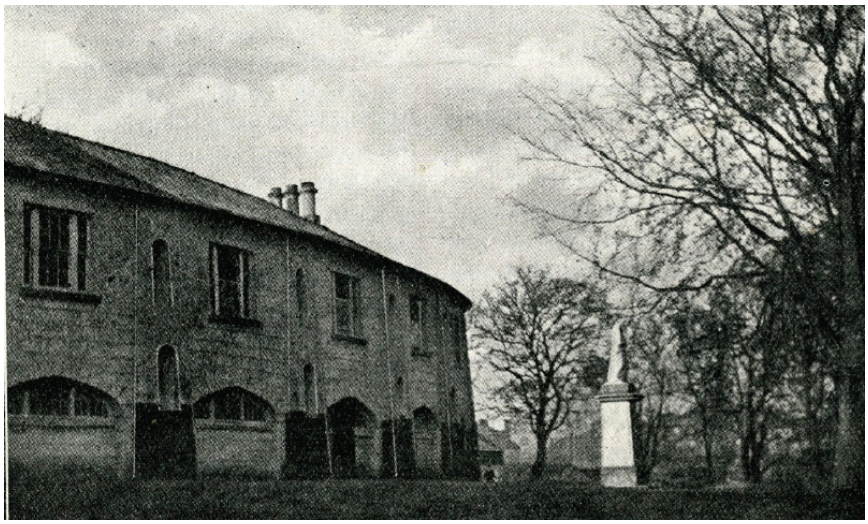
Meath County Archive Building, Formerly St Patrick's Classical School, Navan

Construction Environmental Management Plan

CEMP



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1.0 INTRODUCTION

This Outline Construction Environmental Management Plan, (CEMP), has been prepared to support the proposed conservation, restoration and adaptive re-use of the Former St Patricks Classical School for use as the Meath County Archive.

The site is zoned as B1 – Commercial Town or Village Centre. The site has previously been used as a classical school, former seminary study hall and, most recently, as a furniture workshop and has been vacant for a considerable time. The proposed development consists of the construction of a new County Archive including conservation and restoration works to the original Protected Structure of circa 550sqm together with ancillary and site development works.

The purpose of this Outline CEMP is to provide a framework that outlines how Meath County Council and any contractor appointed will manage and where practicable minimise negative environmental effects during the construction of the proposed development. Construction is considered to include all site preparation, enabling works, demolition, materials delivery, materials and waste removal, construction activities and associated engineering works.

This Outline CEMP identifies the minimum requirements with regard to the appropriate mitigation, monitoring, inspection and reporting mechanisms that need to be implemented throughout construction. Compliance with this Outline CEMP does not absolve the contractor or its sub-contractors from compliance with all legislation and bylaws relating to their construction activities.

2.0 METHODOLOGY

This Outline CEMP provides a framework to:

- Describe the programme for environmental management during construction;
- Outline the principles and minimum standards required of the contractor during the development of the detailed CEMP (and associated Method Statements) and throughout construction;
- Identify the relevant roles and responsibilities for developing, implementing, maintaining and monitoring environmental management; and
- Outline the procedures for communicating and reporting on environmental aspects of the proposed development throughout construction.

It is intended that this Outline CEMP would be expanded and updated prior to the commencement of any construction activities on site. Meath County Council will procure the Main Contractor through a public procurement process.

Following appointment, the contractor will be required to develop more specific Method Statements and submit a more detailed CEMP that is cognisant of the proposed construction activities, equipment and plant usage and environmental

monitoring plan for the proposed development. This Outline CEMP should not be considered a detailed Construction Method Statement as it would be the responsibility of the contractor, appointed to undertake the individual works, in association with Meath County Council, to implement appropriate procedures and progress this documentation prior to commencement of construction.

This Outline CEMP outlines the range of potential types of construction methods, plant and equipment which may be used by any contractor appointed in order to enable their impacts to be assessed.

3.0 Detailed CEMPs

The Main Contractor, procured via a public works tender, will be required to comply with all of the performance requirements set out in the tender documentation including the statutory consent approvals and requirements.

The contractor is therefore required to prepare a more detailed CEMP for each specific package of works as required. The detailed CEMP(s) will be specific, targeted, and 'stand-alone' plans developed to support the detailed design and construction methodologies established during the next phase of the proposed development. The detailed CEMPs will be provided to Meath County Council and it's agents for consultation and approval in advance of any construction works on site.

The contractor is required to develop a detailed CEMP(s) that:

- Is in accordance with the mitigation measures specified in this Outline CEMP;
- Is in accordance with any conditions that may be prescribed as part of the consent(s) for the proposed development;
- Aligns with those design and construction details described in the tender documentation and ensures there is no material change in terms of significant effects on the environment; and
- Where practicable the contractor should seek to identify opportunities for further reducing significant negative environmental effects and to implement best practice in as far as reasonably practicable, i.e. take every reasonable effort to reduce and prevent negative effects, while enhancing benefits.
- Will have regard to the guidance contained in the handbook published by Construction Industry Research and Information Association (CIRIA).

In addition, the contractor is required to develop the following plans, and any others considered relevant, and incorporate accordingly into the detailed CEMP(s):

- Heritage Strategy;

- Construction Compound Management Plan;
- Construction Traffic Management Plan;
- Noise and Vibration Management Plan;
- Dust Management Plan;
- Construction and Demolition Waste Management Plan;
- Emergency Incident Response Plan.

The detailed CEMP(s) are considered 'live' documents that will be reviewed and revised regularly as construction progresses. The process for update, review, and approval of the CEMP(s) must be documented in the detailed CEMP(s) to ensure that all revisions can be easily understood, applied and updated by Meath County Council and the contractor throughout construction.

It is expected that amendments to the CEMP(s) may be necessary to reflect changes in the project scope, contract scheduling, contractor appointments, environmental management policies, practices or regulations, and developments on the site. These reviews and updates are necessary to ensure that environmental performance is subject to continual improvement and that best practice is implemented throughout construction.

4.0 Environmental Management Framework

4.1 Overview

The contract awarded for the proposed development will include a requirement for the contractor to comply with relevant documentation including the planning (and other statutory consent) conditions received, this Outline CEMP and subsequent detailed CEMP(s).

As part of the environmental management framework contractors will need to comply with all relevant environmental legislation and take account of published standards, accepted industry practice, national guidelines and codes of practice appropriate to the proposed development. Due regard should be given to the guidance and advice given by ISO14001 standard and Construction Industry Research and Information Association (CIRIA) guidance.

The contractor will be required to develop and implement an Environmental Management System (EMS) that follows the principles of ISO14001. Further, the contractor's EMS should include an environmental policy, operational, monitoring and auditing procedures to ensure compliance with all environmental requirements and to monitor compliance with environmental legislation and the environmental management provisions outlined in the relevant documentation.

4.2 Responsibilities

4.2.1 Employer

Meath County Council will be the employer responsible for ensuring that competent parties are appointed to undertake construction and that sufficient resources are made available to facilitate the appropriate management of risks to the environment.

4.2.2 Employers Representative

Meath County Council and/or the Employers Representative (ER) appointed by Meath County Council will be responsible for monitoring compliance with the CEMP. The ER may be required to appoint temporary or permanent specialists with appropriate skills and experience as required to implement on site procedures and monitor construction on behalf of Meath County Council, i.e. competent experts in biodiversity, archaeology and heritage, noise, vibration, dust, waste, land, soils, contamination and/or water.

4.2.3 The Contractor

The contractor(s) appointed will be responsible for the organisation, direction and execution of environmental related activities during the detailed design and construction of the proposed development. The contractor is required to undertake all activities in accordance with the relevant environmental requirements including the consent documentation and other regulatory and contractual requirements.

4.2.4 Site Manager

A Site Manager will be appointed by the contractor to oversee the day-to-day management of working areas within the site and ensure that effective, safe, planned construction activities are delivered on an ongoing basis to the highest standards. The Site Manager will be a suitably qualified, competent, and experienced professional that will oversee site logistics, communicate regularly with construction staff, accommodate project-specific inductions for staff on site and ensure that all work is compliant with the relevant design standards and health and safety legislation.

4.2.5 Environmental Manager

An Environmental Manager will be appointed by the contractor to ensure that the CEMP(s) is effectively implemented. The Environmental Manager will be a suitably qualified, competent and experienced professional that would perform the necessary tasks, review environmental procedures and consult with the members of the construction team and stakeholders as requited. The Environmental Manager would be responsible for:

- Preparing, maintaining and implementing the CEMP;
- Establishing, implementing, and maintaining the EMS in line with ISO 14001;
- Conducting regular environmental inspections and audits as specified in the contract and checking adherence to the CEMP;

- Ensuring that construction occurs in accordance with the relevant environmental requirements and that such compliance is adequately recorded and documented;
- Completing a site inspection and compiling an environmental compliance report on a monthly basis;
- Attending site and stakeholder meetings as required;
- Keeping up-to-date with relevant environmental best practice and legislative changes;
- Liaising with the relevant staff to prepare Method Statements and relevant plans for all activities where there is a risk of environmental damage;
- Having a detailed level of knowledge on all aspects of environmental information associated with the proposed development;
- Ensuring all personnel have undertaken adequate environmental inductions, awareness briefings and training (including subcontractors);
- Dealing with environmental complaints; and
- Managing and responding to environmental incidents and ensuring that all incidents are recorded and reported in an appropriate manner.

4.3 Communication Procedures

4.3.1 Community and Stakeholder Engagement

The contractor will take all reasonable steps to engage with stakeholders in the local community, focusing on those who may be affected by the construction works including residents, businesses, community resources and specific vulnerable groups.

