Dub1 Kilcarbery

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

A1067-HMV-ZZ-XX-MGP-ZZ-0001

Quality Assurance Document

H&MV ENGINEERING

QAP 10 HSE 24

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Do not edit the table below, proceed to tables on next page

Issue: 16	Date of issue: 09th January 2024
Author:	Jessica Beckley
Owner:	HSE Director
Technical Content Reviewed by:	Kate Kerrane
Approved by:	PJ Flanagan/John Stokes **Signature:**
Content Reviewed for QMS Compliance by:	Louise Dooley
Next Review Date:	09th January 2027

H&MV ENGINEERING DOCUMENT PREPARATION AND REVIEW:

	Name	Position	Signature	Date
Prepared By:	**Kate Kerrane**	Group Environmental & Sustainability Manager	**Kate Kerrane**	**12-04-2024**
Reviewed By:	**Danny Walling**	Project Manager	**Danny Walling**	**25/04/2024**
Reviewed By:	**Larry Dunne**	Chief Operating Officer	**Larry Dunne**	**26/04/2024**

CLIENT APPROVAL:

	Name	Position	Signature	Date
Approved By:				
Approved By:				

DOCUMENT REVISION HISTORY:

Revision	Description	By	Date
00	Initial Revision	Jamie Woods	11-10-2022
01	Revised to address Clients Review Comments	Jamie Woods	10-11-2022
02	New format & up to date information	Kate Kerrane	11-04-2024
03	Client comments addressed	Kate Kerrane	24/05-2024

(Add additional rows as required)

Note:
This is a 'LIVE' document. It is a work in progress and will be revised and amended as per project construction requirements.

Contents

1. INTRODUCTION 6

2. H&MV ENGINEERING ENVIRONMENTAL POLICY 8

3. SITE INFORMATION 10

3.1 Location 10

3.2 Scope of Works 12

3.2.1 Ground Works & Site Preparation 13

3.2.2 Installation of Underground Transmission Lines 14

3.2.3 Foundations and Structures 15

3.3 Programme of Works 15

3.4 Site Setup 15

3.5 Site Accommodation 16

3.6 Working Hours 17

3.7 Project Entities 17

4. PROJECT MANAGEMENT 18

4.1 Organisational Chart 18

4.2 Project Team 19

4.3 Project Team Duties 19

4.4 Monitoring & Review of CEMP 21

4.5 Project Site Audits 22

4.6 Relevant Documentation 22

5. COMMUNICATION 23

5.1 Staff Training and Awareness 24

5.2 Contractors and Sub-Contractors 24

5.3 Complaints 24

6. LEGAL REQUIREMENTS, CONSENTS & PERMITS 25

6.1 Legal Requirements 25

6.2 Consents and Permits 26

7. ENVIRONMENTAL MANAGEMENT 31

7.1 General Environmental aspects **31**

7.1.1 Site Specifics **31**

7.1.2 Design and Construction Environmental Management Methodology **33**

7.1.3 Best Practise Measures **34**

7.2 Environmental Objectives **35**

7.3 Water Management and Pollution Control **36**

7.3.1 Protection of Watercourses **38**

7.4 Ecology **41**

7.4.1 Invasive Species Best Practises Measures **42**

7.4.2 Ecology Surveys **42**

7.4.3 Ecological Noise Disturbance **42**

7.5 Energy Usage, Energy and Carbon Emitted **43**

7.5.1 Control of Emissions **43**

7.6 Archaeology and Heritage **44**

7.7 Statutory Nuisance **44**

7.7.1 Noise Control **45**

7.7.2 Dust Control **46**

7.7.3 Light & Visual Impact **48**

7.8 Resource Efficiency **48**

7.9 Waste and Material Management **49**

7.9.1 Soil Management and Contaminated Land **54**

7.9.1.1 Reinstatement of Land **54**

7.9.2 Storage of Materials, Disposal of Excavated Materials **55**

7.9.3 Vehicles and Equipment **55**

7.10 Chemical & Oil Management **56**

7.10.1COSHH Storage **56**

7.10.2Management of Oil & Chemical measures **57**

7.10.3Spills & Categories **59**

7.10.3.1 Small Land-based Spill **59**

7.10.3.2 Small Water-Based Spill **60**

7.10.3.3 Medium to Large land-based Spill **60**

7.10.3.4 Medium to Large water-based Spill **61**

7.10.3.5 Other Chemical Spills **61**

7.11 Social Impact **62**

8. ENVIRONMENTAL INCIDENTS **62**

8.1 Reporting and Investigation **63**

8.2 Emergency Environmental Contact Details **63**

APPENDIX A – SPILL PROCEDURE **64**

APPENDIX C – FINDS PROCEDURE **66**

APPENDIX D – WILDLIFE YEAR PLANNER **67**

9. STORAGE DETAILS **70**

10.UPDATE REGISTER **70**

1. INTRODUCTION

The purpose of this Construction Environmental Management Plan (CEMP) is to avoid, minimise or mitigate any construction effects on the environment and the surrounding community. This shall be through the delivery of the best practicable environmental performance, compliance with all applicable legislation and statutory controls, and H&MV Engineering's Environmental policy statement.

All personnel including contractors and sub-contractors working on the project are responsible for the correct environmental management and control of all their work. All duties shall be performed in accordance with the requirements outlined in this CEMP and with continuous items identified in the Environmental Aspects, Impacts and Mitigation Assessments.

This document should be read in conjunction with the full suite of H&MV Engineering project documents, as well as any relevant Client procedures, plans and policies.

This Construction Environmental Management Plan (CEMP) has been produced to set out the environmental controls and mitigation measures that will be implemented to ensure that all client and applicable regulatory requirements for the construction of the Dub11 GIS Substation Compound and the associated transmission lines. This document has been prepared by H&MV Engineering to be applied during the course of all works.

This plan describes how H&MV Engineering will implement measures designed to control or mitigate against potential environmental effects that will arise on this project, ensuring works are compliant with the requirements of the Planning Authorities, agreements with Landowners, and other technical or legal requirements, as well as the commitments made in the EIAR and Appropriate Assessment Screening Report.

Throughout the duration of the project the Construction Environmental Management Plan (CEMP) will be updated and reviewed, as necessary, to ensure that it remains compliant with current legislation and company systems and the client's Environmental Policies and Procedures. The CEMP will also be reviewed should any new or heretofore unforeseen circumstance arise on site that has an environmental sensitivity. As such this CEMP is a 'live' document subject to continual review.

Any revisions to this document will be issued to all correspondents and communicated to all those directly and indirectly related to the project.

The CEMP has been completed by Jamie Wood of JKW Environmental who will also be performing the role of Ecological Clerk of Works on the project.

As already stated, this CEMP is a live document and will be further developed and expanded at a future date as required.

2. H&MV ENGINEERING ENVIRONMENTAL POLICY

H&MV ENGINEERING
High Voltage Specialists

ENVIRONMENTAL POLICY

H&MV Engineering regards environmental protection as an integral and essential part of best business practice. H&MV aims to achieve the highest standard of environmental performance in the interests of the natural environment itself, all our stakeholders, employees, owners, neighbors or the general public.

H&MV is committed to providing the necessary information, training, and equipment to enable our employees to carry out their duties safely and in an environmentally responsible manner. All of our employees are made aware of our environmental policy. We are committed to protecting the environment through the ongoing identification and control of those significant environmental impacts associated with our ESG objectives (Reference QAP 00 QWI 01-D-25 ESG Policy).

H&MV Engineering acknowledges that its operations exert environmental influences, and are committed to handling these impacts in a way that prevents pollution, ensures a robust safeguarding of the natural environment, and concurrently fosters the sustainable development of our economy and communities.

Our Environmental Systems are implemented to ISO 14001 standard and aim to achieve the following objectives:

- Promotion of environmental awareness among all our employees and the generation of an ethos of continual improvement within the company.
- Diligent management of operations by employing control mechanisms, procedures and processes that are proven and economically feasible.
- H&MV aims to have a net positive impact on the environment and people in the long term, by collaborating with the supply chain, encouraging innovative and digital thinking.
- H&MV aims to have a net positive impact on the climate, by reducing its own carbon emissions and helping others to reduce emissions more widely.
- Promotion of continual improvement, pollution prevention and good health and safety practices through continual review of IMS Management objectives and targets.
- Publication and communication of our policy internally and ensuring its availability to interested parties on request so that it is understood, implemented, and maintained.
- Measurement of performance by conducting regular audits and assessment of compliance with the ISO 14001 standard, Environmental policy, relevant legislation, and regulatory requirements.

H&MV Engineering understands its legal obligations and is committed to complying with current health and safety and environmental legislation, regulatory environments, corporate guidelines, and codes of practice. We recognize the paramount importance of safeguarding and protecting the environment and acknowledge that legislative compliance is the minimum standard acceptable. We will review our legislative responsibilities and this policy on an ongoing basis and provide self-monitoring to ensure compliance and constant improvements and protection to the natural environment.

Signed: Paul Kelly Date: 8/1/24

Director

Signed: Date: 8/1/24

"Safety, Loyalty, Integrity, Commitment & Teamwork"

NSAI

Certificate of Registration
of Environmental Management System to I.S. EN ISO 14001:2015

H&MV Engineering Ltd
Unit 35 McLoughlin Road
National Technology Park
Castletroy
Limerick
Ireland

NSAI certifies that the aforementioned company has been assessed and deemed to comply with the provisions of the standard referred to above in respect of:-

The Provision of Specialist High Voltage Design Engineering, Installation, Commissioning, Maintenance, Test Services and HV Switching & Operations

Approved by:
Stewart Hickey
Head - Business Excellence, NSAI

ENVIRONMENT ISO 14001:2015 NSAI Certified

Registration Number: 14.0680HQ
Original Registration: 21 August 2013
Last amended on: 22 July 2022
Valid from: 23 July 2022
Remains valid to: 23 July 2025

This certificate remains valid on condition that the Approved Environmental Management System is maintained in an adequate and efficacious manner. NSAI is a partner of IQNet - the international certification network (www.iqnet-certification.com)

Partner of IQNet

All valid certifications are listed on NSAI's website - www.nsai.ie. The continued validity of this certificate may be verified under "Certified Company Search"

NSAI (National Standards Authority of Ireland), 1 Swift Square, Northwood, Santry, Dublin 9, Ireland T +353 1 807 3800 E: info@nsai.ie www.nsai.ie

CERT-163 WM: 14001 2015 INAB A4 Multisite Page 1 of 3 (Parent) (3)

3. SITE INFORMATION

3.1 Location

Client: Vantage Data Centres

Project No.: A1067

Project name: Dub 1 Kilcarbery

Site address: Vantage Dub 11, Kilbride, Co. Dublin.

Google Map Link: [Vantage DUB11 Data Centre - Google Maps]

Map:

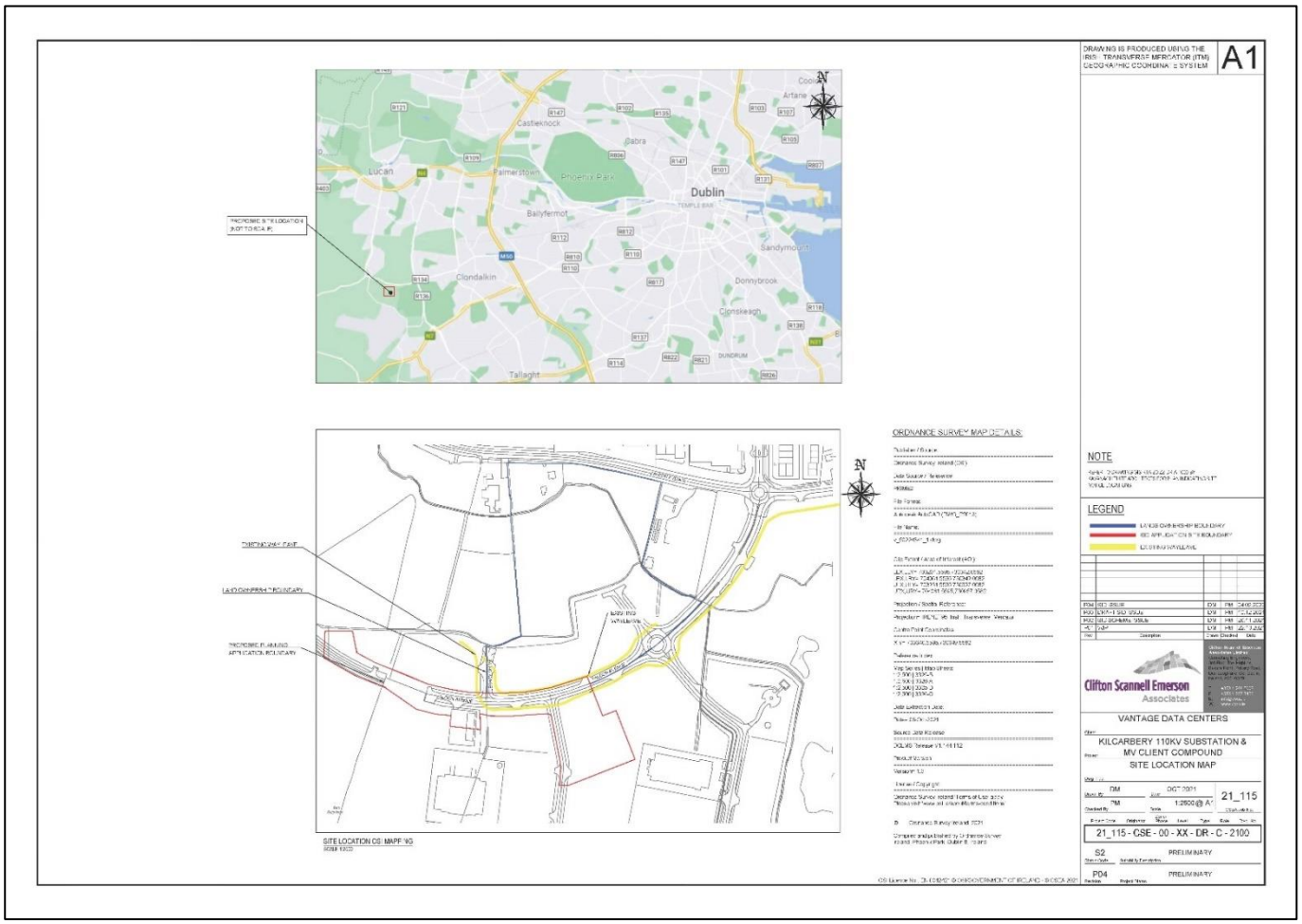


Figure 1: Site Location

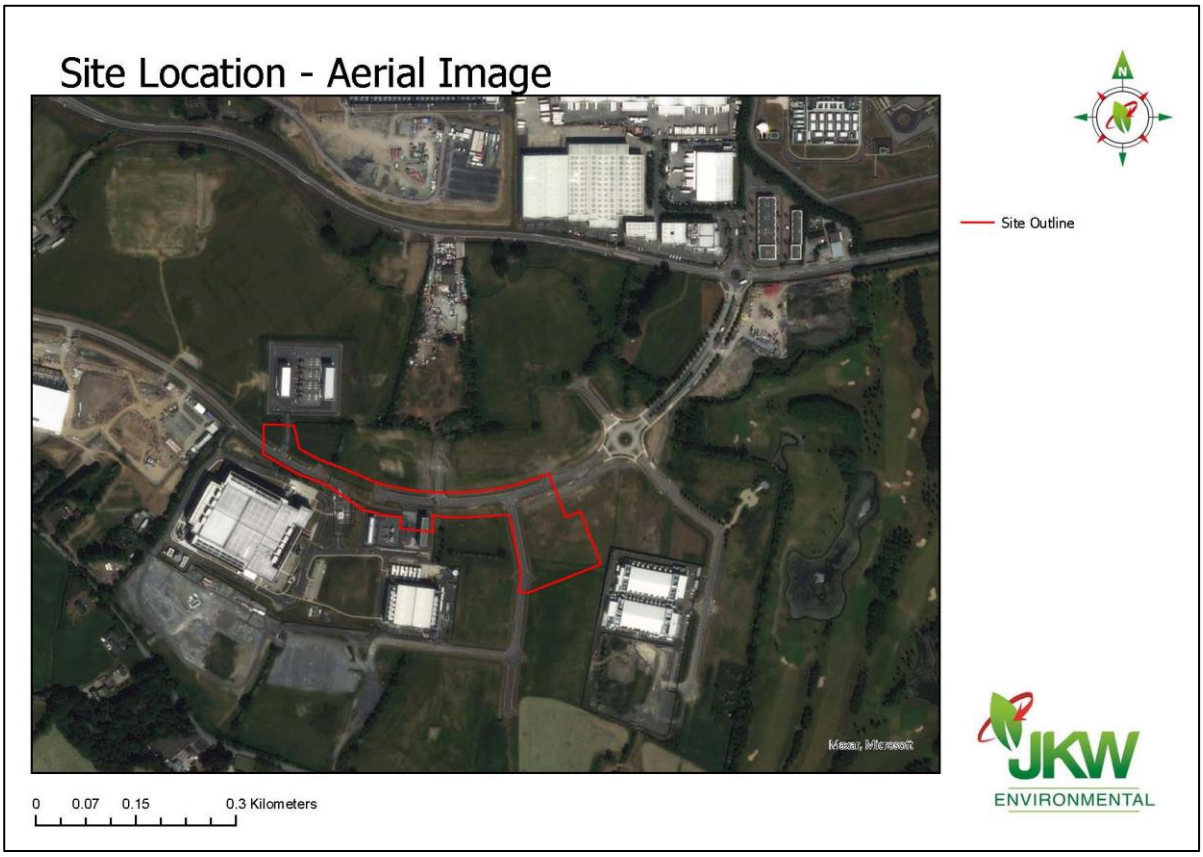


Figure 2 : Site Location - Aerial Image

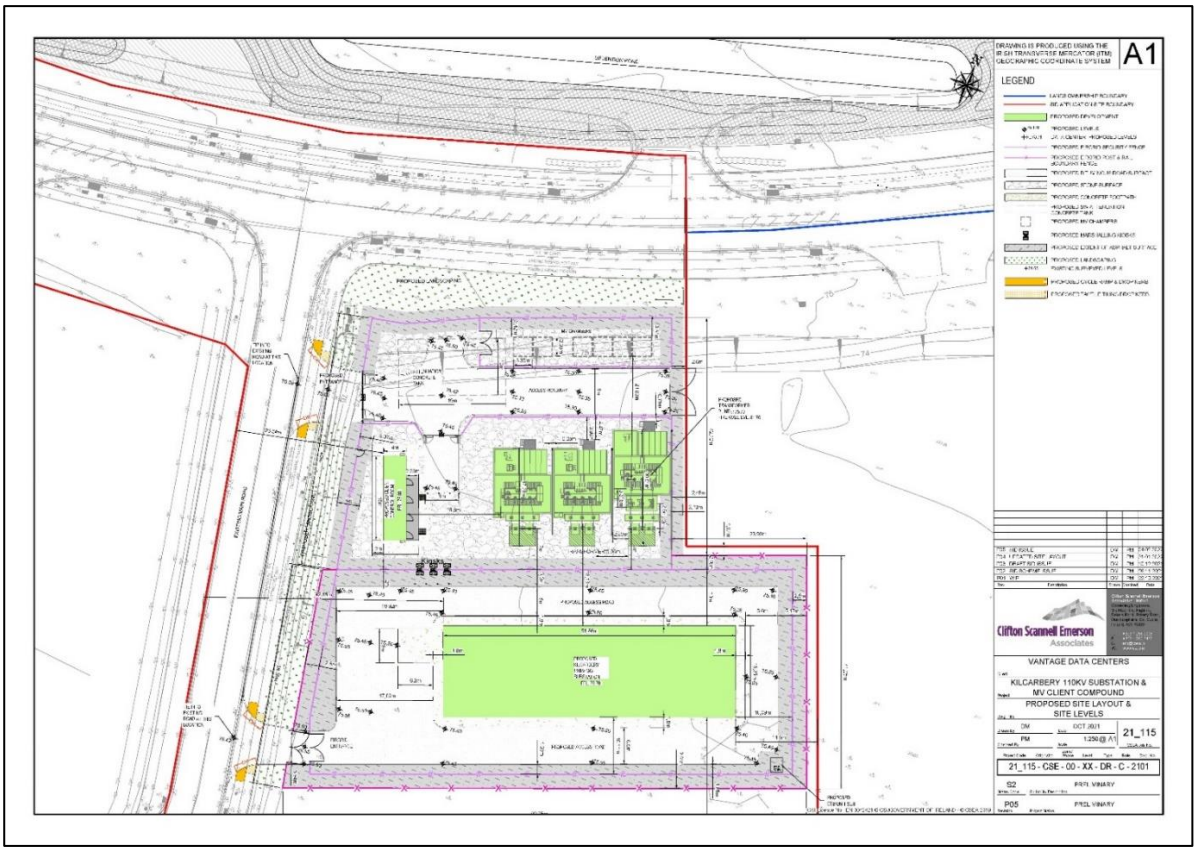


Figure 3: Site Layout

3.2 Scope of Works

The following sections outline the main construction method and environmental controls that will be implemented during the construction. Both this CEMP and the Construction Method Reports will outline the detailed construction methodologies to be incorporated into RAMS prior to construction.

It is proposed to commence construction Q2 2024 with the main building and civil works completed Q1 2025 with commission and handover to Eirgrid/ESB Q1 2026. The project will be carried out in a single phase.

The proposed development comprises of two 110kV underground transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound along with associated and ancillary works. The project is described in detail as follows.

The proposed 110kV GIS Substation Compound is to be located on lands to the south of those that are subject of an application for 2 no. data centres under South Dublin County Council Reg. Ref. SD21A/0241 and to the south of Falcon Avenue within Profile Park, and within an overall landholding bound to the north by Falcon Avenue, Profile Park; to the west by Casement Road, Profile Park; and to the east and south by undeveloped lands; and partly by the Digital Reality complex to the south-east within Profile Park, Clondalkin, Dublin 22. The site of the proposed development has an area of c. 3.19 hectares.

The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation buildings (with a gross floor area of 1,477sqm) (known as the Kilcarbery Substation), three transformers with associated ancillary equipment and enclosures, a single storey Client Control Building (with a gross floor area of 51.5sqm), lightning masts, car parking, associated underground services and roads within a 2.6m high fenced compound and all associated construction and ancillary works.

One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV Barnakyle Substation to the west. The proposed transmission line covers a distance of approximately 274m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass under the internal road network within Profile Park to where it will connect into the Barnakyle substation.

One proposed underground single circuit 110kV transmission line will connect the proposed Kilcarbery 110kV GIS Substation to the existing 110kV underground Castlebaggot - Barnakyle circuit to the west within the Grange Castle South Business Park. The proposed transmission line covers a distance of approximately 492m within the townlands of Aungierstown and Ballybane, and Kilbride and will pass both under, and to the north of the internal road network within Profile Park and Grange Castle Business Park South where it will connect into the Castlebaggot - Barnakyle circuit at a proposed new joint bay.

The development includes the connections to the two substations (existing and proposed) as well as to the Castlebaggot - Barnakyle circuit, associated underground services, and all associated construction and ancillary works.

The overall site and the site layout is as shown on the Site Location Map in Figure 1, the Aerial Image in Figure 2 and the Site Layout in Figure 3

3.2.1 Ground Works & Site Preparation

It is proposed that the accesses and haul roads for vehicles, the contractor's compound and fencing will be established for the proposed development utilising the existing entrance from the internal Profile Park Road to the south of the R134. Security fencing will be established around the site with site access restricted by dedicated security personnel who will check all incoming and outgoing vehicles and workers.

The contractor's preliminary compound will be established upon site mobilisation and will include an office, portable sanitary facilities, equipment storage and parking. This compound will be used for the entire construction phase of the development.

Site clearing and levelling is necessary for base construction and will precede the main construction phase. Site clearing and levelling will be completed alongside compound set up works immediately after site mobilisation. Bulk soil, such as stripped topsoils, will be stored in designated areas only. All stockpiles will be restricted to less than 2m in height and will be located at least 50m from surface drains.

It is predicted that the majority of the cut material generated during site preparation and levelling (2,829m3) will be disposed of offsite. Any material removed off site in this manner will be removed by a licenced haulier to an appropriately licenced facility.

Following grading works, approximately 10,800m3 of fill is anticipated for construction of the proposed roads, carparks, buildings and landscaped berms.

Contained portable chemical toilets will be used on site during the enabling works for the construction phase. As the project progresses, a full site set-up as per site layout plan will be implemented; toilets facilities will be provided in the site compound which will have a sewage tank/wastewater tank. All sewage will be removed by a licenced contractor from the site to an authorised wastewater treatment plant.

During all preliminary works a watching brief will be undertaken by a technically competent and suitably experienced individual during any excavation works. It is not anticipated that any hazardous waste is likely to be encountered during excavations, however if it is found then it will be segregated, tested and classified as either clean, inert, non-hazardous or hazardous in accordance with the EPA Guidance. In the unlikely

event that contaminated soil is discovered, this this will be managed in accordance with best practice guidelines (as outlined in A.1.2 of EMP minimum environmental requirements), H&MV procedures relating to the handling of hazardous materials and all relevant legislation in consultation with South Dublin County Council and the EPA.

Storage of contaminated material, in the unlikely event that it is encountered on-site, will be avoided where possible. Contaminated material, if present, will be strictly segregated into designated bunded areas where contaminants cannot leach into the underlying ground until such time as the material is tested and disposed of by a specialist hazardous water contractor as per procedures.

3.2.2 Installation of Underground Transmission Lines

Ancillary site development works would include the drilling and laying of ducts and cables under the site, connecting the GIS substation to the existing substations via two underground cable feeders.

The 110kV underground cable feeders would comprise a 110kV circuit installed underground in HDPE ducting. The 110kV cables would be a standard XLPE (cross-linked polyethylene) copper cable. The design of the rural supply (49 kVA) underground cable would comprise a looped MV circuit installed underground in HDPE ducting. The MV cables would be a standard XLPE (cross- linked polyethylene) aluminium cable, located within the roadbed of Falcon Avenue to the connection point.

Where the rural supply is outside of the site boundary it is expected that it would be delivered by ESB Networks.

The cable installations are anticipated to extend from the proposed substation to the existing Castlebaggot 220 kV Substation and Barnakyle 110 kV Substation, approximately 400 m and 175m from the location of the proposed substation respectively.

The route of the 110kV circuit comprises two underground cables, as follows:

- Circuit 1 - Kilcarbery to Barnakyle; and
- Circuit 2 - Kilcarbery to Castlebaggot.

The first underground transmission cable circuit (Kilcarbery to Barnakyle) would proceed from the

proposed substation to the west, along Falcon Avenue. At the end of this road, the circuit turns south and enters the existing Barnakyle 110kV Substation. This circuit would cover a distance of approximately 274m.

The other underground transmission cable circuit (Kilcarbery to Castlebaggot) would also proceed from the proposed substation to the west but continue on from the end of Falcon Avenue across an allotment and

onto Castlebaggot 220kV Substation located within Grange Castle Business Park South. This circuit would cover a distance of approximately 492m.

The first circuit (Kilcarbery to Barnakyle) would terminate within Barnakyle 110kV Substation while the second (Kilcarbery to Castlebaggot) would terminate in an underground cable joint bay located outside Castlebaggot 220kV Substation. The cable routes would be co-ordinated to avoid impact on other utility assets present within Falcon Avenue.

During construction, welfare facilities (canteens, toilets, etc) would be available within the construction compound on site. Temporary connections to the existing estate services in the existing estate road would be utilised to provide service and utilities subject to relevant applications and approvals.

3.2.3 Foundations and Structures

Following the completion of site clearance and levelling, all structures will require foundations, built to the structural engineer's specifications. Building structures will comprise of standard structural steel frames. It is anticipated that foundations will require moderate scale excavations. The outer finishing of the building envelopes are to be of a high quality and appearance as per the architects drawings.

Local minor dewatering may be required during excavation works and groundworks. Standard construction practices will be adopted in the construction of site structures and is not described here.

Following building construction fit out will proceed.

3.3 Programme of Works

For a detailed programme of works refer to the latest up to date version of the Programme of Works within the Project Procore folder. The Programme of works will be a "Live" document.

3.4 Site Setup

The site plans can be found within the SharePoint/Autodesk folder in project file and shall be available in the site office. The site plans shall include, as applicable:

- Boundary of site
- General site layout
- Site access and exit points.
- Parking areas
- Vehicle routes and pedestrian walkways
- Storage areas, including lay-down areas

- Site accommodation and welfare

The substation is located on lands within Profile Park, Clondalkin, Dublin.

The works are inclusive of:

- General ground vegetation clearance (general grass, weeds etc)
- Tree felling and pruning.
- Construction of:
  - Temporary bases for temporary structures (such as portacabins & welfare)
  - Drainage systems
  - New concrete bases for installation of permanent equipment
  - Permanent access roads and hard standings
  - Permanent fencing
  - Lighting & CCTV, if applicable
  - Erection of substation / electrical equipment
  - Habitat enhancement / landscaping

3.5 Site Accommodation

Site accommodation shall consist of:

- Site Managers Office & Meeting room
- Canteen for preparation & consumption of food
- Changing room with facilities for drying clothes
- Adequate toilets for anticipated numbers on site
- Storage containers
- Smoking area

Connection of services and other ancillary requirements will be completed with care and consideration. On project completion the area will be returned to pre-existing conditions or according to contract / client requirements.

