



**For: Limerick City & Limerick City &
County Council**
City Hall, Merchants Quay, Limerick

Adare Public Realm Upgrade Project 2026



Outline Construction Environmental Management Plan

January 2026



MHL & Associates Ltd.
Consulting Engineers

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Table of Contents

1	Non-Technical Summary.....	3
2	Introduction.....	5
2.1	Outline Description	5
2.2	CEMP Description	5
2.3	Site Description.....	6
2.4	Proposed Scheme.....	7
3	Legislation and Regulations.....	9
4	NIS Screening information	10
4.1	Existing services.....	10
4.2	Works on N21	10
4.3	Stream works (not proposed)	10
4.4	Existing Outfall.....	10
4.5	Existing sewer network/ combined/ gullies.	11
4.6	Construction Stage runoff control	11
4.7	Proposed SUDS.....	11
4.8	Sensitive Receptors	13
4.9	Flood zone.....	13
5	CEMP Specifics	15
5.1	Third Party Consultation	15
6	Project Organisation And Responsibilities.....	16
6.1	Client Project Manager Responsibilities:	16
6.2	Contracts Manager Responsibilities:	17
6.3	Site Manager Responsibilities	17
7	Project Communication And Coordination.....	19
7.1	Operation Control.....	19
7.2	Checking and Corrective Action	19
7.3	Environmental Incidents / Complaints Procedure	19
7.4	Environmental Targets and Objectives	20
7.5	Liaison.....	20
8	Potential Impacts.....	22
8.1	Construction Impacts.....	22
8.2	Designated Natura 2000 sites	22
8.3	Terrestrial Ecology.....	22
8.4	Operational Impacts	23
9	Environmental Control Measures.....	24
9.1	Pre-Commencement Activities.....	24
9.2	Site Routes.....	24
9.2.1	Construction Phase Traffic	24
9.2.2	Spillage and Blow-off Control	25
9.3	Excavation.....	25
9.4	Stockpiling	25
9.5	Air Quality.....	26
9.6	Noise and Vibration	26
9.7	Construction Vibration.....	28
9.8	Tree Protection	28
9.9	Storage of Hazardous Materials.....	28
9.10	General.....	28
10	Control Of Watercourses, Groundwater	30
10.1	Water Management & Pollution	30
10.2	Surface Water Protection Measures during construction.....	31
10.3	Standard Construction Measures: Control of works	31
11	Construction Works	33
11.1	Phasing.....	33
12	Traffic.....	35
12.1	Construction Deliveries	35
12.2	Staff	35
12.3	Traffic Control Measures.....	36
12.4	Material Storage.....	36

12.5	Road Openings.....	36
12.6	Road Safety	36
12.7	Construction Delivery & Haul Routes.....	37
12.8	Delivery System.....	38
12.9	Emergency Work.....	38
12.10	Cranes, Lifting of Equipment, and Road Closures	38
12.11	Site Compound/Public Road.....	38
13	Emergency Procedures	39
14	Proposals For Minimisation, Reuse And Recycling Of (C&D) Waste And Environmental Control Measures	40
14.1	Hazardous Wastes.....	40
14.2	Segregation of waste on site.....	41
14.2.1	Bedrock, Block & Concrete.....	41
14.2.2	Soil/Subsoil.....	42
14.2.3	Plastic	42
14.2.4	Timber	42
14.2.5	Scrap Metal	42
14.2.6	Cardboard packaging	42
14.2.7	Plasterboard	42
14.2.8	Tracking and documentation procedures for on-site waste	42
14.2.9	Disposal of C&D waste	43
15	Waste Auditing	44
15.1	Assignment of Responsibilities	44
15.2	Training	44
16	Noise & Dust	45
16.1	Air.....	45
16.2	Noise.....	46
16.3	Invasive Species	46
17	Conclusions	47
17.1	Summary Of Construction Phase Control Measures	47
18	Appendix	50
19	Appendix A: Special Protection Areas – NPWS	51
20	Appendix B: Works List.....	52
21	Appendix C: Overview of Standard Measures.....	53
22	Appendix D: Existing Services (for grounding/ rerouting)	54

Table of Figures

Figure 2.1	Site Location & Surrounding Area.....	5
Figure 2.2	Site Location & Surrounding Area.....	6
Figure 2.3	Public Realm Improvements.....	8
Figure 4.1	Typical Excavation details	10
Figure 4.2	Proposed SUD locations (Main St.)	12
Figure 4.3	Sensitive Receptors/ Potential Impact	13
Figure 4.4	Flood zone/ project extents.....	14
Figure 6.1	Personnel: Roles and Responsibilities	18
Figure 19.1	Nearby SAC/ SPA/NHA (C: NPWS).....	51
Figure 20.1	Works list.....	52
Figure 21.1	Standard construction measures	53
Figure 22.1	Existing Overhead ESB	54
Figure 22.2	Typical existing overhead on site	54

Tables

Table 4.1	Typical SUDs design characteristics	11
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1 Non-Technical Summary

This Outline Construction Environmental Management Plan has been developed to outline commitments and standard practice measures to be implemented by for a proposed urban realm improvement works in Adare, Co. Limerick. The CEMP places a strong emphasis on protecting the nearby Special Area of Conservation (SAC) and the local ecology throughout the project. To achieve this, it outlines appropriate work practices in proximity to the SAC to prevent disturbance and ensure that construction activities do not encroach on these vital areas. Additionally, measures will be taken to manage noise, dust, and water / sediment runoff, thereby safeguarding local wildlife and plant life. By prioritising the protection of the SAC and local ecology, the Outline CEMP aims to enhance the village's public realm while preserving its natural heritage for future generations.

The CEMP provides a framework from which a more detailed CEMP will be developed by the appointed Contractor to implement the best practice measures described below.

The project is a standard urban realm enhancement that will be constructed in accordance with established best practices. It is important to highlight that the measures to be implemented during construction are not specific to this site; they would apply to any development of a similar scale. The works are limited to the area between two road carriageways and the construction practices are quite typical for this type of development.

The proposed urban improvements works in Adare encompass enhancement of the public space along the N21, Station Road and at the junction with Blackabbey Road. Key features include the construction of new footpaths/ widened pedestrian areas, modified traffic lane widths, and a reconfigured street car parking layout. The project aims to create inviting public realm areas with seating and implement tabletop, build-out constructions at strategic points. Additionally, new landscaped areas and trees will be introduced, alongside the implementation of SUDs areas and upgrades to connections to the existing storm sewer within the site extents in collaboration with Limerick City and County Council (LCCC) and Transport Infrastructure Ireland (TII). The plan includes the installation of new public lighting, the undergrounding of overhead services, a new bus stop, and updated signage throughout Main Street. Finally, modifications to the road and footpath layout at the junction of the N21 and Station Road will enhance accessibility, complemented by raised table buildouts on the approaches to the village.

This outline Construction Environmental Management Plan (CEMP) presents the overarching management strategy for the excavation and construction activities associated with the proposed development. The CEMP is designed to ensure that all construction operations are conducted in a planned, structured, and considerate manner, minimising the impact of the works on the local environment, residents, and nearby commercial activities. Given the unpredictable nature of construction, unforeseen events may arise on site, and the project team will proactively manage any changes, engaging with the relevant authorities as necessary. The CEMP should be regarded as a living document, which will be updated throughout the development process and in response to any changes in circumstances.

The Environmental considerations for this site are identified with reference to potential impacts associated with the construction project, focusing on key areas such as air quality, noise and vibration, water quality and drainage, biodiversity and habitats, and waste management. Dust suppression techniques will be employed to maintain air quality, while noise barriers will be installed to minimise disturbance to nearby residents. Additionally, effective temporary construction stage drainage systems will be established to protect water quality, and measures will be taken to safeguard local biodiversity and habitats. A robust waste management plan will also be in place to ensure that all materials are disposed of responsibly. By addressing these considerations, it is aimed to minimise the ecological footprint and promote sustainability throughout the project.

The proposed development will potentially be impacted by construction activities, but these impacts will be temporary and not significant. These are common impacts associated with the construction phase, which will be addressed through environmental operating plans developed by the on-site contractor in accordance with best practice guidelines. Post construction, the proposed development is expected to have a low environmental impact.

This plan must be read in conjunction with the ecological reporting that accompanies the application, prepared by JBA Consulting.

2 Introduction

2.1 Outline Description

MHL & Associates Ltd. has been instructed by Limerick City and County Council to prepare an Outline Construction Environmental Management Plan (CEMP) for Part VIII planning application of a proposed Adare Public Realm Upgrade Project in Adare Village, Co. Limerick.



Figure 2.1 Site Location & Surrounding Area

2.2 CEMP Description

The purpose of the Outline CEMP is to provide details of waste, proposals for noise reduction, proposals for dust reduction, invasive species management and details on how the proposed project is intending to use a comprehensive and integrated approach to protecting the Blackwater River and other sensitive receptors within the potential zone of influence. The following outline CEMP outlines the potential impacts of the development, details the sensitive receptors, environmental controls and the best practice/standard practice measures that will be implemented to minimise impacts. The outline CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project.

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

- Final planning permission granted and conditions.
- Compliance requirements of Limerick City & County Council.
- Requirements by other bodies including Inland Fisheries Ireland.
- Concerns raised by residents affected by the works.

