MHL & ASSOCIATES LTD.

For: Clockstrike Ltd.

Proposed Residential Development - Phase 2,
Ringwood, Blarney.



Outline Construction Environmental Management Plan

December 2025

MHL & Associates Ltd.
Consulting Engineers

MHL & ASSOCIATES LTD.

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1 EXECUTIVE SUMMARY

This Outline Construction Environmental Management Plan (CEMP) has been formulated to outline the commitments and mitigation measures to be executed by Clockstrike Ltd. and its appointed contractors throughout the proposed Large-scale Residential Development (LRD) at Ringwood, Blarney, Cork.

The primary purpose of the Outline CEMP is to furnish comprehensive details on the proposed project, the intended works, the phasing and methodologies, and the strategies for protecting sensitive receptors near the works. Additionally, it provides insights into waste and traffic management.

The Outline CEMP delineates the potential impacts of the development, identifying sensitive receptors, environmental controls, and the mitigation measures designed to minimise potential impacts. It also specifies the requirements to be addressed at different project stages and delineates the roles and responsibilities of individuals involved in the project.

Proposed Residential Development - Phase 2

2 INTRODUCTION

This Outline Construction and Environmental Management Plan ("CEMP") has been carried out by MHL & Associates Ltd. on behalf of Clockstrike Ltd. for the proposed Large Scale Residential Development (LRD) for zoned lands in Ringwood, Blarney, Cork. The CEMP serves to outline the proposed project, its works, phasing, and methodologies, emphasizing a comprehensive and integrated approach to safeguarding nearby sensitive receptors. Additionally, it addresses waste and traffic management. The document is contingent on obtaining planning permission, subject to potential changes based on feedback from final planning permission and conditions, compliance requirements from the local authority, and concerns raised by affected residents. The final CEMP for the development will be submitted by the appointed contractor before the relevant site phase commences and will undergo periodic reviews as part of construction process management.

This Outline CEMP has been structured to incorporate measures ensuring compliance and adhering to established good management practices on-site. It is comprised of the following sections: Project Description, Potential Impacts, Mitigation Measures & Monitoring, Site Information, Construction Management, Emergency Procedures, and Conclusions.

2.1 Site Location

The figure above shows the site location in relation to the Blarney Village environs and the wider regional road network. The site is 0.5-1.0 km east of the village centre.

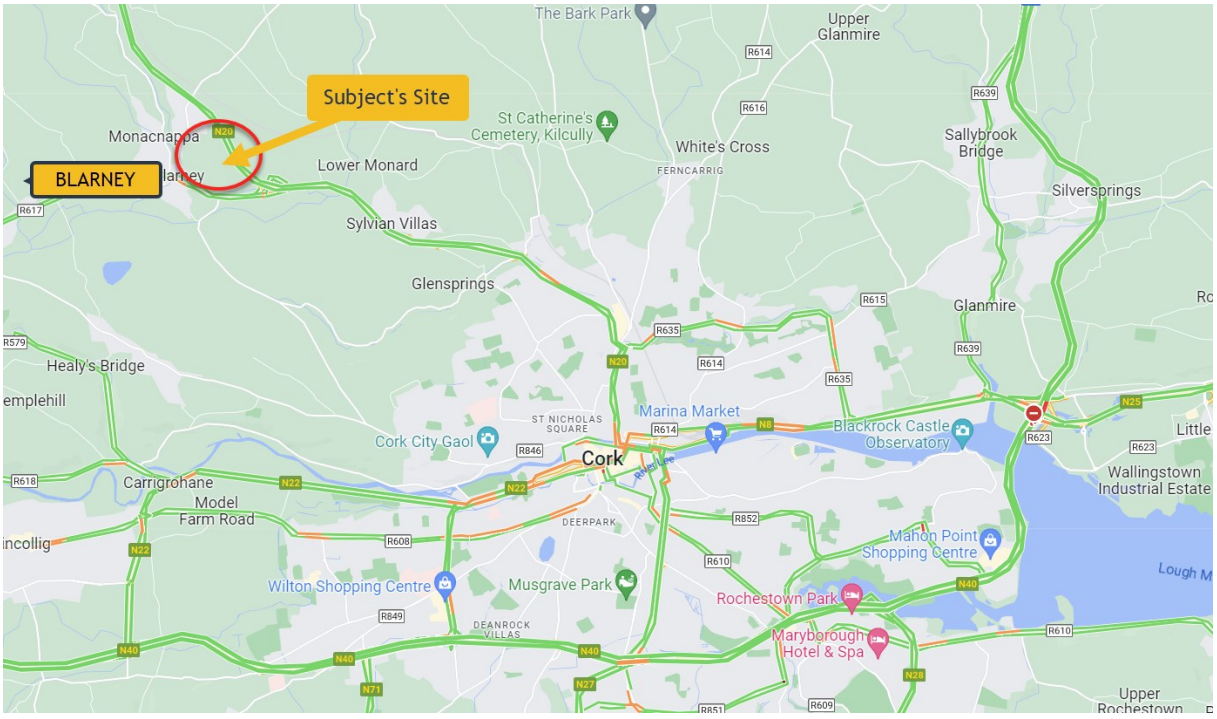


Figure 2.1 Subject's Site Location

The development of the Ringwood site is in keeping with Cork City Development Plan 2022-2028 which focuses on developing Blarney into an important population centre to the west of the city, fulfilling its role in urban city development.

The proposed site layout has been developed by CCK Architects. Please refer to the design team drawing pack submitted for further details.

The wider Ringwood site is located northwest of Cork City and northeast of Blarney village. The subject's site northern and eastern perimeters are aligned with the National Primary Road (N20), with Station Road bounding its western perimeter. The lands to the south are bounded by the R617 Regional Road.

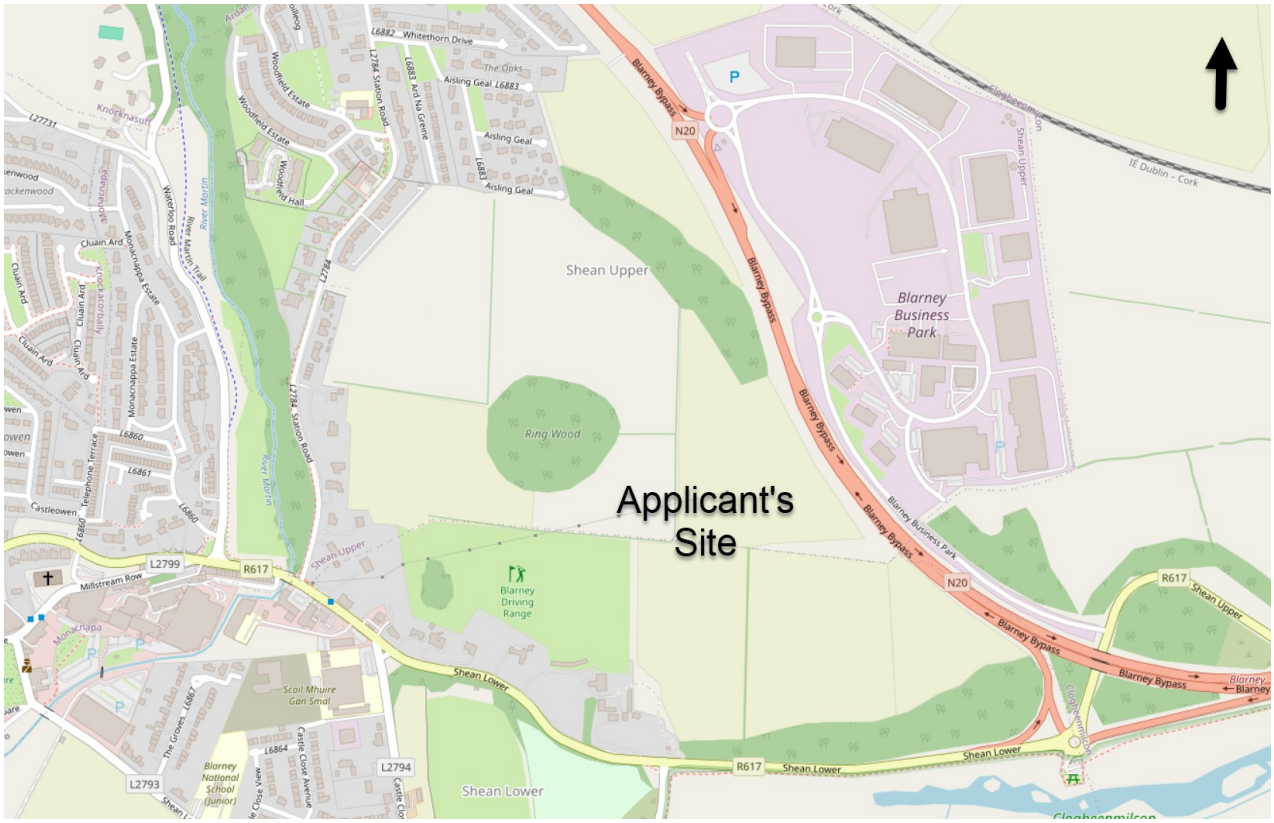


Figure 2.2 Site Location & Surrounding Area

2.2 Development Description

The LRD Phase 2 application:

Clockstrike Ltd., intend to apply for permission for a Large-Scale Residential Development (LRD), at this site at Ringwood, Shean Upper and Shean Lower, Blarney, Cork. The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of (i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (including 129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings (including 26 no. 2-bed and 26 no. 3-bed units) and 114 no. apartments provided in 2 no. 5-storey buildings (including 54 no. 1-bed and 60 no. 2-bed units); (ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services (iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area; (iv) a new access roadway into the site from the R617 with associated

pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road, (v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision (vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure; (vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031) (viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area, (ix) drainage works and nature-based SuDS measures (x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works, (xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays (xii) 2no. substations, all associated ancillary site, drainage and development works. The planning application is accompanied by an Environmental Impact Assessment Report (EIAR).

The application may be inspected online at the following website: www.ringwoodphase2lrd.ie.



Figure 2.3 Development Site Layout Phase 2 (c: CSR/ CCK Architects).

The development proposes to connect onto Station Road via the proposed new signalised development junction (to be constructed in Phase 1) and a new signalised junction / development spine road which is to connect onto the R617. Extensive traffic analysis for this junction and surrounding road networks has been carried out by Systra Ltd. Please refer to their submitted documentation for further details. These junction arrangements have been arrived at following discussions with Cork City Council.

2.3 Summary of Ecological Importance

Site flora and fauna assessments and bat surveys were carried out. In summary, no terrestrial mammals, or signs of mammals of conservation importance were noted on site. No flora of conservation importance was noted on site. The site consists of cultivated farmland, grassland, hedging and treelines.

2.4 Sensitive Receptors

Please refer to the Biodiversity Chapter (Chapter 11) of the EIAR for further details. Potential receptors are as noted in the figure below.

Sensitive Receptor	Location/ Potential Impact
Watercourses	Onsite works will also involve ground clearance, re-profiling, groundworks, and construction, with potential for runoff, dust, light, and noise impacts.
Residents	As seen in the proposed site development, the layout is in close proximity to a number of houses located along Station Road. These properties may be sensitive to noise, dust and lighting impacts. Mitigation measures should be put in place to avoid impacting the residents proximal to the proposed development during the site clearance and construction phase of the project
Terrestrial Fauna and Flora	On-site Fauna and flora of conservation importance to be reviewed by Ecologist.
Birds	Subsequent planting should be supplemented with bird boxes.
Bats	Clearance of the site, particularly the woodland scrub area in the west of the site. Mitigation measures may include a pre-construction bat survey and measures to protect bats during site clearance if individuals are found on site.

