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Construction and Environmental Management Plan

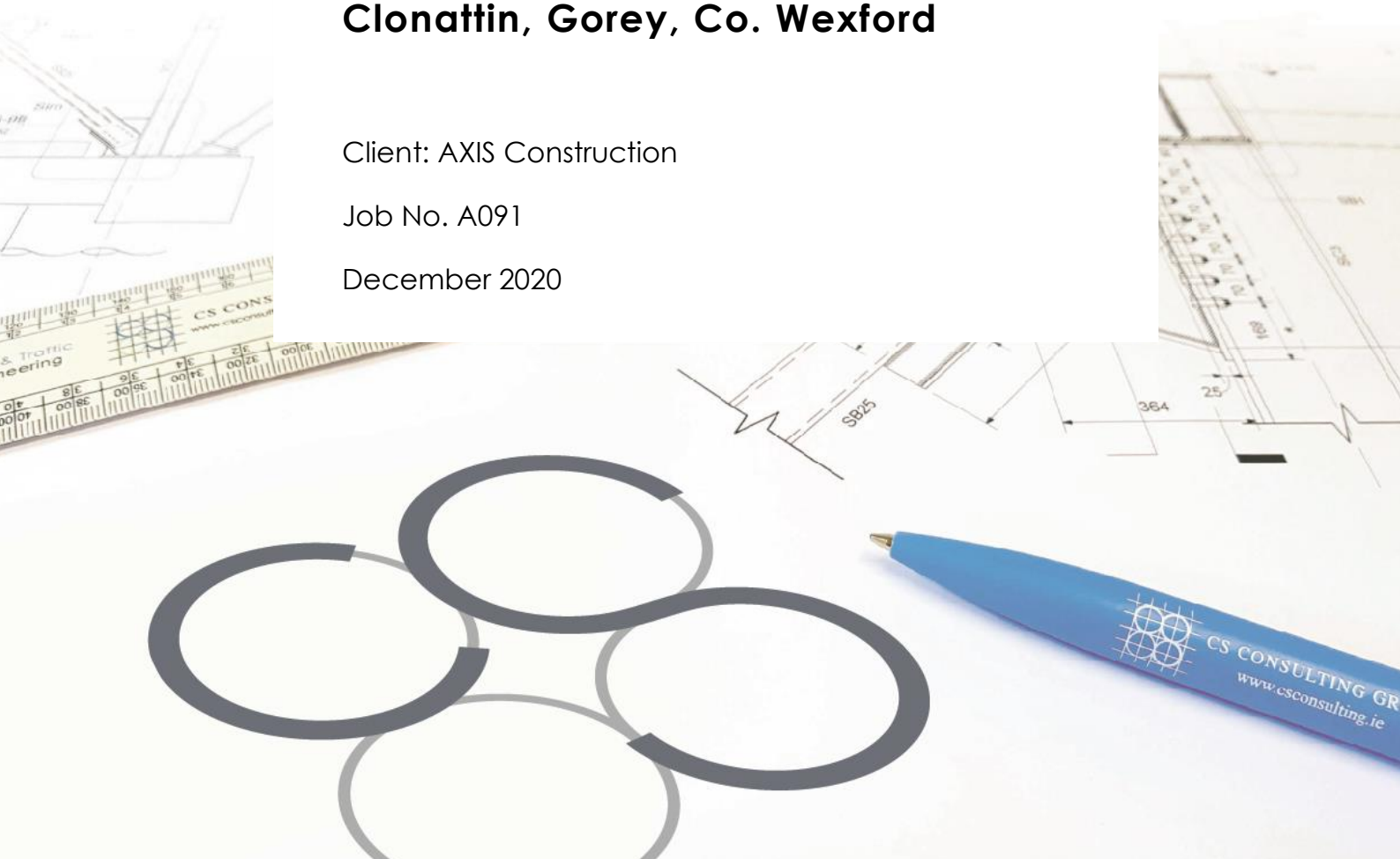
Strategic Housing Development

Clonattin, Gorey, Co. Wexford

Client: AXIS Construction

Job No. A091

December 2020



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CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN

STRATEGIC HOUSING DEVELOPMENT, CLONATTIN, GOREY, CO. WEXFORD

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BS 1192 FIELD	**CLO-CSC-ZZ-XX-RP-C-0005-P4**

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
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1.0 INTRODUCTION

Cronin & Sutton Consulting (CS Consulting) have been commissioned by AXIS Construction to prepare a Construction and Environmental Management Plan to accompany a planning application for a proposed Strategic Housing Development at Clonattin, Gorey, County Wexford.

