given the effective, industry-standard environmental control measures outlined within the CEMP (see **Appendix B**), and the considerable assimilation capacity available in Cork Harbour in relation to water-borne pollution, significant adverse effects are unlikely to occur on the Great Island Channel SAC, Cork Harbour SPA or any Natura 2000 site as a result of surface water discharge during the construction phase of the proposed development.

3.5.1.4 Foul water

Temporary welfare facilities will be provided for the construction phase. These will be managed and emptied by a licensed contractor, for appropriate off-site disposal. No impacts will arise as a result of foul water during the construction phase.

3.5.1.5 Noise and Dust

Localised increases in noise levels are likely to occur during the construction phase. No heavy construction techniques such as blasting or pile driving are proposed but noise will occur through the operation of machinery such as cranes, MEWPs, hand tools etc. Standard dust and noise control measures outlined in CEMP (MHL, 2025a; see **Appendix B**) are considered sufficient such that no significant effects as a result of dust or other airborne emissions impacts are likely to occur on nearby sensitive receptors.

Given the effective, industry-standard environmental control measures outlined within the CEMP (see **Appendix B**), significant adverse effects are unlikely to occur on the Great Island Channel SAC, Cork Harbour SPA or any Natura 2000 site as a result of noise and dust emissions during the construction phase of the proposed development.

3.5.1.6 Alien Invasive Plant Species (AIPS)

No AIPS species listed on Schedule III of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) were identified during the course of surveys. However, there exists risk of importation of alien invasive plant species as a result of the construction phase of the proposed development which may negatively affect neighbouring designated site. The following standard measures outlined in the CEMP (MHL, 2024a; see **Appendix B**) are considered appropriate to eliminate this risk.

Given the lack of invasive species present effective, industry-standard environmental control measures outlined within the CEMP (see **Appendix B**), adverse effects are unlikely to occur on the Great Island Channel SAC, Cork Harbour SPA or any Natura 2000 site during the construction phase as a result of AIPS.

3.5.1.7 Ex-situ Impacts on Birds

Disturbance and/or displacement may occur where populations of a mobile species listed as a qualifying interest of a Natura 2000 site suffer negative effects outside of the Natura 2000 site (ex-situ impacts). Such effects also include fatalities and loss of foraging opportunities caused by habitat loss, degradation or disturbance.

No significant accumulations of special conservation interest (SCI) bird species associated with surrounding SPAs were identified or are likely to occur within and surrounding the proposed development, with habitats within the site and surrounding development considered generally unsuitable for wintering bird species (see **Section 3.4.2** above).

The potential collision risk impacts with the new buildings were considered. The proposed development will result in no significant increase in building height overall. The proposed development exists within the context of Ballinacurra village which is heavily illuminated from public lighting and anthropogenic disturbance. Therefore, the risk of significant collision risk mortality for SCI species is considered to be negligible.

Given the absence of any significant numbers of relevant SCI bird species in the surrounding landscape and the application of effective, industry standard control measures in relation to surface water, noise

and dust (see **Appendix B**), adverse, ex-situ effects are unlikely to occur on the bird species associated with Cork Harbour SPA or any other Natura 2000 site during the construction phase of the proposed development.

3.5.2 Potential Operational Phase Impacts

The potential for direct and indirect impacts on any Natura 2000 site during the operational phase is discussed below.

3.5.2.1 Surface Water

The site is not at risk of fluvial or coastal flooding (MHL, 2025b). Sustainable Drainage System (SuDS) protocols will be implemented to ensure a high standard of surface water runoff from the proposed development, as outlined by the accompanying Drainage Impact Assessment Report (MHL, 2025c). The proposed development will utilise permeable grasscrete paving, tree pits, water butts and attenuation tanks which will be entirely separate to the wastewater system.

The proposed development will be split into three sub-catchments, with a total of six attenuation tanks. The overall attenuation system is designed with a controlled flow rate of less than the greenfield run-off rate for the catchment area and will cater for storm return period of 1 in 100 year and with a 20% climate change factor. All networks will eventually discharge into two outfalls along Rose Lane. Each local network will be fitted with grit-sump manholes, silt traps and hydrocarbon interceptors. Overall, the maximum discharge rate from the proposed has been restricted to considerably less than the calculated permissible runoff for the site (mean annual peak flow 'QBAR').

Given the effective, industry-standard environmental control measures outlined above, adverse effects are unlikely to occur on the Great Island Channel SAC, Cork Harbour SPA or any Natura 2000 site as a result of surface water discharge during the operational phase of the proposed development.

3.5.2.2 Foul Water

The operational phase of the proposed development will see an increase in foul water flow due to the occupation of 128 residential and other mixed-use units. No foul wastewater will be discharged on-site during the operational phase. A pre-connection enquiry form was submitted to Uisce Éireann in relation to the nearby existing connection point along the L3625. Uisce Éireann provided a Confirmation of Feasibility on 5th December 2025 with regards to foul water connection. Upgrade works are noted to be currently ongoing on Midleton WWTP (MHL, 2025b).

The 'Annual Environmental Report' from 2023 notes that Midleton WWTP was non-compliant with Emission Limit Values (ELVs), specifically faecal coliforms, with no remaining organic capacity (PE) (Uisce Éireann, 2023). The operational phase of the proposed development will add additional loading on the over-capacity Midleton WWTP, resulting in significant negative impacts on nearby sensitive receptors. Full discussion on predicted foul water output as a result of the operational phase of the proposed development is outlined in the 'Engineering Design Report' (MHL, 2025b; see **Appendix C**).

Given the predicted additional foul water loading and current issues at Midleton WWTP, the possibility of significant negative effects occurring on the Great Island Channel SAC and Cork Harbour SPA as a result of the occupation of the proposed development cannot be rules out, in the absence of appropriate mitigation measures.

3.6 LIKELY IMPACTS OF THE PROJECT ON THE NATURA 2000 SITES

All potential effects of the proposed project have been identified and assessed. With the exception of the effects discussed below, all other impacts are considered not likely have a significant adverse effect on any Natura 2000 site, either alone or in combination with other plans or projects.

3.6.1 Size, Scale & Land-take

There will be no direct impacts on any Natura 2000 site.

3.6.2 Resource Requirements (water abstraction *etc.*)

There will be no resource requirements from Natura 2000 sites as a result of the proposed works.

3.6.3 Excavation Requirements

There will be no excavation requirements from Natura 2000 sites as a result of the proposed works.

3.6.4 Emission (disposal to land, water or air)

No significant impacts on any Natura 2000 site are likely to occur as a result of emissions from the proposed development in the construction phase. However, significant adverse effects as a result of foul water impacts could occur on Great Island Channel SAC and Cork Harbour SPA during the operational phase of the proposed development in the absence of targeted mitigation due current capacity issues at Midleton WWTP.

3.6.5 Transportation Requirements

Transport requirements during construction and operation will use existing road networks and will not occur within the boundaries of any Natura 2000 sites.

3.6.6 Duration of Operations

For the purposes of environmental assessment, the duration of operations at the proposed site is assumed to be permanent.

3.6.7 Cumulative Effects

While a single development may only result in a minor environmental impact, when considered in combination with other impacts it may result in a cumulative impact which could be considered significant (EPA, 2022).

Appropriate Assessment aims to determine what if any effects a proposed project would have on ecological conditions, relative to baseline conditions. As part of this process, the potential for cumulative effects is considered. Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2022).

Projects to be considered in an assessment of cumulative effects would include the following types of future development within the same zone of influence:

- Proposals for which consent has been applied which are awaiting determination in any regulatory process (not necessarily limited to planning permission).
- Projects which have been granted consent (not limited to planning permissions) but which have not yet been started, or which have been started but are not yet completed (i.e. under construction).
- Proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined to the extent that their details are in the public domain.
- Proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority (CIEEM, 2022).

In some situations, it may be necessary to also consider:

- Constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline.
- Developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan (draft or adopted) (CIEEM, 2022).

A review of the National Planning Database (NPD) was undertaken to identify proximal and relevant planning applications proximal to the study area. A search of planning applications within 1km of the site boundary within the last 5 years was undertaken 21st October 2025 and reviewed on 11th December 2025. **Table 3.2** below provides the results of this search. The locations of applications are shown in **Figure 3.2**.

A number of developments with potential for in-combination effects in association with the proposed development. Three large-scale residential developments (LRDs) have been granted planning permission within 1km of the proposed development. Maple Woods LRD (planning ref: 23/4450; ABP-317290-23) is located 240m southwest and comprises 125 residential units. The second LRD at Lakeview has been granted planning in four phases 610m north (planning refs: 21/7428; 22/4753; 22/6688; 23/5703) for a total of 265 residential units. The third LRD at Castleredmond (planning ref: 23/5707; ABP-318403-23) is located 400m north and comprises 270 residential units. An additional development comprising 89 residential units was granted planning permission outside of the 5-year search window (planning ref: 18/5691; ABP-303221-19) but was included as construction does not appear to be fully completed, and so its effect may not be fully represented in the baseline data. A number of smaller scale residential and commercial developments exist within 1km also (e.g., 24/5386).

Residential developments can result in an increase in human disturbance, semi-natural habitat loss and foul water loading. In order to avoid the current capacity issues with Midleton WWTP, Maple Wood and Castleredmond LRDs propose a temporary wastewater treatment plant to cater for increased foul water loading until such time that upgrade works are complete on Midleton WWTP.

Overall, with the exception of foul water discharge during the operational phase (discussed further below), it is considered no other significant likelihood of cumulative or in-combination effects arise in relation to the proposed development such that an adverse effect on any Natura 2000 site would likely result.

Table 3.2 - Planning applications within the relevant search area.

Application Ref.	Development Description	Decision	Decision Date
245386	Permission for the construction of a residential development consisting of 12 no. residential housing units, the proposed development consists of 6 no. 1 bed units and 6 no. 2 bed units in two no. 2 storey blocks. Planning permission is sought for the de	Conditional Permission	21/02/2025
245718	Permission for the installation of a sewage treatment system for a dwelling house to replace an existing damaged septic tank, and for Planning Permission to Retain the following developments: 1) Single storey kitchen and WC extension to front of dwelling	Conditional Permission	04/11/2024
245655	Permission for the construction of a dormer style dwelling house and associated site works.	Conditional Permission	24/10/2024
235703	Permission for the following phase 4 residential development. Comprising the demolition of outbuildings associated with Lakeview House and the construction of 34 no. residential units (comprising a mix of 2 and 3 bed, detached, semi detached and terraced	Conditional Permission	25/06/2024
244578	Permission for the construction of a hip to gable attic roof extension, to convert attic to storage room including the introduction of front and rear roof windows and associated works.	Conditional Permission	28/05/2024
244434	Permission for retention of 1) front extension to existing ground floor kitchen area as constructed, 2) Permission for a new single storey granny flat extension (incorporating part of existing side extension) & modifications to the existing single storey	Conditional Permission	07/05/2024
244355	Permission for the construction of a first floor extension to the side of the existing dwelling including the introduction of roof windows and associated works.	Conditional Permission	22/04/2024
244357	Permission for the construction of a first floor and attic floor extension to the side of the existing dwelling including the introduction of front and rear roof windows and associated site works.	Conditional Permission	17/04/2024
244142	Permission to demolish the existing dwelling house and shed and to construct a new dwelling house and a new detached domestic garage (change of layout and design from that granted under Pl.Reg.No. 23/05647).	Conditional Permission	26/03/2024
235572	Permission to re-develop and re-purpose, existing farm and stable buildings together with overhead grain storage lofts and forge building, all centered around original stable/farm yard. The works will comprise of; 1) development of farm shop and coffee s	Conditional Permission	20/03/2024
236245	Install a new treatment unit and percolation area and all associated site works.	Conditional Permission	10/01/2024
235841	Permission to partially demolish the rear extension to existing public house, demolish existing domestic storage sheds & construct a new two-storey dwelling house and all associated site works.	Conditional Permission	13/12/2023
235647	Permission to demolish the existing dwelling house and shed and to construct a new dwelling house and a new detached domestic garage	Conditional Permission	14/11/2023
235799	Permission for 1) The demolition of an existing single storey glazed conservatory and the existing single storey front entrance porch; 2) The construction of a new extension on the footprint of the demolished conservatory; 3) Elevational alterations to t	Conditional Permission	26/10/2023

235707/ ABP-318403-23	Permission for the following Large Scale Residential Development (LRD) comprising of the demolition of existing wall into the Castleredmond estate and the construction of 270 no. residential units, 43 no. garden sheds, 1 no. creche, 3 no. ESB substations	Split decision	17/10/2023
235058	Permission for the construction of 3 No. dwelling houses and all associated ancillary development works including access, footpaths, parking, drainage and landscaping. Access to the proposed development will be via the vehicular access permitted to the n	Conditional Permission	04/09/2023
235249	Construct a single storey log cabin granny flat including link extension to the rear of the existing dwelling and all associated site works.	Conditional Permission	14/08/2023
234450/ ABP-317290-23	Permission for the following Large Scale Residential Development (LRD) comprising the construction of 125 no. residential units, 21 no. garden sheds, 1 no. creche, 2 no. ESB substations, a temporary wastewater treatment plant and all associated developme	Conditional Permission	08/05/2023
234317	The construction of a single storey extension to the side of the existing dwelling and all associated site works and site services.	Conditional Permission	14/04/2023
234040	Construction of a detached two-storey dwelling, waste water treatment system and all ancillary site works	Conditional Permission	06/03/2023
226400	Construction of a temporary wastewater treatment plant, modifications to the existing open space and all ancillary site development works. The temporary waste water treatment plant will service: (a) the 40 no. units permitted under Pl.Reg.No. 19/5876 and	Conditional Permission	14/02/2023
226688	Permission for the following Phase 3 residential development at Lakeview, Castleredmond, Midleton Co.Cork, comprising the construction of 35 no. residential units (comprising a mix of 2, 3 and 4-bed, detached, semi detached and terrace units) and all ass	Conditional Permission	07/02/2023
226105	Permission to convert his existing two-storey dwelling into 2no. two-storey dwellings, raise the roof level of the existing dwelling, construct a first floor extension over the existing single storey side extension, elevational changes and all associated	Conditional Permission	13/12/2022
224674	The construction of a single storey detached Montessori building, and all associated site works	Conditional Permission	11/08/2022
224868	To convert original stone-built farm-building to 2 No. holiday apartments, for short-term letting, including construction of new stairwell to rear of main block as well as all associated site development works.	Conditional Permission	19/07/2022
224753	Permission for the following phase 2 residential development at Lakeview, Castleredmond, Midleton, Co.Cork comprising the construction of 99 no. residential units (comprising a mix of 2,3 and 4-bed, detached, semi-detached and terraced units) and permiss	Conditional Permission	31/05/2022
217428	The construction of 97 no. residential units (comprising a mix of 2 ,3 and 4-bed, detached, semi detached and terraced units) and permission for the demolition of rear annexâ€™s associated with Lakeview House (protected structure Ref. RPS-00519) and the	Conditional Permission	26/05/2022
224466	a) Construction of a single storey detached granny flat, detached domestic shed (for uses incidental to the use and enjoyment of the dwelling) and all associated site works b) Retention of covered external patio and storage areas including blockwork peri	Conditional Permission	28/04/2022
216760	A 2 storey dwelling house, an on-site sewage treatment system and all associated site development works.	Conditional Permission	03/02/2022
215102	Permission consequent on the grant of outline permission Ref: No. PL. Reg. No. 19/6235 for construction of a dwelling house and demolition of existing shed, together with all other ancillary site works.	Conditional Permission	17/01/2022

216643	Permission for the retention of sundry changes to layout and elevations of existing farmyard accommodation comprising two (2no.) self-contained units, including such works as (1) retention of new window and door units and fenestration, (2) retention of n	Conditional Permission	11/01/2022
216939	Installation of a free standing 500mm x 750mm x 300mm (l x h x w) gas pressure reduction unit and 3.25m (h) vent stack, with all ancillary services and associated site works in the footpath	Conditional Permission	16/12/2021
216973	The upgrade of the entrance junction to the site, consisting of the widening of the entrance gateway from approximately 6m to approximately 11m and all associated works. Permission is also sought for the installation of approximately 180m of new, interna	Conditional Permission	16/12/2021
216725	The construction of an extension to the side and rear of the existing dwelling including the construction of a garage and associated works.	Split decision	01/12/2021
216737	Construction of a single storey extension to rear of existing dwelling and associated site works.	Conditional Permission	01/12/2021
216655	1.) The construction of a single storey extension (c.32 sq.m) to the side of an existing dwelling house. 2.) All ancillary site and landscaping works required to complete the development.	Conditional Permission	23/11/2021
216583	Permission for retention of (1) Single storey extension to front elevation and (2) Single storey porch extension to the front elevation as constructed to their dwelling house and all associated site works.	Conditional Permission	12/11/2021
216557	To construct a single storey extension and elevation alterations to existing dwelling house along with associated site works.	Conditional Permission	09/11/2021
216461	Permission for retention for partially built a) single storey extension, a garage, to the eastern side of the existing dwelling. b) an extension to the southern side of existing dwelling, and completion of same. Permission for retention for solar panels	Conditional Permission	28/10/2021
216389	Demolish a single storey kitchen annex at the rear of their house and to erect a new extension to the rear of their dwelling house. The new extension will be partially single storey and partially 2 storey. This development includes installing an addition	Conditional Permission	20/10/2021
215806	The construction of a first floor extension to the side of the existing dwelling including the introduction of roof windows and associated works.	Conditional Permission	20/08/2021
215798	1) the construction of a new two storey extension to the eastern elevation; 2) the construction of a first floor extension on top of the existing single storey accommodation to the western elevation; 3) elevational alterations to the existing facades to	Conditional Permission	18/08/2021
215422	Permission for Retention of; rear and side extensions to existing dwelling house, detached domestic garage and two domestic storage sheds in rear garden area.	Conditional Permission	13/07/2021
215335	Retention of the driveway and single-storey extension to the rear of the existing dwelling.	Conditional Permission	06/07/2021
214823	A change of use from permitted retail use to retail use including the sale of alcohol for consumption off the premises (i.e., off licence use) within the overall permitted retail unit, where the floor area for the off licence use is 10sqm and is ancillar	Conditional Permission	21/05/2021
214552	To construct a first-floor extension to the side of existing two-storey detached dwelling and construction of a single storey ground floor extension to the rear, along with alterations to the elevations and all associated site works.	Conditional Permission	26/04/2021

214504	To construct a first-floor side extension and single storey rear extension and elevational alterations to existing dwelling, along with 1 no. rooflight and 25 sqm area of PV panels to front elevation of dwelling including all associated site works.	Conditional Permission	15/04/2021
206975	The installation of one noise attenuation enclosure, consisting of a GRP enclosure (measuring approximately 4.85m high by 11.7m x 5m) with a flat GRP roof and a concrete base (approximately 12m x 5.5m) and associated ancillary facilities.	Conditional Permission	23/02/2021
206728	Construction of a first floor extension to the side of the existing dwelling house, new rooflights to the front and rear of the existing roof, and all associated site works.	Conditional Permission	02/02/2021
206618	To construct a single storey extension to the side and the rear of the existing two-storey detached dwelling, planning permission to carry out alterations to the ground floor level of the existing east elevation consisting of the installation of 2 window	Conditional Permission	27/01/2021
205838	Construction of a first floor extension to the side of the existing dwelling house, new rooflights to the front and rear of the existing roof, and all associated site works.	Conditional Permission	19/10/2020
ABP-306305-20	Retention of demolition of a boiler house, extension, construction of new extension, alteration to front door with a window, variation of ground levels and associated site works.	Conditional Permission	24/03/2020
185691/ ABP-303221-19	Construction of 87 houses, 2 apartments, a creche and all ancillary site development works.	Conditional Permission	19/06/2019

Note: 'Development Description' field was truncated by the Planning Authority when providing data to the NPD.

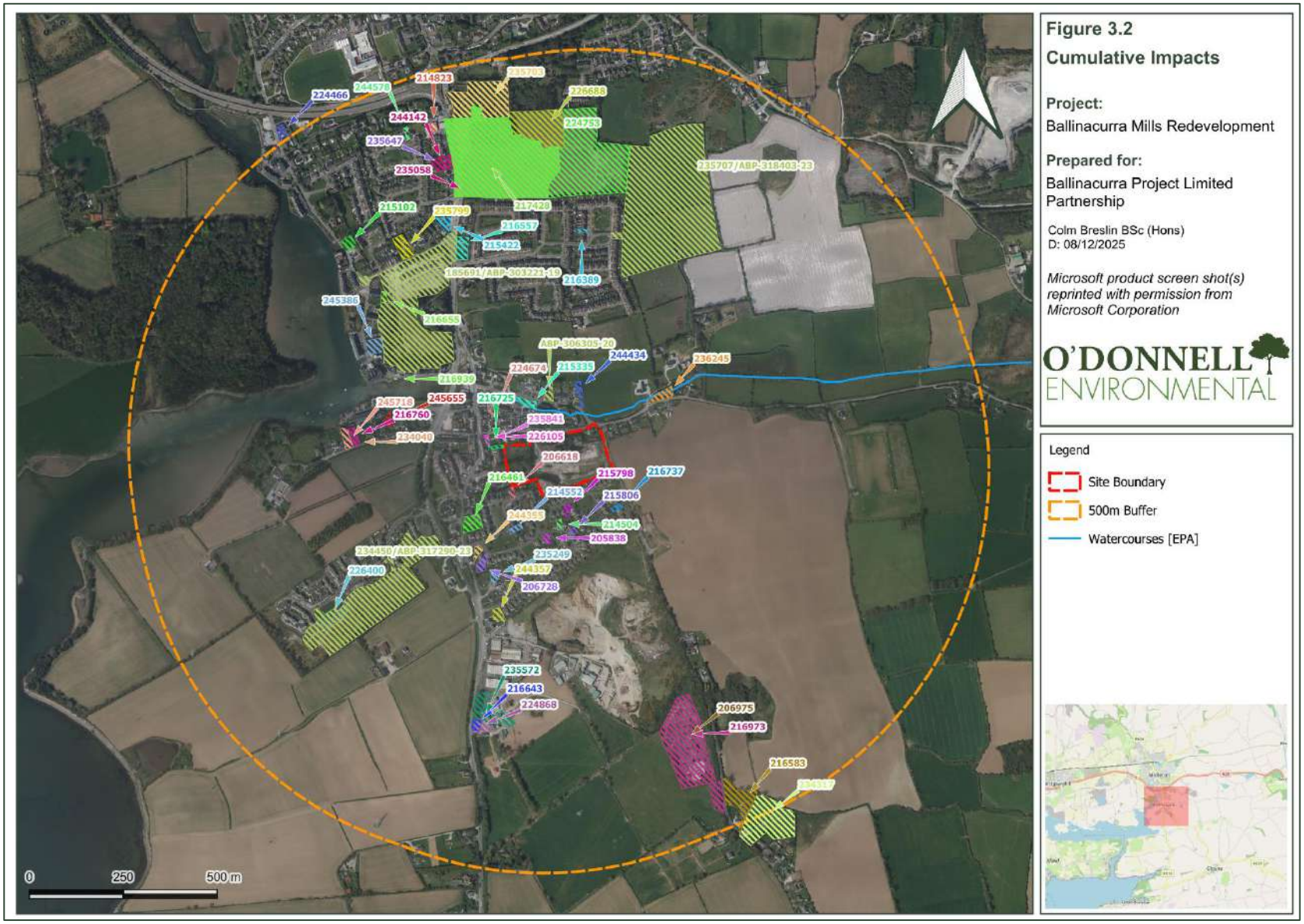


Figure 3.2
Cumulative Impacts
Project:
Ballinacurra Mills Redevelopment
Prepared for:
Ballinacurra Project Limited Partnership
Colm Breslin BSc (Hons)
D: 08/12/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
500m Buffer
Watercourses [EPA]
0
250
500 m
224466
244578
214823
236703
226688
244142
224753
235647
235058
235707/ABP-318403-23
215102
238799
217428
216557
215422
185691/ABP-303221-19
216389
245386
216855
ABP-306305-20
244434
224674
215335
236245
216939
245655
216725
245718
216760
235841
234040
226105
206618
216461
215798
216737
214552
215806
244365
214504
205838
234450/ABP-317290-23
235249
226400
244327
206728
235572
216643
224868
206975
216973
216583
204317

3.7 AA SCREENING CONCLUSION

This Appropriate Assessment screening exercise has been carried out based on the best available scientific information and data available, ecological site walkovers, project details provided by the project design team (including MHL & Associates Ltd. and Fourem Architects) and review of relevant planning applications.

It is considered that specific avoidance and mitigation measures are required to eliminate the likelihood of significant adverse effects occurring as a result of the proposal, specifically potential effects arising during the operational phase as a result of foul water discharge. A Stage 2 'Appropriate Assessment' (NIS) is therefore required to consider the effects of proposed mitigation measures, and this is presented in **Section 4** of this report.

All potential impacts of the proposed project have been identified and assessed. With the exception of the impact discussed above, all other potential impacts are considered not likely have a significant negative effect on any Natura 2000 site either alone or in combination with other plans or projects and are therefore not considered further.

4 Stage 2: Natura Impact Statement

Consideration is given here to the residual impacts of the likely significant adverse effects identified in the preceding section, on the qualifying interests of the Great Island Channel SAC and Cork Harbour SPA following application of avoidance and mitigation measures.

Details of the relevant designated sites including conservation objectives and qualifying interests are outlined in **Section 3**.

4.1 MITIGATION MEASURES

A precautionary approach was taken and in the absence of targeted measures the possibility of a significant adverse effect on Great Island Channel SAC and Cork Harbour SPA could not be ruled out. Specifically, this concern relates to the increased foul water loading on the Midleton WWTP which discharges directly into the Owenacurra Estuary that would occur in the operational phase of the proposed development.

The operational phase of the proposed development will see an increase in foul water flow due to the occupation of 128 residential and other mixed-use units. No foul wastewater will be treated on-site during the operational phase. A pre-connection enquiry form was submitted to Uisce Éireann in relation to the nearby existing connection point along the L3625. Uisce Éireann provided a Confirmation of Feasibility on 5th December 2025 with regards to foul water connection.

The 'Annual Environmental Report' from 2023 notes that Midleton WWTP was non-compliant with Emission Limit Values (ELVs), specifically faecal coliforms, with no remaining organic capacity (PE) (Uisce Éireann, 2023). The operational phase of the proposed development will add additional loading on the over-capacity Midleton WWTP, resulting in significant negative impacts on nearby sensitive receptors.

The Engineering Design Report (MHL, 2025b; see **Appendix C**) states that in order to accommodate the proposed connection upgrade works are to create additional capacity in the wastewater treatment system. Two projects are currently being progressed by Irish Water to provide the additional wastewater treatment capacity. Uisce Éireann has confirmed that following these upgrades there will be sufficient capacity to adequately process the additional input from the operational demand of the proposed development.

In order to avoid the possibility of significant adverse negative effects on the qualifying interests of the relevant Natura 2000 sites, the proposed development will not be occupied until such time that upgrade works are completed by Uisce Éireann and capable of catering for the additional wastewater loading.

4.2 RESIDUAL IMPACTS

As outlined in **Section 1.4**, the 'do-nothing scenario' in this instance is the brownfield site remains as currently described and will continue to become recolonised by scrub habitat. Existing structures will continue to fall into a state of dereliction.

The proposed development will not be occupied until such time as planned upgrade works to the downstream municipal wastewater treatment system are complete. With the implementation of this

effective avoidance measure, it can be objectively concluded that the proposed development, alone or in combination with other plans or projects, will not adversely affect the integrity of the Great Island Channel SAC, Cork Harbour SPA or any other Natura 2000 site. No reasonable scientific doubt remains as to the absence of such adverse effects. In reaching this conclusion, consideration has been given to the conservation objectives of the relevant designated sites.

4.3 NIS CONCLUSION

It is objectively concluded, with consideration of industry standard measures, and the implementation of a bespoke avoidance measure, that the proposed project is not likely to cause significant negative effects on the Great Island Channel SAC, Cork Harbour SPA, Ballycotton Bay SPA or any other Natura 2000 site, individually or in combination with other plans or projects. It is considered that there is no reasonable scientific doubt in relation to this conclusion.

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Appendix A - Photographic Record

A1. View from Easthill House, looking towards Mill Buildings.

A2. View of Mill Buildings from east.

A3. View of Rosehill House.

A4. Overview of brownfield areas of site.

A5. West Ballynacora Stream bordering the north of the proposed site which flows into the Owenacurra Estuary.

Appendix B - Construction and Environmental Management Plan (CEMP)

For: Ballinacurra Project Limited Partnership.

