Construction Environmental Management Plan

Proposed Large-Scale Residential Development

Baneshane, Midleton, County Cork

September 25

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DOCUMENT CONTROL

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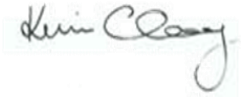
	Name	**Signature**	**Date**	**Position**
Created by	Jim Kennedy		15/09/2025	Senior Environmental Consultant
Reviewed by	Malcolm Dowling		19/09/2025	Principal Environmental Consultant
Approved by	Kevin Cleary		22/09/2025	Operations Director

LIMITATIONS

This initial Construction and Environmental Management Plan (CEMP) has been prepared and presented as a standalone document to support a planning application for a proposed large-scale residential development (LRD) on lands located at Baneshane, Midleton, Co. Cork (hereafter referred to as the Site).

Details provided herein are based on information provided by the Design Team involved in the preparation of the planning application for this development. The CEMP is intended to be regarded as a "live" document to be updated on an on-going basis throughout the project life cycle, and as such the document will be further revised to consider specific planning conditions and any new relevant legislation and guidance that may arise prior to the completion of the development.

Certain information contained within this report has been supplied by other parties. Where any conclusions and recommendations contained in this report are based upon information provided by others, it has been assumed that all relevant information has been provided by those parties and that such information is accurate. Verde accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to Verde from others.

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1 INTRODUCTION

This Construction and Environmental Management Plan (CEMP), incorporating a Construction Resource & Waste Management Plan (CRWMP - Section 5), has been developed by Verdé Environmental Consultants Ltd. (Verde) on behalf of Rockspring Properties Ltd. (the Client) in support of a planning application for a proposed large-scale residential development on lands located at Baneshane, Midleton, Co. Cork. The site location is indicated on Figure 1 attached.

The overall development will comprise the construction of 173 no. dwellings (comprising 99 no. dwelling houses and 74 no. apartments in six blocks) and a creche facility. The development will be constructed over 4 phases. A detailed project description is included in Section 2 of this report.

The objective of this Construction and Environmental Management Plan (CEMP) is to communicate key environmental obligations and waste management procedures that will apply to all contractor organisations involved in the project, their subcontractors and employees involved in conducting any form of construction activity at the site. This Plan defines project-specific environmental measures that must be put in place during construction works. This initial CEMP is an outline document that includes information on construction traffic routes, hours of operation, control of noise, soil extraction and re-use and environmental impacts and associated mitigation measure that will be implemented by the appointed Contractor in the completion of construction works.

Any Contractor retained by the Client to construct the development will be expected to retain provisions that are contained in this document when developing their own contract-specific CEMP.

The CEMP has been prepared in consideration of several other reports that will form part of the supporting planning application documentation. These include the following:

- AA Screening Report, Verdé Environmental Consultants Ltd., September 2025.
- Landscape Design Rationale Report, CSR Land Planning & Design, September 2025.
- Engineering Services Report, CroCon Engineers Ltd., September 2025.
- Construction Resource & Waste Management Plan, CroCon Engineers Ltd., September 2025.
- Site Specific Flood Risk Assessment, CroCon Engineers Ltd., September 2025.
- Drainage Impact Assessment, CroCon Engineers Ltd., September 2025.

- Construction Traffic Management Plan, CroCon Engineers Ltd., September 2025.
- Architectural Design Statement, GCA Architects.
- Archaeological Impact Assessment, Rose Cleary.
- Lighting Impact Assessment, Molloy Consulting Engineers, September 2025.
- Planner's Report, Ian Doyle, September 2025.

The CEMP is considered a "dynamic" document that will be updated and revised as development progresses. This initial document will be updated in line with all conditions and obligations which apply to any grant of permission. The CEMP will also require updating by the appointed Contractor to identify, assess and satisfy the contract performance criteria as set out by the various stakeholders. It will be updated in sufficient detail to describe the framework of the Contractor's proposed management, control and mitigation strategy for each environmental aspect. Following appointment, the Contractor will be required to develop a more detailed contract-specific CEMP that is cognisant of the specific assigned persons, equipment, plant and monitoring required to complete the development.

The CEMP will include, where required, specific method statements for specific works (e.g., site stripping of topsoil and subsoil from across the site and the requirement to ensure airborne dust is not generated).

Therefore, this CEMP is a working document that will remain a valid, relevant document throughout the duration of the development. The Plan will be subject to periodic review and revision in consideration of the following:

- Conditions that issue as a part of planning permission relating to the Proposed Development.
- Permits, licences, and other authorisations used over the course of the project.
- Details of any unplanned incidents and description of outcomes.
- Concerns or issues raised by residents or others impacted by the works.
- Details of materials brought to the site or material (including waste) brought off-site.
- Future legislative changes, including those relating to waste management.

The Plan outlines the environmental commitments associated with the development works at the site and describes how these commitments will be managed by assigning responsibility for ensuring the effective implementation of provisions contained therein. The CEMP will be developed and maintained by appointed Contractor as an integral part of the Health, Safety, Environmental and Quality Management system for the development and will be subject to the requirements of the site quality management system with respect to

documentation control, records control, and other relevant measures. The primary distribution list for this document includes the following personnel:

- Developer (Rockspring Properties Ltd.)
- Main Contractor (to be confirmed)
- Site Manager and appointed Construction Environmental Manager (CEM)
- Specialists engaged by the Contractor and Sub-Contractor Organisations

1.1 Objectives

This initial CEMP on behalf of Rockspring Properties Ltd. identifies key environmental considerations that must be adhered to and delivered during construction of the development. This report is intended as a single document that can be used over the course of works at the site, as a point of reference relating to construction and environmental activities for the Developer and appointed Contractor. The document provides the environmental management framework to be adhered to over the course of construction of the Proposed Development and incorporates mitigating principles so that works are completed in a manner that minimises the potential for environmental impacts to occur. In particular, the CEMP has the following objectives:

- To provide a continuous link and reference document regarding environmental information for all stages of the works.
- To demonstrate how the development will properly integrate the requirements of environmental legislation (including waste management legislation), planning consent conditions, policy, good practice and those of the regulatory authorities and third parties.
- To record environmental risks and identify how they will be managed during the construction period and to record the objectives, commitments, and mitigation measures to be implemented together with programme and date of achievement.
- To identify key staff structures and responsibilities associated with the delivery of the development and environmental control and communication and training requirements, as necessary.
- To facilitate the handover of key environmental information on completion of works. This shall include details of the asset, short and long-term management requirements, and any monitoring or other environmental commitments that have been initiated.
- To provide a review, monitoring and audit mechanism to determine effectiveness of, and compliance with, environmental control measures and how necessary corrective action shall take place.

2 PROJECT OVERVIEW

2.1 Existing Site

The site is located within the designated settlement boundary of the Metropolitan town of Midleton and is located c. 2km southwest of the town centre off the N25 in the townland of Baneshane, Co. Cork. The site has a total area of 4.3Ha and is of an irregular shape. It forms part of a wider 'Rocksprings' portfolio of landholdings in the area, that total 13.03ha, of which 2.5ha are zoned for open space. Ordnance Survey of Ireland (OSI) ITM coordinates for a point near the centre of the site are 586577, 573130. The site consists of a greenfield plot. The site location is indicated on Figure 1 attached.

Currently the landholding associated with the development comprises mostly of grassland and areas of hedgerow or areas with dense tree cover. Various areas of hedgerow cover create boundaries throughout the proposed site. The general topography of the site falls from south to north towards the entrance at Ballintubber Road. Levels vary in the region of 10.5m at the south end to 7.0m at the north end, while the lowest point is in the northeastern corner with a level of 6.5m. The principal hydrological features in the study area are the Owenacurra and Dungourney Rivers and their tributaries, most notably the Baneshane Stream. This stream comes on-site via culvert under the road to the north. Existing features associated with the development site are indicated on the attached Figure 2.

The site is covered by Land Zoning Map the Cork County Development Plan 2022 – 2028. The subject site is zoned for Residential Use. It is a stated objective in the current County Development Plan to "*promote development mainly for housing, associated open space, community uses*." Additionally, residential areas "*are intended primarily for housing development but may also include a range of other uses, particularly those that have the potential to foster the development of new residential communities. These are uses that benefit from a close relationship to the immediate community and have high standards of amenity, such as crèches, schools, nursing homes or homes for older people, open space, recreation and amenity uses*". The proposed development complies with the land use zoning objectives.

At present, the north of the site is bound by Abbey Wood Housing estate and Ballintubber Road. Further north, there is land that appears to be used for agricultural purposes as well as the N25. To the northwest, there are several housing estates including Rock Brook housing estate, which will provide access to the side entrance, and Little Angels Creche. Further agricultural land is found to the southwest. Beyond this, there are sparse single

dwellings and more agricultural land. Gaelscoil Mhainistir Na Corann and land that is also part of 'Rocksprings' portfolio for development is located immediately east of the subject site. Agricultural land is situated further east. A single residential dwelling, a farm/shed and agricultural land is situated immediately south of the site. There is an extensive area of agricultural land beyond this.

There have been various planning applications made and subsequently granted for the site in previous years. The site forms part of an incomplete/unfinished housing estate known as Abbey Wood which was granted planning permission in 2006 for 394 no. houses under Planning App. 06/8157. However, only 14 no. of the proposed residential dwellings was constructed with these being situated immediately north of the proposed development.

Currently, there are several planning applications within the vicinity (1km radius) of the subject site. The closest application is located immediately southeast of the proposed development. This application is in relation to an Extension of Duration to Permission granted under Planning Ref. No. 17/6604., which is for the construction of 65 no. dwelling units.

As described in Section 1 above, the development will comprise a mix of 173 no. residential units including car parking and a creche. These are indicated on Figure 3 attached. Ancillary works will include extensive landscaping, boundary treatments, lighting and other works necessary to facilitate development including SuDS drainage works to include rainwater harvesting, storm water treatment, an attenuation tank, detention basins, bioretention tree pits and standard tree pits, oil separator, permeable paving, low water usage appliances, green/ blue roof systems, and main foul drainage that will discharge via gravity the existing foul sewer network. As requested by the Council proposed attenuation tanks are concrete. Access to the site for the construction period will be via the main entrance through Ballintubber Road and Abbey Wood housing estate to the north of the site and through the side entrance at Rock Brook housing estate to the west.

A Contractor will be retained to undertake construction of the development and will be required to appoint a suitably qualified and experienced Construction Environmental Manager (CEM) to oversee all environmental aspects of the works in-line with the contents of this CEMP. The designated CEM will have ultimate responsibility for the day-to-day management of environmental aspects relating to the project. Other management positions will be filled to support the CEM including the appointment of a designated Construction Waste Manager as described further in Section 5. Roles and responsibilities are further described in Section 3.

2.2 Proposed Development

Planning Permission is being sought for a 10-year period for a large-scale residential development (LRD) located on lands at Baneshane, Midleton, Co. Cork. The Proposed Development consists of 173 no. dwellings covering ca. 7,976.8 sqm and a ca. 137.5 sqm creche facility as detailed below:

(a) 99 no. dwelling houses, consisting of:

- 2 no. 1-bedroom houses (bungalows)
- 10 no. 2-bedroom houses (3 end-of-terrace, 16 mid-terrace)
- 76 no. 3-bedroom houses (33 semi-detached, 27 end-of-terrace, 16 mid-terrace)
- 11 no. 4-bedroom houses (all semi-detached)

(b) 3. no Apartment blocks and 3 no. Duplex blocks consisting of 74 no. dwellings:

I. Apartment Block E1, comprising:

- 6 no. 1-bedroom apartments.
- 11 no. 2-bedroom apartments.
- Associated bicycle parking, bin storage, and public open space.

II. Apartment Block E2, comprising:

- 3 no. 1-bedroom apartments
- 6 no. 2-bedroom apartments
- 3 no. 3-bedroom apartments
- Associated bicycle parking, bin storage, and public open space.

III. Apartment Block E3, comprising:

- 6 no. 1-bedroom apartments.
- 9 no. 2-bedroom apartments.
- Associated bicycle parking, bin storage, and public open space.

IV. Duplex Block D1, comprising:

- 4 no. 1-bedroom duplexes
- 4 no. 2-bedroom duplexes
- Associated bicycle parking, bin storage, and public open space.

V. Duplex Block D2, comprising:

- 5 no. 1-bedroom duplexes
- 5 no. 2-bedroom duplexes

- Associated bicycle parking, bin storage, and public open space.

VI. Duplex Block D3, comprising:

- 3 no. 1-bedroom duplexes
- 9 no. 2-bedroom duplexes
- Associated bicycle parking, bin storage, and public open space.

(c) A crèche of c. 137.5 sqm gross floor area (59.22 sqm dedicated childcare space and 78.28 sqm ancillary/circulation), with capacity for c.20 children.

(d) A total of no. 273 car parking spaces, no. 161 bicycle parking spaces as well as

(e) Provision of a pumping station to serve the development.

(f) Provision of communal and public open spaces.

(g) The construction of vehicular and pedestrian access points to and from the site.

(h) Alterations and improvements to the junction at Abbey Wood Estate and Ballintubber Road.

(i) All landscaping on the site.

(j) All ancillary site development works.

The layout of the Proposed Development is included in Figure 3 attached.

The proposed Deployment will be completed over 4 phases (as per the Phasing Plan included on Figure 6 attached). The proposed phasing plan is as follows:

- Phase 1:
  - Houses 40-57, 70-74 and 83-92.
  - Apt E2 58-69
- Phase 2:
  - Houses 75-82, 93-121 and 134-140.
  - Duplex Apt F3 122-133
  - Creche
- Phase 3
  - Houses 141-155
  - Duplex Apt F1 & F2 156-173
- Phase 4:
  - Houses 33-39

- Apt E1 & E3 1-32

A Contractor will be retained to undertake the construction of the Proposed Development and will be required to appoint a suitably qualified and experienced Construction Environmental Manager (CEM) to oversee all environmental aspects of the works, in-line with the contents of this CEMP. The designated CEM will have ultimate responsibility for the day-to-day management of environmental aspects relating to the project. Other management positions will be filled to support the CEM including the appointment of a designated Construction Resource Manager as described further in Section 5. Roles and responsibilities are further described in Section 3.