Communication with the local community, Meath County Council and other relevant stakeholders shall be undertaken at an appropriate level and frequency throughout construction. The construction contract will specify a Communications Management Plan that will set out obligations in relation to community and stakeholder engagement that the contractor must adhere to. Where communications are related to environmental issues the Environmental Manager will be informed and engaged with, as appropriate.

4.3.2 Regular Consultation and Public Communications

The Communications Management Plan will also specify obligations in relation to regular consultation and public communications activities required during the construction of the proposed development. The contractor will facilitate regular consultation in accordance with the specifications and cooperate with this plan.

Where communications are related to environmental issues the Environmental Manager would be informed and engaged with, as appropriate.

Details of the available communication channels/points of contact for members of the public to contact the project team during construction will be established in advance of the commencement of construction and displayed around working areas.

4.3.3 Advance Notice of Works

The contractor will ensure that local residents, businesses, occupiers, general users of the area and stakeholders are informed in advance of construction activities that may affect them. Relevant obligations and procedures in relation to advance notice of works will be identified in the detailed CEMP(s) and in the Communications Management Plan.

All notifications will detail the nature, estimated duration and working hours. All notifications will include a project-specific contact number to which any enquires can be directed. The contractor will be responsible for preparing and issuing the notifications subject to the relevant approval and consents.

Meath County Council, in conjunction with all project stakeholders and the local community will decide whether to arrange any further targeted consultation with the public or relevant stakeholders in advance of specific construction activities on a local basis.

4.3.4 Contacts

An emergency contact list will be established and made available to all construction staff employed. The contact list shall be displayed prominently on site as well as at suitable locations where construction activity is being carried out around working areas. The contact list will include key environmental representatives that may need to be contacted in the event of an incident.

4.3.5 Enquiries and Complaints

The contractor would establish a process for handling all enquires including complaints. All enquires will be recorded and a log would be maintained to include details of the response and action taken. This will be available upon request for

inspection to Meath County Council or statutory authorities. All enquiries, whether a query or a complaint, will be dealt with in a timely manner.

The Environmental Manager will be immediately informed of any environmental- related issues that have been raised. Where appropriate, the Environmental Manager would be responsible for informing Meath County Council, relevant stakeholders and statutory bodies.

5.0 Environmental Management Procedures

5.1 Training, Awareness and Competence

The contractor (and their subcontractors) will be selected with due consideration of relevant qualifications and experience. The contractor will be required to employ construction staff with appropriate skills, qualifications and experience appropriate to the needs of the works to be carried out during construction.

A site induction will be provided to all construction staff before they commence work on site. Where appropriate, the contractor will identify specific training needs for the construction workforce and will ensure that appropriate training requirements are fulfilled.

The contractor must establish an Environmental Training and Awareness Programme and ensure that all personnel receive adequate training prior to the commencement of construction activities. A baseline level of environmental awareness will be established through the site induction programme. Key environmental considerations and objectives will be incorporated into this induction. Specifically, site inductions will cover the following as a minimum:

- Introduction to the Environmental Manager;
- Description of the CEMP(s) and consequences of non-compliance;
- The requirements of due diligence and duty of care;
- Overview of conditions of consents, permits and licences;
- Identification of environmental constraints and notable features within the site; and
- Procedures associated with incident notification and reporting including procedures for dealing with damage to the environment.

Nobody will work on site without first receiving environmental induction. Signed records of environmental training will be established, maintained and made available to the Employers Representative.

Site briefings and talks would be carried out on a regular basis to ensure that construction staff have an adequate level of knowledge on environmental topics and community relations, and can effectively follow environmental control procedures throughout construction.

5.2 Monitoring, Inspections and Audits

For the duration of the contract, the environmental performance of the contractor will be monitored through site inspections and audits. The programme for monitoring, inspections and audits shall be specified in the contract and it is likely to be a combination of random and routine inspections.

Records of all inspections carried out should be recorded on standard forms and all actions should be closed out in a reasonable time. The detailed CEMP(s) would include further details of inspection procedures.

5.3 Monitoring

Mitigation and monitoring will be carried out in accordance with the requirements of Works Requirements so that construction activities are undertaken in a manner that does not give rise to significant negative effects. Suitable monitoring programmes will need to be developed, implemented, documented, and assessed (with potential follow up) in accordance with the specification outlined in the detailed CEMP(s).

The results of all environmental monitoring activities would be reviewed by the Environmental Manager on an ongoing basis to enable trends or exceedance of criteria to be identified and corrective actions to be implemented as necessary. The contractor will be required to inform the Employer's Representative of any continuous exceedances of criteria.

5.4 Inspections

Routine inspections of construction activities will be carried out by the Environmental Manager on a daily basis to ensure all necessary environmental measures relevant to the construction activities are being effectively implemented by construction staff, ensuring legal and contractual conformity.

More detailed inspections would be undertaken by the Environmental Manager on a weekly basis.

The weekly inspections would be appropriately documented by the Environmental Manager and copies of these records and any action required to be undertaken should be made available to the Employers Representative.

Each month one of the weekly inspections will include a review of environmental documentation and records. The monthly inspection will be recorded on a standard form and reported to the Employers Representative within five days of the inspection taking place. This standard form will address the following as a minimum:

- Summary of compliance/non-compliance with the CEMP(s);
- Results and interpretation of the monitoring programme;
- Key issues noted in inspections and/or audits;
- Summary record of non-conformities, incidents and corrective actions;
- Summary of environmental complaints and queries received in relation to environmental matters; and
- Summary record of environmental training undertaken by staff.

5.5 Audits

Meath County Council may arrange for independent environmental audits to be carried out by a third party during construction. External audits provide the opportunity for an independent auditor to advise on compliance with applicable environmental regulatory requirements, the efficacy of the environmental management approaches used, and recommendations for reducing identified environmental risks (if considered appropriate).

Further, regulatory and statutory bodies may undertake site visits to monitor compliance with legislative and regulatory requirements. These site visits may occur randomly throughout the construction period. The contractor will facilitate these visits and the Environmental Manager will be available to provide information as required and deal with any issues that may arise during, or as a result of, these visits.

Planned and documented audits aimed at evaluating the conformance of the EMS would also be carried out by the Environmental Manager. As part of the detailed CEMP(s), the Environmental Manager will establish a schedule for internal audits and this inspection calendar will be made available to the Employer's Representative. These environmental audits will be scheduled at least once every three months.

The contractor will be required to prepare standard forms for reporting and audit items shall include but not be limited to the following activities:

- Review of environmental documentation to establish if relevant requirements are being achieved and if continual improvement is occurring;
- Site inspection and interviews with onsite personnel; and
- Reporting with recommendations.

For any environmental nonconformities found, the auditor will prepare a Corrective Actions Report to describe and record the findings of the non- conformance. The verification of previous Corrective Actions Reports should be also recorded.

Upon completion of an audit, the auditor will review all Corrective Actions Reports and prepares an Audit Report to summarise:

- Corrective action requests raised;
- Previous corrective action requests closed; and
- Observations made during the audit.

The Environmental Manager will be entitled to participate in all audits. Notwithstanding this, the Employers Representative shall produce and provide the contractor with a copy of each audit report within five working days of the audit. Each audit report will detail the findings from the auditor, specify non- conformances identified and outline the proposed corrective action.

5.6 Incident Response

5.6.1 Corrective Actions

5.6.2 Overview

Corrective actions are measures to be implemented to rectify any non- conformances (i.e. exceedance of criteria or targets) identified during monitoring, inspections and/or audits.

In the first instance, an investigation should be undertaken by the Environmental Manager to identify the cause of any non-conformances. Appropriate remedial measures shall be identified and implemented as soon as practicable to prevent further exceedances. If necessary, the appropriate statutory authority and stakeholders will be notified.

Where new or amended measures are proposed, the relevant CEMP(s) will be updated accordingly by the Environmental Manager and the Employer's Representative should be informed at the earliest opportunity.

5.6.3 Corrective Action Reports

A Corrective Actions Report is prepared on foot of any non-conformances identified during environmental monitoring, inspections and/or audits on site. The Corrective Actions Report will describe in detail the cause and effect of a non-conformance on site and describe the recommended corrective action that is required to remedy it.

An appropriate timeline for closing out the corrective actions will be identified by the contractor in their detailed CEMP(s) as well as arrangements for the Environmental Manager verifying the Corrective Actions Report and informing appropriate authorities and stakeholders in a timely manner.

5.6.4 Emergency Incidents

5.6.4.1 Overview

Emergency incidents are those occurrences that give rise to significant negative environmental effects including but not limited to the following:

- Any malfunction of any mitigation measure and/or environmental protection system;
- Any emission that does not comply with the requirements of the contract and relevant licences;
- Any circumstance with the potential for environmental pollution; or
- Any emergency that may give rise to environmental effects (e.g. significant spillages or fire outbreak).

5.6.4.2 Spill Control Measures

Every effort will be made to prevent pollution incidents associated with spills during the construction of the proposed development. The risk of oil/fuel spillages will exist on the site and any such incidents will require an emergency response procedure. The following steps provide the procedure to be followed in the event of an oil/fuel spill occurring on site:

- Identify and stop the source of the spill and alert people working in the vicinity;
- Notify the Environmental Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action;
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident;
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill;
- If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses etc.
- If possible, clean up as much as possible using the spill control materials;
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited;
- The Environmental Manager shall inspect the site as soon as practicable and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring; and

- The Environmental Manager will notify the appropriate stakeholders such as Meath County Council, National Parks and Wildlife Service, Department of Communications, Climate Action and Environment and Department of Housing, Planning and Local Government and/or the EPA.

- All storage areas of fuel, diesel, petrol, chemicals with SDS are to contained within fully bunded areas.

Environmental incidents are not limited to just fuel spillages. Therefore, any environmental incident must be reported, recorded and investigated in accordance with the procedures described in this CEMP.