Proposed Residential Development at Ballinacurra Mill, Midleton, Cork

Construction and Environmental Management Plan

December 2025

MHL & Associates Ltd.
Consulting Engineers

Document Control Sheet

Client	Ballinacurra Project Limited Partnership.
Project Title	Proposed Residential Development at Ballinacurra Mill, Midleton, Cork
Document Title	Construction and Environmental Management Plan
Document No.	23072HD-MHL-Doc04-CEMP_Construction and Environmental Management Plan
Job No.	23072HD

Revision	Status	Author	Reviewed By	Approved By	Date
01	Internal Draft	D.Archer	K.Manley	B. Loughrey	04/07/2024
02	Draft Issue	D.Archer	K.Manley	B. Loughrey	24/07/2024
03	Draft Issue	D.Archer	K.Manley	B. Loughrey	27/11/2024
04	Draft Issue	D.Archer	K.Manley	B. Loughrey	10/12/2024
05	Client Issue	D.Archer	K.Manley	B. Loughrey	27/01/2025
06	Client Issue	D.Archer	K.Manley	B. Loughrey	09/04/2025
07	Client Issue	D.Archer	K.Manley	B. Loughrey	19/11/2025
08	Client Issue	D.Archer	K.Manley	B. Loughrey	09/12/2025

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1.0 INTRODUCTION

MHL & Associates Consulting Engineers Ltd. (MHL) has prepared this Construction and Environmental Management Plan (CEMP) on behalf of Ballinacurra Project Limited Partnership.This report is a planning stage report outlining the principle of waste and demolition management from the subject site. This report is part of the applicant's planning application to Cork County Council and has been developed together with O'Donnell Environmental Ltd.

The purpose of this Construction Environmental Management Plan is to provide details on the manner in which the proposed Ballinacurra scheme will implement measures, in a comprehensive and integrated approach to ensure protection of the environment during construction on site.

The report details the specific requirements that shall be addressed during the construction phase of the project and includes the roles and responsibilities of individuals involved in the project. It identifies the environmental considerations associated with the construction process and outlines the work practices, management, mitigation and monitoring strategies which shall be implemented, as required to ensure the project is carried out in accordance with best practice, minimum impact on the surrounding environment and maximum safety throughout the duration of the scheme.

This plan includes the project's Construction and Demolition Waste Management Plan, which will ensure that optimum levels of waste reduction, reuse and recycling are achieved throughout the duration of the project.

The proposed development will consist of the demolition of:

1,165 sq.m of structures associated with the former Mill complex and demolition of 2 no. vacant dwellings.

And the construction of:

103 dwelling houses and 25 apartments (total of 128 residential units) as follows: 92 no. new dwelling houses ranging from 2 to 3 storeys in height (comprising of 39 no. 2 bedroom houses, 36 no. 3 bedroom houses and 17 no. 4 bedroom houses), 11 no. dwelling houses in existing structures (including 1 no. 4 bedroom dwelling in Rosehill House, 1 no. 3 bedroom dwelling in Rosehill outbuildings, 1 no. 2 bedroom dwelling and 1 no. 3 bedroom dwelling in Eastville House, and 3 no. 2 bedroom dwellings and 4 no. 3 bedroom dwellings in the Mill Buildings),

25 no. apartments in existing structures (comprising of 1 no. ground floor Studio and 10 no. 1 bedroom apartments and 14 no. 2 bedroom apartments in existing Mill buildings from first to third floor),

1 no. single storey creche, 1 no. single storey café, 2 no. ground floor retail units, 1 no. ground floor commercial office unit, 1 no. ground floor medical centre unit, 1 no. ESB substation.

Ancillary works including provision of roads, footpaths, public open space, communal open space, private open spaces, 214 car park spaces, 114 cycle spaces, EV charging spaces, drainage infrastructure, 2 no. access points (one off Rose Lane and one off Cloyne Road, R629) and all associated site works including landscaping and boundary treatments.

It is also proposed to carry out new car parking arrangements along part of Rose Lane to the north of the site measuring 0.057 hectares (bringing gross site area to 3.687 ha).

The site is expected to produce non-hazardous waste during the construction and demolition phases. All construction waste is to be handled by an assigned specialist waste a management contractor assigned at construction stage.

The subject's site red line boundary extents, as shown in **Figure 1.1**, comprises overgrown vegetation within the site. The figure also highlights the existing buildings to be demolished and retained

Figure 1.1 Proposed Site Plan – Demolition & Retained

1.4 Site Specific Details

The proposed development consists of residential dwellings with a large central open space and localised smaller open spaces. Existing hedgerows and trees are to be retained where possible with generous landscaping proposed in developed open spaces. The house types have been designed using materials, proportions and features that respect and enhance the local setting.

The scheme is accessed via Rose Lane and the R629 with heavy construction traffic being directed to the R629. The Rose Lane access will be for site personnel and small scale deliveries. Construction stage traffic will be scheduled to avoid peak hour periods. A full construction stage traffic management plan will be implemented to ensure the safety of all road users during this phase of the works.

The proposed development lands benefit from an existing foul sewer connection to the public mains under Rose Lane. It is proposed that the scheme foul water will connect to the public mains at this location.

Storm water from the site is to be attenuated to greenfield run-off rates using an agreed attenuation system which will include silt traps and petrol interceptors prior to out falling to the existing Stormwater sewer located in the Rose Lane housing development opposite the site. This ultimately outfalls to the stream behind this existing which connects directly to the Estuary.

This CEMP has been developed in response to recommendations made by the project ecologist, O'Donell Environmental Ltd.

In relation to health and safety, this CEMP has also been developed in accordance with health and safety provisions contained in the Safety Health and Welfare at Work (Construction) Regulations 2013, as amended, which transpose into Irish law obligations under Directive /-92/57/-EEC.

2.0 PROJECT RESPONSIBILITIES

2.1 Assignment of Responsibilities

The Contractor appointed by Ballinacurra Project Limited Partnership to undertake the construction works, shall be responsible for implementing the project-specific Construction Environmental Management Plan (CEMP) incorporating the methodologies and measures described in this plan. To ensure the CEMP remains 'fit for purpose' for the duration of the project, the CEMP shall be reviewed and updated by the Project Manager during the life of the project.

The anticipated roles and responsibilities of the key parties involved in the implementing the CEMP are set out below.

Personnel	Role	Duties/Responsibilities
PROJECT MANAGER	Liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project team.	• Implementing of the CEMP and • Implementing the Health and Safety Plan • Management of the construction project • Liaison with the client/developer • Liaison with the Project Team • Assigning duties and responsibilities in relation to the CEMP • Production of construction schedule • Materials procurement • Maintaining a site project diary
CONSTRUCTION MANAGER	Liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.	• Implementing the Construction Environmental Management Plan. • Assigned Project Management Duties. • Implementing the Health and Safety Plan under the direction of the PSCS • Liaison with the Process Contractors. • Monitoring the Construction Schedule. • Maintaining a Site Project Diary. • Assisting in maintaining the Site Queries and Complaints Register.
ENVIRONMENTAL MANAGER	Ensures that the CEMP is effectively implemented.	• Implementing the Environmental Procedures of the CEMP and updating it as necessary. • Management of all Environmental aspects of the Construction Works and Audit of Controls. • Review and Approval of Method Statements relating to Environmental aspects. • Ensuring Implementation of Mitigation Measures. • Training of Staff in all Environmental issues. • Liaison with Construction Manager.
PROJECT ECOLOGIST	The Project Ecologist will report to the Environmental Officer and is responsible for advising on all ecological monitoring activities	The responsibilities and duties of the Project Ecologist will include the following: • Ensure effective monitoring • Ensure effective implementation of any measures required as set out in the CEMP

ALL SITE PERSONNEL		The site personnel appointed by the Contractor are responsible for: • adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements • adhering to the Health and Safety Plan • reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures

The Contractor shall designate a Site Engineer/Manager/Assistant Manager as the Construction Waste Manager and who will have overall responsibility for the implementation of the Project WMP.

The Waste Manager will have the authority to instruct all site personnel to comply with the specific provisions of the Plan.

A technically competent person will also be required to assess waste arisings and determine classification in accordance with the Hazardous Waste List.

At operational level, a foreman from the Contractor and appropriate personnel from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Project WMP are performed on an on-going basis.

Where the need arises, the Contractor, shall employ the services of an approved Specialist Waste Management Sub-Contractor to assist with the safe management and disposal of contaminated waste materials. They shall specialize in the investigation of such material, the carrying out of sampling and testing of hazardous material and the preparation of treatment and disposal methodologies.

A report and method statement shall be finalised for the safe removal and disposal of the identified hazardous materials.

2.2 Reporting

The Site Manager / Project Manager is responsible for collating and maintaining all reporting, including all environmental and compliance documentation.

2.3 Training and Awareness

An initial Site Environmental Induction and ongoing Training will be provided to communicate the main provisions of the Environmental Plan to all Site Personnel.

Two-way communication will be encouraged to promote a culture of Environmental Protection. The information which must be communicated to Site Staff includes:

- Environmental Procedures of the C.E.M.P.
- Environmental Buffers and Exclusion Zones
- Housekeeping of Materials and Waste Storage Areas
- Environmental Emergency Response Plan
- Reporting Procedures

2.4 Environmental Performance Indicators

The Project Contractor will record the key performance indicators for the site in gauging successful site management in the effective prevention of pollution and the protection of the environment. Environmental performance indicators will at a minimum include:

- Number of environmental accidents/incidents logged;
- Breach of procedure and corrective actions;
- Number of environmental complaints received;
- Results of dust monitoring;
- Results of noise and vibration monitoring, and
- Results of site audits.

2.5 Environmental Incidents / Complaints Procedure

In the unlikely event of an environmental incident, or breach of procedure, or where a complaint is received, the contributing factors shall be investigated, and remedial action taken as necessary. The Main Contractor will ensure that the following response actions will take place:

- The Project Manager must be informed of any incident, breach of procedure and/or complaint received, and details must be recorded in the incident/complaint register
- The Project Manager shall conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance.
- The Project Manager shall notify and liaise with the appropriate site personnel where required, e.g. Site Environmental Manager, Project Ecologist, Project Archaeologist
- If necessary, the Project Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions and remedial measures used following the incident/complaint. The form will also include any recommendations made to avoid re-occurrence of the incident.
- The Project Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will instruct the Main Contractor as appropriate.
- The Site Project Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

2.6 Environmental Targets and Objectives

Targets

- Zero pollution incidents
- Segregation of site waste to include timber, general waste and other materials
- Completion of environmental checklists
- Fuel spill kits to be present on each site at all times
- Maintain all waste documentation including waste transfer notes, for all waste movements including contractors

Reporting Specific Objectives

- Environmental incidences to be reported to Site Manager without delay
- Documentation will be reported to the planning authority on a 4-weekly basis:
- Environmental incidents and nonconformities raised, including nature, status, corrective and
- preventive actions and potential for statutory intervention;
- Key environmental issues raised;

- Significant environmental incidents;
- Complaints and the current status of those complaints;
- Actions or interventions undertaken by enforcement bodies;

Site Specific Objectives

- Reduce waste, water and energy use on the project including within all of the site offices;
- Ensure that everyone complies with the environmental requirements;
- Reduce the carbon footprint of the development;
- Reduce the amount of construction waste and excavated material generated which goes to landfill;
- Zero pollution incidents onsite;
- Recycle construction waste where possible;
- Maximise beneficial reuse of the materials: and
- Ensure that all waste documentation (waste transfer dockets, permits etc.) is available for inspection at the site office / in head office.

3.0 CONSTRUCTION MANAGEMENT

3.1 Introduction

3.1.1 Phasing of Works

The proposed development will consist of the demolition of a number of existing buildings and associated infrastructure on site with the repurposing of the main buildings to residential use. In addition it is proposed to construct 128 no. residential units, 1 no. single storey creche, 1 no. single storey café, 2 no. ground floor retail units, 1 no. ground floor commercial office unit, 1 no. ground floor medical centre unit, and all associated development works including footpaths, parking, drainage, bicycle and bin stores and landscaping/amenity areas. Access to the site will be primarily from the R629 with local access provided via Rose Lane.

It is proposed to develop the site in two phases:

- Phase 1: Bulk excavation and demolition across the entire site extents (site boundary noted in red in **Figure 3.1**).
- Phase 2: 128 no. residential units, 1 no. single storey creche, 1 no. single storey café, 2 no. ground floor retail units, 1 no. ground floor commercial office unit, 1 no. ground floor medical centre unit, and accompanying infrastructure.

Figure 3.1: Site Layout

3.1.2 Construction Stage Methodology

Having regard to the scope of the site works and processes, a detailed scheme of works is described in the following sub-sections.

3.1.2.1 Pre-commencement Activities

Before works commences a number of preparatory activities will be carried out. The following key works will be undertaken as part of the site preparation and pre-development activities:

- Prior to undertaking groundworks, a professional land surveyor shall be appointed to confirm existing ground levels.
- All onsite monitoring wells will be fully decommissioned by an experienced borehole specialist in accordance with relevant guidelines, 'Good practice for decommissioning redundant boreholes and wells' (UK Environment Agency, 2012).
- A programme of confirmatory archaeological investigations will be carried out by a suitably qualified archaeologist under a license issued by the National Monument Service. In the event that any sub-surface archaeological deposits, features or artefacts are identified during the investigations then their surfaces will be manually cleaned, recorded and left to remain in situ while the Planning Authority and the National Monument Service are consulted to determine further appropriate mitigation measures.
- An existing pre-condition survey will be carried out on all access roads within the occupied scheme and on the R629 approach, which will record the current condition of existing roads.

Enabling Works:

- The initial enabling works, to be carried out in accordance with this document, will enable the development of Construction Access 1 Rose Lane and R629 to facilitate construction access to the site. This will include the provision of safety signage on both roads..
- Existing security fencing/hoarding encompassing the site will be upgraded to ensure controlled-only access to the site is possible.
- The construction compound will be formed including welfare facilities/offices, staff parking and material storage.
- Once the site compound is accessible, Tree Protection Fencing of at least 2.3m in height will be installed prior to other works commencing on site to avoid inadvertent felling or use of the ground under canopies for construction use. Fencing will be installed at 2m offsets from hedgerows to be retained and will remain in place for the duration of construction. Fence panels shall be open mesh to ensure continued light and air circulation, with 150mm ground clearance to ensure continued small fauna movement. All trees and other vegetation to be retained shall be clearly marked on site.

Temporary Site Compound

Once the main entrance is in place and the bulk excavation has reached the appropriate stage, the temporary construction facilities will be established, ref. **Figure 3.2.**

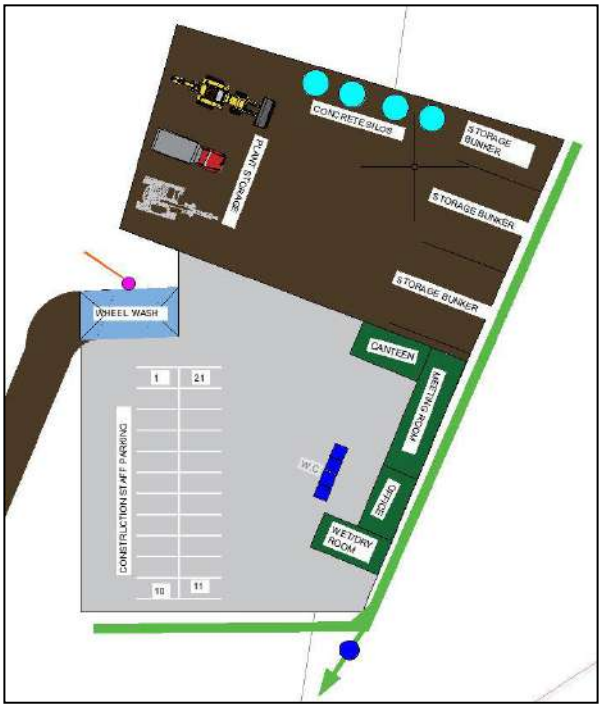

Figure 3.2: Site Compound Plan

The proposed construction compound will include as a minimum:

- Site offices, canteen and toilet / changing facilities c/w temporary water supplies and wastewater treatment unit.
- Secure compound and containers for storage of materials and plant.
- Temporary vehicle parking areas.
- Contained area for machinery refueling and construction chemical storage.
- Contained area for washing out of concrete and mortar trucks.
- Wheel-washing facilities for vehicles leaving the site.

All vehicles and personnel will be checked on entry to ensure no unauthorized access or fly-tipping will occur within the site. Heras fencing will also be provided on all boundaries to adjoining lands.

Water supply for the construction facilities will be taken from the mains supply which is adjacent the site. Power for the pumps and small power requirements for construction activities will be supplied from diesel generators until such time as the permanent site power supply is available.

A suggested compound location is shown in **Figure 3.3** below. The appointed contractor will be required to produce a full Construction Management Plan agreeing to specific details such as final compound location, hours of work, etc with the Cork County Council Area Office.

Figure 3.3: Suggested Site Compound Location

3.1.2.2 Phased Based Construction

The following processes will be repeated for each sequence of development and will be carried out in accordance with the requirements of this CEMP.

Bulk Excavation incl. Demolition Works if required:

- The removal of existing construction waste. Waste material generated from these works will be disposed of in accordance with Section 4 of this document.
- Existing buildings to be demolished will be demolished and materials will be disposed of in accordance with section 4 of this document.
- Following the demolition works, topsoil stripping will be completed. No soil will be stripped within 2m of the edge of the boundary (hedgerows). Existing soil tips (as a result of the original constructed scheme) will be tested for re-use as topsoil. Soil excavated at depths greater than 350mm will be stored separately as subsoil.
- Following the topsoil strip of the site, the access roads serving the development will be constructed to formation level. The bulk excavation to formation across the site will be undertaken. An evaluation of excavated material will be undertaken to ascertain the reusability of site-won material. Any excess fill material generated will be transported off site to a licensed facility.
- Having established the desired site levels during the early works, the next phase of construction will involve the digging of the foundations for each of the buildings. The civil and structural design for each building will confirm the precise location and extent of foundations that are required to support each of the buildings. The foundations for each building will be excavated to the desired size and depth in preparation for the pouring of concrete.

Civil Works:

- The initial civil concrete works will involve the pouring of the foundations for each of the prepared buildings. Once the foundations are poured and have cured it will allow the building envelope to be erected.
- Construction materials will be sourced locally where practicable.
- Works on external services including water mains, foul sewers, storm sewers, roads, footpaths, electricity to include undergrounding of existing overhead lines, and public lighting will be carried out in conjunction with the completion of the units.
- All buildings will be constructed in accordance with current Building Regulations and certified by an appropriated qualified engineer during and after construction.

Landscaping:

- In tandem with the other construction activates being carried out on the buildings, elements of the sites landscaping plan will be progressed. The formation of landscape features will take place in parallel to the early works, utilising material excavated during the cut and fill exercise. As the site build progresses the landscape works will begin to focus on the soft landscaping aspects such as establishment of green zones and walkways, as well as planting of trees and shrubs in designated areas.
- Peripheral planting will be installed during the first planting season to ensure boundary interfaces are as robust as possible upon occupation of units.
- No herbicides will be used in the landscape preparation of the public open spaces, to minimise impact on natural drainage systems. The only use of herbicides will be in the private rear gardens prior to amenity grass installation.

3.1.2.3 Construction Impact Assessment

The potential impacts of the construction process have been considered by each separate discipline including materials and quantities associated with the re-grading works.

The following mitigation measures are proposed where potentially significant impacts have been identified:

- The moving and storage of excess material has been kept to a minimum and has informed the delivery of the scheme.
- Earthworks/ piling plant and delivery vehicles accessing the site will be confined to predetermined haul routes around the site for each sequence of development.
- Excavated material shall be stored on-site to be re-used for later stages of the development.
- Salvaged topsoil is not to be stored more than 6 months if kept in piles more than 1m in height. To ensure healthy aerated soil, the stockpiling is to be rotated as required to meet this time restriction.
- The site investigations have identified that certain quantities of subsoil can be re-used as general class fill material. These will be stored in appropriate stockpiles for re-use.
- Site control measures to protect surface waters and existing stormwater/foul sewer drainage from contamination will be put in place prior to the commencement of any site works.
- To avoid inadvertent felling, trees to be retained will be fenced off at the commencement of construction in line with British Standard 5837:2012 and National Road Authority 2006a guidelines.
- All trees along the southern boundary will be retained for habitat benefit and visual framework.

3.1.2.4 Control of Surface Water Run-off

The control measures relating to surface water run-off during the construction phase of the development shall follow best practice as recommended by CIRA 2010 and ISO 14001:2015 – Environmental Management Systems and C741 Environmental good practice on site guide (4th edition) and CIRIA (2015) Coastal and marine environmental site guide (second edition) (C744).

Measures to be implemented will consist of:

- Surface water shall be directed to settlement ponds where topographically feasible. Where this is not practicable the surface water shall be allowed to percolate to ground and/or be removed by tanker to a designated waste-water treatment plant if excessive build-up of surface water on site occurs.
- Protection of surface water gullies or drains using silt fences
- Use on-site bund structures (including incorporating existing ditches) on site to retain surface waters on site and to prevent runoff from the site. Bunds will be made up of adequately compacted material and visibly inspected during site audits to ensure they remain intact and functional.
- Minimal and short-term storage and the removal of excess materials (soil, stones, and construction wastes) off site in an efficient manner
- Daily checks of surface water regime on site and logging of same
- Works associated with excavations or earth moving not to be undertaken in periods of forecasted bad weather
- Drainage channels beside construction roadways to direct surface water to

settlement areas and allow for natural percolation to ground

- Ensure good site management is maintained at all times during the construction phase including regular site clean-ups and use of appropriate bins.
- Chemicals or fuel/oils shall be stored in temporary bunded storage areas and plant is re-fueled via delivery trucks in specific bunded re-fueling areas, rather than the storage of large quantities of fuel on site in a designated bunded area. Bunds will be made up of adequately compacted material with impermeable membrane and visibly inspected during site audits to ensure they remain intact and functional. Straw mats shall also be implemented in the event of a spillage.
- No plant maintenance will be completed on site, any broken down plant will be removed from site to be fixed.
- Taps, nozzles or valves will be fitted with a lock system.
- The pouring of concrete, application of chemicals, painting or any other activity that has the possibility of being toxic to aquatic life shall be undertaken in a control and isolated manner, preventing the possibility of any pathway to a surface water source.

Construction management measures specifically related to the protection of surface water quality are provided in **Appendix 1** of this CEMP. Given the ecological sensitivities of the Stream that flows along the western boundary of the site, additional protective measures are proposed as follows:

- Protective fencing will be used to prevent encroachment by site operators/construction workers into the stream corridor.
- Any temporary stockpiles of construction material (outside of construction compound) will be stored on impermeable surfaces and covered using tarpaulins, and not within .
- Good housekeeping (daily site clean-ups, use of disposal bins, etc.) on the site during construction, and the proper use, storage and disposal of these substances and their containers will prevent ground/surface water contamination.
- Concrete – pouring of concrete in the western section of the site near the stream will be undertaken with due care, including the use of weather forecasting to plan for dry days when pouring concrete. Following IFI guidelines (IFI, 2016) concrete will only be poured in this area on dry days. Emergency measures will be in place in case of a sudden rainfall event.
- Where necessary silt traps/silt fencing will used at locations to intercept run-off to any watercourse.
- The risk of water pollution will be minimised by the implementation of good construction practices. The Construction Industry Research and Information Association (CIRIA) provides guidance on the control and management of water pollution from construction sites in their publication “Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors” (Masters-Williams et al. 2001). Using these guidelines, a contingency plan for pollution emergencies will be developed by the appointed Main Contractor prior to the commencement of the works.

3.1.2.5 Biodiversity and Invasive Species

Biosecurity protocols shall be implemented during the proposed project to prevent the introduction of invasive species, in particular those listed on the 3rd Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011), to site and the further spread of diseases.

The following measures will be adopted:

1. All equipment intended to be used at the site shall be: -
    i. power steam washed at a suitably high temperature or at least 65 degrees, or
    ii. disinfected with an approved disinfectant, e.g. Virkon or an iodine-based product. It is important that the manufacturer's instructions are followed and if required, the correct contact times are allowed for during the disinfection process. Items that are difficult to soak shall be sprayed or wiped down with disinfectant.
2. During the duration of the proposed project, if equipment is removed off-site to be used elsewhere, the equipment shall be cleaned and disinfected prior to being brought back to the works area of the proposed project.
3. Appropriate facilities shall be used for the containment, collection, and disposal of material and/or water resulting from washing facilities of vehicles, equipment, and personnel.
4. Importation of materials shall comply with Regulation 49 of the EC (Birds and Natural Habitats) Regulations 2011.
5. Appropriate measures will be taken to ensure that trees and hedges being retained are protected in line with British Standard 5837:2012 and National Roads Authority 2006a guidelines. Protective fencing of at least 2.3m in height will be implemented.
6. To compensate for the loss of hedgerow and partial removal of woodland, substantial native tree and hedgerow planting will be established on the site. The planting schemes shall ensure connectivity to linear/ woodland habitats of bats in the wider landscape.
7. Construction lighting shall incorporate the use of accessories such as hoods, cowls, louvres, and shields to direct lighting away from all hedgerow/ treeline habitats to be retained during the bat activity period (April to September).
8. Removal of vegetation such as grassland, woodland, and hedgerow will be carried out outside the breeding bird season (March 1st to August 31st, inclusive).

Following correspondence with O'Donnell Environmental Ltd. **Table 3.1** below was drafted and will be implemented both during and post construction stage to preserve and protect the existing ecological environment.

Topic	Identified Impact	Avoidance/Mitigation/Enhancement Measure	
		Construction	Operational
Habitats and Flora	-Loss high value mature trees and woodland habitat; -Loss of Bee Orchid Population; -AIPS.	-Translocation of Bee Orchid population offsite; -Retention of mature trees; -Root protection areas; -AIPS management.	-Landscape design including tree/hedgerow planting, wildflower meadow, flowering lawns, spring bulbs; -Relocation of Bee Orchid into meadow post-construction. -Appropriate maintenance of meadows. -Post-construction Monitoring.
Bats	-Loss of roosting features; -Artificial lighting; -Alteration of roosting, commuting and foraging behaviour; -Noise, vibration and air emissions disturbance.	-Pre-demolition surveys and advice; -Derogation licence (2025 license applied for); -Timing of works/ seasonal avoidance (structure specific); -Pre-demolition roost illumination; -Toolbox talk; -Roof removal supervision; - Use of hand-tools; -Pre-felling tree surveys and measures; -Daytime works only; -Motion-activated security lighting; -Lighting directed away from ecological features. -Standard dust/noise control measures in CEMP. -Installation of 11 summer/winter bat boxes on structures; -Integrated roosts into roof structures of Rosehill House outbuildings and Kiln Building.	-Landscape design including tree and hedgerow planting; -Post-construction monitoring.
Non-violant Mammals	-Loss of foraging and commuting habitat; -Loss of Hedgehog nesting habitat; -Artificial lighting; -Noise, vibration and air emissions disturbance.	-Pre-demolition surveys and advice; -Supervision of vegetation removal with hand tools; -Hedgehog artificial nest dome installation; -Standard dust/noise control measures in CEMP.	-Landscape design including tree and hedgerow planting; -Mammal-friendly fencing; -Post-construction monitoring.
Birds	-Loss of breeding spaces of identified species; - Localised noise and light construction disturbance; -Attraction of avian scavengers.	Avoidance of bird breeding season in structure demolition; -Screening for active nesting (e.g. Kestrel); - No removal of active nests until nesting attempt complete. -Installation of artificial nest structures (Kestrel, Swift, House Martin, Barn Swallow, House Sparrow, General Passerines).	-Post-construction monitoring.
Other Taxa	-Loss of pooling water during construction and operation on breeding frogs, lepidopterans, and insects.	-Ongoing monitoring of pooling water during construction.	-N/A.

Table 3.1 Summary of key ecological enhancement, avoidance and mitigation measures.

3.2 Hours of Working (Hours of Site Operation)

Works will occur within the hours:

07.00am – 07.00pm* (Monday – Friday inclusive)
07.00am – 4.00pm* (Saturday)
There will be no work on Sunday and Bank Holidays.

* *It is proposed that exceptionally, and with prior agreement of the planning authority, working hours may be extended and/or works may take place on a Sunday and/or Bank Holiday at times when critical elements of work need to be advanced. Longer working days can occur when there is a planned concrete pour. If extended working hours are required, these will be agreed in advance with the planning authority. Accordingly, traffic generated by core construction personnel will be mainly during the off-peaks and will not have a significant adverse impact on the road network.*

3.3 Site Storage

Materials for inclusion as part of the works will be stored generally within the allocated compound. No products will be placed outside of this area. Materials will be brought to site periodically to suit the programme for the works.

Earthworks arising will be stored within the identified space and will be sampled, processed and placed within the works or removed off site in accordance with the Waste Management Plan (Section 4 of this report). Storage spaces will be located away from the excavations/immediate works area, in an appropriate manner at a safe and stable location. The maximum height of temporary stockpiles is 3m.

3.4 Noise and Vibration

The control of noise and vibration during the construction phase shall comply with the general recommendations set out in the Code of Practice BS 5228-1:2009 +A1:2014: “Code of practice for noise and vibration control on construction and open sites” together with the specific requirements described below.
“Best practicable means” shall be used to minimise noise and vibration from the site and compound and shall pay particular attention to the selection of the most appropriate available plant to ensure that neighbourhood noise (as defined in BS 5228 Part I, Section 3) and vibration is kept to a minimum.

All vehicles and mechanical plant used for the purpose of the Works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order. In addition, all diesel engine powered plant shall be fitted with effective air intake silences.

The noise level limits within the Site shall be as per **Table 3.2** below.