2.3 Working Hours for Construction Works

Working hours for the Proposed Development works will be determined by conditions contained within planning permission that is granted for the development. Proposed hours are set out below:

- Monday to Friday - 07:00 to 18:00
- Saturdays - 08:00 to 14:00
- Sundays and Public Holidays - No activity on site.

It is expected that any deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from Cork County Council. Such approval may be given subject to conditions pertaining to the particular circumstances being set by the Planning Authority.

2.4 Site Construction Compound

Two secure compound areas will be established to accommodate the development. One to the north of the site at the proposed site entrance off Ballintubber Road, and the other to the west of the site beside the proposed side entrance off Rock Brook housing estate. A suitable hard standing will be constructed, and the compound will include site offices, a site canteen, drying room, worker welfare facilities, and containers for storage purposes. The compound will be serviced with electrical power, water supply, and toilet facilities. It is anticipated that electrical power will be initially supplied from a low noise, double-bunded diesel generator sited within the

compound. In accordance with Regulation Part 2, Chapter 1 (General Application), and Part 14 of the Construction Regulations, 2013, the Contractor shall provide suitable welfare provisions.

During the construction period, the Contractor may arrange for the discharge of sewerage/effluent to a temporary installed tank which will emptied as required by an authorised contractor. The compound will be used as a storage area for the various components, fuels and materials required for construction. Any fuels will be stored in self-bunded tanks. The compound will include waste bins (general and recycling). Wastes will be segregated at source (into suitable receptacles/skips for recycling and general waste), covered and removed from site regularly by authorised waste contractors. Details on waste management are provided in Section 5. The site compound will be kept clean and tidy at all times and will be subject to regular inspection. The compound will be fenced off to ensure site security is maintained, and only access to site personnel and authorised visitors will be allowed. Appropriate lighting will be provided as necessary within the compound and installed so as to minimise light spillage from the site. The Contractor, when appointed, may identify and utilise additional smaller local work compounds within the subject site subject for short term storage of materials or plant.

It is anticipated that vehicular access to the Proposed Development will be via the main entrance off Ballintubber Road and Abbey Wood housing estate which runs along the north boundary of the site and through the proposed side entrance off Rock Brook housing estate to the west.

2.5 Stockpiled Soil Material

The site is greenfield land that has not previously undergone development. The project is designed to achieve maximum re-use of available on-site topsoil and soil material from within the site boundary. Material excavated from various areas of the site may re-used across the site where necessary.

If necessary, soil that cannot be re-used as part of the development will be transferred from the site by a suitably permitted waste contractor and removed to an authorised soil waste facility. Consideration will also be given to exporting this soil material as a by-product material under Article 5 of the Waste Framework Directive as transposed into Irish legislation by Article 27 of the European Communities (Waste Directive) Regulations 2011. A similar consideration will be given to the importation of clean topsoil or soil material although the overall design indicates that there will be minimal importation of material and that majority of material will be site-won.

2.6 Plant and Equipment

The amount of plant, equipment and labour at the site will be proportional to the extent of the activity underway at any one time. Typical plant and equipment for use includes the following:

- Excavator(s)
- Dumper truck(s)
- Tower and mobile crane(s)
- Breaker(s)
- Piling rig(s)
- Compactors and roller(s)
- Drill/cutter(s)
- Forklift truck(s)

A full inventory of specific plant and equipment will be supplied by the Contractor upon appointment, and the CEMP will be updated accordingly.

3 PROJECT ROLES & RESPONSIBILITIES

Proposed environmental and waste management roles and responsibilities for relevant project personnel over the course of the construction period are described below. Further detail will be provided post-grant of planning permission with the appointment of a Contractor to undertake the development. As referred to in Section 1, at that stage the Plan shall be further refined with specifics to be supplied by the appointed Contractor.

Client/Developer (Rockspring Properties Ltd.)

The Developer will be responsible for the following:

- Ensuring that competent parties are appointed to undertake construction and that sufficient resources are made available to facilitate the appropriate management of identified risks to the environment.

Developer's Representative (to be appointed)

- Undertake Audits – These will be completed either directly or through independent competent environmental consultants. The Developer will not be required to notify the Contractor of these audits in advance.
- Ensure compliance with the CEMP.
- Appoint temporary or permanent specialists where required, to implement on-site procedures and monitor construction works with respect to potential impacts on the receiving environment.

Contractor (to be appointed)

The Contractor will be required to complete the development in accordance with all relevant environmental requirements including the consent documentation and other regulatory and contractual requirements. In particular, the appointed Contractor will be responsible for the following:

- Maintenance and further development of the Construction Environmental Management Plan (CEMP).
- Appointment of a Construction Environmental Manager (CEM).
- Promptly reacting with appropriate mitigating action to any adverse findings arising from environmental audits and provision of written reports to the Client or their representative detailing such mitigation.
- Accompanying third party environmental audits.
- Notification to the Client in relation to any complaints or environmental incidents within 24 hours of such occurrences. Where significant incidents occur, the Contractor is required to involve statutory authorities or emergency services, as well as notifying the Client or their representative within 1 hour.

- Provision of all updated CEMP documentation to the Client on completion of the site works. Reports arising during the site works, such as verification reports, shall be provided to the Client/Developer within one month of completion of the activity and may be subject to review.

Construction Environmental Manager (CEM)

The appointed contractor will be required to engage a qualified person with experience in construction to fulfil the role of Construction Environmental Manager (CEM). It will be a function of the CEM to monitor all site works to ensure that methodologies and mitigation measures are followed throughout the construction phase, and to ensure that negative impacts on the receiving environment are avoided. The CEM (as appointed by the appointed Contractor) will have overall responsibility for the CEMP and execution of all related environmental and waste management activities as appropriate, in accordance with regulatory and project environmental requirements. The CEM shall be present onsite throughout duration of the development. Principal duties and responsibilities of this position will include:

- Overall responsibility for the maintenance, development and implementation of the CEMP and incorporated Construction Resource and Waste Management Plan (CRWMP).
- Provision of support and augment the management team through the provision of adequate training, resources, and facilities in the implementation of the CEMP.
- Participating in the management review of the CEMP for suitability, adequacy, and effectiveness.
- Setting the focus of environmental policy, objectives, and targets for the Contractor.
- Management of all public liaison associated with environment impact associated with the construction phase of the project.
- Ensuring that the requirements of the CEMP in relation to environmental system (including procedures, method statements, and work instructions) are implemented and adhered to.
- Reviewing the environmental responsibilities of other managed subcontractors in scoping their work and during contract execution.
- To ensure that advice, guidance, and instruction on all environmental matters are provided to personnel on site including managers, employees, construction contractors, and visitors to the site.
- Report to the Client on the environmental performance and advise site management on environmental matters.
- Implement a programme of environmental monitoring if required (subject to conditions that may be contained in any forthcoming planning consent).

- Maintenance of all construction related environmental documentation.

All Site Personnel

Contractor employees, subcontractors, and other site personnel will adhere to the following principal duties:

- Co-operate fully with the Construction Environmental Manager in the implementation and development of the CEMP and incorporated CRWMP.
- Conduct all their activities in a manner consistent with regulatory and best environmental practice.
- Participate fully in environmental and waste management training programmes and provide management with any necessary feedback to ensure effective environmental management at the site and
- Adhere fully to the provisions of the CEMP.

Resource & Waste Manager

The appointed Contractor shall designate a suitably experienced and qualified person as Resource & Waste Manager (this may be the CEM, or other nominated, experienced individual put forward by the Contractor) who shall arrange for full details of all generation, movements and treatment of waste to be recorded during development. Other duties of the Resource & Waste Manager shall include:

- Ensuring that the requirements of the Construction Resource Waste Management Plan (Outline CRWMP – included as Section 5 of this CEMP) in relation to waste management (including procedures, method statements, and work instructions) are implemented and adhered to.
- Reviewing waste management procedures of other managed sub-contractors in scoping their work during contract execution.
- Ensuring that advice, guidance, and instruction on all waste matters are provided to all site personnel including sub-contractors and visitors on site.
- Report on performance and provision of advice to site management on waste management related matters.

Environmental/Other Specialists

To fulfil its obligations under the CEMP and to support the provisions contained therein, prior to commencement of development the Contractor may be required to engage qualified and experienced environmental specialists

or other specialist to monitor construction works and their potential impacts on the receiving environment. It is anticipated that the project construction phase may require input from time to time from the following:

- Noise specialist
- Soils/environmental consultant
- Ecologist

3.1 Health and Safety

The appointed Contractor will ensure all relevant health and safety, fire safety and security requirements are in place prior to the commencement of construction and in accordance with relevant legislative requirements in addition to the specifications of Cork County Council. The Contractor will comply with the Safety, Health and Welfare at Work Act 2005 (SHAWW), the Safety, Health and Welfare at Work (Construction) Regulations 2013 and any subsequent safety, health and welfare legislation or regulations.

The Contractor will also be appointed as Project Supervisor for the Construction Stage (PSCS) on the project in accordance with the Safety, Health and Welfare at Work (Construction) Regulations. The PSCS shall develop a suitable safety and health plan for the Proposed Development, prior to the commencement of construction work. The plan shall explain how the key safety and health issues will be managed and shall be revised and updated by the appointed Contractor as development progresses. The contents of the Health and Safety Plan will comply with the requirements of the Regulations. The Contractor will ensure that relevant Irish and EU health and safety legislation is complied with at all times by all site personnel during construction works. Furthermore, the Contractor will ensure that all aspects of their works comply with best industry practice and all necessary consents, licences and authorisations that have been put in place for the development.

Prior to working on site, each individual will receive a full safety briefing and will be provided with all of the safety equipment relevant to the tasks the individual will be required to perform during employment on site. Safety briefings will be held regularly and prior to any onerous or special task. 'Toolbox talks' will be held to ensure all workers are fully aware of the tasks to be undertaken and the parameters required to ensure that the task will be successfully and safely completed. All visitors will be required to wear appropriate personal protective equipment prior to going on to the site and will undergo a safety briefing by a member of the site safety team.

3.2 Communication & Liaison

The appointed Contractor will prepare a Community Liaison Plan, which will include details of how community, road users and affected neighbours will be notified in advance of the scheduling of major works, associated traffic management and on the progress of the construction works.

This Plan should include details in relation to the following:

- Contractor's community relations policy
- Personnel nominated to manage communications
- A procedure for dealing with observations, queries and complaints from the public, neighbours, relevant authorities, the media, and emergency services etc.
- A procedure for project-wide liaison with all relevant parties.

The Contractor will set up and maintain a dedicated telephone hotline to deal with queries and/or complaints from the public during the construction phase of the project. This telephone number will be posted on all construction site notice boards and on any other information or correspondence which will be distributed.

All site staff (including sub-contractors) will be briefed on the Community Liaison Plan including on the complaint procedure and their own responsibilities to register and address any complaints received. Relevant Departments of Cork County Council will be consulted with prior to the commencement of the development and throughout the duration of the construction phase, as necessary.

Construction of the development will have a direct impact on the local community and environment. The following stakeholders are likely to be impacted to some degree:

- Neighbouring residential units to the west, north and south
- Gaelscoil Mhainistir na Corann to the east
- Users of adjoining and local estate road users
- Cork County Council
- Other Statutory Authorities (e.g., Irish Water).
- Building Control
- Utilities Providers (e.g., ESB)

Communication arrangements will be organised to keep stakeholders up to date on construction progress and its impact on all third parties.

3.3 Incident & Emergency Management

The appointed CEM will be responsible for managing any environmental incidents or emergency situations that arise during the construction of the development. All such environmental incidents will be notified to the Client/Developer within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services, the Contractor will notify the Client within 1 hour. General environmental communication in respect of the project to regulatory or statutory bodies shall be undertaken by the Construction Environmental Manager, except in the case of incident notification.

An Emergency Management Plan (EMP) will be drafted by the appointed Contractor and implemented to ensure that emergencies such as accidents, spills, leaks/ loss of containment, sabotage are dealt with in an appropriate manner. If such incidents or emergencies occur, strict adherence to the EMP will ensure that effective counter measures proceed in a controlled manner so that possible adverse effects upon persons and the environment are avoided or minimised. Training in implementation of the EMP will be provided to all employees and sub-contractors on the site.

Where practicable, construction-based activity will be located as far away as possible from nearby residents. In the event of spillages or other incidents, steps will be taken to prevent environmental pollution, for example – covering of vehicles transporting soil to and from site, protection of drains using drain covers or booms and the use of absorbent granules in the case of an oil/chemical spill. Contractor employees will be trained in the correct use of spill kits.

The procedure to be developed by the appointed Contractor will include the following elements:

- The person who has observed the situation arising will immediately report to the CEM or another Site Manager.
- The CEM/Site Manager will assess the gravity of the emergency and if they feel that the area needs to be vacated immediately, the alarm will be raised.

- On raising the alarm, all employees, workers, staff, management will assemble at a pre-designated point (to be identified as "Assembly Point" on site notice board).
- In other situations where evacuation is not required, site management will investigate the nature and the seriousness of the emergency.

In the event of an emergency, it is expected that the EMP will provide for the following general course of action:

- Inform Cork County Council and other appropriate government/non-government authorities as per legal requirement.
- If required, contact nearest hospital (Cork University Hospital)/medical facility/emergency service providers and arrange for treatment of persons injured.
- Internal team must come into action without any formal announcement or order and start evacuation and other response activities as instructed per the EMP.

