

Outline Construction Environmental Management Plan (CEMP) for
a proposed residential development at Bridgegate, Rathgory &
Mulladrillen, Drogheda Road, Ardee, County Louth.



14th March 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.

On behalf of: The Ardee Partnership

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie

Directors: Bryan Deegan and Sara Corcoran

Company No.427560 VAT No. 9649832U

www.altemar.ie

Document Control Sheet			
Project	Outline Construction Environmental Management Plan (CEMP) for a proposed residential development at Bridgegate, Rathgory & Mulladrillen, Drogheda Road, Ardee, Co. Louth		
Client	The Ardee Partnership		
Report	Outline Construction Environmental Management Plan (CEMP)		
Date	14 th March 2022		
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Robert Farrell	25 th August 2020
Draft 02	Bryan Deegan	Jack Doyle	4 th June 2021
Planning	Bryan Deegan		14 th March 2022

Contents

Executive Summary	4
1. Introduction	5
Outline of CEMP	5
Structure of the CEMP	5
2. Project Description	6
Project outline and Site context	6
Drainage	7
Landscape	9
Proposed Construction Methods	9
<i>TRAFFIC MANAGEMENT</i>	14
Sensitive Receptors	26
3. Analysis of the Potential Impacts	27
4. Mitigation Measures & Monitoring.....	29
Adverse Effects likely to occur from the project (post mitigation)	41
Residual Impacts Conclusion	41
5. Site Information	43
a) Roles and Responsibilities	43
b) Training and Raising Awareness	44
6. Emergency Procedures	44
7. Invasive Species	44
8. Relevant Legislation.....	44
9. Monitoring of Rathgory Tributary Stream/River Dee.....	45
10. Conclusions.....	45

Executive Summary

This outline Construction Environmental Management Plan (CEMP) has been developed to detail the commitments and mitigation measures to be implemented by The Ardee Partnership and their appointed contractors for the construction of a proposed residential development on lands at Bridgegate, Rathgory & Mulladrillen, Drogheda Road, Ardee, County Louth. This CEMP is being submitted in tandem and should be read in conjunction with the Natura Impact Statement (NIS) and Chapter 4 (Biodiversity) of the EIAR for the proposed development.

The purpose of the CEMP is to provide details of the project including phasing, sensitive receptors and details on how the proposed project is intending to use a comprehensive and integrated approach to protecting the Rathgory Tributary Stream (06D27) and other sensitive environmental receptors including the River Dee and downstream Natura 2000 sites. The CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project.

1. Introduction

Outline of CEMP

Altamar Ltd. has been commissioned by The Ardee Partnership to prepare an outline Construction Environmental Management Plan (CEMP) for the proposed residential development on lands at Bridgewater, Rathgory & Mulladrillen, Drogheda Road, Ardee, County Louth. In stream works are proposed including a diversion of the Rathgory Tributary stream.

The purpose of the CEMP is to provide details of the project, sensitive receptors and how the proposed project is intending to use a comprehensive and integrated approach to protecting Rathgory Tributary Stream (06D27) and other sensitive environmental receptors including the River Dee and downstream Natura 2000 sites. The following CEMP outlines the potential impacts of the development, details the sensitive receptors, environmental controls and the mitigation measures that will be implemented to minimise impacts. The CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project. Works will be carried out in compliance with the Inland Fisheries Ireland guidance document 'Planning for Watercourses in the Urban Environment: A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning'¹ Consultation was carried out with Inland Fisheries Ireland in relation to the proposed development on the 12th August 2020.

This CEMP is subject to planning permission being granted for the development as per the drawings submitted. The CEMP is a live document subject to change based on the following:

1. Comments from An Bord Pleanála
2. Final planning permission granted and conditions
3. Compliance requirements of Louth County Council
4. Requirements by other bodies including Inland Fisheries Ireland
5. Concerns raised by residents affected by the works

The final CEMP prepared for the development will be submitted prior to commencement of the relevant phase on site and will be subject to periodic review as part of the management of the construction process.

Structure of the CEMP

This CEMP is based on measures to ensure legal compliance and established good management practice on-site and includes the following sections:

1. *Introduction*
2. *Project Description*
3. *Analysis of the Potential Impacts*
4. *Mitigation Measures & Monitoring*
5. *Site Information*
6. *Emergency Procedures*
7. *Invasive Species*
8. *Relevant Legislation*
9. *Monitoring of Rathgory Tributary Stream/River Dee*
10. *Conclusions*

¹ <https://www.fisheriesireland.ie/sites/default/files/migrated/docman/IFIUrbanWatercoursesPlanningGuide.pdf>

2. Project Description

Project outline and Site context

The proposed development site extends to c. 13.03 ha at Bridgegate, Rathgory & Mulladrillen, Drogheda Road, Ardee, County Louth and adjoins Phases 1-3 at Bridgegate (under construction) on lands to the west, accessed from the N2 Drogheda Road. The proposals overlap the boundary of permitted development Reg. Ref.: 10174; ABP Ref: PL15.238053 (as amended) at the western boundary and will supersede granted development in this area which consists of 31 no. dwellings, crèche and community building and public open space.

The development will consist of:

A) The construction of 272 no. residential units comprising a mix of 206 no. 2, 3 and 4 bedroom houses (all 2 storeys) including 50 no. 2-bedroom houses (Type 1), 145 no. 3-bedroom houses (Types 2, 3, 6) and 11 no. 4-bedroom houses (Types 4, 5) all with private open space and car parking, alongside 66 no. duplex units (all 3 storeys) including 17 no. 1-bedroom units (Types D5, D8), 24 no. 2-bedroom units (Types D1, D3, D6) and 25 no. 3-bedroom units (Types D2, D4, D7), all with private open space in the form of terrace at upper floor level and external garden space, with 499 sqm of communal open space serving Duplex Blocks A-B (48 no. units) (served by 2 no. bin and bike stores [each c. 51 sqm] adjacent) at Bridgegate Avenue, providing a total residential gross floor area of c. 28,168.9 sqm;

B) A part 1, part 2 no. storey crèche (c. 484.1 sqm) and playground and a single storey community building (c. 165 sqm) located adjacent at a central community hub (with bin and bike store [c. 23 sqm]) accessed from Bridgegate Avenue served by car parking located on Bridgegate Green and Bridgegate Avenue;

C) A landscaped Public Park located in the northern part of the site extending to c. 3.6 ha accessed from the community hub and between duplex Blocks B & C at Bridgegate Avenue, with 2 no. pedestrian links to permitted public park adjoining to the west and 1 no. pedestrian footpath extending to the northern perimeter at Hale Street, with a reservation for a future link road to lands to the east facilitated in the northern section of the park;

D) Works to the Rathgory Tributary located to the south of Bridgegate Avenue comprising the realignment of the channel and regrading and reprofiling of land (as required), implementation of 2 no. vehicular crossings (including culverts and mammal passes) and the provision of a riparian corridor based around the open watercourse comprising landscaping and planting with safe access to the watercourse provided for maintenance purposes and 1 no. pedestrian and cyclist crossing;

E) A series of landscaped public open spaces provided throughout the site with Public Open Space 01 (c. 1.05 ha) and Public Open Space 2 (c. 0.43 ha) located within the linear park (including riparian corridor) adjacent to the Rathgory Tributary with Public Open Space 03 (c. 0.29 ha) centrally located in the southern part of the site; open spaces will provide a mix of hard and soft landscaping, pedestrian and cycle access (cycle lanes provided at POS 1 and POS 2) and a range of activities including fitness spaces, kickabout area, amphitheatre and nature based play areas;

F) Provision of shared surfaces, landscaped streetscapes including planting and landscaping at two neighbourhood streets in the southern part of the site, with roads provided to site boundaries to the east, south and west to facilitate possible future connections;

G) All landscaping including planting to consolidate treelines and hedgerows forming existing site boundaries with agricultural lands to the east and Cherrybrook residential development to the west and all boundary treatments;

H) Roads and access infrastructure taken from Bridgegate Avenue (permitted under Reg. Ref.: 10/174; ABP Ref: PL15.238053 [as amended]), the provision of a bus stop on the south side of Bridgegate Avenue adjacent to community hub and provision of cycle lanes at this location (continued through Public Open Space 01); a total of 480 no. car parking spaces (362 no. serving houses, 84 no. serving duplexes, 23 no. serving crèche and community building and 11 no. visitor and public open spaces), a total of 296 no. bicycle parking spaces (204 no. spaces serving duplexes [60 visitor spaces], 32 no. spaces at the community hub and 60 no. visitor spaces);

I) Provision of 2 no. ESB substations, all associated drainage and services infrastructure (surface water, foul and water supply), public lighting, SUDS drainage and works to facilitate the development.

The proposals overlap the boundary of permitted development Reg. Ref.: 10174; ABP Ref: PL15.238053 (as amended) at the western boundary and will supersede granted development in this area which consists of 31 no. dwellings, crèche and community building and public open space.

Site flora and fauna assessments were carried out and included two bat emergent surveys. In summary, no terrestrial mammals or signs of mammals of conservation importance were noted on site. No flora of conservation importance were noted on site. No evidence of bats utilising the structures and trees on site was noted. No invasive species were noted on site. The site is proximate to the River Dee and the Rathgory Tributary Stream (06D27) runs through the site. Of particular relevance to the possible impact of the proposed development on Natura 2000 sites are the proposed diversion and culverting of the Rathgory Tributary Stream (06D27), on site drainage (surface water and foul), excavation and landscaping works.

Drainage

An Engineering Services Report for the proposed development has been prepared by Cronin & Sutton Consulting Engineers which describes the storm water drainage, foul drainage and potable water infrastructure which are referred to in further detail below.

Proposed Storm Water Arrangements

In relation to existing storm water drainage, the report outlines the following:

'At present the subject lands does not have any engineered drainage system in place. The open nature of the site and the natural existing gradients has led the majority of the site to drain to the south into a tributary of the River Dee. As noted, the site does have an existing water course through the centre of the site.'

It is proposed that storm water be managed in two phases:

'The first aspect is to reduce any post development run-off to predevelopment discharge rates (i.e. greenfield runoff rates). The development is to retain storm water volumes predicted to be experienced during extreme rainfall events. This is defined as the volume of storm water generated during a 1-in-100-year storm event, increased by 20% to account for the predicted effects of climate change. The second aspect requires that storm water quality be improved before disposal and, where applicable, that storm water be permitted to infiltrate into the ground on site rather than discharging to the public drainage system or to watercourses.'

'The QBar value (greenfield runoff rate) for the site has been established as 2.07 l/s/ha. As the application has three distinct areas (area A, area B and area C), the required discharge rate has been calculated for all three.'

'The proposed development is to retain storm water volumes predicted to be experienced during extreme rainfall events. This is defined as the volume of storm water generated during a 1-in-100-year storm event, increased by 20% to account for predicted climate change effects. The development's attenuation storage volume requirement for such an event has been calculated as 2,957m³. It is proposed to locate 4no. Stormtech attenuation systems in different areas of the development, providing a total attenuation storage volume of 2,951m³.'

'The outfall into the public system shall be into the adjacent storm sewers or into the River Dee's tributary. As noted above, the site has an existing open channel watercourse which is a tributary of the River Dee. It is proposed to re-align this water course to aid in the most sustainable use of the site to provide the required housing densities for the subject site area.'

It is proposed to include the following SUDS features:

- Low water usage sanitary appliances;
- Water-butts to retain rainwater for re-use for landscaping and maintenance purposes;
- Permeable paving for car-parking bays.

Proposed Foul Drainage Arrangements

In relation to existing foul drainage, the report outlines the following:

'The current site is not currently developed and as such no sewers are located on the subject lands. All effluent generated in Ardee is conveyed to the Regional Wastewater Treatment Plant, (EPA Licence Number D0117/01). The Regional Treatment Plant is currently being up-graded with a predicated completion date of April 2019. The Plant will have an expanded capacity from its current 5000P.E. (population equivalent) to 10,000P.E.' As outlined on the Irish water website² "Irish Water, working in partnership with Louth County Council, has completed essential upgrades to the wastewater infrastructure in Ardee, Co. Louth. Wills Brothers Limited and EPS Group delivered this project on behalf of Irish Water."