5.6.4.3 Emergency Incident Response Plan

A set of standardised emergency response procedures will govern the management of emergency incidents. The contractor will be required to detail emergency incident response procedures in the detailed CEMP(s) and to develop an Emergency Incident Response Plan.

The Emergency Incident Response Plan will contain emergency phone numbers and the method of notifying local authorities, statutory authorities and stakeholders. Contact numbers for key personnel will also be included therein. Contractors will be required to adhere to and implement these procedures and ensure that all staff and personnel on site are familiar with the emergency arrangements.

In the case of work required in an emergency, or which if not completed would be unsafe or harmful to workers, the public or local environment, Meath County Council will be informed as soon as reasonably practicable of the reasons and likely duration. Examples may include: where the ground needs stabilising if unexpected ground conditions are encountered, concrete pouring taking longer than anticipated due to delayed deliveries or equipment failure.

In the event of an emergency incident occurring, the contractor will be required to investigate and provide a report including the following, as a minimum:

- A description of the incident, including location, the type and quantity of contaminant and the likely receptor(s);

- Contributory causes;

- Negative effects;

- Measures implemented to mitigate adverse effects; and

- Any recommendations to reduce the risk of similar incidents occurring.

The contractor will consult with the relevant statutory authorities, stakeholders and relevant parties such as the Health and Safety Authority, the Fire Authority, the Ambulance Service, the EPA, utilities companies and Meath County Council when preparing and developing response measures. Further, if any sensitive receptor is impacted, the appropriate environmental specialists will be informed and consulted with accordingly.

Any response measures will be incorporated into an updated Emergency Incident Response Plan that should be disseminated accordingly to construction staff, Meath County Council and the Employer's Representative.

5.6.4.4 Emergency Access

The contractor will be required to maintain emergency access routes throughout construction and identify site access points for each working area. This should be developed in partnership with the emergency services and documented as part of the detailed CEMP(s) and Emergency Incident Response Plan.

5.6.4.5 Extreme Weather Events

The contractor will consider the impacts of extreme weather events and related conditions during construction. The contractor will use a short to medium range weather forecasting service from Met Eireann or other approved meteorological data and weather forecast provider to inform short to medium term programme management, environmental control and mitigation measures.

The detailed CEMP(s) should consider all measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements for staff. As appropriate, method statements should also consider extreme weather events where risks have been identified, e.g. work at height.

5.6.4.6 Unexpected Discoveries

The contractor is obliged to put in place appropriate procedures to be employed in the event of encountering unexpected archaeological or cultural heritage assets or subsurface contamination during intrusive ground works.

The contractor will be required to develop appropriate procedures as part of their detailed CEMP(s) and the Environmental Manager will ensure that specialists (e.g. archaeologist) are facilitated to ensure management in accordance with industry best practice and effective compliance with the relevant legislation. All unexpected discoveries will be reported to the appropriate authorities and documented in an appropriate manner.

5.7 Reporting

5.7.1 Environmental Compliance Report

The contractor will be required to submit a monthly report to the Employer's Representative for review and approval. The report shall address the following as a minimum:

- Summary of compliance with the CEMP(s) including identification of any non-conformances;
- Interpretation of the results of ongoing monitoring;
- Detailed description of any issues and/or non-conformances identified during inspections and/or audits;
- Record of incidents and corrective actions (including Corrective Actions Reports as appropriate);
- Synopsis of environmental complaints received / queries raised by stakeholders; and Records of environmental training undertaken (as appropriate).

5.7.2 Incident Investigation Reports

The contractor will inform the Employer's Representative of all emergency incidents immediately and prepare an initial report within 24 hours setting out the details of the incident and cause(s) if known. The contractor will be required to complete the Environmental Incident Report and any further documentation requested by the Employer's Representative in relation to the incident within 7 days of the incident occurring. The Contractor will respond to all comments made by the ER on any incident.

The Environmental Incident Report will contain details of the incident including the location, known and suspected causes and weather conditions. It will define the scale and effects (short, medium, long term, temporary/permanent) as well as required corrective actions and mitigation/ remediation/compensation measures (as appropriate).

5.7.3 Environmental Records

The Contractor shall maintain records of all environmental documentation including monitoring, test results, method statements and plans. All records will be kept up to date and be made available for audits, inspections and periodical reporting. The Contractor will maintain the following environmental records (as a minimum) that will be made available for inspection to the Employer's Representative and the relevant authorities, if required:

- Management Plans;
- Records of environmental incidents;

- Monthly environmental reports;
- Records of environmental training;
- Register of environmental complaints;
- Corrective Action Reports;
- Environmental inspection and audit reports;
- All monitoring data;
- Waste and chemical inventories; and
- Health and Safety records.

6.0 General Requirements

6.1 Overview

It is anticipated that there will be a single contract to cover all the elements of the proposed development and that the contractor will be required to prepare more detailed CEMP(s).

The contractor (and any subcontractors) will be required to comply with all of the performance requirements set out in the tender documentation including the statutory consent approvals which may be granted.

It is the responsibility of the contractor to ensure compliance and to avoid and/or reduce significant adverse effects that have been identified where practicable.

Where the contractor diverts from the methodologies and working areas outlined herein and/or defined in the granted planning consent and associated conditions that may be granted, it would be the responsibility of the contractor to obtain the relevant licenses, permits and consents for such changes.

6.2 Good Housekeeping

The Contractor will employ a “good housekeeping” policy at all times. This will include, but not necessarily be limited to, the following requirements:

- General maintenance of working areas and cleanliness of welfare facilities and storage areas;

- Provision of site layout map showing key areas such as first aid posts, material storage, spill kits, material and waste storage, welfare facilities etc;
- Maintain all plant, material and equipment required to complete the construction work in good order, clean, and tidy;
- Keep construction compounds, access routes and designated parking areas free and clear of excess dirt, rubbish piles, scrap wood, etc. at all times;
- Details of site managers, contact numbers (including out of hours) and public information signs (including warning signs) will be provided at the boundaries of the working areas;
- Provision of adequate welfare facilities for site personnel;
- Installation of appropriate security, lighting, fencing and hoarding at each working area;
- Effective prevention of oil, grease or other objectionable matter being discharged from any working area;
- Provision of appropriate waste management at each working area and regular collections to be arranged;
- Excavated material generated during construction will be reused on site as far as practicable and surplus materials/soil shall be recovered or disposed of to a suitably authorised waste facility site;
- Effective prevention of infestation from pests or vermin including arrangements for regular disposal of food and material attractive to pests will be implemented. If infestation occurs the contractor will take appropriate action to eliminate and prevent further occurrence;
- Maintenance of wheel washing facilities and other contaminant measures as required in each working area;
- No discharge of site runoff or water discharge without agreement of the relevant authorities;
- Open fires will be prohibited at all times;
- The use of less intrusive noise alarms which meet the safety requirements, such as broadband reversing warnings, or proximity sensors to reduce the requirement for traditional reversing alarms;
- All loading and unloading of vehicles will take place off the public highway wherever this is practicable; and

- Material handling and/or stockpiling of materials, where permitted, will be appropriately located to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

6.3 Hours of Working

6.3.1 Core Working Hours

The timing of construction activities, core working hours and the rate of progress of construction works are a balance between efficiency of construction and minimising nuisance and significant effects. The core construction working hours for the proposed development will be:

- 8am – 6pm: Monday to Friday, (inclusive);
- 8am – 2pm: Saturday
- Sundays & Public Holidays, No activity onsite.

6.3.2 Start up and shut down

The contractor may require a period of up to one hour before and one hour after core working hours for start-up and shut down activities in working areas.

Activities permitted may include deliveries and unloading of materials, (only if noise limits are not exceeded), movement of staff to their place of work, maintenance and general preparation works. The use of plant or machinery likely to cause disturbance will not be permitted outside of the core working hours.

6.3.3 Additional Working Hours

It may be necessary in exceptional circumstances to undertake certain activities outside of the construction core working hours. Any construction outside of the construction core working hours will be agreed by the contractor in advance with Meath County Council and scheduling of such works shall have regard to nearby sensitive receptors.

In the case of work required in an emergency or which if not completed would be unsafe or harmful to workers, the public or local environment, Meath County Council will be informed as soon as reasonably practicable of the reasons and likely duration and timing (outside of the core working hours).

6.3.4 Security

Security will be the responsibility of the contractor who will provide adequate security to prevent unauthorised entry to or exit from any working areas. The following measures may be used to prevent unauthorised access:

- Install CCTV and alarm systems where required;
- CCTV and security systems will be sited and directed so that they do not intrude into occupied residential properties;
- Provide adequate security guards and patrols;
- When there is no site activity, close and lock site gates and set appropriate site security provisions in motion;
- Consult with neighbouring properties and local crime prevention officers including Meath County Council and An Garda Síochána on site security matters as required; and
- Prevent access to restricted areas and neighbouring properties by securing equipment on site such as scaffolding and ladders.

6.3.5 Hoarding and Fencing

A site boundary in the form of hoarding or fencing will be established around each of the working areas before any significant construction activity commences in that working area. The hoarding/fencing shall be 2.4m high to provide a secure boundary to what can be a dangerous environment for those that have not received the proper training and are unfamiliar with construction operations.

Site hoarding also performs an important function in relation to minimising nuisance and effects including:

- Noise emissions (by providing a buffer);
- Visual impact (by screening the working areas, plant and equipment); and
- Dust minimisation (by providing a buffer).

The erection of hoarding would be of a similar nature to what is carried out on most construction sites. Mounting posts would be erected by using a mini-digger and the posts would be set in concrete. The size and nature of the posts and hoarding would depend on the requirements for any acoustic mitigation as well as preferences that the contractor may have. Where practicable, hoarding and fencing would be retained and re-configured and re-used between working areas as the construction activities progress.