3.4 Monitoring, Auditing and Reporting

Daily inspections by the CEM will identify and address environmental issues relating to dust, litter, noise, traffic, surface water, waste management, and general housekeeping. These inspections and remedial actions will be recorded on inspection sheets that will be retained on-site. For the duration of the development works, the appointed Contractor will be required to adapt a "Clean as you Go Policy" that applies to the overall site and surrounds with emphasis on site compound, general site, site access and boundary, and the Ballintubber Road, Abbey Wood and Rock Brook housing estates.

Client Representative will arrange for independent environmental audits to be carried out by a third-party during construction for which the Contractor will not expect advance notification. External audits provide the opportunity for an independent auditor to advise on compliance with applicable environmental regulatory requirements, the efficacy of the environmental management approaches used and recommendations for reducing identified environmental risks (if considered appropriate). Further, regulatory and statutory bodies may undertake site visits to monitor compliance with legislative and regulatory requirements. The Contractor will be expected to make the necessary staff available during each audit including the CEM and provide access to all documentation and site areas (and provide necessary induction and training to allow access where required).

3.5 Non-Compliance and Corrective Actions

The appointed Contractor shall be required to take prompt mitigation actions to address any adverse findings arising from environmental audits and provide written reports to the Client detailing any such mitigations. As required and highlighted in Section 3.4 above, the appointed Contractor will accommodate third party environmental auditing. Non-conformances relating to environmental practices, activities and processes identified during monitoring, verification and testing shall be reported and documented. A copy of all environmental audit reports and responses by the Contractor shall be maintained on site for inspection.

3.6 Site Security

A secured perimeter and secure site compound will be established prior to any construction work commencing to prevent unauthorised access to the site and prevent interference and or damage to equipment/materials held on site. The hoarding surrounding the site may be branded using the Client's logo or design and/or the appointed Contractor's logos, etc. Additional netting may be installed at the boundary fence to catch any debris/dust from the site. Site access for all personnel (including subcontractors and visitors) will be strictly controlled, and all visitors will be required to report to the site offices prior to entering the construction area. Regular inspections of the perimeter and compound security will be undertaken to ensure that site security is maintained at all times and access to unauthorised personnel is prevented. The Contractor will maintain CCTV at the site and will ensure that there is a 24-hour security presence for the duration of works. Any hoarding panels will be maintained and kept clean for the duration of the project.

3.7 Site Storage

The storage of plant, equipment and building materials will be kept to a minimum where possible and these items will be stored within or adjacent to the separately secured site compound. Where practicably possible, the storage of large plant, equipment, or retention on site pending use of large volumes of building materials will be minimised. An inventory of all stored materials will be maintained by the CEM and retained for inspection within the site office.

It is anticipated that a main refuelling area will be set up near the site compound with mobile refuelling bowsers used to deliver fuel. All fuel tanks will be located on appropriate bunds with capacity to retain 110% of stored

volume, to control spillages. All plant, fuel lines, pumps and drip trays will be checked daily. Machines will be re-fuelled at specified filling points where measures will be implemented to prevent diesel or oil leakages entering the ground. Spill kits will be available at these re-fuelling points and at other locations throughout the site. Any machinery/hoses with oil/fuel leaks will be withdrawn from use, moved to a contained area, and repaired without delay. Drip trays will be inspected, and soakage sand will be removed and replaced as required. Any hydrocarbon contaminated soakage sand will be removed from the site and disposed of appropriately by an authorised specialist waste contractor.

As detailed in Section 5, volumes of waste materials including excavated soils (if considered waste and unsuitable for on or off-site re-use), will be kept to a minimum at the site.

3.8 Site Lighting

Appropriate lighting will be provided as necessary at the construction compound. All lighting will be installed so as to minimise light spillage from the site. The proposed lighting installation comprises DW Windsor Street 16 LED 3000K luminaires mounted predominantly on 6m columns, together with DW Windsor Kirium Pro2 48 LED 3000K luminaires mounted on 10m columns at the main junction. All luminaires are specified as warm white LEDs with a 3000K colour temperature, installed at zero tilt, with full cut-off optics. Lighting calculations confirm compliance with BS 5489-1:2020 and BS EN 13201 for the proposed residential and circulation areas.

The following measures will be applied in relation to site lighting:

- Lighting will be provided with the minimum luminosity sufficient for safety and security purposes. The Contractor will ensure that lighting complies with provisions of Safety, Health & Welfare at Work (Construction) Regulations 2013 and that lighting proposals for construction purposes will adhere to the advice provided in current and prevailing best guidance.
- The use of warm white 3000K LED lanterns to reduce blue light content.
- Limiting column heights to 6m where practicable, and careful placement of columns to avoid unnecessary illumination of boundary vegetation.
- Low energy consumption fittings will be installed to reduce usage and energy consumption; and

- Lighting will be positioned and directed so as not to unnecessarily intrude on adjacent residential properties or cause distraction or confusion to passing motorists on the adjoining roads (Ballintubber Road, Abbey Wood and Rock Brook housing estates).
- As far as possible, construction lighting will be restricted to the construction footprint and access/compound.

4 CONTROL MEASURES

The CEMP includes reference to anticipated construction activities and mitigation for the development including site enabling works and main construction works. As highlighted in Section 1, the CEMP is a dynamic or living document in that it will be updated and revised as construction of the development progresses. In particular, the Plan will be updated in line with all conditions and obligations which apply to any grant of permission and upon appointment, the Contractor will be required to further develop the Plan, providing contract-specific detail that is cognisant of the specific persons, equipment, plant, monitoring and control measures required to complete the development. Minimum requirements outlined in this section take cognisance of best practice control measures that will be implemented by the appointed Contractor(s).

4.1 Noise and Vibration Control

Noise arising from on-site activity shall be controlled in accordance with the requirements of British Standard 5228: (2009+A1:2014), "Code of practice for noise and vibration control on construction and open sites". The appointed Contractor's designated construction environmental manager (CEM) will be the primary responsible person for overseeing all noise-related issues on-site, including adopting noise mitigation measures and the handling of noise complaints. All site staff (including subcontractors) will be briefed on the CEMP which will include noise mitigation measures and the complaints response procedure.

The largest noise and vibration impact will occur during the construction phase due to the operation of various plant machinery and HGV movement to, from, and around the site. The intensity and amount of noise created can vary depending on the type of work being carried out.

The appointed Contractor must ensure that noise levels from the Proposed Development shall not be so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause for annoyance to a person in any premises in the neighbourhood or to a person lawfully using any public place.

The appointed Contractor will ensure that all activities associated with the works are carried out in accordance with best practice for the management and control of noise and vibration from construction sites as per:

- The recommendations in British Standards Institution BS 5228: (2009+A1:2014), "*Code of practice for noise and vibration control on construction and open sites*"

- CIRIA guidance document C741 "*Environmental good practice on site guide*"

The control of noise can be described in terms of two categories:

- Controlling the noise at source, and
- Controlling the spread of noise.

4.1.1 Plant & Equipment Noise Control

Noise mitigation measures to control construction noise at its source will be implemented by the Contractor and will include the following:

- Avoid unnecessary revving of engines and switch off equipment when not required.
- Keep internal haul routes well maintained and avoid steep gradients.
- Use rubber linings in, for example, chutes and dumpers to reduce impact noise.
- Minimise drop height of materials.
- Start-up plant and vehicles sequentially rather than all together.
- The normal operating hours of the site must be adhered to. This also applies to the movement of plant onto and around the site.
- The plant and activities chosen to carry out the construction work will be the quietest available means of achieving the required purpose.
- Modifications may be made to plant and equipment, if appropriate, for noise attenuation purposes, provided the manufacturer has been consulted. For example, a more effective exhaust silencer may be fitted to a diesel engine.
- As far as is reasonably practicable, sources of significant noise should be enclosed provided that ventilation and potential hazards to operators have been considered.
- Plant and noisy activities should be located away from noise-sensitive areas where practicable and sources of directional noise should be oriented away from noise-sensitive areas.
- All plant and equipment should be regularly maintained (increases in plant noise are often indicative of future mechanical failure).

Mitigation measures that aim to control the spread of construction noise include the following:

- The distance between noise sources and noise-sensitive areas should be increased as much as is reasonably practicable.
- Where noise control at source is insufficient and the distance between source and receiver is restricted, screening should be implemented. The location of barriers providing screening is an important consideration. Barriers should be located either close to the source of noise (as with stationary plant) or close to the listener. The height of the barrier must also be considered. BS 5228-1 states that an approximate attenuation of 5 dB is achieved when the top of the plant is just visible to the receiver over the noise barrier, whilst an attenuation of 10 dB is achieved when the noise screen completely hides the sources from the receiver. Furthermore, where the noise source is 1 m from the façade of a building, an allowance of +3 dB should be made for reflection.

In addition to the above, each item of plant and equipment (to be specified by the Contractor upon appointment) will comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC (as amended). Construction equipment entering the site will be appropriately maintained and operated in accordance with the manufacture's recommendations and switched off when not in use.

Material and plant loading and unloading must only take place during the construction on-site working hours as designated by any forthcoming planning consent and will be located away from noise sensitive receptors where practicably possible. All plant and equipment will be shut down in the intervening periods during intermittent use or throttled down to a minimum.

All vehicle movement will occur within normal working hours (other than where extension of work requiring such movements has been granted). Deliveries and vehicle movements will be planned so that at no time, vehicles are not waiting or queuing on the adjoining roads.

4.1.2 Additional Noise Control

Control and mitigation measures for the construction phase will include the following:

- Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted.

- Selection of plant with low inherent potential for generation of noise where practicable.
- Placing of noisy plant as far away from any noise sensitive receptors where possible.
- Where noise control at source is insufficient, erection of sound-absorbing barriers/hoardings (particularly during site stripping works undertaken close to noise sensitive receptors).
- Haul roads will be well maintained avoiding steep gradients.
- Plant such as pumps and generators which are required to work outside of normal working hours will be enclosed with acoustic enclosures.
- Avoid unnecessary revving of engines and switch off equipment when not required.
- All plant and equipment must be regularly maintained (increases in plant noise are often indicative of future mechanical failure).
- Establishing channels of communication between the Contractor and local community that are potentially impacted.

The above noise control/mitigation provisions will form part of the site induction training for all contractors and sub-contractors. The issue along with vibration and dust control measures will also feature as subject of toolbox talks for Contractor. Signage at the site entrance will inform workers and visitors to ensure vehicles and equipment are switched off when not in use.

4.1.3 Noise Control Audits

The appointed Contractor will be required to implement measures to minimise noise levels during construction in accordance with the Good Practice Guide and other relevant regulations, standards, and good practice. Specifically, noise levels must be kept below those levels specified below. The noise must also comply with the requirements of BS 5228-1: 2009 (+A1 2014) "*Code of Practice for Noise and Vibration Control on Construction and Open Sites: Noise*".

The Contractor will be required to monitor noise continuously during the works. Prior to the commencement of the development, the Contractor will be required to complete an initial background noise survey focussing at identified noise sensitive locations. Noise monitoring will be conducted in accordance with the International Standard ISO 1996: 2007: Acoustics – Description, measurement, and assessment of environmental noise. The Contractor is expected to retain a competent noise specialist to undertake this monitoring. Based on the outcome

of noise monitoring over the course of the works, additional noise attenuation will be employed to ensure compliance with the adopted noise criterion.

4.1.4 Vibration

The Contractor will be required to carry out the works such that the effect of vibration on the surroundings of the site is minimised and does not cause any damage. Mitigation measures that aim to control vibration from construction works, with reference to Standard BS 5228-2, will include the following:

- The plant and activities chosen to carry out the construction work will be chosen to cause as little vibration as possible while achieving the required purpose.
- All plant and equipment will be regularly maintained to reduce unnecessary vibration.
- Activities causing significant vibration will be located away from sensitive areas and/or isolated using resilient mountings where practicable.
- Removal of obstructions.

4.2 Dust Management

4.2.1 Dust Management Provisions

Where possible and suitable, excavated material will be re-used on site. Pending classification of material and collection by an authorised waste haulier, there may be a requirement for short-term stockpiling. Dust and fine particle generation from construction activities including excavations and temporary stockpiling on the site can be reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

Should material be unsuitable for on-site reuse, then this will be removed as either soil waste material or alternatively as article 27 by-product material under Article 27 of the European Communities (Waste Directive) Regulations 2011. Similarly, the design will minimise the necessity to import soil material to the site. Reusing material excavated from one part of the site may require the provision of temporary stockpiling.

Prior to the commencement of works on site, the appointed Contractor will review all proposed construction activity including enabling works and the requirement for temporary material stockpiling, to identify all potential sources of dust emission. The Contractor will develop a Dust Management Plan, a primary aim of which will be to avoid dust becoming airborne at the source through best practise and if required, by adopting effective control strategies. The pro-active control of fugitive dust will ensure the prevention of significant emissions and is preferable to attempting to control them once they have been released. The Contractor (more specifically the CEM) will be responsible for the co-ordination, implementation and ongoing monitoring of the Dust Management Plan. Staff training and vigilant management of operations will be a paramount requirement of the Contract.

The CEM will be responsible for ensuring dust emissions are minimised and controlled on-site and for the handling of any dust-related complaints. All site staff (including subcontractors) will be fully briefed on the CEMP, and this will include details of dust mitigation measures to be implemented to reduce dust generation and its impact.