The estimated effluent generated upon completion is as follows:

- 446l/day per apartment
- 446 l/day/unit x 272 units = 123,980 l/day = 123.98 m³/day
- 1.435 l/sec Average flow (1 DWF)
- 8.610 l/sec Peak Flow (6 DWF – Population between 0 and 750)

In terms of the proposed foul drainage networks, the report outlines the following:

'The proposed development has been designed in accordance with the specifications and requirements of Irish Water. The proposed foul network system has been designed to drain into the granted foul drainage network under the amended planning application reference 19/336, located to the west of the subject site.'

Proposed Potable Water System

'The current site is not developed and as such it does not have a positive connection into the local watermain network. The site is located adjacent to the regional Irish Water reservoir which currently supplies Ardee.'

Estimated water demand subsequent to completion is as follows:

- 405l/day per apartment
- 405 l/day/unit x 272 units = 110,160 l/day = 110.16 m³/day
- 1.275 l/sec Average water demand
- 6.375 l/sec Peak water demand (5 times average water demand)

'The proposed watermain network system has been designed in accordance with the specifications and requirements of Irish Water. The proposed potable water network has been designed to be connected into the granted potable water network under the amended planning application reference 19/336, located to the west of the subject site.'

Flood Risk Assessment

A Flood Risk Assessment Report, prepared by JBA Consulting, noted the following:

'The Rathgory River and the Mullameelan River are the main hydrological features in the area which are located immediately south and c. 425m south of the site respectively. The Rathgory River rises in the townland of Rathgory, east of the site and flows westwards along the southern boundary. The Mullameelan River flows from east to west, south of the site location. A small tributary known as the Rathgory Tributary flows from east to west through the site.'

'... in the local area there is a fall to west towards the Rathgory Tributary. This is confirmed by an existing site survey. The site falls from its northern boundary (approx. 54m OD) to its western boundary where the Rathgory tributary leaves the site (approx. 36m OD). There is also a fall from the southern boundary (approx. 45m OD) to where the Rathgory tributary leaves the site.'

'The associated groundwater vulnerability is classified as 'Moderate' to 'Extreme' for the site which indicates that a high risk to the groundwater under the site and a bedrock depth of between 3 - 10m. These classifications are based on relevant hydrogeological characteristics of the underlying geological materials.'

'... there is a risk of fluvial flooding in the eastern boundary of the site. The majority of the site is located in Flood Zone C with exception of lands to the east where there is significant out of bank flooding. This area of

² <https://www.water.ie/projects/local-projects/ardee-wastewater-treatment/>

the site located in Flood Zone B (0.1% AEP event)... it is noted that there is some cross catchment flow resulting in flooding on the proposed development site that does not originate directly from the stream flowing through the site.'

The report concludes the following:

'The work undertaken in the FRA and by the CS Consulting stormwater design has demonstrated that there is no additional surface water runoff from the development and that the design appropriately manages flood risk from all sources.

There are no instances of historic flooding on site but there are recorded events in the surrounding area. The Rathgory Tributary flows through the site and the Rathgory River and the Mullameelan River are located immediately south and c. 425m south of the site respectively. According to OPW Fluvial Flood Map the 1% AEP flood event (1 in 100 year) and the 0.1% AEP flood event (1 in 1000 year) partially inundates the eastern border of part of the site.

The detailed hydrological and hydraulic analysis indicates that the eastern border of the site is located in Flood Zone A.

Risk to the site is managed by setting floor levels to the 1% AEP climate change water level, plus a freeboard allowance of at least 1.25m. Further, the finished floor level provides a minimum of 150mm above surrounding ground levels to provide protection against pluvial flooding. All residential buildings have also been located in Flood Zone C, further minimising the risk of inundation. The part of the site within Flood Zone A/B is kept as a meadow/open space and the riparian corridor is also provided. Overall there is a small decrease in the peak flood flows downstream of the site and there are no negative impacts elsewhere.

The stormwater system has been designed to manage surface water runoff from the site. The attenuation tank is designed to retain a 1 in 100-year flood event with a 20% allowance for climate change. The proposed stormwater attenuation system has been designed to limit any outflow from the site to the existing Greenfield Runoff Rate.

Residual risks have been identified as potential impacts of climate change and potential failure of the stormwater system.

The proposed culverts have been designed in accordance with Section 50 (of the Arterial Drainage Act) requirements and the channel design will similarly be subject to Section 9 requirements. The OPW has been consulted through the design process to agree the channel design requirements.

As a result of the mitigation details discussed above, it is concluded that the development proposal is in compliance with the core principles of the Planning System and Flood Risk Management Guidelines and has been subject to a commensurate assessment of risk.'

Landscape

A Landscape Design report was prepared by Stephen Diamond Associates for the proposed development in Ardee. It is stated in the report that the *'landscape proposals for the site are intended to contribute towards: a unique sense of place; a site specific design proposal generated from existing landscape elements and context; a high quality environment; a permeable layout that assists ease of movement for pedestrians and vehicular traffic; a development that acknowledges the local landscape character and integrates well into the receiving environment; a development that promotes beneficial effects on biodiversity by providing new habitat.'* It should be noted that discussions took place between Altamar and Inland Fisheries Ireland (IFI). The proposed diversion will be carried out in consultation with IFI and will be a fisheries compliant biodiversity corridor with instream features to promote biodiversity.

Proposed Construction Methods

A Construction Management Plan (CMP) for the proposed site has been prepared by CS Consulting Group and it outlines how the proposed works will be managed for the duration of works on site.

AS outlined in the CS Consulting Construction Management Plan:

'Site Establishment

'The contractor will provide all necessary accommodation, material handling and secure storage for its operations.

The facilities to be provided and maintained by the contractor will include:

- construction plant;*
- hoisting equipment and cranes;*
- scaffolding, platforms, access ladders, barriers, handrails;*
- barricades and hoardings;*
- temporary driveways, road crossovers and construction zone;*
- 24/7 emergency vehicle access to site during working hours;*
- on-site hardstand areas for vehicle loading and unloading;*
- storage sheds and compounds;*
- rubbish sorting areas;*
- site amenities with all required equipment and facilities;*
- construction worker accommodation;*
- first aid facilities;*
- site administration accommodation.*

Construction plant and site amenities will comply with the requirements of all relevant authorities and be wholly contained within the hoarded site. All construction plant and equipment will be progressively removed when no longer required.

First Aid facilities for the use of all construction staff in the form of a fully provisioned first aid area within the site office with life-saving and safety equipment as required by relevant statutes, authorities and awards will be maintained at all times by the contractor.

The contractor will obtain all required permits, pay the applicable fees and comply with all conditions.

Construction Access and Phasing

Access to the development site for construction traffic shall be from Bridgegate Avenue; this is the primary link street running through the southern section of the adjacent permitted development to the northwest (planning ref. 10/174), which is currently under construction. The adjacent development in turn has vehicular access onto the N2 (Drogheda Road) to the west via a recently constructed simple priority junction'

'A temporary priority-controlled junction shall be created on Bridgegate Avenue, at the north-west corner of the subject development site; this shall be used by all construction traffic entering and exiting the site. Bridgegate Avenue is also to be continued eastward as part of the subject development, and this shall form the public access to all completed phases of the subject development while construction works are ongoing in other phases.

All vehicular access routes during the construction phase will be laid out in accordance with the requirements of Chapter 8 of the Traffic Signs Manual. Security personnel will be present at the site entrance/exit to ensure that all traffic exiting the construction site does so safely. A wheel wash will be installed at the exit from the site, to prevent excess dirt being carried out into the public road. If necessary, a road sweeper will be used to keep the public road around the site clean.'

'Hoarding and Fences

Prevention of unauthorised access to the site is a very high priority and will be vigorously managed throughout the construction period. When the contractor is appointed, the site will be secured with site barriers and hoardings in accordance with the final construction management plan. Any hoardings and signboards to the perimeter of the site will comply with the requirements of the relevant authorities and the relevant Health and Safety Acts.

The contractor will be required to erect a single project signboard to the hoarding at the main entrance points to identify the site.

Services Relocations and Temporary Protection of Public Domain

Prior to any works commencing on site, detailed dilapidation reports will be carried out to properties and buildings adjoining the site.

Further dilapidation reports will be carried out for footpaths, kerbs, road pavements and utility infrastructure features of the main access routes in the immediate vicinity of the site.

The contractor will provide protection to existing surrounding building elements potentially impacted by the works. Protection may be in the form of screened hoardings, scaffolding and fencing, taped drop sheets and the like, all installed prior to commencement of the works.

The type of required hoardings, scaffolding and fencing will vary over the duration of the works, depending on how the site activities potentially impact on the adjoining public domain and neighbourhood.

Dial-before-you-dig enquiries and detailed services location investigations shall be carried out to identify any need for temporary protection of elements of existing utility infrastructure that are not to be diverted as part of the works.

All temporary protection is to be installed and maintained during the duration of the works until they are no longer required.

Major Plant and Equipment

Plant and equipment used during the entire works are:

- articulated and rigid trucks;*
- rigs, bulldozers, excavators, backhoes, with ancillary equipment (rock hammers or saws);*
- mobile cranes;*
- concrete delivery trucks;*
- concrete pumps;*
- man and material hoists;*
- scissor, boom and fork lifts.*

All plant and equipment will be operated by experienced and qualified personnel with the appropriate registrations.

Site Security

Access to site will be controlled by means of an electronic access control system and camera remote monitoring system for out of hours use. During working hours, a gateman will control traffic movements and deliveries.

All personnel working on site will be required to have a valid Safe Pass card.

Material Hoisting & Movement Throughout the Site

It is envisaged that the periodic use of mobile cranes will be sufficient for all construction works on site. Mobile crane visits will be coordinated with the other site activities to ensure that all risks are correctly assessed and guarded against. A detailed crane analysis will be prepared for verification of the safe load parameters. No loads will be lifted over the public domain or adjacent properties.

Hoists and teleporters may also be used within the site and around its perimeter as required during the project, to facilitate material and waste movements into and out of the site.

Deliveries & Storage Facilities

All deliveries to site will be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries will be scheduled outside of rush hour traffic to avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site.

Site Accommodation

On-site facilities shall include:

- a materials and equipment storage area;*
- a site office;*
- staff welfare facilities (e.g. toilets, drying room, canteen, etc.).*

Electricity will be provided to the site via national grid.

Water supply to the site during construction works will be provided by means of a temporary connection to a public watermain. Similarly, a temporary connection for foul water drainage will be made to the public network.

Site Parking

Vehicle parking for construction personnel shall be accommodated within the development site. To the extent possible, personnel will also be encouraged to use public transport, and information on local transportation will be published on site.

Site Working Hours

Subject to the agreement of the Planning Authority, the following site operation hours are proposed:

- Monday to Friday: 08:00 to 20:00*
- Saturdays: 08:00 to 16:00*
- Sundays & Bank Holidays: Works not permitted*

It may be necessary for some construction operations to be undertaken outside these times, for example: service diversions and connections; concrete finishing and fit-out works; etc. There may also be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

ENVIRONMENTAL MANAGEMENT

The contractor will establish guidelines and controls for all activities that may impact on the surrounding environment for the duration of the works, including; air, water, land, natural resources, flora, fauna, humans, and their interrelation.

The project is to be developed to enable to all personnel with the means to understand their responsibilities and to meet the contractor's statutory, contractual and procedural obligations relating to environmental management.

For each activity, the environmental aspects and associated actual and potential impacts are to be identified as they relate to the following environmental elements:

- emissions to air;*
- releases to water;*
- releases to land;*
- use of raw materials & natural resources;*
- use of energy;*
- waste and by-products;*
- community & neighbours;*
- flora & fauna;*
- heritage & cultural.*

Materials and Decontamination

Excavation works will be informed by the results of Site Investigation reports. Any hazardous or contaminated materials encountered during the works shall be treated onsite to the extent possible, and safely removed

and shall be treated onsite to the extent possible, and safely removed and disposed of by a licenced contractor in accordance with the applicable legislation and regulations.

Storm Water and Waste Management

Storm water and waste water management will be constructed as per the conditions of the approved planning permission. The purpose of these procedures is to ensure that storm water and waste water runoff is managed and that there is no off-site environment impact caused by overland storm water flows.

The project environmental management plan will be developed in detail to include:

- silt control on the roads;*
- discharge water from dewatering systems;*
- diversion of clean water;*
- treatment and disposal of waste water from general clean-up of tools and equipment;*
- spills control;*
- a buffer zone of at least 20m separating working machinery from watercourses;*
- a prohibition on machinery entering watercourses;*
- refuelling of machinery off-site or at a designated bunded refuelling area;*
- silt trapping or oil interception (to be considered where surface water runoff may enter watercourses).*

Noise

Noise monitoring will be established on site throughout the project. Noise monitoring shall be carried out for a period of at least 2 weeks prior to any works commencing, in order to establish a baseline, and the results communicated to Louth County Council in the form of baseline reports.