The following services shall be applicable:

- Water
- Mains electricity
- Generator(s)
- Surface water drainage

- Foul – Mains
- Foul – Septic tank
- Internet / Router

3.6 Working Hours

Days	Start Time	Finish Time
Monday to Friday	07:00	19:00
Saturday	09:00	13:00

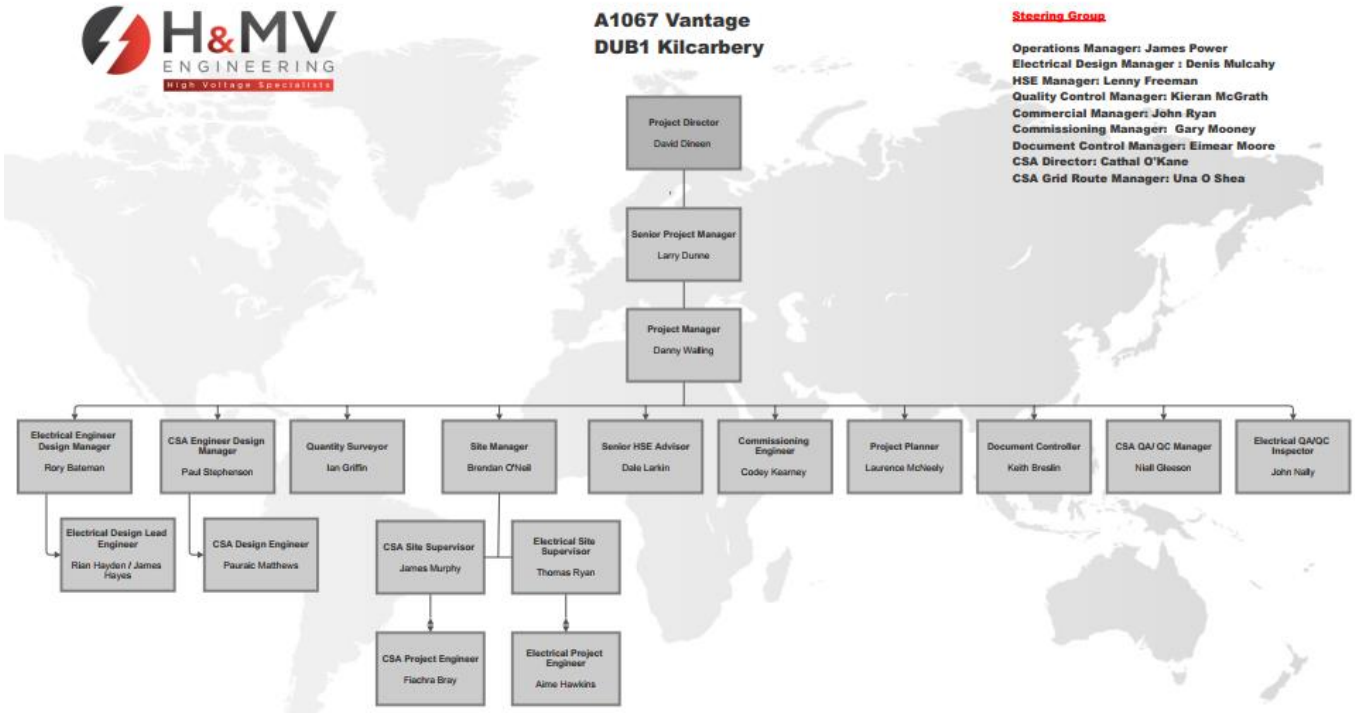
3.7 Project Entities

Project Entities	
The following list forms the chain of entities from the customer to the contractors:	
Client:	Vantage Data Centre
Address	1-2 Victoria Buildings, Haddington Road, Dublin 4.
Contact	Noel Scanlon
Tel:	+353 86 8554721
Email	Noel.Scanlon@vantage-dc.com
Principle Designer:	H&MV Engineering
Address	Hamilton House Block 2, Plassey Business Park, Castletroy, Limerick, V94 YHD6
Contact	Rian Hayden
Tel:	+353 61 357 496
Email	Rian.Hayden@hmveng.ie
Designer:	CSEA
Address	The Highline, CSEA, 3rd Floor, Bakers Point, Dún Laoghaire, Co. Dublin, A96 KW29
Contact	Pauraic Matthews
Tel:	+353 1 288 5006
Email	Pauraic.Matthews@csea.ie
Principle Contractor:	H&MV Engineering
Address	Hamilton House Block 2, Plassey Business Park, Castletroy, Limerick, V94 YHD6
Contact	Larry Dunne
Tel:	+353 87 692 8131

Email	Larry.Dunne@hmveng.ie
Contractor:	Skanstec
Scope	CSA Build
Address	Ballingarrane Science & Technology Park, Cahir Rd, Clonmel, Co. Tipperary, E91 V329
Contact	Padraic Dunne
Tel:	+353 87 400 7138
Email	padraic.dunne@skanstec.com

4. PROJECT MANAGEMENT

4.1 Organisational Chart



As the organisational chart is a 'Live' document the details above may change.

4.2 Project Team

H&MV Engineering staff employed on this project are of suitable experience. Current CVs for personnel are held on file at the H&MV Engineering office and are available on request.

Role	Name	Contact details
Managing Director Ireland	David Maher	David.maher@hmveng.ie
Operations Director	Matthew Greene	Matthew,greene@hmveng.ie
Operations Manager	James Power	James.power@hmveng.ie
Project Director	David Dineen	David.dineen@hmveng.ie
Senior Project Manager	Larry Dunne	larry.dunne@hmveng.ie
Project Manager	Danny Walling	danny.walling@hmveng.ie
Site Manager	James Murphy	james.murphy@hmveng.ie
Group Environmental & Sustainability Manager	Kate Kerrane	kate.kerrane@hmveng.ie
HSE Advisor	Dale Larkin	dale.larkin@hmveng.ie
Site Foreman	Thomas Ryan	thomasa.ryan@hmveng.ie
Site Noise Liaison Officer	James Murphy	james.murphy@hmveng.ie
Site First Aider	Danny Walling	danny.walling@hmveng.ie
Fire Warden/ Marshal	Danny Walling	danny.walling@hmveng.ie
Temporary Works Coordinator	James Murphy	james.murphy@hmveng.ie

4.3 Project Team Duties

The following outlines the roles and required responsibilities in relation to the CEMP for this project.

Top management shall ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the organization.

Top management shall assign the responsibility and authority for:

a) ensuring that the environmental management system conforms to the requirements of this international Standard;
b) reporting on the performance of the environmental management system, including environmental performance, to top management." (Clause 5.3 of the ISO 14001 Specification, 2015)

Project Director

- To ensure effective communication of the policy, plan and programme within his area of responsibility and provide assistance to team in achieving the objectives of the environmental policy and plans etc of the project.

Senior Project Manager & Project Manager

- To ensure effective communication of the policy and programme within his area of responsibility and provide assistance to team in achieving the objectives of the environmental policy and of the project.
- Responsible for delivering civils and Electrical elements of the project, including environmental impacts.

Site Manager

- Responsible for the day to day running of the site including HSE, and the implementation of this CEMP.
- Responsible for community liaison for residents enquires or complaints.

HSE Officer

- Responsible for the day to day running of the site including HSE, and the implementation of this CEMP.
- Provides HSE advice to the project team.
- Responsible for conducting site audits to ensure control measures are applied.
- Responsible for overseeing health and safety management and reviewing the project CPP.

Environmental Advisor

- Provides environmental advice to the project team.

- Responsible for conducting environmental site audits to ensure control measures are applied.
- Responsible for overseeing environmental management and reviewing this project CEMP and WMP.

Site Noise Liaison Officer

- Responsible for monitoring and when necessary reporting noise levels on the construction site
- Responsible for communicating with the public or other bodies about noise issues.

Site Team/Workforce

- Responsible for their own and other people's health and safety
- Ensuring all appropriate environmental controls and understood and followed.
- Report any environmental hazards or incidents to the Site Manager immediately.

Sub-Contractors

- Be familiar with this CEMP and other relevant project documentation, as applicable, that they shall work under
- Report any environmental initiatives that they consider could lead to improvement.
- Manage all environmental risks associated with their work activity, and in accordance with H&MV procedures and site rules.
- Report any environmental hazards or incidents to the Site Manager immediately.

4.4 Monitoring & Review of CEMP

The Site Manager shall be responsible for monitoring the site works and performance in relation to this CEMP, and where changes occur, must assess the situation, and review this CEMP.

The project CEMP shall be reviewed during the project to ensure it remains suitable to facilitate efficient and effective delivery of the project environmental commitments. Reviews may occur following audit reports, inspections, incident, planned actions, changes or through a general review due to time lapse.

Where a review finds no requirement for an update, the project CEMP will remain the same. Where an update is required, this update will be recorded as a new revision, and revision controlled applied.

The following measures have been implemented at the Dub11 site for monitoring and measurement control:

- Environmental advisor or ECoW will conduct frequent visual inspection of the site;
- Daily general visual inspections by site HSE Manager;
- All inspections to include working arrangements, live areas of work, site compound and drainage

networks;

- All Inspections required to ensure that systems are operating correctly and to identify any maintenance that is required;
- Any non-compliance should be noted, and corrective action should be implemented;
- High risk locations or sensitive areas of site will be inspected on a daily basis;
- Provide recommendations for public road cleaning where needed particularly in the vicinity of drains;
- Road Cleanliness – wash down facility and road sweepers shall be in place to immediately and safely clean up any excessive debris. Bowsers fitted with spray nozzles shall keep all areas dampened down and keep all dust supressed. Hard to reach areas will be kept damp by the use of water cannons fitted to the rear of the bowsers.
- Regularly inspect and maintain all pollution control equipment and infrastructure;
- Continue to maintain the high functionality of surface water management systems
- Auditing of the implementation of this CEMP on site.

4.5 Project Site Audits

H&MV Engineering will undertake frequent site audits on the project. The HSE Advisor and Site Manager will review the audits and notify the site teams of their responsibilities to implement any remedial measures highlighted. There will be formal communication of any completed action items to ensure the identified issues have been addressed.

Independent auditing consultants may undertake environmental audits at the site from time to time. H&MV Engineering will make the necessary staff available during each such audit and provide access to all documentation and site areas.

4.6 Relevant Documentation

The following table is a non-exhaustive list of potential applicable HSE and Quality procedures that H&MV will use on the project. These are available separately and are not appended to this CEMP.

Relevant HSE and Quality Procedures
QAP 10 HSE 02 Identifying Environment Impacts Procedure
QAP 10 HSE 03 Waste Management Procedure
QAP 10 HSE 04 Environmental Positive Impact Procedure
QAP 10 HSE 01-F-15 Environmental & Sustainability Site Audit
QAP 10 HSE 07 Emergency Response Procedure
QAP 10 HSE 10 Risk Assessment & Control Procedure
QAP 10 HSE 14 Tool Box Talk Procedure
QAP 10 HSE 18 Hazardous Materials Procedure

QAP 10 HSE 19 Accidents Incidents Procedure
QAP 10 HSE 19-D-01 Accident & Incident Reporting Flow Chart.pdf
QAP 10 HSE 21 Site & Sub-Contractor Management Procedure
QAP 10 HSE 24-D-01 Certificate of Compliance with Environmental Conditions
QAP 10 HSE 29 Site Inspection Procedure
QAP 10 HSE 44 Serious Incident Procedure
QAP 10 HSE 45 Accident and Incident Investigation Procedure
QAP 10 HSE 46 COSHH Process and Risk Register
QAP 10 HSE 50 Risk Register
QAP 10 HSE 76 Procedure for Carrying out Excavations
QAP 10 HSE 77 Noise Management Procedure
QAP 10 HSE 78 Material Handling and Storage Procedure
QAP 10 HSE 80 Environmental Risk Register
QAP 13 QWI-01 Control of Non-Conformance Procedure
QAP 10 HSE 26 Health & Safety Plan
QAP 10 HSE 33 Construction Phase Plan
QAP 10 HSE 34 Traffic Management Plan
QAP 10 HSE 40 Waste Management Plan
QAP 10 HSE 56 Emergency Response Plan

5. COMMUNICATION

All communication to and from the client's representative shall go via the H&MV Engineering Project Manager. For exceptional cases, the communication path could be different, but the Project Director must be informed.

This document will be outlined with all employees prior to commencement of work and periodically during the project by way of onsite toolbox talks. In addition, all employees involved in this project will make themselves available for an H&MV Engineering Induction prior to commencement of work.

Daily hazard identification will also be conducted on site by contractor supervisory staff to identify hazards for their daily tasks. Any changes in the scope of work that may involve unusual risks will be documented on supplementary method statements.

5.1 Staff Training and Awareness

All site staff must attend a site induction before being allowed to work onsite. At induction they will be made aware of the environmental issues associated with the site and the proposed mitigation techniques put in place to protect the environment. They will also be made aware of the procedures to manage a spill event or pollution incident and the appropriate means of reporting such an incident.

Project specific HSE training will mainly be carried out in the form of Tool Box Talks (TBT). These TBT will address current Health Safety and Environmental issues and as a reminder to all working on site of good HSE practises and awareness. An attendance record will be required and maintained onsite.

Details of training and trade specific training records shall be retained by the H&MV Engineering Training Department.

5.2 Contractors and Sub-Contractors

All contractors are to ensure that they are fully aware of and in compliance with the environmental, health and safety obligations detailed within the CEMP.

Where Contractors wish to engage with their own sub-contractors they may do so, provided that it is previously agreed with the H&MV project manager, and that the nominated sub-contractor is on a pre-qualified supplier list.

5.3 Complaints

This section of the CEMP sets out the procedure to prevent and resolve complaints by third parties, to avoid causing nuisance during the construction phase. Measures are summarised in bullet point format below:

- Clearly display a 'contact board' at the site perimeter so that the public know whom to contact if they have a complaint or a comment to make.
- Personnel on site, including sub-contractors will perform their duties in accordance with the CEMP and in such a way as to minimise the risk of complaints from third parties.
- All complaints received from any source, regarding the construction, are recorded and categorised (e.g., Noise, Property Damage, Traffic, Dust etc.) within a central 'site complaints log.'
- The Site Complaints Log will include the following key details:
  - Name, address and contact details of the complainant (with the complainant's permission).
  - Brief outline of the complaint
  - Date of Complaint
  - Name of person receiving complaint details

- Agreed timeline for response to complaint.

- All complaints are to be communicated to the project management team immediately following any complaint.
- All complaints are to be properly followed up and resolved in so far as is practicable.
- The complaint, client and other stakeholders will be kept informed of the progress in resolving complaints received.

6. LEGAL REQUIREMENTS, CONSENTS & PERMITS

6.1 Legal Requirements

A register of all applicable legislation, including relevant Standards, Codes of Practice and Guidelines has been compiled. These are detailed in the company Legal Register and held as part of the ISO 14001 accreditation documentation.

Senior Management update the Legal Register when alterations in legislation are identified from technical journals or other sources.

Project/Site Managers will be notified by the HSE Advisor of the relevant changes through site briefings.

6.2 Consents and Permits

The following conditions are imposed on this site:

	Condition	Source	Covered
1	Number 2. The Mitigation Measures Identified in the Environmental Impact Assessment Report and other plans and particulars submitted with the planning application, shall be implemented in full by the undertaker in conjunction with the timelines set out therein, except as many otherwise be required in order to comply with the conditions of this permission. **Reason:** In the interest of clarity and protection of the environment during the construction and operational phases of the proposed development.	An Bord Pleanála Board Order ABP-312793-22	Address and covered in the documents described at the planning stage and continued and upkept in the construction phase with the Environmental Impacts aspects and Mitigations Assessment QAP 10 HSE 02-F-01.
2	Number 3. The proposed connection point for drainage serving the 110kV Gas Insulated Switchgear substation shall be to manholes on Falcon Avenue via an underground attenuation tank. Water supply and drainage arrangements shall otherwise comply with the requirements of the planning authority for such works in respect of both the construction and operational phases of the proposed development.	An Bord Pleanála Board Order ABP-312793-22	Outline at the planning stage, implementation seen with the drainage layouts of the substation works which have been issues and agreed with Uisce Eireann and planning authority.