The following measures will be applied in relation to hoarding and fencing:

- Maintenance of adequate fencing and hoardings to an acceptable condition to prevent unwanted access to working areas and provide noise attenuation, screening, and site security where required;
- Appropriate sight lines/visibility splays will be maintained around working areas to ensure safety of both vehicles and pedestrians is preserved;
- Use of different types of fencing and hoarding (e.g. mesh fence of solid hoarding including hoardings used for noise control);
- Temporary fences may be used in certain areas, such as for short term occupation of working areas;
- Display information boards with out of hours contact details, telephone helpline number (for comments/complaints) and information on the works;
- Erect notices on site boundaries to warn of hazards on site such as deep excavations, construction access, etc.;
- Ensure suitable measures for tree protection are implemented as required;
- Keep hoarding and fencing free of graffiti or posters;
- Retain existing walls, fences, hedges and earth banks as far as reasonably practicable; and
- Appropriate positioning of the fencing or hoarding to minimise the noise transmitted to nearby receptors or from plant, equipment and vehicles entering or leaving the working area.

6.3.6 Services and Lighting

6.3.6.1 Services and Utilities

Site services shall be installed as part of the enabling works in parallel with the rearrangement and diversion of existing utilities. Working areas will be powered by mains supplies or diesel generators where an electrical supply is not available.

The contractor will be responsible for undertaking their own surveys to establish full extent of underground services prior to the commencement of construction to support any surveys already undertaken as part of early design work and statutory consent applications.

6.3.6.2 Lighting

Site lighting would typically be provided by tower mounted 1000W metal halide floodlights. The floodlights would be cowled and angled downwards to minimise spillage to surrounding properties. The following measures will be applied in relation to site lighting:

- Lighting will be provided with the minimum luminosity sufficient for safety and security purposes. Where practicable, precautions will be taken to avoid shadows cast by the site hoarding on surrounding footpaths, roads and amenity areas;
- Motion sensor lighting and low energy consumption fittings will be installed to reduce usage and energy consumption; and
- Lighting will be positioned and directed as not to unnecessarily intrude on adjacent buildings and land uses, ecological receptors and structures used by protected species, nor to cause distraction or confusion to passing motorists, river users or navigation lights for air or water traffic.

6.3.7 Welfare Facilities

Welfare facilities will be provided, as appropriate, for construction staff and site personnel such as locker rooms, toilets, showers etc. The location of these will be agreed with Meath County Council and identified as part of the detailed CEMP(s).

6.3.8 Reinstatement of Working Areas on Completion

The contractor will reinstate all working areas and access routes as work proceeds during construction. All plant, equipment, materials, temporary infrastructure and vehicles will be removed at the earliest opportunity and the surface of the ground restored as near as practicable to its original condition.

6.3.9 Health and Safety

The contractor would be required to ensure all relevant health and safety, fire safety and security requirements are in place prior to the commencement of construction and in accordance with relevant legislative requirements in addition to the specifications of Meath County Council.

Relevant Irish and EU health and safety legislation would be complied with at all times by all construction staff and personnel during construction. Further, contractors would also have to ensure that all aspects of their works comply with good industry practice and all necessary consents, licences and authorisations that have been put in place for the proposed development.

6.4 Environmental Management

This section describes the specific environmental requirements that will need to be adhered to by the contractor.

It is intended that the measures set out herein will be discussed in more detail with relevant stakeholders as required in order to support the identification of any additional measures to be taken account of during construction.

6.4.1 Traffic and Transportation

The contractor is required to implement the following measures in relation to traffic and transportation during construction:

- All trucks entering and exiting the site will be covered with tarpaulin;
- Adequate parking will be provided to avoid queuing at the site entrances and prevent disruption to neighbouring businesses. Construction vehicles will not be allowed to park on the public road either outside the site or on any of the approach roads leading to the site;
- Construction traffic shall not use St Finian's Terrace or Academy Terrace. Site access shall be through the Meath County Council site identified in the Traffic Management Plan.
- All trucks entering the site will be restricted to suitable speed limits and will be directed to the relevant area by the Site Manager;
- Trucks required to wait on site will switch off engines to avoid unnecessary fuel usage and noise;
- Roads outside the site will be visually inspected on a daily basis and power swept and washed as and when required;
- All site staff including truck drivers will be required to abide by the normal rules of the road;
- The contractor shall prepare a Detailed Construction Traffic Management Plan (CTMP) covering all construction stages that takes into account other potential construction works in the area. The CTMP will demonstrate how pedestrians, cyclists and motorised vehicles can pass through the works areas safely and that measures are in place which ensure traffic operates in as an efficient manner as possible;

- The CTMP will include a detailed consultation plan to deal with third party queries from both residents and retail/ commercial operators. The CTMP will require agreement with both Meath County Council and An Garda Síochána.

The contractor will appoint a single point of contact to facilitate the communication of the various traffic management plans and the preparation of a project specific website to aid communications would also be beneficial.

- As part of the CTMP a Mobility Management Plan will be prepared to ensure access to the site by sustainable travel modes is encouraged. The following measures will need to be considered within the Mobility Management Plan:
  - The provision of showers/ changing rooms for construction staff;
  - The provision of cycle parking for staff;
  - The promotion of car sharing among staff, including van pooling to travel between the different work sites;

6.4.2 Air Quality and Climate

The contractor is required to implement the following measures in relation to air quality and climate during construction:

- Implementation of 'standard mitigation', as stated in the TII guidance, including the following measures:
  - Spraying of exposed earthwork activities and site haul roads during dry weather;
  - Provision of wheel washes at exit points;
  - Covering of stockpiles;
  - Control of vehicle speeds, speed restrictions and vehicle access; and
  - Sweeping of hard surface roads.

- Erection of a c. 2.4m hoarding will be provided around the working areas to minimise the dispersion of dust from the working areas;
- Generators will be located away from sensitive receptors in so far as practicable;
- Stockpiles will be located as far as possible from sensitive receptors and covered and/or dampened during dry weather;
- Employee awareness is also an important way that dust may be controlled on any site. Staff training and the management of operations will ensure that all dust suppression methods are implemented and continuously inspected.
- A Refurbishment/Demolition Asbestos Survey, (RDAS), shall be carried out in advance of the works covering the entire site including pipes, insulations, sheeting, fuseboards, adhesives etc. Where asbestos is uncovered on site during construction, the ACM will be double-bagged and removed from the site by a competent contractor and disposed of in accordance with the relevant procedures, legislation and approved RAMS. Air quality monitoring shall be undertaken during the removal of ACMs.

6.4.2.1 Dust Monitoring

Dust mitigation & monitoring measures are to be put in place as follows:

Areas likely to produce dust during the works, (demolishing / excavating / crushing / broken / dismantling etc), are to be wetted down using a combination of large and small droplets, (to capture particles of different sizes). Spoil heaps on the ground or at high level are to be wetted down as required. It is noted that weather conditions may alleviate the need for wetting down external spoil heaps but all sources of dust shall be continuously wetted down to reduce the number and size of particles that become airborne. The contractor shall comply with any request by the ER to wet down areas of the Works.

In addition to the Dust Mitigation measures noted above the following dust monitoring measures shall be put in place:

Dust Monitors are to be put in place at 3Nr locations to verify that the dust control measures are operating as intended;

Dust monitor:

Metric	-	**Method**
Airbourne Particulate Matter	-	Optical Dust Analyser
Dust Deposition & Soiling	-	Sticky Pads, Horizontal
Dust Flux	-	Sticky Pads, Vertical

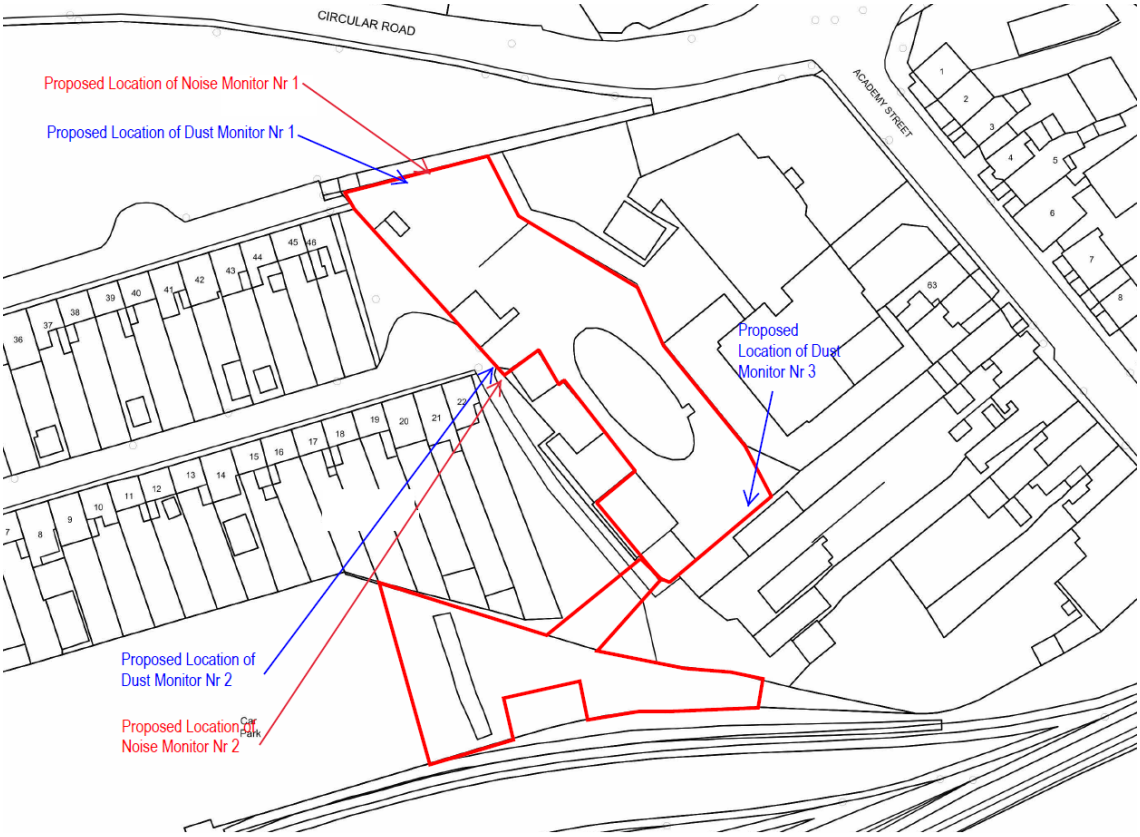
The following Site Action Levels set out below are required:

PM10 Concentrations: 250 µg/m3 averaged over a 15-minute period.