All construction activities will be carried out in compliance with the recommendations of BS 5228 “Code of practice for noise and vibration control on construction and open sites – Part 1: Noise” and comply with BS 6187 Code of Practice for Demolition. The measures employed to ensure compliance will include:

- Noise monitoring stations, monitored daily, located on site and at recommended locations in the vicinity of the site, to record background and construction noise activity.*
- The best means practical used to minimise the noise produced by all on site operations.*
- Proper maintenance of all operating plant to ensure noise emission compliance.*
- Selection of all operating plant on the basis of incorporating noise reducing systems, with a minimum requirement that effective exhaust silencers be fitted.*
- Fitting of compressors with acoustically lined covers, which will remain closed while the machines are in operation.*
- Location of plant such as pumps and generators, which are required to work outside of normal working hours, within acoustic enclosures.*
- Strict adherence to the site working hours stipulated in the planning conditions.*

Air Quality Monitoring

Appropriate Air Quality and Dust monitoring will be carried out on a regular basis in accordance with planning conditions and records will be kept of all such monitoring for review by the Planning Authority.

The following measures are proposed to mitigate any air pollution problems that site activity may cause:

- Selection of all operating plant on the basis of incorporating noise reducing systems, with a minimum requirement that effective exhaust silencers be fitted.*
- Fitting of compressors with acoustically lined covers, which will remain closed while the machines are in operation.*

Migrating Dust & Dirt Pollution

The Contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport dust and dirt to pollute the external roadways. This will be achieved through a combination of the following measures:

- ensuring that construction vehicles have a clean surface to travel on within the site (i.e. haul road);*
- ensuring that all construction vehicles are inspected by the gateman for cleanliness prior to exiting the site;*
- ensuring that an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site.*

The use of appropriate water-based dust suppression systems will greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system will be closely monitored by site management personnel, particularly during extended dry periods and in accordance with site management methods.

Harmful Materials

Harmful material will be stored on site for use in connection with the construction works only. These materials will be stored in controlled manner.

Where on site facilities are used, there will be a bunded filling area using double bunded steel tank at a minimum.

WASTE MANAGEMENT

Please refer to the separate Waste Management Plan prepared by AWN for details of waste management during the construction and operational phases of the project.

TRAFFIC MANAGEMENT

Access to the Site

*Access to the development site for construction traffic shall be from Bridgeway Avenue; this is the primary link street running through the southern section of the adjacent permitted development to the northwest (planning ref. 10/174), which is currently under construction. The adjacent development in turn has vehicular access onto the N2 (Drogheda Road) to the west via a recently constructed simple priority junction (see **Error! Reference source not found.**, page **Error! Bookmark not defined.**, and **Error! Reference source not found.**, page **Error! Bookmark not defined.**). From the N2, construction traffic may access the M1 motorway, via the R170 and the N33, bypassing Ardee town centre.*

A temporary priority-controlled junction shall be created on Bridgeway Avenue, at the north-west corner of the subject development site; this shall be used by all construction traffic entering and exiting the site. Bridgeway Avenue is also to be continued eastward as part of the subject development, and this shall form the public access to all completed phases of the subject development while construction works are ongoing in other phases.

All vehicular access routes during the construction phase will be laid out in accordance with the requirements of Chapter 8 of the Traffic Signs Manual. Security personnel will be present at the site entrance/exit to ensure that all traffic exiting the construction site does so safely. A wheel wash will be installed at the exit from the site, to prevent excess dirt being carried out into the public road. If necessary, a road sweeper will be used to keep the public road around the site clean.

Site Traffic, Traffic and Pedestrian Management

The major construction items include excavation and fill, substructure and superstructure construction, and fit-out. It is expected that construction traffic to and from the site shall reach a peak during the preliminary

earthworks, which are required to raise the level of the site. These works shall require the transport from site of approximately 35,000m³ of fill material. This material is expected to be transported by HGVs with a typical load capacity of 12m³, equating to a total of approximately 2,900 HGV journeys to the site.'

'The final programming and scheduling of this material transfer shall be determined by the appointed contractor. Under a 'worst-case' scenario, however, it is possible that up to 10no. delivery trips may be made to the site each hour during this phase (one HGV arrival and one HGV departure every 6 minutes). In addition to HGV traffic, periodic deliveries of materials to site shall be made by Light Goods Vehicles (LGVs). Under a worst-case construction traffic generation scenario, 10no. such LGV arrivals and 10no. LGV departures are assumed in each of the background peak hours.

Limited car parking for construction personnel is likely to be provided on site during construction works; some vehicular trips shall therefore be made to and from the site each day by construction personnel commuting to and from work. However, as the site working hours are expected to be from 08:00 to 20:00 (subject to planning conditions), the majority of these trips are expected to fall outside the background traffic peak hours. In the worst case scenario, it is assumed that the equivalent of 50no. light vehicle trips may be made to the site during the AM peak hour, and the equivalent of 50no. such trips may be made from the site during the PM peak hour.

It is therefore expected that – under a worst-case scenario – vehicular traffic to and from the development site during the construction phase shall comprise the following:

- 10no. HGV arrivals and 10no. HGV departures in each of the peak hours;
- 10no. LGV arrivals and 10no. LGV departures in each of the peak hours;
- 50no. car arrivals (construction personnel) in the AM peak hour; and
- 50no. car departures (construction personnel) in the PM peak hour.

The construction site will be delineated by means of hoardings and lockable gates with screened fencing at the entry and exit points. The Contractor will pay particular attention to pedestrian traffic and safety at the entrances. All vehicles will enter and exit the site in a forward direction.

Pedestrians will have right of way. If required, alternate pedestrian routes around the site will be created and clearly signed. Depending on the progress of the works and temporary constraints imposed by the construction methodology, the location of access and exit points to the site may vary.

Minimisation of Construction Vehicle Movements

Construction-related vehicle movements will be minimized through:

- consolidation of delivery loads to/from the site and scheduling of large deliveries to occur outside of peak periods;
- use of precast/prefabricated materials where possible;
- reuse of 'cut' material generated by the construction works on site where possible, through various accommodation works;
- provision of adequate storage space on site;
- development of a strategy to minimise construction material quantities as much as possible;
- promotion of public transport use by construction personnel, in order to minimise staff vehicle movements.

The following headings identify some of the measures to be encouraged.

Cycling

Cycle parking spaces will be provided on the site for construction personnel. In addition, lockers will be provided to allow cyclists to store their cycling clothes.

Car Sharing

Car sharing among construction personnel will be encouraged, especially from areas where construction personnel may be clustered. The contractor shall aim to organize shifts in accordance with personnel origins, hence enabling higher levels of car sharing. Such a measure offers a significant opportunity to reduce the proportion of construction personnel driving to the site and will minimise the potential traffic impact on the surrounding road network.

Public Transport

Construction personnel will be encouraged to use public transport as means to travel to and from the site. An information leaflet shall be provided to all personnel as part of their induction on site, highlighting the location of the various public transport services in the vicinity of the construction site.

Public Roads

A Visual Condition Survey (VCS) will be carried out of all surrounding streets prior to any site works commencing. The contractor will liaise with the Transportation and Infrastructure department of Louth County Council to agree any changes to load restrictions and construction access routes for the site. Measures will be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads will be continuously maintained for emergency vehicle access.

The following measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- a regular program of site tidying will be established to ensure a safe and orderly site;*
- scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;*
- food waste will be strictly controlled on all parts of the site;*
- mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate;*
- wheel wash facilities will be provided for vehicles exiting the site;*
- in the event of any fugitive solid waste escaping the site, it will be collected immediately and removed.*

Project Specific Traffic Management Plan

A detailed project specific traffic management plan will be developed by the contractor and agreed with Louth County Council and An Garda Síochána prior to works commencing on site. This plan will be updated as required throughout the project. Issues addressed in the Traffic Management Plan will include:

- Public safety*
- Construction traffic routes*
- Deliveries schedule*
- Special deliveries (wide and long loads)*
- Traffic flows*
- Signage and lighting*
- Road opening requirements*
- Road closures*
- Lighting*

A liaison officer will be appointed as a point of contact with local residents, Louth County Council and An Garda Síochána.'