	Prior to commencement of the proposed development, and following consultation with Uisce Eireann, the undertaker shall agree with the planning authority proposals for all works as they may affect water and drainage services, together with written commitment to undertake the proposed development in accordance with this agreement **Reason:** In the interests of environmental protection and public health.		
3	Number 4. The landscaping proposals shall be carried out with the first planting season following commencement of construction of the proposed development, Any trees or shrubs planted in accordance with this condition which are removed, die, become seriously damaged or diseased within two years of planting shall be replaced by trees or shrubs of similar size and species to those originally required to be planted. The landscaping and screening shall be maintained at regular intervals. **Reason:** To Blend it into its surroundings in the interest of visual amenity.	An Bord Pleanála Board Order ABP-312793-22	Covered in the landscape design plan
4	Prior to commencement of the development, a detailed Construction Environmental Management Plan (CEMP) for the construction phase shall be submitted to and agreed in	An Bord Pleanála Board Order ABP-312793-22	Details included in this document cover these points. The HSE Advisor and the Site Manager shall undergo training to be

	writing with the planning authority, generally accordance with the Outlines CEMP including Environmental Impact Assessment Report. The CEMP shall incorporate the following: (a) A detailed plan for construction phased incorporating, inter alia, the construction programme, supervisory measures, noise, dust and surface water management, including the appointment of a Site Noise Liaison Officer, construction hours and the management, transport and disposal of construction waste, (b) A comprehensive programme for the implementation of all monitoring commitments made in the planning application and supporting documentation during the construction period, (c) An emergency response plan, and (d) Proposal in relation to public information and communication. A record of daily checks that are being undertaken in accordance with the Construction Environmental Management Plan shell be kept for inspection by the planning authority.		compliant in holding the role of Site Noise liaison officer, in addition the necessary noise monitoring equipment shall be used on site during the construction phase. This document covers the general conditions of the waste management procedures, however the Waste Management Plan will go into additional details. All site personal shall receive the necessary environmental and sustainability training to adhere to environmental and sustainability compliance. All daily checks, reports and other documentation will be kept in the folder on SharePoint 01. Safety > 10. Environmental & Sustainability and will be available for the necessary inspections.

	Reason: In the interests of environmental protection and orderly development.		
5	The undertaker shall facilitate the perseveration, recording and protection of archaeological materials or features that may exist within the site. In this regard, the undertaker shall: (a) Notify the planning authority in writing at least four weeks prior to the commencement of any site (including hydrological and geotechnical investigations) relating to the proposed development, (b) Employ a suitably qualified archaeologists who shall monitor all site investigations and other excavation works, and (c) Provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the planning authority considers appropriate to remove. In default of agreement of any of these requirements, the matter shall be referred to An Bord Pleanala for determination.	An Bord Pleanála Board Order ABP-312793-22	Covered,

	Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that exist within the site.		

7. ENVIRONMENTAL MANAGEMENT

Site specific environmental issues are reviewed and recorded on the Environmental Aspects, Impacts and Mitigation Assessment.

Each environmental aspect is provided with a risk rating, classified as High, Medium, or Low. All 'High' risk rated aspects are considered 'significant'. See Appendix B for Risk Methodology.

Depending on how an environmental risk is classified measures may or may not be required to reduce the risk to an acceptable level or manage the risk to limit an adverse environmental effect.

All normal and abnormal operating conditions, and reasonably foreseeable emergency situations are considered for potential environmental impacts.

The following are normally considered when reviewing for potential environmental aspects on site:

- Energy usage, energy and carbon emitted
- Archaeology and heritage
- Ecology
- Statutory nuisance
- Water management and pollution control
- Resource efficiency (Raw Materials and natural resources)
- Soil management and contamination control
- Waste and material management
- Social impact

H&MV Engineering will consider the environmental aspects which we cannot directly control but which we have some influence over. For example, products and/or services supplied by third parties.

Environmental aspects and impacts are reviewed throughout the life cycle of the project and in the event of an environmental incident to implement further controls, reducing recurrence.

7.1 General Environmental aspects

7.1.1 Site Specifics

The site is considered to be of sub-optimal ecological value with the following habitats identified onsite;

- Buildings and artificial surfaces (BL3)

- Recolonising bare ground (ED3)
- Improved Agricultural Grassland (GA1)
- Treelines (WL2)
- Drainage ditches (FW4)

There is a water course called the Balldonell Stream located approximately 170m away from the construction site location as well as water feature ponds in the adjacent golf course. The site is drained through two pipes. Discharging into the Balldonell Stream and connecting with the Griffen River approximately 2km north of the site, this discharges into the River Liffey, approximately 6.4km from the Application Site. The River Liffey stretches approximately 30km before entering into the Dublin Bay.

There are no watercourses within the Application Site boundaries but as mentioned above Balldonell Stream located approximately 170m away, so due care of water protection to be taken. The distance from the Natura 2000 Sites will result in the dissolution of contamination. It is considered that there will be no contamination of the designated sites within the Dublin Bay as a result of the Proposed Development.'

The AA screening also concluded that there were no ecological or ornithological connectivity between the proposed development and any Natura 2000 site.

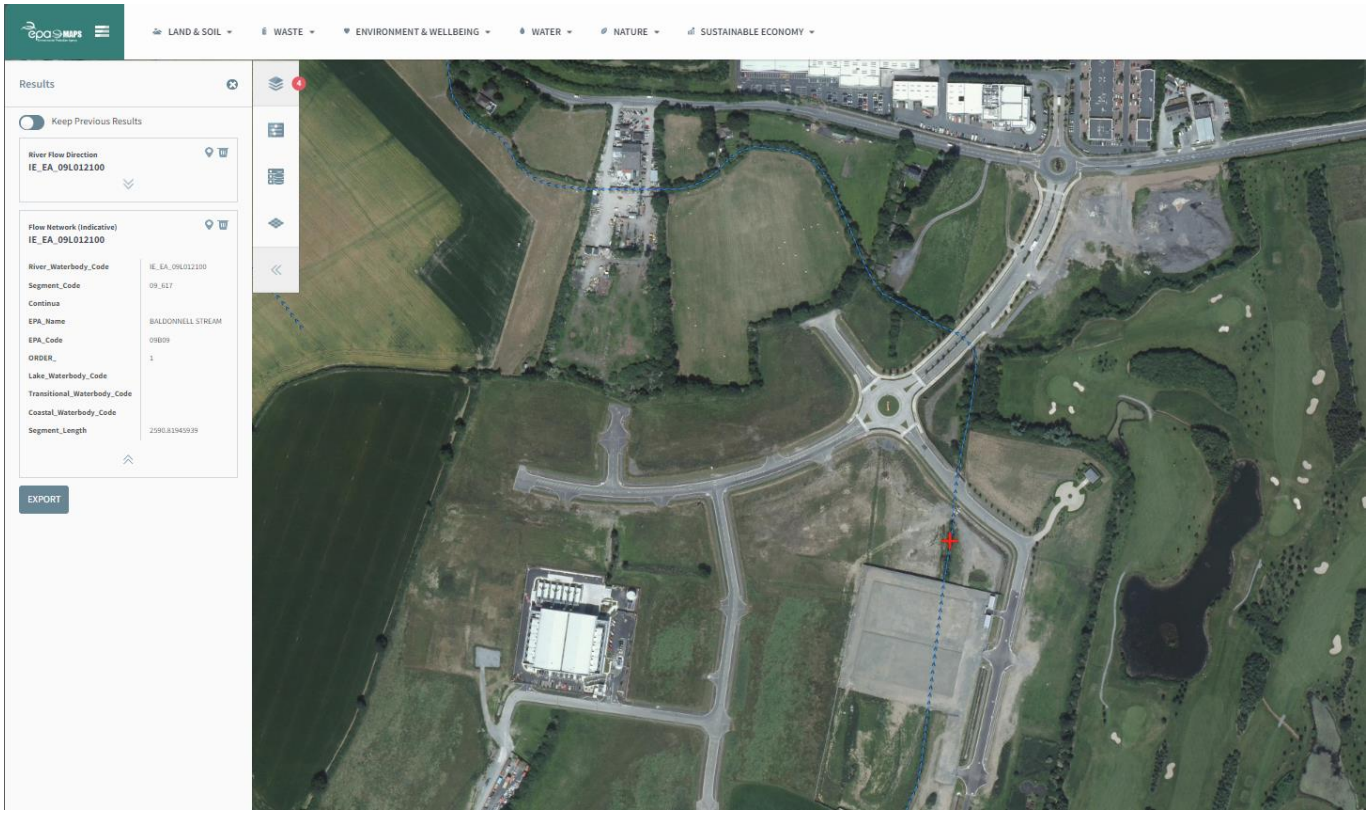


Figure 4 EPA Map, Balldonell stream identified with red X

There is no known record of any protected and / or notable animal species on or in proximity to the proposed development site. In addition, no derelict buildings, mature trees etc were noted which may act as potential bat roost sites.

The land type is identified as Limestone till (Carboniferous) with a variable texture. The site is located in an Industrial, commercial and transport identifies area with artificial surfaces.

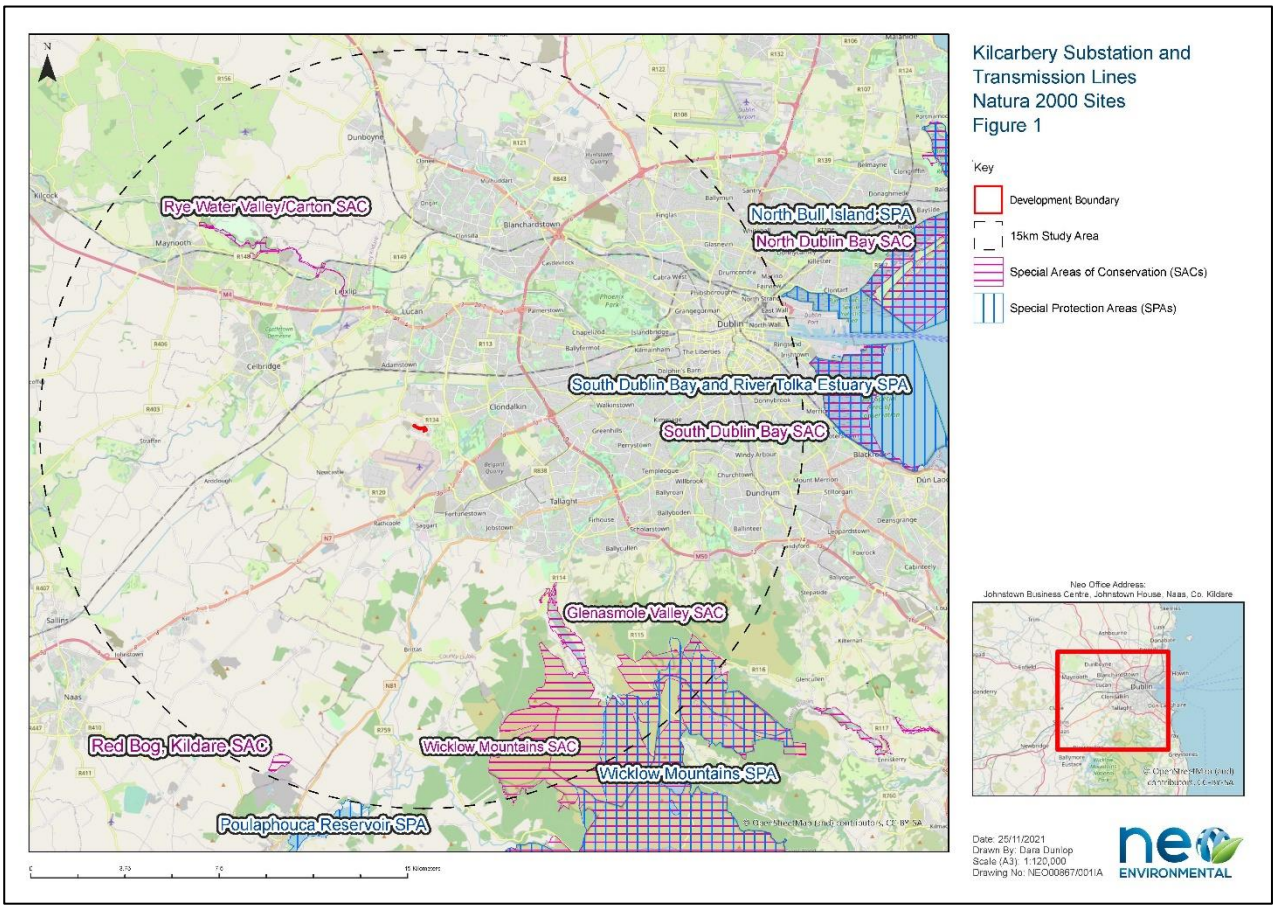


Figure 5 Designated European Sites relative to the proposed site

7.1.2 Design and Construction Environmental Management Methodology

Prior to commencement of construction works the contractor will draw up detailed Method Statements which will be informed by construction methodology and any environmental protection measures within this CEMP. The contractor will also adhere to all the guidance documents and measures listed below.

The following documents will contribute to the preparation of the method statements in addition to those measures proposed below: -

- Inland Fisheries Ireland (2016) *Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters*. Inland Fisheries Ireland, *Dublin*,

- *National Roads Authority (2008) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes*. National Roads Authority, Dublin;
- E. Murnane, A. Heap and A. Swain. (2006) *Control of water pollution from linear construction projects*. Technical guidance (C648). CIRIA;
- E. Murnane et al., (2006) *Control of water pollution from linear construction projects*. Site guide (C649). CIRIA.
- Murphy, D. (2004) Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites. Eastern Regional Fisheries Board;
- H. Masters-Williams et al (2001) *Control of water pollution from construction sites. Guidance for consultants and contractors* (C532);
- Enterprise Ireland (unknown). *Best Practice Guide (BPGCS005) Oil storage guidelines;* Law, C. and D'Aleo, S. (2016) *Environmental good practice on site pocket book*. (C762) 4th edition. CIRIA;
- CIRIA *Environmental Good Practice on Site (fourth edition) (C741) 2015*.

7.1.3 Best Practise Measures

The proposed works will be carried out by employing accepted good work practices during construction.

Measures to be adopted during these works are as follows:

- A 'Just in Time' delivery system will operate at the Dub11 site works to minimise storage of materials and prevent excess waste.
- All materials shall be stored at the Welfare compound until required and transported to the works zone or off site immediately prior to their use/disposal.
- Where possible, it is proposed to source general construction materials from the surrounding area to minimise transportation distances and reduce the carbon footprint of the construction phase.
- Weather conditions will be taken into account when planning construction activities to minimise risk of run off from site.
- If dewatering is required as part of the proposed works e.g. in trenches for underground cabling or in wet areas, water must be treated prior to discharge (using for example silt bags and or vegetated buffers where they exist).
- An internal site drainage system will be installed that will incorporate silt controls and SUDs systems as part of the design.
- The contractor shall ensure that silt fences and or sediment controls are regularly inspected and maintained during the construction phase. These inspections will be carried out daily during construction and weekly post construction and after all heavy rainfall events;

- A regular review of weather forecasts of heavy rainfall is required, H&MV will prepare a contingency plan for before and after such events if extreme weather is forecast;
- The contractor shall ensure that all personnel working on site are trained in pollution incident control response;
- In the unlikely event of water quality concerns, the Environmental Manager and ECoW will be consulted;
- Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows.;
- Only emergency breakdown maintenance will be carried out on site;
- Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures;
- Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed off site;
- Adequate stocks of absorbent materials, such as sand or commercially available spill kits shall be available;
- Spill kits will be located nearby refuelling areas and areas where there is a risk of spillages occurring. Mini spill kits will be located within all construction plant.
- Concrete or potentially concrete contaminated water run-off will not be allowed to enter any drainage channel;
- Any pouring of concrete (delivered to site ready mixed) will only be carried out in appropriate weather, pouring of concrete in very wet conditions will be avoided if possible;
- Washout of concrete trucks shall be strictly confined to a designated, lined and controlled wash-out area; this washout will be located remote from drainage channels and other surface water features.
- A concrete washout area will be constructed onsite. This will consist of a lined bunded settlement pond. All material will be inert and disposed of correctly. Chute only washing will be permitted onsite with full bottle washing expected to occur back at the batching facility.
- Entry by plant equipment, machinery, vehicles and construction personnel into wet drainage ditches shall not be permitted;
- All routes used for construction traffic shall be protected against migration of soil and wastewater.