This outline CEMP is to be submitted prior to commencement of the relevant phase on site and will be subject to periodic review as part of the management of the construction process.

The construction phase of the project needs to be carefully controlled so as not to have any significant impact on the environment and the local community. The Client and Construction Contractor both have key responsibilities to ensure that these environmental impacts are controlled adequately. Management during the construction works will be delivered through the development of an Outline Construction Environmental Management Plan (CEMP). The outline CEMP outlines generally details how the construction will be undertaken and managed in accordance with the planning, legislative requirements and construction industry best practice.

2.3 Site Description

The location of the proposed works is Adare Village (N21), Co. Limerick. The site of the proposed works is located in an urban area with a number of shops, pubs, restaurants located in the vicinity. Station Road serves as a link between the village centre and the hinterland to the north, while Blackabbey Road connects to the west. The N21 provides connectivity to Limerick City to the east and to Killarney/Tralee, Kerry to in the west. The proposed works are located within a 50km/h speed limit.

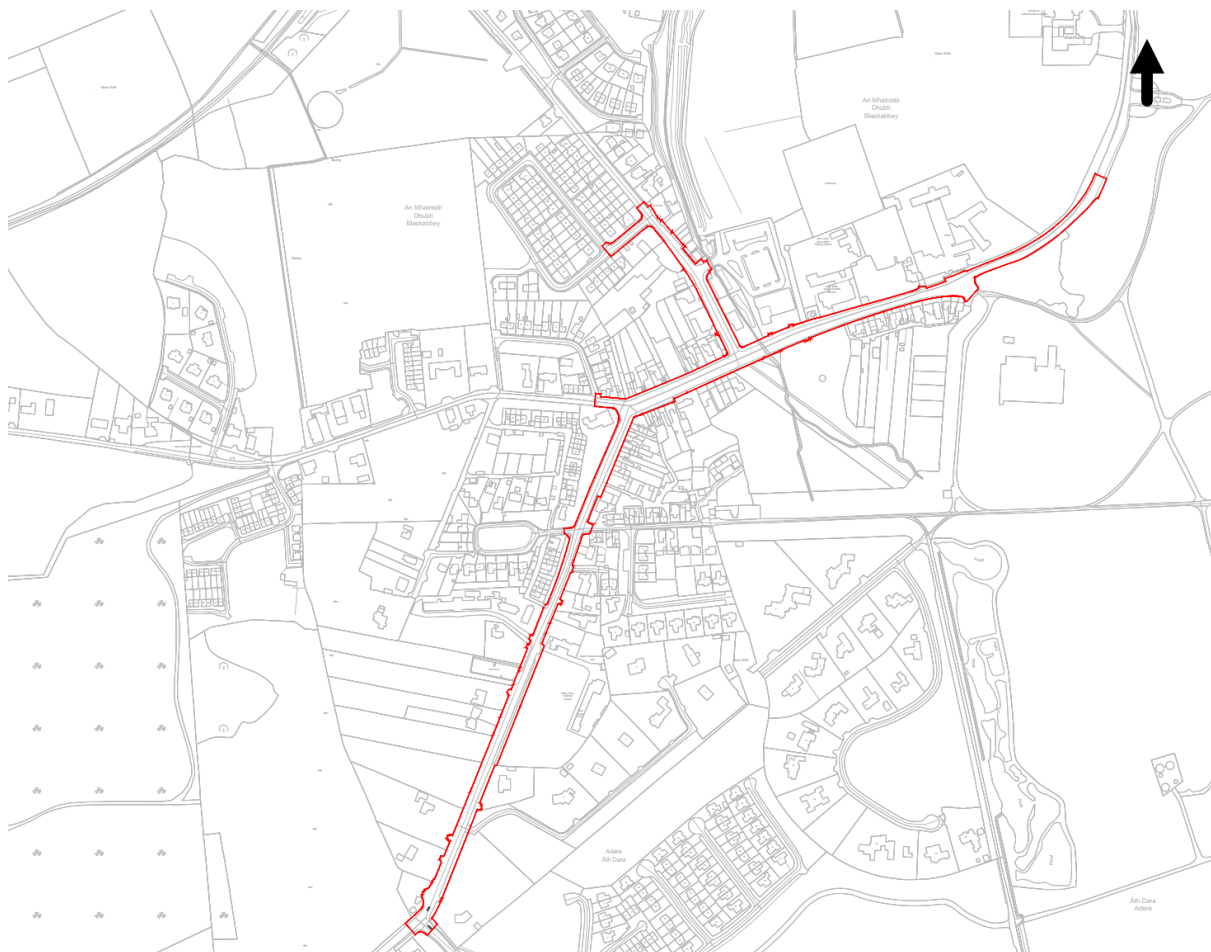


Figure 2.2 Site Location & Surrounding Area

Limerick City & County Council proposes to carry out works which include the provision of new footpaths, new controlled and uncontrolled pedestrian crossings, a new public lighting scheme, improved road markings, signage and carriageway resurfacing.

2.4 Proposed Scheme

The Adare, Co. Limerick infrastructure project includes upgrades such as new footpaths, road surfacing, parking layouts, and public spaces. Key improvements involve modifying the existing roundabout junction between Station Road/N22 to a priority junction, adding traffic-calming features, and incorporating Sustainable Urban Drainage Systems. The project will also enhance landscaping, seating, and public lighting, while moving overhead services underground. Public transport will be improved with updated bus stops and signage. Additionally, pedestrian safety will be boosted with new crossings and junction adjustments, and clearer signage will be added to the road approaches to the village.

The proposed scheme will have the following benefits:

- The provision of new footpaths with modified widths.
- Modified traffic lane widths along the N21 at Main Street, within Adare village with new road surfacing.
- Modified car parking along Main Street and Station Road.
- Provision of new public realm areas and seating.
- Development of new table top and build out constructions at particular points along Main Street.
- Provision of new landscaped areas and trees.
- Provision of new public lighting.
- Undergrounding of overhead services (telecom and ESB).
- Repositioned gully locations within the site extents.
- Provision of new signage on Main Street.

The location of the proposed road improvement works is set out on the Part VIII drawing pack submitted with this application. This report was prepared to accompany the planning pack for this proposed public realm works.

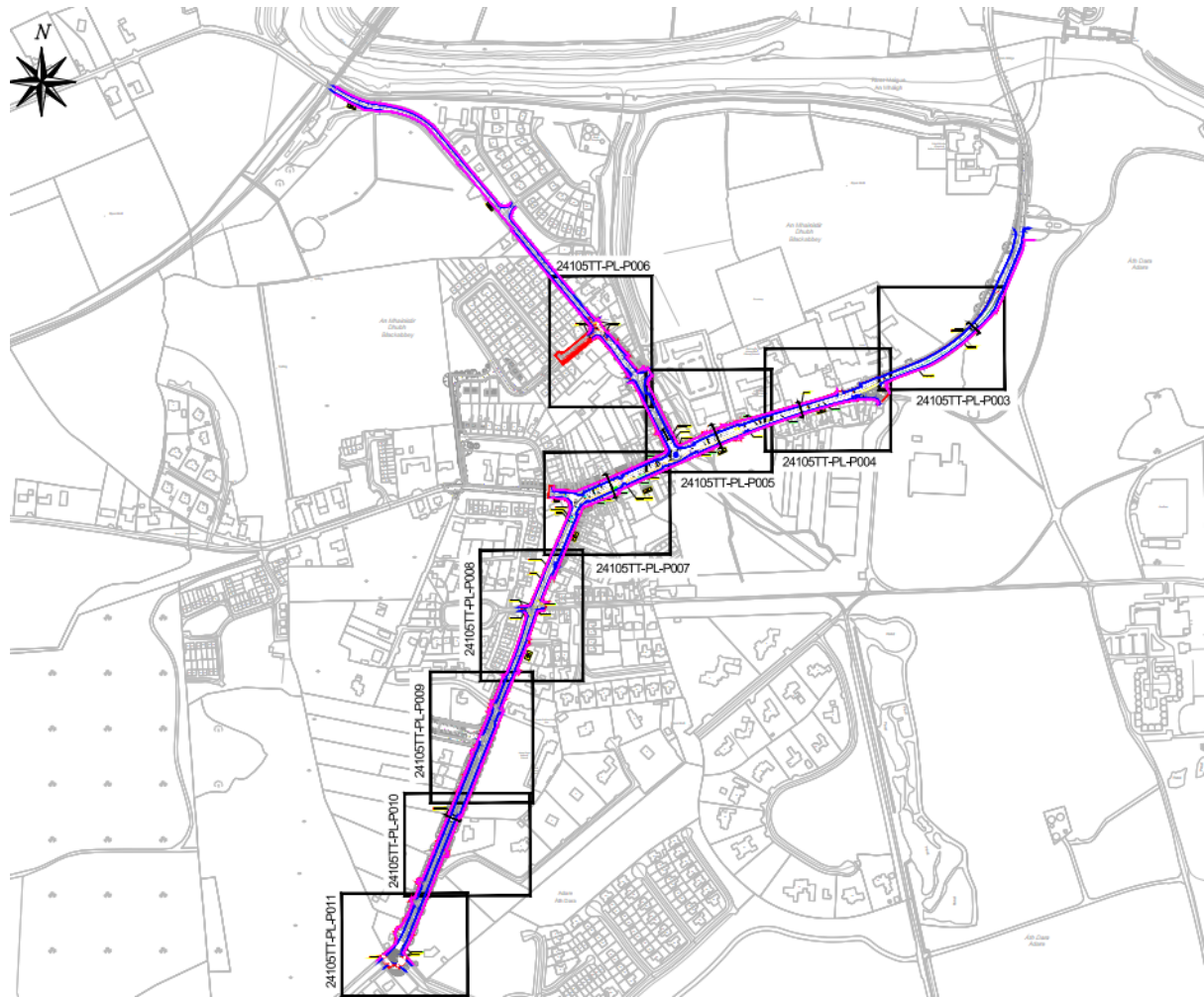


Figure 2.3 Public Realm Improvements

3 Legislation and Regulations

This outlines the relevant legislation and regulations (non exhaustive) that govern the construction project, ensuring compliance with all legal requirements. This includes adherence to local authority guidelines, which set forth specific standards and expectations for development within the area. By following this regulatory framework, it is the aim to promote the highest standards of safety and environmental stewardship, fostering a responsible approach to construction that respects both the community and the natural surroundings.