Figure 2.4 Sensitive Receptors/ Potential Impact

3 CONSTRUCTION PLANNING

3.1 Construction Phasing

There may be several phases of construction on the client's site. The proposed order of construction of key elements is as follows, however this is subject to detailed review by the Contractors at construction stage and specifics may require adjustment once the contractor has been appointed. The delivery of the Spine Road is to run concurrently within Phase 2, offset to begin after a quantum of Phase 2 housing has been delivered.

- Site Setup.
- Demolitions and site clearance.
- Earthworks, including cut and fill and disposal of excess material off site.
- Construction of substructure.
- Super Structures.
- Roof and Façade finishes.
- Internal fit out.

3.2 Construction Particulars

3.2.1 Arborist

The scale and density of the proposed new development will require the clearance of existing vegetation cover before this is replaced with a new landscape planting scheme within the new layout. Some of the more prominent mature trees will be retained along with the dense landscape screen along existing boundary. Please refer to CSR details regarding tree survey, constraints plan and protection proposals.

3.2.2 Proposed Surface Water Drainage

The supporting Engineering Design Report that accompanying this planning application provides the drainage strategy for the proposed development, encompassing surface water and foul wastewater drainage.

Regarding existing infrastructure, the report notes an existing surface water sewer on Station Road and discharging to the Martin River to the west. The proposed strategy considers employing source control SUDS features and linking subsequent features for enhanced interception. Open conveyance and detention basins are reserved for the northern open area. Underground attenuation features fulfil remaining storage needs. Westward outflows, restricted to greenfield rates, discharge through a single outfall to the adjoining. Likewise southern outflows, restricted to greenfield rates, discharge through a single outfall to the south.

3.2.3 Proposed Wastewater Drainage

The westward flows of Phase 2 are to be gravity directed to an existing UE wastewater sewer on Station Road. This existing UE service runs north to south along Station Road.

Under the permitted Phase 1 application, a wastewater pump station is to be constructed to cater for the build out of these the initial phase 1 development.

For phase 2, eastward and southward wastewater flows are to be gravity routed along the proposed Spine Road and connect into a new Type 3 pumping station. This pump station is to be positioned within the development, located west of the new development access with the R617. From this pumping station, a proposed wastewater rising main is to run westward along the R617 and connect to an existing UE wastewater manhole at the Station Road Junction.

3.2.4 Flood Risk Assessment

Potential flood risk from surcharging or blockage of the development's drainage system, mitigated through appropriate design, regular maintenance, inspection, and the establishment of overland exceedance flow routes with the drainage design incorporating a 20% climate change allowance. The proposed development adheres to the requirement of not increasing runoff rates compared to the existing greenfield site, contributing to the reduction of flooding and improvement of water quality. A Flood Risk Assessment has been carried by JBA Consulting Group for this application. Please refer to this document for further details on this assessment.

3.2.5 Public Lighting

The lighting strategy for the proposed development has been prepared by MHL Consulting Engineers. The proposed public lighting layout is designed to ensure compliance with national, local, and sensitive ecology guidelines/ best practice.

4 CONSTRUCTION MANAGEMENT

4.1 Ecologist Appointment:

A project ecologist will be appointed to approve all site clearance methodologies and works before the commencement of activities on-site.

4.2 Initial Site Activities:

After securing access to the site, the site compound will be immediately established. Existing site services will be isolated, including decommissioning any existing substations in coordination with the ESB (Electricity Supply Board), and a temporary builder's power supply will be provided. The site will be secured with hoarding on all open sides and accessible approaches, following the indicated red-line boundaries on planning drawings and Figure 1.

4.3 Construction Compound:

The exact location of the construction compound will be confirmed in advance and agreed with the local authority. The construction compound, likely to be relocated during the works, will include welfare facilities (washrooms, drying rooms, canteen, and first aid areas), foul drainage, and a potable water supply. Control measures will segregate construction traffic from external pedestrian traffic.

4.4 Construction Spine Road / Accesses

Please refer to the supporting EIAR chapters (Chapters 5 and 7) for Construction Strategy and Traffic application details for Phase 2 and the LRD Outline Construction Traffic Management Plan (CTMP) report submitted in support of this Phase 2 application.

- One access point for development traffic will be provided using the existing entrance, Station Road. (This is as per the permitted Phase 1 application).
- It is envisioned that the new Spine Road will form part of the construction traffic haul route for the LRD Phase 2 application and subsequent future development phases.
- Signalisation of the development entrance junction with the R617 and nearby Killard/R617 Junction is proposed as part of the construction works for phase 2 to ensure safe access/egress from site for HGV traffic.

These two proposed development entrances as noted, will be the main access points of connection with the wider road network. The new Spine Road will form the primary Construction Traffic Haul Route for this LRD Phase 2 application and future development phases.

4.5 Standard Working Hours:

Anticipated normal working hours are Mon-Fri 08.00-19.00 and Saturday 08.00 - 16.00, subject to agreement at pre-commencement stage with the Local Authority. Any work outside standard hours requires written approval from the Local Authority.

4.6 Traffic Management and Deliveries:

Deliveries will be strategically planned to avoid high-volume periods. A detailed Traffic Management Plan will be developed, agreed upon, and submitted by the Contractor before commencement.

4.7 Site Storage:

Materials or items will not be placed outside the hoarding line unless otherwise agreed with the local authority.

4.8 Liaison and Communication:

Before commencing, relevant local authority departments will be contacted and liaised with, and Road Opening Licence applications will be submitted for approval if necessary. Acknowledging stakeholders' interests, the project manager will handle strategic liaison, while the construction manager will be responsible for day-to-day liaison and logistics. Both managers will be permanently based on-site, with the construction manager serving as the primary point of contact for concerns, issues, and complaints. A display board outside the site will provide key personnel contact details, and communication methods will include liaison meetings, progress photos, and organized site visits.

4.9 Complaints and Issue Resolution:

Prompt logging, assessment, and appropriate addressing of received complaints will be a priority. Proactive liaison with relevant parties throughout construction periods is integral to project success. Addressing key issues from the outset is crucial, fostering a positive working relationship and adopting an integrated team approach to resolve potential issues before they arise.

4.10 Efficient Management and Coordination:

Efficient management and coordination of deliveries are paramount for operational efficiency. Coordination efforts will be directed to prevent vehicle queuing, minimize disruption to traffic, and avoid conflicts with waste collection, other deliveries, and peak traffic hours. Scheduling large deliveries outside peak hours aims to reduce disruption, with careful consideration given to the possibility of out-of-hours deliveries and collections to facilitate the seamless continuation of construction activities.

4.11 Emergency Work:

In the event of spillages or incidents, steps will be taken to prevent environmental pollution. Measures include drain protection, absorbent granules for spills, and shutting off equipment. Full details of incidents and remedial actions will be provided to relevant authorities and recorded in the site environmental register.

4.12 Site Security:

The site will be secured with hoarding on all open sides. Hoardings include painted timber hoarding, external lighting, and safety signage. Site security, including monitored infrastructure systems like lighting and CCTV cameras, will be implemented when necessary. All personnel on site must have a valid Safe Pass card.

4.13 Delivery of Materials:

All deliveries will occur inside the site boundary.

4.14 Road Safety:

The construction site is structured to maintain a clear separation between vehicles and pedestrians. Gatemen are assigned to manage the interface during deliveries and road traffic. To minimize risks to the public, a designated crane off-loading area is situated within the site boundary. Critical considerations in traffic management encompass the segregation of pedestrians and vehicles, reduction of movements, ensuring optimal visibility, and the provision of explicit signs and instructions.

Phase two's construction access from the R617 will be installed to avoid construction travel through completed areas of the development, particularly phase 1. This will ensure a separation of construction and permanent user access until the construction works are completed.

4.15 People on Site:

Workers who operate vehicles, machinery, and attachments must be both physically fit and competent. Ongoing training is provided to drivers and operators, and the activities of visiting drivers are effectively managed. Trained and authorized personnel are designated to direct vehicle movements safely. Drivers are assisted with aids like mirrors, CCTV, and reversing alarms. Gatemen are appointed to control and manage vehicle manoeuvres on-site. Proper site lighting ensures good visibility, particularly in low-light conditions. Pedestrians on-site are required to wear high-visibility clothing for enhanced visibility to vehicle operators.

4.16 Signs and Instructions:

Ensuring comprehensive understanding of routes and traffic rules among all drivers and pedestrians on-site. Utilising standard road signs as deemed appropriate. Conducting induction training for drivers, workers, and visitors to guarantee competency and comprehension of safety measures.

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5 CEMP RESPONSIBILITIES- IMPLEMENATION

Management to the site is the responsibility of the contractor. The contractor must advance their tasks with care and diligence, overseeing the site's priorities in terms of safety and well-being for all construction activities. The appointed contractor of the works shall be responsible for ensuring full implementation of the CEMP.

The Contractor is obligated to adhere to all applicable statutory requirements, including but not limited to the 2005 Safety, Health and Welfare at Work Act, The Construction Regulations (SI 291 of 2013), the General Application Regulations (SI 299 of 2007), and any subsequent amendments.

The contractor is to ensure all staff have received site-specific safety induction training, ensure that a competent project supervisor/manager for the design process and construction stage are appointed, that a safety officer is appointed and a secure and maintained means of entry to and exit from the site is ensured.

The CEMP shall include details on the project organisation and responsibilities, project communication and co-ordination, analysis of potential impacts, environmental control measures, control of pollution, watercourses, construction management information construction scheduling, site traffic/deliveries, waste mitigation measures, air and noise control measures, sensitive receptors, invasive species, monitoring, and emergency procedures.

The highlighted measures require training, operational control, checking and corrective action and a complaints mechanism. The work's contract documentation will ensure that the contractor is obliged to comply with the actions set out in the CEMP and to demonstrate to the client how they intend to identify further environmental impacts and implement the detailed mechanisms for managing the impacts of works on site. All site works should be undertaken in compliance with the CEMP, reviewed during the construction process and include information on the review procedures.

Furthermore, the Contractor is required to adhere to all reasonable safety directives set by the Client, the Project Supervisor for the Design Process, and the Project Supervisor for the Construction Stage. A Preliminary Construction Management Plan (PCMP) prepared by DBFL Consulting Engineers, provided separately, has been examined in the development of this Outline Construction Environmental Management Plan (CEMP). Relevant portions have been extracted and included as needed in this outline.

5.1 Project Organisation and Responsibilities

Clockstrike Ltd. Project Manager is to be confirmed. Any changes to these details during the proposed works will be notified to Cork City Council and amended on-site. The following tables will need to be populated as part of the Project CEMP and placed in a prominent location, accessible to the general public and site staff.

Contractor Contacts

Position Title:	Name:	Phone:	Email:
Project Manager			
Construction Manager*			
Environmental Manager*			
Safety (PSCS)*			
Safety Officer*			
Site Emergency Number*			

**24-hour contact details required*

Employer Contacts

Organisation:	Position:	Name:	Phone:	Email:
Safety (PSDP)	Overall Project PSDP			
Employers Public Liaison Officer	Project Liaison Officer			
Employers Ecologist	Project Ecologist			
Employers Archaeologist	Project Archaeologist			

Third Party Contacts

Organisation:	Position:	Name:	Phone:	Email Address:
Inland Fisheries Ireland				
National Parks and Wildlife Service				
Environmental Protection Agency				
Local authority				
Department of the Environment, Heritage, and Local Government				
Health and Safety Authority				
Emergency Services				
Other, as appropriate.				

5.1.1 Client Project Manager Responsibilities:

- Review and approve the Contractor's CEMP together with any specialist procedures and identify the need for any improvements.
- Identify the competence of all contractors to be employed for the works.
- Review construction method statements with regard to environmental aspects and advise and agree any suggested improvements prior to works commencing.

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- Provide main contact between Contractor and Client's project team on environmental and construction issues.

On appointment, the Main Contractor is to confirm the names of Contracts Manager and Site Manager.