Sticky Pads: 2-5% EAC/day, measured over a 1-week period.

Dust flux: Sticky pads where both EAC and AAC are measured over a 1-week period as shown in Table 2, p17 of the IAQM Document, “Guidance on Air Quality Monitoring in the Vicinity of Demolition & Construction Sites”. A Site Action Level of “High” is required.

Should the “Site Action Levels” be exceeded work shall cease and additional mitigation measures shall be put in place to reduce the number/size of particles being emitted form the site. A written report outlining the readings from each dust monitor and the mitigation measures in effect shall be issued on a bi-weekly basis to the ER for comment.



6.4.3 Odour

No mitigation measures are required during the construction of the proposed development with regards to odour as no such releases are anticipated.

6.4.4 Noise and Vibration

A Noise and Vibration Management Plan (NVMP) will outline how the appointed Contractor(s) will comply with the noise criteria set out in this section and will deal specifically with construction activities in a strategic manner to remove or reduce significant noise and vibration impacts associated with the construction of the proposed development. The NVMP will detail the provision and installation of localised acoustic screens, the best practice noise measures that the appointed Contractor(s) will be required to adhere to for construction activities and the noise and vibration monitoring programme that the appointed Contractor(s) will be required to undertake during the construction works.

In addition, the appointed Contractor(s) will prepare detailed method statements addressing the likely groundborne noise and vibration levels that will be generated as a result of the construction activities once the specific details of the proposed plant items and construction methodologies are known.

Where considered necessary, structural surveys will be undertaken at sensitive receptors in close proximity to the works to establish their condition and tolerance for vibration impacts.

The contractor is required to implement the following measures in relation to noise and vibration during construction: The contractor will take specific noise abatement measures and comply with the recommendations of the standard and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001 and 2016 so as to acknowledge the EC (Noise Emission by Equipment for Use Outdoors) (Amendment) Regulations 2006;

- A site representative shall be appointed to be responsible for matters relating to noise and vibration;
- Construction of temporary infrastructure (e.g. haul roads) will be with materials that minimise noise and vibration and design of haul roads will minimise reversing;
- Unnecessary revving of engines should be avoided and equipment should be switched off when not required;
- Rubber linings shall be used in chutes and dumpers etc. to reduce noise;
- Drop heights of materials shall be minimised;
- Generators will be located away from sensitive receivers and will be enclosed;
- Careful selection of equipment, construction methods and programming with the objective of reducing noise and vibration where possible. Only equipment, including road vehicles, conforming to relevant national or international standards, directives and recommendations on noise and vibration emissions, will be used;
- Plant and vehicles shall be started sequentially rather than all together;
- Selecting electrically powered plant that is quieter than diesel or petrol-driven plant, if interchangeable;

- Using noise-control equipment such as jackets, shrouds, hoods, and doors, and ensuring they are closed;
- Locating plant, as far as is reasonably practicable, away from receptors or as close as possible to noise barriers or hoardings where these are located between the source and receptor;
- Regular and effective maintenance by trained personnel shall be carried out to reduce noise and/or vibration from plant and machinery;
- Construction Machinery and Equipment shall be noise limiting where possible and a record of Noise & vibration values of equipment to be kept on site.
- Ensuring that all plant is maintained regularly to comply with relevant national or international standards and operation of plant and equipment that minimises noise emissions;
- Ensuring that plant is shut down when not in use;
- Ensuring that air lines are maintained and checked regularly to prevent leaks;
- Designing all audible warning systems and alarms to minimise noise. Non- audible warning systems can be used in preference, i.e. cab-mounted CCTV or the use of banksmen. If required, ensure that audible warning systems are switched to the minimum setting required by the Health and Safety Authority and where practicable use 'white noise' reversing alarms in place of the usual 'siren' style reversing alert
- A c. 2.4m hoarding shall be provided around construction works.
- Rotary drills and bursters actuated by hydraulic or electrical power will be used for excavating hard material. In some instances, chemical bursting can be used where nearby sensitive structures are particularly vulnerable to vibration from pneumatic breakers etc.;
- Handling all materials, particularly steelwork, in a manner that minimises noise. For example, storing materials as far as possible away from sensitive receptors and using resilient mats around steel handling areas;

- A Communications Management Plan shall be prepared to provide for effective community liaison to help ensure the smooth running of construction activities and to address any issues that may arise;

- Noise monitoring should be undertaken at the start of each new activity to determine the compliance with limit values. This may involve monitoring on a daily basis initially (for the first three weeks), but subject to satisfactory results, this could be relaxed to once a week/twice-weekly depending upon the site activities. The frequency will be increased again if particularly noisy activities (such as driven piling) are undertaken;

All practicable measures shall be taken to reduce the level of noise emitted from the works. The proposed works shall comply with British Standard 5228 ' Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control.

6.4.4.1 Noise Survey & Monitoring

In advance of the works a Background Noise Survey will be undertaken to establish the prevailing noise conditions in the vicinity of the site.

Noise monitoring and control shall comply with BS-5228. Specifically, noise levels at the site boundaries shall be kept below the following limits, (note that additional limits on working hours apply – see Section 6.3):

Day Time	**Noise Impact**	**Criteria (I aeq, period)**
Monday-Friday	08:00-19:00	75db
Monday-Friday	19:00-22:00	65db
Saturday	08:00-13:00	75db
Saturday	13:00-22:00	60db

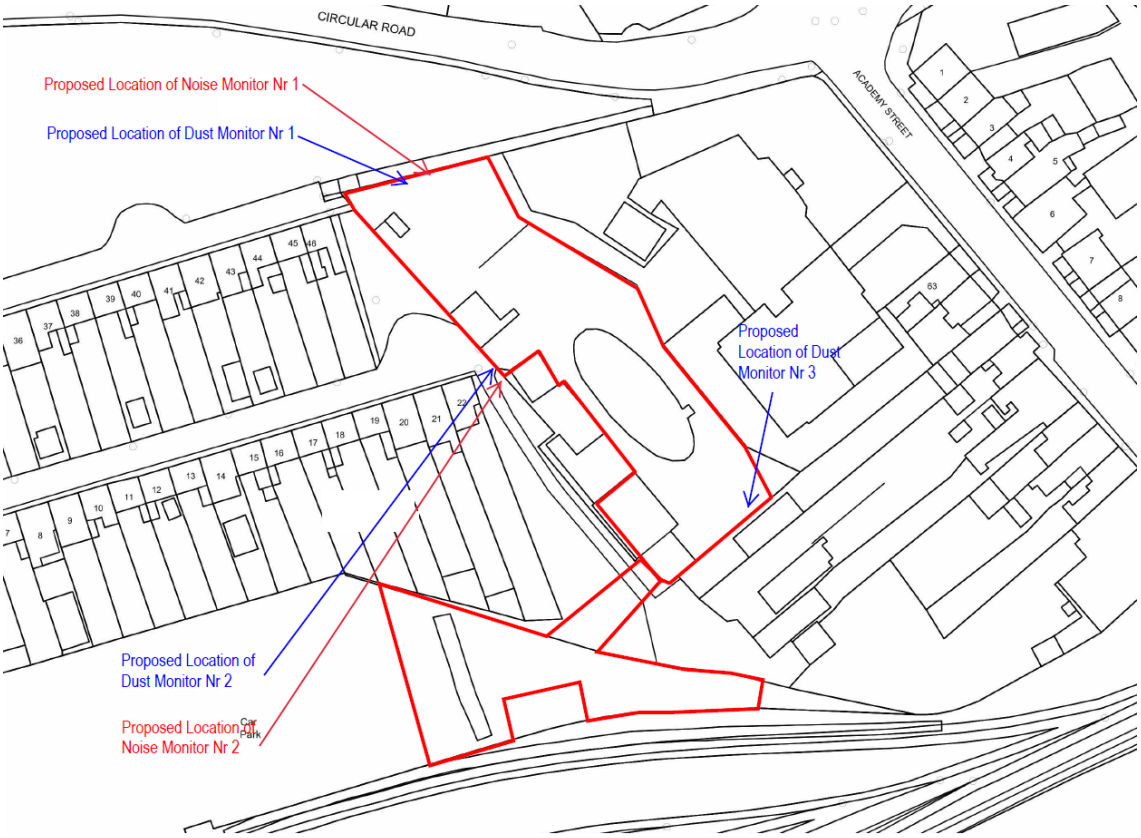
A total of 2no. continuous monitoring devices shall be installed, at locations to be agreed with the Meath County Council, to adequately verify that the noise limits onsite are being adhered to during the works. These locations are indicatively identified on the map below, final locations to be agreed with the Employers Representative prior to works commencing.