7.2 Environmental Objectives

H&MV Engineering strive to achieve the objectives contained in our Environmental Policy.

The following objectives are specific to this project:

- Waste Management

7.3 Water Management and Pollution Control

Construction activities can cause serious harm to watercourses. Pollution can contaminate drinking water, suffocate fish, and kill plants, animals and insects living in the water. H&MV Engineering and its contractors will control the entry of polluting matter and effluents into any place that may ultimately affect a watercourse.

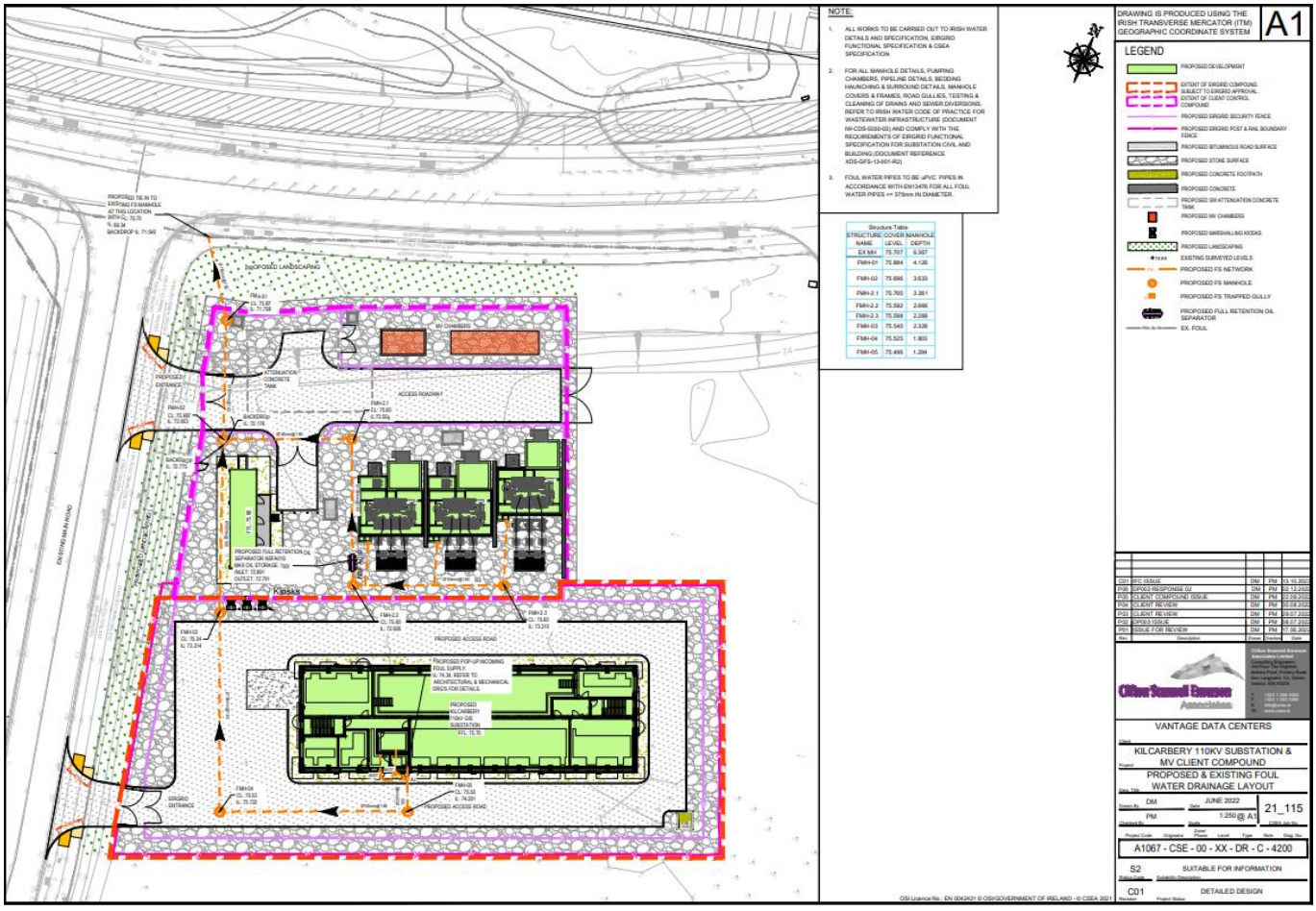


Figure 6 Proposed & existing foul water drainage layout

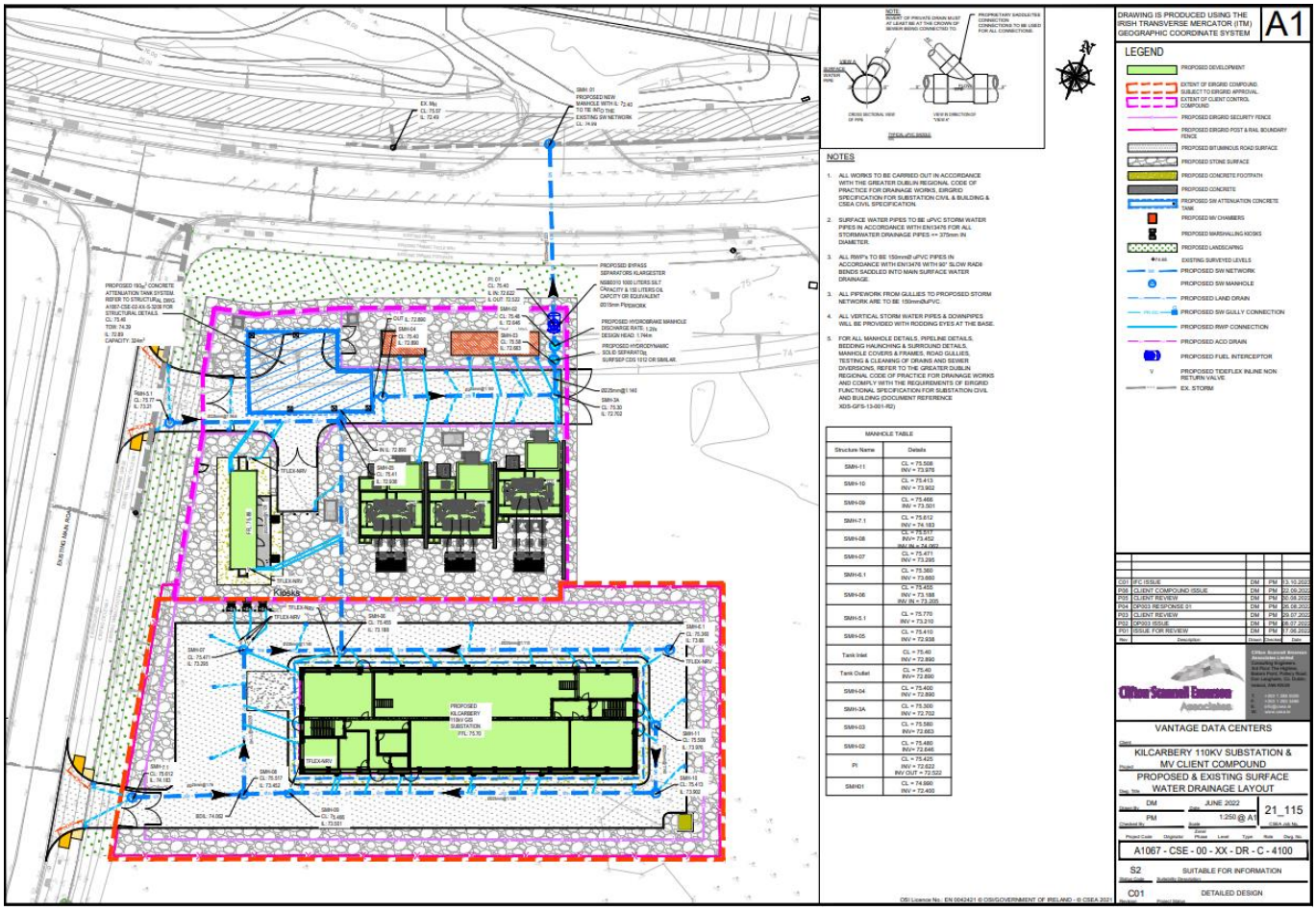


Figure 7 Proposed & existing surface water drainage layout

Before any work starts on site, existing drainage systems shall be identified and clearly marked on site plans. Surface water, foul and combined systems will be distinguished.

The site-specific Environmental Aspect, Impact and Mitigation Assessment will determine control measures associated with water management and pollution to mitigate adverse impacts on receptors. This assessment will include the following aspects:

- Site establishment
- Groundwater
- Water abstraction
- Dewatering excavations (surface and contaminated)
- Discharging effluent
- Building flow control structures
- Engineering works
- Septic tanks
- Concrete and cement

- Sewage and welfare
- Vehicle and boot washing
- Silt management
- Oil and fuel storage
- Chemical storage
- Herbicides
- Emergency effluent (fire run-off)
- Drainage systems
- Refuelling

Where necessary all above activities shall be carried out in a safe area considering use of PPE, plant nappies, spill kits and specific fire extinguishers as a minimum.

7.3.1 Protection of Watercourses

As outlined in both the EIAR and in the AA Screening, there is a negligible impact on downstream watercourses and receiving waters expected from the development. However, minimal as it may be, a theoretical hydraulic link does exist between the site and sensitive downstream watercourses and therefore works must be planned accordingly.

The proposed works have been designed to avoid disturbance to watercourses by avoiding direct impacts. Pollution of watercourses will most likely arise as a result of sediment run-off during, and immediately after construction or due to spillages.

Run-off into excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. However, earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and surface water flows. Correct management will ensure that there will be minimal inflow of shallow/perched groundwater into any excavation.

Care will also be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.

No significant dewatering will be required during the construction phase which could result in the localised lowering of the water table. There may be localised pumping of surface run-off from the excavations (up to 3m) during and after heavy rainfall events to ensure that the trenches are kept relatively dry. But all such pumping events will be discharged to silt controls before release to site drainage.

Spillages and oil management have already been discussed in previous sections of this CEMP.

In order to effectively manage all surface water generated on site, H&MV Engineering will develop and adhere to the below Sustainable Urban Drainage (SUDs) plan and its principles. Temporary SuDS will need to be put in place and constantly changed or modified as works progress, therefore specific method statements will be developed and revised as required. Work permits will be issued to the work crews weekly for SuDs works.

The SuDs plan, as outlined in this document, allows for sediment laden water to be contained and to attenuate preventing direct discharge of 'dirty' surface water into the wider environment.

Dirty Water Drain

A dirty water drain will be installed following the perimeter of all hardstanding area footprints which will intercept any surface water generated onsite. The drain will be V shaped and will encircle all works.

Checkdams / Gravel Traps

Checkdams / Gravel Traps are piles of clean round stone that are placed either within the dirty water drain or on the access/egress points of settlement ponds (these are discussed later). The primary aim of gravel traps is to slow the flow of water and trap sediment contained within the water flowing through the stone.

Gravel traps will be located along the dirty water drain and will be inspected regularly and maintained as required. The precise location for gravel traps will be as agreed on site with the ECoW and Resident Engineer.

Photo 1 Typical Gravel trap arrangement

Settlement Ponds:

Following the dirty water drain a settlement pond may be installed if deemed necessary. This pond will be installed prior to the main excavation works onsite and used to slow the flow rate of water and aid in sediment settlement (figure 8). Settlement ponds (if installed) will be dug in sets of three and made as long as possible allowing for maximum settlement of sediment. Diffuse discharge points will be located at the discharge points of the settlement ponds. These will constitute 'rip rap' weirs of clean stone dug into the

ground, preventing water from flowing over bare ground, and therefore picking up sediment and further reduce the rate of water flow.

Settlement pond locations and drainage are placed as required and with the natural fall of the land and existing drainage. Locations will be agreed on site with RE.

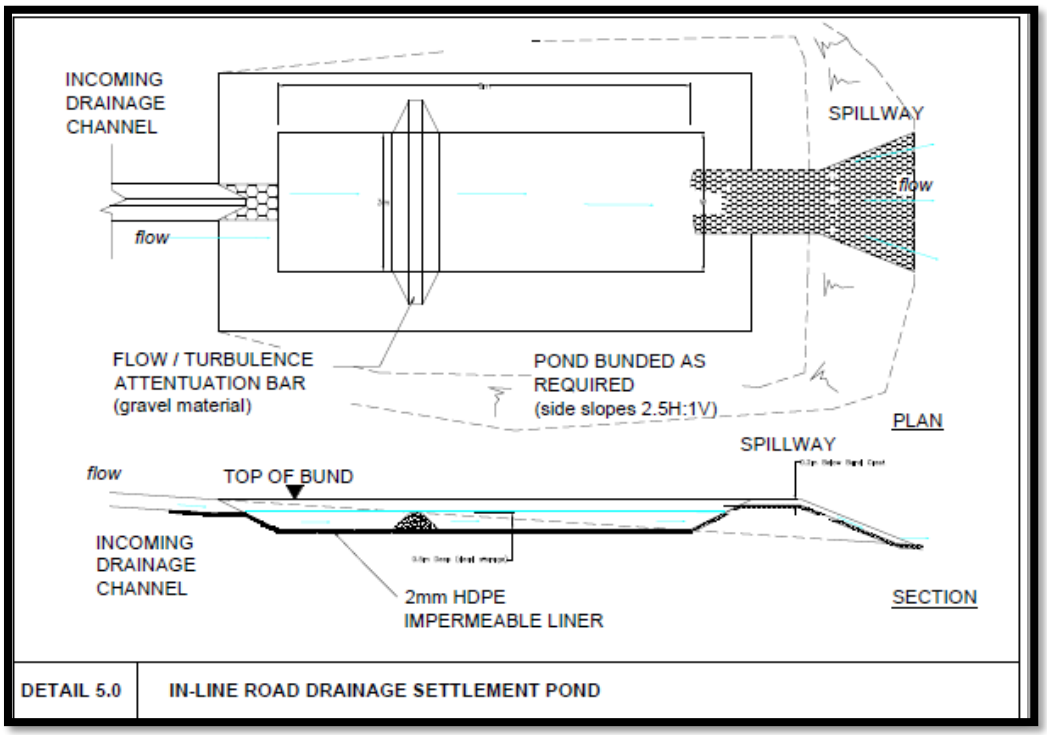


Figure 8 Typical Settlement Pond design

Silt Fences

Silt fences will be utilised at egress points of settlement ponds before water is discharged over vegetation. Silt fences use filter fabric which retains sediment while allowing water to flow through. Horse shoe shaped silt fences will be used which allow for a larger amount of water to be retained / filtered (See Photo 2 & 3).