The Construction and Environmental Management Plan includes a description of the proposed works and how these works shall be managed for the duration of the works on site. This plan shall be updated by the contractor and agreed with Wexford County Council (by the appointed Contractor) in advance of the construction phase.

The project shall be under the control of a main contractor who shall be appointed after the approval is granted for the Project Application. Upon appointment and once familiar with the site and having developed a final detailed methodology for the construction of the Development Project, the contractor shall prepare a Detailed Construction Management Plan. It is anticipated the detailed plan shall be based upon this plan. This Construction and Environmental Management Plan (CEMP) is a preliminary plan which has been prepared to give an outline of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan shall be revised by the contractor and expanded to provide a project specific site management plan, incorporating:

- Operational Health & Safety (OH&S) Management Plan;
- Environmental Management Plan including a Waste Management Plan;
- Pedestrian and Traffic Management Plan.

The Construction Management Plan shall be integrated into and implemented throughout the construction phase of the project to ensure the following:

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- To manage and control any environmental impacts (noise, vibration, dust, water) that project construction work activities may have on receptors and properties that are located adjacent to project work areas and on the local receiving environment.
- To comply with planning conditions and requirements relating to waste management as required by Wexford County Council.

The proposed Construction and Environmental Management Plan has been prepared to demonstrate how the appointed contractor and the appointed Project Supervisors shall comply with the following relevant legislation, and relevant Best Practice Guidelines:

- Integrated Pollution Prevention and Control Directive (1996/61/EC)
- The Waste Framework Directive (Directive 2008/98/EC)
- Environmental Protection Agency Act 1992,
- Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016.
- Waste Management (Permit) Regulations 1998 (SI No. 165 of 1998)

- Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – June 2006
- Local Government Water Pollution Act 1977

This Construction and Environmental Management Plan presents the potential environmental impacts and proposed management and monitoring methodologies based on the concept of Best Practice and the proposed mitigation measures to be implemented at the site.

2.0 SITE LOCATION

2.1 Site Location

The site of the proposed development lies between Clonattin Road and Courtown Road (R742) in the townlands of Clonattin Upper and Goreybridge, Gorey, Co. Wexford. The application site has a total area of 15.5ha and is located within the administrative jurisdiction of Wexford County Council.

Figure 1 – Location of proposed development site
(*map data & imagery: EPA, OSM Contributors, Google*)

The location of the proposed development site is shown in Figure 1; the indicative extents of the development site, as well as relevant elements of the surrounding street network and transport infrastructure, are shown in more detail in Figure 2.

Figure 2 – Site extents and surrounding transport infrastructure
(*map data & imagery: NTA, OSM Contributors, Google*)

The main body of the development site is bounded to the north generally by the existing Clonattin Village access road, to the north-west by the existing Hillcrest residential development, and on all other sides by undeveloped agricultural lands. The application boundary also includes the alignment corridor of a new link road that shall connect Courtown Road (R742) to Clonattin Village and Clonattin Road. The provision of such a link is given as a roads objective in the Gorey Local Area Plan 2017–2023.

The internal road network of the proposed development shall tie in to the existing Clonattin Village access road at 6no. locations along the site's northern boundary. Access to the wider road network from these points shall be via the existing Clonattin Village access junction on Clonattin Road. To the south, the proposed new link road traversing the development site shall

tie in to the existing junction on Courtown Road that gives access to the existing Movies@Gorey cinema site.