Re-profiling of ground elevations and shallow excavations have the potential to generate dust. Whilst the design minimises material balance, there is likely to be a requirement for the creation of short-term stockpiles of fill material pending transfer from the site, which again may be considered potential sources of dust generation. The CEM will be responsible for adhering to the provisions of the Dust Management Plan and ensuring dust emissions are minimised and controlled on-site and for the handling of any dust-related complaints. All site staff (including subcontractors) will be fully briefed on provisions of the CEMP including details of dust mitigation measures to be implemented to reduce dust generation and its impact. These are further discussed below. Where potential exists for general dust emissions, the following basic mitigation measures will be included in the Dust Management Plan and implemented:

- Site roads will be regularly cleaned and maintained as appropriate.
- Any site road that has potential to give rise to fugitive dust will be regularly watered and swept, as appropriate, during extended dry and/or windy conditions.
    - Control of vehicle speed within the site with appropriate signage
- Vehicles delivering materials with dust potential will be enclosed with tarpaulin or similar covers to restrict the escape of dust. Vehicles collecting material from the site (stockpiled soil or topsoil) for off-site disposal will be similarly covered.
- Wheel wash will be installed close to exit from the site onto the adjoining road.

Dust mitigation measures shall be reviewed by the Contractor at regular intervals over the course of construction to ensure the effectiveness of the procedures in place. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and satisfactory procedures implemented to rectify the problem. The Dust Management Plan will be updated appropriately over the course of the construction period. The focus of control measures will be to reduce the generation of airborne dust.

To monitor dust levels, the Contractor will be required to establish dust monitoring points at appropriate boundary locations. Monitoring stations will be established prior to the commencement of works and shall be monitored on a monthly basis. As per industry standard for the construction phase, the TA Luft Regulations limit value of 350mg/m²/day (as accepted by the Irish EPA) will be adhered to by the Contractor using best practise measures and appropriate control techniques.

Site Roads

Site roads can be a significant source of fugitive dust from construction sites if adequate control measures are not in place. The most effective means of suppressing dust emissions is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25% to 80%. Such measure will include:

- An appropriate speed restriction will be applied as an effective control measure for dust for on-site vehicles.
- Bowsers will be available and in use during periods of dry weather throughout the construction period. Research has found that the effect of watering can result in reductions in 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.
- Inspect onsite haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Any hard surface roads including will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto the public road.

- During movement of soil materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before exiting the site, trucks will be adequately inspected to ensure no potential for dust emissions.

Site Stripping

As referred to in 4.2.1 above, the inherent design of the Proposed Development minimises the excavation of material from below ground. Whilst there will be no bulk excavation required (for example for basement construction), the construction phase of the Proposed Development will involve the stripping/excavation of shallow soil/topsoil from parts of the site and its re-use elsewhere within the development where possible. In relation to general site stripping, topsoil and shallow subsoil may be retained on site for re-use in the development for landscaping purposes.

Site stripping and earth-moving/establishing temporary stockpiles, particularly during periods of high winds and dry weather, can be a cause of dust emissions. Where practicably possible, these activities will be prohibited in such instances and re-scheduled to occur during more favourable weather conditions. Regular watering will take place (via the use of a bowser) to ensure moisture content is high enough to increase the stability of the topsoil and thus suppress dust.

Stockpiles

The requirement for stock piling of stripped or imported soil material will be minimised on-site. In each case (excavating material for re-use on the site or for off-site transfer), there will be a requirement for temporary stockpiling because of the proposed cut and fill.

The location of any temporary stockpiling by the Contractor must take cognisance of sensitive receptors, most notably residential dwellings to the southeast and the north of the development site. Upon appointment, the Contractor will be required to provide a Stockpile Management Plan, detailing how soil material will be temporarily stored on-site pending its use. In general, all stockpiling must be kept to a minimum and soil/stone material arriving on site will be deposited in general area where it is to be profiled (thus avoiding double movement of material). Where soil or other building materials require stockpiling, the location and moisture content of these stockpiles are important factors which will determine their potential for dust emissions. In the case of stockpiling, the following mitigation measures will be adopted and will be considered in the Contractors Stockpile Management Plan:

- All stockpiles will be located at least 20m from any adjoining waterways.

- There will be no storage along the western site boundary with adjacent residential dwellings.
- Stockpile retention will be minimised.

Public Roads

The potential for spillage and blow-off of debris, aggregates and fine material accumulating onto adjoining roads including the Ballintubber Road, Abbey Wood and Rock Brook housing estate to the west housing estate will be reduced to a minimum by employing the following measures:

- Any unsurfaced internal roads will be restricted to essential plant/traffic only with speed restrictions implemented.
- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with a tarpaulin to restrict the escape of dust.
- A mechanical road sweeper will be made available to ensure that roads are kept free of debris. Focus will be on the following areas -
    - Ballintubber Road and the housing estates to the north and west of the site shall be regularly inspected for cleanliness. This will be completed daily with results recorded and corrective action implemented as required.
    - Internal roads within the construction site will be regularly inspected for cleanliness (at a minimum twice daily) and cleaning will be completed daily or more frequently as required.

4.2.2 Dust Monitoring Requirement

In conjunction with the dust mitigation measures to minimise the release of dust into atmosphere during the construction that are outlined above, the appointed Contractor will implement dust deposition monitoring. Dust deposition monitoring must be conducted at several locations in the vicinity of the development site using the Bergerhoff method (German Standard VD 2119, 1972). Results must be compared to the TA Luft guidelines of 350mg/m²/day. If an exceedance of the TA Luft limit occurs during the construction phase, additional mitigation measures must be implemented. Monitoring stations close to identified sensitive receptors will be established prior to the commencement of works and shall be monitored on a monthly basis for the duration of the construction period with reports issued to the Developer. Based on the outcome of dust monitoring over the course of the works, additional mitigation measures will be employed to ensure compliance with the guidelines.

4.3 Ecological Impact Control, Drainage Management, Water Supply and Flood Risk Assessment

4.3.1 Ecological Impacts

The works are entirely within the site boundary. There will be no works within European sites required as part of the Proposed Development. The nearest protected European Sites are the Great Island Channel SAC (site code: 001058), which is located approximately 1.1km to the east of the site, and the Cork Harbour SPA (site code: 004030), which is located approximately 1.1km to the east of the site also. These protected areas loop around in a southeasterly direction away from the site.

The nearest Natural Heritage Area (NHA) is the Boggeragh Mountains NHA (site code: 002447) in Cork, with the next closest being the Slievenamon Bog NHA (site code: 002388) in Tipperary. It is unlikely that development works will cause significant direct or indirect impacts on Natura 2000 sites, alone or in combination with other plans or projects.

Best practice measures will be implemented by the Contractor in any case to reduce potential impact on environmental receptors. These include the following:

- There will be no works outside of the designated areas within the subject site footprint.
- The Contractor will have regard for relevant guidelines such as Construction Industry Research and Information Association's (CIRIA) Control of water pollution from construction sites (CIRIA, 2001), Environmental good practice on site guide (CIRIA, 2015), Ciria C750 Groundwater Control - Design and Practice, and the EPA's Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects (EPA, 2021).
- Controls and contingency measures to manage run-off from works areas and to manage sediment, including the use of Silt & Petrol interceptor, sediment fencing, sediment traps, and other drainage measures as required.
- Securely covering all excavations at the end of each working day to prevent accidental trapping of badger or other small mammals.
- All excavated materials will be stored at least 20m from the ditches on the northwest boundary and a portion of the southeast boundary of the site, and from drains that may occur off site. Excavated materials will be removed offsite as soon as is reasonably possible, and in accordance with all relevant waste management requirements.

- All oils, lubricants, or other chemicals to be stored in appropriate secure containers in a suitable storage area within the construction compound, with spill kits provided at the storage location and at suitable places across the site. Spill kits will be provided in the cabin of all construction plant.
- To avoid potential pollution impacts to soils, vegetation and watercourses/waterbodies, all refuelling and servicing of vehicles and plant will be carried out in a designated area using a mobile bund.
- Any spillages of distillate fuel during delivery/transfer will be managed. This includes the provision for a licensed contractor to respond to any emergency and with capabilities to collect and safely dispose of any spilled fuel.
- Dust suppression techniques will be adopted during construction works to prevent emissions of dust from the movement of vehicles/plant, or from other construction activities.

4.3.2 Surface Water, Groundwater, Foul Water Management and Water Supply

Surface Water and Groundwater

The principal hydrological features in the study area are the Owenacurra and Dungourney Rivers and their tributaries, most notably the Baneshane Stream. This stream comes on-site via culvert under the road to the north. This stream flows into the Owenacurra Estuary, which is located to the southwest of Midleton and is approximately 1.1km to the southeast of the site.

Surface runoff discharge from the proposed development during construction will be controlled and monitored by the Contractor. Groundwater ingress shall be managed during construction to ensure excavations are protected from groundwater flooding; however, the majority of construction works will take place above the water table, so dewatering activity is unlikely apart from the management of rainwater. Water from dewatering and various other processes during construction will be disposed of appropriately. Rainwater will also accumulate on the site during construction. This water will be discharged directly via suitable pollution control and attenuation measures either directly to ground within the site or with permission of the Council, to the municipal sewer systems via portions of the Cork County Council sewer network.

Examination of the existing drainage infrastructure on site, which was verified by the surveys conducted, shows a storm water connection in the northeast corner of the site. This connection consists of a 1200mm diameter storm sewer running adjacent to Ballintubber Road and falls in an easterly direction away from the site to an

outflow in the estuary. An existing temporary stormwater connection from the adjoining Rockgate Estate discharges into the subject lands. This connection was installed on an informal basis by the Rockgate developer and does not form part of a formal drainage agreement.

In accordance with Cork County Council requirements, storm water shall be managed in two phases. The first is to restrict storm water run-off from the Proposed Development to greenfield run-off rates. The second aspect to be included in new applications is to incorporate sustainable urban drainage systems (SuDS) proposals into the scheme. The SuDS concept requires that storm water quality is improved before disposal and, where applicable, storm water is discharged into the ground on site. The proposed surface water system within the site will be separated from the foul system as required. The development will be served by a simple gravity drainage system including SuDS features (green roofs / permeable paving, tree pits, etc.) and will follow the natural topography of the site, falling towards the existing drainage infrastructure in the northeastern corner of the site. It is proposed to discharge treated and attenuated stormwater runoff to the existing watercourse (Baneshane stream) at the northern boundary. Site design will be so that a gravity network is achieved.

The SuDSs features shall consist of:

- Rainwater Harvesting - For rainwater harvesting, each dwelling could be provided with a water butt located at the rear. This would collect runoff from the rear sloping roof of the dwelling and be used for watering plants. The intention is for homeowners to install these retrospectively.
- Permeable Paving – this system allows rainwater to be directed into carparking bays whereby the rainwater can filter through gaps in the paving blocks and percolate into the subsoil. The area which can be drained is subject to the infiltration characteristics of the subsoil.
- Tree Pits – Tree pits will be located along walkways, where possible, to capture runoff for the existing hard standing area. It is proposed that the tree pits will be connected and act like a detention basin where the water can then be released slowly into the storm network.
- Filter Drain – Trenches containing permeable material with a perforated collection pipe at the base, optionally capped with sandy topsoil, are designed to treat, convey, and store runoff at source. Where subgrade conditions allow, they also facilitate infiltration, providing temporary storage for small rainfall events and promoting some evaporation and absorption, thereby reducing runoff, and mimicking the natural catchment response. The LRD application proposes these features along pedestrian and cycle

pathways, enabling groundwater recharge. Although they may reduce the volume of runoff requiring attenuation, this potential has not been included in the attenuation calculations.

- Green/ Blue Roof - Green, blue, and sedum roofs consist of vegetation installed over a drainage and storage layer atop a waterproof membrane. They help intercept and retain rainwater, reducing surface water runoff. These systems are well-suited to the flat roofs proposed for the apartment buildings, with sedum roofs additionally offering ecological, aesthetic, and rainwater pollutant removal benefits. f) Bioretention Tree Pit - Bioretention tree pits are small, planted areas designed to collect and treat stormwater runoff. Shallow landscaped basins use soil and vegetation to remove pollutants, with the treated runoff forming part of the wider SuDS strategy for areas adjacent to the Main Distributor Road within the development.
- Attenuation Tanks – As noted above, for extreme storm events, a dedicated system to contain the storm water flows generated during a 1-in-100-year storm, increased by 20% for climate change are required. Elements such as blue/green roofs, filter drains, tree pits, infiltration basins whilst having a reducing effect of the attenuation volumes required have been ignored from the stormwater network and attenuation design. It is proposed to use an underground storage tank in one location for this purpose. The tank is proposed to be constructed using a reinforced concrete underground tank.
- Oil Separator – An oil separator will be installed before the final disposal point at the existing storm water network. This ensures that hydrocarbon elements that are harmful to the environment are removed from the water before disposal.
- Low Water Usage Appliances – It is also worth highlighting that low water usage appliances should also be utilised to aid in the reduction of water usage on the development.

The combination of the above noted elements will allow the proposed development to adhere to the principles of sustainable drainage practices while enhancing overall storm water quality. Blue-green features such as swales and permeable paving are excluded from the simulation model storage calculations; therefore, the actual site storage provision will be greater than that represented in the analysis. To mitigate the impact of surface runoff on potential flooding, a Stormwater Management Plan will be implemented for surface water discharges to adjacent watercourses.