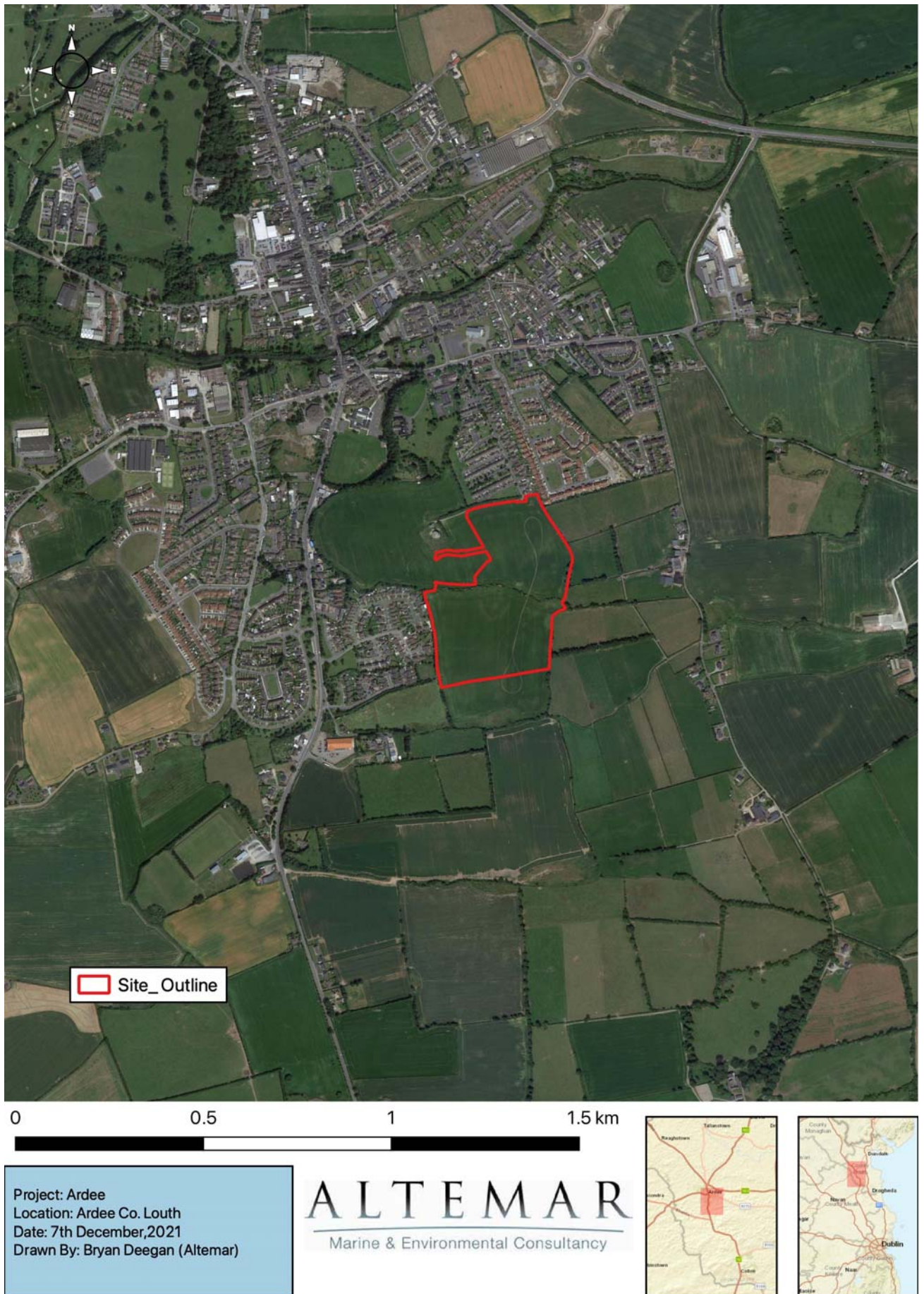


Figure 2. Proposed site outline



Figure 3. Proposed site layout



Figure 4. Landscape masterplan



Figure 6. Proposed drainage layout

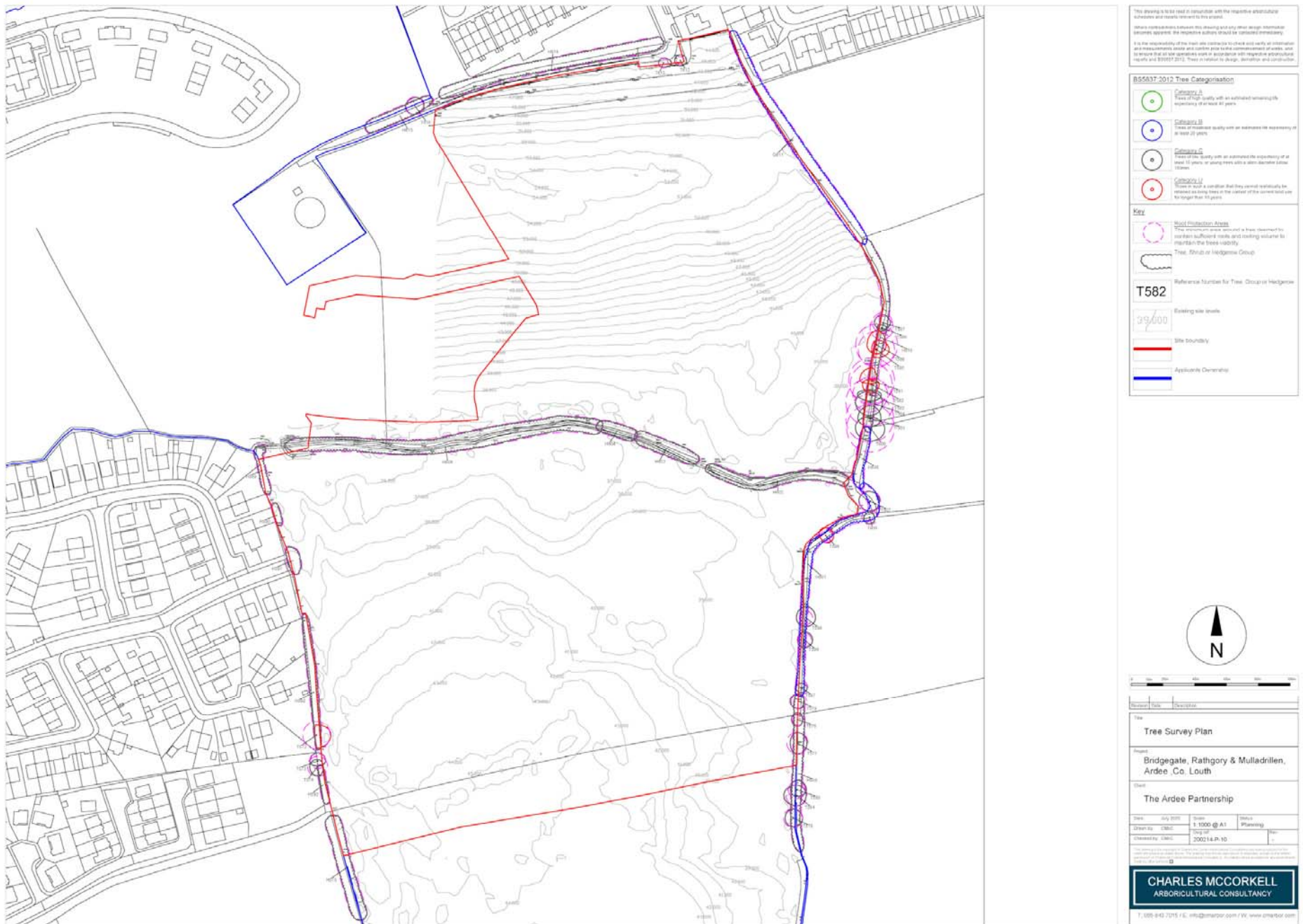


Figure 7. Tree survey plan

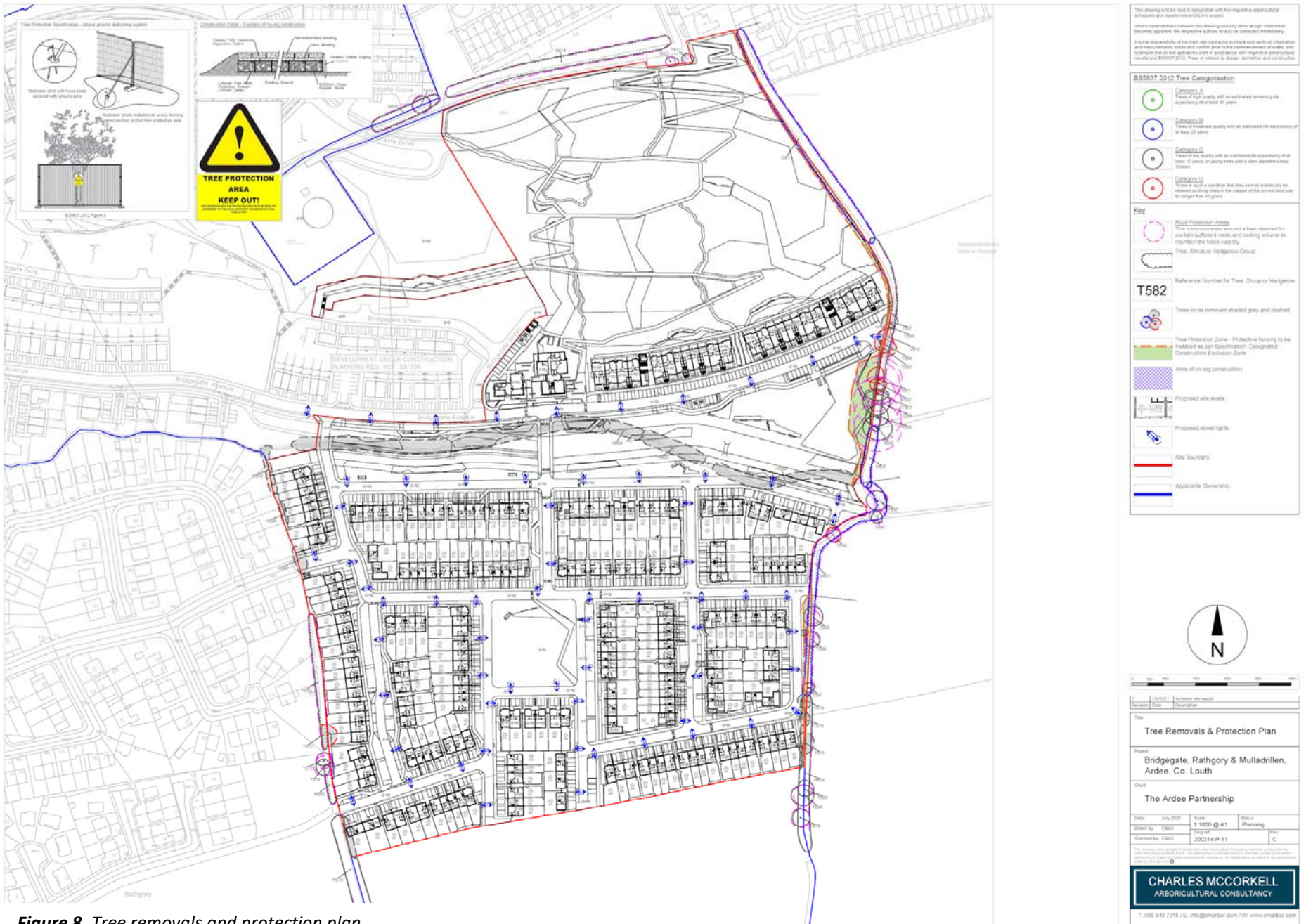
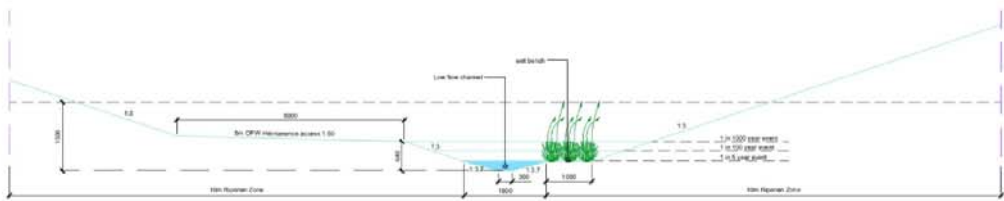
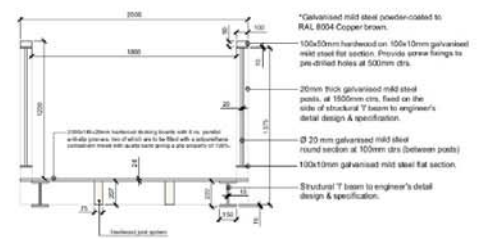


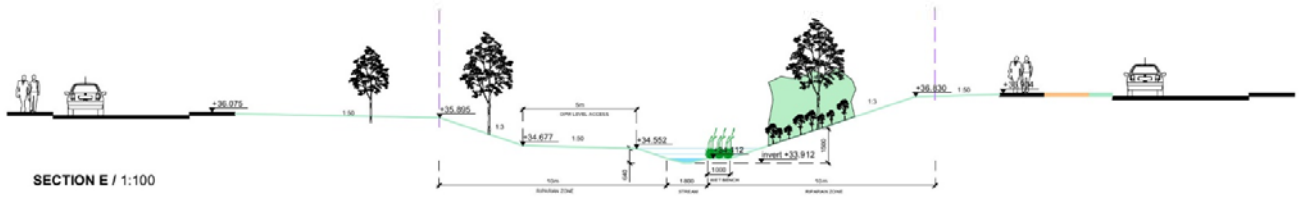
Figure 8. Tree removals and protection plan



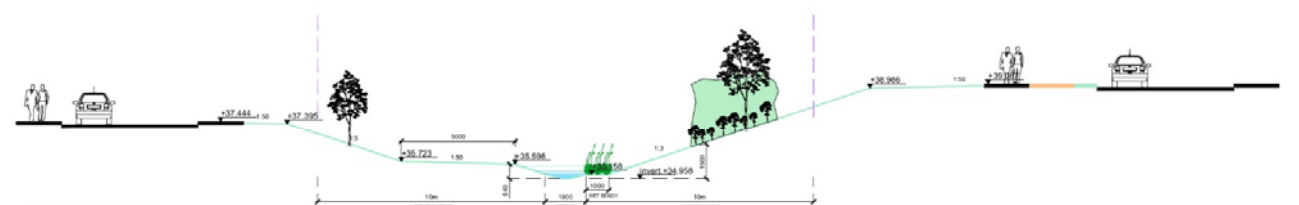
STREAM TYPICAL DETAIL / 1:50
 *Fisheries compliant watercourse with a low flow channel, pools, riffles and glides. (The in-stream biodiversity enhancement measures are subject to further fine resolution detailed design with J1)



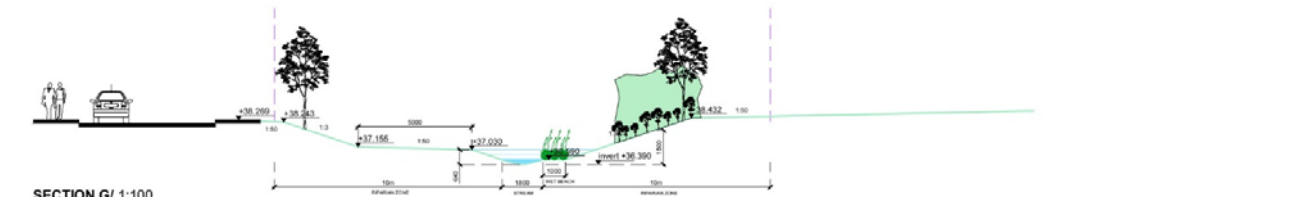
PEDESTRIAN BRIDGE SECTION DETAIL / 1:20



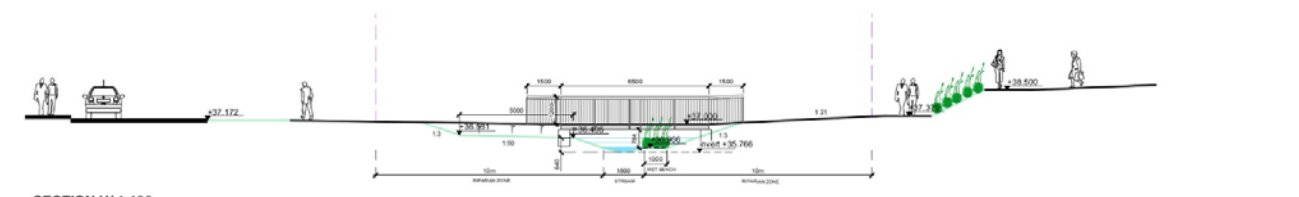
SECTION E / 1:100



SECTION F / 1:100



SECTION G / 1:100



SECTION H / 1:100



KEY PLAN

STEPHEN DIAMOND ASSOCIATES
 CHARTERED LANDSCAPE ARCHITECTS

64 Phares Street Dublin 2 Tel: 01 6779870
 email: info@sdia.ie Fax: 01 6779869
 Client: The Ardee Partnership
 Project: Residential Dev at Bridgegate, Rathgory & Mulladrillen, Ardee
 Title: Stream Sections Date Issued: 2021-10-19
 Dwg No: 20-547-SDA-PD-DR-201 Scale: 1:100 @ A1
 Drawn: LP Purpose: Planning Checked: SD

Figure 10. Landscape sections

Sensitive Receptors

The sensitive receptors in the vicinity of the proposed development are summarised and the potential impact/mitigation are seen in Table 1.