2.2 Existing Land Use

The subject site is predominantly greenfield and currently generates no vehicular traffic. There are 2 no. existing derelict buildings (a dwelling and a shed) within the western part of the site, and an existing pond is located inside the site's southern boundary.

2.3 Proposed Development

The proposed strategic housing development at this site in Clonattin, Gorey will include the demolition of the existing buildings and will provide 363no. residential units, a crèche, public open space, a new access road connecting to Courtown Road. All associated site development works and services provisions including parking, bin storage, substations, landscaping and all services required to facilitate the proposed development. A full description is provided in the statutory notices and in Chapter 3 of the EIAR.

3.0 LOGISTICS

3.1 Construction Program & Phasing

Subject to a successful grant of planning, it is intended for the works to commence in Q1 2021. The proposed development is anticipated to be constructed over an 18-month period.

The development is proposed to be constructed on the following basis;

- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes around the site;
- Site Clearance;
- Reduced Level excavations;
- Site services installations (drainage, power, water and the like);
- Construct Building Frame and Envelope;
- Finish Interior and Exterior Landscaping

3.2 Vehicular Access to Site

The site is currently accessed from Clonattin Village. The existing vehicular access shall be adapted to suit the development layout as part of the development works. It is anticipated that for the duration of the works all access and egress for deliveries shall be via the existing access point from Clonattin Village. It may also be beneficial to install a pedestrian only entrance to the site to segregate vehicular and pedestrian movements to and from site.

Security personnel shall be present at the entrance/exit of the site to ensure all egressing traffic shall do so safely. A wheel wash shall be installed at the exit from the site to prevent any dirt being carried out into the public road. If necessary, a road sweeper shall be used to keep the public road around the site clean.

3.3 Protection of Public Areas from Construction Activity

Perimeter hoarding shall be provided around the site to provide a barrier against unauthorized access from the public areas. Controlled access points to the site, in the form of gates or doors, shall be kept locked for any time that these areas are not monitored (e.g. outside working hours).

The hoarding shall be well-maintained and shall be painted. Any hoardings may contain graphics portraying project information.

3.4 Site Security

The site shall be secured with a hoarding.

The site hoarding shall be branded using the appointed Contractors logos etc. Some marketing images or information boards may also be placed on the hoarding.

Access to site shall be controlled and monitored outside of site working hours.

All personnel working on site must have a valid Safe Pass card.

3.5 Material Hoisting & Movement Throughout the Site

Hoists and teleporters may be utilised as required during the project to facilitate material movement into the structures and waste movements out. With the commencement of the fit-out activities, hoists strategically positioned shall play a key role for successful project delivery. They are also less susceptible to being affected by inclement weather conditions.

3.6 Deliveries & Storage Facilities

It is proposed that unloading bays are provided for deliveries to the site within the hoarding perimeter. They should be accessible by forklifts. Appropriately demarcated storage zones shall be used to separate and segregate materials.

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

3.7 Site Accommodation

On-site facilities shall consist of;

- Materials storage area;
- Site office & meeting room;
- Staff welfare facilities i.e. toilets, drying room, canteen, etc.

Electricity shall be provided to the site via the national grid.

Water supply to the site shall be provided by means of a temporary connection to the public water main. Similarly, a temporary connection for foul water drainage shall be made to the public network.

3.8 Site Parking

There shall be sufficient on-site parking for staff and visitors. Construction staff shall also be encouraged to use public transport and information on local transportation shall be published on site.

3.9 Site Working Hours

Construction operations on site shall generally be subject to a planning permission and conditions. However, 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.

Deliveries of materials to site shall generally be between the hours of 08:00 and 19:00, Monday to Friday, and 08:00 to 14:00 on Saturdays. There may 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.

4.0 ENVIRONMENTAL ISSUES

4.1 Noise

The Contractor shall implement measures to eliminate where possible and reduce noise levels where not.

All construction activities shall be carried out in compliance with the recommendations of BS 5228, Noise Control on Construction and open sites part 1 and comply with BS 6187 Code of Practice for Demolition.