5.1.2 Contracts Manager Responsibilities:

- Develop and review the CEMP, construction method statements, work instructions and other specialist procedures.
- Ensure that all CIF Covid-19 Procedures are in place and being fully implemented.
- Identify competence requirements for all staff and ensure delivery of training to the project team.
- Review and agree method statements for all environmental aspects of project works prior to works starting with client Project Manager.
- Monitor construction activities to ensure that identified appropriate control measures are effective and ensure compliance with the CEMP.
- Act as a main point of contact between the regulatory authorities and the project on all issues.
- Provision of advice and liaison with subcontractors to ensure that risks are identified, and appropriate controls developed, which are identified within method statements.
- Assist with the development and undertaking of training for site staff.
- Liaison with the Client Project Manager.

5.1.3 Site Manager Responsibilities

- Assist the contract manager in developing and maintain the CEMP together with other documentation.
- Monitor construction works to ensure necessary control measures are in place and meet requirements of the CEMP.
- Monitor construction works to ensure all staff are complying with and implementing CIF Covid-19 procedures.
- Carry out weekly site inspections and complete inspection report identifying any actions required.
- Maintain training register and provide training where necessary.
- Assist in responding to complaints.
- In the event of an environmental incident, advise Contracts Manager and Client Project Manager immediately, confirm their instructions and ensure correct procedures are adhered to.
- Provide information on waste management/reduction procedures to relevant staff.
- Implementation and operation of environmental controls on site.
- Respond to any minor environmental incidents on site, such as spills.

Role	Responsibilities
Applicant	Clockstrike Ltd. 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.
Contractor	Contractors will be hired to carry out all works on site. Works carried out will be overseen by Clockstrike Ltd. and on a day-to-day basis by the site manager. All contractors on site are required to comply with all elements

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	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 toolbox 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 City 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.

Figure 5.1: Personnel: Roles and Responsibilities

5.2 Project Communication and Coordination

Periodic meetings will be held between the team members to discuss performance to date, the need for improvements (if any), results of inspections and any complaints received. Upcoming work operations will be reviewed in order to plan any necessary actions to mitigate risks and to disseminate information on best practice. If necessary, representatives of the Statutory Authorities may also be invited to attend such meetings, as and when required.

5.2.1 Operation Control

Site works will be checked against the CEMP requirements. Any mitigation measures that have been agreed with the Statutory Authorities, or are part of the planning conditions, will be put into place prior to the undertaking of the works for which they are required, and all relevant staff will be briefed accordingly. Method statements that are prepared for the works will be reviewed/approved by the Client Project Manager.

5.2.2 Checking and Corrective Action

Daily inspections of the site and the works will be undertaken to minimise the risk of environmental damage and to ensure compliance with the CEMP. Any environmental incidents are to be reported immediately to the Site Manager. The Contracts Manager will undertake weekly/fortnightly inspections as appropriate and complete an assessment of the

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project's performance with regard to the relevant standards/legislation and the contents of the CEMP. Following these inspections, the Manager will produce a report detailing the findings which will be provided to the Client Project Manager and reviewed at the fortnightly project meeting. The Client Project Manager will carry out weekly inspections of the works in addition to attending the fortnightly project meetings and will be present on site for certain key operations, e.g. decommissioning and removal of existing fuel tanks, installation of sheet piling for fuel/ attenuation tanks excavation and initial dewatering of same, installation of new fuel/attenuation tanks, air pressure testing of fuel tanks and lines, vacuum testing of tank/duct ground chambers, new service connections, review of building foundation ground, initial fuel delivery to new tanks, initial power up of site, etc.

5.2.3 Environmental Incidents / Complaints Procedure

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

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

5.2.4 Environmental Targets and Objectives

Targets:

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

Reporting Specific Objectives:

- Environmental incidences to be reported to Site Manager without delay.
- The following documentation will be reported to Cork City Council on a 4-weekly basis:
- Environmental incidents and nonconformities raised, including nature, status, corrective and preventive actions and potential for statutory intervention.

Proposed Residential Development - Phase 2

- Key environmental issues raised by others.
- Significant environmental incidents.
- Complaints and the current status of those complaints.
- Actions or interventions undertaken by enforcement organisations.

Site Specific Objectives:

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

6 CONSTRUCTION TRAFFIC

Integrating a variety of control measures and associated management activities aims to minimize the potential impacts of construction activities related to the development. The following initiatives will be put in place to prevent, reduce, and/or mitigate the expected impacts during the construction period:

The nominated Main Contractor is to be experienced in similar sized residential development scheme construction, with a history of completing all types of developments in different areas and have proven specialist capability in previous housing development projects.

Movement of vehicles to/from the site will be confined to the working hours permitted in the planning conditions. It is proposed to use the Station Road access to the site for inward and outward deliveries.

6.1 Construction Deliveries

Construction deliveries will take place through the entrance on Station Road, and subsequently via the new access onto the R617. The site operating hours will be from 08:00 to 18:00 Monday to Friday and 07:00 to 16:00 on Saturdays and all delivery vehicles entering and existing the site will do so during these hours. Should it be necessary to work outside these hours for some specific reason, the Area Engineer's office at Blarney will be consulted and appropriate permissions received.

6.2 Staff

It is proposed to provide an on-site compound for staff parking, area will be defined to ensure orderly parking within the site, ensure no construction parking occurs on the Station Road. The site operating hours will be from 08.00 to 19.00 Monday to Friday and 08.00 to 16.00 on Saturdays, therefore staff traffic arriving and leaving the site will be before /after rush hour peak traffic, both morning and evening.

6.3 Traffic Control Measures

The contractor shall ensure that all site hoardings shall in no way impinge on the current road widths to avoid potential 'bottlenecks' in the vicinity of the site and shall ensure access to owners' homes located west of site is maintained.

6.3.1 Hoarding erection process-

Hoardings will be painted timber, approximately 2.4m in height, with supports and appropriate anchoring (designed by a Temporary Works Engineer). External lighting and safety signage will be incorporated into the hoarding, including health and safety warnings at appropriate intervals.

6.3.2 Site deliveries

It is proposed that the gates to the site are set back 2.0m and will be 7.0m wide, formed in Heras fencing with 10.0m stretch of fencing either side of the entrance gate. This will facilitate safe marshalling and direction of delivery trucks at the entrance, to avoid disruption of traffic flows on the road and prevent traffic hazard. The entrance shall be located to allow for all vehicles leaving the site to have an adequate line of sight on exit. It is also proposed to erect a convex mirror on the opposite side of the carriageway to ensure all drivers a clear view of traffic coming from the west when exiting the site. We propose that all delivery checks for vehicles entering the site shall be carried out inside the hoarding gates. This will ensure the area outside the gates remains free at all times, other than during vehicle arrival/departure.

6.3.3 People on site

Ensuring the competency of all workers to operate on-site vehicles, machines, and attachments involves conducting checks during driver/operator recruitment or contractor hiring, providing comprehensive training for drivers and operators, and effectively managing the activities of visiting drivers.

6.3.4 Vehicle movement/ routing

Personnel responsible for directing vehicle movements will undergo training and authorisation. The following measures will be implemented for effective management of vehicle operations on site:

- Providing aids for drivers such as mirrors, CCTV cameras, or reversing alarms to enhance visibility around the vehicle.
- Appointing a gate attendant trained to control manoeuvres.
- Ensuring proper lighting on-site for visibility, especially in low-light conditions.
- Mandating pedestrians on-site to wear high-visibility clothing.

The completion of the Phase 2 "The Spine Road" will add a second connection from Phase 1 construction works. This proposed Phase 2 Spine Road will connect with the R617 along the southern boundary of the client's lands. This new entrance along with the existing access on the L2784 Station Road will be the main access points from the wider road network and will form the preferred haulage route to/from the site in agreement with Cork City Council. It is envisioned that the new Spine Road will form part of the construction traffic haul route for Phase 2.

The proposed haul routes are depicted in Figure 6.1. These suggested routes aim to reduce the impact on the adjoining road network by facilitating all construction traffic to navigate through predefined haul routes. This eliminates the ambiguity in arrival/departure traffic to the site which can cause delays. The finalisation of the proposed haul route will be subject to agreement with the Local Authority before the commencement of construction activities on-site.

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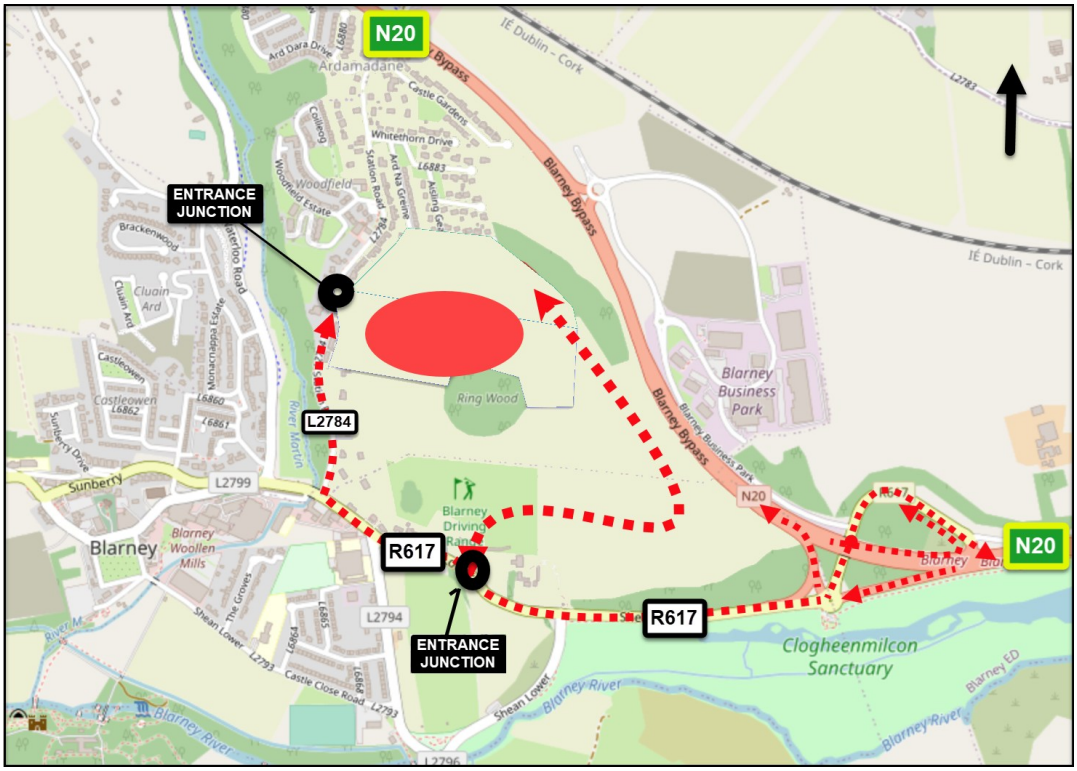


Figure 6.1 Proposed Construction Stage Haul Routes for large HGV'S

Every driver and pedestrian will undergo training to ensure a comprehensive understanding of the routes and traffic regulations on the site. Standard road signs will be strategically employed as necessary. Additionally, induction training programs will be instituted for drivers, workers, and visitors to guarantee a thorough grasp of the site's operational guidelines and safety measures.

6.4 Material Storage

Designated storage areas are chosen to avoid environmentally sensitive zones, with materials clearly labelled and segregated to prevent contamination. Spill prevention and response measures are implemented, including containment and runoff control. Waste is managed by segregating and following proper disposal procedures. Safety and security measures, such as access control and inventory tracking, are enforced. Materials are stored under conditions that protect them from environmental damage, with specific guidelines for hazardous substances. Handling and transportation procedures are established, and staff receive training on storage protocols and emergency response. Regular inspections and incident reporting ensure ongoing compliance and improvement, with emergency plans in place for potential incidents. Continuous feedback and updates to the CEMP ensure best practices are maintained and adapted as needed. All material shall be stored in the site storage area, within the hoarding.