Day	**Time**	**Level (dbA)** (measured over any 1 hour period)	**L. Max (dbA)**
Monday-Friday inclusive	07:30 - 18:30	65 leq	75
Monday - Friday inclusive	18:30 - 22:00	60 leq*	65*
Saturday*	08:30 - 15:30	65 leq	75
Sunday* and Bank Holidays*	08:30 - 12:00	60 leq*	65*
*** Where agreed by the Planning Authority and/or necessary for emergency works. Measurements will be taken and recorded using a Digital Seismograph and Sound Level Meters**			

Table 3.2 Noise Levels

All compressors shall be “sound reduced” models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use. All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where available, dampened tools and accessories shall be used.

Machines in intermittent use shall be shut down in the intervening periods between work.

The start-up of plant and vehicles shall occur sequentially rather than all together.

All internal haul routes within the site shall be well maintained and avoid steep gradients where possible.

All ancillary plant, such as generators and pumps, shall be positioned so as to cause minimum noise disturbance. If operating outside the normal working week or where the distance between a noise source and receiver is restricted, acoustic enclosures shall be provided. Barriers installed to provide screening will be located either close to the source of the noise (as with stationary plant) or close to the receptor. The height of the barrier will be in accordance with BS 5228-1.

Activities causing significant vibration will be located away from sensitive areas and/or isolated using resilient mountings where practicable.

The drop height of materials will be minimised to keep noise disturbance to a minimum.

Activities causing significant vibration will be located away from sensitive areas and/ or isolated using resilient mountings where practicable.

Times and noise levels at noise sensitive areas resulting from any operation during the construction phase, on or off the site, shall not exceed those listed in the Table above.

The distance between noise sources and noise-sensitive areas will be increased as much as is reasonably practicable.

A baseline noise monitoring programme has been completed by an independent consultant with attended noise monitoring having been carried out at a number of locations. Procedures and results of this aspect of the baseline noise monitoring programme will be in general in accordance with ISO 1996: Part 2: 2007 2.

During the construction and demolition phases, the development shall comply with British Standard 5228 ‘Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control.’

BS 5228 includes guidance on the various aspects of construction site noise mitigation, including, but not limited to:

- Liaison with neighbours
- Noise monitoring
- Hours of works
- Selection of quiet plant
- Control of noise sources and screening

Noise control audits will be conducted at regular intervals through the construction phase of the development. In the first instance it is envisaged that such audits will take place monthly. This is subject to review and the frequency of audits may be increased as deemed necessary.

The purpose of the audits will be to ensure that all appropriate steps are being taken to control construction noise emissions. To this end, audits will encompass the following:

- Implementation of hours of operation
- Opportunities for noise control ‘at source’
- Optimum siting of plant items
- Avoidance of plant items being left to run unnecessarily
- Correct use of proprietary noise control measures
- Materials handling
- Maintenance
- Correct use of screening provided and opportunities for provision of additional screening

3.5 Dust Management Plan

All necessary steps shall be implemented to control dust caused by construction traffic. This will include measures such as:

- Wetting of haul road and storage areas;
- Covering or dousing of any dry, imported or excavated material;
- Reducing the duration for stockpiling in fill materials;
- Use of a wheel wash for construction traffic.

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. The following dust control measures have been formulated by drawing on best practice guidance from Ireland, the UK and the USA.

The key features of proposed dust management are:

- the specification of a site policy on dust;
- the identification of the site management responsibilities for dust;
- the implementation of documented systems for managing site practices and implementing management controls;
- the implementation of criteria by which the performance of the dust management plan can be assessed.

The objective is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies.

Hoarding or screens will be erected around works areas to prevent larger particles of dust from travelling off-site and impacting sensitive receptors, primarily the existing surrounding housing developments.

The siting of construction activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions to minimise the potential for significant dust nuisance.
In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs:

- During working hours, technical staff shall be on site and available to monitor dust control methods;
- Complaint registers will be kept on site detailing any telephone calls and letters of complaint received about construction activities, together with details of any remedial actions carried out;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust using best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and procedures implemented to rectify the problem. Specific dust control measures to be employed are highlighted below.
Site roads (particularly unpaved) can be a significant source of fugitive dust from construction sites if control measures are not in place. However, effective control measures shall be implemented. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions.

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles;

- Bowsers will be available during periods of dry weather throughout the construction period. The bowser will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use;
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Land clearing / earth-moving during periods of high winds and dry weather conditions can be a significant source of dust.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

The location and moisture content of storage piles are important factors which determine their potential for dust emissions:

- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site;
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. The regular watering of stockpiles has been found to have an 80% control efficiency.

Spillage and blow-off of debris, aggregates and fine material onto public roads should be reduced to a minimum by employing the following measures:

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with tarpaulin always to restrict the escape of dust;
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- A wheel wash facility will be employed within the site so that traffic exiting the site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain.

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, will contribute towards the achievement of no dust nuisance occurring during the construction phase.

3.6 Construction Access

Main Construction Access to the site will be from the R629. This access point will make the site more accessible for HGVs. A secondary site access using the existing site entrance along Rose Lane will facilitate site personnel and their vehicles as well as small scale deliveries. HGVs will be prohibited from using this access.

As indicated in Figure 3.4 the primary construction access will be from the R629.

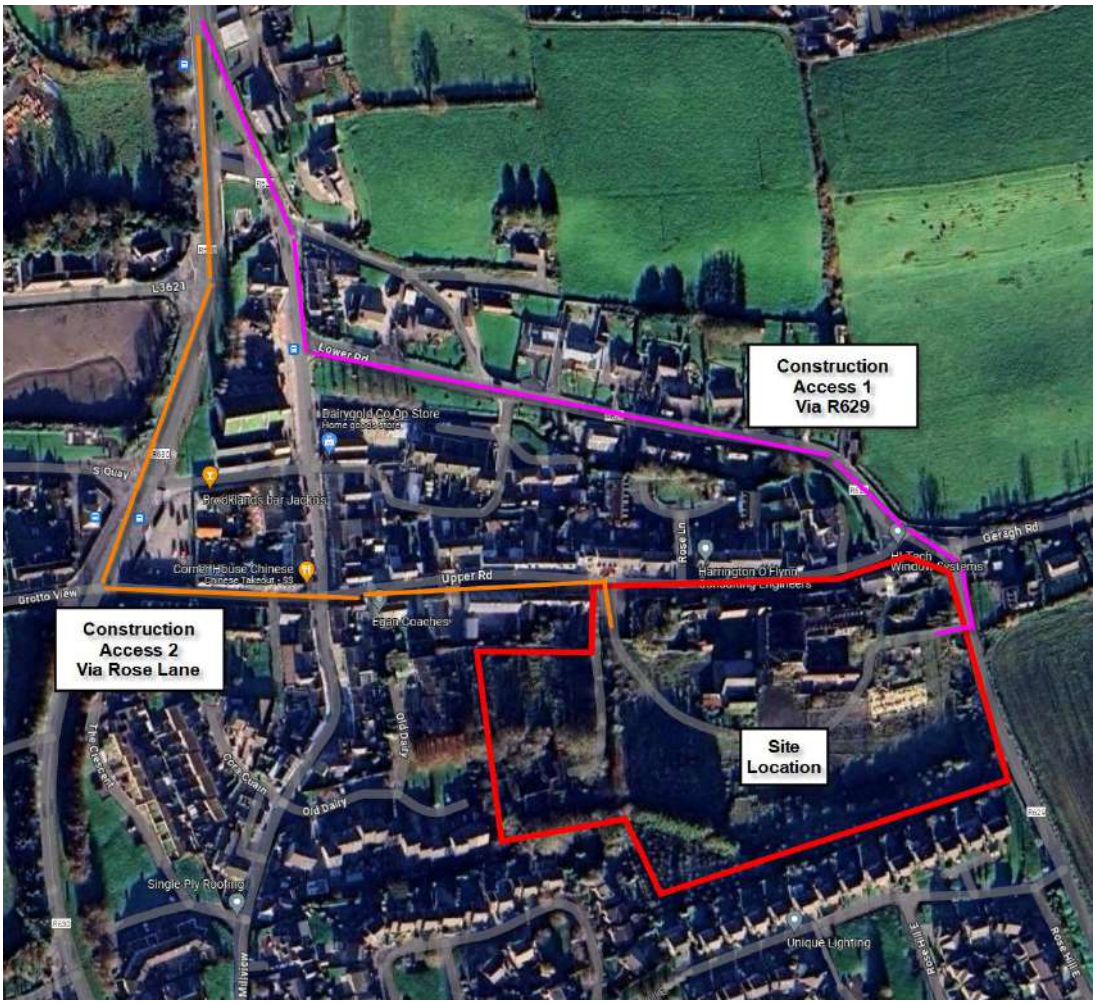

Figure 3.4: Construction Access Routes

3.7 Liaison

The Project Manager, will be responsible for project strategic liaison whilst the Construction Manager will be responsible for day-to-day liaison and logistics for all the construction related activities. Both will be permanently based on site with the Project Manager the first point of contact for the project team and client/developer and the Construction Manager shall be the first point of contact for all concerns, issues and complaints. A display board will be erected outside the site, which as minimum will identify key personnel and their contact details (email and telephone numbers).

Newsletters, liaison meetings, progress photos, and organised site visits will be communication methods which shall be used to provide information to existing residents and the general public.

3.8 Site Specific Traffic Management Plans (TMP's)

A Construction Traffic Management Plan will be developed by the appointed contractor and shall be agreed with the Cork County Council Area Office prior to commencement of works.

All public roads, accesses, drains, ditches and grips will be kept clear of all dirt, mud and material arising from the execution and completion of the Works and suitable clearing equipment and labour will be provided by the Contractor for this purpose. Attention will also be given to the loading of lorries carrying bulk materials into the Site and spoil from the Site to ensure that these will not be overloaded or loaded in such a way that spillage is avoided. Any dirt or mud adhering to the tyres or chassis of any vehicles will be thoroughly cleaned off before the vehicle is permitted to leave the Site. In the case of delivery to the Site, vehicles will be thoroughly cleaned before they leave the point of collection. The Contractor will be equally responsible for the vehicles of his sub-contractors and suppliers and the like.

An automatic wheel-washing unit shall be installed and maintained at the entrance to the site. This will be available for use at all times. Maintenance will include for cleaning out of the equipment and disposal of any material gathered within. The required equipment for supplying water and power to the wheel washing facility shall be made available and maintained in good working order. At the end of the construction phase, the wheel washing facilities shall be removed from site.

3.9 Complaints

The Complaints that may be received will be logged, assessed and appropriate action taken as soon as practicable. It will be critical to ensure that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

3.10 Vehicle Movement & Deliveries

Deliveries will be co-ordinated to prevent queuing of vehicles which could adversely affect traffic flow and to minimise disruption to local traffic. Deliveries will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly adjoining landowners) and rush hour traffic (AM & PM peak hours as identified in the Traffic & Transportation report). Large deliveries will be scheduled outside peak hours to minimise disruption.

On occasion, with the agreement of the planning authority, out of hours deliveries and collections shall be implemented, for example, in relation to out-sized loads to facilitate the smooth continuation of works and minimise disruption.

Site staff will be encouraged to car-pool and to use public transport to reduce the number of vehicle movements entering and existing the site.

3.11 Site Security

Access to the site will be strictly controlled with an on-site security person logging entry and exits. This will include all on-site personnel. These measures will be developed in conjunction with the Project Supervisor Construction Stage.

3.12 Road Safety

Measures to keep pedestrians and vehicles adequately separated will be implemented on-site. The following actions will help be taken to keep pedestrians and vehicles apart:

- Entrances and exits - separate entry and exit gateways for pedestrians and vehicles shall be provided with a gate man in attendance to interface with the traffic and public to facilitate safe access and egress of vehicles.
- Walkways - firm, level, well-drained pedestrian walkways will be provided.
- Crossings - where walkways cross roadways, a clearly signed and lit crossing point shall be provided where drivers and pedestrians can see each other clearly;
- Visibility - drivers driving out onto public roads will be required to be able to see both ways along the footway before they move on to it;
- Obstructions - walkways shall be kept free of construction vehicles
- All workers shall be competent to operate the vehicles, machines and attachments they use on site.
- Personnel directing vehicle movements will be trained and authorized to do so. Access to vehicles will be managed and people alerted to the risk.

The following shall be provided on site during the construction phase:

- Aids for drivers - Mirrors, CCTV cameras or reversing alarms will be provided that can help drivers see movement all-round the vehicle;
- Banksmen will be appointed to control manoeuvres and who are trained in the task;
- Lighting – The site will be properly lit so that drivers and pedestrians on shared routes can see each other easily. Lighting may be needed after sunset or in bad weather;
- Clothing - Pedestrians on site will wear high visibility clothing.
- Signs and instructions
- All construction personnel, drivers and pedestrians shall be informed of the routes and traffic rules on site. Use standard road signs where appropriate.
- Induction training shall be provided for drivers, workers and visitors and send instructions out to visitors before their visit.
- All the construction vehicle drivers and supply chain personnel shall be competent and have relevant training and certification appropriate for their job.

3.13 Plant & Equipment

The typical Plant and Equipment to be employed during the construction works are listed in **Table 3.3** below.

Plant Item	Purpose
Hydraulic excavators various	Excavation, substructures, drainage
Mobile cranes- various	Erection of buildings, movement of large materials and plant
Dumpers	Excavations, drainage, landscaping, movement of materials
Concrete saw cutting	Used for cutting concrete slabs in yard areas, building substructure and superstructures.
Volvo dump trucks	Removal of demolition materials off site
Ready-mix concrete trucks	Delivery of concrete to site for new structures, slabs, etc.
Pump unit for ready-mix concrete	For placement of concrete.
Vibrating rollers	Used for compacting stone in roads, yard areas, substructures etc.
HGV – 20 foot trailers	Delivery of materials, steel, cladding, concrete blocks
HGV – 40 foot trailers	Delivery of structural steel, cladding, large elements of new plant and equipment
Telescopic site handlers	Handling and moving materials on site
Road sweeping equipment	Management of dust and excavation residues on site and off site on road approaches.
Welding gear	Demolitions, erection of structural steel and in mechanical installations
Elevation platforms	For use by employees erecting steel, cladding and general construction at height.
Small tools – grinders, saws, drills, kango hammers, powerfloats, temporary lights, water pumps, concrete	For use during all stages of construction

Table 3.3 List of typical plant required for this Project

4.0 CONSTRUCTION & DEMOLITION WASTE ARISING & MANAGEMENT

4.1 Analysis of Waste Arising from the Construction Stage (including Demolition)

It is anticipated that a significant amount of material arising from the works will be classified for re-use as fill material under roads and pavements or general fill material under footpaths and green areas. The objective is to ensure the absolute minimum amount of material leaves the site as waste.

The following main waste arisings, including surplus materials, which are likely to be generated during the project are presented in **Table 4.1** hereunder.

Waste Type	European Waste Classification Code	Waste Classification
Concrete Kerbs	17 01 01	Non-hazardous
Concrete (ex. Roads)	17 01 01	Non-hazardous
Concrete (ex. Footpaths)	17 01 01	Non-hazardous
Soil and Stones	17 05 04	Non-hazardous
Scrap Metal	17 04 05	Non-hazardous
Bitumen/Tarmacadam	17 03 02	Non-hazardous
Surplus Cabling	17 04 11	Non-hazardous
Plastic Pipe Cut-offs	17 02 03	Non-hazardous
Biodegradable Garden and Parks Waste	20 02 01	Non-hazardous
Plastic Packaging	15 01 02	Non-hazardous
Paper and Cardboard Packaging	15 01 01	Non-hazardous
Mixed Municipal Waste	20 03 01	Non-hazardous
Waste construction material containing asbestos	17 06 05	Hazardous

Table 4.1 Main Waste Types & EWC Codes

For the purposes of this plan, it is assumed that all of the soil and stone waste arising from the project will be categorised as non-hazardous and will be kept on-site. Based on the site investigation report carried out by Priority Geotechnical, the movement of any excess material off site is not anticipated. Fill material generated on site will be strengthened to ensure it can be used as aggregate construction material on the development. Full laboratory analysis will be completed prior to the start of works to confirm exact soil strengthening requirements.
Topsoil excavated will be stored for re-use on the site.

The demolition of existing concrete structures is included within the project scope. It is not anticipated that asbestos will be encountered, however if asbestos is uncovered on site (waste classification code 17 06 05), the asbestos containing materials (ACM) will be double-bagged and removed from the site by a competent contractor and disposed of in accordance with the relevant policies and legislation.

During the construction phase, typical wastes arising include:

- Excavation wastes
- Construction waste from building materials such as Off Cuts of Metal and Insulation
- Pipe Off Cuts, Wrapping, Insulation, Weld Rods
- Materials Wrapping
- Oils, Filters and Cleaning Materials
- Food Waste, Packaging Materials, Dry Recyclables
- Metal, Wire
- Wash Out from Trucks

All wastes will be managed, collected, stored, and segregated in separate areas and removed off site by a licensed waste management contractor at regular intervals during the works. All concrete trucks will have to return to their respective yards for washout.

4.2 Types of Materials

As with most construction projects, the materials required for this development will include imported stone, masonry and concrete. The principal construction materials will be:

- Concrete, sub-structures, Ground Floor, Timber Floors.
- Steel reinforcement used in concrete.
- Structural steelwork used for equipment support, roof structure, hand railings.
- Partitions incorporating studwork and paneled walls.
- Secondary steel work.
- Masonry concrete block work.
- Stone fill.

4.3 Opportunities for Re-use/Recycling

Material arising from site clearance works will be stored at different locations according to material identification split into three individual stockpiles. **Table 4.2** presents the estimated quantities of materials to be generated within the development:

- Stockpile 1 - excavated top-soils
- Stockpile 2 - excavated sub-soils suitable for reuse as structural fill
- Stockpile 3 - excavated materials unsuitable for reuse as structural fill

Removed topsoil will be kept separate from the general spoil. All turfs and topsoil will be stored on geotextile matting. Once deposited, the topsoil will be trafficked to the minimum possible extent to prevent damage and dusting.

Stockpiled sub-soils will be located in an area away from drainage ditches and will be bunded on the down gradient edges with a silt curtain or other suitable materials to reduce the risk of silt run-off.

All excavated material is being proposed for the purposes of filling or general landscaping on site. However, any surplus or rejected excavated material be generated, it is to be transported off the site to an approved waste facility. It will be tested in advance of disposal to verify the acceptability of the constituents.

Summary of Excavated Materials		
Description	Cut (cu.m)	Fill (cu.m)
Site Extents	23,401	8,870

Table 4.2 Volumes of excavated materials

Based on the calculated quantities of cut and the fill requirements on the site approximately 9,000 cu.m of suitable structural fill material will be required at construction stage. At this stage it is unclear whether site-won material will meet the requirements of structural fill beneath houses (SR21 Annex E) hence it is assumed that a quantity 23,400 cu.m would need to be exported from site. This equates to approximately 1,000 HGV movements to the site during this phase of the works.

Other construction stage deliveries include concrete, concrete blocks, timber, structural steel,

reinforcing steel, road construction materials, finishing materials, subsurface drainage works (including attenuation and storage systems), public lighting columns, windows & doors, all of which will be delivered to site at different phases of the scheme.

5.0 Environmental Issues & Management Requirements

An environmental review of the proposed scheme has been undertaken by O'Donnell Evironmental Ltd. and Environmental Management procedures (EMPs) will be implemented for managing the environmental impacts of Activities associated with the development Project. (Refer to **Table 5.1 below and Appendix 1**). The environmental management procedures (EMPs) set out the principles to be adhered to and outline commitments and measures that are to be implemented during the works, so as to ensure that potential environmental impacts and disturbance to local residents will be minimized or eliminated.

The control measures will only be amended by improvement with regards to environmental protection and will take cognisance of any additional Environmental Commitments arising from planning conditions. The Contractor will ensure that plans/procedures are communicated to all site staff, including sub- contractors, through induction, training and at relevant meetings.

Ref:	Procedure:-
EMP-1	Fuel and Oil Management
EMP-2	Construction Traffic Management
EMP-3	Waste Management
EMP-4	Noise Management
EMP-5	Dust Management
EMP-6	Site Environmental Training and Awareness
EMP-7	Environmental Emergency Response
EMP-8	Monitoring and Auditing Procedure
EMP-9	Environmental Accidents, Incidents and Corrective Actions Procedure
EMP-10	Environmental Complaints Procedure
EMP-11	Odour Control Procedure
EMP-12	Light Pollution Control Measures
EMP-13	Surface Water Management and Run-off Control Measures

Table 5.1 Environmental Management Procedures (Refer Appendix 1)

Appendix 1- Environmental Management Procedures

EMP-1 Fuel and Oil Management

EMP-2 Construction Traffic Management

EMP-3 Waste Management

EMP-4 Noise Management

EMP-5 Dust Management

EMP-6 Site Environmental Training and Awareness

EMP-7 Environmental Emergency Response

EMP-8 Monitoring and Auditing Procedure

EMP-9 Environmental Accidents, Incidents and Corrective Actions Procedure

EMP-10 Environmental Complaints Procedure

EMP-11 Odour Control Procedure

EMP-12 Light Pollution Control Measures

EMP-13 Surface Water Management and Run-off Control Measures

EMP 1	FUEL AND OIL MANAGEMENT PROCEDURE
Purpose	Measures for the management of all fuels on site for the protection of ground and watercourses from any spills.
Responsibility of Control	Environmental Manager Construction Project Manager
Procedure	<u>Refueling</u> • Refueling will be carried out using 110% capacity double bunded mobile bowsers. The refueling bowser will be operated by trained personnel. The bowser will have spill containment equipment which the operators will be fully trained in using. • Plant nappies or absorbent mats to be place under re-fueling point during all refueling to absorb drips. • Mobile bowsers, tanks and drums shall be stored in secure, impermeable storage area, away from drains and open water; • To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up to date service record will be required from the main contractor. • Potential leaks from delivery vehicles will be reduced by visually inspecting all vehicles for major leaks. • In the unlikely event of an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility. • The Environmental Manager will be immediately informed of the oil leak/spill, and will assess the cause and the management of the clean-up of the leak or spill. The Environmental Manager will inspect nearby drains for the presence of oil, and initiate the clean-up if necessary. • Immediate action will be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks will be kept at the site compound and also in site vehicles and machinery. • Correct action in the event of a leak or spill will be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and cleaning up of oil spills or leaks. This training will be provided by the Environmental Manager at site induction. • In the extremely unlikely event of a major oil spill, a company who provide a rapid response emergency service for major fuel spills will be immediately called for assistance, their contact details will be kept in the site office and in the spill kits kept in site vehicles and machinery. **<u>Oil storage</u>** • Fuel containers must be stored within a secondary containment system e.g. bund for static tanks or a drip tray for mobile stores; • Collision with oil stores will be prevented by locating oils within a steel container in a designated area of the site compound away from vehicle movements. • Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Taps, nozzles or valves will be fitted with a lock system.

	• The volume of leakages will be prevented through monitoring oil storage tanks/drums for leaks and signs of damage. This will be carried out daily by the Environmental Manager. • Long term storage of waste oils will not be allowed on site. These waste oils will be collected in leak-proof containers and removed from the site for disposal or re-cycling by an approved service provider.
Environmental Controls	• Mobile bowsers, tanks and drums will be stored in secure, impermeable storage area, away from drains and open water. • Fuel containers must be stored within a Secondary Containment System, e.g. bund for static tanks or a drip tray for mobile stores. • Ancillary equipment such as hoses, pipes must be contained within the bund. • Taps, nozzles or valves must be fitted with a Lock System. • Fuel and Oil Stores including tanks and drums must be regularly inspected for leaks and signs of damage. • Only designated Trained Operators are authorized to refuel plant on site and emergency spill kits will be present at equipment for all refueling events. • Procedures and contingency plans will be set up to deal with emergency accidents or spills • Suitable spill response materials and emergency instruction shall be available on site and staff shall have been adequately trained
Monitoring	Daily visual inspection of storage areas for • Damage to containers or ancillary equipment • Leakages • Unlocked storage container

EMP 2	TRAFFIC MANAGEMENT
Purpose	Measures for the management of all traffic, including construction traffic and oversized loads, for the minimization of disturbance and nuisance to the local community.
Responsibility of Control	Construction Project Manager Construction Personnel
Procedures	• Details of site access and any site traffic rules, including security, parking, loading and unloading, required speed or other relevant details. • Details of equipment delivery. • Site operating hours (including delivery). • Communicating with the community, and the Local Authority the Gardaí where required. • A site specific Traffic Management Plan (TMP) will be prepared to cover the movement of site based traffic to and from the public roads..
Environmental Controls	Public Road • In order to mitigate from a significant impact during peak traffic hours, the majority of staff will either arrive on-site before or after the peak morning traffic ()8:00-09:00) and finish work before or after the evening peak traffic hours (17:00-18:00). • The condition of the public road will be monitored on an on-going basis and a road sweeper provided to clean the public road if required. Site Entrance • There will be no parking of any vehicles on the public road near the site entrance. • Adequate parking will be provided on site for both employees and visitors. • The condition of the site entrances will be monitored on an on-going basis and a road sweeper provided to clean the public road if required.
Monitoring	Daily checks

EMP 3	WASTE MANAGEMENT PROCEDURE
Purpose	Measures for the management of all wastes associated with the Project including all welfare facilities.
Responsibility of Control	Construction Project Manager Environmental Manager
Procedures	The following wastes may be generated during the construction of the project:- • Surplus excavated soils • Waste Fuels; Oil / Diesel • Paper / Cardboard • Non-Hazardous Office and Canteen Waste • Wastewater from Office and Welfare Facilities Wastes must be segregated and stored in the allocated tanks, bins, skips or areas. Implement Storage Areas and organize the relevant Licensed Contractors for the appropriate waste collections. Ensure all Permits and Licenses are in place and maintain relevant copies in the Site Office. Wastewater from holding tanks must be collected by an appropriate Licensed Contractor. Construction materials must be stored and managed in a way which promotes waste minimization, including segregating materials for re-use as appropriate.
Environmental Controls	Appropriate waste receptacles will be provided on site.
Monitoring	Daily Visual inspection for • Damage • Untidiness • Full skips

EMP 4	**NOISE MANAGEMENT**
Purpose	Measures for the management of impacts surrounding areas to the site, nuisance noise and construction noise impacts. The objective of this plan is to provide a framework for construction noise and vibration management to ensure that noise and vibration levels at neighboring buildings remain within reasonable limits throughout the works.
Responsibility of Control	Construction Project Manager Construction Personnel
Procedures	Implement control measures to ensure that noise impacts are minimized. The following measures will be communicated to all Staff on site. • All Plant and Machinery will be maintained to ensure noise and air emissions are minimized. • Only use required power and size of equipment • Fit engine exhausts with silencers • Operate equipment in a quiet and efficient manner • Do not leave equipment idling unnecessarily • Regularly inspect and maintain equipment • Use quiet reversing alarms/methods • Use designated routes and access points for deliveries
Environmental Controls	Adequate inspection of plant and equipment in operation shall be carried out to ensure that noise and vibration levels do not exceed the permitted levels.
Monitoring	Noise Monitoring at nearest sensitive receptors

EMP 5	**DUST MANAGEMENT**
Purpose	Measures for the management of impacts on air quality and nuisance dust
Responsibility of Control	Construction Project Manager
Procedures	• All Plant and Machinery will be maintained to reduce dust and air emissions. • Construction personnel must not leave any Plant and Machinery running unnecessarily. • To reduce dust and particular blown around site, dust suppression measures shall be implemented in prolonged, dry and windy spell including standard dust suppression (spraying), as required. • Stockpiles should be located at suitably sheltered areas to prevent erosion or weathering and shall be located away from drainage ditches. • Public roads in the vicinity of the site will be regularly inspected for cleanliness, and cleaned as necessary. • A temporary vehicle wheel wash facility will be installed in proximity to the site entrance. • The dust minimization control measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimization of dust through the use of best practice and procedures.
Environmental Controls	Adherence to dust management measures
Monitoring	Monthly dust deposition monitoring program to be undertaken

EMP 6	SITE ENVIRONMENTAL TRAINING AND AWARENESS PROCEDURE
Purpose	To describe measures for the training of all Site Personnel in the protection of the Environment and the relevant controls.
Responsibility of Control	Construction Project Manager
Procedures	▪ Environmental awareness and training shall be achieved by: – Site induction, including relevant environmental issues. – Environmental posters and site notices. – Method statement and risk assessment briefings. – Toolbox talks, including instruction on incident response procedures. – Key project specific environmental issues briefings. ▪ All managers and supervisors will be briefed on the CEMP. ▪ Method Statements will be finalised for specific activities and will include all environmental protection and mitigation measures identified in this CEMP and emergency preparedness appropriate to the activity covered. ▪ Method Statement briefings will be given before personnel carry out key activities for the first time. ▪ Environmental Training Records are to be retained in the Site Office.
Environmental Controls	▪ Site staff shall be competent to perform tasks that have the potential to cause a significant environmental impact. Competence is defined in terms of appropriate education, training and experience.
Monitoring	N/A

EMP 7	**ENVIRONMENTAL EMERGENCY RESPONSE PLAN**
Purpose	To describe Measures for the prevention of an Environmental Accident or Incident and the response required to minimize such an event.
Responsibility of Control	Construction Project Manager
Procedures	In the unlikely event of an Environmental Emergency, all Personnel will react quickly and adhere to this Procedure. The following outlines some of the information, on the types of emergency, which must be communicated to Site Staff:- • Release of Hazardous Substance – Fuel or Oil Spill • Flood Event – Extreme Rainfall Event • Environmental Buffers and Exclusion Zones Breach • Housekeeping of Materials and Waste Storage Areas Breach • Stop Work Orders due to Environmental Issue or Concern (threat to Archaeological or Ecological Feature) If any of the above situations occur; the Plan is activated. The Construction Project Manager must be immediately informed and report to the scene. The Construction Project Manager must be aware of the:- • Nature of the Situation – Brief Description of What Has Happened • Location of the Incident • Whether any Spill has been Released • Whether the Situation is under Control
Environmental Controls	All Personnel are to be inducted in the provisions of the Environmental Emergency Response Plan.
Monitoring	n/a

EMP 8	**MONITORING AND AUDITING PROCEDURE**
Purpose	To describe measures for Environmental Monitoring during the Construction Works and audit of control measures to ensure Environmental Protection.
Responsibility of Control	Construction Project Manager Construction Environmental Manager
Procedures	All mitigation measures, any Planning Conditions and relevant Construction Methods will be monitored on site. The Appointed Contractor will provide Audit Checklists to ensure regular checks of the site's Control Measures for the ongoing protection of the environment. Monitoring is to be carried out in adherence with the following:- • Fuel and Oil Management Plan • Waste Management plan • Dust Management Plan • Construction Noise Monitoring Checklists for weekly or monthly Site Audits shall be finalised and the relevant Personnel informed of their duties. Checklists should include (but are not limited to) confirmation that fuel is stored appropriately, that management rules are adhered to, all environmental buffers are maintained, sediment control measures are in place and functioning.
Environmental Controls	Compliance with site management rules
Monitoring	All Environmental Records, including completed Checklists, will be retained at the Site Office.