All noise monitors to be fixed with alarms, both aural and visual with 'traffic light' system to be implemented:

• Green - noise below all thresholds - ok to proceed

• Amber - noise above first threshold limit (90% of max) - stop and check

• Red - noise above maximum permissible - stop and action



6.4.5 Biodiversity

The contractor is required to implement the following measures outlined in relation to biodiversity during construction:

6.4.5.1 Terrestrial biodiversity, habitats, and flora

The recommendations of the Arboricultural Report submitted with the Part 8 Application are to be carried out in full. The Contractor shall implement the recommendations of the Tree Protection Plan to ensure no adverse impacts on the existing mature along Circular Road and shall provide all protection required around retained trees for the duration of the works. A site specific Arboricultural Method Statement shall be undertaken prior to commencement demonstrating how the contractor will comply with these requiresments.

6.4.5.2 Birds

Tree felling, removal of scrub and other tall vegetation will be carried out between 1 September and 28 February, to avoid any risk to breeding birds and their habitats.

Nesting boxes for the Amber-listed Swift, will be provided under the eaves of the restored building at appropriate locations to be chosen with the project ecologist.

6.4.5.3 Bats

Four species of bat was recorded within the survey area: Leisler's bat, soprano pipistrelle, common pipistrelle and brown long-eared bat.

The proposed development site is used as a foraging and commuting habitat for local bat populations. While the level of bat activity and the number of bat encounters do not indicate that the proposed development site is an important area for local bat populations, the treeline boundaries are commuting routes and foraging habitats.

There was no evidence of bats roosting in the structure but there are suitable sites within the exposed walls of the building. However the survey was undertaken outside the principal bat survey season and therefore mitigation measures are provided to address this. In addition, due to the fact that the proposed development will increase human usage of the site, additional bat mitigation measures are provided to reduce potential impact.

Impact assessment is that the proposed development will have a Permanent Slight negative impact on local bat populations. The implementation of the measures below will reduce this if undertaken as prescribed.

Bat Mitigation Measures

Re-Survey

It is recommended to re-survey the structure during the summer bat season to determine if the building is used as a roosting site. This should be a dusk survey during the months of May to August during mild weather conditions.

Lighting Plan

Bats are light sensitive bats species, hence their nocturnal activities. The three bat species recorded commuting and foraging within the survey area are Light Tolerant or Semi-tolerant bat species.

However, it is still important that strict lighting guidelines are required to reduce the potential impact of the proposed development on local bat populations as standard best practice.
Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).

o All luminaires used will lack UV/IR elements to reduce impact.

o LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.

o A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).

o Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

o Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.

o Only luminaires with an upward light ratio of 0% and with good optical control will be used.

o Luminaires will be mounted on the horizontal, i.e. no upward tilt.

o Any external security lighting will be set on motion-sensors and short (1min) timers.

o As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

Any external lighting for the proposed development should strictly follow the above guidelines and these should be strictly implemented during construction and operation phase of the proposed development. The following table provides details of which of the BCT, 2018 measures will be implemented as part of the proposed lighting plan.

Tree Felling

In relation to trees proposed to be felled and identified as PBRs, the following is recommended:
i) Trees proposed to be removed, should be felled on mild days during the autumn months of September, October or November or Spring months of February and March (felling during the spring or autumn months avoids the periods when the bats are most active). a. Category 2: Any ivy covered trees which require felling will be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape.

Landscaping

It is recommended that native tree, shrub and plant species are included in the landscaping plan. It is recommended that night-scented planting is also undertaken to encourage foraging areas for local bat populations.

It is recommended that a native hedgerow within individual trees (Alder, Birch, Crab apple, Rowan etc.) is planted along Boundary 1 and 2 linked in with the current landscaping measures. This additional planting will act as a buffer zone to ensure that there is dark zone along the specified boundaries.

Bat Conservation Measures

It is recommended that a bat box scheme should be erected within the landscaping plan for the proposed development. This is in the form of two rocket bat boxes to be erected within the boundary habitat.

Bat boxes scheme be sited carefully and this will be undertaken by a bat specialist. The rocket bat boxes are to be erected on a 5m pole fixed in 1m3 of 40 newton strength concrete (Please see appendices for details).

Monitoring

Monitoring is recommended post-construction works. This monitoring should involve the following aspects:

- Inspection of bat boxes within one year of erection of bat box scheme/rocket box. Register bat box scheme with Bat Conservation Ireland. This should be undertaken for a minimum of 2 years.

<u>Additional habitat creation measures for bats</u>

It is envisaged that the façade and roof of the restored building will provide roosting opportunities for bats. As part of the proposed development, the appointed bat specialist shall review the buildings and advise on an appropriate location for of a purpose-built bat box such as the Improved Roost-Maternity Bat Box; likely to be located on the southern facade of both Process and Inlet works Buildings at about 4.5m off the ground. These locations will not be directly illuminated.

6.4.6 Archaeology, Architectural and Cultural Heritage

The contractor is required to implement the following measures in relation to archaeology, architectural and cultural heritage during construction:

- All ground excavations associated with the proposed development will be monitored by a suitably qualified archaeologist. This will enable the identification of any previously unrecorded features/ deposits of archaeological significance. Full provision will be made to ensure the preservation by record of any such features, should that be deemed the most appropriate manner in which to proceed, following consultation with the DCHG;

- All archaeological works will be carried out under the supervision of a project archaeologist, appointed on behalf of Meath County Council, to ensure all mitigation measures are implemented;

6.4.7 Land and Soils

The contractor is required to implement the following measures in relation to land and soils during construction:

- The adopted construction techniques will comply with the requirements of statutory bodies (Building Control Amendment Regulations, Health Service Executive inspections, Irish Water inspections and compliance with Employers Requirements).

- Precautionary measures will be taken to contain any areas within the planning boundary at risk of contaminated run-off.

- Potential pollutants shall be adequately secured against vandalism and will be provided with proper containment according to the relevant codes of practice. Any spillages will be immediately contained and contaminated soil shall be removed from the proposed development and properly disposed of in an appropriately licensed facility.

- Dust generation shall be kept to a minimum through the wetting down of haul roads as required and other dust suppression measures.

- Any stockpiles of earthworks and site clearance material shall be stored on impermeable surfaces and covered with appropriate materials.
- Silt traps shall be placed in gullies to capture any excess silt in the run-off from working areas.
- Soil and water pollution will be minimised by the implementation of good housekeeping (daily site clean-ups, use of disposal bins, etc.) and the proper use, storage and disposal of these substances and their containers as well as good construction practices in accordance with the CIRIA guidance[11].
- A contingency plan for pollution emergencies will also be developed by the contractor prior to the commencement of the works and regularly updated during construction. This contingency plan will identify the actions to be taken in the event of a pollution incident in accordance with the CIRIA guidance 11 which requires the following to be addressed:
    - Containment measures;
    - Emergency discharge routes;
    - List of appropriate equipment and clean-up materials;
    - Maintenance schedule for equipment;
    - Details of trained staff, location and provision for 24-hour cover;
    - Details of staff responsibilities;
    - Notification procedures to inform the EPA or Environmental Department of the Meath County Council;
    - Audit and review schedule;
    - Telephone numbers of statutory water consultees; and
    - List of specialist pollution clean-up companies and their telephone numbers.

6.4.7.1 Amphitheatre Area

- Excavations shall be kept to a minimum, using banking, shoring or trench boxes where appropriate. For more extensive excavations, a temporary works designer shall be appointed to design excavation support measures in accordance with all relevant guidelines and standards. Such excavations are not anticipated.

- All excavated material will, where possible, be reused as construction fill. The appointed contractor will ensure acceptability of the material for reuse for the proposed development with appropriate handling, processing and segregation of the material. This material would have to be shown to be suitable for such use and subject to appropriate control and testing according to the Earthworks Specification(s). These excavated soil materials will be stockpiled using an appropriate method to minimise the impacts of weathering. Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. Any surplus suitable material excavated that is not required elsewhere for the proposed development, shall be used for other projects where possible, subject to appropriate approvals/notifications.

- Earthworks haulage will be along agreed predetermined routes along existing national, regional and local routes. Where compaction occurs due to truck movements and other construction activities on unfinished surfaces, remediation works will be undertaken to reinstate the ground to its original condition. Where practicable, compaction of any soil or subsoil which is to remain in situ along the sites will be avoided.

- Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe runoff and prevent ponding and flooding. Runoff will be controlled through erosion and sediment control structures appropriate to minimise the water impacts in outfall areas. Care will be taken to ensure that the bank surfaces are stable to minimise erosion.

- Ground settlement, horizontal movement and vibration monitoring will be implemented during construction activities to ensure that the construction does not exceed the design limitations.

- Ground settlements will be controlled through the selection of a foundation type and method of construction which are suitable for the particular ground conditions.

6.4.8 Water

The contractor is required to implement the following measures in relation to water during construction:

6.4.8.1 Hydrology and Water Quality

- During construction, surface water runoff would be collected by the temporary drainage system installed by the contractor and then treated or desilted on-site before discharge.
- Earthworks operations shall be carried out such that the surfaces are designed with adequate slope to promote safe runoff and prevent flooding;
- Good housekeeping such as site clean ups, use of disposal bins, etc will be adopted in construction areas;
- In order to prevent accidental release of hazardous materials such as fuels, cleaning agents etc into surface water during construction, all hazardous materials will be stored within appropriately bunded containment areas designed to retain spillages;
- Temporary bunds will be used for storage of oil/diesel

6.4.9 Resource and Waste Management

The contractor is required to implement the following in relation to resource and waste management during construction:

- The contractor is required to prepare, implement and maintain a Construction and Demolition Waste Management Plan throughout construction that addresses the following as a minimum:
  - Description of the proposed development;
  - Wastes arising including procedures for minimisation/reuse/recycling;
  - Estimated cost of waste management;
  - Roles including training and responsibilities for construction and demolition waste;
  - Procedures for education of workforce and plan dissemination programme;

- Record keeping procedures;
- Waste collectors, recycling and disposal sites including copies of relevant permits or licences; and
- Waste auditing protocols.