6.5 Road Openings

For any road openings, a road opening licence will be applied for, in which the traffic management proposal specific to that opening will be outlined and agreed with the Council.

Access requirements for nearby property will be maintained by the contractor for the duration of the contract.

6.6 Road safety

The project team will organise the construction site so that vehicles and pedestrians are kept separate. Access gate personnel will ensure that the interface between deliveries and road traffic will be controlled at delivery gates. Effective management of transport operations throughout the construction process can and should prevent site vehicle incidents. By creating an off-loading area within the site boundary all offloading will be possible within the site boundary which will minimise any risk to the public.

Traffic management on site should:
- Keep pedestrians and vehicles apart
- Minimising vehicle movements
- People on site
- Turning vehicles
- Visibility
- Signs and instructions
- Adequate lighting at site entrance

Accidents can occur from groundworks to finishing works, and managers, workers, visitors to sites and members of the public can all be at risk. Inadequate planning and control are the root causes of many construction vehicle accidents.

Construction materials transported to the site by earthworks machinery and vehicles will strictly adhere to predetermined haul routes and designated delivery zones. This precautionary measure is in place to minimise the potential for rutting and degradation of both the topsoil layer and any uncovered subsoil layers.

Near the site entrances, facilities for vehicle wheel washing will be installed, and road sweeping will be carried out as needed to uphold the condition of the road network in the immediate vicinity of the site.

To address dry weather conditions, dust suppression measures, such as dampening down, will be applied as necessary to mitigate the release of dust.

The following measures will be implemented to maintain a safe distance between pedestrians and vehicles:

- Separate entry and exit gateways will be designated for pedestrians and vehicles, with a gate attendant facilitating safe access and egress.
- Pedestrian walkways will be established as firm, level, and well-drained pathways wherever feasible.
- Clearly signed and well-lit crossing points will be provided where walkways intersect with roadways, ensuring visibility for both drivers and pedestrians.
- Visibility will be ensured for drivers exiting onto public roads, allowing them to see in both directions along the footway.
- Walkways will be kept free of obstructions to maintain a clear passage.
- Barriers will be installed to create a separation between the roadway and walkway, enhancing safety on-site.

- Phase 2's construction access from the R617 will be installed to avoid construction travel from these phases through completed areas of the development. This will ensure a separation of construction and permanent user access until the construction works are completed.

6.7 Traffic Generation

According to Chapter 7 of the EIAR (Traffic & Transportation), a project of this magnitude would require a maximum of about 40 staff members on-site simultaneously, leading to a peak of 30 two-way vehicle trips during the peak morning and evening periods throughout the phased construction. While the number of staff and accompanying light goods vehicles may vary during construction, considering the worst-case scenario (40 staff members, 30 large goods vehicles) ensures a cautious evaluation of the resulting traffic and transportation impacts during the construction phase of the development.

After finishing the initial site clearance, Heavy Goods Vehicle (HGV) movements will be distributed evenly throughout the day during the construction period, ensuring minimal impact during peak traffic periods. Given the scale of this development, we anticipate that HGV two-way vehicle movements will not surpass 30no. vehicles per hour, even during the busiest phase of construction.

	Staff/ LGV	HGV	Total (vehs)
Daily	30	30	60
AM Peak Hour	16	8	24
Afternoon Peak	6	5	11
PM Peak Hour	22	8	30

*** These values are provisional only and are subject to further determination during construction works.

Figure 6.2: Estimated Trip generation – (Construction Stage)

After conducting an initial examination of the current survey data and proposed site levels, our estimate suggests that a large portion of this material will be reused on-site during the construction of Phase 01 construction phases and future development works on the applicant's land holdings. It is still anticipated that an additional quantum will require to be deposited across adjoining lands within the client's ownership. This is to reduce the need to transport excessive fill material off site.

The development has evaluated three foundation options. The transportation assessment in Chapter 7 of the EIAR has taken the worst-case scenario for the specified volume of material that needs removal, including HGV truckloads and the associated traffic impact. Additionally, the traffic impact assumed in the multiple construction phases overlapping is expected to be greater than that resulting from the most demanding of the three foundation options. This approach ensures a conservative and thorough evaluation of the traffic impacts arising from the site in question.

As part of the Outline Construction Traffic Management Plan (CTMP), a suitable control and routing strategy for Heavy Goods Vehicles (HGVs) can be implemented throughout the site works. The plan avoids the use of roads with weight/height restrictions for HGV routing during the construction phase. One notable advantage of the development site is its capacity

to fulfil all parking needs for construction traffic vehicles on-site, thereby mitigating the impact on the operational performance and safety of nearby public roads.

Given the site's proximity to the strategic road network, it is determined that construction traffic will not pose significant concerns or hinder the operational efficiency of the local road network and its adjacent junctions.

During the construction stage, there is an expected temporary negative impact on the traffic environment in the immediate vicinity of the site. This impact will stem from vehicle trips generated by Light Goods Vehicles (LGVs) used by construction staff and HGVs transporting materials to and from the site. However, earlier sections outline mitigation measures to be implemented during the construction stage. These measures aim to reduce the number of vehicle trips to and from the site, consequently minimizing the impact on the surrounding road environment.

6.8 Site Compound / Public Road

Parking spaces will be provided within the site compound reserved for staff, clients, and visitors. These will be located on the east side of the site along the road edge. No road parking or queuing along Station Road immediately outside the site will be permitted under any circumstance, with all construction delivery traffic to be managed on a just in time basis to reduce possibility of queueing.

It will be the responsibility of all vehicle owners/operators to inspect their vehicles before they leave the site for stones or other debris caught in their tyres. Unauthorised entry to site will not be permitted and will be managed by a security company for entire construction period.

7 POTENTIAL IMPACTS

The proposed development as mentioned will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations and the construction of roads, dwellings, and associated services.

7.1 Construction Impacts

This CEMP has been prepared to outline the construction and operation phase mitigation 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.

7.2 Designated Natura 2000 sites within 15km

The proposed development is not within a designated conservation site.

Runoff during site clearance, re-profiling, the construction, and operation of project elements could impact on nearby Clogheenmilcon Fen, with water quality or downstream/upstream impacts. 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.

The proposed works will be carried out based on best practice mitigation procedures, including the prevention of silt and or pollutants entering watercourses. In addition, the project will have to comply with SUDS, Cork City Council requirements and the provision of additional measures such as petrochemical interceptors and silt interception. Standard construction phase and operational controls in relation to onsite drainage will be in place and no impact is foreseen in relation to designated conservation sites.

7.3 Terrestrial Ecology

Common mammalian species.
Loss of habitat and habitat fragmentation may affect some common mammalian species om the site.
Amphibians and reptiles.
Frogs and reptiles were not observed on site - There are a no pond / wet ditch areas within the study area.
Bat Fauna.
A bat survey may be required to consider the impact of the removal of the existing trees in advance of construction stage works.

7.4 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 internal and perimeter landscaping matures.

Designated Conservation sites within 15km

Currently the site has no attenuation or SUDS control or petrochemical interception. The proposed development includes a sustainable drainage strategy with a number of hydrocarbon interceptors. This will improve the drainage network, particularly during extreme weather events as surface water from the site will be attenuated to greenfield runoff rates.

The development must comply with CCC requirements, and the Water Pollution Acts and measures will be in place to prevent downstream impacts. No significant impacts on designated sites are likely.

7.5 Climate Impact

Specific to the site, additional mitigation measures will be implemented during the construction phase of the proposed development to further reduce emissions. Notably, measures such as preventing on-site or delivery vehicles from idling their engines, even for short periods, and minimizing material waste due to poor timing or over-ordering will contribute to minimizing the embodied carbon footprint of the site.

8 ENVIRONMENTAL CONTROL MEASURES

8.1 Pre-commencement Activities

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

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

8.1.1 Pre-Commencement Surveys:

- Prior to any commencement of any physical works, a professional land surveyor shall be appointed to carry out demarcation works and establish benchmarks on site. Upon obtaining all the necessary survey data, a joint survey to check existing ground levels shall be carried out with the consulting engineers.
- Any detailed ground investigations required to support the site regrading process will be carried out and finalized.
- Any necessary pre-commencement environmental surveys to be completed.

8.1.2 Enabling Works:

- The initial enabling works, to be carried out in accordance with the Project specific CEMP (Traffic Management, control of surface water, storage of materials etc.), will be site clearance and excavation to facilitate construction access to the site.
- This will be followed by bulk excavation works in the area designated for the compound. These works will create a level platform, upon which the site compound and materials storage area will be constructed.

8.2 Construction Phase Traffic

In order to mitigate the impact of construction traffic during network peak hours, a Traffic Management Plan will be developed and implemented by the Contracts Manager.

This plan will focus on the:

- Co-ordination of car parking for construction personnel.
- Implementation of 'just in time' contract plant hire.
- Restriction of unnecessary vehicle movements during the day.
- Co-ordination of deliveries to arrive outside of peak times where appropriate.

The Proposed Construction Site Compound layout shows the construction-phase site arrangement, gated access point, and staff/client/visitor parking area. Additional details can be found in the Appendix of this Outline CEMP.

8.3 Air Quality

The CEMP will ensure that measures are in place to minimise dust during construction activities, during drier periods and earth works operations.

Primary dust-generating activities are categorized into four types, delineating their distinct potential impacts:

- Demolition
- Earthworks
- Construction
- Track out (involving the movement of heavy vehicles)

The Contractor shall take all necessary steps to control dust caused by construction traffic. This will
include measures such as:

- Strict speed limits will be enforced for vehicles on site roads, with a speed restriction of 20 kph on unsurfaced roads and as determined by site management on hard-surfaced roads.
- Roads with the potential for fugitive dust will be appropriately watered during dry and/or windy conditions.
- Hard surface roads will undergo regular sweeping to eliminate mud and aggregate materials, while unsurfaced roads will be restricted to essential site traffic.
- Vehicles transporting materials with dust potential (such as soil and aggregates) will be enclosed or covered with tarpaulin at all times to contain dust.
- Exiting site vehicles will use a wheel wash facility when appropriate before entering public roads.
- Public roads outside the site will undergo daily inspections for cleanliness and be cleaned as necessary.
- Debris, sediment, and grit captured by road sweeping vehicles will be disposed of off-site at a licensed facility.
- Material handling systems and site stockpiling will be designed to minimize exposure to wind, and water misting, or sprays will be utilized as needed for particularly dusty activities during dry or windy periods.
- Before entering public roads, trucks will undergo thorough inspections to ensure no potential for dust emissions, and they will be consistently covered with tarpaulin during the movement of materials both on and off-site.

These procedures are continuously monitored and assessed by the appointed contractor to ensure strict adherence.

8.4 Noise and Vibration

The Contractor shall comply with the general recommendations set out in the Code of Practice BS 5228: "Noise Control on Construction and Open Sites" together with the specific requirements described below.

The Contractor shall employ the "best practicable means" to minimise noise and vibration from the site and compound and shall pay particular attention to the selection of the most appropriate available plant to ensure that neighbourhood noise (as defined in BS 5228 Part I, Section 3) is kept to a minimum.

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

The noise level limits within the site shall be as per the figure below.

Assessment Category & Threshold Value Period (L_{Aeq})	Threshold Value, Decibels (dB)		
	Category A [A]	Category B [B]	Category C [C]
Night-Time (23:00 to 07:00hrs)	45	50	55
Evenings & Weekends [D]	55	60	65
Daytime (07:00 - 19:00) & Saturdays (07:00 - 13:00)	65	70	75

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category B values.