EMP 9	**ENVIRONMENTAL ACCIDENTS, INCIDENTS AND CORRECTIVE ACTIONS PROCEDURE**
Purpose	To describe measures for the recording, investigation and close-out of any Environmental Accidents or Incidents on the Site
Responsibility of Control	Project Manager Project Environmental Manager
Procedures	Any Environmental Accidents and Incidents occurring on site during the Works must be reported, recorded and investigated. Any corrective actions must be put in place and closed out after an Accident or Incident occurs. Environmental Accidents and Incidents may include but are not limited to:- • Accidents involving large spill of fuel (Emergency Response required). • Spills of fuel and oil (Minor) • Waste or rubbish left around the site (not in dedicated waste areas) • Failure of any control measures • Unplanned vehicle movement within a buffer zone. If an Environmental Accident or Incident occurs, personnel must inform *Project Manager / Environmental Officer / Nominated Person* immediately. Once the situation is under control, the Environmental Accident or Incident must be recorded and the cause investigated. Any remedial action required must be taken to mitigate any damage and prevent a reoccurrence. Corrective actions must be communicated to Personnel and Sub-Contractors where relevant – particularly where it results in a change in procedure
Environmental Controls	Compliance with site management rules
Monitoring	As required

EMP 10	ENVIRONMENTAL COMPLAINTS PROCEDURE
Purpose	To describe measures for the recording and resolving of complaints by Third Parties, including Local Residents or Members of the Public.
Responsibility of Control	Project Manager Project Environmental Manager
Procedures	Any Environmental complaints received, whether internal or external, must be recorded and investigated. Immediate action must be taken as relevant to resolve Environmental complaints to avoid any nuisance to the Local Community or Environmental Damage. This Procedure includes;- • Recording of any complaints to the Site Register incorporating communication from the Public. • Follow up by the relevant Site Representative – Environmental Officer. • Remedial Measures where required. • Ongoing communication with complainant to confirm resolution. • Any required Training or communication with Site Personnel and Sub-Contractors as a result.
Environmental Controls	Compliance with site management rules
Monitoring	n/a

EMP 11	ODOUR CONTROL PROCEDURE
Purpose	To describe measures to minimise potential for malodours emissions associated with the works
Responsibility of Control	Project Contractor Project Environmental Manager
Procedures	• Control potential odours during excavation by minimising the working surface area and covering with a clean fill as soon as practical • In the unlikely event that putrescent wastes/soils or materials be unearthed during excavation, a deodoriser might be needed to minimise emissions of malodorous gases to the atmosphere • Transport any odourous wastes in covered vehicles. • Ensure sedimentation ponds and drainage systems are functioning correctly to above becoming stagnant • Ensure sanitary facilities are appropriately maintained and Wastewater from holding tanks routinely collected and removed by an appropriate Licenced Contractor. • Ensure wastes are stored correctly in appropriate waste receptacles • Ensure all wastes, in particular food wastes, are removed from site at regular internal • Ensure all plant is in good working order.
Environmental Controls	Adherence to odour management measures and site management rules
Monitoring	n/a

EMP 12	**LIGHT POLLUTION CONTROL MEASURES**
Purpose	To describe measures to minimise obtrusive light associated with the works on local residents and other sensitive receptors
Responsibility of Control	Project Contractor
Procedures	The following measures will be implemented, as required:: • Dim or switch off lights where it is safe to do so • Use low lighting equipment where feasible • Use of timers and sensors for switching off lights/ flood lights • Avoid flood lighting in areas adjacent to sensitive nearby receptors • Light shielding will be implemented where light glare is a nuisance • Outdoor artificial lighting for site security shall be designed to face downwards and inward to the site and oriented to avoid significant light spill by means of selection of appropriate fitting with filters/screens and with suitable Lux levels.
Environmental Controls	Adherence to light pollution controls and site management rules
Monitoring	n/a

EMP 13	SURFACE WATER MANAGEMENT AND RUN-OFF CONTROL MEASURES
Purpose	Measurements for the control and management of all surface waters associated with the site during construction
Responsibility of Control	Project Contractor
Procedures	The following measures will be implemented: • Implement erosion control to prevent runoff flowing across exposed ground and become polluted by sediments; • Intercept and divert clean water runoff away from construction site runoff to avoid cross-contamination of clean water with soiled water; • Implement the erosion and sediment controls before starting site clearance/construction works; • Minimise area of exposed ground by maintaining existing vegetation that would otherwise be subject to erosion in the vicinity of the development and keeping excavated areas to a minimum; • Install a series of silt fences or other appropriate silt retention measure where there is a risk of erosion runoff to watercourses from construction related activity particularly if working during prolonged wet weather period or if working during intense rainfall event; • Implement sediment control measures that includes for the prevention of runoff from adjacent intact ground that is for the separation of clean and 'dirty' water; • Install appropriate silt control measures such as silt-traps, check dams and sedimentation ponds; • Washout from concrete trucks and plant will not be permitted on site. • Provide recommendations for public road cleaning where needed particularly in the vicinity of drains; • Controls need to be regularly inspected and maintained otherwise a failure may result, such as a build-up of silt or tear in a fence, which will lead to water pollution so controls must work well until the vegetation has re-established; inspection and maintenance is critical after prolonged or intense rainfall; • Develop checklists for weekly Site Audits, which must be finalised by the Appointed Contractor and the relevant Personnel informed of their duties;
Environmental Controls	Adherence to surface water management and run-off control plan and site management rules
Monitoring	Daily visual inspection of controls to ensure appropriately operating

Appendix C - Engineering Design Report

ENGINEERING DESIGN REPORT

Ballinacurra Mill LRD scheme, County Cork

December 2025

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This report should be read in conjunction with the submitted Engineering and Architectural Design Drawings

1. INTRODUCTION

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

MHL Consulting Engineers have been engaged by Ballinacurra Project Limited Partnership to provide design consultancy services for the civil engineering elements associated with a proposed development of 128 residential units, including creche, retail and commercial, to be determined by way of the Strategic Infrastructure Application process to An Bord Pleanála. The proposed site is located along the Main Estate Roads & Rose Lawn and between the Minor Estate Roads & Isolated Paths, and the Junction R629/Geragh Road/Rose Lawn and the Junction R629/Development Access in Ballinacurra LRD Scheme, Midleton and is highlighted in **Figure 1.1** below.

Figure 1.1: Site location

2. ROADS

PROJECT: **BALLINACURRA MILL LRD SCHEME, COUNTY CORK**

CLIENT: **Ballinacurra Project Limited Partnership**

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

Internal Estate Roads

The internal estate roads have been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS). In general, a maximum gradient of 6.4% and minimum gradient of 1.5% was used for all internal estate roads. Due to the sloped nature of the site, a gradient of 2.7% was required for a short section of Estates Road 3 for the area featuring no direct access to dwellings. The design team has ensured that the lengths of road necessitating a gradient of 6.4% were kept to a minimum.

Figure 2.1: Overall proposed estate roads (refer to MHL drawings 23072HD-SL-P01 to 23072HD-SL-P03)

Figure 2.2: Overall proposed estate roads (refer to MHL drawings 23072HD-SL-P01 to 23072HD-SL-P03)

The parameters for a design speed of 20km/h were used to produce the horizontal and vertical alignments in accordance with the standards set out in Design Manual for Urbans Roads and Streets (DMURS), as required per Objective 5.16 in the Cork City Development Plan 2015-2021. Table 4.3 in DMURS outlines the minimum requirement for horizontal and vertical curvature for a 20km/h road. The minimum value used for horizontal curvature is 11.5m. To produce a robust design regarding the vertical alignment it is prudent to use K-values relating to a 40km/h road, 4.1 for a crest curve and 2.6 for a sag curve. **Figure 2.1 and Figure 2.2** highlight each of the internal roads and corresponds with **Table 2.1** which highlights the maximum and minimum design parameters used.

Estate Roads Design	Max Gradient	Min Gradient	Max K	Min K	Junction Approach Gradient
Main Access Road	5.0%	0.7%	16.1	5.3	-3.0%
Road 1	5.4%	0.8%	12.5	3.9	-3.6%
Road 2	6.7%	6.7%	N/A	N/A	6.7%
Road 3	2.7%	1.0%	31.7	31.7	2.7%
Road 4	-5.2%	5.2%	N/A	N/A	-5.2%
Road 5	-5.2%	-3.2%	8.2	8.2	-5.2%
Road 6	4.6%	4.6%	20.8	20.8	4.6%
Road 8	3.3%	1.8%	18.7	5.7	3.3%
Reference Document: ➢ Design Manual for Urban Roads and Streets 2019					

Table 2.1: Internal Estate Roads Design

3. TRAFFIC AND PEDESTRIAN MANAGEMENT

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

An overview of traffic calming and pedestrian connectivity throughout the site is presented in **Figure 3.1** below. Shared surface streets with road widths of 3.0m and minimum road radii per DMURS are proposed at selected internal roads. Appropriate surface treatments, such as paving, will be used on these roads to serve as a reminder to motorists that they are in a shared space requiring low speeds. The site is well located in terms of connectivity with pedestrian footpaths which provide a link to public transport and local services such as retail stores, the local creche, and the Village Centre in Ballincurra.

Figure 3.2 presents proposed public realm works on the L96302 including a 2.0m footpath either side of the carriageway, staggered parallel parking, and a 5.0m carriageway. Further public realm improvements include for a proposed speed ramp and raised pedestrian crossing and a proposed uncontrolled pedestrian crossing at the priority T-junction with the R629. It is expected that the provision of the above public realm improvement works will urbanise the area, resulting in a reduction in traffic speed in the area which will be a road safety gain.

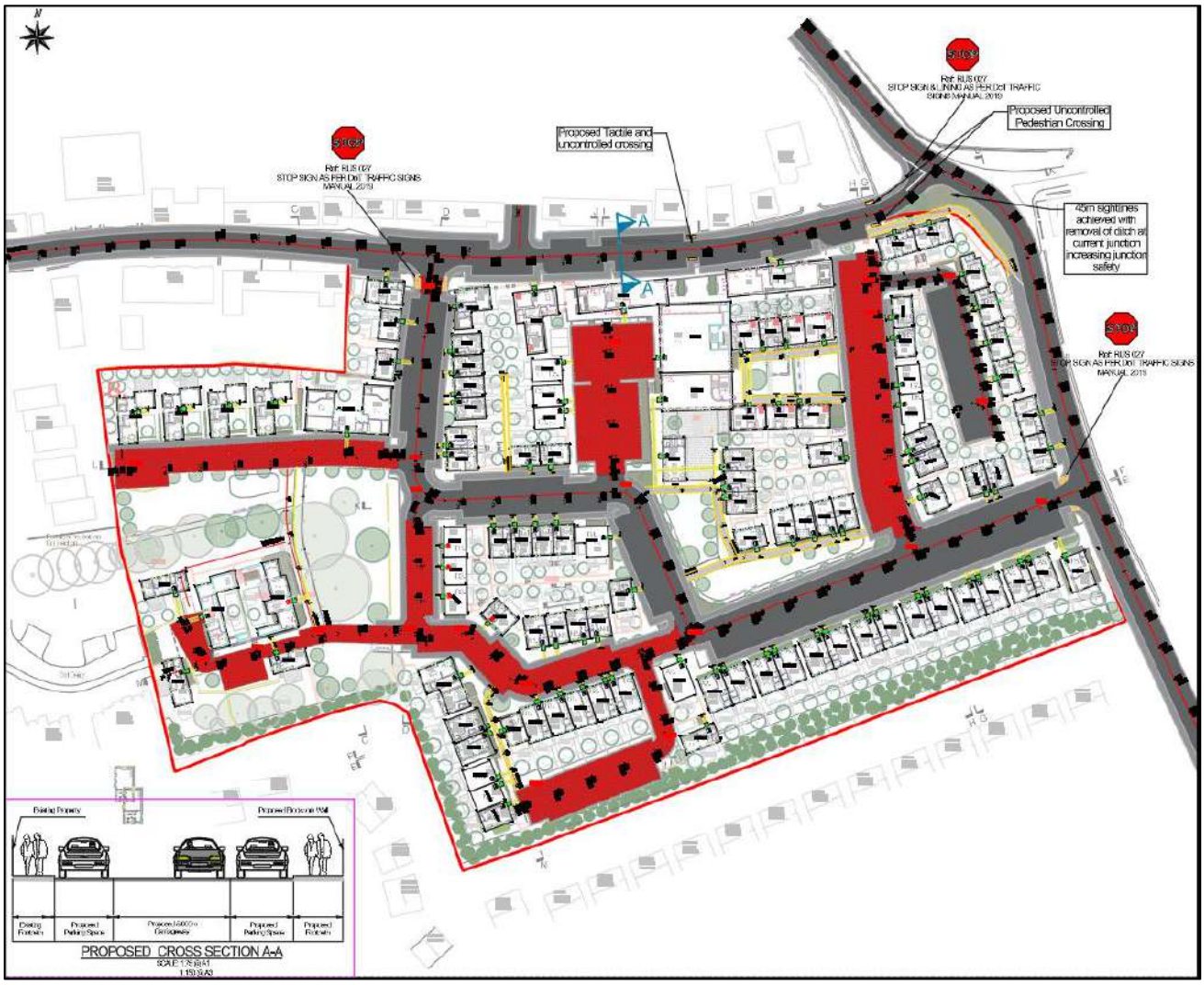


Figure 3.1: Traffic Calming & Pedestrian Connectivity

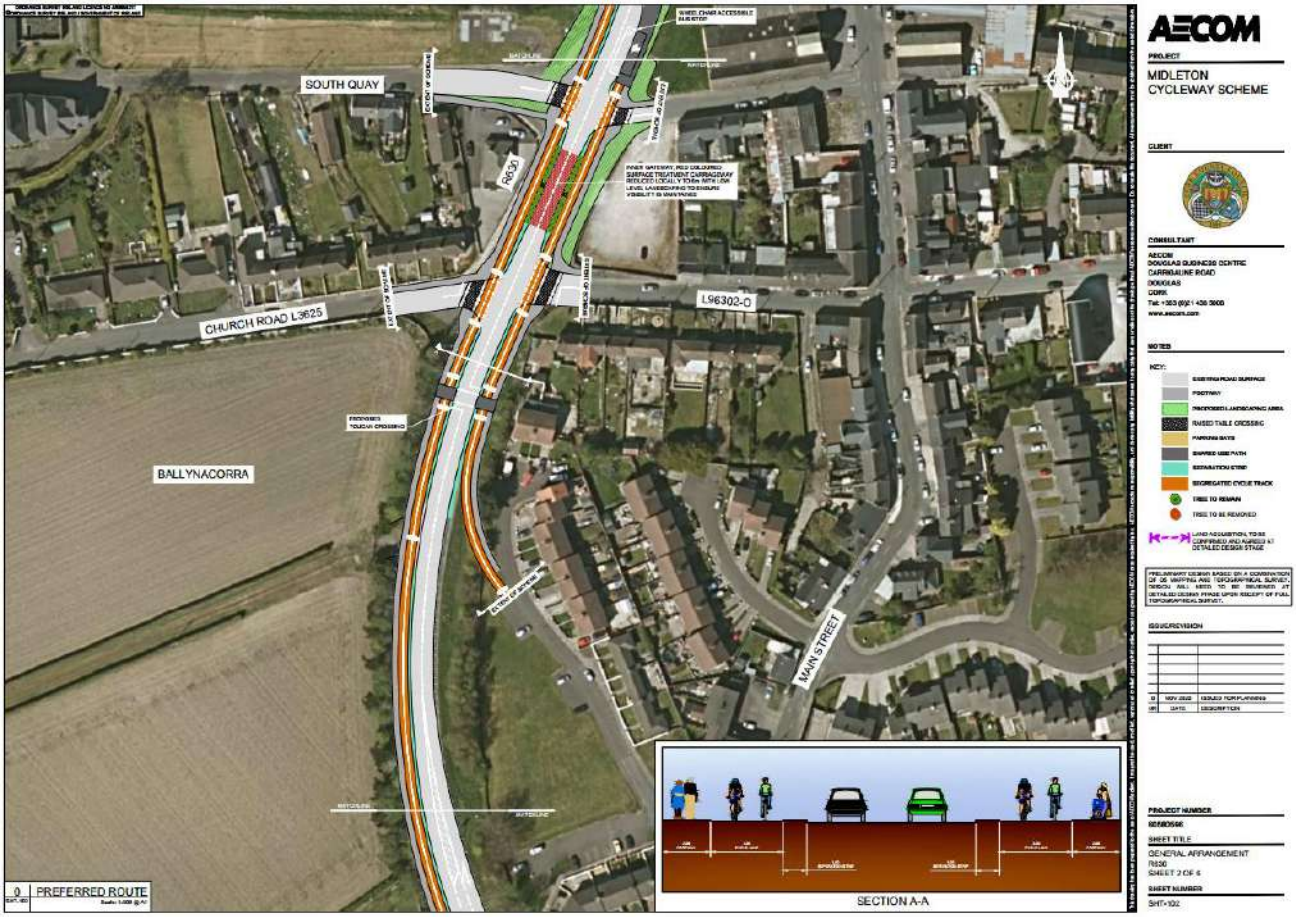


Figure 3.2: Proposed Pedestrian/Cycle Connectivity Improvement Measures along the L96302

Currently a footpath is provided on the L96302, opposite the development site, which connects as far as L3625. It is proposed to provide a segregated footpath and cycle lane on the development side of the L3625 to further enhance connectivity and create a safer environment for all road users.

It is noted that the Midleton- Ballinacurra Cycleway Scheme which encompasses the R630 is complete in the proximity to the proposed site. These works began in 2023. Phase 1 of this scheme will be complete following the construction of this development which connects Ballinacurra, Midleton and Water Rock. Based on the completion of this scheme a future target year modal shift of 30% was agreed with the Council Transport Department. The extent of this scheme is shown below. This scheme will tie in with the Cork to Youghal Greenway which will allow for greater use of sustainable forms of transport.

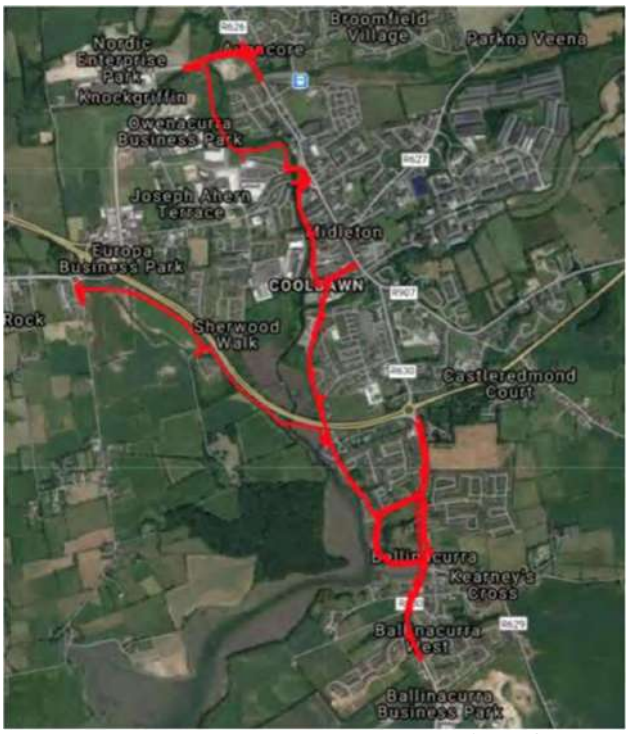


Fig 3.3: Midleton to Ballnacurra Pedestrian Cycle Scheme

Future connectivity to adjoining lands is also proposed at several locations within the site. These will be provided to ensure future connectivity to the creche, and retail element of the scheme is available.

Internally within the scheme, each developed area has multiple options of connectivity for each of the different modes of travel, maximising accessibility to the various amenities provided as part of the scheme, as set out in further detail in Landscape Architect's drawings submitted with the application. The quality of these routes has been carefully considered to ensure their viability in terms of desire lines and to ensure users will feel comfortable and safe when availing of these facilities.

A separate Traffic & Transport Assessment (TTA) report is included with this submittal for review. The TTA assesses & quantifies how the proposed development will impact upon the surrounding roads network.

4. SITE INVESTIGATION

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

As part of the design for the proposed development, comprehensive site investigations were carried out by PGL PRIORITY on the proposed site in September 2023. In total, site investigation consisted of 4 No. trial pits to measure the depth of soil and rock, and 2 No. infiltration pits to measure the on-site infiltration rate. The investigation also included laboratory testing on samples taken from trial pits. The results of investigation indicate a shallow water table at the south of the site. No bedrock was encountered during the course of the study.

Figure 4.1 & **Figure 4.2** below highlight the test locations of the site investigation.

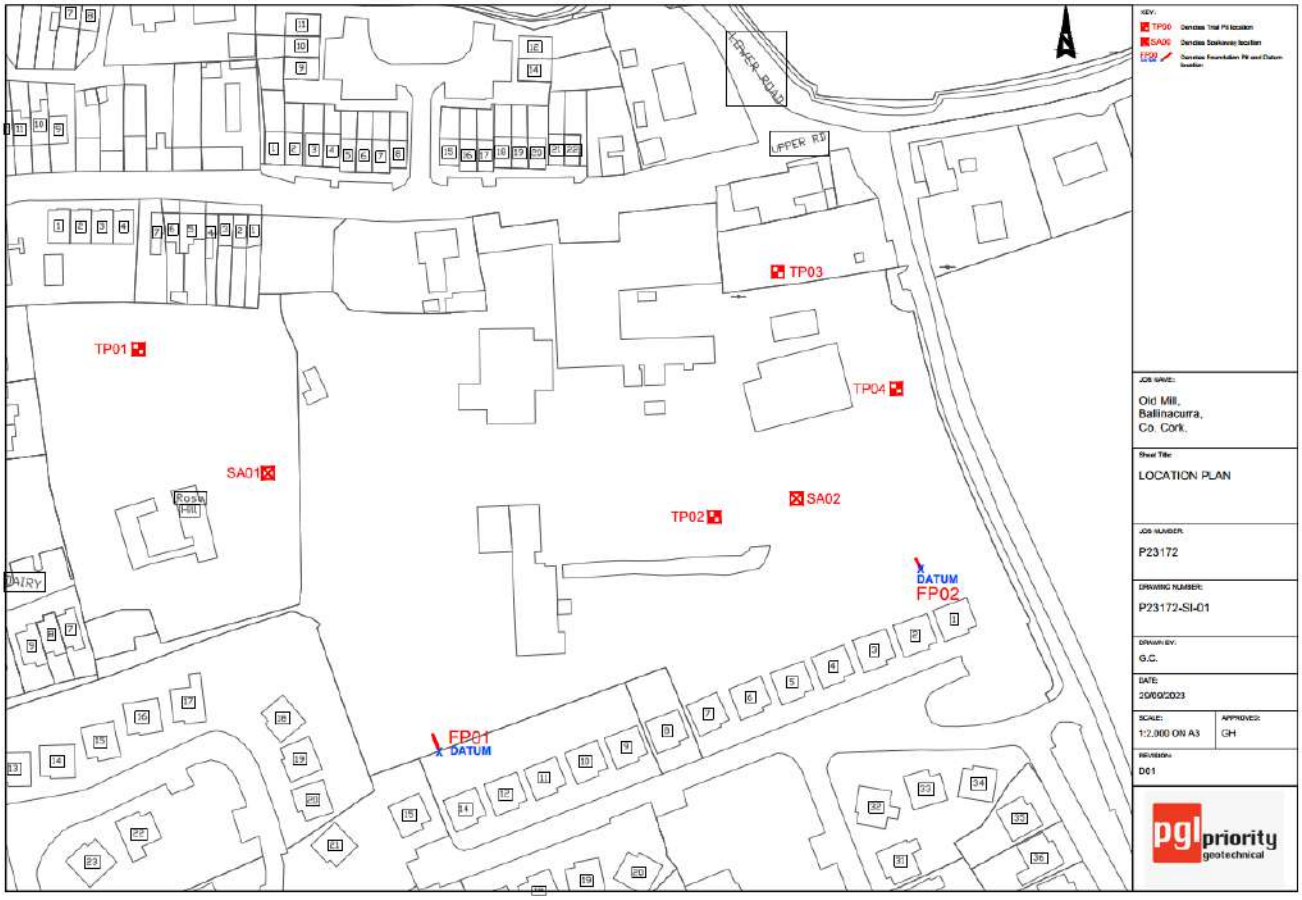


Figure 4.1: Site investigation locations

The complete results and logs of the site investigations are included in appendices of this report. A full Site Investigation Factual and Interpretative Report will be included as part of full application.

Site Investigation - Storm design

With regards to the design of the storm water network, it was found that the chances of an infiltration are very low. This result, in combination with a known history of localised flooding, informed the design team that soak pits should not be utilised as a method of catering for surface water within the site. Rather, the decision was made to utilise several attenuation tanks with a designed flow control of less than greenfield run-off (QBar). See

extract from infiltration test results in **Figure 4.2** and 4.3 below. The infiltration tests were carried out in accordance with BRE Digest 365.

BRE 365 Soakway Test

P23154 **Old Mill Ballinacurra** **27/09/2023**

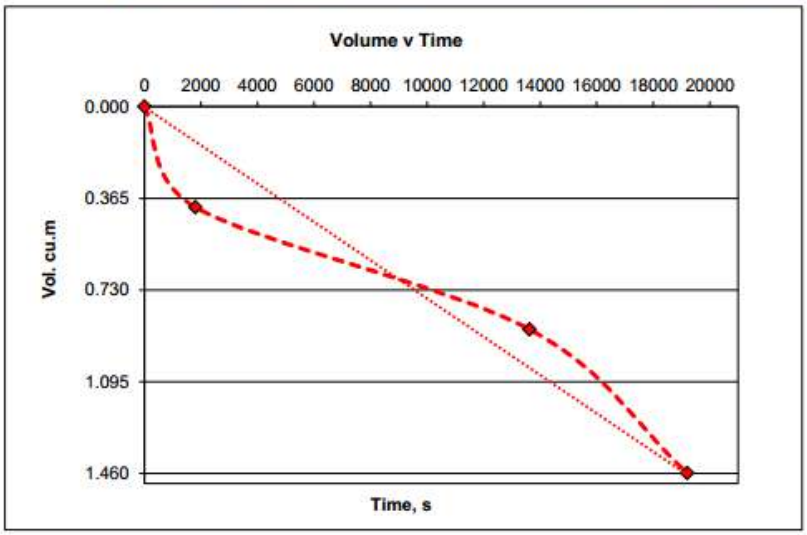
Test 1 **SA01** E588728.859 N571675.861 8.289mOD

l, m	**2.200**	b, m	**1.300**	d, m	**2.000**
l_base, m	**2.200**			d_eff, m	**0.790**
l_eff, m	**2.200**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
Start: 12:00:00	0	1.210	0	0.79	0.00	0.000
	30	1.350	1800	0.65	0.14	0.400
	227	1.520	13620	0.48	0.31	0.887
End: 17:20:00	320	1.720	19200	0.28	0.51	1.459

Area	2.860 m^2	$V_{p75\text{-}25\ theory}$	volume	1.1297	m^3
50% Area_eff, a_{p50}	5.625 m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.7293	m^3
50% Area_act, a_{p50}	4.645 m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	9600	s

Infiltration Coefficient *f* 1.64E-05 ms^-1



NOTES:

Pit assumed unsaturated. Moderate stability
Infiltration calculated over actual fall recorded.