Table 1. Sensitive Receptors.

Sensitive Receptor	Location / Potential Impact
Watercourses Designated Conservation Sites with hydrological pathway	Rathgory Tributary Stream and downstream River Dee Mitigation measures will be put in place to avoid impacting this watercourse and biodiversity corridor that runs through the site. Two Natura 2000 sites (Dundalk Bay SAC/Dundalk Bay SPA) are located downstream. In-stream works including the installation of culverts and a realignment of the Rathgory Tributary Stream are proposed. Onsite works will involve ground clearance, re-profiling, groundworks and construction, with potential for runoff, dust, light and noise impacts that could impact on the biodiversity and/or water quality of the stream with potential for downstream impacts.
Residents	In proximity of the proposed development. As seen in Figures 1 and 2 the proposed development is proximal to residential areas that would be sensitive to noise, dust and lighting impacts. Mitigation measures will be put in place to avoid impacting the residents proximal to the proposed development during the demolition and construction phase of the project.
Terrestrial flora and fauna	On-site Fauna and flora of conservation importance No terrestrial species of conservation importance have been recorded on site (NBDC records) or were observed on site during the site survey. Bats were observed foraging on site. The onsite works will involve ground clearance, re-profiling, groundworks and construction with potential for runoff, dust, light and noise impacts. However, as no terrestrial species of conservation importance or potential breeding sites, were noted on site no derogation licences will be required for the works.
Birds	Clearance of the site, particularly the existing treelines along the watercourse will result in the loss of nesting habitat. Subsequent planting will be supplemented with bird boxes. There will be a reduction in the vegetation cover and removal of the scrub and some of the mature trees that offer nest sites for the bird species noted within the site.
Bats	A bat surveys was carried out and no evidence of bat roosting areas was found. Bats were noted foraging along the watercourse and treelines. However, mitigation measures will include a pre-construction bat survey and measures to protect bats during clearance, if individuals are found roosting on site
Mammals	No evidence of mammals are noted on site. However, Otter (<i>Lutra lutra</i>) has been recorded 1km to the north on the River Dee.

3. Analysis of the Potential Impacts

The proposed development will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations and the construction of roads, dwellings and associated services. The project also proposes to re-align the Rathgory Tributary Stream, install culverts and landscape the riparian corridor.

Introduction

Construction Impacts

This report has been prepared to outline the construction and operational phase measures in addition to detailing the potential impacts on sensitive receptors within the Zone of Influence (ZOI) and to designated conservation sites including the Natura 2000 sites downstream of the proposed development. The construction of the proposed development, would potentially impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development.

Construction phase mitigation measures are required on site particularly as significant reprofiling of the site is proposed which will remove all existing terrestrial habitats and can lead to silt laden and contaminated runoff. In addition, the Rathgory Tributary Stream is located in the centre of the site running from east to west. It is also proposed install new culverts and realign the course of the existing stream. There is potential for silt laden runoff and contamination to enter the watercourse with potential for downstream impacts.

Designated Natura 2000 sites within 15km

The proposed development is not within a designated conservation site. It should be noted that the proposed development site is on the Rathgory Tributary stream and the nearest Natura 2000 sites with a hydrological pathway are the Dundalk Bay SPA and the Dundalk Bay SAC both located downstream of the proposed development site. The River Dee is a salmonid river Atlantic salmon (*Salmo salar*). The Dawson's Stream has no instream faunal biodiversity and is heavily tunnelled by trees and has a paucity of instream vegetation . There are no features of interest of these conservation sites that would migrate through or be seen on this proposed development site. No other Natura 2000 sites have a direct or indirect hydrological connection or pathway from the proposed development site.

Runoff during site demolition, re-profiling, the construction and operation of project elements could impact on the Rathgory Tributary Stream and the downstream River Dee, with water quality or downstream impacts on Dundalk Bay, 12.1 km from the proposed development site. Impacts on the Rathgory Tributary Stream would be seen as the primary vector for impacts on conservation sites. Ensuring water quality and compliance with Inland Fisheries Ireland procedures/ conditions and the Water Pollution Acts would be seen as the primary method of ensuring no significant impact on designated conservation sites.

Altamar has consulted with Inland Fisheries Ireland (IFI) and the proposed works will be carried out based on best practice mitigation procedures and compliance with IFI requirements or conditions, including the prevention of silt and or pollutants entering watercourses. In addition, the project will have to comply with SUDS, County Council requirements and the provision of additional measures such as petrochemical interceptors and silt interception. There will be no direct pumped discharge to or abstraction from the stream during works. However, a series of silt interception measures will be in place to desilt surface runoff from the lands during works. Standard construction phase and operational controls in relation to onsite drainage and instream works will be in place and no impact is foreseen in relation to designated conservation sites.

Terrestrial Ecology

During the site visits no flora, bird or terrestrial mammal species of conservation importance were recorded on site or in NPWS or NBDC records.

Common mammalian species. Loss of habitat and habitat fragmentation may affect some common mammalian species and there is expected to be mortality during construction.

Amphibians and reptiles. Frogs and reptiles were not observed on site -However, the Rathgory Tributary Stream flows through the site and frogs may occur on site. The common lizard may occur on site but, was not observed. The proposed development will remove some potential foraging habitats on site. Some mortality may occur during construction.

Bat Fauna. There is no evidence of a current or past bat roost in the trees on site, therefore no significant negative impacts on the roosting of these animals are expected to result from the proposed development. Foraging activity was noted along the riparian corridor and adjacent treelines. Mitigation measures will be in place during works and supplementary planting of the riparian hedgerow will be carried out. However, this planting will be such that it does not encourage tunnelling of the watercourse by trees.

Operational Impacts

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. The biodiversity value of the site would be expected to improve as the landscaping matures. It would be expected that the ecological impacts in the long term would be positive once landscaping has established due to the implementation of a fisheries compliant realignment and a reduction in tunnelling which would encourage instream biodiversity.

Designated Conservation sites within 15km

The development must comply with LCC drainage requirements and the Water Pollution Acts. Measures will be in place to prevent downstream impacts. No significant impacts on designated sites are likely during operation.

Terrestrial Ecology

As the landscaping elements improve with maturity it would be expected that the biodiversity value of the site to birds and flora would also increase. Mitigation measures will be in place to offset the short term nesting resource.

4. Mitigation Measures & Monitoring

Standard construction and operational controls will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (Zoi) including the Rathgory Tributary Stream and River Dee.

Designated Conservation sites within 15km

As the main potential vector for impacts would be seen to be via the River Dee, no additional controls are required besides those outlined below, during the construction and operational phases of the development, to mitigate against potential negative impacts on designated conservation sites. The mitigation has been designed to ensure that the project will comply with the Water Pollution Acts and standard LCC and IFI Conditions in relation to construction and drainage. All construction and operational phase controls outlined in the CEMP must be followed. The CEMP will be updated following any additional conditions received during planning and approved by IFI and LCC prior to the commencement of the relevant phase on site.

Development Construction

Contamination of watercourses. As existing drainage ditches are present on site, in proximity to the Rathgory Tributary Stream and substantial instream works are proposed, a project ecologist will be appointed prior to works or site clearance commencing on site. All works in the riparian corridor must be carried out in consultation with and to the satisfaction of IFI and the project ecologist, following the best practice guidelines for construction in the vicinity of watercourses.

All works on site and in the riparian corridor will have sufficient mitigation measures to prevent silt from runoff during works. This will include measures outlined by the project ecologist including silt fences, phasing of the project to initially carry out diversion works and immediate landscaping of the riparian corridor following works.

Riparian Corridor Construction Stage

As significant site clearance is involved in the project and the site is on sloping land adjacent to a watercourse measures need to be put in place to ensure that runoff from the site during construction is contained and that silt is intercepted. A silt interception system will be prepared in consultation with the project ecologist. The purpose of this is to ensure that silt is removed from runoff prior to entering the stream throughout the construction process. The following measures will be carried out to ensure that the site runoff is suitably contained during construction:

- a) Site works will commence with the submission of a construction methodology to IFI. It should be noted that the watercourse will be fisheries compliant and will contain features for biodiversity enhancement. Following agreement of the methodology with IFI the excavation of the riparian diversion will be carried out in the dry, isolated from the existing watercourse. Only when all dry works have been completed and inspected by the ecologist and IFI will the stream become live.
- b) Once the realignment has been carried out the riparian buffer of 10m will be established, landscaped and marked out prior to site clearance works on the remainder of the site. It is important that this area is cleared and landscaped in late spring/early summer as a portion of this area is within the potential flood zone of the river and landscaping needs to be well established prior to any risk of flooding, in order to limit any silt entering the stream during a flood.
- c) The placing of silt fences in the riparian corridor will be carried out to prevent runoff entering the newly established riparian corridor. It is important that the bases of these are buried deeply in the soil as this area has the potential to be flooded and they could cause downstream impacts if not installed correctly. The riparian buffer of 10m will be established, landscaped and marked out to avoid machinery access, prior to site clearance works on the remainder of the site.

- d) A temporary trench will be dug at the edge of the riparian corridor so that any runoff during works will run parallel to the river and be caught by silt fences and measures in the trench. All planting and landscaping will be carried out immediately.
- e) Following the completion of this element of the project this area of the site will be closed off to machinery access.

Drainage on site outside the riparian corridor.

- a) Channels will be prepared on site, in the vicinity of future access roads. Within these channels silt fences/barriers will be placed and will consist of woven/terram style material of suitable density to remove the majority of silt from runoff. These will be maintained throughout the construction phase to ensure efficiency, prior to the installation of the permanent drainage network.
- b) Silt fences will be placed along the edge of the riparian corridor (outside of future construction areas) to capture runoff from the site. These will also prevent machinery from entering the riparian corridor.
- c) Mitigation measures including silt fences will be in place (in consultation with the project ecologist and IFI) to capture silt from runoff and prevent it from entering the stream during the culvert works.
- d) Appropriate storage and settlement facilities will be provided on site. This could include the provision of silt and petrochemical interception for water pumped on site (if required).
- e) Fuel, oils and Chemicals will be stored on an impervious base with a bund. Under LEED there will be a strategy put in place to prevent pollution of the watercourse. In most cases this will involve collecting the run-off and routing it to treatment by filtration, settlement or specialist techniques.

Additional mitigation if required will be placed on roadworks to capture silt that may not be caught by road sweeping, before runoff enters the Rathgory Tributary Stream.