D) 19:00 - 23:00 weekdays, 13:00 - 23:00 Saturdays and 07:00 - 23:00 Sundays.

Figure 8.1: Noise Levels

Best practices encompass:

- Designating a site representative from the contractor specifically responsible for noise-related issues.
- Engaging a noise and vibration monitoring specialist for periodic independent assessments at random intervals and sensitive locations. The results will be compared with prescribed limits and background levels.
- Ensuring that all supplementary pneumatic percussive tools are equipped with mufflers or silencers recommended by the manufacturers. Additionally, whenever possible, utilizing dampened tools and accessories available in the market.

All compressors shall be "sound reduced" models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use. All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used. Machines in intermittent use shall be shut down in the intervening periods between work. All ancillary plant, such as generators and pumps, shall be positioned so as to cause minimum noise disturbance. If operating outside the normal working week, acoustic enclosures shall be provided.

The evaluation of construction noise and vibration adheres to the best practice guidelines outlined in BS 5228-1:2009+A1:2014, the Code of Practice for noise control on construction and open sites, and BS 5228-2:2009+A1:2014, the Code of Practice for vibration control on construction and open sites. It is anticipated that noise associated with the construction phase will not surpass the recommended limit values for noise-sensitive locations beyond 40

meters from the site boundary, resulting in no significant effects. Within the 40-meter range from the boundary, the potential exists for construction noise to exceed recommended limit values, depending on the specific construction activity. To address this, a range of standard and proven best practices for noise and vibration mitigation is proposed. Additionally, a comprehensive monitoring system for noise and vibration should be implemented on site by the contractor to ensure strict adherence to limit values.

8.5 Construction Vibration

Vibration during construction operations is unlikely to be perceptible at any of the nearby vibration sensitive receptors due to their distance from the site. It is however, recommended that construction vibration levels are subject to a watching brief with vibration measures taken as necessary.

8.6 Groundworks

Due to the topography on site an initial examination of the site's survey data and proposed site levels was undertaken to determine an estimate for the material to be excavated on site. It suggests that a quantum of material will need excavation across the granted phase 1 site and the Phase 2 LRD development site application. A quantum of this material will be reused on-site at identified deposition zones noted in Figure 8.2 during the construction phasing, with surplus excavated material to be deposited across adjoining lands within the client's ownership and remove off site where it is deemed necessary. Please refer to the LRD and EIAR reporting for further details.

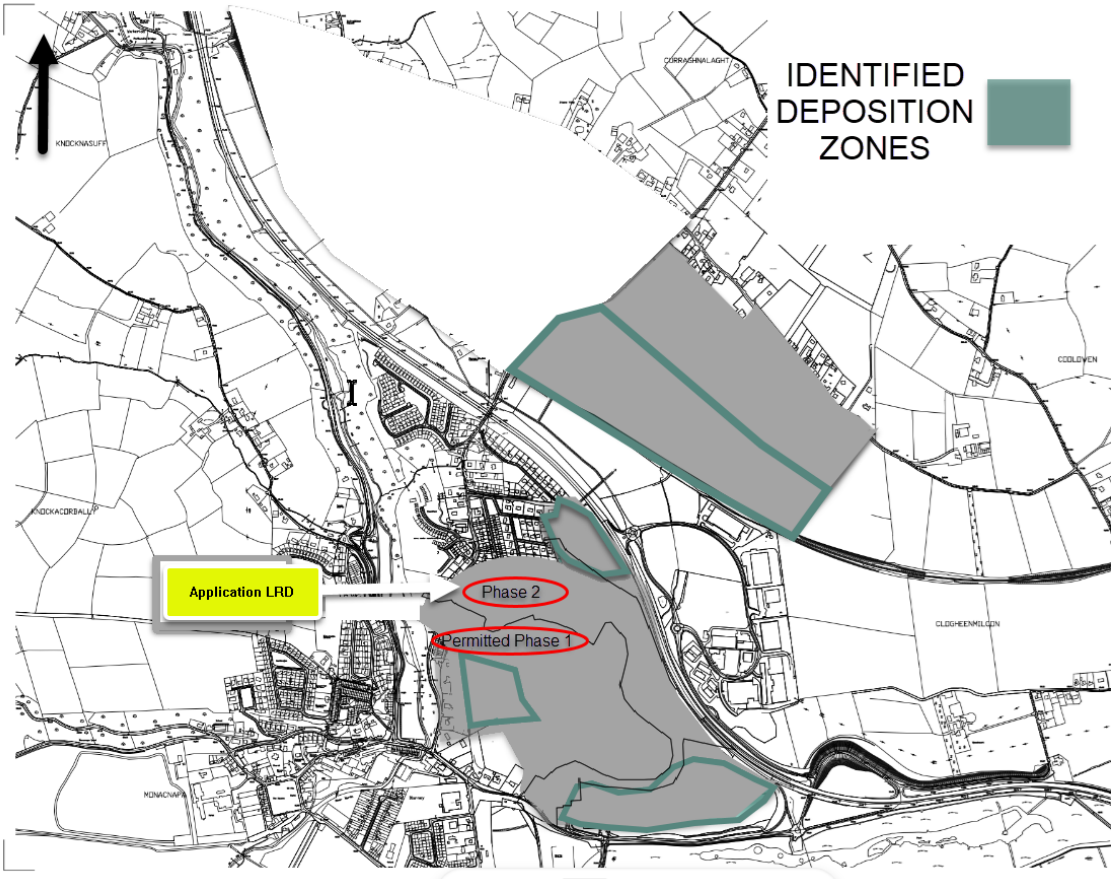


Figure 8.2 Potential Deposition Zones

8.6.1 Stripping of Topsoil

The removal of topsoil will be executed in a carefully controlled manner, strategically aligned with the proposed development staging. As mentioned earlier, a % of the stripped topsoil will be repurposed on-site, contributing to landscaping efforts. The remaining topsoil will either find reuse on another site as a by-product, adhering to Article 27 of the EC (Waste Directive) Regulations (2011), or be appropriately disposed of at a licensed waste receiving facility, contingent upon the facility operator's approval in line with their permit or license.

To minimise the exposure of subsoil, the extent of topsoil strip, at any given time, will be confined to the immediate vicinity of active work areas. Throughout the project's duration, topsoil stockpiles will be safeguarded and strategically positioned away from areas where runoff may potentially enter existing surface water drains.

Additionally, the placement of topsoil stockpiles will be carefully planned to avoid the need for double handling.

All ground disturbance activities across the development site should be overseen by a suitably qualified archaeologist if deemed necessary. If archaeological material is recorded during monitoring, further discussion/consultation with the DHLGH should be initiated to determine the appropriate treatment (i.e., preservation by record/preservation in situ) for any additional archaeological remains. If preservation by record/full archaeological excavation is recommended by the DHLGH, this work should be carried out under the appropriate license. Please refer to archaeology chapter of the EIAR reporting (Chapter 12) for further details.

8.6.2 Excavation of Subsoil Layers

The excavation of existing subsoil layers has been kept to a minimum by aligning the design of proposed ground floor levels and external pavement levels with the natural topography of the site. Likewise, efforts have been made to minimise basement excavation within the constraints imposed by structural and functional considerations.

Disturbed subsoil layers will be promptly stabilised through actions like backfilling service trenches, constructing road capping layers, applying concrete blinding to the basement excavation, establishing building foundations, and completing landscaping. The exposure duration of subsoil layers will be minimized to mitigate the impact of weather effects.

Similar to the precautions taken for stripped topsoil, stockpiles of excavated subsoil material will be safeguarded throughout the project. Notably, these subsoil stockpiles will be located separately from topsoil stockpiles.

To address sediment-laden surface water runoff, measures will be implemented, including the protection of surface water inlets and the use of earth bunding adjacent to open drainage ditches for effective capture and treatment.

8.6.3 Importation of fill

The site will necessitate the importation of fill material for road makeup. The materials brought onto the site for use as fill will consist of natural stones obtained from local quarries or substances that have received approval as by-products from the EPA, aligning with the EPA's criteria for identifying a material as a by-product under Article 27(1) of the European Communities (Waste Directive) Regulations, 2011.

There will be no large or extended holding of stockpiles for fill material on the site. At any given time, the amount of fill material present on the site will be restricted to what is required in the immediate vicinity of the active work area.

Where smaller stockpiles of fill are necessary, they will be appropriately safeguarded to prevent sediment-laden runoff from entering existing surface water drains. These stockpiles will also be strategically located to avoid the need for double handling.

8.6.4 Site Investigation

WAC testing and Suite E environmental testing has been carried out on site to determine the existing ground constituents and appropriateness for reuse on site.

8.7 Mitigation measures for construction stage in relation to landscape / visual impact and Biodiversity

A standard 2.4-meter-high construction hoarding will be installed to obstruct views of the construction activity on the site. Additionally, measures for tree protection will be implemented, including establishing no-dig construction zones, using tree protection fencing, and preserving existing hedgerows. Any trees designated for preservation will be left undisturbed and unharmed. This involves employing sheet piling as necessary to shield the roots of existing trees that might be impacted by the basement excavation.

The construction of tree protection fences will adhere to the guidelines outlined in BS 5837:2012, titled "Trees in Relation to Design, Demolition and Construction - Recommendations." A 'Construction Exclusion Zone' notice will be prominently displayed on the tree protection fencing at regular intervals.

It is emphasized that Tree Protection Zones should not be utilised for car parking, the storage of plant, equipment, or materials. Following construction, a reassessment of any retained trees will be conducted to ensure their continued well-being.

8.7.1 Mammals

To minimize disruption to mammals during construction, implement the following general avoidance measures:

- Restrict working hours to daylight hours whenever possible to reduce disturbance to nocturnal and crepuscular animals.
- Ensure the site is efficiently maintained, with the removal of unused materials that could pose harm to wildlife, such as wires or bags that animals may become entangled in.

- Cap pipes when not in use, especially during the night, to prevent animals from getting trapped. Cover excavations overnight or use strategically placed planks to allow animals to escape if covering is not feasible.
- Exercise caution during vegetation removal to account for nesting Hedgehogs in woodland areas. An Ecological Clerk of Works (ECoW) will visually inspect the site before machinery is introduced. The clearing will occur on a rotational basis, leaving scrubby patches for nesting habitat and cover for Hedgehogs. Dead wood and brash piles will be created in undisturbed areas.

8.7.2 Birds

Any clearance of trees and scrub will be conducted outside of the bird nesting season (March to September inclusive).

8.7.3 Planting

Planting of native species of trees and scrub will compensate for potential loss of foraging, commuting and nesting habitat with planting focused on providing cover and nesting opportunities for birds and the mixed planting of wildflowers to attract insects which is a food resource for many bird species.

8.7.4 Bats –Construction Lighting

To minimise light split and unintended effects of construction lighting, lighting will be switched off during non-working hours where possible and directional lighting will be used during the construction phase. This will minimise spill light into non construction site areas. The LED luminaire colour temperature and specification will be chosen to ensure sharp cut-off, lower intensity, and dimming capability. A warm white spectrum (2700 K – 3000 K) will be used to reduce the blue light component where feasible.

8.7.5 Invasive plants

No invasive plant species are expected on site. This outline CEMP notes that prior to clearance of vegetation and works commencement in the area, a site walk through by the contractor should be undertaken to ensure no invasive plants are within the works zone. If uncovered, a treatment and removal plan is to be developed by the contractor, with removal and appropriate disposal proposed to avoid further dispersal of the species. Removal can be done by either physical control or chemical control. If an extensive rhizome network is uncovered, physical removal is only practical on a limited scale. Extensive removal would necessitate chemical control as the preferred option.

8.8 Surface Water Protection Measures

Groundwater precautions will be taken prior to and during construction to ensure the protection of watercourse and groundwater against pollution. The measures would be informed by the site investigation works discussed above and also by CIRIA Report 532 'Control of Water Pollution from Construction Sites' and Environment Agency Pollution Prevention Guidelines, principally PPG6 - 'Working at Construction and Demolition Sites'.