Figure 4.2: Infiltration test results – P23154

BRE 365 Soakway Tes

P23154 **Old Mill Ballinacurra** **27/09/2023**

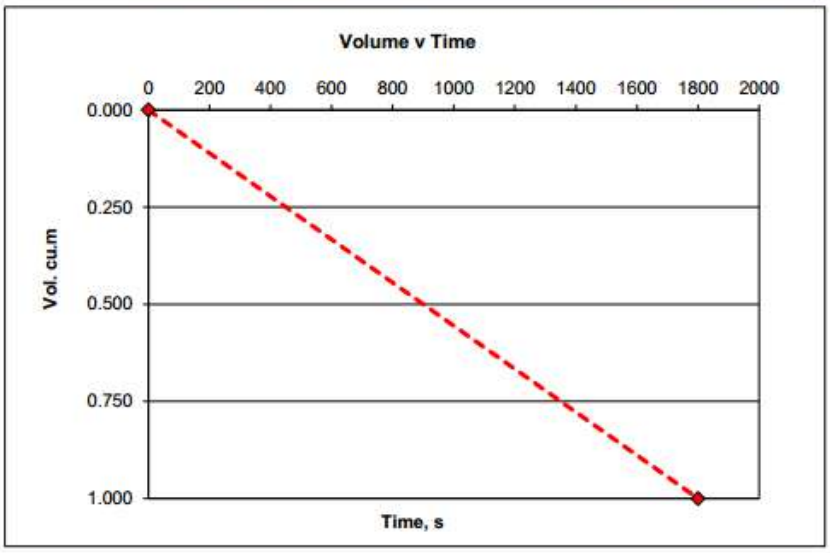
Test 1 **SA02** E588888.642 N571668.141 8.648mOD

l, m	**2.200**	b, m	**1.300**	d, m	**2.000**
l_base, m	**2.200**			d_eff, m	**0.350**
l_eff, m	**2.200**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
Start: 11:15:00	0	1.650	0	0.35	0.00	0.000
End: 11:45:00	30	2.000	1800	0.00	0.35	1.000

Area	2.860 m^2	$V_{p75\text{-}25\ theory}$	volume	0.5005	m^3
50% Area_eff, a_{p50}	4.085 m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.5005	m^3
50% Area_act, a_{p50}	4.085 m^2	$t_{p\ 75\text{-}25\ actual}$	time	900	s

Infiltration Coefficient *f* 1.36E-04 ms^-1



NOTES:

Pit assumed unsaturated. Moderate stability
Infiltration calculated over actual fall recorded.
Water bowser drained in full 1000 lt (1.0cu.m) in 30 minutes.

Figure 4.3: Infiltration test results – P23154

Site Investigation - Road design

The site investigation bore holes and trial pits have informed the design team of the depth and strength of subsoil throughout the site. No rock was encountered during the site investigation. From this information an approximate volume of cut and fill material needed to construct the proposed development has been determined. The samples taken from each pit also went through a series of lab testing to examine the re-usability of the subsoil. The results of these tests have been included in the Site Investigation Interpretive Report completed by Priority Geotechnical, which has been submitted as part of the application documentation.

It was found that the volume of subsoil to be excavated is approx. 26,307.54 m^3 with the volume of fill required being approx. 8,771.59 m^3. All excavated subsoil will be considered for suitability to be used as fill on site. No hazardous material was uncovered during the site investigation. It is proposed that excavated material generated on site shall be treated as necessary for use as general fill around the site. As a result of the assessment of several soil samples taken from the trial pits, the grading capability of the subsoils has been assessed as follows:

Topsoil was 100mm to 400mm thick, overlay mixed glacial deposits; slightly sandy slightly gravelly SILT, very gravelly SAND and (slightly) silty very sandy GRAVEL with low Cobble contents were encountered up to 1.5m below existing ground level (bgl) to 4.5m bgl. Limestone Boulders were encountered below a depth 1.8m at TP01.

Groundwater levels may be subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc. The duration trial excavations remain open may not allow for equilibrium groundwater level to be established in cohesive deposits. The groundwater regime should be assessed from standpipe well installations where available.

The full results from this analysis has been included as a part of the application documentation.

Extracts from trial pit and borehole logs generated by Priority Geotechnical are highlighted in **Figure 4.4** below. The full log information is included in the attached appendices.

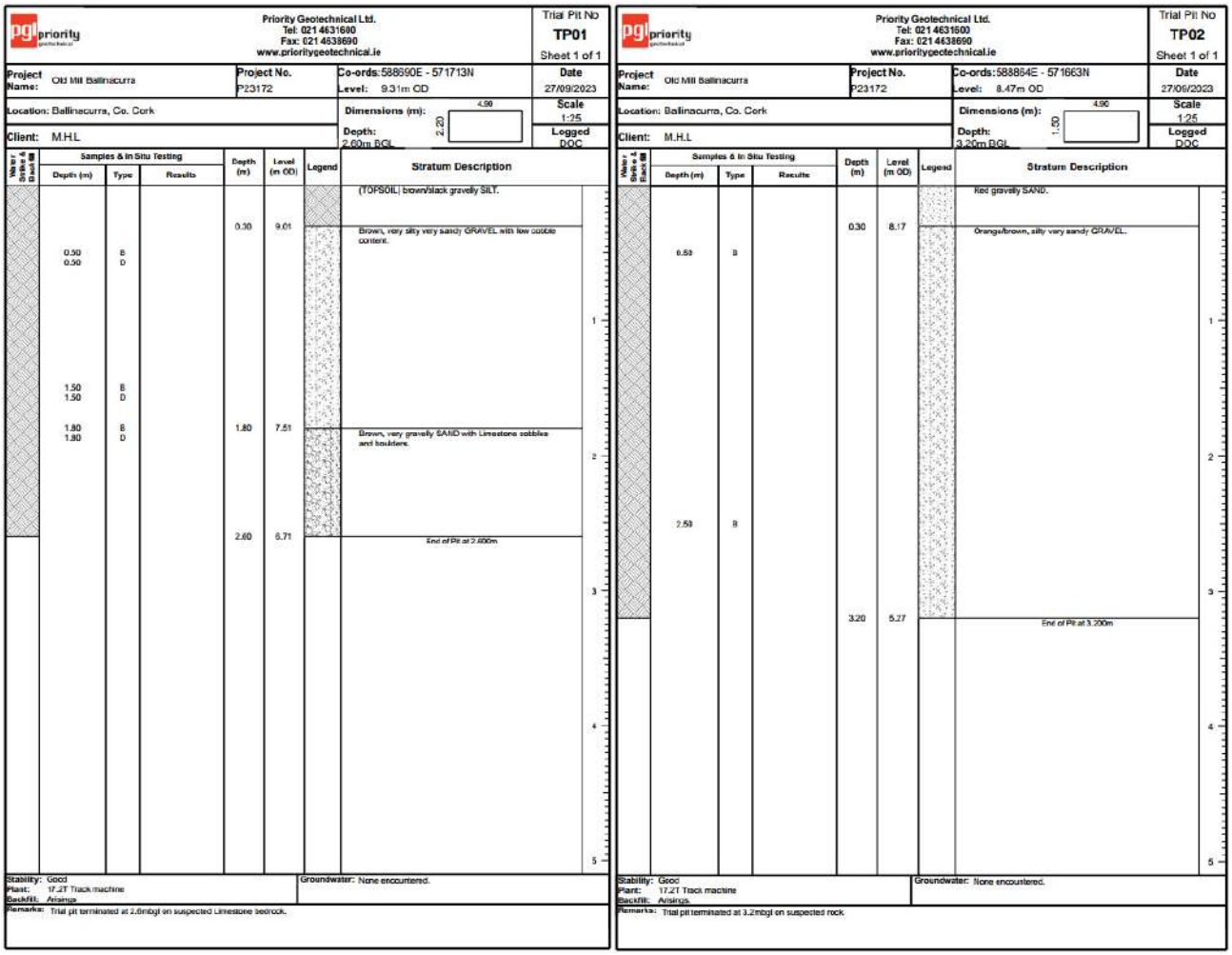


Figure 4.4: Trial Pit 01 and Trial Pit 02 logs

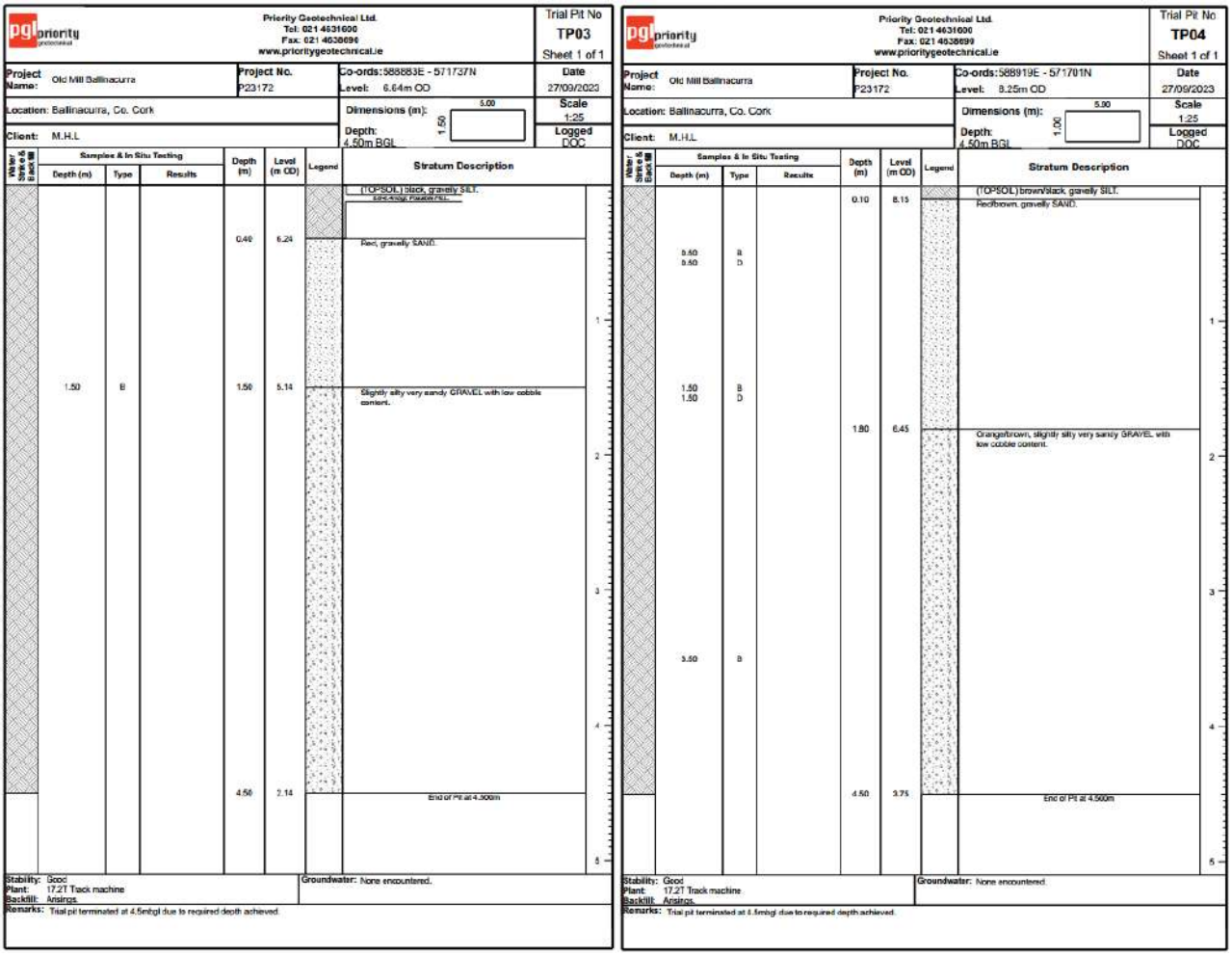


Figure 4.5: Trial Pit 03 and Trial Pit 04 logs

5. STORM WATER NETWORK

Storm design: (Return Period 1:100 with a 20% Climate Change Factor)

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

The proposed surface water drainage system is in accordance with Sustainable Urban Drainage Systems (SUDS) principles and divides the site into three (3) drainage catchments: all of which are proposed for attenuation utilising a number of reinforced concrete attenuation tanks. The proposed surface water drainage system for the development is to be carried out via two storm sewer networks. Storm network 1 includes the western extents of the proposed development while Storm Network 2 includes for the eastern extents of the proposed development. Each attenuation system is designed with a controlled flow rate of less than the greenfield run-off rate for the catchment area. This results in an overall discharge from the site of 6.99 l/s for Storm Network 1 and 2.65 l/s for Storm Network 2 which are less than the greenfield run-off of 15.53 l/s. The attenuated systems for Storm Network 1 will ultimately discharge into the existing stream north of the development via the public storm sewer present on Rose Lane while the attenuated systems for Storm Network 2 are to discharge into the public storm sewer present on the R629 northeast of the development, refer to **Figure 5.2**.

The pipe diameters of storm sewer network 1 were calculated to provide adequate capacity for the development and are shown in **Table 5.1** below. The minimum gradient in the development storm sewer network is 1/200. The maximum gradient in the development storm sewer network is 1/14.

The pipe diameters of storm sewer network 2 were calculated to provide adequate capacity for the development and are shown in **Table 5.2** below. The minimum gradient in the development storm sewer network is 1/200. The maximum gradient in the development storm sewer network is 1/22.

Petrol Interceptors will be located before stormwater sewers enter attenuation tanks to avoid the build up of petrol in attenuation tanks as well as silt traps to avoid the out falling of silt to the existing river.

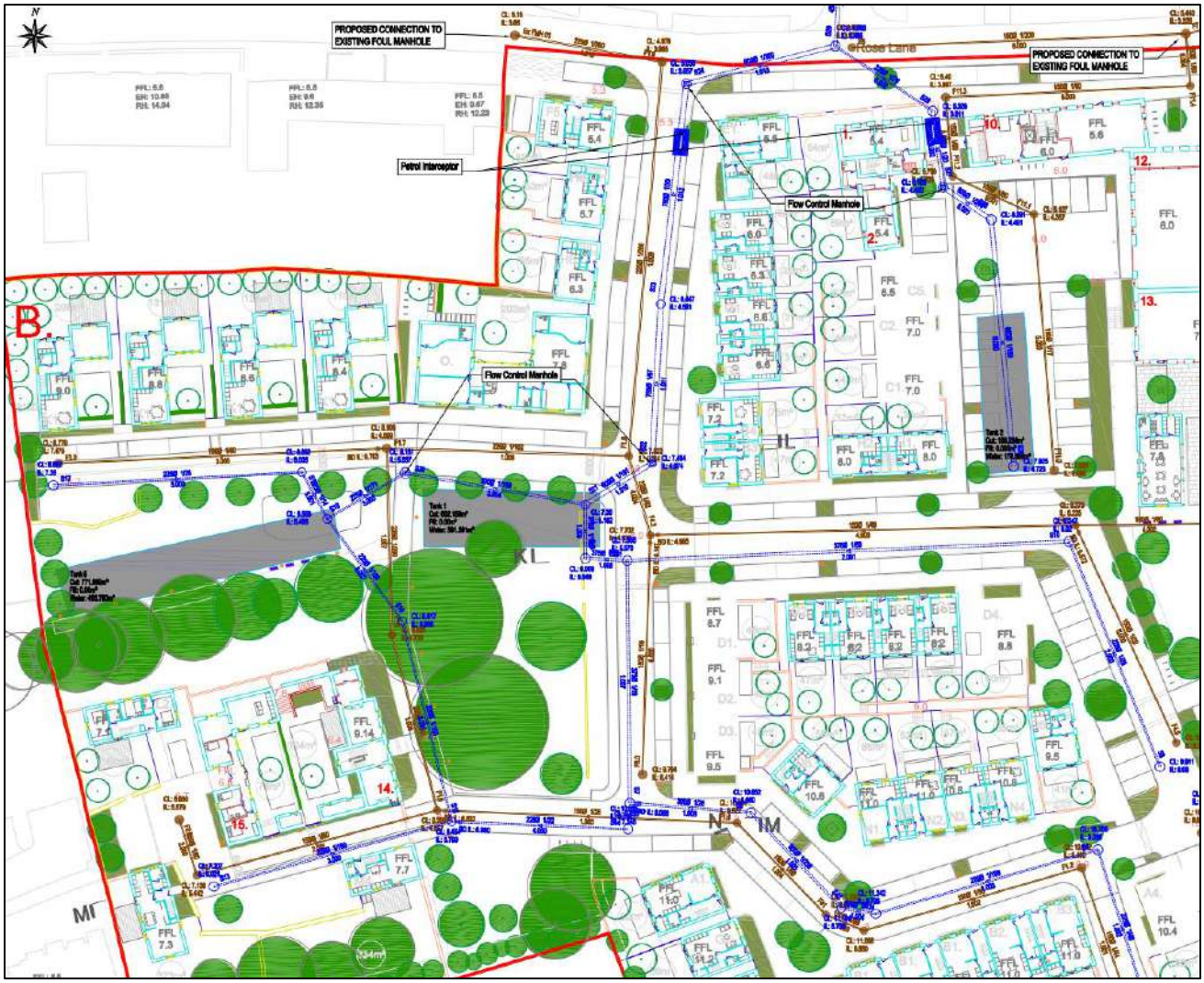


Figure 5.1: Proposed storm/foul lines, attenuation tank, and flood storage tank locations

The storm-runs generally flow in a northerly direction to the five proposed attenuation tanks. The design of the attenuation tanks was informed by the actual site greenfield run-off rate for each catchment using HR Wallingford Methodology IH124. However, in order to produce a robust design, the surface water run-off rate has been restricted further for each tank. Details of the attenuation tanks design and sizes are included in **Table 5.3** below. Attenuation tanks have been designed for a storm return period of 1 in 100 year and with a 20% climate change factor.

One outfall is proposed from the surface water network to tie into the existing storm sewer running along R629 Lower Rd. As stated previously in this section, and shown in **Figure 5.2**, the development surface water from Storm Network 1 will ultimately discharge into the nearby stream to the north of the L96302.

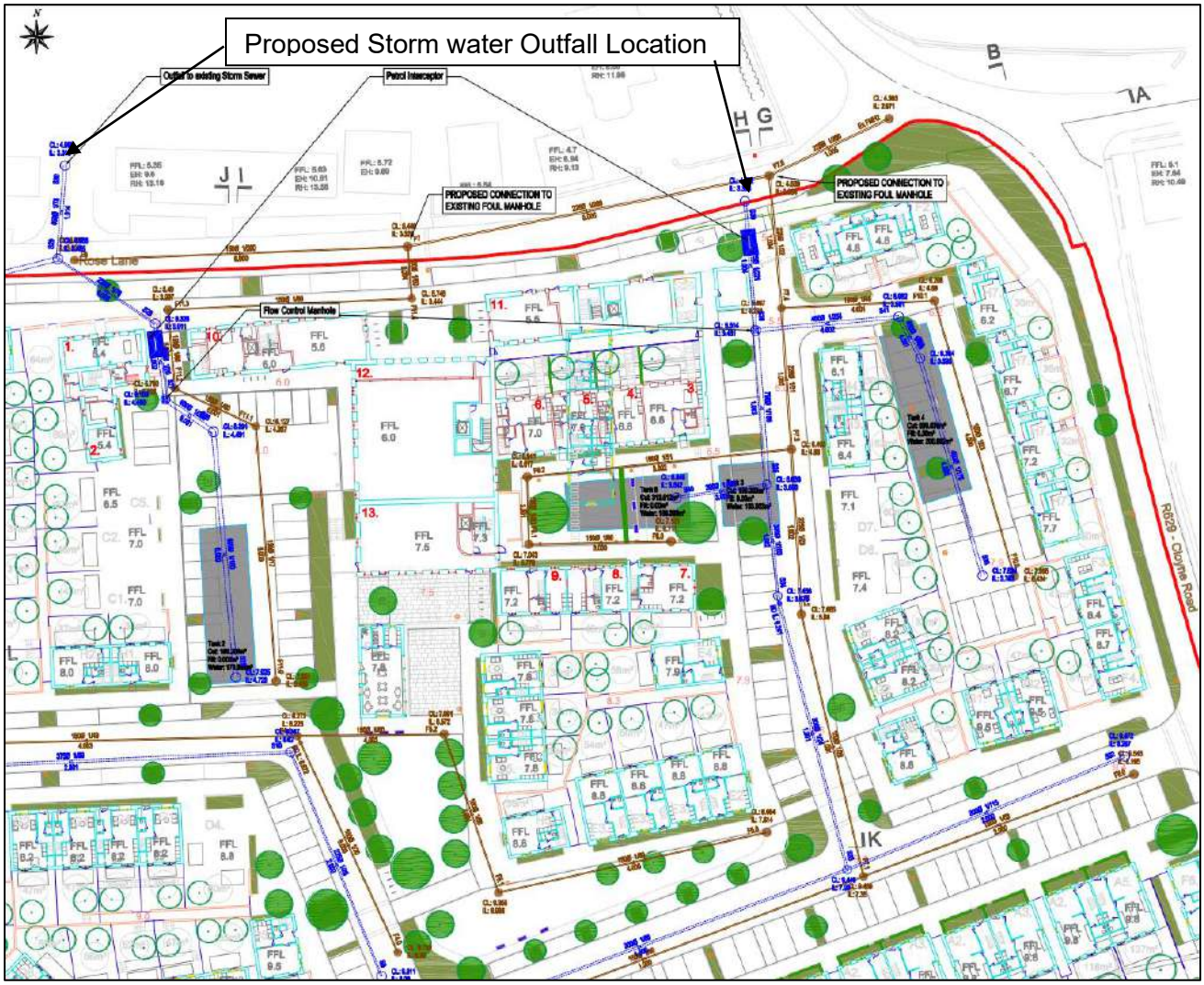


Figure 5.2: Proposed outfall from proposed surface water network

Layout details of the stormwater network can be found in drawings **23072HD-OPN-P01, 23072HD-OPN-P02** and **23072HD-OPN-P03**. Longsections of the stormwater network are presented in drawings **23072HD-SLS-P01**, **23072HD-SLS-P02, 23072HD-SLS-P03**, and **23072HD-SLS-P04**.

Pipe No.	Upstream MH ID	Downstream MH Node	Length (m)	Dia (mm)	Vel (m/s)	Outflow (l/s)	£ Area (ha)
1.000	S1	S2	39.733	0.225	1.224	25.475	0.081
1.001	S2	S3	8.464	0.225	1.061	31.948	0.012
1.002	S3	S4	19.967	0.225	0.925	36.768	0.027
1.003	S4	S5	33.197	0.225	1.816	71.407	0.093
1.004	S5	S6	22.896	0.300	1.458	94.226	0.063
1.005	S6	S7	13.515	0.300	3.247	97.303	0.013
1.006	S7	S12	38.500	0.375	1.451	114.769	0.054
2.000	S8	S9	11.131	0.225	1.124	14.778	0.042
2.001	S9	S10	35.413	0.225	2.571	43.058	0.080
2.002	S10	S12	57.557	0.375	0.001	0.075	0.116
1.007	S12	S21	12.115	0.375	0.002	0.189	0.008
3.000	S13	S15	36.574	0.225	-0	-0.008	0.087
4.000	S14	S15	26.400	0.225	0.298	7.07	0.027

3.001	S15	S16	30.037	0.225	0.000	0.015	0.074
3.002	S16	S19	16.656	0.225	0.000	0.014	0.009
5.000	S17	S18	34.743	0.225	2.601	34.771	0.098
5.001	S18	S19	7.473	0.225	0.000	0.007	0.000
3.003	S19	S20	12.739	0.225	0.001	0.021	0.000
3.004	S20	S21	25.741	0.300	0.000	0.024	0.043
1.008	S21	S22	11.072	0.600	0.001	0.195	0.000
1.009	S22	S23	22.425	0.750	0.368	0.219	0.068
1.010	S23	S24	31.212	0.750	0.202	28.324	0.077
1.011	S24	S29	21.636	0.600	0.566	4.896	0.000
6.000	S25	S26	34.849	0.600	0.002	0.501	0.155
6.001	S26	S27	8.185	0.600	0.001	0.276	0.021
6.002	S27	S28	10.808	0.450	0.489	0.691	0.034
6.003	S28	S29	16.509	0.225	0.510	0.691	0.000
1.012	S29	S30	13.236	0.450	0.856	5.423	0.000

Table 5.1: Storm Sewer Network 1 design output

Pipe No.	Upstream MH ID	Downstream MH Node	Length (m)	Dia (mm)	Vel (m/s)	Outflow (l/s)	£ Area (ha)
1.000	S31	S33	47.385	0.3	1.763	63.793	0.164
2.000	S32	S33	42.369	0.3	1.317	53.812	0.147
1.001	S33	S34	39.925	0.3	3.494	130.858	0.046
1.002	S34	S35	15.832	0.3	1.034	49.028	0.039
3.000	S40	S35	12.906	0.3	0.009	0.643	0.071
1.003	S35	S38	23.551	0.75	0.142	6.915	0.106
4.000	S36	S37	37.537	0.45	0.440	2.412	0.009
4.001	S37	S38	22.848	0.45	0.131	4.052	
1.004	S9	S11	16.633	0.375	0.489	1.85	0.024

Table 5.2: Storm Sewer Network 2 design output

Attenuation tank ID	Catchment (m^2)	Storage volume required (m^3)
AT-1	4,600	392
AT-2	2,100	179
AT-3	970	104
AT-4	2,400	207
AT-5	2,950	497
AT-6	2,200	187

Table 5.3: Storm water attenuation tank design and sizing

The construction of the storm sewer pipe network shall be in accordance with BS EN 752:2008 - drain and sewer systems outside buildings.

6. FOUL WATER NETWORK

Foul design

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

Each person is assumed to consume 150 litres of water per day.
Dry Weather Flow (DWF) = 450 litres/dwelling/day (2.7 persons per dwelling with a 10%-unit consumption allowance).
Design for Peak Flow (6 X DWF) = 2,700 litres/dwelling/day (to account for surges in the consumption at peak times leading to surcharges in the pipe network).

For each pipe run, the accumulative number of households contributing to that section of pipework is used to calculate the design flow. Contributions from the creche, retail unit, and café with offices were also determined and included in the design.

The calculated foul pipe diameters to provide adequate capacity for the development are shown in **Table 6.1** below.

Layout details of the foul network can be found in drawings **23072HD-OPN-P01, 23072HD-OPN-P02**and **23072HD-OPN-P03**. Longsections of the foul network are presented in drawings **23072HD-WWLS-P01**, **23072HD-WWLS-P02**, and **23072HD-WWLS-P03**.

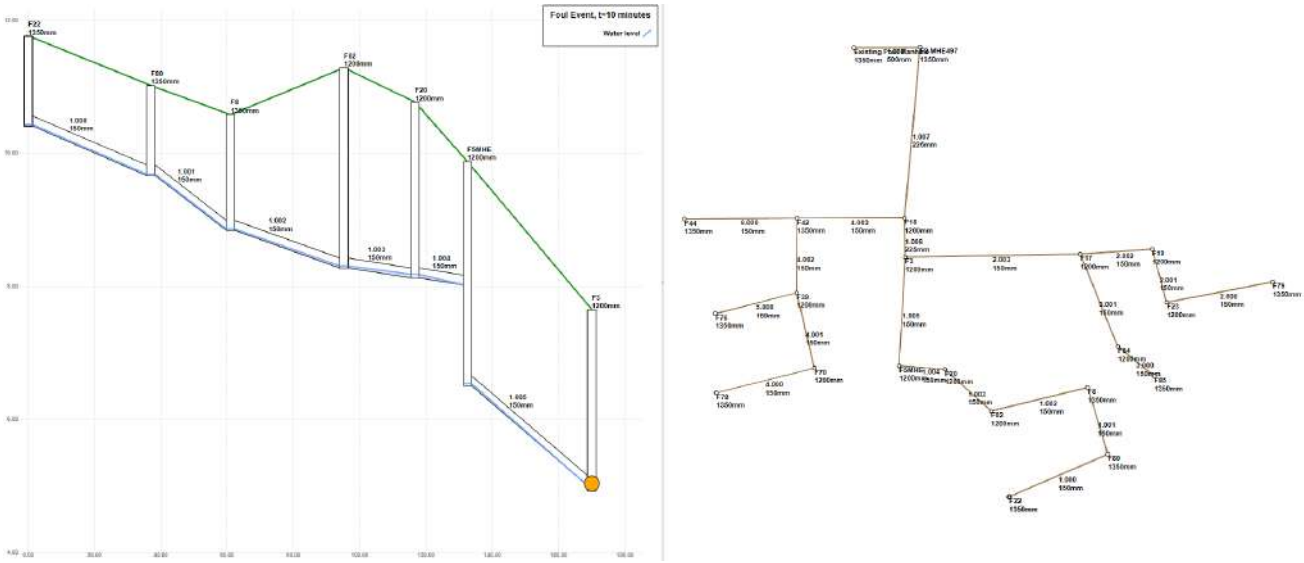


Figure 6.1: Typical Output profile plot and graph from foul sewer analysis package

The construction of the foul sewer pipe network shall be in accordance with Uisce Eireann Code of Practice for Wastewater Infrastructure Doc IW-CDS-5030-03.