Photo 2: Horse shoe arrangement

Photo 3: Watercourse protection

During routine audits carried out by the H&MV HSE Manager and or the ECoW, settlement ponds, gravel traps and silt fences will be checked for an excess build-up of sediment. A bowser will be used to remove sediment build up and will be moved to another part of the site for disposal.

7.4 Ecology

H&MV Engineering aim to apply the ecology mitigation hierarchy to avoid or minimise adverse impacts on biodiversity:

1. **Avoidance** – Through design and pre-construction, we will avoid creating adverse impacts from the outset.
2. **Minimisation** - Where impacts cannot be completely avoided, as far as is practically feasible, we will take measures to reduce the duration, intensity and/or extent of impacts.
3. **Restoration** – We will take measures to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/or minimised.
4. **Offset** – Where avoidance, minimisation and/or restoration cannot be avoided, we will compensate for any significate adverse impacts to achieve no net loss. Offsets may include interventions such as restoration of a previously degraded habitat or protecting areas where these is projected loss of biodiversity.

The site-specific Environmental Aspect, Impact and Mitigation Assessment will determine control measures associated with project works to mitigate adverse impacts on ecology. This assessment will include the following aspects:

- Taking, disturbing, or relocating protected species before construction
- Site clearance (removal of trees, shrubs, soils, structures, rubble, and other materials)
- Site set up (locations of offices, compounds, and storage)
- Establishment of haul roads
- Groundworks
- Construction

Refer to Appendix D for a Wildlife Year Planner.

7.4.1 Invasive Species Best Practises Measures

Invasive species can be introduced into a location by contaminated plant, machinery and equipment which were previously used in locations that contained invasive species. Good site organisation and hygiene management shall be maintained always on site, and best practice measures will be implemented, as follows:

- Toolbox talks to incorporate information on common Invasive species and identifiable features
- Plant and machinery will be inspected upon arrival and departure from site and cleaned/washed as necessary to prevent the spread of invasive aquatic / riparian species such as Japanese knotweed Fallopia japonica and Himalayan Balsam Impatiens glandulifera. Any invasive species encountered will be notified to the Client
- Site hygiene signage will be erected in relation to the management of non-native invasive material
- Any invasive species identified within the works area will be removed by H&MV site operatives under the direction of the ECoW. Such instances will be reported to the client.

7.4.2 Ecology Surveys

The **Wildlife Year Planner** found in **Appendix D** of this document shows the appropriate times of the year to deal with specific issues.

In the event of any unexpected discoveries of protected or invasive species that could be impacted by site activities, works shall cease, and the discovery must be reported to the Site Manager and then the Environmental Advisor. Specialist advice may be sought.

7.4.3 Ecological Noise Disturbance

Construction activities shall not exceed noise thresholds stated within site-specific Environmental Aspect, Impact and Mitigation Assessment. The noise thresholds represent precautionary noise levels above which there is potential for significant disturbance to ornithological receptors associated with the Swale Special Protection Area and have been obtained from the Clients Construction Noise Management Plan.

Any construction that gives rise to noise that is audible beyond the site beyond shall not be carried out except within the agreed working hours. Sunday and bank holidays shall not be permitted unless written permission from council/client, if granted local residents shall be informed by the client prior to any works commencing.

7.5 Energy Usage, Energy and Carbon Emitted

The project aims to reduce energy usage as far as reasonably practicable including reduced energy site lighting. This is also applicable to the reduction of carbon emissions onsite.

The project aims to reduce energy emitted as far as reasonably practicable.

The site-specific Environmental Aspect, Impact and Mitigation Assessment will determine control measures associated with energy to mitigate adverse impacts on the environment and improve efficiency of the project. This assessment will include the following elements:

- Welfare
- Type of equipment
- Products
- Lighting and CCTV
- Use of plant and equipment
- Vehicles and transportation
- General surrounding environment

7.5.1 Control of Emissions

The following control measures are to be implemented on site to control emissions related to site traffic:

- Paved site roads and associated vehicle waiting areas shall be regularly inspected and kept cleaned of all mud and dusty materials
- Unpaved roads and verges shall be maintained in a compacted condition as appropriate and necessary
- General site traffic shall be restricted to watered (if required) or maintained haul roads
- Speed limits shall be established and enforced over all site traffic routes
- Agreed routes of haulage and movements of site vehicles will be adhered to
- No vehicle or equipment emitting visible black smoke from its exhaust system other than during ignition shall be used on any construction site or public road
- Combustion engines shall not be left running unnecessarily
- All plant and vehicles used on site will be regularly serviced
- All vehicle and equipment engines and exhaust systems shall be maintained so those exhaust emissions do not breach EU statutory limits set for vehicle/equipment type and mode of operation
- All vehicles and equipment are to be maintained in accordance with manufacturer's guidance
- All construction vehicles licensed to go on public roads must have valid DOE/CVRT test certificates

- A water bowser is to be held onsite to suppress the generation of dust if required.

7.6 Archaeology and Heritage

Early effective risk management in the planning phases of this project has minimised the risk of unexpected archaeological finds, which could have had significantly higher costs if found during the construction phase.

There are no recorded archaeological sites listed on the SMR or RMP anywhere within the site boundary. The geophysical survey undertaken across the site by ACSU in 2020 revealed four anomalies of probable archaeological origin pertaining to previous activity. A scheme of test trenching in June 2021 revealed the remains of an oval/circular enclosure c.40m in diameter, as well as two linear ditch features likely to be former field boundaries. Other similar circular enclosures of probable medieval date are recorded or have been fully excavated in the study area (TOR 11 & 12) and are generally considered as being included on the RMP. The on-site archaeological resource is therefore considered to be of local value and low significance.

However, the proposed development will involve groundworks which will inevitably have an impact on below ground archaeological remains where they are yet known and recorded. The risk of impacts would come from the damage to the below ground site / features / localised findspots that were revealed by the trenching. In recognition of this, a licenced archaeologist has been appointed to the project and will be on site during stripping works.

In the event of a find, H&MV Engineering will:

- Instruct a professional archaeologist to supervise works and to ensure that suitable protection measures are put in place and maintained.
- Only employ professional archaeologists to excavate and record remains and findings.

Finds must be protected and not disturbed any further until specialist investigations and advice has been instructed and obtained by the client. Advice should be sought from site by contacting the Local Authority.

If an unexpected find has been made, **Appendix C** of this document, containing our **Finds Procedure** shall be followed. **Appendix C** shall be displayed on site, with all employees and sub-contractors made aware of the process.

7.7 Statutory Nuisance

Project site activities could cause a nuisance to receptors. We aim to limit the ways our activities could cause potential nuisances through:

1. **Source Management**– Through elimination, substitution, and isolation, we will prioritise controlling nuisance at the source.

2. **Pathway Protection** – Where source control has not been successful, control measures will be placed along the pathway. Examples include absorption, dust barriers and acoustic dilution.

Where it has been identified our construction work is likely to cause a nuisance, we will apply formally for prior consent from the relevant local council.

Consents specific to this project are contained in section **6. Legal requirements, consents and permits** of this document.

The site-specific Aspect, Impact and Mitigation Assessment will determine control measures associated with nuisance to mitigate adverse impacts on receptors. This assessment will include the following aspects:

- Exhaust emissions
- Dust
- Vapours and fumes
- Noise
- Vibration
- Light pollution

7.7.1 Noise Control

Noise nuisance is likely to arise through the use of mechanical tools, general construction activities, and from the movement of vehicles servicing the site.

During the construction phase, it is anticipated that construction activities are likely to be audible in the vicinity of the development. However, due to the temporary and transient nature of construction phase works, the existing noise environment (the site being located in an existing business park) and the distance to the nearest sensitive receptors, the impact is not considered to be significant. It should be noted the Contractor shall liaise with the operators of the Dog's Trust site to the north in order to manage impacts during the construction phase.

The following general mitigation measures are considered appropriate for the proposed development during the construction phase:

- Plant will be used in an appropriate manner with respect to minimising noise emissions;
- All plant will be used will be modern, well maintained and working properly;

- Engines will be switched off when not in use;
- Equipment to be started sequentially rather than all together.
- Inherently quiet plant will be selected where appropriate;
- Local screening will be provided where considered necessary;
- Noisy plant will be located as far as possible from noise sensitive receptors;
- Construction contractors will be required to adhere to the codes of practice for construction working provided in British Standard BS 5228, and the guidance given therein, for minimising noise emissions from the proposed development;
- Construction works with a significant noise impact will be avoided outside of normal working hours; During the off-road section of works, construction staffing personnel will arrive prior to 07.00am to mitigate against traffic peak. Site development and building works shall be carried only out between the hours of 08.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays.
- A person will be appointed with responsibility for maintaining noise levels within acceptable limits investigating any complaints arising and liaison with the local authority, as appropriate, in relation to noise related issue.

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Construction operations and equipment use causes ground vibrations, which spread through the ground and diminish in strength with distance. Ground vibration from construction activities very rarely reach the level that can damage structures and no impact from vibration is anticipated as part of this project.

7.7.2 Dust Control

All site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors, particularly neighbouring properties, local traffic and pedestrians. The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done primarily through good design, planning and effective control strategies.

The following measures will be implemented to ensure impacts are minimised:

- The siting of construction activities and the limiting of stockpiling will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance.

- Equipment and vehicles used on site will be in good condition such that emissions from diesel engines etc. are not excessive;

- Pre-start checks will be carried out on equipment to ensure they are operating efficiently and that emission controls installed as part of the equipment are functional.

Site access routes (particularly unpaved routes) can be a significant source of fugitive dust from construction sites if control measures are not in place.

- A speed restriction of 15 km/hr will be applied as an effective control measure for dust for on-site vehicles;
- Bowsers will be available during periods of dry weather throughout the construction period. Research shown found that the effect of surface watering is to reduce dust emissions by 50%. The bowser will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use;
- Access gates to the site shall be located at least 10m from sensitive receptors where possible;
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only. During dry and windy periods, and when there is a likelihood of dust nuisance, watering shall be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust;
- During periods of very high winds (gales), activities likely to generate significant dust emissions should be postponed until the gale has subsided.
- Trucks containing materials with a potential for dust generation moving to an off-site location will be enclosed or covered.
- Overburden material will be protected from exposure to wind by storing the material in sheltered parts of the site, where possible stockpiles should be located downwind of sensitive receptors;
- Regular watering will take place during dry/windy periods to ensure the moisture content is high enough to increase the stability of the soil and suppress dust;
- There will be no storage of soil along the cable route; and
- Where feasible, hoarding will be erected around site boundaries to reduce visual impact. This will also have an added benefit of preventing larger particles from impacting on nearby sensitive receptors.

Spillage and blow-off of debris, aggregates and fine material onto public roads will be reduced to a minimum by employing the following measures:

- Vehicles delivering or collecting material with potential for dust emissions shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.

7.7.3 Light & Visual Impact

- Lighting of compounds and work sites will be restricted to agreed working hours and that which is necessary for security and safety;
- A minimum general lighting level of 20 lux shall be maintained on areas to be accessed on site;
  The following lighting levels shall apply;
  - Internal walkways and access areas – 50lux
  - Internal work areas – 100lux
  - External site access areas routes and roads – 20lux
  - External construction compound areas – 20lux
  - External lifting and crane operation areas – 100lux
- Directional light fittings will be used that will minimise light pollution in the area;
- Arc lighting will not be permitted
- Fencing or hoarding will be erected around the construction site prior to commencement of construction;
- Materials and machinery will be stored tidily behind fencing and within the construction area during the works;
- Portable machinery will be stored behind fencing in compounds when not in use;
- Roads providing access to site compounds and work areas will be maintained free of excessive dust and mud as far as is reasonably practical; and
- Temporary fencing, barriers, traffic management and signage will be removed when no longer required

7.8 Resource Efficiency

H&MV Engineering aim to use material resources in the most sustainable manner whilst minimising our environmental impact through:

- Using fewer materials
- Optimising the use of materials

- Preventing waste
- Using reclaimed or highly recycled content materials

Resource efficiency measures will be applied across the project's life cycle, contained in the site-specific Environmental Aspect, Impact and Mitigation Assessment, and considers the following stages:

- Design
- Procurement
- Construction activities

7.9 Waste and Material Management

H&MV Engineering and all sub-contractors shall manage waste in accordance with the waste hierarchy principles:

Figure 9 Waste management Hierarchy

Following methods that align with circular economy practices is essential; this is why we have identified certain materials that can be reused either on site or by 3rd parties, which would have otherwise been wasted.

We operate with Zero waste to landfill licenced carriers. All waste records will be stores on the H&MV Engineering SharePoint and be available on site.

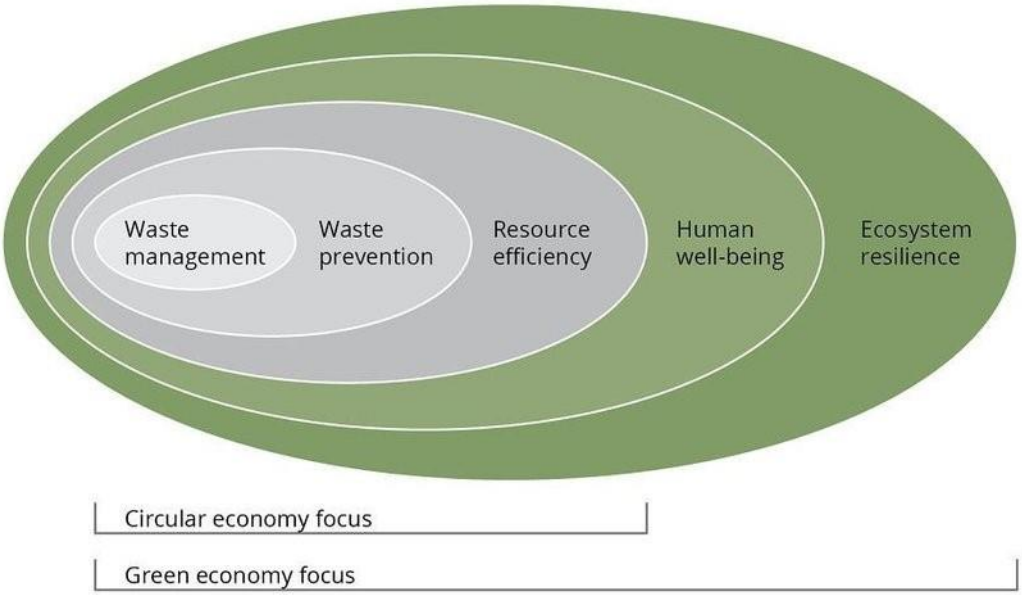
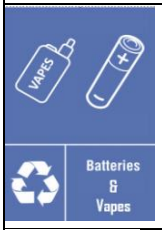


Figure 10 Circular and Green Economy

The below tables highlight the waste streams that have been identified for the project and include the the proposed bin types and a description of each waste stream, together with specific requirements to be followed in H&MV Engineering Construction site.