- Environmental Protection Agency Act 1992: This act establishes the framework for environmental protection and management in Ireland, regulating activities that may have an impact on the environment.
- Planning and Development Act 2000: This legislation governs land use planning and development in Ireland, mandating the integration of environmental considerations into the planning process.
- Waste Management Act 1996: This act provides the legal framework for waste management in Ireland, covering the proper handling, disposal, and recycling of construction waste.
- Water Pollution Act 1977: This legislation aims to prevent water pollution and safeguard water quality, requiring measures to manage runoff and discharges during construction activities.
- Habitats Directive (92/43/EEC): This European directive seeks to protect natural habitats and wild fauna and flora, necessitating assessments to ensure that construction activities do not negatively impact designated sites.
- Birds Directive (2009/147/EC): This directive protects wild birds and their habitats, requiring consideration of bird populations in construction planning.
- Health and Safety at Work Act 2005: While primarily focused on worker safety, this act also addresses environmental health and safety considerations during construction activities.
- DECLG Document 'Circular WPR 07/06 - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects', published by the Department of the Environment, Community and Local Government (DECLG) in July 2006.
- ProPG Document 'Planning & Noise – Professional Practical Guidance on Planning & Noise for New Residential Development', May 2017.
- CIRIA C532: Guidance for Consultants and Contractors on the Control of Water Pollution from Construction Sites.
- CIRIA C692: Environmental Good Practice on Site.
- BPGCS005: Oil Storage Guidelines.
- CIRIA C648: Control of Water Pollution from Linear Construction Projects.

4 NIS Screening information

The information below outlines key aspects of the project, including the existing services that may be impacted during construction, and measures for controlling runoff to prevent sediment and pollutants from entering water bodies.

Standard construction procedures/ practises proposed in this outline CEMP are measures that are deemed necessary for this project during construction stage. They are considered standard measures as per required regulations, following primarily best practice CIRIA C532 and CIRIA C692.

The following list particulars for the screening of the project:

4.1 Existing services

It is not expected to change to the existing buried services within the village except where potential rehabilitation/ connections may be required.

Type of Excavation	Typical Depths
Stormwater Drainage	Standard, installed at depths of 1.2 m to 2.5 m.
Electricity and Telecommunications	Standard, installed at depths 0.6 m to 1.0 m for underground cables, depending on local regulations and the type of cable.

Figure 4.1 Typical Excavation details

Existing overhead telecom and ESB are to be grounded throughout the works, with new public lighting ducting installed to run between new lighting column locations.

The proposed scheme is to include for the installation of new service utilities that will require trenching, specifically for ESB, telecom. This is proposed to occur for the extent of Main St. and at the T junction between Main St. and the Station Road.

An existing sewer runs the length of Main Street with gullies present on both sides of the carriageway's kerb line. Existing storm drainage system to be maintained and incorporated into the new urban realm layout. At detailed design stage a GPR survey and SUS survey will be carried out to determine status of this service and rehabilitation works that may be required.

Please refer to the best practice measures proposed during construction stage to ensure impact on water quality is not exacerbated above existing conditions.

4.2 Works on N21

Proposed works on the N21 are limited to the carriageway and third-party developments adjacent to the N21 are not included with the extents of this project. Please refer to the design layouts as submitted, which identifies the site extents.

4.3 Stream works (not proposed)

No instream works are proposed as part of this urban realm project.

4.4 Existing Outfall

The existing storm network is to be utilised for this project and the existing storm network outfall is to remain as insitu.

4.5 Existing sewer network/ combined/ gullies.

The existing sewer network within Main St. and N21 are to be remain as insitu, with possible minor rehabilitation works required pending condition surveys.

4.6 Construction Stage runoff control

The construction works agreed upon between the appointed contractor and LCCC. The area where construction activity is to occur will have appropriate measures in place to ensure effective management of stormwater and prevent disruption to the drainage system. Manhole and gully blocking will be carried out in areas where excavation and sediment runoff are anticipated. Ongoing monitoring and adaptive management strategies will address any unforeseen challenges, ensuring compliance with environmental regulations.

4.7 Proposed SUDS

Sustainable Urban Drainage proposals in the form of bioretention areas / swales and the application of impermeable paving areas within areas of the urban realm are proposed to align with Limerick SUDS specifications. Pre construction stage, site investigation will be carried out to determine existing water table levels and existing soil characteristics.

Table 4.1 Typical SUDs design characteristics

Feature	Description
Bioretention Areas	
Depth	Overall depth is usually between 300 to 900 mm.
Planting Soil Layer	Typically, around 300 to 450 mm deep.
Gravel Layer	May be around 300 to 600 mm deep to facilitate drainage.
Swales	
Depth	Generally designed to be 300 to 600 mm deep.
Design Variation	Depth can vary based on specific design and the amount of runoff to be managed.
Side Slopes	Typically gentle, with a ratio of 3:1 or 4:1 to prevent erosion and facilitate maintenance.

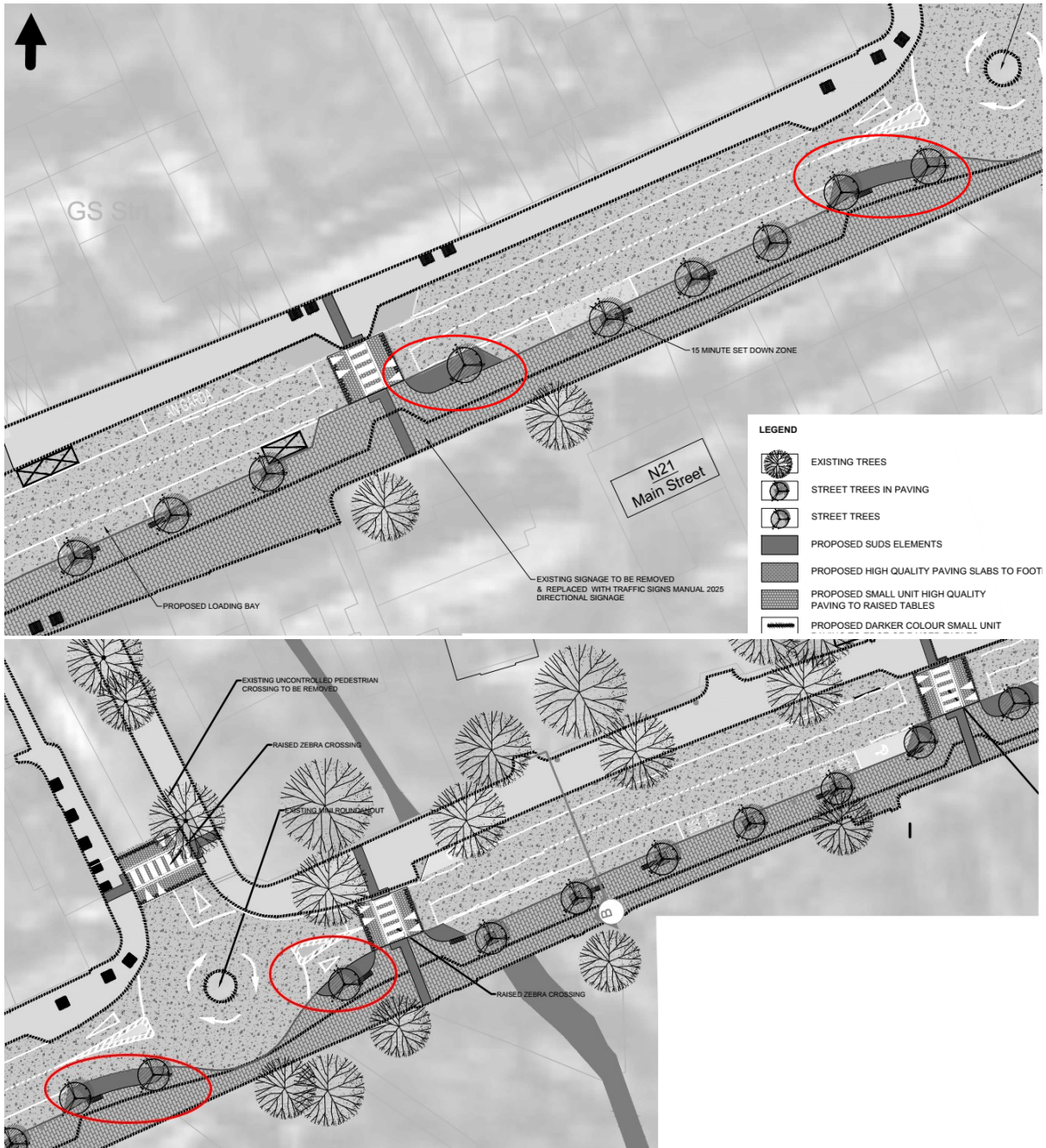


Figure 4.2 Proposed SUD locations (Main St.)