To prevent spillages from contaminating the underlying soils, a secure bunded hardstand area will be designated for the storage of oils, fuels, paints, and other chemicals.

Refuelling and servicing of construction machinery will be conducted in a specific hardstand area, with off-site activities being pursued when on-site execution is not feasible.

A comprehensive response procedure will be established to address accidental pollution incidents, and spillage kits will be readily available. Construction staff will be well-acquainted with emergency procedures and the proper use of the equipment.

During the construction phase, the proposed monitoring measures concerning the soil and geological environment include:

- Strict adherence to the Construction Management Plan and Construction and Environment Management Plan, outlined separately and to be strictly followed.
- Ongoing construction monitoring, involving inspections of existing ground conditions upon completion of cuts to road formation level, assessment of stability in excavations, and similar activities.
- Regular inspections of fuel/oil storage areas.
- Monitoring the cleanliness of the adjacent road network, implementation of dust suppression measures, and the provision of vehicle wheel wash facilities.
- Oversight of the contractor's stockpile management, ensuring the protection of excavated material intended for reuse as fill and safeguarding soils designated for removal from the site against contamination.

Consideration of weather conditions and seasonal variations will inform the planning of topsoil stripping and excavations, aiming to minimize soil erosion.

To prevent spillages from contaminating the surrounding water and hydrogeological environments, all oils, fuels, paints, and chemicals will be stored in a secure bunded hardstand area. Construction machinery refuelling and servicing will be conducted in a designated hardstand area or, when not feasible on-site, off-site.

Concrete batching for in situ concrete pours will occur off-site, and concrete truck wash down will be conducted off-site at an authorized concrete batching plant, ensuring full compliance with relevant planning and environmental consents.

The construction compound will feature adequate staff welfare facilities, including foul drainage and a potable water supply. Foul drainage discharge from the construction compound will be transported off-site to a licensed facility until a connection to the public foul drainage network is established. The construction compound's potable water supply will be shielded from contamination during construction activities. The contractor will secure a temporary connection from the existing water supply network along adjoining public roads in accordance with Irish water requirements.

Proposed monitoring during the construction phase for the water and hydrogeological environment includes:

Implementation of measures outlined in the Preliminary Construction Management Plan and

- Outline Construction and Environment Management Plan.

- Inspection of fuel/oil storage areas.

- Monitoring the cleanliness of the adjacent road network, implementation of dust suppression, and vehicle wheel wash facilities.

- All storm water discharge during construction will be discharged through a mobile oil filter separator system, until construction programme has reached the stage when surface water discharges can be passed through the two specified newly installed hydrocarbon interceptors. From there the runoff will be directed into surface water attenuation chamber, which in turn will discharge via a hydro-brake flow control device into the River Martin. The surface water attenuation chamber is being constructed as a sealed unit to ensure ground water cannot seep into the chamber system and that runoff from the redeveloped site can be limited to discharge through a hydrobrake unit at 2.0-litres/sec maximum.

- A method statement will be implemented for the cleaning and maintenance of the proposed storm drainage system during the operational phase. The OMS will specify that the two oil interceptors are cleaned twice yearly, and that the attenuation system is dislodged biannually. Both frequencies can be increased if site operations deem it necessary.

- The proposed storm network will be inspected following construction to ensure that no cross connection between the proposed foul system and storm network exists.

- The storm drainage system will be cleaned appropriately, oil interceptors and foul chamber will be filled with clean cold water and entire system will be inspected prior to being fully commissioned i.e., before being allowed to accept any drainage runoff and/or discharge to the existing canal/stream network.

- A licenced waste management company will be retained to maintain the oil interceptors and the attenuation tank initial chamber: as necessary (at least annually).

- Detailed silt control methods will be required for works and it is expected that a variety of methods may be required i.e., silt curtains, dewatering, silt sumps etc.

9 NOISE & DUST

9.1 Air

The principal sources of air emissions, particularly suspended particulates likely to occur from the construction site include:

- Site clearance
- Movement of construction vehicles within the site during dry, windy weather
- Soiling of the public road with subsequent dust emissions caused by passing traffic and/or in dry, windy weather.
- Excavation and loading of trucks with C&D waste material.

Dust emissions arise when an operation causes particulate matter to become airborne. This airborne dust is then available to be carried downwind from the source. The amount of dust generated and emitted from a working site and the potential impact on surrounding areas varies according to the following:

- The type and quantity of material and working method.
- Climate/local meteorology and topography i.e., wind speed and direction.

Potential dust particles generated from site operations within the site are expected to comprise of large dust particulates (i.e., above 30 am). These site operations include excavation, temporary stockpiling, loading, and hauling of C&D waste. The maximum distance such particulars are likely to travel is 30 to 60m. Smaller dust particles will remain airborne for longer, thus dispersing over a wider area. Particulates below 30 µm0, and particularly below 10µm, typically only form a small fraction of dust emitted from construction sites.

The non-respirable dust fractions (i.e., >10µm) may generate a cumulative long-term impact if dust deposition outside the site boundary continues over a period of time without amelioration (e.g., Staining of vegetation). Short-term impacts may occur from visible dust clouds being generated during windy dry weather events.
Respirable dust fractions (i.e., <10µm) potentially affect respiratory and cardiovascular systems. Self No. 271 of 2002 relating to limit values for particulate matter in ambient air indicates a 24-hour percentile (90.4%) limit value of 50pg/m3 MM10.
In dry periods it is intended to dampen down site surfaces with sprayed water to reduce and minimise dust emissions.

The proposed site is well protected by substantial trees and mature vegetation on three sides and with the site hoarding in place is less likely to be affected by wind and gusts.

To avoid, reduce and /or mitigate potential dust nuisance, the contractor will introduce air emission abatement measures as follows:

- Any temporary site road will be dressed in crushed rock.
- In the event that the public road becomes soiled, the contractor will have available a sweeper to remove soil and debris promptly.
- Work areas will be sprayed during periods of dry weather in order to suppress dust migration from the site.

- Stockpiles will be sprayed during periods of dry weather to suppress dust migration from the site.
- A speed of 15kph will be enforced for all vehicles operating at the site.
- A wheel wash will be installed at the construction entrance for all delivery trucks.

9.2 Noise

The development site is in urban location with residences in its immediate vicinity along the western and northern boundaries of the site. Background noise levels are expected to be elevated during daytime hours. To the north and southwest of the site there are single residential dwellings.

The principal sources of noise emissions from the site will be:
General construction activity, including HGV traffic to/from the site, use power tools, etc.

To reduce the impact of noise, the following work practices will be employed:
Working hours will be from 08:00 to 19:00 Monday to Friday and 07:00 to 16:00 on Saturdays. There will be no construction activity on Sundays or Bank Holidays

All site plant will be maintained in good working order and exhausts will be fitted with mufflers and unnecessary revving of engines will be avoided.

A speed limit of 15kph will be enforced at the site.

10 ARCHAEOLOGY AND HERITAGE

Chapter 12 (Archaeological and Cultural Heritage) of the supporting EIAR for the site was prepared to identify the locations and characteristics of archaeological or cultural features, materials, or artifacts that might be affected by proposed development.

Pre-construction assessments, including a desktop study, walkover survey, geophysical survey, and test trench assessment, have already been executed at the site. No additional pre-construction assessment is proposed at this juncture.

All ground disturbance activities across the development site should be overseen by a suitably qualified archaeologist if deemed necessary. If archaeological material is recorded during monitoring, further discussion/consultation with the DHLGH should be initiated to determine the appropriate treatment (i.e., preservation by record/preservation in situ) for any additional archaeological remains. If preservation by record/full archaeological excavation is recommended by the DHLGH, this work should be carried out under the appropriate license.

Proposed Residential Development - Phase 2

11 POPULATION AND HUMAN HEALTH

The mitigation measures outlined in this outline CEMP also contribute positively to population and health considerations. A concise summary of these measures includes:

- Ensuring the continuous effectiveness of this CEMP throughout the project's duration.
- Establishing working hours from 08:00 to 19:00, Monday to Friday, and 07:00 to 16:00 on Saturdays (with flexibility subject to CCC special permission if needed outside these times).
- Coordinating arrivals and departures of heavy goods vehicles outside core times to align with school-related traffic.
- Implementing comprehensive Dust and Noise Management and Minimization plans throughout the construction phase.

11.1 Material Assets

Mitigation measures to safeguard the surrounding material assets include the following:

- Effective management of construction traffic and proper handling of waste/spoil stockpiles, detailed in Traffic Management and Road Safety.
- The appointed contractor will be required to develop and submit a Construction Management Plan for approval before commencing any work.

To protect the potable water networks and foul water sewers, the following measures will be implemented:

- Thorough testing of potable water networks and foul water sewers before connection.
- Identification and safeguarding of utilities/public services, with reinstatement post-construction.

12 PROPOSALS FOR MINIMISATION, REUSE AND RECYCLING OF (C&D) WASTE AND ENVIRONMENTAL MITIGATION MEASURES

Following the high-level strategy outlined will guarantee the effective management, minimization, reuse, recycling, recovery, and disposal of waste material generated throughout the demolition, excavation, and construction phases of the proposed development. Before commencement, the contractor(s) will need to refine/update the C&D WMP or submit an addendum to the local authority. This submission should outline specific measures for minimizing waste generation and resource consumption and include details about the proposed waste contractors and destinations for each waste stream. Accurate classification and segregation of excavated material are essential to identify any potentially contaminated materials. Proper handling is crucial to prevent negative impacts on workers, as well as water and soil environments, both on and off-site.

Disturbance of the existing ground shall be minimised insofar as practically possible. It is expected that there will be unavoidable construction waste, material surpluses and damaged materials that will need to be disposed of. The developers shall ensure that materials are ordered so that the quantity delivered, and the storage is not conducive to the creation of unnecessary waste.

Where possible, construction works will employ prefabrication techniques, thereby minimising onsite waste in favour of an optimised industrial process with established recycling and waste minimisation procedures, i.e., prefabricated steel, prefabricated roof truss, cut to size cladding, prefabricated glazing, etc.

Excavated soil/stone will be carefully stored in segregated piles on the site for subsequent re-use within the development where it is deemed acceptable by the site Engineer to do so. Any hydrocarbon-contaminated soils encountered during construction works shall be set aside on a strong durable polythene sheet for testing and classification prior to disposal to a licenced facility. Whilst it is not anticipated that there will be excess material, where excess should arise it will be removed from site to a suitable permitted C&D disposal site.

Concrete waste resulting will be minimal and will be generated from the construction process. This waste will be source segregated and will either be stored in piles for further processing on site or will be used as lean mix in conjunction with hard-core fill. Where necessary, it is intended that hardened concrete waste will be crushed on site with the resulting aggregate being used as part of the hard-core fill (not used as fill under the building or footpaths). As any concrete waste will be the excess left as a result of ordering, there will not be any reinforcing steel to recycle.

Masonry waste resulting from the construction process will be source segregated and will be stored in piles for further processing on site. It is intended that suitable masonry waste will be crushed on site with the resulting aggregate being used as part of the hard-core fill for the car parking and circulation footpath areas.

Wood material generated as part of the site clearance will be minimal and will be source segregated for subsequent separation and recovery at a remote facility.

12.1 Proposed Waste Management Options

On-site waste materials will be segregated, prioritizing practicality. If on-site segregation is not feasible for specific waste types, the waste management contractor will conduct off-site segregation. Skips and other receptacles will be made available to enable segregation at the source. The waste contractor will collect and transfer waste as receptacles are filled, adhering to the established procedures. Multiple permitted and licensed waste contractors in the Cork Region offer this service.