Pending the construction of the drainage infrastructure, the appointed Contractor will be required to implement and comply with the following surface water protection measures as part of their Contract-specific CEMP:

- The appointed Contractor will ensure that their contract-specific CEMP specifies how materials with the potential to adversely affect surface water quality, for example diesel and oil, will be stored and handled in a manner that minimises the risk of accidental spills or leaks. The CEMP will also ensure that spill containment and clean-up equipment is provided and maintained during the construction phase of the development.
- Measures will be put in place during the construction phase to collect, attenuate, settle, and treat surface water runoff prior to discharge from the site. If required, these measures will include features such as surface swales, settlement ponds, silt dams and check dams.
- Storage – all equipment, materials and chemicals will be stored a minimum distance of 20m away from any surface water drainage channel. Chemical, fuel, and oil stores will be sited on impervious bases and within a secured bund of 110% of the storage capacity, within a designated lay down area.
- The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall also be tested and demonstrated.
- All fuel oil fill areas will have an appropriate spill apron, and spill kits will be provided on site.
- Vehicles and refuelling – standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Where practicable, refuelling of vehicles and machinery will be carried out on an impermeable surface in designated areas, well away from any surface drainage channel.
- Maintenance – maintenance to construction plant will not be permitted on-site unless vehicles have broken down necessitating maintenance at the point of breakdown. All necessary pollution prevention measures will be put in place prior to commencement of maintenance in this instance.
- Concrete - Wet concrete operations will be carried out in dry conditions. Runoff from wastewaters or contaminated surface water runoff will be directed to construction phase surface water drainage system to be installed on site.
- Mess, sanitation, and welfare facilities will be required during construction and will be located at the construction compound. Foul effluent will make use of chemical facilities with periodic removal for offsite disposal.
- The prevention of silt generation during site works will be achieved through the interception and management of surface water runoff. Surface water swales will be installed around the perimeter of the construction footprint. All surface water collected in swales will be directed to attenuation tanks/ponds where it can settle prior to discharge. Settled water will pass through an interceptor prior to discharge.

This will allow for the control and management of all surface water runoff within the site during the construction phase.

- Stockpiled soil material (referred to in Section 4.2.1 above) generated during the construction phase will be stored in a designated areas that are at minimum 20m from any drainage channel.
- Excavated soil material will be temporarily stored on level ground in a designated area before being disposed of offsite appropriately.
- Standard dust suppression measures will be implemented during periods of dry weather. This will avoid any impacts arising from the spread of dust particles during the construction phase.
- A Pollution Prevention Plan (PPP) will be implemented and monitored by the Contractor's site manager/CEM as part of a full Construction Method Statement for the project to be approved by the Planning Authority and relevant consultees.
- As a minimum, the PPP will comply with best practice as advocated by CIRIA. The PPP will identify site specific measures, and incorporate a Pollution Incident Plan, which will include emergency contact details, details of spill kits on site, and instructions on actions in case of spillage/emergency.
- Sediment control in the construction and post-construction stages are important considerations to ensure that only high quality, treated runoff leaves the site. Erosion control measures to prevent runoff flowing across exposed or excavated ground and becoming polluted with sediments will be provided for on-site if required during the construction stage. Erosion control measures may include:
    - Minimising the area of exposed ground and ensuring excavation will not proceed faster than the rate of construction.
    - All stockpiles will be located at least 20m from any drainage channels occurring within the site and will be kept away from the southern boundary.
    - A temporary berm will be constructed around the stockpile to prevent runoff to watercourses or drainage channels.
    - Monitoring of the weather forecast prior to planning excavation works.
    - Providing impermeable mats (plastic sheeting) as covers to mounded excavated material and open excavations during periods of heavy rainfall.
- Drainage runoff controls such as settlement tanks, silt fences and silt traps will be temporarily provided adjacent to excavations and installed before starting site clearance and earthworks. These and other control measures will be provided for in the construction management proposals should they be deemed necessary by the supervising engineer.

- All site staff (including subcontractors) will be briefed on the CEMP to include training on the mitigation measures to protect surface watercourses outlined in this plan. The implementation of these measures will ensure that all surface water generated at the site will be adequately managed to mitigate the pollution threat to any nearby sensitive receptors.

Protection measures will be put in place to ensure that all materials used during the construction phase are appropriately handled, stored, and disposed of in accordance with recognised standards and manufacturer's guidance.

Emergency Preparation and Training

- The appointed Contractor will be required to prepare an Emergency Response Plan which will detail procedures to be undertaken in the event of flooding, a spill of chemicals, fuel or other hazardous wastes, a fire or other non-compliance/incident. This plan will include the following details:
    - Containment measures.
    - List of appropriate equipment and clean-up materials.
    - Maintenance schedule for equipment.
    - Details of trained staff, location, and provision for 24-hour cover.
    - Details of staff responsibilities.
    - Notification procedures to inform the relevant environmental authorities that may include Cork County Council and the Environmental Protection Agency.
    - Audit and review schedule.
    - Telephone numbers of Cork County Council Water and Drainage Division.
    - List of specialist pollution clean-up companies and their telephone numbers.
- Ensure site staff are trained in the implementation of the Emergency Response Plan and the use of any spill control equipment.
- Prepare method statements for the control, treatment, and disposal of potentially contaminated surface water.
- Prepare a site plan showing the location of all surface water drainage lines and proposed infiltration areas/discharge to sewer.

The following construction mitigation measures will be utilised to control the interaction of wash down water from concrete and cement-based material with ground/surface water:

- The appointed Contractor will comply with the following guidance document – CIRIA Guideline Document C532 Control of Water Pollution from Construction Sites (CIRIA, 2001).
- All batching and mixing activities will be in areas away from drains.
- There will be no hosing into surface water drains of spills of concrete, cement, grout, or similar materials.
- Washout from mixing plant or concrete lorries will be carried out in a designated, contained impermeable area.

Additional control measures will be put in place to avoid the release of cement-based pollutants during development:

- Use of ready-mixed supply of wet concrete products will be maximised.
- Where possible, pre-cast elements for concrete works will be used.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.
- Where concrete is delivered on site, only the chute will need be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain will be allowed. Chute cleaning water is to be tanked and removed from the site to a suitable, non-polluting, discharge location.
- Use weather forecasting to plan dry days for pouring concrete.
- Ensure pour site is free of standing water, and plastic covers will be ready in case of sudden rainfall event.
- Disposal of raw or uncured waste concrete will be controlled to ensure that watercourses or other sensitive areas will not be impacted.

All precautions will be taken to avoid spillages of diesel, oil, or other polluting substances during the construction phase. The following measures to prevent contamination of groundwater will be implemented:

- In order to reduce the risk of contamination arising as a result of spills or leakages, all fuels, chemicals, and liquid will be stored on impermeable surfaces.
- All tanks and drums are to be bunded in accordance with established best practice guidelines. Fuels will be stored in double-skinned (self-bunded) tanks (bund of 110% of the storage capacity).

- The integrity and water tightness of all the bund structures and their resistance to penetration by water or other materials stored therein shall also be tested and demonstrated with records retained on site for inspection.
- Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles or equipment will take place in designated bunded areas within the main construction compound and not on-site where reasonably practicable. If it is not possible to bring machinery to the refuelling point, fuel will be brought to site by a 4x4 in a double-skinned bowser with drip trays. The bowser/4x4 will be fully stocked with spill kits and absorbent material, with delivery personnel being fully trained to deal with any accidental spills. The bowser will be bunded appropriately for the fuel usage volume for the time period of the construction.
- The plant and machinery used will be regularly inspected for leaks and fitness for purpose.
- Spill kits will be readily available to deal with accidental spillages.
- All plant and machinery will be fully stocked with spill kits, hydrocarbon absorbent packs and absorbent material and operators will be fully trained in the use of this equipment.
- An inventory of all chemicals on site will be kept.

Foul Water

The foul drainage system will be separated from the surface water network throughout the development. An internal main sewer system will drain the entire site and connect to the new pumping station at the north entrance to the site. The existing main to which the development will connect will be rerouted to a new proposed pump station which will be located in an open area to the north of Ballintubber Road. From here a new 100mm rising main will discharge the foul into the closest existing gravity sewer.

Any temporary discharge utilising the existing or permitted sewerage network will be agreed with Cork County Council and Irish Water. Where available, proposed permanent connections to the public sewer systems required for the operational phase will be used temporarily for the construction phase, to optimise efficiencies and avoid the creation of new temporary outfalls for construction. Any such arrangement will be finalised by the appointed Contractor.

Water Supply

Water will be supplied for the construction phase of the development from the existing water mains and diversion points. They will be subject to agreement with Irish Water and the local Authority. The appointed Contractor will be required to make all necessary arrangements for this water supply. A water meter will be installed to monitor water consumption on the site and to enable early detection of leaks.

4.3.3 Flood Risk Assessment

De-watering operations (in the unlikely event that these are required) and surface runoff discharge from the development during construction will be controlled and monitored by the Contractor who will be required to comply with Guideline Document C624 Development and Flood Risk - guidance for the construction industry (CIRIA, 2004). If required, the Contractor will secure a discharge licence from Cork County Council for the temporary pumping of ground water to sewer. Monitoring of any such licensed discharge will be the responsibility of the Contractor.

A review was carried out in relation to the potential of flooding within the proposed development, with reference to flood mapping, records and predictive flood modelling available from the OPW and Local Authority sources. The Catchment Flood Risk Assessment and Management (CFRAM) information available from the OPW, both for Tidal and Pluvial events, indicates no flooding or potential flooding for the development site. The area closer to Midleton is within an area of low risk for fluvial and coastal flooding. The Geological Survey Ireland Groundwater Flooding Probability Mapping information available from the OPW, indicates no flooding or potential flooding for the development site. The National Indicative Fluvial (river-based flooding) Mapping information available from the OPW, indicates no flooding or potential flooding for the development site. While the Oatencake Stream does traverse the site, there is no historic information or data that suggests it presents a flood risk to the site. Furthermore, there are no instances of historic flooding on site itself. Following a review of the site survey data there are no depressions within the site that would be at risk of surface water flooding. Surface waters onsite will flow along the natural gradient towards the northwest and will infiltrate to ground.

Storm-water design for the development will be undertaken in accordance with the SuDs as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) and Chapter 11 to the Cork County Development Plan 2022-2028 and is further detailed in the Engineering Services Report (CroCon Engineers Ltd.). Flood risk associated with storm water runoff and potential off-site effects during the construction phase is deemed to be low.

4.4 Nuisance & Pest Control

4.4.1 Pest Control

Steps will be taken to ensure that pests (rodents, birds, insects, or invasive plant species) are controlled at all times during the construction phase of the Proposed Development. Control measures will include the following:

- All hygiene facilities, wastes and building materials will be located within the site compound to centralise any potential nuisance pest issues.
- Site compound will be kept clean and tidy at all times. Stockpiles of building materials will be kept to a minimum where possible.
- Wastes will be segregated at the source (into suitable receptacles/skips for recycling and general waste), covered and removed from site regularly by licenced waste contractors.
- A pest control company will be engaged to install and manage rodent bait stations within the secured site compound and conduct regular monitoring for other pests including bird species or insects.

4.4.2 Invasive Species

Best practice biosecurity measures will be implemented by the appointed Contractor throughout the construction phase to ensure that invasive species are not inadvertently introduced.

To avoid the spread of non-native invasive species, the following measures must be implemented by the Contractor:

- Imported soil/fill will be clean and uncontaminated, and inspected prior to acceptance.
- Vehicles and loads delivering material to site will be examined for the presence of invasive species.
- Contractor will include observations on weekly inspection sheet in relation to the presence or not of suspected invasive species.
- Toolbox talks will be provided by the Contractor, to ensure that all staff are familiar with the appearance of common invasive plant species. Additional posters will be provided within the staff compound area.

Where poisons are employed at the site (insecticides, herbicides, or pesticide), any relevant Health and Safety requirements will be adhered to and appropriate measures taken to eliminate danger to children, household pets, and other wildlife.

4.5 Litter

The site compound will be kept clean and tidy at all times. Waste will be segregated at source (into suitable receptacles/skips for various recyclables and general waste), covered and removed from site regularly by permitted waste hauliers. Regular inspections of the wider construction site will take place, at a minimum on a daily basis to ensure it is free of litter and waste. Records will be retained on site for inspection.

4.6 Traffic Management & Safety

4.6.1 General Traffic Management Provisions

The Proposed Development is located on a greenfield site. During the construction phase, it is anticipated that vehicular access to the Proposed Development will be via the main entrance off Ballintubber Road and Abbey Wood housing estate which runs along the northern boundary of the Site and through the side entrance off Rock Brook housing estate to the west. A Traffic Impact Assessment and Road Safety Audit accompany the subject application and indicates that the proposed development will not impact adversely on the N25.

Deliveries will typically occur between 08:00–18:00 Monday to Friday, and 08:00–16:00 on Saturdays (subject to Cork County Council approval). Where feasible, deliveries will avoid peak commute hours (08:00–09:00 and 17:00–18:00). Buffer times will be built into the schedule to avoid vehicles queuing on local roads due to delays. The construction shift times will ensure construction traffic will have limited impact on the peak periods of 07:15 - 08:15 in the morning and 16:00 - 17:00 in the evening as it is envisaged most construction staff will arrive to work before 07:00 in the morning and leave after 19:00 in the evening.

While daily traffic volumes may vary, an average of approximately 40 construction and HGV movements per day is anticipated. The highest volumes are likely during bulk excavation when daily movements may reach around 60. As the project progresses through planning and procurement, updated traffic estimates, including the number of six-wheel grab lorries during excavation, will be provided. Traffic volume will vary over the course of

the construction project but during peak works, traffic will be generated from the following construction related activities:

- Preparation of site compound and parking areas.
- Securing site boundaries and installing hoarding.
- Erecting health & safety and warning signage.
- Excavation and on-site topsoil storage.
- Installation of foul and storm drainage and watermains.
- Construction of internal access roads.
- Building of dwellings, services, and associated structures.
- Staff trips.
- Site visitors and unscheduled deliveries.

Removal of stockpiled soil/topsoil

While precise cut-and-fill volumes are yet to be confirmed, it is anticipated that a proportion of excavated material, particularly topsoil and subsoil, will be suitable for reuse on site. This approach aligns with the EPA's Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (2021), which encourage minimising off-site disposal, maximising reuse, and recovery of inert materials, and reducing environmental impact and transport-related emissions. Any material deemed unsuitable for reuse, due to contamination, excess volume, or engineering constraints, will be removed from site in accordance with relevant waste management legislation.

It is expected that movement of material will be limited in duration and frequency, occurring primarily during the initial site preparation phase. All haulage operations will be managed to minimise disruption, with appropriate traffic management measures in place to ensure safety and efficiency. As a result, it is anticipated that there will be minimal traffic movement associated with the transfer of excavated material from the site, particularly where reuse is achievable.