4.8 Sensitive Receptors

The sensitive receptors in the vicinity of the proposed development are summarised and the potential impact/controls are seen in Figure 4.3 below.

Sensitive Receptor	Location/ Potential Impact
Watercourses	Best practice measures should be put in place to avoid impacting this watercourse and biodiversity locations that are in close proximity to the works site. Onsite works will also involve ground clearance, re-profiling, groundworks and construction, with potential for runoff, dust, light and noise impacts that could impact on the biodiversity and/or water quality of the River. Existing drainage on site is connected to the River and care will need to be taken in relation to the removal of this during ground works.
Residents	As seen in Figure 1.1, the proposed works is in close proximity to residential properties and local businesses, with a number of houses also located across the N21 from the site that would be sensitive to noise, dust and lighting impacts. Best practice 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	On-site Fauna of conservation importance to be reviewed by Ecologist.
Bats	Best practice measures may include a pre-construction bat survey and measures to protect bats during site clearance, if individuals are found on site.

Figure 4.3 Sensitive Receptors/ Potential Impact

4.9 Flood zone

A section of the proposed development is located within a Flood Zone but due to the development type it is considered to be at low risk of flooding. Please refer to the flood study report developed by JBA for this Part VIII submission.

Low risk elements include:

- Realignment of footpaths and low stone wall to facilitate Bus Stop on the N21
- Realignment of kerb lines to improve safety of junctions of minor road and N21
- Installation of section of footpath to improve pedestrian connectivity
- Installation of planted edge to N21 to improve biodiversity and reduce traffic lane width to assist in slowing traffic in village centre.



Figure 4.4 Flood zone/ project extents

5 CEMP Specifics

The works 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 control 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.

5.1 Third Party Consultation

The design team have had extensive consultation with third party stakeholders as part of the pre planning for this Part VIII application.

Pre consultation with Transport Infrastructure Ireland (TII) has confirmed aspects of the works along the N21, inclusive of traffic calming, speed and road width particulars. A Road Safety Audit has been completed for the Part VIII scheme.

6 Project Organisation And Responsibilities

LCCC's Project Manager is to be confirmed. Any changes to these details during the proposed works will be notified to Limerick City and County 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 Environment, Climate and Communications				
Health and Safety Authority				
Emergency Services				
Other, as appropriate.				

6.1 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.

- 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.

6.2 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.

6.3 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	The applicant 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 LCCC and on a day-to-day basis by the site manager. All contractors on site are required to comply with all elements of the CEMP.
Site Manager	The Site Manager will be responsible for the day-to-day management of the site including compliance of all personnel with the CEMP, in addition to Health and Safety, Environmental and Quality elements. The Site Manager is responsible for ensuring that all people on-site are provided with relevant information concerning environmental protection. The Site Manager will be responsible for overseeing any environmental monitoring programmes, carrying out site environmental inspections and audits as necessary, and will co-ordinate the environmental monitoring programme. All records of incidents and environmental issues will be collated and maintained by the site manager. The Site Manager will also be responsible for reviewing all risk assessment method statements and ensuring an appropriate programme of 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, dissemination of waste reduction and waste management procedures to all relevant personnel on site.
Monitoring	Noise and Dust specialists will be appointed to oversee control measures on site and to act as liaison with the County Council.
All Staff and Subcontractors	All staff and subcontractors have the responsibility to comply with the CEMP including environmental procedures on site to minimise environmental impacts, avoid pollution on-site, including noise and dust, and to respond quickly and effectively to an incident to avoid or limit environmental impacts. All incidents must be reported to the Site Manager immediately.

Figure 6.1 Personnel: Roles and Responsibilities

7 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.

7.1 Operation Control

Site works will be checked against the CEMP requirements. Any 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.

7.2 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 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 infrastructure, installation of storm and UG services excavation and initial dewatering of same, installation new drainage systems, duct ground chambers, new service connections, assessment of nearby building foundations if necessary, initial energising of new UG and public lighting on site, etc.

7.3 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, following the incident/complaint. The form will also include any recommendations made to avoid re-occurrence of the incident.

- The Project Manager will be responsible for any corrective actions required as a result of the incident e.g., an investigative report, formulation of alternative construction methods or environmental sampling, and will 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.

7.4 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 Limerick City and County Council on a 4-weekly basis:
 - Environmental incidents and nonconformities raised, including nature, status, corrective and preventive actions and potential for statutory intervention.
 - Key environmental issues raised 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.

7.5 Liaison

Limerick City and County Council's relevant departments will be contacted and engaged prior to the commencement of the project. Where necessary, applications for Road Opening Licences will be submitted for approval from the local authority. It is recognised that various stakeholders will have an interest in this project throughout the duration of the contract, and our activities during the construction phase will directly impact the local environment, particularly concerning:

- Local residents and landowners
- Tenants and Residents Associations
- The Planning Authority
- Other Statutory Authorities
- Building Control
- Environmental Health
- Utilities Providers

The project manager will oversee strategic liaison, while the construction manager will handle day-to-day communication and logistics related to all construction activities. Both individuals will be permanently based on-site, with the construction manager serving as the first point of contact for any concerns, issues, or complaints. A display board will be erected outside the site, providing key personnel contact details, including addresses and telephone numbers.

Any complaints received will be logged, assessed, and addressed as promptly as possible. We will actively seek to engage with all stakeholders throughout the construction period. It is essential for the success of the project that key issues are addressed from the outset, fostering a positive working relationship and an integrated team approach to resolving potential challenges before they arise.

8 Potential Impacts

8.1 Construction Impacts

This CEMP has been prepared to outline the construction and operation phase control 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 site works. The construction of the proposed urban realm works 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 carriageways on site and the construction phases of the site works. The proposed site clearance and development of the new services will be temporary and consider minor. The treeline habitats along the roadside will remain and it is not proposed to divert or carry out instream works in the Glencorbry River.

8.2 Designated Natura 2000 sites

The proposed development is not within a designated conservation site. It should be noted that the proposed works are located in close proximity to Shannon SPA /SAC, the nearest Natura 2000 site. Please refer to the Appendix for further details.

Runoff during site clearance, re-profiling, the construction and operation of project elements could impact on the Estuary, with water quality or downstream/upstream impacts. Impacts on the Glencorbry River, Shannon Estuary would be seen as the primary vector for impacts on conservation sites. Ensuring water quality and compliance with Inland Fisheries Ireland procedures/ conditions and the Water Pollution Acts would be seen as the primary method of ensuring no significant impact on designated conservation sites.

The proposed works will be carried out based on best practice procedures, including the prevention of silt and or pollutants entering watercourses. In addition, the project will have to comply with SUDS, Limerick City & County 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.

8.3 Terrestrial Ecology

Common mammalian species.

No loss of habitat and habitat fragmentation is expected, with no additional fragmentation to occur as a result of this project as the footprint of the project is confined to built urban spaces e.g. the existing road footprint.

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.

The effects of the project on bat populations in the area are anticipated to be minimal, as the existing trees within the site boundaries will be preserved.

8.4 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 proposed landscaping features mature.

Designated Conservation sites within 15km

Currently the site has no attenuation or SUDS control or petrochemical interception. The proposed works includes a sustainable drainage strategy with a new hydrocarbon interceptor to be installed.

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

9 Environmental Control Measures

9.1 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 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.

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 excavating the local road 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, accessible from the main spine road, upon which the site compound and materials storage area will be constructed.

9.2 Site Routes

A speed limit of 15 km/h will be enforced for all on-site vehicles and delivery vehicles operating in the vicinity of the site to effectively control dust emissions.

Water bowsers will be deployed during dry weather throughout the construction period. Research has shown that surface watering can reduce dust emissions by up to 50%. The bower will operate during dry spells to ensure that unpaved areas remain moist, with the frequency of application adjusted based on soil type, weather conditions, and vehicular activity.

Hard surface roads will be regularly swept to remove mud and aggregate materials, while access to unsurfaced areas will be restricted to essential site traffic only.

9.2.1 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.

9.2.2 Spillage and Blow-off Control

To minimise spillage and blow-off of debris, aggregates, and fine materials onto public roads, the following measures will be implemented:

Vehicles transporting materials with the potential for dust emissions to off-site locations will be enclosed or covered at all times to prevent dust escape.

Hard surface site roads will be regularly swept to remove mud and aggregate materials, while access to unsurfaced roads will be restricted to essential site traffic only.

A power washing or wheel cleaning facility will be installed near the site compound for use by vehicles exiting the site, as needed.

Road sweepers will be employed to clean the site access route as required.