- The Contractor will minimise waste disposal so far as is reasonably practicable;
- Waste from the proposed development will be transported by authorised waste collectors in accordance with the Waste Management (Collection Permit) Regulations 2007 to 2016 to take into account the Waste Management (Collection Permit) (Amendment) Regulations 2016.
- Waste from the proposed development will be delivered to authorised waste facilities in accordance with the Waste Management Acts 1996-2011 and the Waste Management (Collection Permit) (Amendment) Regulations 2016;
- Source segregation: Where possible metal, timber, glass and other recyclable material will be segregated during construction works and removed off site to a permitted/licensed facility for recycling. Waste stream colour coding, and photographs of wastes to be placed in each container as required, will be used to facilitate segregation. Where waste generation cannot be avoided this will maximise the quantity and quality of waste delivered for recycling and facilitate its movement up the waste hierarchy away from landfill disposal and reduce its environmental impact;
- Material management: 'Just-in-time' delivery will be used so far as is reasonably practicable to minimise material wastage;
- Supply chain partners: The contractor will engage with the supply chain to supply products and materials that use minimal packaging, and segregate packaging for reuse;
- Waste Auditing: The contractor will record the quantity in tonnes and types of waste and materials leaving site during the construction phase;
- Waste fuels/oils may be generated from equipment used on-site during construction and may be classified as hazardous waste. Such wastes will be stored in a secure, bunded area on-site prior to collection by a contractor who holds the appropriate waste collection permit;

- Possibilities for re-use of clean non-hazardous excavation material as fill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use. Where excavation material may not be re-used within the proposed works the contractor will endeavour to send material for recovery or recycling so far as is reasonably practicable;

- The name, address and authorisation details of all facilities and locations to which waste and materials are delivered will be recorded along with the quantity of waste in tonnes delivered to each facility. Records will show material which is recovered and which is disposed of; and

- The contractor(s) will ensure that any off site interim storage or waste management facilities for excavated material have the appropriate waste licences or waste facility permits in place.

6.4.10 Population and Human Health

The contractor is required to implement the following measures in relation to population and human health during construction:

- Provide for safe pedestrian access at points of entry and exit of construction vehicles adjacent to the site

- Stagger works wherever possible and remove hoarding as soon as it is no longer needed to mitigate against severance;

- Maintain regular proactive consultation with local residents and businesses.

APPENDIX A – Construction & Demolition Waste Management Plan

7.0 METHODOLOGY

This plan has been prepared with reference to:

- The Waste Management Act (1996 - 2011) and subsequent amendments.
- Department of Environment policy statements, including:
    - "Changing our Ways" (1998).
    - "Delivering Change – Preventing and Recycling Waste" (2002).
    - "Taking Stock and Moving Forward" (2004).
    - "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects" (Dept. of Environment July 2006).
- National Construction and Demolition Waste Council initiative.

It also seeks to provide guidance on the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution, (eg contamination and/or water pollution).

8.0 Waste Management

8.1.1 Proposed Development

The proposed new development will involve the conservation, restoration and adaptive reuse of parts of a Protected Structure (Ref; 90,915). All materials of historic value shall be retained and re-used in the course of the works. During construction there will be general construction waste generated such as excavation from service trenches, hazardous materials in small quantities (paints, oils, diesel etc), timber formwork, and over-supply of materials along with packaging such as cardboard, plastic, and polystyrene, and off-cuts / defective materials. A

comprehensive waste management plan shall be put in place to manage all site waste in line with the Waste Hierarchy;

Waste Hierarchy (Source: European Commission)

8.1.2 Main Construction Waste Categories:

The main non-hazardous waste streams that will be generated by the construction activities at the site are:

- Non-hazardous stones / bedrock, topsoil and subsoil, made ground fill, from excavations
- Excess new block, brick, tiles and ceramics
- Excess asphalt and tar products
- Excess plasterboard
- Scrap metal
- Cardboard (packaging)
- Plastic (wrapping, packaging)
- Waste wood
- Paper
- Glass

- Damaged materials

The hazardous waste streams may also include the following:

- Excavated soils classified as 'Hazardous' (none known at this time)
- Batteries
- Oils / fuels from machinery and equipment
- Excess paints
- ACM's

Fuels used during the construction stage are classified as hazardous. If fuel is stored on site for machinery and construction vehicles, then areas around fuel tanks and draw off points will be bunded. When fuel is correctly contained and bunded, there should not be any significant fuel wastage at the site. As a precaution all areas of fuel storage and use shall have "spill-kits" located in close proximity.

8.1.3 Waste Arising from Excavations and Site Preparation

Excavated material will generally be used onsite to make up levels as described in the planning documentation.

If excavated material is found to be contaminated, an appropriate disposal method shall be selected depending on the type of contaminant found, ie at a licensed facility.

If materials must be removed off-site, they must be classified in a Waste Classification Report. The classifications are 'Hazardous', 'Non-Hazardous' and 'Inert'. Material of a particular classification is to be disposed of to a landfill or facility licensed to take that class of material. All contracted haulers and disposal facilities used to dispose of excavation waste from the site must be licensed to dispose of this waste as noted, and all licenses/permits must be valid and conditions adhered to.

8.1.4 Waste Arising from Construction Activities

Appropriate measures should be taken to ensure excess waste is not generated during construction, including;

- Ordering of materials should be on an as needed basis to prevent over supply to site. Co-ordination is required with suppliers enabling them to take/buy back surplus stock.
- Purchase of materials pre-cut to length to avoid excess scrap waste generated on site.
- Ensuring correct storage and handling of goods to avoid unnecessary damage that would result in their disposal
- Ensuring correct sequencing of operations.
- Use reclaimed materials in the construction works.
- Materials of historic value will be safely set aside and re-used in other parts of the construction where possible.

The Contractor shall outline in its Construction & Demolition Waste Management Plan, submitted pre-commencement for agreement with Meath County Council, the types and quantities of waste categories anticipated to be generated on site along with the disposal instructions. A format similar to the template below is required;

COMPANY DETAILS	
Company Trading Name(s): TBC	
Site Address: Former St Patrick's Classical School, St Finians Terrace, Dillonsland, Navan	
Postal Address: Former St Patrick's Classical School, St Finians Terrace, Dillonsland, Navan	
Company Site Waste Contact: TBC	**Mobile No.: TBC**
2. WASTE COLLECTION & MANAGEMENT DETAILS	
List each type of waste for collection, e.g. Rubble (Inert), Inert Soil, Non Hazardous Soil, Hazardous Soil, Steel, Timber, Plastic, Cardboard, Plasterboard, Mixed Construction & Demolition, Mixed Canteen, Canteen Dry-Recyclables, Print Cartridges, Office Paper, Asbestos, Oily Absorbent, Oily Sand, Aerosol Cans, Mastic Tubes, Paint, Batteries, Oily Liquid, Sewage, etc. Use separate line for each waste type. Enter ALL waste collection companies and ALL destination facilities as appropriate for EACH waste.	
COLLECTION	**MANAGEMENT**

Waste Type To Be Collected From Site	Company used for Carrying Waste Off-Site	Waste Collection / Carriers Permit Ref. (FULL COPY in head office)	Company Name of Facility to Where Waste is First Offloaded	Address of Facility to Where Waste is First Offloaded	Waste Facility Licence / Permit Ref. (FULL COPY of Permit in head office)	Waste Management (Percentage Reused, Recycled, Recovered, Landfilled)	
General Waste	**Allied Waste**	**NWCPO - 12-11002-01**	**Allied waste**	**Clonmellon, Industrial estate, Navan Co. Meath**	**WFP-KE-08-0347-01**	Reuse	%
						Recycle	TBC %
						Recover	%
						Landfill	%
Steel	**Mulligan**	**WCP-KK-11-580-01**	**Hammond Lane**	The Hammond Lane Metal Company Pigeon House Road	**WFP DC - 0013-11**	Reuse	%
						Recycle	100%
						Recover	%
						Landfill	%
Concrete	**Allied Waste**	**NWCPO - 12-11002-01**	**TBC**			Reuse	%
						Recycle	100%
						Recover	%
						Landfill	%
						Landfill	%
Asbestos	**Rilta Enviroment al**	NWCPO-09-01192-01	**Rilta Enviromenta l**	Block 402, Grant's Drive, Greenogue Business Pk., Rathcoole, Co. Dublin	W0192-03	Reuse	%
						Recycle	%
						Recover	%
						Landfill	%

I will notify Enviromental Supervisor in advance of any changes to Waste Collection or Management. I have read and understood this document and confirm that _____ *(company name)* will fulfil the expectations as outlined therein.

Name(BLOCK CAPS): _____	**Signed** (in pen): _____	**Date:** _____

8.1.5 Proposed Uses for Waste and Surpluses Generated on Site

Concrete and masonry waste should be source segregated separately and disposed off-site at a facility for the reprocessing and reuse of such waste as aggregate or backfill material. Timber and scrap metal shall be collected in receptacles with mixed construction waste materials, for subsequent separation and recycling at an off-site facility. Other construction waste materials will be collected in receptacles with mixed waste materials, for subsequent separation and disposal at an off-site remote facility.

Hazardous wastes will be identified, removed, and kept separate from other waste materials in order to avoid contamination.

All generated waste should be separated into paper/glass/plastic recycling and removed to an off-site recycling facility. Under no circumstances is the burning of waste material permitted.

Packaging waste will be separated into glass, paper, steel, aluminium, fibreboard, wood and plastic sheeting fractions and arrangements be made for it to be collected by a Repak approved waste contractor.

8.1.6 Removal of Waste Off-Site

It is anticipated that waste materials will have to be moved off site as outlined above. It is the contractor's responsibility to either; gain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorizations, for the collection and movement of waste off site. Material will be brought to a facility which currently holds a waste permit.