Delivery of Construction Materials

All deliveries will be managed via the site access at Ballintubber Road into Abbey Wood. Vehicles will be met by a Banksman and directed to a designated unloading area before exiting along the same route. To maintain safety for staff and pedestrians, all site users will be informed of delivery procedures, and safety measures will be

enforced. Deliveries will operate on a timeslot booking system, allocated on a first-come, first-served basis, with a reservation board available on site. The Site Manager will stagger deliveries to minimise disruption, with a Banksman present for all vehicle manoeuvres.

The majority of construction traffic to the site is expected to consist of 6-wheel grab lorries (approx. 7.6m), rigid delivery vehicles (7.8m), 6-wheel concrete pump lorries (7.7m), and smaller delivery vans (5.6m). Accordingly, all vehicles accessing the site are anticipated to be under 10m in length.

Staff Trips

It is estimated that during the peak construction activity, 75 to 150 personnel will be working on the site depending on the stage of construction. This estimate will be confirmed in consultation with Cork County Council, considering expected travel patterns. It is projected that around 50 vehicles will access the site daily, with carpooling actively promoted to reduce traffic impact. Many staff member trips to the site will be in advance of morning peak traffic to facilitate arrival on site in advance of 07.00.

Site Visitors/Unscheduled Visits

Site visitor numbers/unscheduled visits will vary over the course of the construction. Times for these visits will vary, as will length of visit.

The following traffic management provisions will be implemented during the construction phase of the project to mitigate impact:

- All movements of plant and machinery will take place within the permitted construction on-site working hours and will be co-ordinated to prevent queuing of vehicles on public roads as to minimise disruption to local traffic.
- During peak hours, ancillary, maintenance and other site vehicle movements will be discouraged.
- Vehicle movements will be coordinated to avoid conflict with local waste collections.
- Construction programme will be planned to minimise the number of disruptions. Queuing on adjoining roads will be avoided. Large deliveries will be scheduled outside peak hours to minimise disruption. Out of hours deliveries and collections may be required in exceptional circumstances only and prior agreement will be sought from Cork County Council in these instances.
- All vehicles carrying excavated/infill material will be covered.
- All roads will remain open to general traffic through all stages of the construction.

Traffic generated by peak construction activities will result in minimal impact on road links in the vicinity of the site. Construction traffic impact will be mitigated through the implementation of the Construction Traffic Management Plan (CTMP) prepared by CroCon Engineers Ltd. and submitted to Cork County Council for approval prior to the commencement of the works.

4.7 CO_2 Emissions

The following measures will be implemented during the construction phase of the development to minimise CO_2 emissions:

- The Construction Traffic Management Plan will be implemented in full to minimise congestion.
- Materials will be handled efficiently on-site to minimise the waiting time for loading and unloading, thereby reducing potential emissions.
- Engines will be turned off when machinery is not in use.
- Regular maintenance of plant and equipment will be carried out.

4.8 Construction Traffic Safety

The construction site access point(s) will be controlled to ensure that the interface between deliveries and road traffic will be managed safely at all times. A secure perimeter will prevent any unauthorised access to pedestrians.

Construction site vehicle incidents will be minimised by the effective management of transport operations throughout the construction process. Key issues in dealing with traffic management on-site are identified as follows:

- Prevention of access to the site for the general public.
- Keeping workers and vehicles/plant apart on-site where practicably possible.
- Minimising vehicle movements on-site.
- Provision of adequate space for the safe turning of vehicles.
- Ensuring visibility of workers (and vehicles).
- Suitable, clear signage and instructions.

- Barriers lined with plastic or solid hoarding will be used to reduce risk of dust migration from excavation areas.

4.8.1 Keeping Pedestrians & Vehicles Apart

Most construction transport accidents result from the inadequate separation of workers and vehicles. This risk will be mitigated through careful planning and control of vehicle operations during construction work.

The following actions will be taken to keep pedestrians/workers and vehicles apart:

- Entrances and exits - A separate entry and exit gateway for pedestrians and vehicles will be provided.
- Walkways - firm, level, well-drained and signposted pedestrian walkways will be provided on-site, which will be free from obstruction, to prevent workers from walking on access roads.
- Crossings - dedicated pedestrian crossing points for access roads will be provided for on-site that will be clearly sign posted and lit where necessary.
- Visibility - All workers on-site will wear suitable high-visibility clothing and vehicles will be required to operate with headlights on at all times. All vehicles will have mirrors, working CCTV cameras (where installed) and reversing alarms.
- Appropriate sight lines/visibility splays will be maintained around working areas to ensure safety of both vehicles and pedestrians is preserved.
- Lighting - The site will be properly lit so that drivers and pedestrians on shared routes can see each other easily (particularly required in the early morning or the evening during winter months). Lighting will also be used in poor weather.

4.8.2 People On-site

All workers will hold a valid Construction Skills Certification Scheme (CSCS) white card certification and will be suitably qualified and competent to operate their respective vehicles, machinery, or plant. The following will be tightly controlled:

- All site staff (including subcontractors) and visitors to the site will be briefed on the CEMP and all relevant health and safety requirements including those relating to on-site traffic.

- Workers who direct vehicle movements and manage access to-site will be suitably trained and authorised to do so. Appropriate checks will be undertaken when recruiting drivers/operators (including subcontractors).
- Induction training is mandatory, and additional training will be provided to workers throughout the course of the construction period.

4.8.3 Signs & Instructions

All workers (including subcontractors and visitors) will be made aware of vehicle and pedestrian routes and of the site traffic rules. Standard road signs will be installed across the site and speed limits enforced by the CEM.

5 CONSTRUCTION RESOURCE AND WASTE MANAGEMENT PLAN (CRWMP)

5.1 Overview and Context

This initial Construction Resource & Waste Management Plan (CRWMP) has been prepared by Verdé Environmental Consultants (Verde) on behalf of Rockspring Properties Ltd. in support of a planning application for a Proposed Development on lands located at Baneshane, Midleton, Cork. The Proposed Development is in relation to a large-scale residential development consisting of 173 no. residential units (comprising 99 no. dwelling houses and 74 no. apartments in six blocks) and a creche facility. The development will be constructed over 4 phases also including car parking, pedestrian and motor access points, landscaping and ground alterations and surface water management.

The CRWMP includes information on the legal and policy framework for construction and demolition (C&D) waste management in Ireland, estimates of the type and quantity of C&D waste to be generated by the Proposed Development and the Plan makes recommendations for the management of different waste streams that are likely to be generated. In that respect, the Plan provides guidance on waste minimisation and re-use and the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil and/or water).

The management of waste during the development of the site will be carried out following best practice principles and complying with the appropriate environmental standards and waste regulations.

5.1.1 Purpose of the CRWMP

This CRWMP aims to promote compliance with national and regional waste management policy, most notably, A Waste Action Plan for a Circular Economy, and objectives and policy set down in the current Cork County Development Plan 2022 – 2028. The CRWMP is cognisant of recent EPA guidance. The Agency has issued 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects' in November 2021. These guidelines[1] effectively replace the previous guidelines issued by The National

[1] *Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects, Environmental Protection Agency, 2021*

Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage, and Local Government (DoEHLG) in 2006.

The CWRMP is considered a "dynamic" document in that it will be updated and revised as development progresses. The document will be updated in line with all conditions and obligations which apply to any grant of permission. The CWRMP should be read in conjunction with other relevant documentation, most notably the Construction Environmental Management Plan (CEMP), and both will require updating by the appointed main Contractor to identify, assess and satisfy the contract performance criteria as set out by various stakeholders. The CRWMP be updated in sufficient detail to describe the framework for the Contractor's management of waste arising, identifying permitted hauliers and authorised waste management outlets that will be engaged during the construction period. Following appointment, the main Contractor will be required to develop a more detailed contract-specific CRWMP that is cognisant of the specific responsible persons (Resource & Waste Manager), equipment and hauliers/outlets that will be used over the course of the development.

Following appointment, the main Contractor will be required to develop a more detailed contract specific CRWMP that is cognisant of the specific responsible persons (Resource & Waste Manager), the framework for the Contractor's management of waste arising, and the authorised waste management hauliers/outlets that will be used over the course of the construction phase of the Proposed Development.

Therefore, this CRWMP is a working document that will remain a valid, relevant document throughout the duration of the construction phase of development. The CRWMP will be subject to periodic review and will include revisions for inclusion of the following:

- Conditions that issue as part of planning permission relating to the Proposed Development.
- Waste Permits, Licenses and other authorisations used over the course of the project.
- Details of any unplanned incidents and description of outcomes.
- Details of materials (including waste) brought off-site.
- Details of materials brought onto site.
- Future legislative changes, including those relating to waste management that may be driven by the existing waste management policy for Ireland - A Waste Action Plan for a Circular Economy Ireland's National Waste Policy, 2020-2025.

The Plan outlines commitments associated with the management of resources and waste from the development and describes how these commitments will be managed by assigning responsibility for ensuring the effective implementation of provisions contained therein. The CRWMP will be maintained as an integral part of the Health, Safety, Environmental and Quality Management system for the development and will be subject to the requirements of the site quality management system with respect to documentation control, records control, and other relevant measures. The primary distribution list for this document includes the following personnel:

- Developer (Rockspring Properties Ltd.)
- Main Contractor (To be confirmed).
- Site Manager and appointed Construction Environmental Manager/Designated Resource & Waste Manager.
- Sub-Contractor Organisations.

5.1.2 Objectives of the CRWMP

A key overall objective of this Construction Resource & Waste Management Plan (CRWMP) is to communicate key waste management obligations and procedures that will apply to all contractor organisations involved in the project, their subcontractors and employees involved in carrying out any form of construction activity at the site. This Plan defines project-specific measures that are to be put in place during construction works.

This plan will provide information necessary to ensure that the management of construction waste at the site is undertaken in accordance with the current legal and industry standards including the Waste Management Acts 1996 (As amended) and associated Regulations, Protection of the Environment Act 2003 as amended, Litter Pollution Act 1997 as amended and relevant guidelines including those issued by EPA in November 2021.

In particular, this Plan aims to ensure maximum recycling, reuse, and recovery of waste with diversion from landfill, wherever possible. It also seeks to provide guidance on the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil and/or water).

This CRWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the development and makes recommendations for management of different waste streams. This Plan is intended as a single document that can be used over

the course of works at the site, as a point of reference relating to construction waste management for the Developer and appointed Contractor. The document provides the waste management framework to be adhered to over the course of construction of the Proposed Development.

In particular, the CRWMP has the following objectives:

- To promote an integrated approach to waste management throughout the project construction stage and to set out appropriate responsibilities.
- To promote sustainable waste management in line with waste management hierarchy.
- To provide an outline for the management of wastes arising from construction works for the project in accordance with the relevant Irish and EU waste management legislation; and
- To provide a framework for the designers and the principal contractor to appropriately manage waste generated over the course of the development. The principal contractor, upon appointment, will be responsible for maintaining and revising the implementing the CRWMP.

The CRWMP outlines methods to achieve waste prevention, maximum recycling and recovery of waste and provides recommendations for the management of the various anticipated waste streams. The CRWMP also provides guidance on the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil or water resources). Section 5.2 below describes the applicable legal and policy framework for construction waste management in Ireland (both nationally and regionally).

This CRWMP aims to ensure maximum waste prevention, recycling, reuse, and recovery of waste with diversion from landfill, wherever possible. This is in accordance with latest policy issued by the Government – A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025. The purpose of the CRWMP is also to outline the manner in which waste is to be managed throughout the construction phase of the Proposed Development, to ensure waste management activities from the site will not have an adverse impact upon the environment.

5.1.3 Scope of the CRWMP

The scope of this CRWMP includes all solid wastes generated during the construction phase of the development. The scope does not include the management of wastewater where "wastewater" refers to any aqueous liquid

wastes that are managed by either direct discharge to sewer or collection and transfer to a municipal wastewater treatment plant.

5.2 Relevant Waste Management Legislation, Policy & Best Practice

The scope of this CRWMP includes all solid wastes generated during the construction of the proposed development consisting of 173 No. residential units including car parking, and creche at Baneshane, Midleton, Co. Cork. The scope does not include the management of wastewater where "wastewater" refers to any aqueous liquid wastes that are managed by either direct discharge to sewer or collection and transfer to a municipal wastewater treatment plant. The CRWMP is considered a "live" document that will be updated prior to works commencing and at intervals during the progress of the development work. At all times, the management of waste must be compliant with legislation and must be considerate of up-to-date policy. This section provides an overview of current legislation and policy at a national and regional level.

5.2.1 National Legislation

The primary Irish waste management legislation is:

- Waste Management Act 1996 (as amended) and associated Regulations including those listed below.
- Circular Economy and Miscellaneous Provisions Act 2022.

Supporting Regulations, Legislation and Guidance include:

- European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) as amended 2011 (S.I. No. 323 of 2011) and 2016 (S.I .315 of 2016).
- Waste Management (Collection Permit) Regulations (S.I. No. 820 of 2007) as amended 2008 (S.I. No 87 of 2008), 2015 (S.I. No. 197 of 2015) and 2016 (S.I. No. 24 and 346 of 2016).
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008) as amended 2014 (S.I No. 320 and No. 546 of 2014) and as amended 2015 (S.I. No. 198 of 2015).
- Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010).