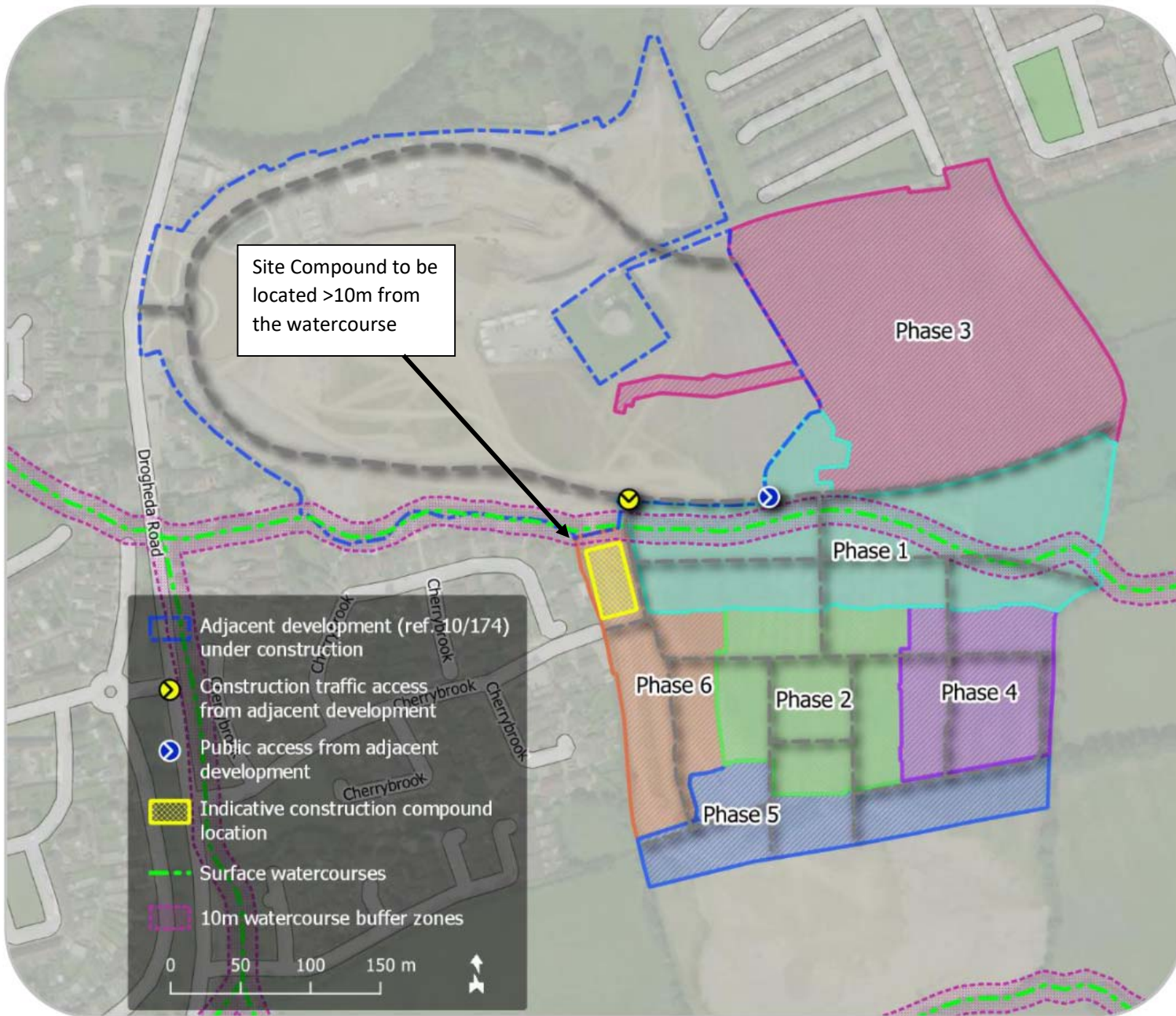


Figure 11. Proposed development Phases - location



Silt Fences

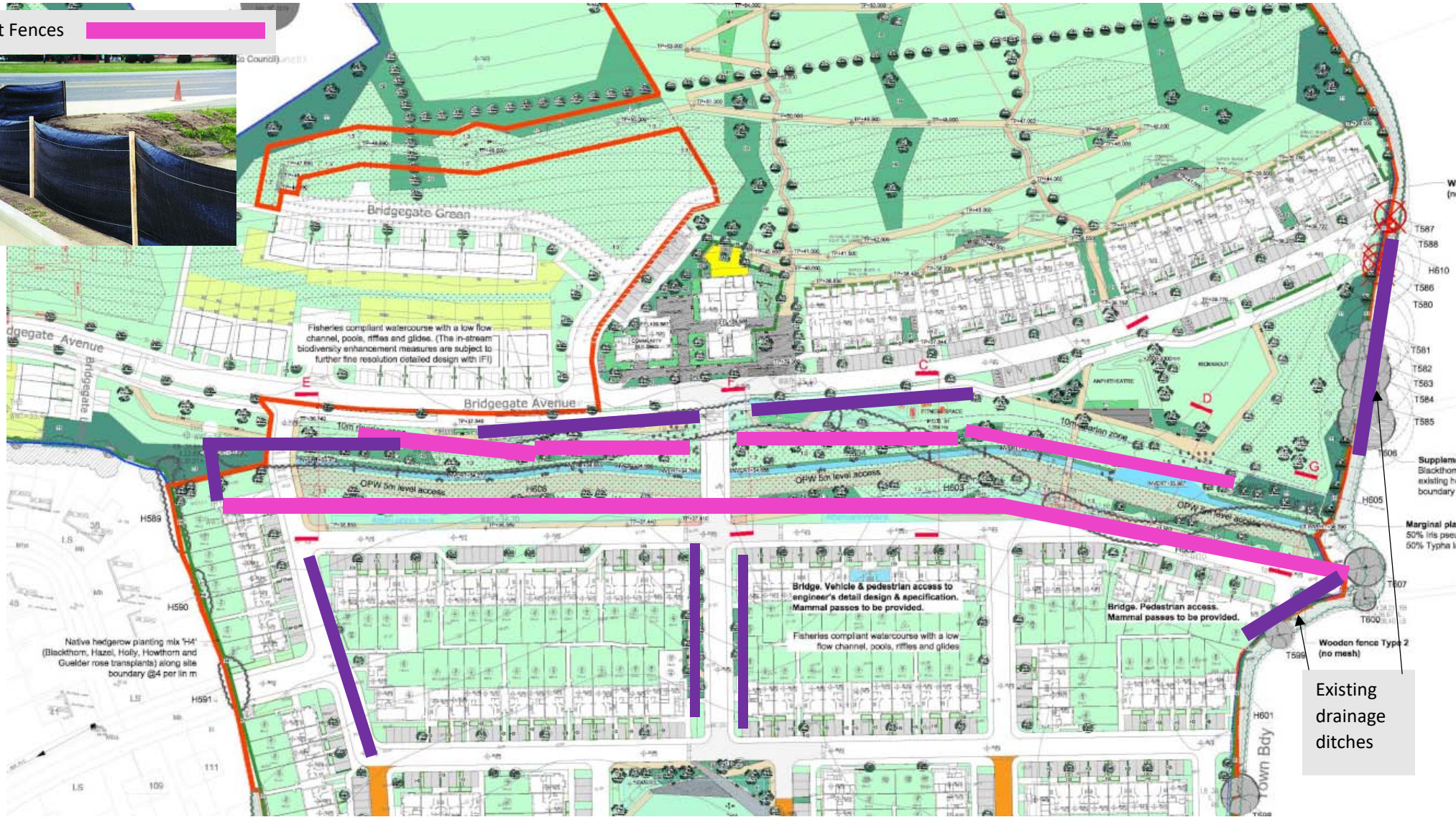


Figure 12. Mitigation measures to protect the Rathgory Tributary and River Dee

Culvert Installation Methodology

It is proposed to install three river crossings. Due to the presence of sensitive species downstream of the works (Otter (*Lutra lutra*) and Atlantic salmon (*Salmo salar*)) in addition to having a direct hydrological pathway to two Natura 2000 sites downstream and the necessity to comply with Water Pollution Acts, it has been deemed necessary to limit the potential impact of the works and implement mitigation measures and carry out the instream works as follows:

Pre-Installation:

Prior to carrying out the works the project will:

- Submit a final methodology statement at least 1 month before the proposed in stream works to IFI.
- Notify IFI one week in advance of each culvert works commencing.
- Electrofish the water within the full extent of the works location to 50m downstream (if required by IFI), at the start of the project. Remove any fish and transport downstream (It would be preferable if this was carried out by IFI on the day of connection works if possible).

Installation process (live downstream culvert):

- A temporary stream diversion will be prepared with a 900mm diameter pipe.
- A minimum of four independent terram baffles will be placed downstream of the proposed works.
- The stream will be diverted through the pipe which will allow access to the bed of the original stream.
- The culvert will be installed in the dry while the river remains on its diverted course. The excavation will leave two areas of soil at either end of the diversion to prevent the river from entering the works area.
- Pumps will be placed within the diversion area should any seepage, rainwater or groundwater enter the works area. These are to be connected to silt busters/or to the onsite swales as directed by the project ecologist (and not directly back to the stream without filtering). Any seepage/rainwater/groundwater will be pumped onto open ground north of the river and allowed to seep naturally into the groundwater. No runoff will be allowed back into the stream.
- The excavated material will be stockpiled on site away from the watercourse (min 20m).
- Concrete units will be delivered to site on an Artic truck
- The new culvert sections will be lifted with the crane and placed on to the bed of Sand/stone as required.
- Minor adjustments if required will be made to ensure the first section is correct for line and level.
- The remaining sections will be installed using the same procedure.
- On completion of the installation backfilling will commence to the sides of the culvert.
- Backfill material will be placed and compacted in layers.
- New ducting sections will be placed downstream of the culvert.
- The ecologist will be in attendance for environmentally sensitive works.
- On completion of the backfilling the small remaining bunds trench will be removed.
- Silt interception methods will be implemented downstream prior to instream works.
- Instream biodiversity elements will be placed within the watercourse as instructed by the ecologist/IFI.
- A gradual switchover will be implemented and the stream will flow through the newly installed culvert under supervision of project ecologist.
- A gradual switch over to the diversion will be monitored by the project ecologist. This will involve the stream being gradually dammed both upstream and downstream of the crossing location using sandbags.
- Once the full flow is in the diversion and stable the Existing stream bed will then be gradually blocked off with sandbags and final elements of rock armour will be carried out behind sand bags.
- When complete downstream mitigation measures will be removed.

To construct the culverts at the mid and eastern end of the site these will be done in the dry and will not involve the diversion of the watercourse.