Waste Stream	Skip Size	Reusable?
Timber	Large	Yes
Metal	Large	Yes
Recycling	Large	Where practical
General Waste	Small	No
Organic Compost	Domestic Size bin	No
WEEE	Small	No
Earth & Soil	Ad hoc	Yes where suitable
Hazardous Waste	Ad hoc	No

	Metal waste will be stored in a skip provided by and given to licensed metal recycling company. This will be placed in the Skip Area. Used copper or valuable metals shall be stored in a secure area and recycled with the profits of such being handed back to H&MV.
	Wood and wood from pallets will be reused where possible. Any wood not suitable for reuse will be stored in a skip. This will be placed in the Skip Area. H&MV Engineering are increasing the re-use of materials and practices in the circular economy and have partnered with local sawmills to repurpose waste timber onsite into furniture, bee hives and other uses.
	Any packaging material will be segregated, as required, into separated bins which will be labelled. These will then be disposed by the waste contractor. This will be placed in the Skip Area. There will also be a smaller recycling bin in the welfare compound which will be emptied into the larger skip.
	Any organic waste will be disposed of in a separate bin provided by the waste contractor and removed offsite at regular intervals. There will be a smaller bin provided in the welfare unit. The site manager must ensure that this is managed and collected regularly to prevent rodents.
	To minimise general waste all other bins must be considered before this bin is used. This shall be the smallest skip on site. There will also be a smaller waste bin in the welfare compound which will be emptied into the larger skip. To encourage zero waste to land fill this generated waste stream will be either SRF (Solid Recovered Fuel) or RDF (Refuse Derived Fuel) depending on the quality of the material.
	Any Hazardous Waste identified and generated onsite will be stored in separate container(s). The correct and licenced carrier will be used for the correct collection and disposal of the waste type. The waste will be weighed and all relevant documentation from this removal must be kept and stored. This will be monitored.
	Electrical waste will be collected in blue containers which will be available in the Welfare compound, this includes batteries, e-cigarettes and vapes. When the container is full the Site Manager will notify a WEEE Ireland approved recycling scheme and arrange for collection.
	Septic tank contents will be removed by a licenced waste carrier and all records will be made available.

	Any inert material needing to be removed from the site will be carried out by a licenced carrier. Where reasonably practical soil and other inert material will be reused and reinstated onsite, promoting biodiversity initiatives.

A dedicated and secure compound containing bins, and/or skips, and storage areas, in which all waste materials generated by construction site activities are to be stored, is to be established within the site compound.

Waste materials generated will be segregated on site at the site compound, where it is practical. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled.

The site construction manager will ensure that all staff are informed of the requirements for segregation of waste materials by means of clear signage and verbal instruction. Appointed employees will be made responsible for ensuring good site housekeeping.

The following mitigation measures will be implemented during the construction phase:

- Building materials will be chosen with an aim to 'design out waste';
- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated: Office / Canteen waste, Concrete rubble, Metals and Timber.
- Left over materials (e.g. timber off-cuts, broken concrete blocks/bricks) and any suitable construction materials shall be re-used on-site, where possible;
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A member of staff will ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered where possible to minimise material designated for disposal;
- All waste leaving the site will be transported by suitable permitted or licenced contractors and taken to suitably registered, permitted or licenced facilities;

- All waste leaving the site will be recorded and copies of relevant documentation maintained.

It will be the responsibility of the construction manager to ensure that a written record of all quantities and natures of wastes removed from the site are recorded.
All Waste Transfer Notes (WTNs) and Waste Consignment Notes (WCNs) are held in the project file and must be retained for a minimum of 3 years.

Waste audits shall be carried out by the Environmental Advisor, which shall include duty of care obligations. It is expected that all sub-contractors carry out regular inspections on all waste containers to ensure correct segregation is in place and that the waste hierarchy principles are being followed.

A separate Waste Management Plan will be produced for this project and shall include as a minimum:

- Details of types (EWC code) and estimated quantities of waste likely to arise from activities (Demolition, Excavation and Construction).
- Details of any hazardous/ special wastes including handling and storage requirements.
- Schedule of waste contractors/brokers to be used for waste removal from site. Include Waste Carriers License Registration numbers and Waste Facility Permit numbers/ exemptions.
- Outputs from Designing out waste/resource efficiency workshops (if applicable) to capture waste initiatives implemented or to be implemented on site. Include actual waste savings where possible.
- Appropriate skips/containers shall be provided and correct segregation signage provided to ensure the correct disposal of each waste type.
- All waste containers shall be places in a designated area, located away from environmental sensitive areas on site. Areas around these container shall remain tidy, with regular inspections.

The site-specific Environmental Aspect, Impact and Mitigation Assessment will determine control measures associated with waste to ensure compliance and mitigate adverse impacts on the environment. This assessment will include the following aspects:

- Hazardous/ Special waste
- Effluent
- Storage
- Soil
- Emergency wastes (fire-run off)

- Welfare, including sanitary and bio-hazardous (first aid/sharps) waste.

Hazardous waste generated on site shall be correctly bagged and labelled with the exact contents and placed in the Hazardous waste container which shall be located in the COSHH storage. This waste must be removed from site by a licenced hazardous waste carrier or the subcontractor, in line with the relevant waste legislation.

Any sewage from temporary toilet facilities that are provided onsite at any phase of the contract shall be disposed of as per legislation by a licenced carrier and in accordance with current company procedures.

7.9.1 Soil Management and Contaminated Land

Clean soil resources will be identified to reduce the risk of soil becoming mixed with spoil or contaminated materials, thereby ensuring its reuse for landscape works.

The site-specific Aspect, Impact and Mitigation Assessment will determine control measures associated with soil management and contaminated land to mitigate adverse impacts on the environment. This assessment will include the following aspects:

- Site planning
- Adverse weather
- Stripping subsoil
- Stockpiling
- Soil placement
- Sourcing and importing
- Waste soil (also referenced in the Waste Management Plan)
- Soil aftercare
- Soil contamination
- Storage of COSHH

If contamination is found on site, that has not previously been identified, it shall be reported to the Site Manager and HSE Advisor, who shall inform the Client. An investigation and risk assessment shall be undertaken. Where remediation is necessary, it shall be agreed with the local authority and a verification report submitted to the local planning authority upon completion.

7.9.1.1 Reinstatement of Land

Construction of the substation will require a range of mobile machinery during the construction period including cranes and high loaders. Existing vegetation cover will be removed and, where appropriate,

reinstatement of vegetation will be implemented. Overall, the impacts will be adverse but short-term in duration. All works areas will be restored to their original condition.

7.9.2 Storage of Materials, Disposal of Excavated Materials

A 'Just in Time' delivery system will operate to minimise storage of materials, the quantities of which are unknown at this stage. Where possible it is proposed to source general construction materials from the surrounding area to minimise transportation distances.

Aggregate materials such as sands and gravels will be stored in clearly marked receptacles in a secure compound area within the contractors' compound on site.

Liquid materials will be stored within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications) to prevent spillage.

Construction materials will be brought to site by road. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials and spoil to prevent the escape material along the public roadway if required.

The majority of construction waste materials generated will be soil from excavation works. Soil requiring removal offsite will be removed from site regularly to ensure there is minimal need for stockpiling.

Many of the materials handled in construction operations, such as oils, cement, spoil material, chemicals, and cleaning materials have the potential to cause serious pollution, especially if released to watercourses. The following control measures will be implemented onsite to prevent adverse environmental impact:

- Minimise area of exposed ground by maintaining existing vegetation where possible;
- Soil, rock or any excavated material during construction which can be, shall be used to generate onsite berm;
- Excavated spoil will be reused where appropriate on site for regrading or revegetation; &
- On completion of construction, all remaining spoil and construction material will be removed from the site by a licenced contractor to a licenced facility.

7.9.3 Vehicles and Equipment

Details of all plant and vehicles owned by H&MV Engineering are kept on file. This gives details of the status of each vehicle and item of plant and ensures that every vehicle is taxed, statutory certification is completed, serviced and NCT /CVRT tested carried out (if required) by the appropriate date along with scheduled

maintenance.

Details of the equipment on hire along with subcontractor's equipment is kept within the Safety file.

- Unscheduled maintenance and repairs will be conducted over plant nappies or other spillage controls where all accidental releases are captured for appropriate containment with spill kit;
- Maintenance teams are in place to ensure the efficient operation of plant and equipment at all times. The maintenance regime will ensure that all extraneous noises from mechanical vibration, creaking and squeaking are reduced to a minimum;
- All noise control equipment as fitted to plant and machinery shall be maintained in good and efficient working order and operated in such a manner as to minimise noise emission wherever possible; &
- Work compounds must be laid out so that accesses and loading areas are located as far away from sensitive neighbours as practicably possible and so that temporary structures screen noisy areas where practicable.

7.10 Chemical & Oil Management

7.10.1 COSHH Storage

A Chemical storage unit will be brought to site and used to store any chemicals used in the construction operation.

Figure 11 COSHH Store

This is used for the storage/control of Substances Hazardous to Health. It will be a bunded container to prevent any chemicals from spilling and leaking into the ground. All hazardous substances must be

accompanied by a legible safety data sheet (SDS). A hazardous material onsite checklist will have to be completed on all Hazardous substances stored on site. Please note the following:

The QAP 10 HSE 46 COSHH Process and Risk Register will be followed and used with the store. The QAP HSE 18-F-02 Hazardous Material onsite checklist should be carried out to audit or review the site set up in relation to COSHH storage onsite weekly. All Hazardous substances stored on site must be recorded on the COSHH Site specific product list QAP 10 HSE 46-F-02. This list is to be filled in with the product, use description, quantity and shelf life of each chemical placed in the COSHH store onsite.

7.10.2 Management of Oil & Chemical measures

All sub-contractors on site will be expected to adhere to the environmental procedures and rules set up by H&MV Engineering Ltd during the construction phase of the works. These works will be monitored by the H&MV Site Manager.

Mitigation is in place to prevent contamination of lands from accident release; these include mandatory compliance with environmental management system by H&MV Engineering staff and contractors.

Specific measures outlined in the control of liquid materials onsite include:

- Storage of fuel and oil on the Site shall be kept to a minimum;
- Fuel bowsers shall be double skinned, visual checks are conducted on the bowser;
- All personnel involved in the handling of fuels and oils shall be trained in proper procedures for this work and for dealing with any spills that may occur;
- A formal procedure for refuelling shall be developed and adopted by H&MV Engineering and shall be reviewed by the client before work commences on site;
- All refuelling shall follow this procedure and will be conducted under the permitting system;
- Adequate containment and clean-up equipment to deal with any spill shall be located on every fuel bowser at all times;
- Any diesel or fuel oils stored on site will be bunded to 110% of the capacity of the relevantstorage tank and the design and installation of such tanks will be in accordance with bestpractice guidelines. Such facilities will not be located close to any drain or watercourse;
- Refuelling of construction plant will take place within a designated area, using drip trays, plant nappies and other spillage controls;
- Drip trays and emergency spill kits will be kept available on site; &
- Only emergency breakdown maintenance will be permitted on the site.

The following additional control mechanisms will be maintained onsite to prevent accidental pollution of watercourses:

- Oils, fuel and all potentially harmful materials will be stored within impermeable proprietary containers.
- All potentially harmful materials will be brought back to the secured storage facility immediately after use and after each shift.
- No hazardous substance shall be permitted to be left unattended at any time when taken outside the secured storage.
- All hazardous substances will be transported to the location of use in their proprietary sealed container.
- Containers shall be secured with lid or cap in the secured storage, during transport and immediately after use.
- All containers shall have their content clearly labelled.
- Specific containers will be used to collect and temporarily store contaminated material and soiled spill kits material.
- Temporary storage shall be in secured facilities only.
- Only a waste carrier holding the appropriate waste collection permit will transport hazardous waste away from site.
- Material quantities will be carefully managed so that only a limited amount of each material is stored on site at any one time.
- The storage area will be arranged so that each area is readily accessible by site operatives and that materials can be easily removed for use when required.
- The material storage areas will be regularly monitored to check if any containers have signs of damage or are leaking.
- Should a container be leaking or damaged it will be removed and disposed by a specialist disposal company.
- Mobile storage such as fuel bowsers will be bunded to prevent spills.
- Tanks, bowsers and generators shall be double skinned.
- When not in use all valves and trigger guns from storage containers will be locked.
- All plant refuelling will take place on site using mobile fuel bowsers, only dedicated trained & competent personal to carry out refuelling operations.
- Mobile bowsers to be returned to the bunded storage area in a site compound on completion of refuelling operations.

- All pipework from containers to pump nozzles will have anti siphon valves fitted.
- Strict procedures for plant inspection, maintenance and repairs shall be detailed in the contractor's method statements.
- All site plant will be inspected at the beginning of each day prior to use.
- Defective plant shall not be used until the defect is satisfactorily fixed.
- In the event of a defect or maintenance necessitating work on the hydraulic system or engine the concerned plant will be brought back to a bunded area to be seen to by the mechanics.
- In the event the plant cannot be brought back to a bunded area a specific environmental risk assessment shall be produced.
- In the event the plant maintenance cannot reasonably be carried out within the bunded area, a specific environmental risk assessment shall be produced.
- As a minimum a spill kit and effective drip trays shall be available for all such field repairs and maintenance.
- All site repairs and maintenance will be carried by a competent person only.
- All major repair and maintenance operations will take place off site.
- Stringent plant refuelling procedures shall be detailed in the contractor's method statements.
- Bulk deliveries of fuel shall be restricted to the bunded area at the site compound.
- All refuelling mobile bowsers will be checked regularly for signs of wear and tear.
- Refuelling operations shall be carried out under the supervision of a dedicated competent person only.

7.10.3 Spills & Categories

The main potential source of a spill is hydrocarbons from project plant. In the event of an oil/fuel spill the action taken will be dependent on the location and nature of the spill; this is broken down into four categories, detailed below. Please Appendix A for in illustration of the Spill procedure.

Category	Description
1	Small land-based spill
2	Small water-based spill
3	Medium to Large land-based spill
4	Medium to Large water-based spill

7.10.3.1 Small Land-based Spill

- The source of the spill will be identified and where possible immediately stopped;

- If the spill cannot be stopped then the contents of the damaged tank/container must be transferred to another drum.
- Stopping the leak will only be done if it is safe to do so.

- Absorbent mats or granules will be used to contain and lift the spilt fuel/oil.
- The used absorbent material will be put in sealable bags which will be transferred to sealable UN approved drums (drums).
- Any contaminated ground will be excavated, and the excavated material transferred to drums.
- All drums will be held in a bunded storage container prior to their removal off-site for disposal.
- Waste oil or oil contaminated material will be disposed of in accordance with the site Waste Management Plan. This involves collection and treatment/disposal by a licensed/permitted waste contractor.

7.10.3.2 Small Water-Based Spill

- The source of the spill will be identified and where possible immediately stopped;
  - If the spill cannot be stopped then the contents of the damaged tank/container must be transferred to another drum;
  - Stopping the leak will only be done if it is safe to do so;
  - For trace or small spills, oil spill booms will be used to contain any oil spill and the oil removed using absorbent mats/pads.
- The used absorbent material will be put in sealable bags which will be transferred to drums.
- Any contaminated ground will be excavated, and the excavated material transferred to drums.
- All drums will be held in a bunded storage container prior to their removal off-site for disposal.
- Waste oil or oil contaminated material will be disposed of in accordance with the site Waste Management Plan. This involves collection and treatment/disposal by a licensed/permitted waste contractor.