Road sweepers will dispose of the material collected from sweeping the road network at a licensed waste facility. The frequency of road sweeping operations, as well as the intervals for emptying and changing water in the road sweeper unit, may vary throughout the duration of the construction works. These variations will depend on factors such as weather conditions and the nature of the ongoing operations at any given time. By adapting the frequency of these activities, we aim to maintain a clean and safe environment for both site workers and the surrounding community.

9.3 Excavation

Excavation works during periods of high winds and dry weather can significantly contribute to dust generation. To mitigate this, the following measures will be implemented:

During dry and windy conditions, and when there is a risk of dust nuisance, watering will be carried out to ensure that the moisture content of the materials being moved is sufficient to enhance soil stability and suppress dust emissions.

Activities that are likely to generate dust emissions should be postponed during periods of very high winds (gales) until conditions improve.

Trucks transporting materials with the potential to generate dust will be enclosed or covered to prevent dust from escaping during transit to off-site locations.

Water sprays will be deployed in dust-sensitive areas, such as during concrete cutting, to further minimise dust emissions.

Public roads outside the site will be regularly inspected for cleanliness and will be cleaned as necessary to prevent dust accumulation.

The burning of materials on-site is prohibited.

9.4 Stockpiling

The location and moisture content of stockpiles are critical factors in determining their potential for dust emissions. To mitigate this risk, the following measures will be implemented:

- Overburden material will be stored in sheltered areas of the site to protect it from exposure to wind, thereby reducing the likelihood of dust generation.

- Regular watering of stockpiles will be conducted during dry and windy periods to maintain a sufficient moisture content, enhancing soil stability and effectively suppressing dust emissions.

9.5 Air Quality

No specific controls, other than adopting best construction practices are proposed with regard to air quality. The CEMP will ensure that measures are in place to minimise dust during construction activities, during drier periods and earth works operations.

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

- Wetting of compound / storage and general site areas within the site extents.
- Covering or dousing of any dry, imported or excavated material.
- Reducing the duration for stockpiling in fill materials.
- Use of a wheel-wash for construction traffic.

9.6 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.

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

The noise level limits within the Site shall be as per Table 6.1 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 6.1 Noise Levels

All compressors shall be “sound reduced” models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use. All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where 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 general best practice principles and methods will include the following measures:

- Avoiding unnecessary revving of engines and ensuring that equipment is switched off when not in use.
- Maintaining internal haul roads in good condition to reduce noise and dust.
- Minimising the drop heights of materials to limit noise during handling.
- Starting up plant machinery sequentially rather than simultaneously to reduce noise peaks.
- Enclosing noise sources where practical to minimise sound emissions.
- Keeping site equipment positioned away from sensitive receptors, such as adjacent houses along the northern and eastern boundaries of the site.
- Conducting regular maintenance of plant and equipment to ensure optimal performance and reduce noise levels.

By implementing these measures, we aim to minimise the environmental impact of construction activities and ensure a considerate approach to the surrounding community.

9.7 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.

9.8 Tree Protection

The principal standard applicable to tree protection during construction is BS 5837:2012, "Trees in relation to design, demolition and construction. Recommendations." The design and management recommendations set forth in BS 5837:2012 are regarded as best practice for the selection, retention, protection, and management of trees within the context of new developments.

In terms of tree protection, whether vertical or horizontal, all measures must comply with the recommendations outlined in Section 6 of BS 5837:2012. These measures must be fit for purpose and appropriate to the nature of the development and the anticipated daily activities on site. By adhering to these standards, we aim to safeguard the health and integrity of the retained trees throughout the construction phase.

9.9 Storage of Hazardous Materials

Chemical products, including sealants, adhesives, glues, epoxy resins, solvent-based paints, isocyanate-based foams/paints, mineral oil, and cement-based products, are utilised daily on construction sites. All such materials must be accompanied by Safety Data Sheets (SDS), and the Main Contractor is responsible for the proper use and storage of these materials on site, in accordance with the manufacturer's requirements and current health and safety legislation.

The Main Contractor must provide additional information regarding any proposed on-site fuel storage. If fuel storage is to occur on site, the Main Contractor is required to provide, operate, and maintain a proprietary self-contained and 110% self-bunded fuel storage system, which should include a pump, dispensing hose, removable fuel particle filter, and an automatic shut-off trigger.

Furthermore, a 120-litre oil/hydrocarbon spill kit and an oil spill drip tray must be kept readily available on site to address any accidental spills or leaks of fuel, oil, or hydraulic fluid from construction machinery or equipment. An example of such a kit can be sourced from Safety Care Ireland or a similar provider.

9.10 General

The main contractor will ensure that all loads of materials leaving the site are assessed and covered as necessary to minimise potential dust impacts during transportation. The transporting entity, whether a subcontractor or supplier, shall take all reasonable measures to prevent fugitive losses of waste or any other materials during transit to and from the site. This includes, but is not limited to:

- Covering all waste or materials with securely fastened tarpaulins or covers to prevent loss; and

- Using enclosed units to further prevent any loss.

Before commencing construction operations, the main contractor, in collaboration with the local authority (if requested), will conduct condition surveys of the road pavement and footpaths along access routes to the site. These surveys will document the baseline structural condition of the roads through video footage and photographic records.

Throughout the construction of the proposed development, ongoing visual inspections and monitoring of the haul roads will be carried out to record any damage caused by construction traffic, with the relevant local authority notified accordingly. The main contractor will arrange, at their own expense, for the repair of any such damage to an appropriate standard as required by the local authority, ensuring that disruption is minimised.

Upon completion of the construction works, the pre-construction surveys will be repeated, allowing for a comparison between the pre- and post-construction conditions. If any section of the road is identified as having been damaged or deteriorated due to construction traffic, it will be repaired to the pre-construction standard or better, as required by the local authority.

10 Control Of Watercourses, Groundwater

10.1 Water Management & Pollution

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'.

The proposed location is a sensitive site with the Shannon Estuary present north of the village; the SAC and SPA associated with the estuary and the projects the close connectivity to the Mague River.

This section outlines the measures to be implemented to manage sedimented water during construction activities, particularly in relation to the blocking of manholes to prevent the discharge of sediment-laden water into the Special Area of Conservation (SAC). The blocking of manholes is essential to protect the sensitive ecological environment during the construction process. All relevant manholes within the construction area will be identified and assessed for their potential to discharge sedimented water. To prevent any flow of water into the sewer system during construction, these manholes will be securely blocked using appropriate materials, such as temporary covers or plugs. The blocking will be carried out in accordance with best practices to ensure that it is watertight and does not allow any sediment or pollutants to escape. Regular inspections will be conducted to ensure that the manhole blocks remain intact throughout the construction period, and any signs of leakage or failure will be addressed immediately.

An assessment will also be conducted to determine the volume and quality of rainwater runoff expected during construction, evaluating the potential for sedimentation and contamination from construction activities. To control sediment, silt fences and sediment traps will be installed around the construction site to capture sediment before it can enter the drainage system. Designated areas will be established for the temporary storage of sediment-laden water, ensuring that it does not flow into the SAC. This may involve the use of temporary construction containment measures. Procedures will be established for the safe disposal of sedimented water collected in these temporary storage areas, which may include treating the water to remove contaminants before discharge or arranging for off-site disposal in accordance with environmental regulations if treatment is not feasible.

The connection of gullies to the drainage system will be strategically timed to occur at the end of the construction phase. This approach ensures that sedimented water is effectively managed and does not enter the drainage system prematurely. Prior to tying in the gullies, a thorough inspection will be conducted to ensure that all sediment control measures are in place and functioning effectively. The connection will be made in a manner that minimises disturbance to the surrounding environment and ensures that any potential sediment discharge is contained.

By implementing manhole blocking and careful timing the connection of gullies to the sewer system, the project seeks to safeguard the ecological integrity of the surrounding environment while adhering to environmental regulations. Ongoing monitoring and

adaptive management strategies will be utilised to tackle any unforeseen challenges that may emerge during the construction process.

10.2 Surface Water Protection Measures during construction

At the construction stage, a series of control measures will be introduced to effectively manage contaminants during the construction phases. These measures are to be agreed upon with the local authority council engineers, ensuring that they align with both regulatory requirements and the best practices for pollution prevention. The agreed-upon control measures will include the use of sediment control systems, spill containment, and runoff management, as well as regular maintenance during the project of the existing drainage infrastructure to prevent contamination. During the construction works, some of these control measures will be further refined and implemented based on the evolving site conditions, as per the agreement with the council engineers. This flexibility ensures that site-specific challenges can be addressed in real-time, while maintaining a high standard of environmental protection. The control measures will be fully compliant with the principles set out in environmental legislation, ensuring that the project aligns with environmental sustainability standards. This process of continuous engagement with the council engineers and adaptive management of control measures will facilitate effective pollutant control throughout the project.

A method statement for the cleaning and maintenance of the storm drainage system will be implemented during construction, specifying regular cleaning of oil interceptors and desludging of the system. Maintenance frequencies can be adjusted, if necessary, based on site conditions. These measures will ensure effective control of stormwater discharge and maintenance of the drainage system throughout the construction phase.

Protective barriers and reinforcements will safeguard existing sewers from construction activities, and all sewer connections will remain sealed, as insitu, unless otherwise required. A licenced waste management company will be retained to maintain the oil interceptors, as necessary.