4.2 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall monitor dust levels in the vicinity of the site in accordance with planning conditions. Records shall be kept of such monitoring for review by the Planning Authority.

4.3 Migrating Dust & Dirt Pollution

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

- Ensuring construction vehicles have a clean surface to travel on within the site (i.e. haul road).
- Providing a "Full-Body Self Contained" wheel wash, constructed and located within the site confines.
- Ensuring an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site. If conditions require it then a manned power washer shall be put in place to assist the wheel wash system.

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

4.4 Harmful Materials

Harmful material shall be stored on site for use in connection with the construction works only. These materials shall be stored in a controlled manner. Where on-site facilities are used there shall be a bunded filling area using double bunded steel tank at a minimum.

5.0 TRAFFIC MANAGEMENT

5.1 Access to the Site

Construction traffic shall access the site from the adjoining street network. Clonattin Village provides easy access to the M11 via a network of local distributor roads for deliveries and extraction to and from the site.

5.2 Vehicle Movements During Construction

The major construction items include excavation, construction and fit out. It is anticipated that the peak of HGV movements to and from the site shall be during excavation works and construction of the building foundations. The peak LGV movements to and from the site shall be during the building construction and fit out. It is anticipated that the construction traffic impact on the surrounding local road network shall be minimal.

The Contractor must submit a Construction Traffic Management plan to the Local Authority for approval. Haulage vehicle movements should be fully coordinated to comply with the requirements of the layout and requirements herein.

- At no time should construction associated vehicles be stopped or parked along the routes.
- Haulage vehicles should not travel in convoys of greater than two vehicles at any time.
- Haulage vehicles should be spaced by a minimum of 250m at all times.
- Strictly at no time should haulage vehicles be parked or stopped at the entrance to the site.
- All loading of excess material shall occur within the site boundary.

- All off-loading of deliveries shall take place within the site, away from the public road and shall access via the construction site access.

The routes to and from the site shall depend on where the excavated material shall be taken to and from where construction material shall be brought into the site. The above locations shall be identified by the Contractor at a later stage and appropriate routes shall be agreed with Wexford County Council as part of the Contractors more detailed construction management plan.

The increase in traffic as a result of construction shall be minor and can be readily accommodated within the existing road network. However, the site is located in a residential area where restricted road and junction space is shared with vulnerable road users and the flow of construction traffic shall need to be marshalled and regulated to ensure that potential conflicts are avoided as much as possible.

5.3 Minimise Construction Vehicle Movements

Construction vehicle movements shall be minimized through:

- Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak periods;
- Use of precast/prefabricated materials where possible;
- 'Cut' material generated by the construction works shall be re-used on site where possible, through various accommodation works;
- Adequate storage space on site shall be provided;
- A strategy shall be developed to minimise construction material quantities as much as possible;
- Construction staff vehicle movements shall also be minimised by promoting the use of public transport.

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

5.3.1 Public Transport

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

5.3.2 Public Roads

A Visual Condition Survey (VCS) shall be carried out of all surrounding streets prior to any site works commencing. The Contractor shall liaise with Wexford County Council Roads & Traffic Department to agree any changes to load restrictions and construction access routes for the site. Measures shall be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

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

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

- A regular program of site tidying shall be established to ensure a safe and orderly site;
- Scaffolding shall have debris netting attached to prevent materials and equipment being scattered by the wind;
- Food waste shall be strictly controlled on all parts of the site;
- Mud spillages on roads and footpaths outside the site shall be cleaned regularly and shall not be allowed to accumulate;
- Wheel wash facilities shall be provided for vehicles exiting the site;

- In the event of any fugitive solid waste escaping the site, it shall be collected immediately and removed.

5.4 Project Specific Traffic Management Plan

A detailed project specific traffic management plan shall be developed by the Contractor and agreed with Wexford County Council prior to works commencing on site. This plan shall be updated as required throughout the project.

Issues addressed in the Traffic Management Plan shall 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

6.0 PROVISIONS FOR CONSTRUCTION

6.1 Hoarding, Set-up of Site & Access/Egress Points

The site area shall be enclosed with hoarding details of which are to be agreed with Wexford County Council. Hoarding panels shall be maintained and kept clean for the duration of the project.