- Waste Management (Packaging) Regulations 2003 (S.I. 61 of 2003) as amended 2004 (S.I. No. 871 of 2004), 2006 (S.I. No. 308 of 2006) and 2007 (S.I. No. 798 of 2007).
- Waste Management (Landfill Levy) (Amendment) Regulations 2012 (S.I. 221 of 2012) as amended 2015 (S.I. No. 189 of 2015).
- European Communities (Shipment of Hazardous Waste exclusively within Ireland) Regulations 2011
- Waste Management (Shipment of Waste) Regulations (S.I. 419 of 2017).
- The Environmental Protection Act 1992 and amendments and subordinate regulations.
- Protection of the Environment Act 2003 (S.I. No. 413 of 2003).
- Construction Industry Research and Information Association (CIRIA) document 133 Waste Minimisation in Construction.
- Litter Pollution Act 1997 (S.I. No. 12 of 1997) and amendments and subordinate regulations.
- Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects, Environmental Protection Agency, 2021.
- Guidance on Soil and Stone By-products in the context of Article 27 of the European Communities (Waste Directive) Regulations, 2011, Version 3, EPA, June 2019.
- Southern Region Waste Management Plan, 2015 – 2021
- The Cork County Development Plan 2022-2028

5.2.2 Relevant Definitions and Duty of Care

A “Waste Holder” is defined at Section 5 of the Waste Management Act, which is the general definitions section, as amended by the EC (Waste Directive) Regulations 2011 (SI 126/2011).

“Waste holder” means the waste producer or the person who is in possession of the waste. Just because generated waste has been transferred to, for example, a waste transport company and they have control of the waste, does not mean that there is no liability attached to the original waste producer.

"Waste Producer" means anyone: (a) whose activities produce waste (in the Act referred to as the “original waste producer”); or (b) who carries out the pre-processing, mixing or other operations resulting in a change in the nature or composition of such waste.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 (as amended) and subsequent Irish legislation, is the principle of "Duty of Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery, or disposal (including its method of disposal). It is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, therefore waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of "Polluter Pays" whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged e.g., for transportation and disposal/recovery/recycling of waste. It is therefore imperative that the waste contractors engaged by the appointed Contractor are legally compliant with respect to waste transportation, recycling, recovery, and disposal. This includes the requirement that a contractor handle, transport, and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur arising from these activities. It is the responsibility of the original waste producer or other waste holder in the chain to ensure that waste is appropriately managed. Liability in the case of inappropriate/unauthorised waste management can be attached to multiple bodies including the Developer. It is therefore critical that clear procedures for waste management are developed and followed by the Contractor over the course of the construction of the development.

5.2.3 National Policy - Waste Action Plan for Circular Economy

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025 and Ireland's updated goals, actions, and policies to be implemented during this period. This plan, 'A Waste Action Plan for a Circular Economy' replaces the previous national waste management plan, "A Resource Opportunity" (2012), and was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities. The new policy is structured around the framework provided in the EU's Second Circular Economy Action Plan launched in March 2020.

The Waste Action Plan for Circular Economy sets the direction for waste planning and management in Ireland up to 2025 and the document contains over 200 measures across various waste areas and includes a dedicated section (Section 11) in relation to Construction and Demolition Waste. A key objective now enshrined in national policy is to shift the focus back up the product life cycle, to remove or design out harmful waste, to extend the life of the products, materials and goods used and prevent waste arising in the first place – consistent with the concept of a zero-waste future. The policy is intended to move Ireland toward a circular economy shifting away from waste disposal, favouring circularity and sustainability by identifying and maximising the value of material through improved design, durability, repair, and recycling. By extending the time resources are kept within the local economy, both environmental and economic benefits are foreseen. The policy looks to implement increased regulation and measures across every sector to attain its goal.

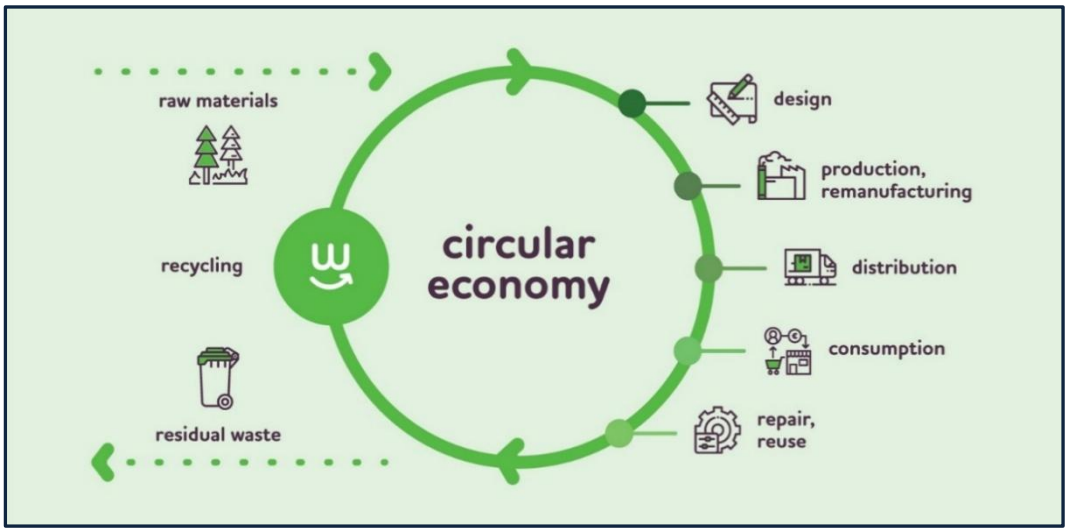

Figure 5-1 Circular Economy

Key elements for C&D Waste in the Waste Action Plan include:

- Project Ireland 2040 sets out the State's development goals over the next 20 years which allows for the opportunity to forecast large, specific C&D waste streams with a focus on preventing or efficiently managing the waste from these areas.
- Prevention of soil arisings which are a significant financial burden on the sector are to progress by placing value on the used material where possible. There is a strong focus on Article 27 by-product and Article 28 end-of-waste decision making process. These processes are to be streamlined and detailed guidance will be developed for specific problematic materials.

- The use of recycled construction materials will be incentivised (potentially by introducing a levy on virgin aggregates).
- The plan looks to make national end-of-waste decisions for specific construction and demolition waste streams at the earliest possible stage.
- The 2006 Best Practice Guidelines for construction and demolition waste will be revised to improve the Preparation of Waste Management Plans for Construction and Demolition Waste Projects (Note: this was completed with the issuance on new guidelines by the EPA in 2021).
- Utilisation of Green Public Procurement thresholds to encourage the use of recycled materials in construction projects.

5.2.4 Best Practice Guidance for Management of Waste from Construction Projects

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002, as one of the recommendations of the forum for the construction industry, in the Task Force B4 final report. The NCDWC subsequently produced 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' in July 2006 in conjunction with the then Department of the Environment, Heritage, and Local Government (DoEHLG). The guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle, and reuse wastes.
- Waste disposal/recycling of C&D wastes at the site.
- Provision of training for Resource Manager and site crew.
- Details of proposed record keeping system.
- Details of waste audit procedures and plan and
- Details of consultation with relevant bodies.

The Environmental Protection Agency has recently new guidance in the form of Best Practice Guidelines for the Preparation of Resource Management Plans for Construction & Demolition Projects (April 2021). The appointed Contractor will be expected to have regard for new guidance which effectively replace the pre-existing (2006) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects. The guidelines have also been prepared to promote more circular design and construction principles in

line with the EU Circular Economy Action Plan under the EU Green Deal. The circular economy model tries to avoid using unnecessary resources in the first place and to keep resources 'in flow' by means of effective and smart reuse and recycling strategies reducing the use of virgin materials. The design concept for The Knock development is cognisant of this in its proposed re-use of soil as a key component of the development where possible. The overall design of site layout of the development is cognisant of the existing topography and will involve minimal site excavation works, thereby minimising the creation of soil waste and importation of materials.

5.2.5 Regional Waste Management Policy

Waste planning and associated policy actions are currently implemented through the National Waste Management Plan for a Circular Economy 2024-2030. This National Plan replaces the previous Regional Waste Management Plans. This Plan sets out the framework to implement national and European Policy and sets out strategic targets for waste management. Though there are no specific targets for Construction & Demolition waste in this Plan, the Waste Framework Directive sets Member States a target of "70% preparing for reuse, recycling and other recovery of construction and demolition waste" (excluding natural soils and stones and hazardous wastes). It is noted that a new target may be imposed at a future date.

Regional waste planning and associated policy actions are currently implemented through the three regional waste management plans. These were published in May 2015 and set out a regional framework to implement national and European Policy.

The Southern Region Waste Management Plan 2015 – 2021 is the regional waste management plan covering the Cork County Council municipal area. The Regional Plan sets out the strategic targets for waste management in the region but does not set a specific target for C&D waste. However, the Waste Framework Directive sets Member States a target of "*70% preparing for reuse, recycling and other recovery of construction and demolition waste*" (excluding natural soils and stones and hazardous wastes) to be achieved by 2020.

The Cork County Development Plan 2022-2028 was adopted by the Elected Members of Cork County Council at the Special Meeting of the Council held on Monday, 25th April 2022. The Plan came into effect on Monday, 6th June 2022. The Development Plan sets out several policies, in line with the objectives of the regional waste management plan. The Plan refers to the Regional Spatial and Economic Strategy (RSES) noting that the "*There*

is currently in preparation a draft of the National Waste Management Plan for a Circular Economy and this new national plan will be the successor to the current regional waste management plans. The upcoming National Waste Management Plan will incorporate guidance entitled 'Waste Management Infrastructure – Guidance for Siting Waste Management Facilities' which the planning authority will support the implementation of once adopted.

The Regional Spatial and Economic Strategy for the Southern Region, 2020 echoes these sentiments and aims to move away from the traditional unsustainable linear model where we consume resources and generate high waste volumes to be sent to processed as waste. As at national level, policy is now focused on building a circular economy."

Section 15.12 of the Development Plan refers to Waste and Section 15.12.23 refers specifically to Construction and Demolition Waste, noting the following:

"*A significant amount of waste generated in Cork County is as a result of construction activity. The Council recognises the inherent sustainability of retention and refurbishment, compared with the whole life energy costs and waste impacts that would result from demolition and replacement. The reuse of existing structures preserves the embodied energy expended in the original construction, minimises waste and reduces the use of new materials. The Council will, therefore, promote circularity by seeking to avoid demolition and encourage re-purposing of existing buildings in the first instance. Since the last Development Plan there has been a shift in line with regional and national policy with regard to how C&D waste is treated. The most recent figures from the Southern Region Waste Management Plan indicate that 95% of C&D waste is being re-used or recycled.*

In order to continue to achieve the target with regard to reuse or recycling of C&D waste, the Council will have regard to and require compliance with the Environment Protection Agency 'Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Waste Projects A Construction and Demolition Waste Management Plan shall be required for projects in excess of the following thresholds:

- *New residential developments of 10 houses or more.*
- *New developments (other than the bullet point above), including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,1250m2.*
- *Demolition/renovation/refurbishment projects generating in excess of 100m3 in volume of construction and demolition waste.*

- *Civil engineering projects producing in excess of 500m3 of waste, excluding waste materials used for development works on the site."*

In recognition of national and regional waste management policy, it is a key objective of this CRWMP to manage material resources more efficiently, where the value of products, materials and resources are maintained in the economy for as long as possible, to minimise the requirement of natural resources and to minimise the generation of waste. To achieve such resource efficiency, there is a need to divert materials from waste to beneficial re-use (for example through the re-use of site-won material where suitable and appropriate for road construction or landscaping purposes).

Specific objectives are described below. It is important to bear in mind that the Plan is dynamic, and certain revisions may result from future legislation changes. At this initial stage, objectives include:

- Planning applications for infilling of marginal land through soil importation will be supported where it can be demonstrated that the developments accord with proper planning and sustainable development, ensuring that they are compatible with the protection of environmental resources including water quality, Natura 2000 sites, biodiversity, archaeological and landscape resources.
- Support will be provided for locating suitable sites within the county for the safe disposal of construction and demolition waste in conjunction with the Southern Waste Region.
- Construction and Environmental Management Plans (CEMPs)/ Construction and Demolition Management Plans shall be prepared for larger scale projects as set out in paragraph 15.12.24 and this requirement shall be assessed on a case-by-case basis as part of the development management process.
- Support the implementation of the recommendations and policies of the National Hazardous Waste Management Plan 2014-2020.

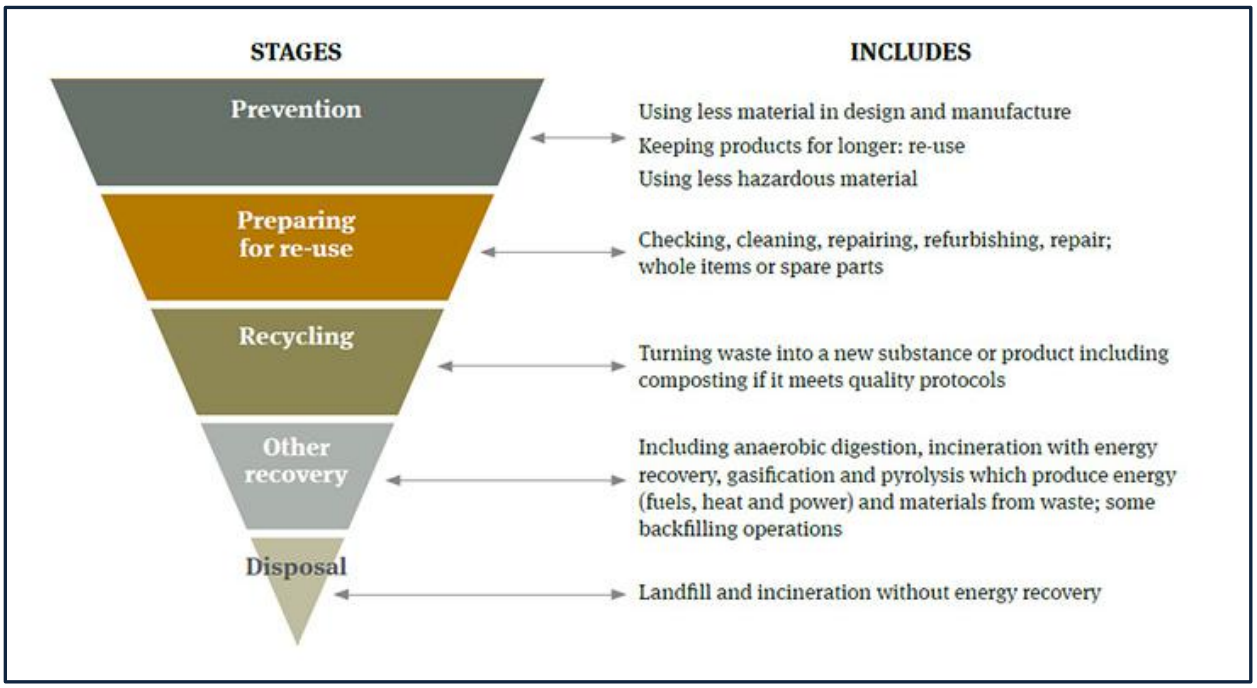

Figure 5.2 - Waste Hierarchy

- Transfer of Waste: To ensure that where waste is generated, this waste will be transported and disposed of in accordance with applicable legislation and without causing environmental pollution. The Plan will ensure that all waste leaving the site is transported by hauliers fully authorised (permitted by the National Waste Collection Permit Office – NWCPO) to carry this waste to licensed facilities that are fully authorised to accept the waste.
- An inventory of such permits and licences will be maintained on-site and will be available for inspection.
- Awareness and Training: To ensure all site staff are aware of the relevant obligations under waste management legislation and to promote best practice (Section 6.1).
- This CRWMP provides a framework for the Principal Contractor to appropriately manage waste generated during the project. Upon appointment, the Principal Contractor will be responsible for implementing the findings and recommendations of the CRWMP in their updated, detailed Plan[2].