Name	US Node	DS Node	Length (m)	Dia (mm)	Vel (m/s)	Flow (l/s)
1.000	F22	F80	37.010	150	1.684	0.9
1.001	F80	F8	24.005	150	2.223	1.0
1.002	F8	F82	34.197	150	1.533	1.0
1.003	F82	F20	21.440	150	0.955	1.9
1.004	F20	F5MHE	15.780	150	0.954	2.2
1.005	F5MHE	F3	37.530	150	2.402	2.2
2.000	F79	F23	37.091	150	1.532	0.0
2.001	F23	F19	19.043	150	1.534	1.1
2.002	F19	F17	24.843	150	1.533	1.4
3.000	F85	F84	16.151	150	1.951	0.7
3.001	F84	F17	34.391	150	3.125	0.9
2.003	F17	F3	60.238	150	1.568	1.9
1.006	F3	F18	13.445	225	3.357	3.3
4.000	F78	F70	34.861	150	1.533	0.5
4.001	F70	F39	26.603	150	1.534	1.0
5.000	F76	F39	28.808	150	1.887	0.5
4.002	F39	F42	25.732	150	1.531	1.5
6.000	F44	F42	38.772	150	3.344	0.5
4.003	F42	F18	37.083	150	0.956	1.8
1.007	F18	F2 MHE497	59.179	225	1.066	4.0
1.008	F2 MHE497	Existing Foul Manhole	22.703	500	1.768	4.3

Table 6.1: Foul design output

As per the confirmation of feasibility received from Uisce Eireann there is sufficient capacity in the local wastewater network to accommodate the proposed units in this scheme.

7. WATERMAIN NETWORK

Water design

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

A 100mm diameter HDPE watermain is proposed to supply potable water to all units and fire hydrants within the development. The proposed pipe network has no dead ends with loops serving a minimum of 4 units in accordance with Uisce Eireann Code of Practice for Water Infrastructure Doc IW-CDS-5020-03.

The 100mm mains will be connected to the existing mainline present on the R629 and L96302, respectively.

Figure 7.1: Watermain layout for Section of Proposed Development

Layout details of the watermain network can be found in drawings **23072HD-WM-P01**, **23072HD-WM-P02**, **23072HD-WM-P03**, and **23072HD-WM-P04**.

The construction of the water supply pipe network shall be in accordance with Uisce Eireann Code of Practice for Water Infrastructure Doc IW-CDS-5020-03. Service layout distances to comply with Uisce Eireann Detail STD-W-11.

A Pre-Connection Enquiry Form and Statement of Design Acceptance has been submitted to Uisce Eireann to progress connection details. The response from Irish Water is included in **Appendix A & Appendix E** of this report.

As per the confirmation of feesibility received from Uisce Eireann 110m of the existing watermain requires an upgrade and as part of this upgrade it will be developed in conjuncton with Uisce Eireann to ensure the that the flow will achieve the Fire Authority Requirements. This will be agreed with Uisce Eireann and the Fire Authority at connection application stage during construction.

8. PUBLIC LIGHTING

Public Lighting design

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

A public lighting design report and associated drawing have been included as part of this planning submission. The public lighting design for the development has been designed in compliance with the following standards and guidelines;

- BS 5489-1: Code of Practice for the design of road lighting Part 1 - Lighting of roads and public amenity areas (2020)
- EN 13201-1: Road Lighting Part 1 - Guidelines on Selection of Lighting Classes (2014)
- EN 13201-2: Road lighting Part 2 - Performance requirements (2015)
- Cork County Council: Public Lighting Manual and Product Specification (2023)
- Institution of Lighting Professionals: Guidance Note 01/21 - The Reduction of Obtrusive Light (2021)
- Institution of Lighting Professionals: Guidance Note 08/18 - Bats and artificial lighting in the UK (2018)

The design was carried out using Lighting Reality Pro which is a specialized software package for lighting designers. The software is used to create standards-compliant plans for streetlights and outdoor areas, offering real-time calculations, integrated manufacturer data and tools to meet ecological needs, helping professionals design efficient and compliant public lighting systems.

The following is a non-exhaustive list of compliance notes for the public lighting layout;

- No trees shall be planted within 10m of lighting columns on the same side of the road or in such a manner that the foliage is likely to obstruct the light in the future.
- Hinged columns to be installed where accessibility by a maintenance vehicle is not viable.
- The minimum clearance from edge of carriageway to face of lighting columns shall be 0.8m as per Table 2 from BS 5489 for a design speed of <50km/hr.
- Columns are to have a double locked framed door and should be multisided galvanised to Cork County Council specification.
- Public lighting to be fed from new power supply connections.
- All Lanterns within the estate are to be Warm White 2700°K with a peak wavelength greater than 550nm

The public lighting design contained 7no. design grids which are listed below in **Figure 8.1**

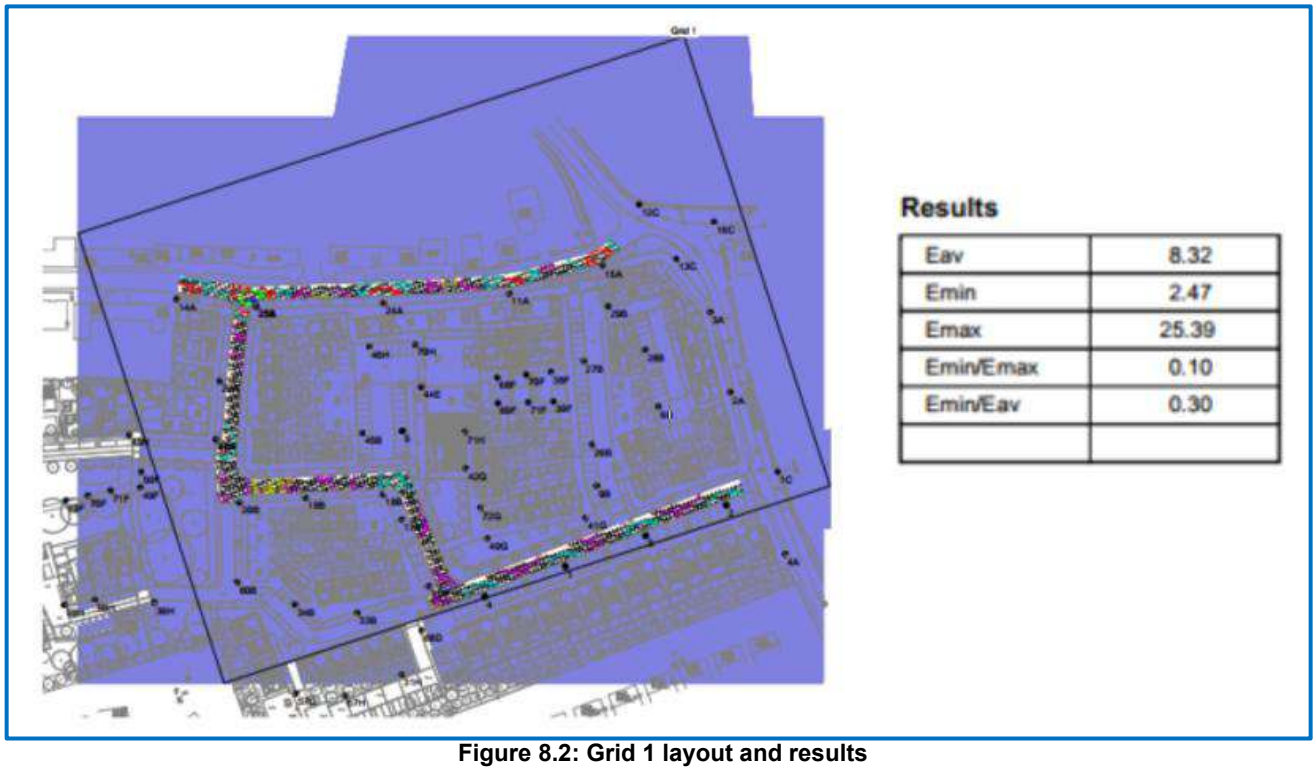
LIGHTING CLASSIFICATION
GRID 1: Main Estate Roads & Rose Lawn - P3
GRID 2: R629 - C4
GRID 3: Minor Estate Roads & Isolated Paths- P4
GRID 4: Junction R629/Geragh Road/Rose Lawn- C3
GRID 5: Junction R629/Development Access- C3
Grid 6: Rose Hill House & Parkland Cul de Sac- P5
Grid 7: Southern Cul De Sac - P5

Figure 8.1: Lighting Classification Table

GRID 1

Grid 1 contains the design for the Main Estate Roads & Paths as well as Rose Lawn which is the public road to the north of the site. The Lighting Classification applied to these areas is P3. P3 requires an E average of between 7.5 lux & 10 lux with an E minimum of 1.5 lux and a uniformity of at least 0.2.

The grid is shown below in **Figure 8.2** with the areas highlighted and results for the grid also shown.



Results

Eav	8.32
Emin	2.47
Emax	25.39
Emin/Emax	0.10
Emin/Eav	0.30

Figure 8.2: Grid 1 layout and results

GRID 2

Grid 2 contains the design for the R629 road which is the public road to the east of the site. The speed limit on this section of the R629 is within the 50km/hr zone. Table A.3 from BS 5489-1 gives the lighting class for roads with speed limits below 40mph (64km/hr). A traffic flow of Low to Moderate has been chosen for the R629. This gives a Lighting Classification of M4/C4.

Table A.3 Lighting classes for traffic routes ($v \leq 40$ mph)

Traffic flow	Lighting class		
	Dual carriageway		Single carriageway
	Junction density: high	Junction density: low	
High to very high [A]	ME3b or M3	ME4a or M4	ME3b or M3
Low to moderate [B]	ME4a or M4	ME5 or M5	ME4a or M4
Very low [C]	ME5 or M5	ME6 or M6	ME5 or M5

Figure 8.3: Table A.3 (BS 5489-1)

M4/C4 requires an E average of at least 10 lux and a uniformity of at least 0.4. The grid is shown overleaf in **Figure 8.4** with the areas highlighted and results for the grid also shown.

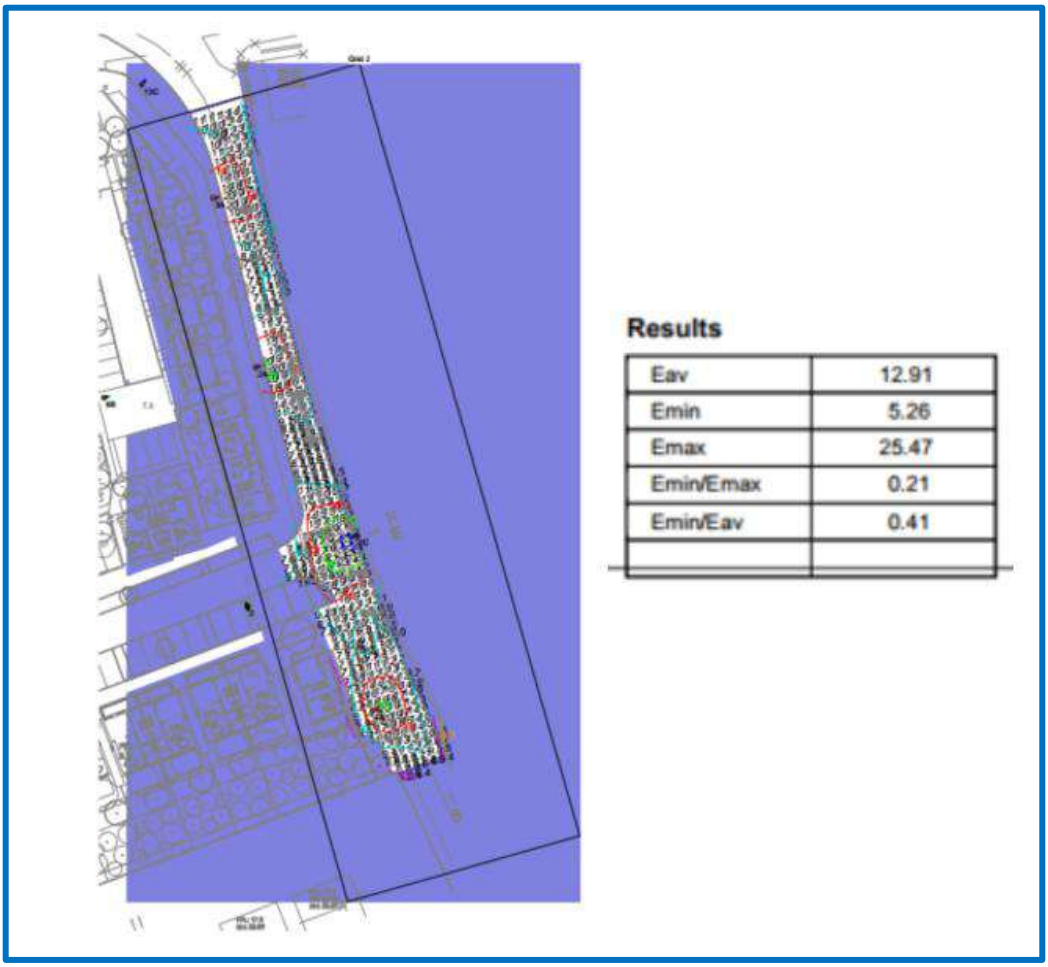


Figure 8.4: Grid 2 layout and results

GRID 3

Grid 3 contains the design for the minor estate roads and isolated paths. The Lighting Classification applied to these areas is P4. P4 requires an E average of between 5.0 lux & 7.5 lux with an E minimum of 1.0 lux and a uniformity of at least 0.2. The grid is shown below in **Figure 8.5** with the areas highlighted and results for the grid also shown.

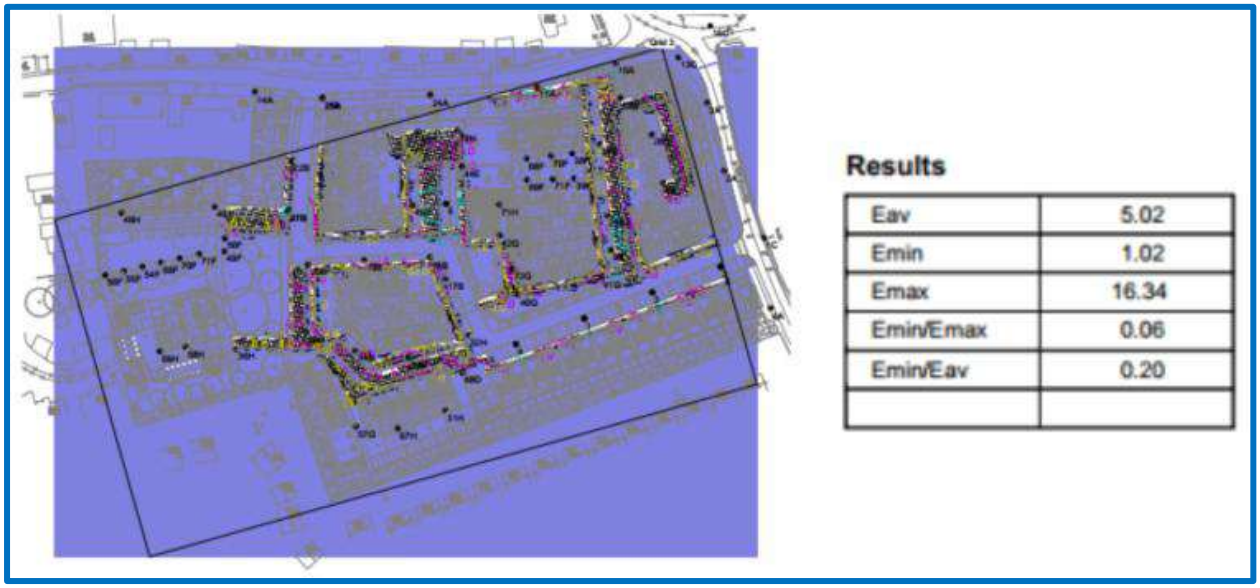


Figure 8.5: Grid 3 layout and results

GRID 4

Grid 4 contains the design for the staggered junction intersection between the R629 Road/Geragh Road & Rose Lawn to the north east of the site. As this is classified as a Conflict Zone, a Lighting Classification of one step higher than the Lighting Class on the major road (R629) has been applied. This results in a step of from the M4/C4 class to a M3/C3 class for this intersection. M3/C3 requires an E average of at least 15 lux and a uniformity of at least 0.4. The grid is shown below in **Figure 8.6** with the areas highlighted and results for the grid also shown.

Figure 8.6: Grid 4 layout and results

GRID 5

Grid 4 contains the design for the development access onto the R629 Road. As this is classified as a Conflict Zone, a Lighting Classification of one step higher than the Lighting Class on the major road (R629) has been applied. This results in a step of from the M4/C4 class to a M3/C3 class for this intersection. M3/C3 requires an E average of at least 15 lux and a uniformity of at least 0.4. The grid is shown below in **Figure 8.7** with the areas highlighted and results for the grid also shown.

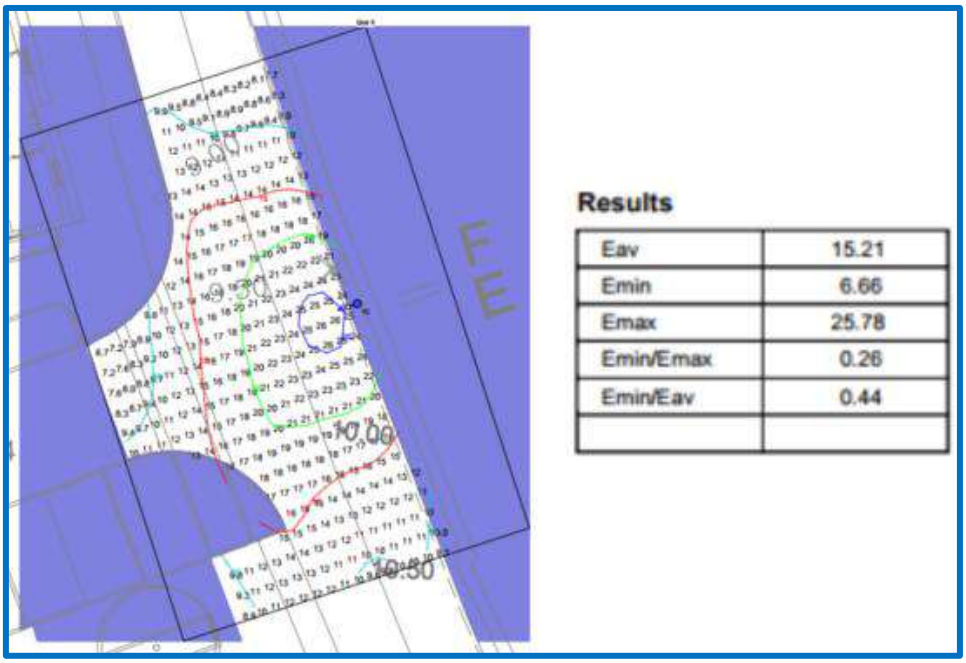


Figure 8.7: Grid 5 layout and results

GRID 6

Grid 6 contains the design for the private gated area of Rose Hill House as well as the home zone cul de sac in the parklands area in the north west of the development. The private gated area of Rose Hill House serves 5no. units while the home zone area to the north west serves 4no. units. Due to the sensitive nature of these areas from a heritage, parklands and ecological point of view, a Lighting Classification of P5 has been applied. P5 requires an E average of between 3.0 lux & 5.0 lux with an E minimum of 0.6 lux and a uniformity of at least 0.2. The grid is shown below in **Figure 8.8** with the areas highlighted and results for the grid also shown.

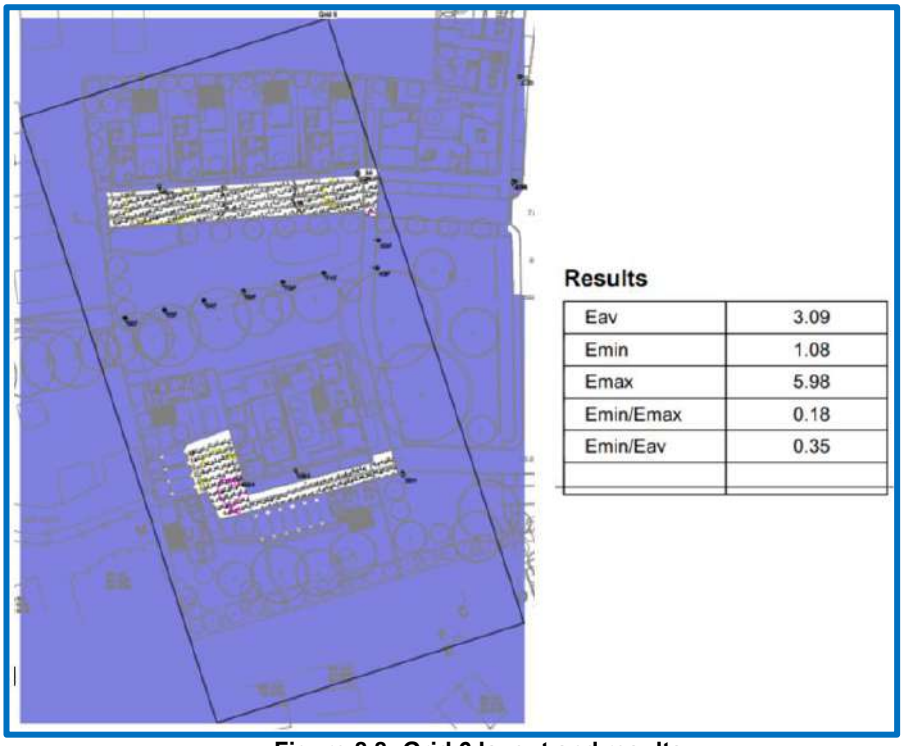


Figure 8.8: Grid 6 layout and results

GRID 7

Grid 7 contains the design for the home zone cul de sac in the south of the development. Due to the sensitive nature of this area from an ecological point of view, a Lighting Classification of P5 has been applied. P5 requires an E average of between 3.0 lux & 5.0 lux with an E minimum of 0.6 lux and a uniformity of at least 0.2. The grid is shown below in **Figure 8.9** with the areas highlighted and results for the grid also shown.

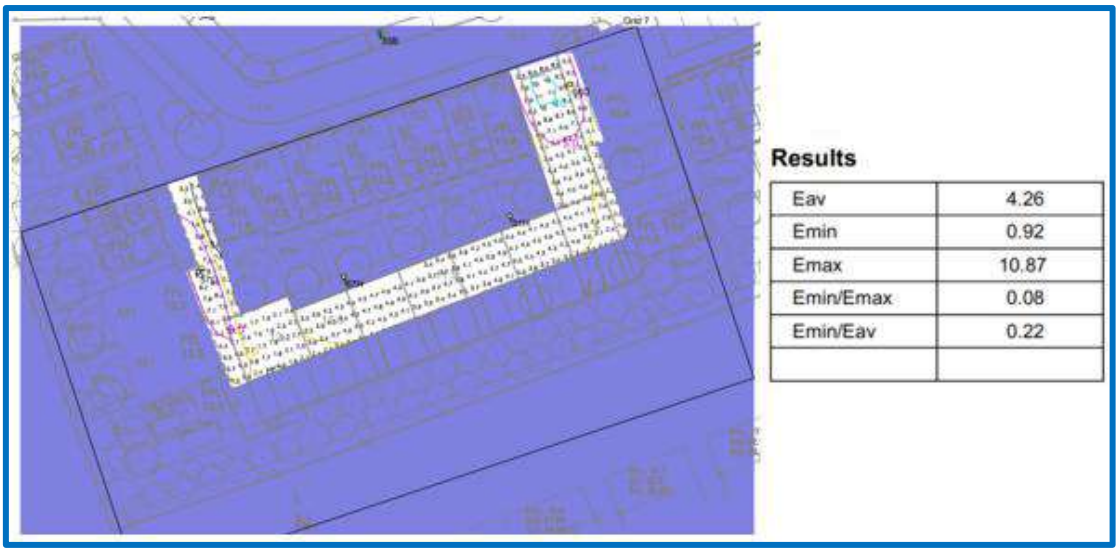


Figure 8.9: Grid 7 layout and results

9. FLOOD RISK ASSESSMENT

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

Planning guidelines on flood risk and development have been published by the OPW and Department of Environment, Heritage, and Local Government (DoEHLG). The below sections summarise how the developments design was assessed in accordance with the main principals of the guidelines.

SEQUENTIAL APPROACH

The sequential approach makes use of flood zones for river and coastal flooding, as described below:

Zone A High probability. This zone defines areas with the highest risk of flooding from of flooding. For river flooding it is defined as more than 1% probability or more than 1 in 100 years, and for coastal flooding it is defined as 0.5% probability or more than 1 in 200 years.

Zone B Moderate probability. This zone defines areas with a moderate risk of flooding. For river flooding it is defined as 0.1% to 1% probability or between 1 in 100 and 1 in 1000 years, and for coastal flooding 0.1% and 0.5% probability or between 1 in 200 and 1 in 1000 years.

Zone C Low probability. This zone defines areas with a low risk of flooding less than 0.1% probability or less than 1 in 1000.

The flood zones are then to be looked at with the vulnerability of the buildings proposed.

- Highly Vulnerable Hospitals, Garda stations, homes, motorways etc.
- Less Vulnerable commercial, retail, offices etc.
- Water Compatible Marina's, green areas

A sequential approach is then taken to assess the most favourable location for the development based on its vulnerability.

Zone A Water Compatible or Justification Test
Zone B Less Vulnerable if no other lands are available or highly vulnerable with Justification Test
Zone C Any development

DEVELOPMENT SEQUENTIAL TEST

Coastal Flood Risk
There is no risk associated with coastal flooding for this site as general ground levels for the site (circa 5.00m – 10.00m OD) are much higher than expected extreme coastal flood levels.

Fluvial Flood Risk
Fluvial flooding is the result of a river exceeding its capacity and excess water spilling out onto the adjacent floodplain.

Myplan.ie map incorporates many different sets of spatial information, including OPW Flood Mapping data (fluvial, pluvial, coastal flooding data and groundwater flood extents).

Figure 9.1 is an extract from www.floodinfo.ie and indicates that there is no fluvial flooding threat to the site of the proposed development.

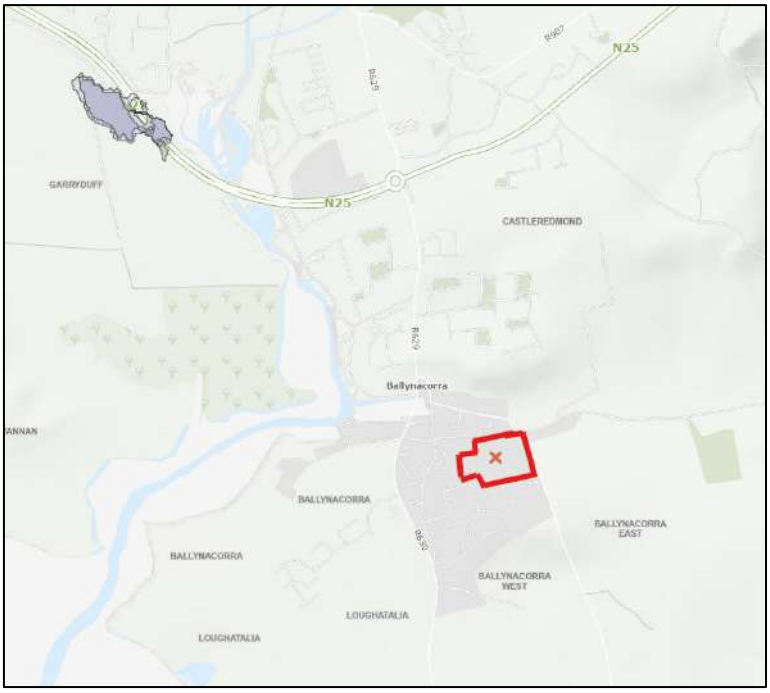


Figure 9.1: Fluvial flood map in the vicinity of the proposed site (outlined in red)

While the Ballinacorra Stream is in close proximity to the proposed site, as seen on the flood maps the stream poses no threat to the proposed site due to level differences.

Pluvial Flooding

The OPW Flood Hazard Mapping Website is a record of historic flood events, and this database indicates that High Tides and Strong Winds. Flooding caused by a combination of south-easterly winds and high tides. Flooding occurred on Monday morning 03rd Feb at high tide. Main Street (L3624), South Quay (L96303) and the local road from Main Street to the R630 (L3657) were all flooded including 2 no. houses on South Quay (4 and 5 Quay Place). On Tuesday evening04th Feb flooding occurred again at high tide. Again, Main Street, South Quay and L3657 were all flooded. No records of houses flooding a second time., see **Figure 9.2** below.