The figure below outlines common non-hazardous and hazardous waste streams produced during construction and demolition, along with their corresponding European Waste Code (EWC) classifications:

Waste Stream	EWC Classification
Concrete and Bricks	17 01 01
Wood	17 02 01
Metal	17 04 01
Soil and Stones	17 05 04
Plasterboard	17 08 02
Glass	17 09 04
Plastic	17 09 01
Insulation Materials	17 06 04
Bituminous Mixtures	17 03 01
Paints and Varnishes	08 01 11*
Asbestos-containing Materials	17 06 05

Figure 12.1 Waste Materials Categorisation

*Note: Specific hazardous waste codes may apply based on the composition of paints and varnishes.

12.2 Non-Hazardous Wastes

During the construction phase, various waste materials such as glass, concrete, masonry, tiles, ceramics, plasterboard, timber, steel, and tarmac will be generated. The classification of these materials as either non-hazardous or hazardous will be determined using best practice guidelines. Additionally, the classification will adhere to the Waste Acceptance Criteria outlined in accordance with the European Communities (EC) Council Decision 2003/33/EC, which provides criteria for the acceptance of waste at landfills.

12.3 Hazardous Wastes

To explore opportunities for reuse, nearby sites in need of clean fill material will be contacted. If any material is to be repurposed on another site as a by-product rather than waste, it will be done in accordance with Article 27 of the EC (Waste Directive) Regulations (2011), and EPA approval will be obtained before the material is moved.

These measures guarantee that waste generated during the construction phase aligns with the provisions of the Waste Management Act 1996, as amended, associated Regulations, the Litter Pollution Act 1997, and the EMR Waste Management Plan (2015-2021). They aim to achieve optimal levels of waste reduction, reuse, recycling, and recovery, promoting sustainable resource consumption.

Hazardous waste which may be encountered on site/include:

- Waste oils or fuels
- Soils contaminated with waste oils or fuels.
- Soils contaminated with septic tank runoff.
- Used aerosol containers.

Hazardous wastes will be kept from other C&D waste materials in order to avoid further contamination and will be stored on site in suitable receptacles for subsequent separation and disposal at a suitable permitted remote facility. Other C&D waste materials will be collected in receptacles with other mixed C&D waste materials for subsequent separation and disposal at a remote facility. Packaging will be source separated for recycling and return to the suppliers.

Excavation soil and C&D waste derived aggregates are considered suitable for certain on-site construction applications.

Any waste materials resulting from excavation work that cannot be reused on site will have to be moved off site. It is intended to engage specialist waste service contractors, who will possess the requisite authorisations, for the collection and movement of waste off-site, and to bring the material to a facility which currently holds a Waste Permit. Accordingly, it may be necessary to arrange some of the following waste authorisations specifically for the project:

12.4 Segregation of waste on site.

The C&D WSA will have skips and receptacles for all recyclable wastes. The appointed waste contractor will collect and transfer the recyclable wastes as receptacles are filled. The non-recyclable waste will be transferred by an authorised waste collector to an appropriate facility. There are numerous waste contractors in the Cork region who carry out this operation.

A successful C&D Waste Management Plan is largely dependent on how readily it can be integrated into normal site operations by the person responsible. It is recognised that the plan should not be obstructive to site operations and the construction programme by placing the responsibility of construction waste management with the Manager. All reuse, recycling, wastage, and necessary disposal can be monitored as close to the source as possible. An Environmental Representative from each Works Sub-Contractor will also be nominated responsible for all waste management in their own operations. In this way, it is possible to identify where the greatest material waste occurs, with a view to implementing better management, both in this and future projects.

The site Construction Manager will be designated as the Responsible Person and have overall responsibility for the implementation of the on-site C&D WMP. The Responsible Person will be assigned the authority to instruct all site personnel to comply with the specific provisions of the plan. At the operational level, a nominated Environmental Representative from each

subcontractor company on site shall be assigned the direct responsibility to ensure that the discrete operations stated in the C&D WMP are performed on an on-going basis.

12.4.1 Bedrock, Block & Concrete

Most of the C&D waste will be clean, inert material and it is proposed to reuse it for construction purposes, where possible. If bedrock is encountered during excavations, it will either be crushed on-site and used for infill during construction or be removed from the site by appropriately permitted waste collectors. Rock recovered from the site will be recovered at an authorised site locally.

12.5 Subsoil/ Soil

Soil excavation will be undertaken for the construction of foundations, access roads, site services, and landscaping. Whenever feasible, excavated topsoil will be reused on-site for landscaping purposes. However, it is anticipated that any excess soil, beyond this application's on-site re-use capacity, will be reused by recovery and proper disposal/ deposition on the clients extended lands by considering on-site re-use options, forming part of the soil deposition strategy outline previously in section 8 of this report.

Following the Waste Management Hierarchy, which prioritizes waste management methods, the most preferred option is waste prevention and minimization, followed by reuse, recycling/recovery, energy recovery (e.g., incineration), and disposal as the least favoured option. While the bulk excavation phase is necessary for construction and doesn't allow for waste prevention, the beneficial reuse of inert natural material (Category A1) is explored. This material could potentially be repurposed as fill material in other construction projects or as engineering fill for waste-licensed sites. However, further testing may be required to ensure that the materials meet specific engineering standards for their intended end-use, considering factors such as sulphate content and pyrites.

Options to reuse clean and inert material on nearby sites will be explored in need of fill or capping material. If any material is considered for reuse on another site as a by-product rather than waste, the process will adhere to Article 27 of the European Communities (Waste Directive) Regulations 2011. Compliance with specific conditions and decisions related to by-products will be communicated to the Environmental Protection Agency (EPA) through their designated online notification form.

If the material is considered waste, its removal, reuse, recycling, recovery, or disposal will adhere to the Waste Management Acts 1996-2008, the Waste Management (Collection Permit) Regulations 2007 (as amended), and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). The necessity for a Certificate of Registration (COR), Waste Facility Permit, or Waste Licence at the receiving facility will depend on the volume of waste removed.

Importing soils/stones from another construction site as a by-product will also comply with Article 27. After exhausting beneficial reuse options, recycling, and recovery at waste-permitted/licensed sites will be explored. Disposal to landfill will be considered only if all reuse and recovery options are exhausted, and void capacity cannot be secured at appropriately permitted/licensed facilities.

Contaminated soil/subsoil will be stored separately, undergo testing, and be classified as non-hazardous or hazardous based on the EPA publication 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous' using approved classification method. The material will then be classified as clean, inert, non-hazardous, or hazardous following EC Council Decision 2003/33/EC.

The bulk of the materials generated will consist of topsoil and subsoil/stones resulting from site reprofiling for roads, footpaths, services, and basement excavation for construction. Calculations based on a 3D ground model of the existing site and the proposed development, considering the hectare development site, are outlined below:

Earthworks	Cut	Fill	Dlff
	(m3)	(m3)	(m3)
Phase 1	45000	11000	34000
Phase 2	72000	18000	54000
Phase: Spine Road	28000	52000	-24000
	145000	81000	64000

*** These values are provisional only and are subject to further determination during construction works.

Figure 12.2 Preliminary Planning Cut & Fill Calculation

The figure illustrates that the majority of the excavation will consist of inert topsoil and subsoil/stones. This excavation is necessary for the construction and installation of roads and services, as well as land reprofiling to accommodate these elements and future construction of dwellings (subject to future planning applications).

12.5.1 Plastic

As plastic is now considered a highly recyclable material, much of the plastic generated during construction will be diverted from landfill and recycled. The plastic will be segregated at source and kept as clean as possible and stored in a dedicated skip.

12.5.2 Timber

There will be timber waste generated from the construction work as off-cuts, or damaged pieces of timber. Timber that is uncontaminated (i.e., free from paints, preservatives, glues, etc.) will all be recycled. It will be collected on-site in a designated area, and collected by a timber recycling company, or a recycling company that will pass it on to a timber recycling company. Such companies shred the timber and use it in energy recovery or for manufacture of wood products or for landscaping woodchips, etc.

12.5.3 Scrap Metal

Steel is highly recyclable material and there are numerous companies that will accept waste steel and other scrap metals, (Cork Metals). A segregated skip will be available for steel/ metal storage o-site pending recycling.

12.5.4 Cardboard packaging

Cardboard packaging can be also can also be recycled. Cardboard will be flattened and placed in a covered skip to prevent it getting wet.

12.5.5 Plasterboard

Waste gypsum can be recycled into plaster new plasterboard. Ask it will be provided for the separate collection of waste plasterboard and collected as necessary.

12.5.6 Tracking and documentation procedures for on-site waste

The waste manager will maintain a copy of all waste collection permits. If waste (soil and stone) is being accepted on site, a waste docket must be issued to the collector. If the waste is being transported to another site, a copy of the waste permit or EPA waste licence for that site must be provided to the waste manager. If the waste is being shipped abroad, a copy of the trans frontier shipping TFS document must be obtained in Cork City Council as this is the relevant authority on behalf of all authorities in Ireland and kept on site along with details of Final Destination (permits, licenses, etc). As well as a waste collection dockets, receipts from the final destination of the material will be kept as part of the on-site waste management records. All information will be entered in the waste management system to be retained outside maintained on site.

12.5.7 Disposal of C&D waste

There will be a general skip or receptacle for C&D waste not suitable for reuse or recovery. This skip will include general waste, wet waste, mixed food waste and food packaging, contaminated cardboard, contaminated plastic, etc. Workers on site will be encouraged to recycle as much municipal waste as possible, i.e., cardboard, plastic, metal, and glass. Prior to removal the municipal waste receptacle will be examined by the four person or a member of his or her team to determine if recyclable materials have been placed in there. If this is the case effort will be made to determine the cause of the waste not being segregated correctly.

Ringwood Phase 2	323	units
	1	PCC
C & D waste/ material	Quantity (tonne)	
Soil and stone	3209	
Concrete	535	
Masonry	214	
Wood	214	
Packaging	21	
Hazardous Material (Asphalt and lead flashing)	0	
Other Waste Materials (Windows, Doors, Fittings, Pipes and Electrical Wiring	107	
Total	4300	

*** These values are provisional only and are subject to further determination during construction works.

Figure 12.3 C&D Material Waste Estimate Schedule -Ringwood Development Phase 02

Proposed Residential Development - Phase 2

13 WASTE AUDITING

Clockstrike Ltd. or their appointed Site Operator will be responsible for the development and the implementation of the Construction and Environmental Management Plan and monitoring/mitigation measures. The implementation and monitoring (including Roles & Responsibilities) associated with the proposed development will be detailed in the final CEMP.

The C&D Waste Manager shall arrange for full details of all movements and the treatment of construction and demolition waste discards to be recorded during the construction stage of the Project. Each consignment of C&D waste taken from the site will be subject to documentation, which will ensure full traceability of the material to the final destination to the requirements and its disposal /recycling.

Details of the inputs of materials to the construction site and the outputs of wastage arising from the Project will be investigated and recorded in a Waste Audit, which will identify the amount, nature and composition of the waste generated on site. The Waste Audit will examine the manner in which the waste is produced and will provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction and demolition waste. Measured waste quantities will be used to quantify the costs of management and disposal in a Waste Audit Report, which will also record lessons learned from these experiences that can be applied to future projects.

The total cost of C&D waste management will be measured and will take account of the purchase cost of materials (including imported soil), handling costs, storage costs, transportation costs, revenue from sales, disposals, etc.

A separate table is required to be compiled in respect of each waste material replacing 'Material' with the relevant item. Final details of the quantities and types of C&D waste arising from the Project will be forwarded to Cork City Council Environmental Department.

13.1 Assignment of Responsibilities

A Site Manager shall be designated as the C&D Waste Manager and have overall responsibility for the implementation of the Project C&D Waste Management. The manager will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan. At the operational level, Senior Foreperson from the main contractor and Site Foreperson from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Project C&D Waste Management Plan are performed on an on-going basis.