10.3 Standard Construction Measures: Control of works

Effective control of pollution to watercourses is a critical aspect of water management and pollution prevention on construction sites. Measures will be implemented in line with the guidance provided in CIRIA Report C532, Control of Water Pollution from Construction Sites. These measures will ensure that all site activities are carried out in a manner that minimizes the risk of contamination to nearby watercourses and adheres to environmental regulations.

- Refuelling and maintenance of plant and equipment will be carried out in designated areas away from watercourses. Bunded areas and drip trays will be used to capture any accidental spills, and spill response kits will be readily available on-site to address incidents promptly. Furthermore, fuels, oils, and hazardous materials will be stored in secure, bunded areas, clearly marked with appropriate signage and secondary containment measures to prevent leaks or spills from entering water bodies.
- Concrete washout is a significant source of water pollution on construction sites. Designated washout areas will be established, lined with impermeable membranes to capture and contain wash water, preventing it from infiltrating the

ground or flowing into watercourses. Regular emptying and safe disposal of washout materials will be conducted in compliance with waste management regulations.

- Existing sewer systems will be carefully managed to prevent polluted water from entering watercourses. Particular attention will be given to controlling surface water runoff during periods of heavy rain to avoid overwhelming sediment controls or discharging untreated water into nearby streams and rivers.
- All site staff will be trained in water pollution prevention measures, as outlined in the site's Construction Environmental Management Plan (CEMP). Toolbox talks and method statement briefings will emphasise the importance of good practices and compliance with CIRIA guidelines. Inspections and audits will be carried out regularly to ensure that all water pollution control measures remain effective and that corrective actions are taken if any issues are identified. Designated parking for construction works to be decided prior to construction and should be located at least 50 metres from any watercourse.
- Oil spill kits will be available on-site, and appropriate staff will be trained in their use.
- All fuel tanks will be bunded.
- Chemicals used in construction will be properly stored and secured.
- A designated washdown area will be provided within the contractor's compound for cleaning equipment or plant, with safe disposal of any contaminated water.
- Pouring of cementitious materials will be carried out under relatively dry conditions.
- A wheel wash system will be installed to prevent excessive material from being transported onto surrounding roads, where it could be washed into road gullies and subsequently into watercourses.
- Road sweeping devices will be deployed as necessary to keep surrounding roads clean.

Any discharge of construction surface water or groundwater from excavations will pass through an appropriate filtration and sedimentation system, designed in accordance with CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.

All surface water management works will be undertaken with reference to the following guidelines:

- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors
- CIRIA C692: Environmental Good Practice on Site
- BPGCS005: Oil Storage Guidelines.
- CIRIA C648: Control of Water Pollution from Linear Construction Projects.

11 Construction Works

As the development is currently undergoing the planning application process, it is not possible to confirm specific dates against a timeline at this stage. However, the following key project milestones are anticipated:

- Receipt of a Grant of Planning Permission.
- Progression through the detailed design stage, including community consultations.
- Issuance of tender documents to shortlisted contractors, followed by a period for tender submissions, assessment, and contract award.
- Mobilisation of the contractor and preparation of the Contractor's Construction Management Plan (CMP)
- Site set-up, including the installation of perimeter hoarding to secure the area.
- Enabling works, such as utility diversions and preliminary site preparations.
- Construction of new footpaths and public realm areas.
- Installation of landscaping features, including trees and seating.
- Development of traffic management measures and modifications to road layouts.
- Completion of public lighting and signage installations.
- Finalisation of all surface water management systems.
- Completion of external landscaping works, including green spaces.
- Final handover of the project and certification of completed works.

11.1 Phasing

11.1.1.1 Phase 1(a)- Site Set Up

It will involve site clearance prior to site clearance, set up of a site office, hoarding to site perimeter to secure the construction site and erection of signage for site security and safety purposes. The provision of temporary welfare facilities will be provided close to the site office location. The welfare facilities will be portable type as there is no existing foul sewer network.

11.1.1.2 Phase 1(b)- Site Clearance

It will involve the decommissioning and clearance existing site services (OH/UG), trenching, etc.

11.1.1.3 Phase 2- Installation UG services, private connection, storm network gully connections, Site Services

This phase will also involve the installation of storm and UG infrastructure, modified footpaths and pedestrian crossing table tops, bus stop installation, private residential and commercial service connections.

A task specific method statement should be produced for these works. Detailed silt control methods will be required during these works. This will require effective control of silt, and it is expected that a variety of methods may be required i.e., silt curtains, dewatering, silt sumps etc

11.1.1.4 Phase 3- Site Surfacing

The works will include the laying of drainage channels, kerbing, footpaths and installation of manhole frames/covers, installation of asphalt surfacing, etc.

11.1.1.5 Phase 4-Site Marking, Signage/Bollard installation, Boundary Treatment

The works will include the installation of road markings, installation of site signage (safety, directional), installation of new site fencing and walls, planting of soft surfaces externally.

11.1.1.6 Phase 5-Site Commissioning and Snagging

The site is then ready for commissioning and fully opened to the public. Snagging of any outstanding issues will be presented and agreed to be remedied by the Contractor.

A more detailed programme will be developed by the Contractor once appointed and will be included in the updated version of this plan. Prior to commencing any on-site activities, the Contractor will ensure that all necessary statutory consents and licences are obtained, adhering to the required notice periods. These consents and licences will include:

- Construction notices to inform relevant authorities and stakeholders of the planned works.
- Permissions for connections to existing utilities and main sewer systems to facilitate the proposed urban realm works.

By securing these approvals in advance, the Contractor will help ensure a smooth and compliant start to the project, minimising potential delays and disruptions.

12 Traffic

Before the construction of the proposed development begins, the contractor will prepare a Traffic Management Plan (TMP) in collaboration with the Local Authorities and Emergency Services. This plan will be designed to mitigate any potential impacts of the construction activities on the surrounding road network, ensuring safe and efficient traffic flow during the construction phase. The TMP will outline strategies for managing vehicle access, pedestrian safety, and any necessary road closures or diversions, and will be subject to agreement with the relevant authorities to ensure compliance with local regulations and community needs.

As the site is situated in an urban/rural area near the N21, traffic is not envisaged as causing a nuisance to local residences. The nominated Main Contractor is to be experienced, with a history of completing all types of developments in different areas and have proven specialist capability in works similar to urban realm improvement 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 access points to the site as follows: N21 and Station Road. These will be used for inward and outward deliveries. In general, this road is approximately 8.0m wide with a level gradient (<1:50) in the vicinity of the village centre. This road is suitable to act as an access road to a construction site entrance. All exiting traffic will be routed to ensure minimal impact on passing mainline N21 traffic.

The Traffic Management Plan (TMP) will be treated as a "live document," continuously updated to reflect any changes to the construction programme or operations throughout the development. The TMP will adhere at all times to the requirements set forth in the following guidelines:

- Department of Transport Traffic Signs Manual 2010 – Chapter 8: Temporary Traffic Measures and Signs for Roadworks
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010)
- Any additional requirements specified in the Design Manual for Roads and Bridges (DMRB) and the Design Manual for Urban Roads and Streets (DMURS)

By ensuring compliance with these standards, the TMP will effectively manage traffic flow and enhance safety for both construction personnel and the public during the construction phase.

12.1 Construction Deliveries

All construction deliveries will take place through the entrance into the village from the N21. The site operating hours will be from 07.30 to 18.00 Monday to Friday and 07.30 to 14.00 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 will be consulted, and appropriate permissions received.

12.2 Staff

It is proposed to provide on-site compound for staff parking, area will be defined to ensure orderly parking along within the site, ensure no construction parking occurs on

the N21 Coast Road. The site operating hours will be from 07.30 to 18.00 Monday to Friday and 07.30 to 14.00 on Saturdays, therefore staff traffic arriving and leaving the site will be before /after rush hour peak traffic, both morning and evening.

12.3 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 owner's home located north of site is maintained.

Hoarding erection process-

The hoarding shall require the excavation of pits for the vertical uprights and the fixing of the hoarding from the outside. During this process we propose to provide traffic management with adequate signage from 300m on each side of the development site to ensure work can be carried out in a safe manner.

Site deliveries-

It is proposed that any gates to the site compound are set back and formed in Herras 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. 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 when exiting the site. It is proposed 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.

12.4 Material Storage

All material shall be stored in the site storage area, within the hoarding.

12.5 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.

12.6 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 prevented site vehicle incidents. By creating an off-loading area within the site boundary all offloading will be possible within the site boundary which will minimize any risk to the public.

Traffic management on site should:

- Keeping pedestrians and vehicles apart
- Control construction traffic onto Main St. from the N21
- Minimising vehicle movements
- People on site
- Control turning vehicles
- Visibility

- Signs and instructions
- Adequate lighting at site entrance

Accidents occur from groundwork's 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.

The Traffic Management Plan will include provisions for the following, as required:

- The contractor will be responsible for repairing any damage to existing roads or footpaths caused by their own contractors or suppliers during transport to and from the site.
- The contractor will ensure that all public and private roads and footpaths remain entirely free of excavated materials, debris, and rubbish. A vehicle wheel wash will be provided to thoroughly clean all wheels and wheel arches of vehicles as they leave the site.
- The contractor will confine activities to the area of the site occupied by the works and the builders' compound, as far as practicable, during each phase of the development.
- Defined haul routes to and from the site will be established and agreed upon with the Local Authority to ensure efficient traffic management.
- Properly designed and designated entrance and exit points for construction traffic will be utilised to minimise the impact on external traffic.
- Flagmen will be employed to control the entry and exit of construction vehicles from the site onto the public road, ensuring safe and orderly traffic flow.
- Existing fire hydrants will remain accessible at all times, as required, to ensure compliance with safety regulations.