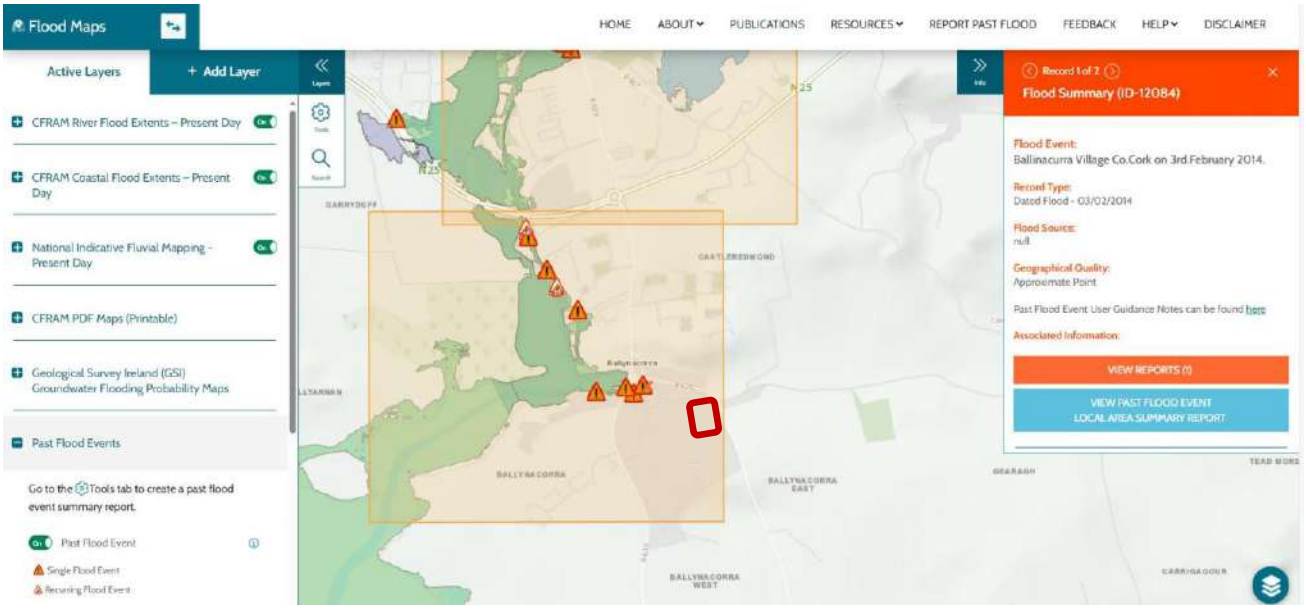


Figure 9.2: Historical flood events in surrounding area

The flood is as a result of the event in Ballinacurra Village, Midleton, Co. Cork. National Grid Reference: started on 3rd. February 2014 and ended on 5th. February 2014.

Figure 9.3 below shows the expected extent of flooding for each of the risk categories from 10% to 0.1% AEP Flood Events.

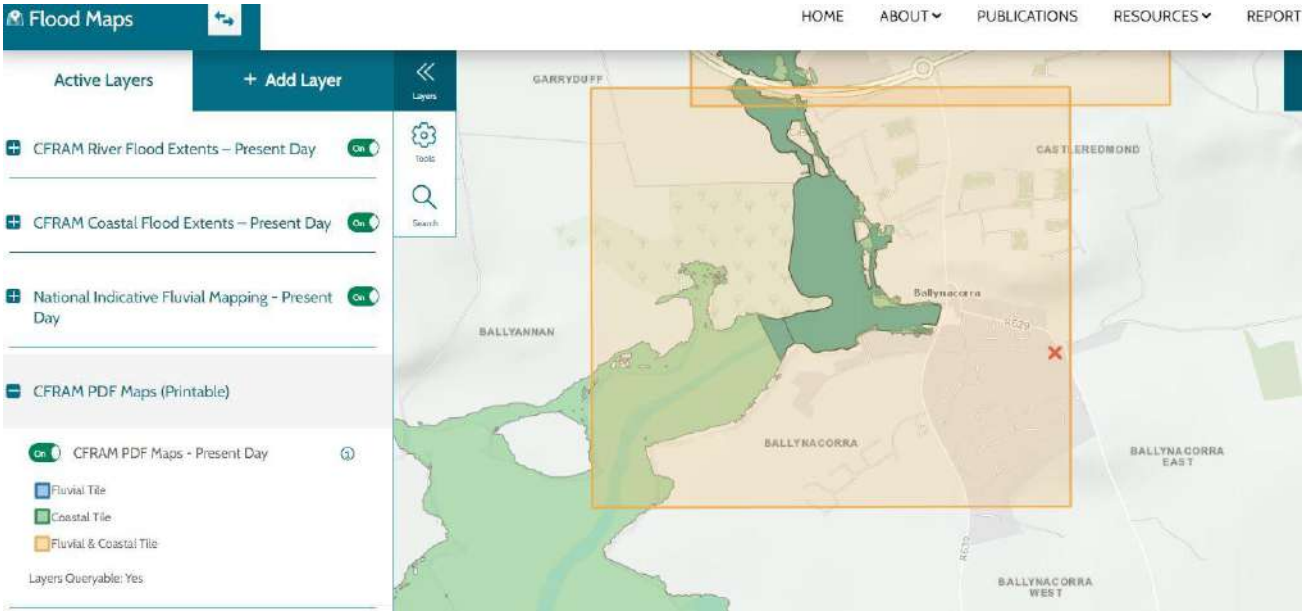


Figure 9.3: Flood Extent Mapping from the Lee CFRAMS Study

It is noted that the site of the proposed development has not been affected by the historical flood events nor is it vulnerable to predicted flood events as part of the Lee CFRAMS study. Evident from the mapping is that the adjoining residential scheme, Senandale, is vulnerble and will continue to be at risk unless remedial measures are put in place.

The following diagram indicates the location of rivers and streams in the vicinity of the site. **Figure 9.5** shows the historic 6 inch mapping for the area which does not include the man-made land drain running through the site. The stream running on the western boundary of the site is indicated on the historic map and hence a review of the catchment of this stream was undertaken. **Figure 9.6** is an extract from the OPW online map system which includes details of this stream. Evident from this map is the contributing catchment of 1.135 km², which is significantly less than the lower limit of 5 km² used to determine if watercourses are included in the CFRAMS model. The conclusion is that this northern stream running adjacent to the site was not included in the CFRAMS model and, therefore, the results of **Figure 9.3** relating to the site may be incomplete.

Figure 9.4 below presents the location and direction of the existing watercourses in relation to the site.

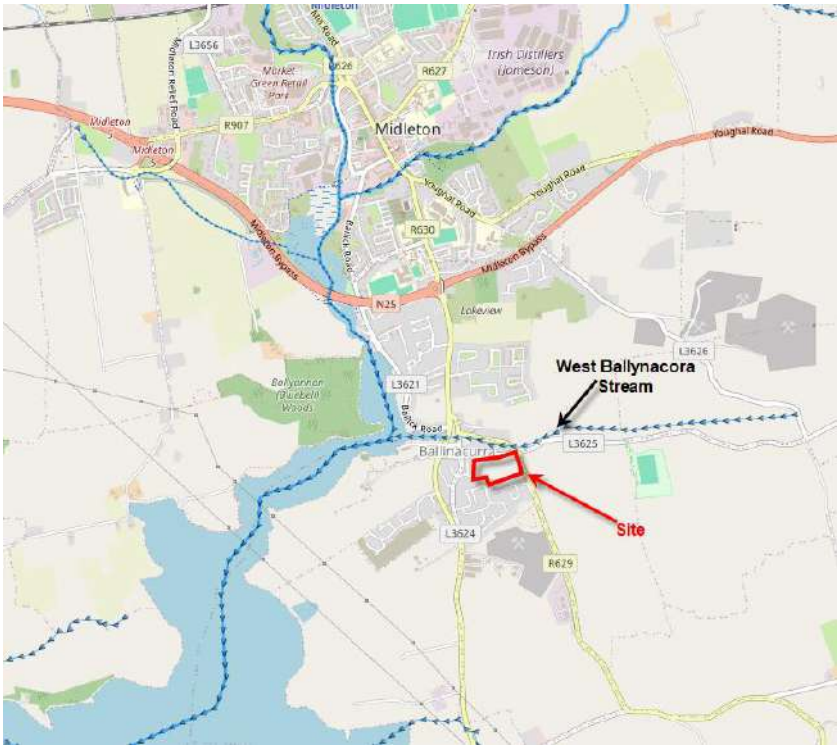


Figure 9.4: Location and direction of watercourses in relation to site

Figure 9.5: 6'' Historic Map of the area

Development Drainage

The proposed surface water drainage design proposes to discharge below QBAR for all rainfall events up to and including the 1 in 100-year storm event plus 20% climate change as discussed and agreed with the Cork County Council's Drainage Department. This exceeds the climate change factor of 10% required as part of GDSDS. As is evident from the HR Wallingford Greenfield Runoff Estimation tool (refer to **Appendix D**), the proposed discharge rate of 15.53 l/s is considerably lower than the 30-year and 100-year greenfield runoff rates and represents a substantial reduction in the peak run-off rates from the site. Furthermore, additional SuDS elements are proposed in areas where the designed layout, topography and ground conditions allow, which have not been included when sizing of the attenuation tanks. Specifically, a series of 'floodable' basins is proposed within the main greenspace serving the site that will restrict the volumes entering the stream on the western boundary.

All positive storm drainage within the site is being redirected to a proposed storm sewer on the L96302 where it will ultimately outfall to the West Ballynacora stream north of the development or to the existing public sewer

northeast of the site on the R629. The result is that the proposed control is very conservative and will result in a reduced flood risk downstream.

Figure 9.6 below presents the proposed layout for the storm network which includes for the six attenuation tanks distributed throughout the development.

Figure 9.6: Proposed storm/foul lines, attenuation tank, and flood storage tank locations

Complete layout details of the stormwater network can be found in drawings **23072HD-OPN-P01, 23072HD-OPN-P02** and **23072HD-OPN-P03**. Layout and cross-section details of the proposed flood storage system are provided in drawings **23072HD-SLS-P01**, **23072HD-SLS-P02,** and **23072HD-SLS-P03**.

Flood Risk Assessment Conclusions

The site has been assessed in accordance with the Flood Risk Management Guidelines. As part of the sequential test, the OPW flood hazard maps, and the draft OPW Preliminary Catchment Flood Risk Assessment Maps were consulted.

Other sources of flood risk have been investigated including development drainage, however, there were no water bodies identified as a source of flood waters that could potentially impact the site. To mitigate any risk, measures including compensatory flood storage, and attenuated surface water drainage have been proposed. These measures will remove the risk of flooding occuring within the development site or the site impacting on the wider area.

For the aforementioned reasons, the development is deemed appropriate in the proposed site location.

10. NZEB COMPLIANCE

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

This document provides an overview of the developments energy strategy and relates to the sustainability and energy targets proposed for the project. The development must approach the energy design in an efficient manner that reduces energy demand initially through passive strategies such as an efficient envelope which in turn reduces the energy demands relating to items such as the heating system. This initial approach in reducing the energy demand significantly aids the project in obtaining the required energy goals. Performance criteria relating to the development's envelope are set out in the following document.

The energy systems design must also focus on specifying energy efficient equipment to ensure the day to day running of the energy systems are optimised to further enhance energy savings and the related energy cost. Specifications relating to efficient heating, lighting and auxiliary equipment are set out in the document.

The report sets out to demonstrate a number of methodologies in Energy Efficiency, Conservation and Renewable Technologies that will be employed in part or in combination with each other for this development. These techniques will be employed to achieve compliance with the building regulations Part L and NZEB standards currently in public consultation.

BUILDING ENERGY RATING

As of 2006 all domestic buildings that were newly built and existing buildings that are for sale or rent require a BER (Building Energy Rating) certificate. The actual building energy rating is based on the primary energy used for one year and is classified on a scale of A1 to G with A1 being the most energy efficient. It also gives the anticipated carbon emissions for a year's occupation based on the type of fuel that the systems use. In order to identify Primary energy consumption of the building, the BER assesses energy consumed under the following headings:

- Building type (house, apartment etc)
- Building orientation
- Thermal envelope (insulation levels of the façade, roofs, ground floor etc)
- Air Permeability (how much air infiltrates into the building through the façade)
- Heating systems (what type of heat source is used and how efficient)
- Ventilation (what form of ventilation is used. Natural vent, mixed mode mechanical ventilation)
- Fan and pump efficiency (how efficient are the pumps and fans)
- Domestic hot water generation (is a high efficiency boiler used)
- Lighting systems (how efficient is the lighting in the building

Through the specification of an energy efficient façade and HVAC systems, the energy consumption of the building will be reduced compared to a set baseline. This ensures the environmental and economic impact of the operation of the building is reduced. The key philosophy of this plan is to reduce energy consumption by firstly limiting the energy needed by improving the buildings insulation. The second step is to utilise energy in the most efficient way through the selection and installation of energy efficient plant and equipment. The final step is to introduce energy from renewable sources to reduce the burden on Fossil Fuels.

BUILDING SERVICES (M&E) OVERVIEW

Heating & Ventilation systems

Various options for heating of residential units will be considered including include possible gas boilers, heat pumps or exhaust air heat pumps.

Air source heat pumps utilize low grade heat from external ambient air and transfer heat to heating system pipework. These systems operate with very high efficiencies (>400%) which provides significant carbon reductions in comparison to a traditional boiler system.

Gas heating options would comprise a high efficiency gas boiler for provision of heating and hot water. Photovoltaic panels would be installed in conjunction with the gas boiler option to achieve the Part L renewable energy requirements.

Exhaust air heat pumps utilise an exhaust air heat pump type system for heating, hot water and ventilation of the individual units. This will re-cycle the heat from your house's ventilation system. These machines are ideal for more compact air-tight low energy or passive homes. Air is drawn through ducts to the heatpump from the bathrooms, utility and kitchen areas. The cold waste air is discharged to outside through another duct, and condensation to a drain. Additional heat generated internally from lighting, people and domestic appliances is also utilised through heat recovery.

For every unit of electricity used to operate the heat pump, up to four to five units of heat are generated. Therefore, for every unit of electricity used to generate heat, 4-5 (400-500%) units of heat are produced. Efficiencies in order of 600% may also be achieved depending on ambient conditions.

Photovoltaic panels are best suited to sites which have an unobstructed southerly and south-easterly elevations. PV is particularly suitable due where there is a simultaneous requirement for heating, hot water and electrical demand. The on-site generation of electricity can supplement the electrical requirement for lighting, motors, etc & reduce the electrical demand and from the grid.

Applying this to each dwelling would considerably reduce the demand from the grid and consequently reduce losses and emissions from power stations. Such is the benefit of on site or distributed generation, the DEAP model determines that each kWh offset from PV equates to circa 2.5 times the thermal equivalent and reduces CO2 emissions by some 0.47Kg/kWh generated.

Lighting

All lighting to be energy efficient with provision made for low energy lamps such as Compact Fluorescent Lamps (CFLs) which use 80% less electricity and last up to 10 times longer than ordinary light bulbs in the dwellings.

11. FIRE SAFETY

PROJECT: BALLINACURRA MILL LRD SCHEME, COUNTY CORK

CLIENT: Ballinacurra Project Limited Partnership

PROPOSED DEVELOPMENT: 128 residential units, Including creche, retail and commercial.

The scheme has been designed in compliance with Technical Guidance Document B of the Building Regulations. The various design drawings and documents have been developed to align with these requirements. Refer in particular to overall site layout drawings and water services design drawings. The water services have been designed in accordance with Irish Water Standard Details.

Appendices

APPENDIX A

Irish Water Pre-connection response

CONFIRMATION OF FEASIBILITY

Fiachra O Sullivan

MHL & Associates LTD
Unit 1B, The Atrium
Blackpool
Cork
T23T2VY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

5 December 2025

Our Ref: CDS25007914 Pre-Connection Enquiry
The Mill, Ballinacurra, Midleton, Cork

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Multi/Mixed Use Development of 134 unit(s) at The Mill, Ballinacurra, Midleton, Cork, (the **Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection**
  - Feasible Subject to upgrades
  - In order to serve the proposed development upgrades are required to the Uisce Éireann water network, The upgrades require will be approx. 110m of existing 4'' main upgraded to min 125mm ID See Figure 1. Uisce Éireann currently does not have any plans to upgrade its network in this area. The cost for the provision of this network extension will give rise to a quotable charge based on the Commission for Regulation of Utilities (CRU) approved Connection Charging Policy. Any such network extension would have to be entirely funded by you. To guarantee a flow to meet the Fire Authority requirements you should provide adequate fire storage capacity within your development

- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

Where can you find more information?

- **Section A -** What is important to know?
- **Section B -** Details of Uisce Éireann's Network(s)

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,

Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

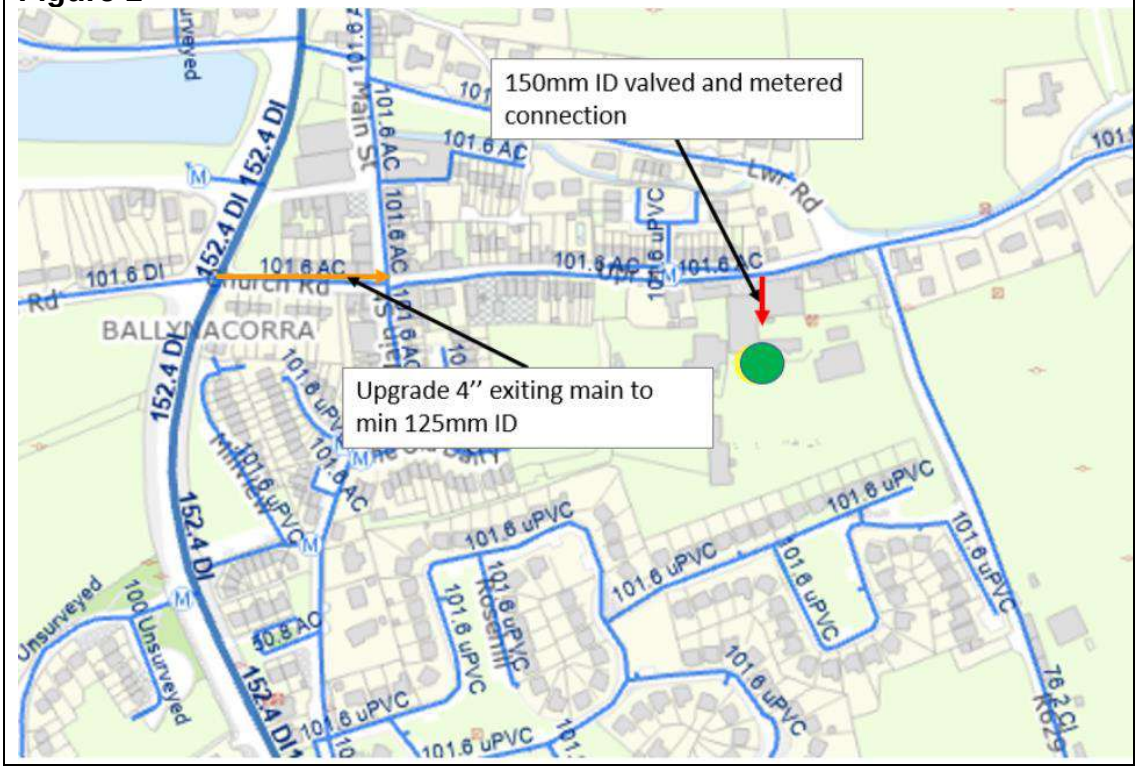
What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Section B – Details of Uisce Éireann's Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie

Figure 1



Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Note: The information provided on the included maps as to the position of Uisce Éireann's underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann's network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann's underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann's underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

APPENDIX B

Site Investigation Trial Pit Logs

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
FP01
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588781E - 571592N **Level:** 16.30m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 3.20 x 1.50 **Depth:** 1.50m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							Black, earthy SILT with organic content.
				1.20	15.10		Red/brown, slightly gravelly, slightly sandy SILT.
	1.50 1.50	B D		1.50	14.80		End of Pit at 1.500m

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings

Groundwater: None encountered.

Remarks: Foundation pit terminated at 1.5mbgl.

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
FP02
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588926E - 571647N **Level:** 16.73m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 2.50 x 1.20 **Depth:** 2.00m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							Black, earthy SILT with organic content.
				0.50	16.23		Red, slightly gravelly, slightly sandy SILT.
				2.00	14.73		End of Pit at 2.000m

1
2
3
4
5

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Foundation pit terminated at 2.0mbgl.

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP01
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588690E - 571713N **Level:** 9.31m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 4.90 x 2.20 **Depth:** 2.60m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL) brown/black gravelly SILT.
				0.30	9.01		
	0.50 0.50	B D					Brown, very gravelly SAND with cobble content.
	1.50 1.50	B D					
	1.80 1.80	B D		1.80	7.51		Brown, very gravelly SAND with Limestone cobbles and boulders.
				2.60	6.71		End of Pit at 2.600m

1
2
3
4
5

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings

Groundwater: None encountered.

Remarks: Trial pit terminated at 2.6mbgl on suspected Limestone bedrock.

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP02
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588864E - 571663N **Level:** 8.47m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 4.90 x 1.50 **Depth:** 3.20m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							Red gravelly SAND.
				0.30	8.17		Orange/brown, gravelly SAND.
				3.20	5.27		End of Pit at 3.200m

1
2
3
4
5

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 3.2mbgl on suspected rock.

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP03
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588883E - 571737N **Level:** 6.64m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 5.00 x 1.50 **Depth:** 4.50m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL) black, gravelly SILT. *0.0-0.4mbgl: Possible FILL.*
				0.40	6.24		Red, gravelly SAND.
				1.50	5.14		Sandy GRAVEL.
				3.00	3.64		Very sandy GRAVEL. Sand is fine.
				4.50	2.14		End of Pit at 4.500m

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 4.5mbgl due to required depth achieved.

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP04
Sheet 1 of 1

Project Name: Old Mill Ballinacurra	**Project No.** P23172	**Co-ords:** 588919E - 571701N **Level:** 8.25m OD	**Date** 27/09/2023
Location: Ballinacurra, Co. Cork		**Dimensions (m):** 5.00 x 1.00 **Depth:** 4.50m BGL	**Scale** 1:25
Client:			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
				0.10	8.15		(TOPSOIL) brown/black, gravelly SILT.
	0.50 0.50	B D					Red/brown, gravelly SAND.
	1.50 1.50	B D					
				1.80	6.45		Orange/brown, very sandy GRAVEL.
				4.50	3.75		End of Pit at 4.500m

1
2
3
4
5

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 4.5mbgl due to required depth achieved.

APPENDIX C

Site Investigation Infiltration Test Data

P23154 **Old Mill Ballinacurra** **27/09/2023**

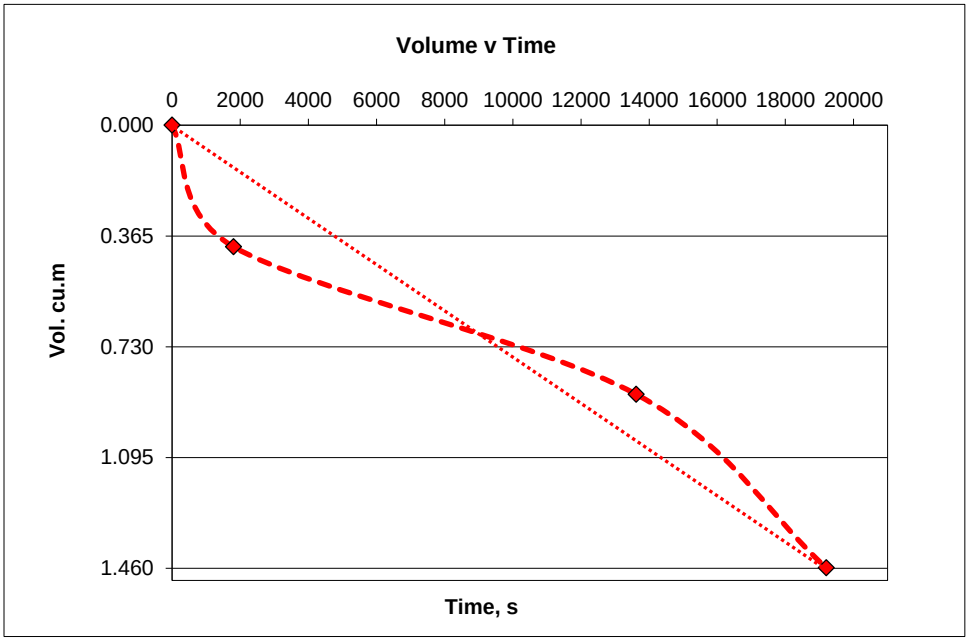
Test 1 **SA01** E588728.859 N571675.861 8.289mOD

l, m	**2.200**	b, m	**1.300**	d, m	**2.000**
l_base, m	**2.200**			d_eff, m	**0.790**
l_eff, m	**2.200**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
Start: 12:00:00	0	1.210	0	0.79	0.00	0.000
	30	1.350	1800	0.65	0.14	0.400
	227	1.520	13620	0.48	0.31	0.887
End: 17:20:00	320	1.720	19200	0.28	0.51	1.459

Area	2.860 m^2	$V_{p75-25\ theory}$	volume	1.1297	m^3
50% Area_eff, a_{p50}	5.625 m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.7293	m^3
50% Area_act, a_{p50}	4.645 m^2	$t_{p\ 75-\ 25\ actual}$	time	9600	s

Infiltration Coefficient *f* 1.64E-05 ms^-1



NOTES:

Pit assumed unsaturated. Moderate stability
Infiltration calculated over actual fall recorded.

P23154 **Old Mill Ballinacurra** **27/09/2023**

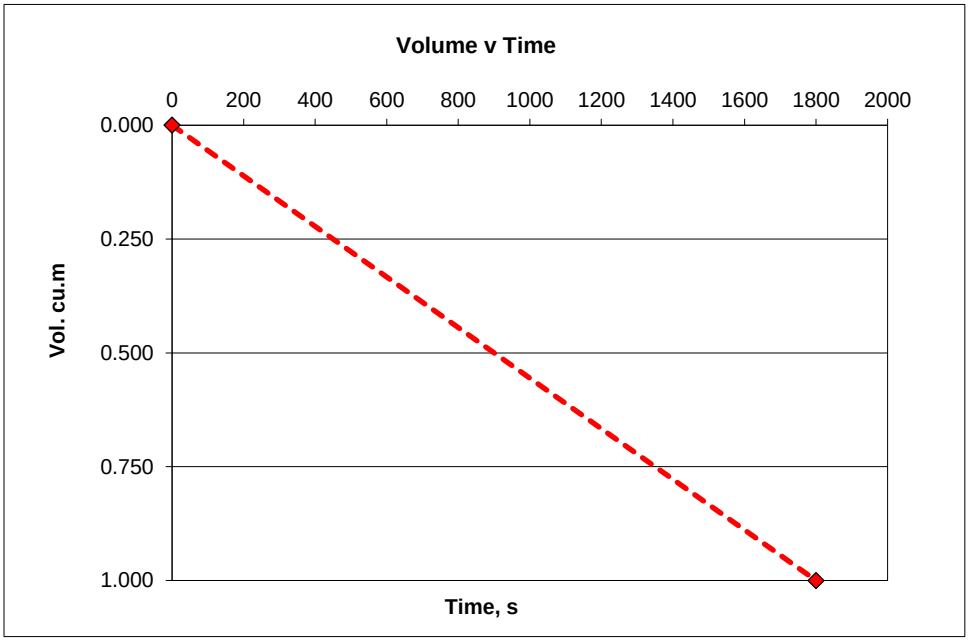
Test 1 **SA02** E588888.642 N571668.141 8.648mOD

l, m	**2.200**	b, m	**1.300**	d, m	**2.000**
l_base, m	**2.200**			d_eff, m	**0.350**
l_eff, m	**2.200**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
Start: 11:15:00	0	1.650	0	0.35	0.00	0.000
End: 11:45:00	30	2.000	1800	0.00	0.35	1.000

Area	2.860 m^2	$V_{p75\text{-}25\ theory}$	volume	0.5005	m^3
50% Area_eff, a_{p50}	4.085 m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.5005	m^3
50% Area_act, a_{p50}	4.085 m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	900	s

Infiltration Coefficient *f* 1.36E-04 ms^-1



NOTES:

Pit assumed unsaturated. Moderate stability
Infiltration calculated over actual fall recorded.
Water bowser drained in full 1000 lt (1.0cu.m) in 30 minutes.