13.2 Training

Copies of the project C&D Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Project C&D Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation, selective material reuse techniques apply, each member of staff will be given instructions on how to comply with the Project C&D Waste Management Plan. Posters will be designed to reinforce

the key messages within the Project C&D Waste Management Plan and be displayed prominently for the benefit of site staff.

Proposed Residential Development - Phase 2

14 EMERGENCY PLANNING AND RESPONSE

An Integrated Management System will govern operations at the site, encompassing essential procedures for effective emergency planning and response. The procedures include emergency preparedness and response, incident investigation, nonconformity, corrective action, preventative action, spillage containment, and a pollution prevention program.

Acknowledging that unforeseen circumstances may arise, making it impractical to adhere to all requirements, the appointed project team commits to providing as much notice as possible to authorities and neighbours during emergency situations. Examples of such situations include the erection or removal of cranes and hoists or special crane lifts. In case of spillages or other incidents, measures will be promptly implemented to prevent environmental pollution. These include safeguarding drains, using absorbent materials for spill cleanup, and shutting down equipment generating noise or dust.

Upon resolution of the situation, comprehensive details about the incident and the remedial actions taken will be communicated to the corporation, relevant authorities, and documented in the site environmental register. This register will serve as a comprehensive record of regulatory, legal, and other requirements, summarizing environmental legislation and other pertinent details related to the project.

14.1 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. 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.

15 CONCLUSIONS

The outline CEMP has been submitted to show Clockstrike Ltd. commitment to Environmental Management of the proposed site. The environmental principles outlined in the Plan, should 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.

This Outline CEMP describes the environmental measures that are specific to the subject development, and which are to be implemented for the proposed development at Ringwood, Blarney, Cork. As noted earlier in the report, this is a 'live' document which will be continuously updated throughout the construction stage where relevant. The roles and responsibilities of the applicant, the site manager, project manager and site workers have been described and how these controls are to be implemented. Regular updating and monitoring throughout the construction period will be required to ensure potential risks are adequately managed throughout the construction works.

Proposed Residential Development - Phase 2

16 APPENDIX

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Proposed Residential Development - Phase 2

17 APPENDIX - PROPOSED CUMULATIVE /FUTURE SEQUENTIAL CONSTRUCTION PHASING

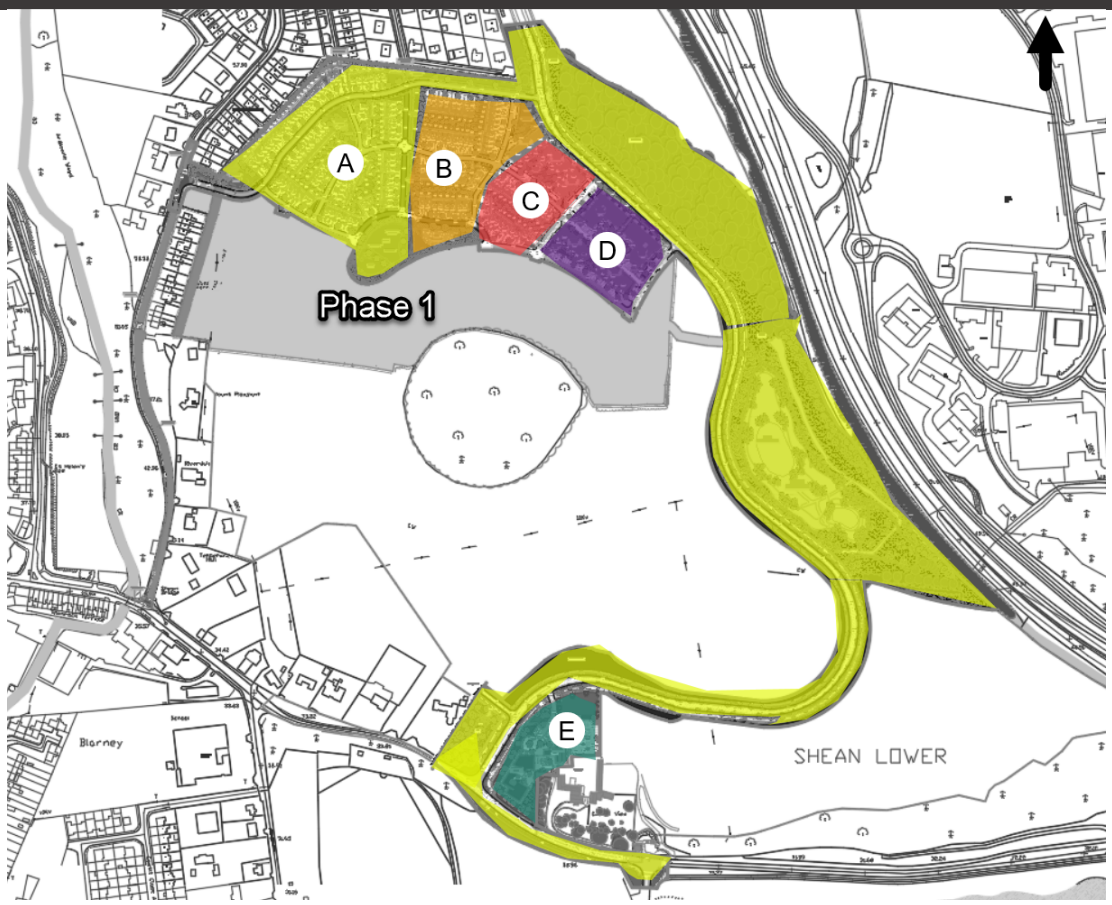


Figure 17.1Cumulative Sequential Construction Phasing

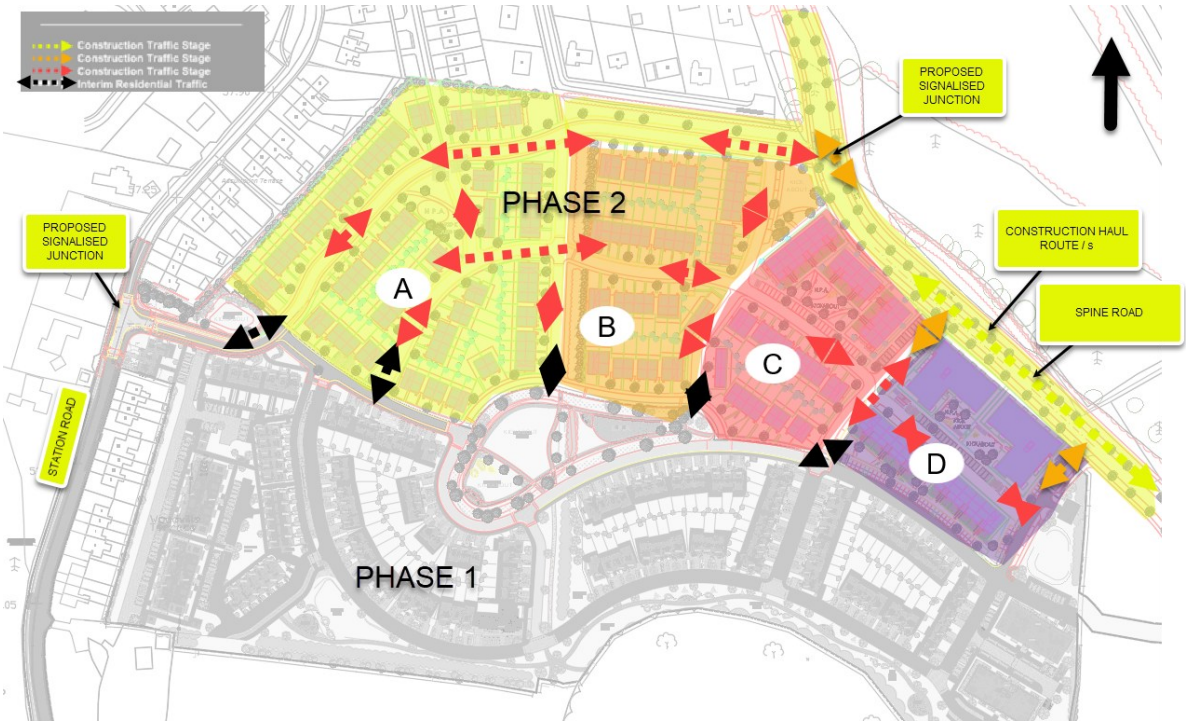


Figure 17.2Cumulative Sequential Construction Phasing

Construction Phasing to be confirmed by the appointed site contractor.

17.1 Construction compound



Figure 17.3 Construction traffic/ site compound details

18 APPENDIX - INSPECTION AND MONITORING

Monitoring and inspecting construction activities enhance the efficacy of environmental mitigation by identifying and addressing potential issues at an early stage. The following figure/table outlines the monitoring program to be implemented:

	Residential Development	
	Constraint	Monitoring requirements
	Planning	All planning conditions set by the planning authority must be adhered to, and monitoring requirements will be observed as specified in the conditions.
	Landscape and Biodiversity	Throughout the construction period, an Arborist and Landscape Architect may be engaged. All activities related to the removal, retention, protection, and tree surgery will be subject to approval and monitoring by a qualified Arborist. Monitoring encompasses various aspects of the project, including tree-related activities, topsoil stripping, disturbance by site works, excavation, alteration of ground levels, landscape build-up, profiling, cultivation, finishing, implementation, proposed planting and seeding, and a 12-month aftercare period to ensure landscape measures are established.
	Land and Soils	Ongoing monitoring will be conducted for planting and seeding to ensure successful establishment and proper management. Retained trees will undergo regular reviews to ensure their successful integration into the new landscape.
	Archaeology	Archaeological monitoring of all groundworks associated with the development might be advised, allowing for the full excavation of any archaeologically significant material uncovered. If archaeological features or material are discovered during construction phase monitoring, it is essential to halt machine work in the immediate area, enabling the archaeologist to assess, excavate, and record any such material.This work should be carried out under license in accordance with Section 26 of the National Monuments Acts 1930 – 2014, with a method statement agreed upon in advance with the National Monuments Service (Department of Culture, Heritage, and the Gaeltacht) and the National Museum of Ireland. If the removal of vegetative root systems is necessary, it is recommended that this work be supervised by a suitably qualified archaeologist.
	Water	Monitoring activities will be conducted in accordance with the specifications outlined in any discharge license linked to the construction phase of the project.
	Waste	Documentation and monitoring of the import and export of materials will be conducted in compliance with the Waste Management Act.
	Biodiversity	If trees are to be felled on the site, this is to be undertaken with the supervision of an experienced ecologist. If bats are discovered during the process, all activities must halt, and a derogation license from the National Parks and Wildlife Service will need to be sought.
	Dust	Dust monitoring during the construction phase will be implemented to verify the effectiveness of dust mitigation measures in controlling emissions. The Bergerhoff method or equivalent best practice will be employed for dust monitoring.
	Noise and Vibration	The contractor will conduct noise monitoring in accordance with planning conditions, undertaking regular assessments at locations representative of the nearest sensitive area to ensure compliance with relevant criteria.
	Traffic	A designated site liaison officer will serve as the primary contact for the planning authority and the local community, addressing any issues related to construction traffic and activities on the public road promptly and efficiently. Site personnel will be stationed at the site access junction on the public road during operational hours, ensuring the safe movement of construction vehicles to and from the site and facilitating the passage of road users along Station Road in proximity to the site access or any ongoing construction works on the adjoining roadway.
	Dust/Litter	Routine inspections for cleanliness will be conducted on public roads outside the site, at least on a daily basis, with prompt cleaning as required. A road sweeper will be deployed to maintain the cleanliness of public roads and ensure they are free of debris.

Figure 18.1 Typical site construction monitoring programme

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