12.7 Construction Delivery & Haul Routes

Identifying the most appropriate haul routes is essential for transporting materials to and from the site in an efficient and environmentally sensitive manner. Generally, deliveries and construction vehicle activities will be scheduled to occur outside of peak traffic hours to minimise disruption. Delivery times may vary depending on construction activities; for instance, during large concrete pours, there will be an increased demand for deliveries.

The construction programme, along with the contractor's management of deliveries, will focus on minimising the impact of construction traffic during peak hours by organising deliveries for times outside these periods.

Additionally, consideration will be given to sensitive factors such as the presence of local schools, ensuring that construction-related traffic is managed to avoid any potential impacts on students and the surrounding community.

During the construction phase, all Heavy Goods Vehicles (HGVs) will travel to and from Adare using the N21. This route has been selected as it is the shortest available to the nearby national carriageway, thereby minimising the impact of the development on Village during the construction period.

12.8 Delivery System

The key to efficient material and plant deliveries will be the effective management and coordination of all delivery activities. Deliveries will be carefully scheduled to prevent vehicle queuing, which could adversely affect traffic flow and cause disruption to local traffic. Timing will be coordinated to avoid conflicts with waste collection, other deliveries (particularly to adjacent properties), and peak rush hour traffic. During the project procurement phase, the Main Contractor will develop a delivery schedule that adopts a 'just in time' approach, minimising potential conflicts and reducing unnecessary storage and handling on-site.

All offloading operations will be conducted within the site boundary to ensure safety and minimise disruption to the surrounding area. By implementing these measures, we aim to facilitate smooth operations and maintain a positive relationship with the local community throughout the construction process.

12.9 Emergency Work

Should exceptionally working hours be necessary, advance notice will be provided to the appropriate authorities and neighbouring residents as much as possible. Such works may include the erection or removal of cranes and hoists, or special crane lifts.

In the event of spillages or other incidents, immediate steps will be taken to prevent environmental pollution. This may involve protecting drains with covers or booms, using absorbent granules in the case of oil or chemical spills, and turning off equipment or other sources of noise or dust.

Once the situation has been resolved, full details of the incident and the remedial actions taken will be recorded in the site environmental register. The site manager will be responsible for managing any emergency environmental issues that arise, ensuring that appropriate measures are implemented swiftly and effectively.

12.10 Cranes, Lifting of Equipment, and Road Closures

All lifting equipment and appliances will possess current test certificates and will be inspected prior to use to ensure safety and compliance. Trained banksmen will be present at all times to assist with crane operations.

Permits and approvals for any necessary road restrictions will be sought from Limerick City and County Council, and all relevant parties will be kept informed of progress throughout the process. The Main Contractor will also obtain approval from the Environmental Health Department and the Planning Authority to ensure that the planned activities are feasible within the agreed timelines.

12.11 Site Compound/Public Road

Parking spaces will be provided within the site compound reserved for staff, clients and visitors. No construction vehicle road parking or queuing along N21, Station Road, or Blackabbey 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.

13 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.

14 Proposals For Minimisation, Reuse And Recycling Of (C&D) Waste And Environmental Control Measures

C&D waste will arise on the project mainly from excavation activities. In accordance with the recommendations set out in the decommissioning report associated with the previous site occupation, disturbance of the existing ground shall be minimised as far 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 waster 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.

14.1 Hazardous Wastes

The management of hazardous waste will comply with current legislation.

- The Waste Management Acts (WMA) 1996 to 2005
- Waste Management Regulations 1998

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:

14.2 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 Limerick 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.

14.2.1 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.

14.2.2 Soil/Subsoil

Excess inert soils and sub-soils excavated that is not required for use as fill on site will be recovered off-site. Soil will only be removed by authorised waste collectors to an authorised site. Any fill material excavated at the site, which is deemed to be contaminated (i.e., non-hazardous or hazardous) will be stored separately to the inert material, sampled and tested, in order to appropriately classify the material as non-hazardous or hazardous in accordance with Council Decision 2003/33/EC10, which establishes the criteria for the acceptance of waste at landfills before being transported to an appropriately authorised facility by permitted contractors.

14.2.3 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.

14.2.4 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.

14.2.5 Scrap Metal

Steel is highly recyclable material and there are numerous companies that will accept waste steel and other scrap metals. A segregated skip will be available for steel/ metal storage on site pending recycling.

14.2.6 Cardboard packaging

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

14.2.7 Plasterboard

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

14.2.8 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 Limerick City & County 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 docket, receipt 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.

14.2.9 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 way 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.

15 Waste Auditing

LCCC or their appointed Site Operator will be responsible for the development and the implementation of the Construction and Environmental Management Plan and monitoring/control 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 Limerick City & County Council Environmental Department.

15.1 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.

15.2 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.

16 Noise & Dust

16.1 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 μm). 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 μm , and particularly below 10 μm , typically only form a small fraction of dust emitted from construction sites.

The non-respirable dust fractions (i.e., >10 μm) 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., <10 μm) potentially affect respiratory and cardiovascular systems. S.I. No. 271 of 2002 relating to limit values for particulate matter in ambient air indicates a 24-hour percentile (90.4%) limit value of 50 $\mu\text{g}/\text{m}^3$ MM10.

In dry periods it is intended to dampen down site surfaces with sprayed water to reduce and minimise dust emissions.

The proposed works is well protected by the village's adjoining properties 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.

16.2 Noise

The development site is in a semi-rural/urban location within the local village vicinity. Background noise levels are expected to be elevated during daytime hours. To the north, north-east and northwest, the N21 traffic passes the main village centre.

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 07.30 to 18.00 Monday to Friday and 07.30 to 14.00 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.

16.3 Invasive Species

Prior to works commencing on site an Invasive Species Management Plan will be investigated and prepared if necessary. No other invasive species that could impact on the movement of soil on or off site were noted at planning stage.

17 Conclusions

This outline Construction Environmental Management Plan (CEMP) has been submitted to demonstrate LCCC's commitments to effective construction and environmental management for the proposed project. The CEMP outlines the environmental principles that will be adopted to ensure that potential environmental impacts and health and safety issues associated with the construction processes are effectively managed, minimised, and, where possible, eliminated.

The plan details the roles and responsibilities of the applicant, site manager, project manager, and site workers, as well as the methods for implementing these controls. The CEMP will be adopted by the appointed main contractor in due course and will be expanded and updated to accommodate any specific planning conditions that may be imposed.

Regular monitoring of the CEMP will be conducted throughout the development programme to ensure that potential risks are adequately managed during the construction works, as is standard practice. We have noted that the nature of the construction for the proposed buildings and associated site works is conventional and poses negligible risk to neighbouring properties. There are no particularly difficult or challenging aspects to the construction, and we consider the project to be relatively straightforward in construction terms.

17.1 Summary Of Construction Phase Control Measures

The contractor will be required to implement specific control measures to prevent the release of hydrocarbons, polluting chemicals, sediment, silt, and contaminated water during the construction phase. This CEMP aligns with the Natura Impact Statement (NIS) with the following control measures outlined for the construction stage:

Specific measures will be put in place to prevent sediment release beyond baseline conditions in the downstream receiving water environment during construction. These measures may include, but are not limited to, the use of silt fences, silt curtains, settlement areas, and filter materials.

Exclusion zones and barriers, such as silt fences, will be established between earthworks, stockpiles, and temporary surfaces to prevent sediment from entering existing drainage systems and subsequently affecting the downstream receiving water environment. Temporary surface drainage and sediment control measures will be implemented before any earthworks commence.

Weather conditions will be considered when planning construction activities to minimise the risk of runoff from the site.

Prevailing weather and environmental conditions will be assessed prior to pouring cementitious materials near any surface water drainage features or connected drainage systems. Pumped concrete will be monitored to prevent accidental discharge, and mixer washings or excess concrete will not be disposed of in existing surface water drainage systems. Concrete washout areas will be located away from any surface water drainage features to avoid accidental discharge into watercourses, and washing out concrete trucks on site will be avoided.

All fuels and chemicals, including hydrocarbons and other polluting substances, will be stored in designated, secure bunded areas to prevent any potential pollutants from seeping into the local surface water network. These designated areas will be clearly

signposted, and all personnel on site will be informed of their locations and associated risks.

All mobile fuel bowzers must be equipped with a spill kit, and operatives are required to have received spill response training. Any fuel-containing equipment, such as portable generators, will be placed on drip trays, and all fuels and chemicals stored on-site will be clearly labelled. Careful attention will be given during refuelling and maintenance operations, with particular focus on gradient and ground conditions, which will be documented and made available at all times. This documentation will include, at a minimum:

- Valid Safety Data Sheets
- Health and Safety and Environmental controls to be implemented when storing, handling, using, and in the event of a spillage of materials
- Emergency response procedures and precautions for each material; and
- The required Personal Protective Equipment (PPE) for handling each material.