8.1.7 Tracking and Documentation Procedures

All waste will be documented prior to leaving the site. All information will be entered into a waste management system kept on the site.

The following records at a minimum will be kept at the site office:

- Waste Management Plan
- Copies of all relevant permits/licences

- Audit reports
- Site waste docket, detailing:
  - The waste carrier(s) used and contact details;
  - Permit No. and Vehicle Registration
  - Waste description and quantity and consignment route number.
  - The disposal site(s) name, License Ref. and contact details
- Weighbridge dockets (Non-hazardous waste)
- Landfill Receipts (Non-hazardous waste)
- WTF forms (Hazardous waste)
- Trans-frontier shipment documents (Hazardous waste)

The Construction Manager will be informed of inspections by Statutory Bodies, or breach of the Duty of Care by any party involved with the transfer of site waste.

8.1.8 Roles and Responsibilities for Construction Waste

A construction waste manager shall be appointed on site to ensure that waste prevention / minimisation and recycling are managed appropriately. Their main tasks should be;

- To implement all items set out above effectively and to keep accurate records on the waste generated, and the cost associated with waste generation and management.
- Document each consignment of construction waste, including;
  - Type of material being transported,
  - Quantity of material,
  - Name and permit number of waste collection contractor,

- Destination of material and proposed use.

Note: Summary reports are required to be provided on the above, which also include estimates of the quantity of waste that is diverted from landfill.

- Document the extent of re-use, salvage, recycling and solid waste disposal

The construction waste manager if appointed should have the authority to instruct all site personnel to comply with the construction waste management plan. At the operational level, sub-contractors shall have an appointed person who has the responsibility to ensure operations in the construction waste management plan are carried out on an ongoing basis.

8.1.9 Waste Auditing

If appointed the construction waste manager on site will be responsible for conducting a waste audit on site. The audit will include a review of all the records for the waste generated and transported on or off the site to be undertaken. This will include:

- Reviewing details of materials arriving on site.
- Reviewing the amount, nature and composition waste leaving site.
- Calculate the total cost of waste management.
- All areas, and stages of the project should be reviewed to ensure that obvious opportunities for waste reduction are not overlooked.
- Summary of waste arising should be sent to the environmental authority at the completion of the project.

8.1.10 Training

Copies of the construction waste management plan should be made available to all personnel on site, and objectives, procedures and responsibilities of the construction waste management plan should be outlined to all site personnel during their site induction.

Members of staff should be instructed on, waste segregation, and material reuse, and how to comply with the construction waste management plan. Posters should be displayed on site reinforcing the key messages of the construction waste management plan.

8.1.11 Estimated Cost of Waste Management

The cost of waste management should be estimated by the appointed contractor. This should include:

- The purchase cost of waste materials.
- Handling costs.
- Storage and transportation costs.
- Disposal costs including landfill tax.

It should then be possible to estimate:

- Total waste steel management costs.
- Total waste timber management costs.
- Total waste concrete management costs.
- Total waste soil management costs.
- Total waste masonry management costs.

This will help ensure that unproductive and avoidable costs of construction waste management are eliminated and will be effective in enhancing internal cost control procedures. The estimate of the cost of the waste management should be updated throughout the project at each stage at which a waste audit is carried out.

9.0 Appendix A: EPA Waste Flowchart

Do I need a Waste Licence, Permit or Certificate of Registration ?

Sept 2008 – V15

epa Environmental Protection Agency

Private Sector Activities

KEY
COR – Certificate of Registration under SI 821 of 2007 as amended
Permit – under SI 821 of 2007 as amended
Licence – under Part V of the Waste Management Act
Tyre COR – under Tyre Regulations SI 664 of 2007
WEEE RC – Registration Cert. under WEEE Regulations SI 340 of 2005
P&D Act - Planning & Development Act 2000

NB: See definitions in Article 5 of SI 821 of 2007

Exempt from requirement to hold a Waste Licence, Permit or COR:
- WMA Section 39(7):- Specified waste activities on an IPPC regulated site; deposit of litter in a bin; the disposal of specified animal by-products; the disposal of household waste within the curtilage of the dwelling where produced; transfer of waste to an authorised person for Recovery.
- WMA Section 51:- Recovery of sludge for use in agriculture; recovery of animal or poultry blood or slurry/manure.
- Temporary storage (<6 months) of waste on the site of its production (certain limitations for WEEE distribution centres, see Art 39(1a) of SI 340 of 2005).
- WEEE Regs SI 340 of 2005. Art 39(1) & (1b):- Temporary storage of certain quantities & types of WEEE at a distribution outlet; and storage by registered charities of <90m³ of certain household WEEE and <50kg mobile phones (at any one time).
- Tyre supplier temporarily storing <180m³ waste 'take-back' tyres (SI 664 of 2007, Article 33(1))
- Temp storage of waste batteries at workplaces, distributors & charity venues. Certain limits apply. See Article 44 of SI 268 of 2008

Recovery or Disposal of waste to Land

- I-5; II-5 Recovery of Inert Excavation or Dredge Spoil to land
  - II-5 <25,000t total → COR
  - I-5 >25,000t and <100,000 total → Permit
  - >100,000t total → Licence
- I-6; II-6 Recovery of Inert waste to land
  - II-6 <10,000t total → COR
  - I-6 >10,000t and <50,000 total → Permit
  - >50,000t total → Licence
- Landfill Disposal → Licence
- II-9 Storage at place of extraction of chemically unaltered quarry or excavation material where conditions under S261 of P&D Act have not been imposed
  - No foreseeable use → Permit
  - Use in on-site restoration → COR
- I-10; II-13 Organic Waste
  - II-15 Recovery to land for use in eco-benefit or agriculture, food crops & forestry <1000tpa → COR
  - I-10 Recovery to land >1000tpa <50,000tpa → Permit
  - Recovery to land >50,000tpa, or Disposal to land → Licence
- Other → Licence

Waste Transfer/Storage/Treatment/Collection Location

- I-1; II-1 Household Hazardous Waste
  - II-1 HHW Reception & Temporary Storage for onward recovery
    - <50tpa (<25t solid, <25t liquid) & <30 days in storage for any item → COR
    - I-1 >50tpa OR >30 days in storage for any item, AND <200tpa (100liq, 100t sol) → Permit
    - >200tpa (100liquid, 100t solid). OR Storage/Transfer for Disposal → Licence
  - I-1 Reception and Temporary Storage for onward Recovery or Disposal
- I-2, I-4, I-12, II-3 Scrap Metals & Vehicles
  - II-3 Reception, Storage at any one time of <6 crashed or immobilised non end of life waste vehicles → COR
  - I-4 Reception, storage and recovery of Metals (incl. depolluted vehicle scrap) → Permit
  - I-2, I-12 Reception, Storage, Recovery, Treatment (Depollution) of ELV and other vehicles → Permit
- I-3 WEEE Reception, Treatment & Recovery
  - >10,000tpa → Licence
  - <10,000tpa → Permit
  - I-1 Other
    - **Stand alone unit** & <30 days storage for any item. At any one time:- <540m³ household WEEE; <12,000 of lighting units; <300kg of mobile phones → WEEE RC
    - II-4 At any one time:- <540m³ household WEEE; <12,000 of lighting units; <300kg of mobile phones. <30 days storage for any item → COR
- I-1; II-4 WEEE Reception & Storage, Transfer for Recovery
- II-4 Non-WEEE Equipment containing CFCs
  - Reception & Storage for transfer to Recovery of <1t at any one time. <30 days storage for any item → COR
  - II-4 Reception & Storage for transfer to Recovery of: (a) <1t (at any time) of used B&A; (b) <10t used industrial & automotive B&A. AND <30 days storage for any item → COR
- I-9; II-4 Batteries & Accumulators
  - I-9 Reception, Storage & Recovery of <1000tpa used batteries & accumulators → Permit
  - Reception, Storage & Recovery of >1000tpa used batteries & accumulators → Licence
- Waste Incineration → Licence

- Farm use of tyres (<8 tyres per m² of silage pit) → Tyre COR
- I-7; II-7 Recovery of Inert C & D waste
  - >50,000t tpa or >15% residual to Disposal → Licence
  - I-7 >10,000tpa, <50,000t tpa & <15% residual to Disposal → Permit
  - II-7 <10,000tpa & <15% residual to Disposal → COR
- I-8; II-12; II-13 Biowaste
  - II-13 Recovery of organic waste for benefit to agriculture, food crops, forestry, & eco-benefit. <1000tpa → COR
  - II-12 Storage & Bio- Treatment at site of production of <50tpa, and <20t compost, digestate & biowaste stored at any one time → COR
  - I-8 Reception, Storage & Bio-Treatment >50tpa but <10,000tpa, and where <6000m³ compost, digestate & biowaste stored at any one time → Permit
  - Reception, Storage & Bio- Treatment >10,000tpa, OR where >6000m³ compost, digestate & biowaste stored at any one time → Licence
- II-14 Reception & temporary storage for transfer of containers of waste refrigerant gases, halons, & fluorinated greenhouse gases
  - >18t stored at any one time → Licence
  - <18t stored at any one time → COR
- I-10, I-11; II-2 General MSW, Commercial & Industrial Waste, and Other Waste activities
  - II-2 Reception & temporary storage for off-site Recovery or Disposal of <1000t at any one time, of waste deposited by the public [haz. or non-haz., and where not otherwise limited by Schedule III of SI 821/07 as amended.] → Permit
  - I-11 Reception, storage and transfer of non-hazardous waste for Disposal (other than at a landfill facility) <7,500tpa → Permit
  - I-10 Recovery of non-hazardous waste <50,000tpa, and with <15% residual to onward Disposal → Permit
  - Other → Licence