7.10.3.3 Medium to Large land-based Spill

- The source of the spill will be identified and where possible immediately stopped;
  - If the spill cannot be stopped then the contents of the damaged tank/container must be transferred to another drum.
  - Stopping the leak will only be done if it is safe to do so.
- The spread of the oil/fuel will be stopped using adsorbent granules, the granules will be used to create a berm down gradient of the spill and will be sufficiently large so as to contain the entirety of the spill.

- Absorbent granules will initially be used to lift the spilt fuel/oil with absorbent mats used for any mopping up after this initial clean-up.
- The used absorbent material will be put in sealable bags which will be transferred to drums.
- Any contaminated ground will be excavated, and the excavated material transferred to 1m^3 contaminated soil bags, obtained from and approved by the waste contractor.
- All drums/soil bags will be held in a bunded storage container prior to their removal off-site for disposal.
- A licensed/permitted waste contractor will collect, treat and dispose of any waste oil or oil contaminated material.

7.10.3.4 Medium to Large water-based Spill

- The source of the spill will be identified and where possible immediately stopped;
  - If the spill cannot be stopped then the contents of the damaged tank/container must be transferred to another drum.
  - Stopping the leak will only be done if it is safe to do so.
- The spread of the oil/fuel will be stopped using containment booms.
  - The boom should be sufficiently large so as to account for any spread in the spill during the time of deployment.
  - If there is a thick layer of fuel/oil then oil absorbent pillows will be used first, this maximises absorption.
  - Oil only absorbent mats will be laid out within the containment boom and the oil mopped mechanically.
  - The used absorbent material will be put in sealable bags for transfer to sealable drums or directly into the sealable drums.
- All drums will be held in a bunded storage container prior to their removal off-site for disposal.
- Where applicable control mechanisms/operations will be put in place to ensure that a similar event does not happen again.

7.10.3.5 Other Chemical Spills

In the event of a chemical spill, the individual(s) working with the chemical are initially responsible for stopping and containing the spill. They should have the spill control materials and PPE appropriate for the chemicals being handled. The information regarding the environmental impact and spill management of a chemical is detailed in the chemical's Safety Data Sheet. The recommendations made in the SDS must be followed.

The site environmental department, H&MV and the client must be informed of all spills.

7.11 Social Impact

There are no formal construction promoting public schemes (e.g., Considerate Constructors) relevant to this project.

H&MV Engineering seeks to be a good neighbour by maintaining all sites and welfare to the highest standards. On this project, we intend to:

- Provide contact details for the person(s) responsible for briefing all staff about acceptable conduct on site.

8. ENVIRONMENTAL INCIDENTS

Appendix A of this document contains the **Spill Procedure**, which should be followed in the event of a pollution incident.

The site-specific **Emergency Response Plan** includes the following elements:

- Identification of potential incidents, including prevention and mitigation measures
- Allocation of responsibility for managing incidents
- Arrangements for internal and external reporting
- Identification of escalation process to respond to incidents.
- Evacuation arrangements
- Disposal measures for debris and contaminants
- Severe weather
- Communication
- Testing / drill requirements

Environmental incidents can be defined as an occurrence or set of circumstances, as a consequence of which pollution (land, air, water, nuisance) or an adverse environmental impact has occurred, is occurring, or is likely to occur. This includes near misses. All environmental incidents will be reported to the HSE Advisor immediately.

All environmental incidents and near misses will be investigated. The investigation will involve persons associated with the incident / near miss and any witnesses. A report with findings will be issued.

8.1 Reporting and Investigation

If an incident is contained and pollution prevented, it should be reported as an environmental near miss. If a spillage leads to an environmental incident i.e. pollution, a copy of the Incident and Accident Report Form should also be sent to the HSE Advisor and an investigation, if deemed appropriate, will be undertaken.

8.2 Emergency Environmental Contact Details

EMERGENCY CONTACT DETAILS		
	NAME:	**TELEPHONE:**
Site Manager	James Murphy	0877488297
HSE Advisor	Dale Larkin	0873620939
Environmental Advisor	Kate Kerrane	0874771762
Project Manager	Danny Walling	0871180035
Client	Vantage Nick Sinnot	0860832059
Environment Protection Agency	EPA Ireland	**0818 33 55 99**
Local Authority	SDCC	(01) 414 9000

APPENDIX A – SPILL PROCEDURE

The following procedure should be communicated in the Site Induction and tested to evaluate effectiveness.

If the spill cannot be safely contained or if the spill is causing a threat to life, evacuate the area and call 999 from a safe location

STOP > CONTAIN > NOTIFY > CLEAN-UP

STOP

- Stop work immediately
- Stop the leak or eliminate the source of the spill
- Eliminate ignition sources and provide natural ventilation

CONTAIN

- Use pollution control equipment (e.g. spill kits, drip trays, bunds of earth or sand) to contain the spill
- Check the spill has not reached any drains, water courses or other sensitive areas
- Cover all drains / manholes to prevent the spill from entering the drainage system

NOTIFY

- Once the spill has been contained, notify your emergency contact

CLEAN-UP

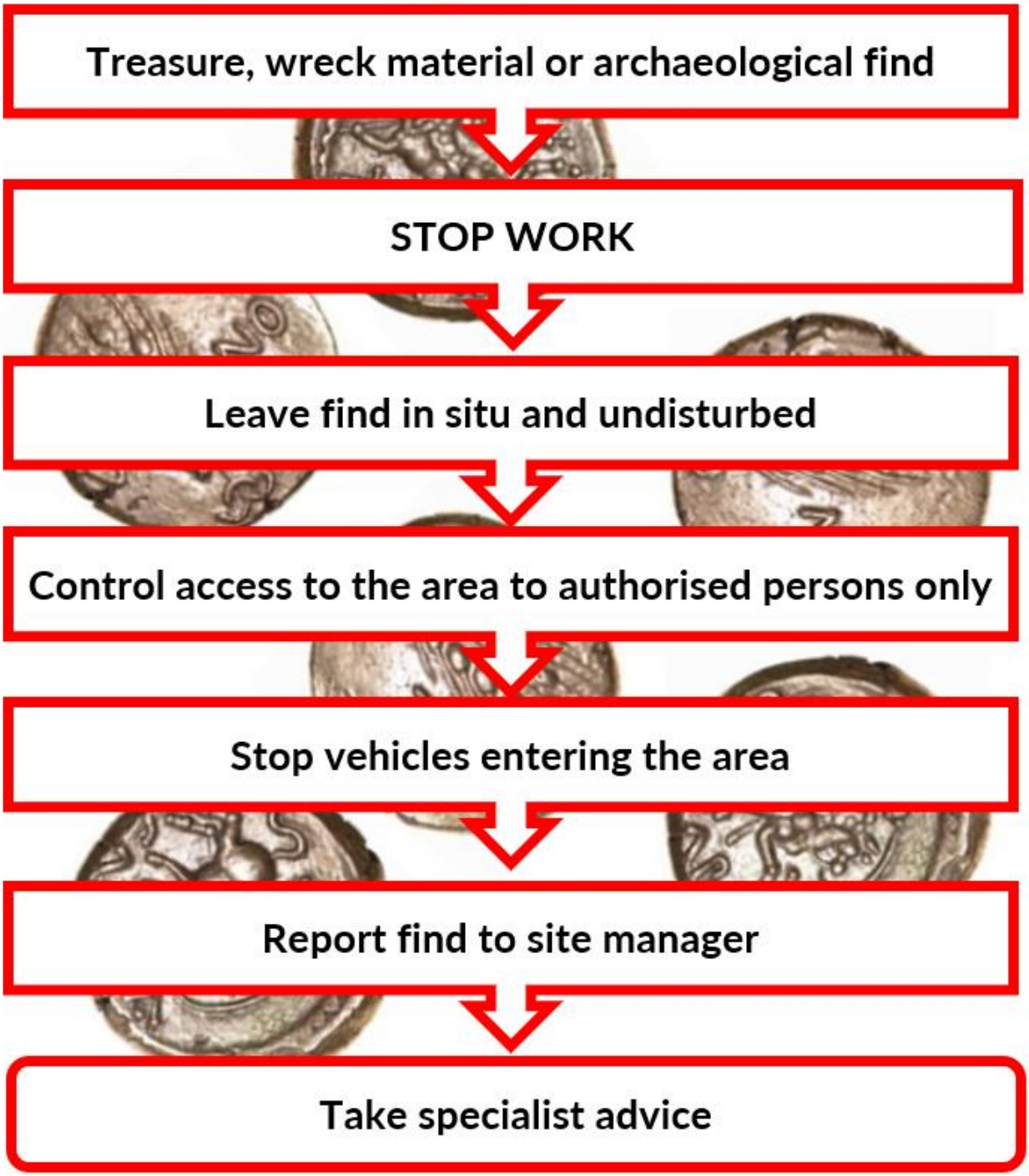
- Attempt to soak up the spill using absorbent material
- Always follow your Duty of Care for waste when disposing of contaminated materials including spill kit / equipment

APPENDIX B – RISK METHODOLOGY

Environmental Aspects must be reviewed against the following methodology.

Likelihood	Severity			
	Score (Likelihood x Severity)	1 Minor or minimal short-term impacts to the environment or social areas (e.g. minor spill of <20 litres; dust/odour; disturbance to locally protected species or habitat)	2 Significant impact to the wider environment or social areas, where short term restoration works are needed (e.g. confirmed spread of invasive species; disturbance to nationally/internationally protected site or species; damage to SSSI; habitat destruction)	3 Major, extensive impact to the environment or social area where long term remediation is required (e.g. long term pollution involving toxic or hazardous materials; damage to nationally protected site or species; unlicensed killing of a protected species)
	1 Low likelihood the risk will occur (<25%)	1	2	3
	2 Medium likelihood the risk will occur (26-75%)	2	4	6
	3 High likelihood risk will occur (>75%)	3	6	9

APPENDIX C – FINDS PROCEDURE



APPENDIX D – WILDLIFE YEAR PLANNER

Badgers

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												
3												
4												
5												

Badger Surveys – are best carried out during November to April when the vegetation is low and field signs are easier to identify.

Badger Survey – can continue but become less reliable as the vegetation becomes denser.

Artificial Badger sett construction – Should be completed at least six months before a sett exclusion. Winter is the time to complete artificial setts to give the badgers time to familiarise themselves before the licensing season.

Badger territorial bait marking surveys – Territorial markings is at its peak between February and April and the vegetation is low enough to identify latrines. This is the only time of the year when bait markings are effective.

Badgers Licensing season: Between 1 July and 30 November – Nature conservancy councils will normally only issue disturbance and exclusion licenses outside this time in cases of proven urgency.

Water Voles

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												
3												

Water Voles Surveys – Need to be carried out during the summer breeding season. Best carried out between March and June before the vegetation grows too high.

Water Voles Surveys – Can continue for the rest of the breeding season but field signs become harder to identify as the vegetation become denser.

Water Voles Surveys – Excluding and trapping are recommended during February and March, Before the breeding season, or October and November, after the end of the breeding season.

Otters

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												

Otter Surveys – can be carried out throughout the year, although surveys are easier to carry out during periods of low vegetation.

Otter Surveys – Can be carried out throughout the year but may be restricted if evidence of breeding is identified.

Great Crested Newts

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												

Great Crested newts breeding pond surveys – are the only way to effectively establish presence or absence and to quantify populations. These are best carried out between March and June

Great Crested newts breeding pond surveys –are least effective but can be carried out during early spring and during the autumn, depending upon weather conditions. Surveys should be carried out when night temperatures are above five degrees centigrade and when the ground is moist.

Bats

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												
3												
4												

Flight Surveys – That involve identification of bats in flight by observation or echolocation can be carried out between March and October, although the optimum time for the survey is April to September. Surveys of this type can be carried out without a license as they are non-intrusive.

Dusk emergence and dawn swarming surveys – Can be carried out between May and October although the optimum time for the survey is between May and September

Hibernation roost surveys – can only be carried out between November and March when the bats are hibernating. These surveys are very difficult to carry out as bats hibernate deep in cracks and crevices and are therefore difficult to identify.

Habitat Surveys – can only be effectively carried out between April and October when the bats are active.

Crayfish

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												
3												

Crayfish Surveys – are best carried out between July and October, although it is possible to carry out surveys during April.

Crayfish releasing young surveys – Should not be carried out between May and June because crayfish are releasing their young.

Crayfish reduced activity surveys- Should not be carried out during the winter months due to reduce levels of activity.

Nesting Birds

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												

Nesting Bird season – No vegetation clearance work should be carried out during the nesting bird season unless immediately preceded by a thorough nesting bird survey.

Vegetation Clearance work – is best carried out at these times of year when birds are not nesting, although work must stop if nests are found.

Reptiles

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1												
2												
3												

Reptile Surveys – can only be carried out between March and October when reptiles are active. During winter months reptiles are in hibernation, therefore it is not suitable to carry out surveys.

Reptile capture and release programmes – can only be carried out between March and October when reptiles are active.

Scrub Clearances – work can be carried out throughout the year.

9. STORAGE DETAILS

H&MV ENGINEERING CONTROLLED DOCUMENT REPOSITORY	
Location	**Responsible Person**
QMS Documents Stored Securely in SharePoint Document Repository	Sinead Nelligan

10. UPDATE REGISTER

UPDATE REGISTER (Template Only)				
Revision	**Summary of the update**	**Date**	**Author**	**Approved**
00	Initial revision	Date	Name	Name
01	1. Format Update. 2. Revision on 4. Procedure to 6. Procedure. 3. Addition of 11. and 12.	22-Feb-16	Mike Collins	Martin Whelan
02	Format Update Added Environmental Emergencies Information to Section 2 and Appendix 3	13-Feb-17	Peter Mulvihill	Mike Collins
03	Formatting only	09-Jan-18	Sinead Nelligan	Mike Collins
04	Added signed Environmental Policy	15-Jan-18	Sinead Nelligan	Mike Collins

05	Updated signed Environmental Policy	07-Jan-19	Eimear Moore	Mike Collins
06	Updated Cover Sheet	02-Mar-2020	Tara Tormey	Sinead Nelligan
07	Full review of document with minor changes throughout	07-April-2020	Sinead Nelligan	Mike Collins
08	Updated signed Environmental Policy	11-Jan-2021	Tara Tormey	Martha Collins
09	Added tables page 3. Transferred to new template.	24-Mar-2021	Martha Collins	Mike Collins
10	Full review of document with updates throughout	25-May-2021	Graham Raath	Mike Collins
11	Replace EHS with HSE	20-Sept-2021	Nivi Rani	Mike Collins
12	Updated Environmental Policy	12-Jan-2022	Emma Young	Mike Collins
13	Added Wildlife Year Planner	19-Apr-2022	Graham Raath	Mike Collins
14	Updated signed Environmental Policy	10-Jan-2023	Zoe O'Neill	Mike Collins
15	Full review of document with changes throughout	25-Apr-2023	Jessica Beckley	Kate Kerrane
16	Updated Environmental Policy	09-Jan-2024	Lucija Stibuhar	Kate Kerrane

Do not edit this table when completing the plan for a project, refer to tables on page 3