This shall involve erecting the hoarding around the proposed site perimeter in line with the finished development description.

6.2 Removal of Services

Prior to any works commencing a utility survey shall be carried out to identify existing services. All services on site shall be disconnected, diverted or removed as agreed with service providers.

6.3 Excavation

This development shall involve excavation and removal of material from site for foundations and regrading of the site profile.

It is not envisaged that rock shall be encountered during the excavation works.

The Contractor must prepare a Construction Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

6.4 Site Service Installations

Drainage, power, water and the like shall be installed to serve the proposed development.

6.5 Housing Construction

The housing is proposed to be constructed on the following basis;

- Reduced level excavations;
- Traditional strip foundations, ground beams and floor slabs;
- Construct house frames and blockwork;
- Finish interior and exterior landscaping

Please note the above shall be carried out in accordance with the particular construction phasing.

7.0 MITIGATION MEASURES

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 Clonattin Stream.

7.1 Construction Measures

Designated Conservation sites within 15km

No Natura 2000 sites are within the Zone of Influence. As the main potential vector for impacts would be seen to be via the Clonattin Stream, 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 Court Dunes and Glen pNHA. The mitigation has been designed to ensure that the project will comply with the Water Pollution Acts and standard IFI Conditions in relation to construction and drainage. All construction and operational phase controls will be followed.

Development Construction

Contamination of watercourses. As existing drainage ditches are present on site and substantial instream works are proposed, a project ecologist should 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 should have sufficient mitigation measures to prevent silt from runoff during works. This should 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.

7.2 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 and drainage ditches throughout the construction process. The following measures will be carried out to ensure that the site runoff is suitably contained during construction:

- 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.
- Once the culvert 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.
- 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.

- 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 should be carried out immediately.
- Following the completion of this element of the project this area of the site will be closed off to machinery access.

7.3 Drainage on site outside the riparian corridor.

- 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.
- 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.
- 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.
- 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).

- 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 Dawson's Demesne Stream.

7.4 Culvert Installation Methodology

In addition to having a direct hydrological pathway to a pNHA 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).
- 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.

Designed-in Mitigation

- 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 must be protected from dust, silt, and surface water throughout the works.
- Local silt traps established throughout site.
- 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 should be put in place as soon as possible to allow biodiversity corridors to establish.
- 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 should be carried out to the satisfaction of IFI.
- 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 drainage ditches or stream. Trenched double silt fencing shall be put in place along boundary of the proposed development site with 10m buffer from the Clonattin 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.

Air & Dust

Dust may enter the Clonattin 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 Clonattin 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 instream works, maintain the existing 10m buffer with the Clonattin 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 should be carried out to monitor dust, records and notes on these inspections should 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.

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 Clonattin 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 Dawson's Demesne 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 Clonattin 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 bowsers located in the proposed compound location. Fuel bowsers 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 Clonattin 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)

- 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 should 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.
- 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 should be undertaken to ensure nesting birds are absent.

Bats (International Protection)

- Derogation Licence required for demolition of house on site.
- 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 should be done sensitively on site with no direct lighting of hedgerows and treelines.
- Replanting of the riparian corridor at phase 1 of the project.
- 5 bat boxes should be placed on site as advised by the project ecologist to offset the loss of the roosting site.
- Lighting of the site should be as lighting plan with no lighting of the riparian corridor, the attenuation pond or central park areas. Light spin should be as per designed lighting plan.

Mammals (Terrestrial)

- A Pre-Construction survey should be carried out.

Amphibians

- A Pre-Construction survey should be carried out.

7.5 Operational Measures

Operational mitigation measures are primarily directed towards maintenance of mitigation measures that have been put in place during the construction phase. This would be directed towards ensuring compliance with Water Pollution Acts through the maintenance of onsite drainage infrastructure and ensuring lighting is maintained as per lighting plan. No additional operational mitigation measures are required.