APPENDIX D

HR Wallingford Greenfield Runoff Estimation

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Desmond Archer
Site name:	Ballinacurra Mill
Site location:	Ballinacurra

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.89729° N
Longitude:	8.16228° W
Reference:	1833915130
Date:	Apr 23 2024 16:18

Runoff estimation approach

IH124

Site characteristics

Total site area (ha): 3.5

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	3
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.37

Hydrological characteristics

	Default	Edited
SAAR (mm):	1015	1015
Hydrological region:	13	13
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	1.65	1.65
Growth curve factor 100 years:	1.95	1.95
Growth curve factor 200 years:	2.15	2.15

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited

Q_{BAR} (l/s):	9.85	15.53
1 in 1 year (l/s):	8.37	13.2
1 in 30 years (l/s):	16.26	25.62
1 in 100 year (l/s):	19.21	30.28
1 in 200 years (l/s):	21.18	33.39

APPENDIX E

Uisce Eireann Statement of Design Acceptance

Fiachra O Sullivan
MHL & Associates LTD
Unit 1B, The Atrium
Blackpool,
Cork

T23T2VY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

31 October 2025

Re: Design Submission for The Mill, Ballinacurra, Midleton, Cork (the "Development") (the "Design Submission") / Connection Reference No: CDS25007914

Dear Fiachra O Sullivan,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Uisce Éireann has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before you can connect to our network you must sign a connection agreement with Uisce Éireann. This can be applied for by completing the connection application form at www.water.ie/connections. Uisce Éireann's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Uisce Éireann's network(s) (the "**Self-Lay Works**"), as reflected in your Design Submission. Acceptance of the Design Submission by Uisce Éireann does not, in any way, render Uisce Éireann liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Uisce Éireann representative:
Name: Kyle Jackson
Email: kyle.jackson@water.ie

Yours sincerely,

Dermot Phelan
Connections Delivery Manager

Appendix A

Document Title & Revision

- [23072HD-OPN-P01 REV06]
- [23072HD-OPN-P02 REV06]
- [23072HD-OPN-P03 REV06]
- [23072HD-WWLS-P01 REV01]
- [23072HD-WWLS-P01 REV01]
- [23072HD-WWLS-P01 REV01]
- [23072HD-WM-P04 REV05]
- [23072HD-WM-P01 REV05]
- [23072HD-WM-P02 REV06]
- [23072HD-WM-P03 REV06]

Standard Details/Code of Practice Exemption:

N/A

For further information, visit ***www.water.ie/connections***

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Uisce Éireann will not, in any way, render Uisce Éireann liable for any elements of the design and/or construction of the Self-Lay Works.

Notes:

- For any discrepancies found please consult with design office and refer to Irish Water STD-W-13 for backfill and bedding detail.
- Service layout distances to comply with Irish Water Detail STD-W-11
- Air valve and hydrants covers, where located in grass areas, shall be surrounded by a concrete plinth, 200mm all round and 100mm deep formed with C20/25 concrete, 20mm aggregate size, bedded in Clause 804 material. The plinth shall incorporate mild steel reinforcement links and shall have a bull-nose finish around its external perimeter. See Section 3.18 of Water Code of Practice for further details.
- All pipe connections to units to be a minimum of 25mm O.D. in accordance to Irish Water Code of Practice Section 3.7.

Legend:

- Proposed Watermain (100mm Internal Ø HDPE)
- Proposed 25mm outer Ø PE-80 Water Connection to Private Property (Refer to STD-W-01 & STD-W-03 Irish Water: Water Infrastructure Standard Details)
- Proposed Boundary Box (Refer to STD-W-03 Irish Water: Water Infrastructure Standard Details)
- M.E — Proposed Electronic Bulk flow meter with a SMS/GRPS telemetry data logger located in an adjoining kiosk. (Refer to STD-W-26 & STD-W-36 Irish Water: Irish Water Infrastructure Standard Details)
- AV — Proposed Air Valve (Refer to STD-W-20 to STD-W-23 & STD-W-32 Irish Water: Irish Water Infrastructure Standard Details). For marker posts refer to STD-W-27 Irish Water: Water Infrastructure Standard Details.
- Proposed Sluice Valve (Refer to STD-W-04 to STD-W-10 & STD-W-14 to STD-W-15 Irish Water: Water Infrastructure Standard Details) For marker posts refer to STD-W-27 Irish Water: Water Infrastructure Standard Details
- H — Proposed Fire Hydrant (Refer to STD-W-18 to STD-W-19 Irish Water: Water Infrastructure Standard Details) For marker posts refer to STD-W-27 Irish Water: Water Infrastructure Standard Details
- Proposed Scour Valve (Refer to STD-W-30 & STD-W-32 Irish Water: Water Infrastructure Standard Details). For marker posts refer to STD-W-27 Irish Water: Water Infrastructure Standard Details
- Connection Point (Refer STD-W-05 Irish Water: Water Infrastructure Standard Details)
- Existing Watermain
- Site Boundary

Rev	By	Date	Description
05	FOS	30.10.25	Revised design as per KJ comments
04	FOS	15.10.25	Revised design post Section 32 comments
03	DA	08.04.25	Layout Updated
02	DA	15.01'25	Layout Updated
01	DA	18.09'24	Scour Valves Added to low points

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Watermain Layout 1 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 18, The Atrium, Blackpool, Cork
Tel: 021-4840234
Fax: 021-4840215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
FOS	FOS	KM

Scale:	Date:
1:250 @ A1 1:500 @ A3	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-WM-P01	05

Notes:

- For any discrepancies found please consult with design office and refer to Irish Water STD-W-13 for backfill and bedding detail.
- Service layout distances to comply with Irish Water Detail STD-W-11
- Air valve and hydrants covers, where located in grass areas, shall be surrounded by a concrete plinth, 200mm all round and 100mm deep formed with C20/25 concrete, 20mm aggregate size, bedded in Clause 804 material. The plinth shall incorporate mild steel reinforcement links and shall have a bull-nose finish around its external perimeter. See Section 3.18 of Water Code of Practice for further details.
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- Proposed Scour Valve (Refer to STD-W-30 & STD-W-32 Irish Water: Water Infrastructure Standard Details). For marker posts refer to STD-W-27 Irish Water: Water Infrastructure Standard Details
- Site Boundary

Rev	By	Date	Description
06	FOS	30.10.25	Revised design as per KJ comments
05	FOS	17.10.25	Revised design post Section 32 comments
04	DA	08.04.25	Layout Updated
03	DA	15.01'25	Layout Updated
02	DA	18.09'24	Scour Valves Added to low points
01	DA	25.04'24	Issued for IW Design Acceptance

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Watermain Layout 2 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 18, The Atrium, Blackpool, Cork
Tel: 021-4840234
Fax: 021-4840215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
DA	DA	KM

Scale:	Date:
1:250 @ A1 1:500 @ A3	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-WM-P02	06

Notes:

- For any discrepancies found please consult with design office and refer to Irish Water STD-W-13 for backfill and bedding detail.
- Service layout distances to comply with Irish Water Detail STD-W-11
- Air valve and hydrants covers, where located in grass areas, shall be surrounded by a concrete plinth, 200mm all round and 100mm deep formed with C20/25 concrete, 20mm aggregate size, bedded in Clause 804 material. The plinth shall incorporate mild steel reinforcement links and shall have a bull-nose finish around its external perimeter. See Section 3.18 of Water Code of Practice for further details.
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- Connection Point (Refer STD-W-05 Irish Water: Water Infrastructure Standard Details)
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- Site Boundary

Rev	By	Date	Description
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04	DA	08.04.25	Layout Updated
03	DA	15.01'25	Layout Updated
02	DA	18.09'24	Scour Valves Added to low points
01	DA	25.04'24	Issued for IW Design Acceptance

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Watermain Layout 3 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 18, The Atrium, Blackpool, Cork
Tel: 021-4840234
Fax: 021-4840215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
DA	DA	KM

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1:250 @ A1 1:500 @ A3	Oct 2025

Job No:	Drawing No:	Revision:
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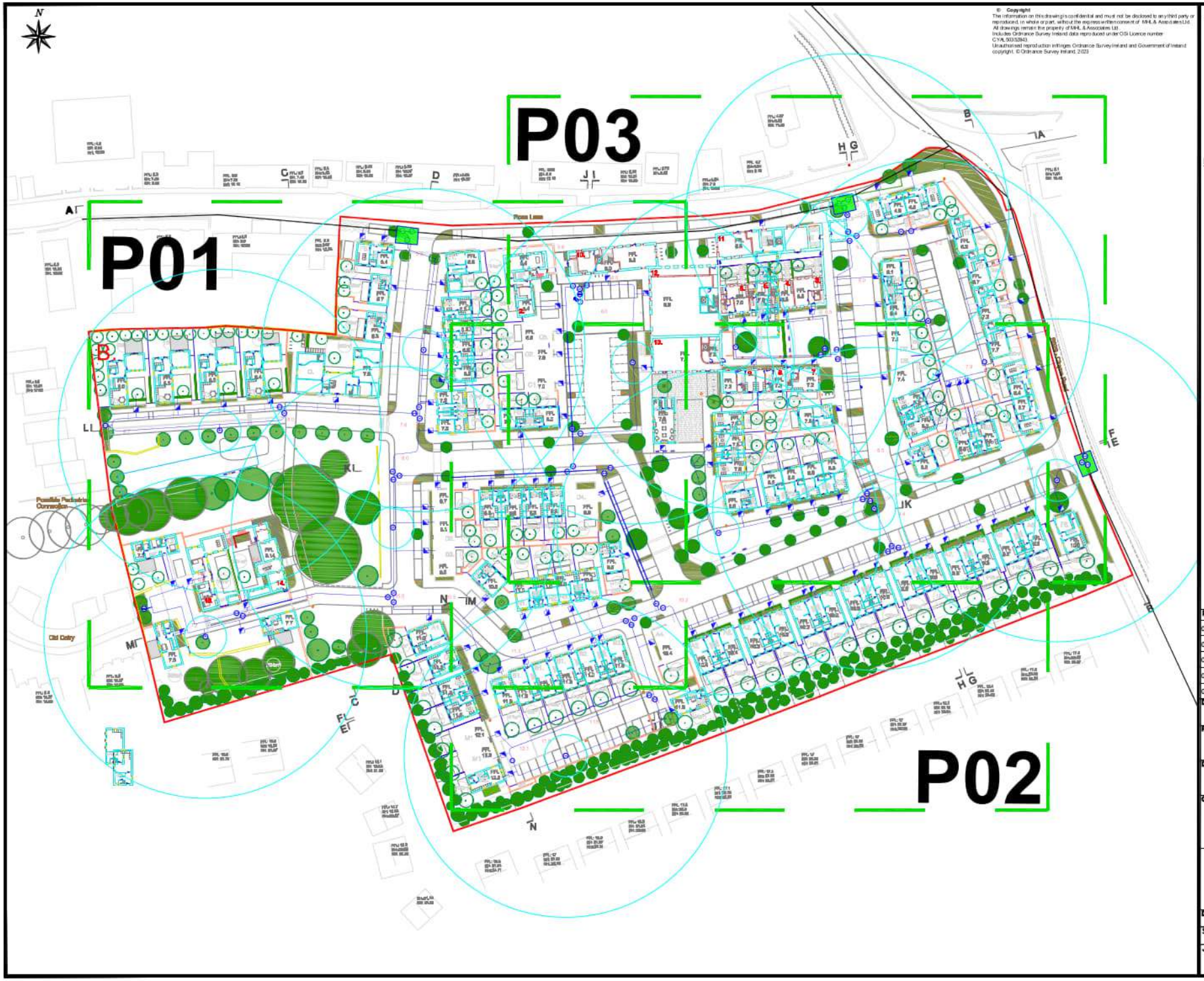

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- Connection Point (Refer STD-W-05 Irish Water: Water Infrastructure Standard Details)
- Existing Watermain
- Site Boundary

Rev	By	Date	Description
05	FOS	30.10.25	Revised design as per KJ comments
04	FOS	17.10.25	Revised design post Section 32 comments
03	DA	08.04.25	Layout Updated
02	DA	15.01'25	Layout Updated
01	DA	18.09'24	Scour Valves Added to low points

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Watermain Site Layout

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 18, The Atrium, Blackpool, Cork
Tel: 021-4840234
Fax: 021-4840215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
FOS	FOS	KM
Scale: 1:1000 @ A3	**Date:** Oct 2025	
Job No: 23072HD	**Drawing No:** 23072HD-WM-P04	**Revision:** 05

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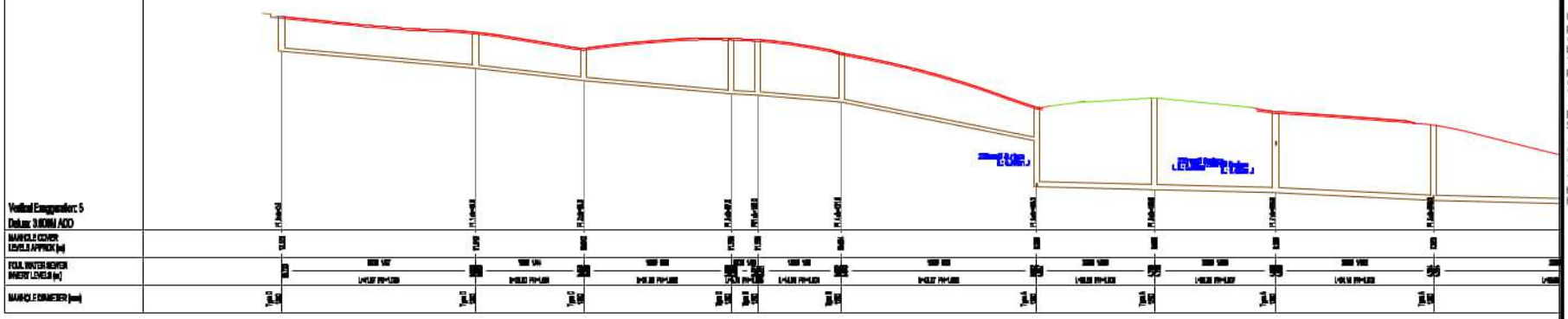

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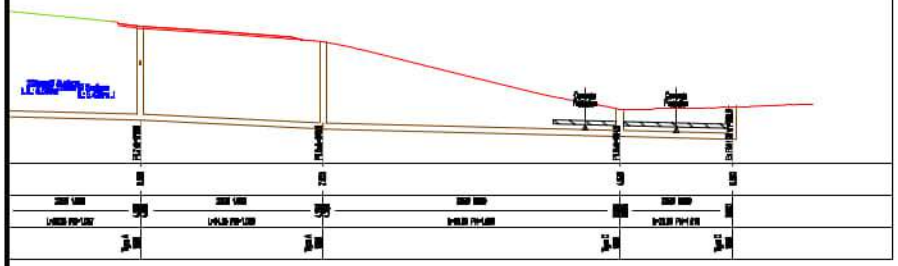

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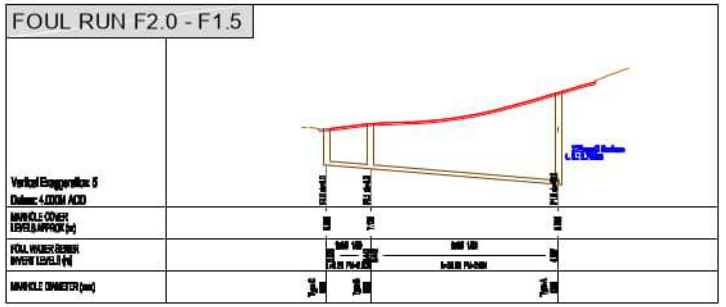

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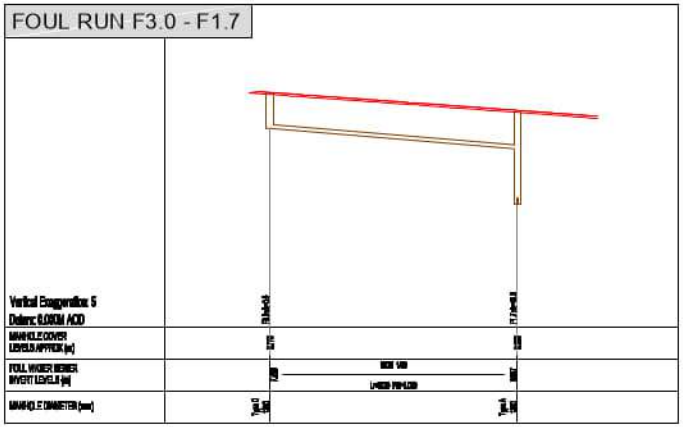

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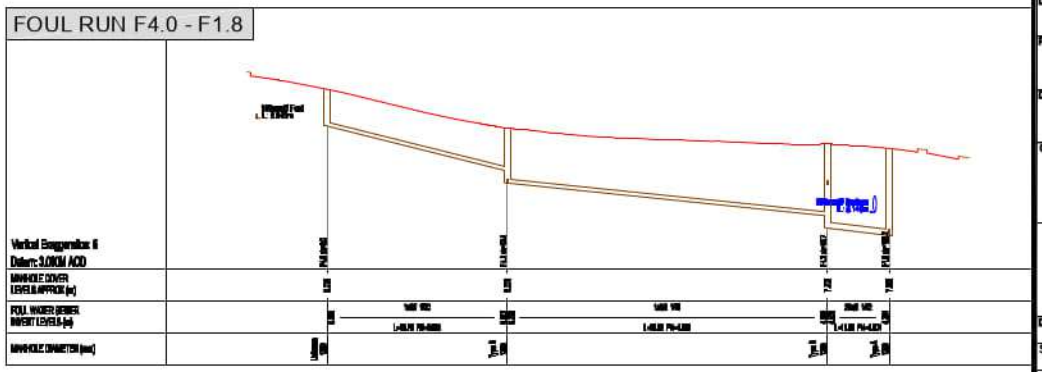

NOTES:
All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
This drawing should be read in conjunction with all contract drawings, documents and specifications.

All works to be carried out to Irish Water standard details and codes of practice.

All pipes to be uPVC type as per section 3.13. of the IW Code of Practice for Wastewater Infrastructure.

Unplasticised PVC pipes and fittings shall comply with the provisions IS EN 1401 2009/2012. Pipes to be application area code "UD", Stiffness Class 8kN/m2. Provision for jetting shall be based on the WRc Sewer Jetting Code of Practice,June 1997. Pipes to be capable of resisting a maximum jetting pump pressure of 2,600psi (180 Bar) without damage.(Sewer diameters 150mm up to 450mm, Service Connections of 100mm diameter)

Bedding and trench detail as per STD-WW-07 and STD-WW-08.

All manhole to be 1.2m internal diameter and precast concrete as per detail on Irish Water drawing STD-WW-10.

The minimum pipe size for Gravity Sewer where more than 20 housing units are connected is 225mm diameter subject to hydraulic design capacity assessment requirement.

Rev	By	Date	Description

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Wastewater Longsection (Sheet 1 of 3)

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 11B, The Atrium, Blackpool, Cork.
Tel: 021-4841214
Fax: 021-4841215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
FOS	FOS	KM

Scale:	Date:
NTS	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-WWLS-P01	

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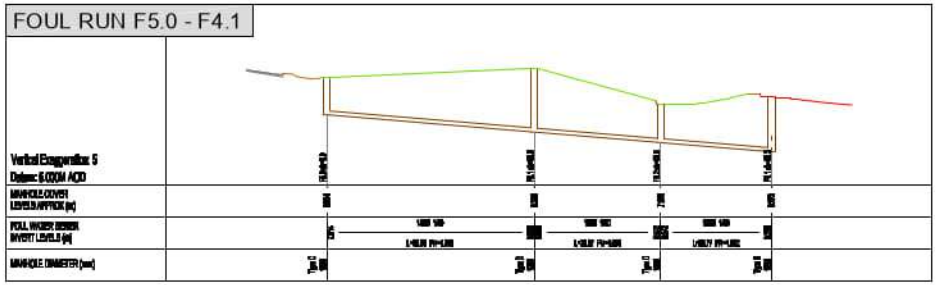

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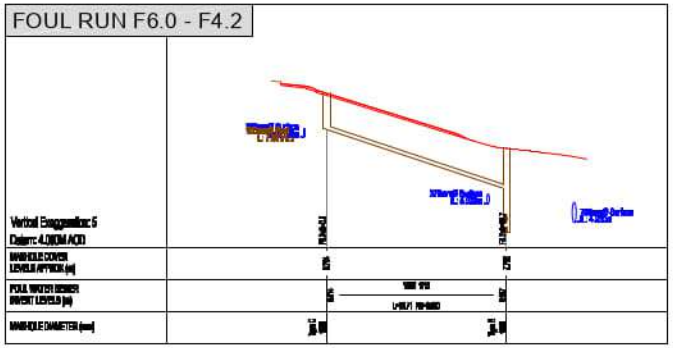

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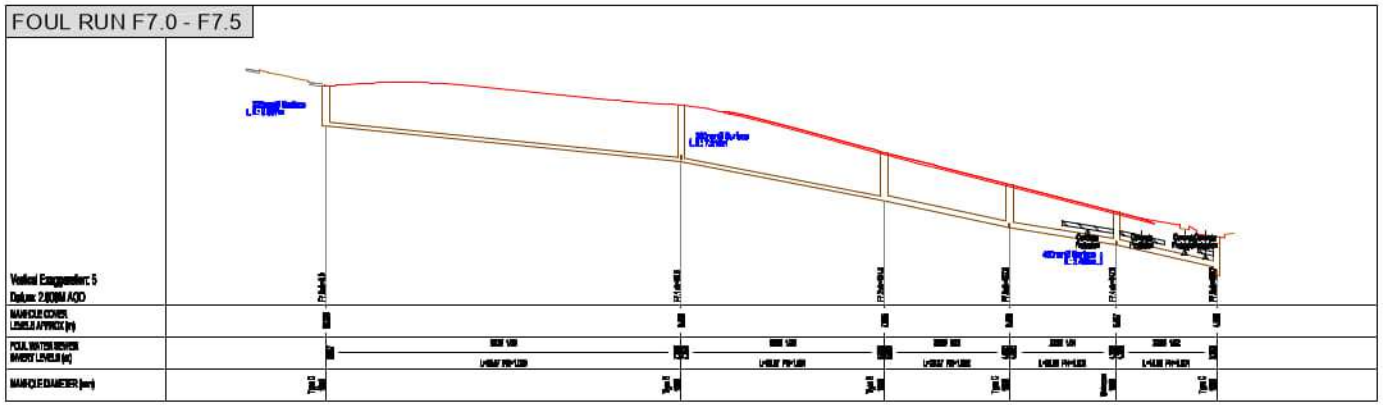

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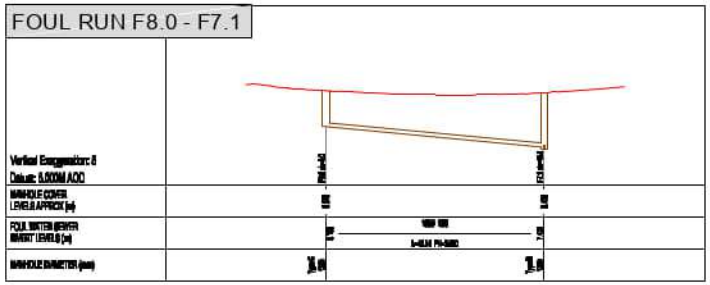

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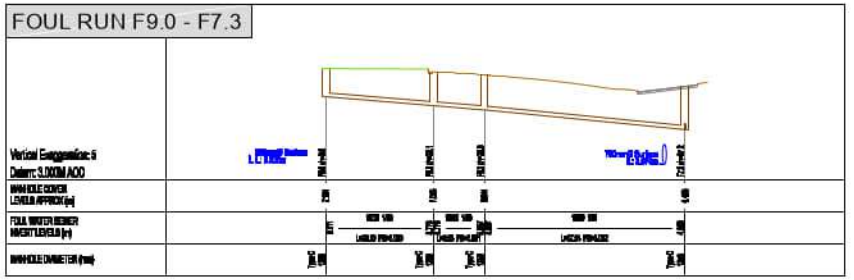

NOTES:
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Rev	By	Date	Description

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Wastewater Longsection (Sheet 2 of 3)

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 11B, The Atrium, Blackpool, Cork.
Tel: 021-4841214
Fax: 021-4841215
E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
FOS	FOS	KM

Scale:	Date:
NTS	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-WWLS-P02	

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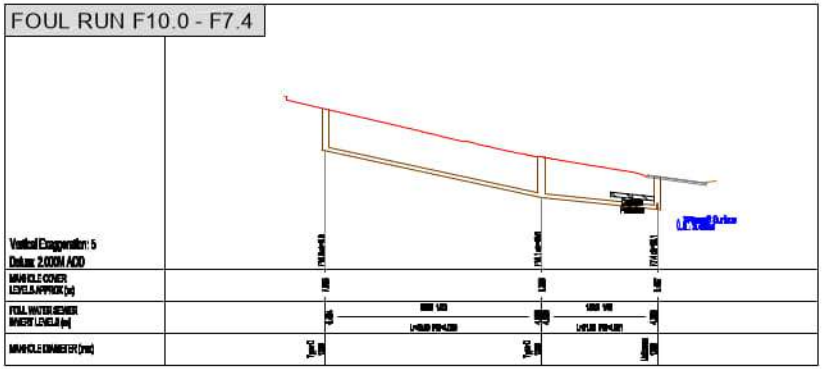
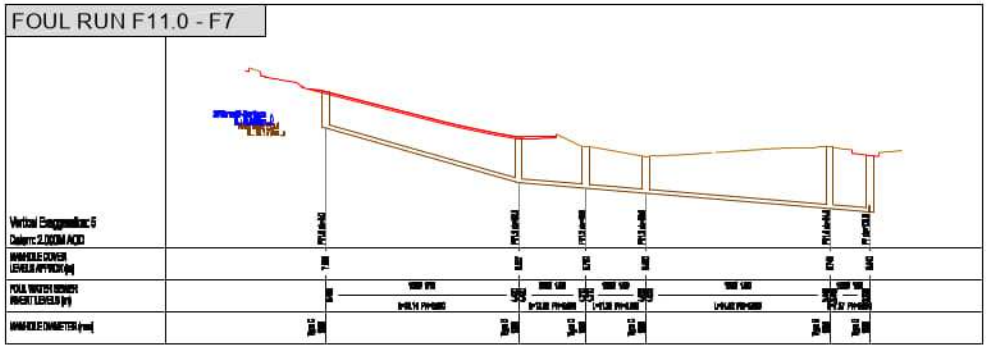


FOUL RUN F11.0 - F7



NOTES:
All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
This drawing should be read in conjunction with all contract drawings, documents and specifications.

All works to be carried out to Irish Water standard details and codes of practice.

All pipes to be uPVC type as per section 3.13. of the IW Code of Practice for Wastewater Infrastructure.

Unplasticised PVC pipes and fittings shall comply with the provisions IS EN 1401 2009/2012. Pipes to be application area code "UD". Stiffness Class 8kN/m2. Provision for jetting shall be based on the WRc Sewer Jetting Code of Practice,June 1997. Pipes to be capable of resisting a maximum jetting pump pressure of 2,600psi (180 Bar) without damage.(Sewer diameters 150mm up to 450mm, Service Connections of 100mm diameter)

Bedding and trench detail as per STD-WW-07 and STD-WW-08.

All manhole to be 1.2m internal diameter and precast concrete as per detail on Irish Water drawing STD-WW-10.

The minimum pipe size for Gravity Sewer where more than 20 housing units are connected is 225mm diameter subject to hydraulic design capacity assessment requirement.

Rev	By	Date	Description

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Wastewater Longsection (Sheet 3 of 3)

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
Consulting Engineers
Unit 11B, The Atrium, Blackpool, Cork.
Tel: 021-4841214
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E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
FOS	FOS	KM

Scale:	Date:
NTS	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-WWLS-P03	

NOTES:
All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
This drawing should be read in conjunction with all contract drawings, documents and specifications.

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Legend:

- Site Boundary
- Storm Manhole
- Foul Manhole
- Storm Sewer
- Foul Sewer
- Storm Sewer Details Name/Size/Slope
- Foul Sewer Details Name/Size/Slope
- Attenuation Tank

Key Plan

Rev	By	Date	Description
06	FOS	15.10.25	Revised design post Section 32 comments
05	DA	01.04.25	Revised Site Layout
04	DA	15.01.25	Planning Issue
03	DA	17.09'24	Address UE comments & Moved Tanks
02	BH	28.05'24	Updated Storm Network

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Overall Pipe Network Plan Sheet 1 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
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Unit 18, The Atrium, Blackpool, Cork.
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Designed:	Drawn:	Checked:
KM	PN	KM

Scale:	Date:
1:250 @ A1	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-OPN-P01	06

NOTES:
All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
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- Storm Sewer
- Foul Sewer
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Key Plan

Rev	By	Date	Description
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05	DA	01.04.25	Revised Site Layout
04	DA	15.01.25	Planning Issue
03	DA	17.09'24	Address IE comments & Moved Tanks
02	BH	28.05'24	Updated Storm Network

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Overall Pipe Network Plan Sheet 2 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
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Unit 18, The Atrium, Blackpool, Cork.
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E-Mail: info@mhl.ie

Designed:	Drawn:	Checked:
KM	PN	KM

Scale:	Date:
1:250 @ A1	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-OPN-P02	06

NOTES:
All dimensions in metres.
Do not scale from drawing.
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Legend:

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- Storm Manhole
- Foul Manhole
- Storm Sewer
- Foul Sewer
- Storm Sewer Details Name/Size/Slope
- Foul Sewer Details Name/Size/Slope
- Attenuation Tank

Key Plan

Rev	By	Date	Description
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05	DA	01.04.25	Revised Site Layout
04	DA	15.01.25	Planning Issue
03	DA	17.09'24	Address UE comments & Moved Tanks
02	BH	28.05'24	Updated Storm Network

Drawing Status: PLANNING

Project Title: Ballinacurra Mill LRD.

Drawing Title: Overall Pipe Network Plan Sheet 3 of 3

Client: Ballinacurra Project Limited Partnership

M.H.L & Associates Ltd.
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Designed:	Drawn:	Checked:
KM	PN	KM

Scale:	Date:
1:250 @ A1	Oct 2025

Job No:	Drawing No:	Revision:
23072HD	23072HD-OPN-P03	06

O'DONNELL ENVIRONMENTAL

info@odonnellenviro.ie