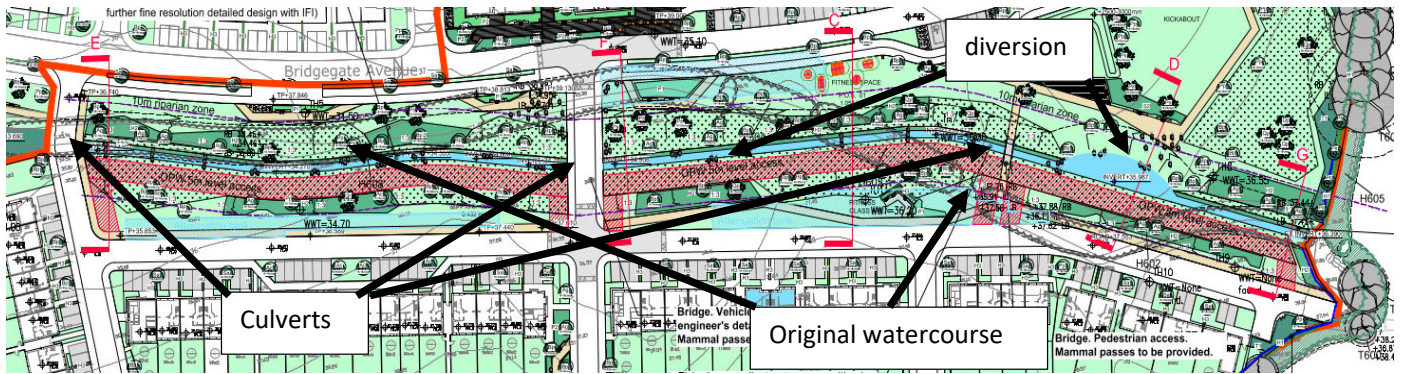


Figure 13. Proposed diversion and current layout

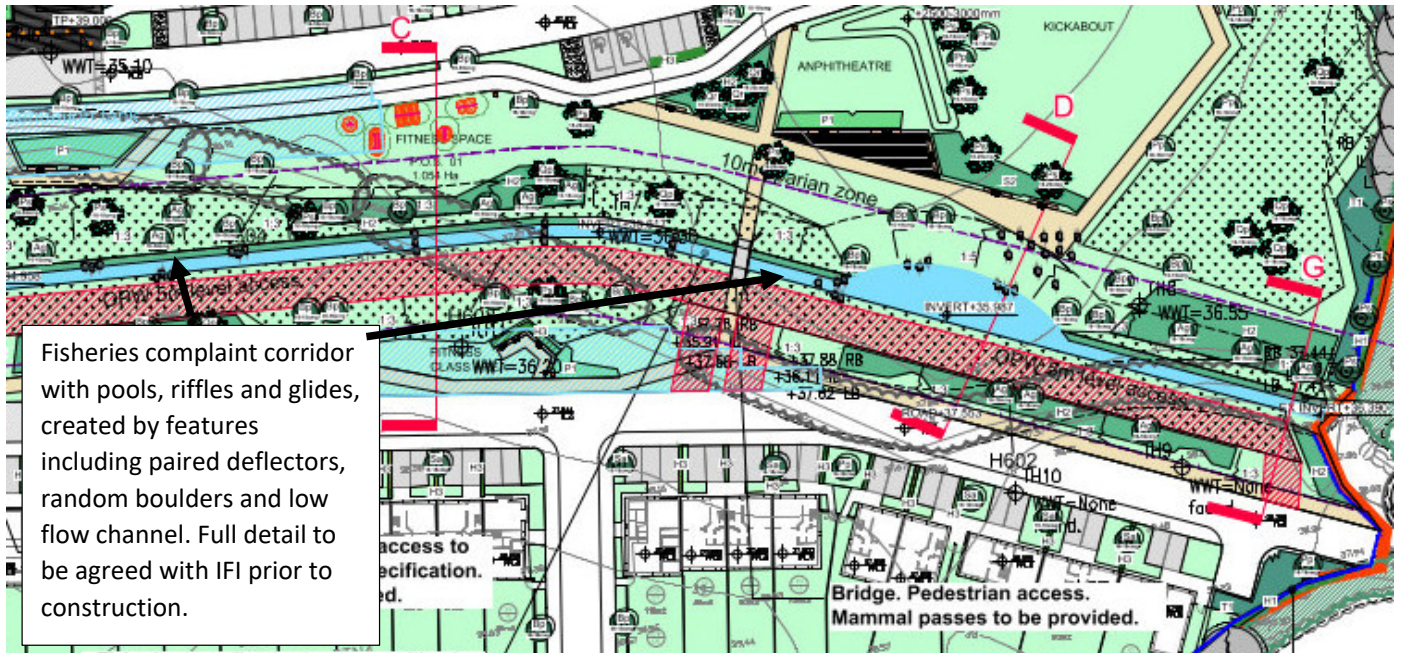


Figure 14. Fisheries complaint diversion

Relocate & Culverting of Stream

The future diversion of and installation of the culverts in, the Rathgory Tributary Stream will be carried out in the dry, prior to carrying out any instream works, in order to mitigate the silt disruption caused from the installation of the proposed culvert. The installation of culverts will take approx. 5-7 days. During the works period, a project ecologist/senior environmental advisor will be in attendance to monitor sensitive works (instream/connection works). Culvert installation will be carried out in the dry and the entire project. The Rathgory Tributary Stream will be connected to its new course following the installation under the supervision of the project ecologist. IFI may require inspection of the culvert prior to the Rathgory Tributary Stream becoming live in the new diversion and culvert.

Table 2. Sensitive Receptors/Impacts and mitigation measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
Dundalk Bay SAC Dundalk Bay SPA River Dee and Rathgory Tributary Stream	<ul style="list-style-type: none"> • Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts • Negative impacts on aquatic and bird fauna 	<ul style="list-style-type: none"> • All in-stream works methodologies must have prior approval of Inland Fisheries Ireland. • Best available technology (BAT) mitigation measures designed by project ecologist • Staging of project to reduce risks to watercourses from contamination with all instream works being carried out in Phase 1 of the project, where the stream is diverted, landscaped and protected from all subsequent phases. • Local watercourses (Rathgory Tributary stream) must be protected from dust, silt and surface water throughout the works. • Local silt traps established throughout site. • Mitigation measures on site include dust control, stockpiling away from watercourse and drains • Stockpiling of loose materials will be kept to a minimum of 20m from watercourses and drains. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses. • Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches or the watercourse, excavations and other locations where it may cause pollution. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the stream. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. • The excavation of the diversion will be carried out in the dry with no connections to the existing watercourse, until the works are complete with the exception of the small areas where the stream is currently live. • De-stocking of the Rathgory Tributary may need to be carried out prior to the commencement of works (if required by IFI) and upstream and downstream permeable barriers to remain in place until construction is completed. • In stream works to be carried out in full consultation with and to the advice of Inland Fisheries Ireland and the project ecologist. • Staging of project to initially stabilise, isolate, fence off watercourse on site • Mitigation measures on site include dust control, stockpiling away from watercourses and drains • Pollution control and mitigation on site • Stockpiling of loose materials will be kept away from watercourses and drains. A risk based approach will be taken. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses. • Fuel, oil and chemical storage will be sited within a bunded area. A risk based approach will be taken. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. • During the construction works silt traps will be put in place in the vicinity of all runoff channels the stream to prevent sediment entering the watercourse. • Petrochemical interception and bunds in refuelling area • Planting in the vicinity of the stream crossings will be put in place as soon as possible to allow biodiversity corridors to establish.

		<ul style="list-style-type: none"> • On-site inspections to be carried out by project ecologist. • Maintenance of any drainage structures (e.g. de-silting operations) must not result in the release of contaminated water to the surface water network. • No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system • Landscaping of the Riparian corridor will be carried out to the satisfaction of IFI.
Watercourses	<ul style="list-style-type: none"> • Habitat Degradation • Dust deposition • Pollution • Silt ingress • Potential downstream impacts. 	<p>Measures outlined above in addition to:</p> <ul style="list-style-type: none"> • During the works silt traps will be put in place • No discharges will be to the watercourse during and post works • Silt traps established throughout site including a double silt fence between the site and the watercourse. • Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks. • The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained. • The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. • A project ecologist must be appointed and be consulted in relation to all onsite drainage during construction works. Consultation with the project ecologist will not involve the formulation of new mitigation measures for the purposes of protecting any European Site, and relate only to the implementation of those mitigation measures already stated in the submission or the formulation of mitigation for other purposes. • Dewatering of excavations may be necessary. Appropriate monitoring of groundwater levels during site works will be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out. Unfiltered surface water discharges or runoff are not permitted from the site into the Rathgory Tributary Stream or Dee River during the works. Trenched double silt fencing shall be put in place along boundary of the proposed development site with 10m buffer from the Rathgory Tributary Stream. This fencing must be in place as one of the first stages on site and prior to the full site clearance. The silt fencing will act as a temporary sediment control device to protect the watercourse from sediment and potential site water runoff but also act as a tree protection zone for the riparian buffer. The fencing will be inspected twice daily, based on site and weather conditions, for any signs of contamination or excessive silt deposits. • Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains and drainage ditches. • Abstraction of water from watercourses is not to be permitted. • Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis. • All site personnel will be trained in the importance of good environmental practices including reporting to the site manager when pollution, or the potential for pollution, is suspected. All persons working on-site will receive work specific induction in relation to surface water management and run off controls. Daily environmental toolbox talks / briefing sessions will be conducted to outline the relevant environmental control measures and to identify any environment risk areas/works.

- Environmental risks due to construction and operation of the proposed development do potentially exist, particularly in relation runoff from sloping site, drains that could lead to the Rathgory Tributary Stream. Ecological supervision will be required during diversion, excavation and enabling works stages. Silt interception measures will need to be in place to ensure that the watercourses are not impacted during works and in particular during the site clearance, in-stream works and reprofiling stages. Landscaping of the grassed areas of the site proximate to the Rathgory Tributary Stream will take place immediately following re-profiling, to act as a buffer to protect the watercourse.
- Daily turbidity monitoring of the Rathgory Tributary Stream (upstream, downstream of works) will take place during works in consultation with the project ecologist. This would be particularly important following high rainfall events. It is recommended that sufficient baseline readings are made prior to construction commencing to understand the existing turbidity on site particularly in the pond area as this appeared turbid during the site visit.

Air & Dust

Dust may enter the Rathgory Tributary Stream via air or surface water with potential downstream impacts. Mitigation measures will be carried out reduce dust emissions to a level that avoids the possibility of adverse effects on the Rathgory Tributary Stream. The main activities that may give rise to dust emissions during construction include the following:

- Excavation of material;
- Materials handling and storage;
- Movement of vehicles (particularly HGV's) and mobile plant.
- Contaminated surface runoff

Mitigation measures to be in place:

- Following the diversion works, maintain the existing 10m buffer with the Rathgory Tributary Stream with a double layer of silt fences
- Consultation will be carried with an ecologist throughout the construction phase;
- Trucks leaving the site with excavated material will be covered so as to avoid dust emissions along the haulage routes.
- Speed limits on site (15kmh) to reduce dust generation and mobilisation.
- The stream is to be protected from dust on site. This may require additional measures in the vicinity of the building during demolition e.g. placing of terram/protective material over the stream.

Site Management

- Regular inspections of the site and boundary will be carried out to monitor dust, records and notes on these inspections will be logged.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces within 100 m of site boundary, integrity of the silt control measures, with cleaning and / or repair to be provided if necessary.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Maintain a vegetated strip and vehicle exclusion zone between the works and the Rathgory Tributary Stream in consultation with the project ecologist.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste

- Avoid bonfires and burning of waste materials.

Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.

- Only remove the cover in small areas during work and not all at once.
- 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.
- Due to the proximity of the Rathgory Tributary Stream an ecologist will oversee works in particular the excavation of material from the perimeter of the site.
- The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required.

Storage/Use of Materials, Plant & Equipment

- Materials, plant and equipment shall be stored in the proposed site compound location;
- Plant and equipment will not be parked within 50m of the Rathgory Tributary Stream at the end of the working day;
- Hazardous liquid materials or materials with potential to generate run-off shall not be stored within 50m of the Rathgory Tributary Stream.
- All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater;
- Fuel may be stored in the designated bunded area or in fuel bowzers located in the proposed compound location. Fuel bowzers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages;
- Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. They will not be stored within 50m of the Rathgory Tributary Stream;
- Drip trays will be turned upside down if not in use to prevent the collection of rainwater;
- Waters collected in drip trays must be assessed prior to discharge. If classified as contaminated, they shall be disposed by a permitted waste contractor in accordance with current waste management legal and regulatory requirements;
- Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips;
- No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction;
- Re-fuelling of machinery, plant or equipment will be carried out in the site compound as per the appointed Construction Contractor re-fuelling controls;
- The appointed Construction Contractor EERP will be implemented in the event of a material spillage;
- All persons working will receive work specific induction in relation to material storage arrangements and actions to be taken in the event of an accidental spillage. Daily environmental toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant environmental control measures and to identify any environment risk areas/works.
- Consultation with Inland Fisheries Ireland will be carried out pre and post works is essential and to be led by the project ecologist.

Birds (National Protection)	<ul style="list-style-type: none"> • Removal nesting habitat. • Removal foraging habitat. • Destruction and/or disturbance to nests (injury/death). • Predation . 	<ul style="list-style-type: none"> • Retain hedgerows and trees where possible. • Wildlife corridors provide additional shelter to minimise predation. • “Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist will be undertaken to ensure nesting birds are absent. This would include nesting gulls on buildings if present. • Nest boxes places on site to compensate for resource loss. <p>Removal of potential nesting habitats outside of bird breeding season (March to August inclusive). Should this not be possible, a pre-works check by a qualified ecologist will be undertaken to ensure nesting birds are absent</p>
Bats (international Protection)	<ul style="list-style-type: none"> • Removal roosting/foraging habitat. • Lighting Impacts 	<ul style="list-style-type: none"> • Pre Construction survey for bats • Retain hedgerows and ivy cover on trees where possible. • Wildlife corridors provide additional shelter to minimise predation. • Ecologist notified if bats found during demolition • Lighting at all stages will be done sensitively on site with no direct lighting of hedgerows and treelines. • Replanting of the riparian corridor at phase 1 of the project.
Hedgerows and Treelines (Local importance)	<ul style="list-style-type: none"> • Loss of commuting habitat. <ul style="list-style-type: none"> • Injury/death during construction and operation 	<ul style="list-style-type: none"> • Retain hedgerows and ditches where possible. Compensatory planting will be carried out on site. • Wildlife corridors maintain landscape connectivity and provide additional shelter.