Response measures for potential pollution incidents will be implemented, and a robust Spill Response Plan and Environmental Emergency Plan will be developed prior to the commencement of works. These plans will be communicated, adequately resourced, and enforced throughout the duration of the project. Emergency procedures and spill kits will be readily available, and construction staff will be trained and experienced in emergency protocols for accidental fuel spillages.

All trucks will be fitted with built-in tarpaulins to cover excavated materials during transport off-site, and wheel wash facilities will be provided at all site exit points. If groundwater is encountered during the works and temporary pumping is necessary at a specific location:

- An appropriate dewatering and groundwater management system tailored to the site conditions will be designed and maintained. This will include measures to minimise surface water inflow into the excavation and avoid prolonged exposure of groundwater to the atmosphere.
- Qualitative and quantitative monitoring will be conducted to ensure that the water quality is suitable for discharge. Silt traps will be employed if monitoring indicates a need, with no silt or contaminated water permitted to enter the receiving water environment.

All water will be filtered through appropriate materials before being discharged from the construction site. The removal of any potentially contaminated made ground material will be carried out in accordance with the Waste Management Act and best practice guidelines, transporting it to an appropriate licensed facility.

A discovery procedure for contaminated material will be established and adopted by the appointed contractor before excavation works commence, detailing how potentially contaminated material will be managed during the excavation phase. Measures will be implemented to minimise waste and ensure the correct handling, storage, and disposal of waste, particularly concerning wet concrete, pile arisings, and asphalt.

The Main Contractor will take all necessary steps to control pests—such as rodents, birds, insects, and invasive plants—prior to the commencement of any works on site. All of the aforementioned measures will be monitored throughout the construction period to ensure their effectiveness, implement maintenance measures as needed, and address any potential issues that may arise.

The proposed development may experience impacts from construction activities; however, these effects are expected to be temporary and will only occur during the construction period. These are common impacts associated with the construction phase, which will be addressed through environmental operating plans developed by the on-site contractor in accordance with best practice guidelines.

18 Appendix

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20 Appendix B: Works List

Non exhaustive list as tabulated:

Element	Description	
New Footpaths & Road Surfacing	Improvements to pedestrian pathways and road surfaces for safety and mobility.	Plan work during off-peak hours. Provide temporary pedestrian pathways. Use durable materials for safety.
Parking Layout	Reconfiguration or addition of parking spaces to improve vehicle accommodation.	Implement a traffic management plan. Install clear signage for drivers. Ensure compliance with accessibility standards.
Public Realm Areas	Development of public spaces for community use and engagement.	Involve local residents in the design process. Develop public spaces in phases to allow continued use.
Tabletop & Build-out Constructions	Raised areas and changes to the road surface to slow traffic and improve safety.	Implement temporary traffic control measures.
Shared Surfaces	Pedestrian shared spaces.	Clearly mark shared spaces with signage and pavement markings.
Landscaping & Seating	Aesthetic improvements and addition of seating for public use.	Use native plants for landscaping. Install seating in well-lit, accessible areas.
Associated Drainage	Protection of the existing drainage system to manage stormwater, with new connections and upgrades to be determined.	Implement best practice during construction.
Public Lighting	Upgrades or new street lighting for increased safety and visibility.	Ensure energy-efficient lighting design.
Undergrounding of Overhead Services	Moving overhead power lines and utilities underground for aesthetics and safety.	Coordinate with utility companies for planning. Follow safety protocols during excavation and installation.
Bus Stop & Signage on Main Street	Addition or updating of bus stops and signage for better public transport access.	Ensure new bus stops are accessible. Install clear and visible signage for passengers.
Pedestrian Crossing & Junction Layout Changes at N21 and Station Road	Improvements to the junction for better traffic flow and pedestrian safety.	Upgrade traffic signals if applicable. Ensure pedestrian crossings are well-marked and visible.

Figure 20.1 Works list

21 Appendix C: Overview of Standard Measures

Section	Objective	Details
19.1 Safety Signage and Barriers	Ensure safety of workers and the public by marking hazardous areas and providing essential information.	Types of Signage: - Warning signs (e.g., construction zone, heavy machinery) - Directional signs for safe navigation - Informational signs (project timelines, contact info, safety protocols) Barriers: - Physical barriers (fencing, hoarding) to restrict access and protect the public.
19.2 Personal Protective Equipment (PPE) Requirements	Minimise risk of injury to workers on-site.	Types of PPE: - Hard hats - High-visibility vests - Safety goggles and face shields - Gloves and steel-toed boots Training: - Proper use and maintenance of PPE.
19.3 Site Access Control	Manage and control access to the construction site for safety and security.	Access Points: - Designated entry/exit points for workers, vehicles, deliveries - Controlled public access with signage Security Measures: - Security personnel/surveillance systems - Visitor logs for tracking non-construction personnel.
19.4 Regular Safety Training and Briefings	Ensure all personnel are aware of safety protocols and procedures.	Training Programmes: - Initial safety orientation - Regular safety briefings - Specialised training for specific tasks Documentation: - Records of training sessions and attendance.
19.5 Emergency Response Plans	Prepare for emergencies and ensure swift response to incidents.	Components of the Plan: - Identification of potential emergencies - Designated emergency response team - Clear evacuation routes and assembly points - Communication protocols Drills: - Regular emergency drills.
19.6 Environmental Management Measures	Minimise environmental impact of construction activities.	Dust Control: - Water sprays or dust suppressants - Covering stockpiles Noise Control: - Quieter machinery - Scheduling noisy activities off-peak Waste Management: - Waste management plan (recycling, disposal) - Monitoring waste generation and disposal.
19.7 Traffic Management and Access Arrangements	Ensure safe and efficient movement of vehicles and pedestrians.	Traffic Management Plan: - Designation of vehicle routes - Coordination with local authorities for road closures Pedestrian Safety: - Safe pathways and crossings - Clear signage for pedestrians.
19.8 Monitoring and Reporting	Ensure compliance with safety and environmental standards.	Monitoring Protocols: - Regular site inspections - Monitoring air quality, noise levels Reporting: - System for reporting incidents and non-compliance - Regular reporting to stakeholders.

Figure 21.1 Standard construction measures

22 Appendix D: Existing Services (for grounding/ rerouting)

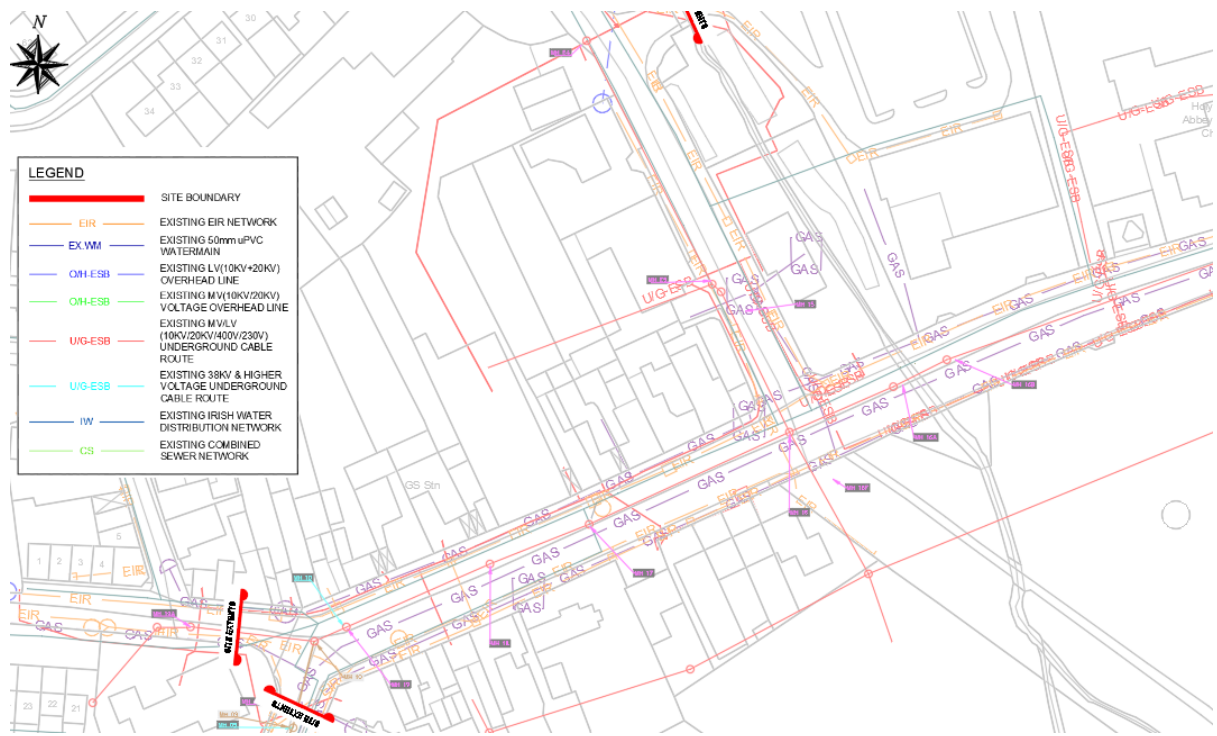


Figure 22.1 Existing Overhead ESB



Figure 22.2 Typical existing overhead on site



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