Adverse Effects likely to occur from the project (post mitigation)

Standard construction and operational mitigation measures are proposed. These would ensure that water entering the Rathgory Tributary Stream, is clean and uncontaminated. However, given the proximity of numerous sensitive receptors and the watercourse leading to the Natura 2000 sites, it should be noted that the early implementation of ecological supervision on site and consultation with IFI at initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation.

With the successful implementation of standard mitigation measures to limit surface water impacts on the Rathgory Tributary Stream, biodiversity mitigation/supervision and the successful installation and initiation of the foul treatment system, no significant impacts are foreseen from the construction or operation of the proposed project (Table 3). Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works. Positive impacts would be seen through the implementation of an improved riparian corridor with greater potential for biodiversity than currently exists on site.

The construction and operational mitigation proposed for the development satisfactorily addresses the potential impacts on biodiversity and designated conservation sites through the application of standard construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt and pollution entering the stream will satisfactorily address the potential impacts on downstream biodiversity and Natura 2000 sites. No significant adverse impacts on the conservation objectives of Natura 2000 sites are likely following the implementation of the mitigation measures outlined above.

It is essential that these measures outlined are complied with, to ensure that the proposed development does not have “downstream” environmental impacts. These measures are to protect the groundwater/surface water, which are potentially the primary vectors of impacts from the site, and ensure that it is not impacted during construction and /or operational phases of the proposed development. Ongoing consultation with IFI is essential.

Residual Impacts Conclusion

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on the sensitive receptors through the application the standard construction and operational phase controls. The overall impact on the ecology of the proposed development will result in a long term slight positive residual impact on the ecology of the area and locality overall. This is primarily as a result of the loss of terrestrial habitats on site, supported by the creation of an improved biodiversity focused riparian corridor, additional biodiversity features, standard construction and operational controls and a sensitive native landscaping strategy. The implementation of SUDS drainage on site and riparian features in consultation with IFI would be seen as beneficial to the Rathgory Tributary Stream.

Table 3a. Construction Impacts on habitats and sensitive receptors post mitigation

Habitat	Habitats Directive	Site Rating ³	Construction Impact	Impact Significance
Watercourses		C	Silt or petrochemicals entering the Rathgory Tributary Stream and River Dee. Mitigation measures will be put in place to avoid impacting this habitat through the introduction of silt or petrochemical protection measures.	Positive Long term
Scrub		E	Construction will result in the complete removal of this habitat.	Negligible
Recolonising Bare Ground/Bare Ground		E	No species of importance were noted on, or in, this habitat. No bat roosts were noted on site. The removal of this habitat will not result in the loss of species of importance.	Negligible
Hedgerows and Treelines		E	No species of importance were noted on, or in, the buildings or artificial surfaces. No bat roosts were noted on site. The removal of this habitat will not result in the loss of species of importance. Replanting of removed hedgerows will be carried out so as not to encourage tunnelling of the stream, but retain the foraging corridor for bats.	Positive in the long term
Nearby Residents			The proposed development is proximal to residential areas that would be sensitive to noise, dust and lighting impacts.	Slight negative/ Negligible
Natura 2000 and other conservation sites.	Yes	C	Silt or petrochemicals entering the Rathgory Tributary Stream and River Dee. Mitigation measures will be put in place to avoid impacting this habitat through the introduction of silt or petrochemical protection measures.	Negligible

Table 3b. Construction Impacts on species

Species	Site Rating	Construction Impact	Impact Significance
Mammals-Terrestrial	A-D	No other terrestrial mammals of conservation importance were noted on site. No badger activity or setts were noted. No otter activity or holts were noted. Lighting will be controlled towards River Dee and Rathgory Tributary Stream.	Negligible
Birds	D	Clearance of the site will result in the loss of nesting habitat. Subsequent planting and inclusion of bird boxes, could result in a positive impact.	Negligible/positive long term
Amphibians-Frogs	B	Evidence of frog activity was not noted on site.	Negligible
Terrestrial Flora	-	No flora of conservation significance were found on the site.	Negligible

Table 3c. Operation Impacts on habitats and sensitive receptors post mitigation

Habitat	Site Rating	Operational Impact	Impact Significance
Watercourses	C	The watercourse and riparian buffer will become a focus of the development which would be seen as a positive. However, there may be increased disturbance of the area with potential for interaction with the watercourse.	Positive/Neutral
Recolonising Bare Ground/Bare Ground	E	Construction will result in the complete removal of this habitat. It is not expected that the new site will not contain this habitat.	Negligible
Hedgerows and Treelines		Public lighting will not be located in the vicinity of this area.	Neutral
Nearby Residents		Nearby residents would not be impacted by noise, dust or lighting from construction following completion of the works. There will be increased presence of people on site with associated noise and light impacts.	Neutral

³ Site ecological evaluation rating: <https://www.tii.ie/technical-services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf>

Table 3d. Operational Impacts on habitats

Species	Site Rating	Operational Impact	Impact Significance
Mammals- Terrestrial	A-D	No other terrestrial mammals of conservation importance were noted on site.	Negligible based on mitigation
Birds	D	Subsequent planting could result in a positive impact.	Minor Adverse/ localised/short-term
Amphibians- Frogs	B	Evidence of frog activity was not noted on site. Mitigation measures including the improvement of the riparian corridor will be put in place prior to development construction.	Minor Adverse/ localised/short-term
Terrestrial Flora	-	No flora of conservation significance was found on the site.	Negligible
Aquatic Fauna		The successful implementation of landscape features are important to the biodiversity value of the watercourse.	Negligible based on controls.

5. Site Information

a) Roles and Responsibilities

The roles and responsibilities of the personnel involved in the construction works are outlined in Table 4. However, it will be necessary that all personnel involved in the project are responsible for ensuring the requirements of the CEMP are followed.

Table 4. Roles and responsibilities of the personnel involved in the development project

Role	Roles and responsibilities
Applicant	The Ardee Partnership will have overall responsibility for the compliance with the CEMP. They will appoint staff and contractors to deliver the various elements of the development and oversee works carried out on site.
Project Ecologist	The ecologist will be on site prior to enabling works and oversee compliance with Wildlife Acts, Water pollution Acts and the mitigation measures outlined.
Contractor	Contractors will be hired to carry out all works on site. Works carried out will be overseen by The Ardee Partnership and on a day to day basis by the site manager. All contractors on site are required to comply with all elements of the CEMP.
Site Manager	The Site Manager will be responsible for the day to day management of the site including compliance of all personnel with the CEMP, in addition to Health and Safety, Environmental and Quality elements. The Site Manager is responsible for ensuring that all people on-site are provided with relevant information concerning environmental protection. The Site Manager will be responsible for overseeing any environmental monitoring programmes, carrying out site environmental inspections and audits as necessary, and will co-ordinate the environmental monitoring programme. All records of incidents and environmental issues will be collated and maintained by the site manager. The Site Manager will also be responsible for reviewing all risk assessment method statements and ensuring an appropriate programme of tool box talks are developed and effectively communicated. The site manager will be responsible for overall waste management issues arising from the project. These would include: Implementation and monitoring of waste minimisation, segregation and safe disposal measures and Dissemination of waste reduction and waste management procedures to all relevant personnel on site.
Monitoring	Noise and Dust specialists will be appointed to oversee mitigation measures on site and to act as liaison with the County Council.
All Staff and Subcontractors	All staff and subcontractors have the responsibility to comply with the CEMP including environmental procedures on site to minimise environmental impacts, avoid pollution on-site, including noise and dust, and to respond quickly and effectively to an incident to avoid or limit environmental impacts. All incidents must be reported to the Site Manager immediately.

b) Training and Raising Awareness

As part of site induction for all personnel, a copy of the CEMP will be provided to and discussed with all onsite staff. This would include discussing the elements outlined in the CEMP including sensitive receptors on site and measures in place to mitigate impacts on these receptors.

As part of tool box talks relevant elements of the CEMP will be discussed particularly when working in areas with sensitive receptors e.g. near the watercourse or, where there is potential to impact sensitive receptors on site. Training records of all personnel on site will be reviewed and copies held centrally. This is particularly important for those operating excavators, other heavy machinery and with environmental certification to deal with incidents on site.

6. Emergency Procedures

The risk of spilling fuel is at its greatest during refuelling of plant. All refuelling of major plant and equipment will take place on an impermeable surface within a designated area of the site compound, greater than 10m away from any drains. The vehicles and equipment will not be left unattended during refuelling. Spill kits and hydrocarbon absorbent packs will be stored in this area and operators will be fully trained in the use of this equipment.

Diesel pumps and similar equipment will be placed on drip trays to collect minor spillages or leaks. All equipment must be checked regularly.

Fuel, oil and chemical storage will be sited within a bund of adequate capacity. The bund must be located at least 10 metres away from drains, ditches, excavations and other locations where it may cause pollution.

All materials will be stored in accordance with the manufacturer's instructions. Epoxy mortars and chemical based materials/sealants will be stored in secure containers with relevant warnings shown on the storage unit. Spill kits will be located adjacent to storage areas and used in the event of spillages.

7. Invasive Species

No invasive species that could impact on the movement of soil on or off site were noted.

8. Relevant Legislation

The key legislation which will be adhered to during the proposed project are defined as follows:

- Water Framework Directive (2000/60/EC);
- Local Government (Water Pollution) Act, 1977–1990;
- Water Quality (Dangerous Substances) Regulations, 2000;
- Arterial Drainage Act, 1945;
- S.I. No. 41 of 1999 Protection of Groundwater Regulations, resulting from EU Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances (the Groundwater Directive);
- S.I. No. 249 of 1989 Quality of Surface Water Intended for Abstraction (Drinking Water), resulting from EU Directive 75/440/EEC concerning the quality required of surface water HES Report No.: P1293 FINAL - Rev 0 Report Date: 31st August 2015 intended for the abstraction of drinking water in the Member States (repealed by 2000/60/EC in 2007);
- S.I. No. 439 of 2000 Quality of Water intended for Human Consumption Regulations and S.I. No. 272 of 2007 European Communities (Drinking Water No. 2) Regulations, arising from EU Directive 98/83/EC on the quality of water intended for human consumption (the Drinking Water Directive) and WFD 2000/60/EC (the Water Framework Directive); S.I. No. 272 of 2009 European Communities Environmental Objectives (Surface Waters) Regulations; and, S.I. No. 9 of 2010 European Communities Environmental Objectives (Groundwater) Regulations 2010.
- The Fisheries Consolidation Act 1959 (as amended).
- The Fisheries (Amendment) Act 1997.
- The Inland Fisheries Act 2010.

- Council Directive 78/659/EEC on the Quality of Freshwaters Needing Protection or Improvement in Order to Support Fish Life.
- The European Communities (Quality of Salmonid Waters) Regulations 1988 (S.I. 293 of 1988).
- The Wildlife Act 1976.
- The Wildlife (Amendment) Act 2000.
- The Local Government (Water Pollution) Act 1977.
- The Local Government (Water Pollution) Amendment) Act 1990.
- The Habitats Directive (92/43/EEC).
- The European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011).
- The Water Framework Directive (2000/60/EC).
- The European Communities (Water Policy Regulations 2003 (S.I. 722 of 2003).
- The European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. 272 of 2009).
- The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations(2009) (S.I. 296 of 2009).

9. Monitoring of Rathgory Tributary Stream/River Dee

A project Ecologist will be appointed to oversee the project and mitigation measures, prior to the commencement of works on site. During the construction works there will be ongoing monitoring of the Rathgory Tributary Stream for any visible signs of pollution (suspended solids, silt, hydrocarbon sheen and or other products). If any evidence of pollution is seen then immediate corrective action will be taken to eliminate the source of the pollution. The project ecologist will be consulted to oversee installation of mitigation for the works and consultation with Inland Fisheries Ireland and Louth County Council in relation to environmental matters. Daily checks of turbidity will be made on site from the commencement of site works to the completion of enabling works and the data sent to IFI if requested. It is recommended that at least two sites are chosen for this monitoring i.e. upstream and downstream of the proposed works.

10. Conclusions

This CEMP has been submitted to show The Ardee Partnership's commitment to Environmental Management of the proposed project. This CEMP has outlines the environmental principles that will be adopted to ensure that potential environmental impacts and health and safety issues associated with the construction processes are effectively managed, minimised and / or eliminated. The plan details the roles and responsibilities of the applicant, the site manager, project manager and site workers and how these controls are to be implemented. The CEMP will require regular updating and monitoring throughout the construction period to ensure potential risks are adequately managed throughout the construction works.