[2] The Principal Contractor will provide a more detailed Plan incorporating the findings and recommendations of this CRWMP and providing further waste management detail such as site-specific waste management procedures, responsibilities and documentation requirements. It is anticipated that the CRWMP will provide a working document which can be amended and updated during the construction works as required.

5.3 Roles and Responsibilities

There are many stakeholders with responsibility for the development of an effective CRWMP through the project life cycle. The Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects (EPA, 2021) promotes that a Resource Manager (RM) should be appointed. The RM may be performed by number of different individuals over the life cycle of the Project; however, it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction and demolition methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.3.1 Role of the Developer

The Client, Rockspring Properties Ltd., is the body establishing the aims and the performance targets for the project. In achieving this, the Client has commissioned the preparation and submission of this preliminary CRWMP as part of the design and planning submission. The Client will also commission the preparation and submission of an updated CRWMP as part of the construction tendering process and will ensure that the CRWMP is agreed on and submitted to Cork County Council prior to commencement of works on site. The client will request the end-of-project CRWMP from the appointed Contractor.

5.3.2 Role of Developer's Advisory Team

The Client Advisory Team/Design Team is formed of architects, consultants, planners, and engineers and is responsible for the following:

- Drafting and maintaining the CRWMP through the design, planning and procurement phases of the project.
- Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This should also include data on reuse and prevention mechanisms to illustrate the positive circular economy principles applied by the Design Team.

- Handing over of the CRWMP to the selected Contractor upon commencement of construction of the development.
- Working with the Contractor as required to meet the performance targets for the project.

5.3.3 Future Role of the Contractor

An experienced Contractor will be retained to undertake construction of the development and will be required to appoint a Resources Manager (RM) who will have responsibility for the management of waste. Upon selection the Contractor will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the CRWMP throughout the construction (including the management of all suppliers and sub-contractors) as per the requirements of these guidelines.
- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP.
- Identifying all hauliers to be engaged to transport each of the resources / wastes offsite.
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable.
- Identifying all destinations for resources taken off-site. Any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility.
- Maintenance of full records of all resources (both wastes and other resources) for the duration of the project; and
- Preparing a CRWMP Implementation Review Report at project handover.

5.3.4 Pre-Construction (Client and Design Team)

The client and the design team will integrate the 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects' guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post demolition and construction. Further details on these design principals can be found within the guidance document. The design team will undertake the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections will be the focal point of the design process and material selections and will continue to be analysed and investigated throughout the design process

and when selecting material. The approaches presented are based on international principles of optimising resources and reducing waste on construction projects through:

- Prevention
- Reuse
- Recycling
- Green Procurement Principles
- Off-Site Construction
- Materials Optimisation; and
- Flexibility and Deconstruction.

Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders, and incentivise competitions to recognise sustainable approaches. They will also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery and use ordering procedures that avoid excessive waste.

Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.
- The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards.
- Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively.

Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the number of offcuts produced on site, focusing on promotion and development of off-site manufacture.

Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products used only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

5.3.5 Construction (Contractor Obligations)

The CRWMP presented here provides guidance to be followed in relation to waste management at the site during the construction of the Proposed Development. It will be a requirement that the CRWMP is updated with sufficient additional information by the appointed Contractor prior to commencement of construction works. The CRWMP includes detail to describe the framework of the Contractor's proposed waste management strategy, control, and mitigation. Following appointment, the Contractor will be required to develop and maintain a detailed CRWMP that is cognisant of the information provided herein (i.e., will be aligned with the requirements of this CRWMP) but is also specific in terms of persons, equipment, waste receptacles and sub-contractors to manage waste during the construction of the development. The CRWMP will be subject to approval by the Client's Representative/Advisor prior to commencement of works.

The Contractor will be required to appoint a suitably experienced Resource Manager (RM) for the project to ensure all wastes produced at the site are managed safely, efficiently and in compliance with the relevant statutory requirements.

Duties of the Contractor's Resource Manager will include the following:

- Confirmation that wastes contractors (transport and treatment/disposal) have suitable permits.
- Ensuring that applicable waste management procedures are in place as per the requirements of this CRWMP.
- Monitoring and auditing the waste management procedures and practices of contractors.
- Maintenance and updating of this Plan.
- Ensuring that Client's waste management expectation as described herein is fully realised.
- Ensuring appropriate training for all site personnel in the implementation of the Plan.
- Monitor the effectiveness of the Plan including the entire waste management lifecycle to ensure that all waste is handled and disposed in a manner that mitigates risks and meets all applicable legal and regulatory requirements.
- Ensuring that the waste management services contractor applies the waste hierarchy to the extent practicable.
- Identifying and classifying all waste arising at the site in accordance with the List of Waste (LoW) Code.
- Ensuring that all waste management activities include systems for waste tracking and waste reporting to control the accountability of waste management.
- Maintaining all documentation associated with project related waste.
- Investigating all waste-related non-conformances, decide any changes necessary and report internally and externally as required.
- Ensuring the availability of appropriate waste containers.
- Ensuring that all waste is separated, labelled and dated, packaged and stored in accordance with the requirements of the Plan.
- Facilitating audits on behalf of the Client.

It is expected that the appointed Contractor will establish a designated area for the temporary storage of materials to be used in the development and an area where excavated soil/fill material can be temporarily stored pending re-use at the site or potentially removal from site in the case of excess topsoil. Such stockpiled material will be kept to a minimum. If, over the course of site stripping/excavation, suspected contaminated soil material is encountered, this will be stored separately pending outcome of analysis and potential removal from the site (if found to be contaminated).

All site staff (including subcontractors) will be briefed on the provisions of the CRWMP (Section 5.5.1 below).

The steps outlined in this document will ensure that materials arising from construction works are managed, re-used, recovered, or disposed of by methods that ensure that the provisions of the Waste Management Act 1996 (as amended) and associated Regulations are complied with. The Plan will also ensure that the optimum levels of waste prevention, re-use and recycling are achieved based on the principles of the EU Waste Hierarchy and reflected in specific objectives for site waste management.

5.4 Key Materials and Quantities anticipated during Construction Phase

Construction and Demolition (C&D) waste is defined as waste which arises from construction, renovation, and demolition activities together with all the waste categories mentioned in Chapter 17 of the List of Waste (LoW)[3]. In the case of the proposed development at Baneshane, this will involve the construction of a large-scale residential development consisting of 173 no. dwellings, and a creche.

Also included within the definition of construction and demolition waste are surplus and damaged products and materials arising during construction works or used temporarily during on-site activities.

Typical construction waste types which are likely to arise during the construction works are described in the sub-sections below and are set out in Table 5.1.

5.4.1 Soil and Stone

It is intended to minimise the volume of soil to be exported from the site and to re-use excavated soil as much as possible within the development footprint. Soil will be generated from general site levelling and installation of foundation piles as well as from installation of services and drainage.

In the unlikely event that suspected contaminated soil is encountered, the precautionary principle will be adopted. Where doubt exists, suspect material will be segregated and stored separately and appropriately sampled, analysed, and described in accordance with the EPA 2015 Report "Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous". It will be a requirement in such instances that soil for off-

[3] Environmental Protection Agency, Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, Valid from 1st June 2015

site transfer is appropriately characterised through Waste Assessment Criteria (WAC) testing and subsequent waste classification. Results of testing will be provided to potential authorised waste outlets, and a waste acceptance letter will be required prior to material moving off-site. It will be the responsibility of the Contractor's designated Resource & Waste Manager to ensure that sampling, analysis, and classification, if required, is completed and that material to be transferred from the site is fully categorised.

5.4.2 Soil for Removal Off-site

If soil is required to be transferred from the site as waste, the excavated material will be sent for appropriate off-site disposal or recovery. A letter of acceptance will be required from each soil waste outlet who will be provided with results of the soil waste classification exercise. The letter of acceptance will be on headed paper from the outlet and will contain specific reference to the outlet name and address and relevant permit/licence reference number. The letter shall also refer to the nature of material accepted with reference to the relevant List of Waste Code and relevant waste classification information. It is more likely that clean, greenfield soil will be transferred as a by-product under Article 27 of the Waste Directive Regulations 2011.

5.4.3 Temporary Storage of Soil Material

Pending transfer off-site or potential on-site re-use, soil material may require temporary stockpiling. Where this occurs, the following procedure will be followed:

- A suitable temporary storage area shall be identified and designated by the appointed Contractor.
- Stockpiles shall be assigned a stockpile number.
- Any suspected contaminated material (unlikely) shall be stored separately pending receipt of results of analysis.
- Stockpiles of clean material will be dampened down if required to minimise dust generation.

Control measures for the control of dust during the construction stage will be devised by the Contractor based on a risk assessment. The risk of dust becoming airborne and affecting site users, construction workers and neighbours is at its highest when the soils are dry and able to be eroded by the wind. Typically soil moisture is sufficient to prevent dust becoming airborne, however where soil becomes dry there is a likely temporary moderate adverse effect on site workers in the immediate vicinity of the works. As described in Section 4.2, the

appointed Contractor will be required to develop a Dust Management Plan for the construction phase. Further detail relating to dust mitigation that must be implemented and included in the Plan is provided in Section 4.2.

5.4.4 Other Construction Waste

There will also be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals, and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated as well as municipal-type waste from the compound area. To reduce the generation of waste from the development, the construction contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised. Where possible, the following materials will be segregated and stored in skips within a designated waste storage area:

Plastic

Much of the plastic generated during construction will be diverted from landfill and recycled. The plastic waste may be off-cuts and will be segregated at source and kept as clean as possible and stored in a dedicated skip.

Timber

There will be timber waste generated from the construction work such as off-cuts or damaged pieces of timber. Timber that is uncontaminated i.e., free from paints, preservatives, glues etc., will all be recycled. It will be collected on-site by a suitably authorised haulier from the designated waste storage area. The collected clean timber will be used in energy recovery, for manufacture of wood products, or for landscaping woodchips, etc.

Scrap Metal

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

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

Cardboard Packaging

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

Plasterboard

Waste gypsum can be recycled into new plasterboard. A skip will be provided for the separate collection of waste plasterboard and collected, as necessary. The Resource Manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Concrete Blocks, Bricks, Tiles & Ceramics

Concrete block, bricks, tiles, and ceramic waste generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible.

Canteen Wastes/W/C Utilities Wastes

Regular housekeeping of the temporary canteen/W/C areas will be carried out. Removal of domestic waste from the construction compound will be carried out by a suitably authorised waste contractor. Any temporary W/C utilities used on-site during the construction will be maintained by an approved and suitably authorised contractor.

Non-Recyclable Waste

Construction waste which is not suitable for reuse or recovery, such as polystyrene, some contaminated plastics and some cardboards, will be placed in separate general waste skips or other receptacles. Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle. Workers on the site will be encouraged to recycle as much municipal waste as possible i.e., cardboard, plastic, metals, and glass.

Hazardous

On-site storage of any hazardous wastes produced will be minimised with off-site removal organised on a regular basis. Appropriate storage of all hazardous materials on-site will be undertaken including bunding of fuels,

lubricants etc. to minimise potential for environmental impacts. Hazardous wastes will be recovered wherever possible and failing this, disposed of appropriately.

Table 5.1 below presents a list of wastes that are likely to be generated during construction works. Portable sanitation facilities will be leased so that foul waste will be managed by the hire company and safely removed off-site for appropriate disposal. The relevant List of Waste Codes (LoW) (formerly EWC codes) are included.

Table 5.1 – Waste materials that may arise during the construction phase

Non-Hazardous	List of Waste Code	Comments
Soil and Stone	17 05 04	Soil waste will be minimised based on inherent design and material will be re-used on site where possible. Where off-site transfer is required, material may be considered a by-product if conditions are met. Alternatively, it will be waste under LoW 17 05 04.
Wood/Timber	17 02 01	Small amount of timber will be generated from off-cuts, damaged pieces, pallets/crate packaging. Dedicated skip will be provided.
Glass	17 02 02	Dedicated skip to be provided for broken glass etc.
Cardboard	20 01 01	Waste will be produced from shipping containers, packaging etc. Cardboard will be flattened and placed in covered container to prevent it getting wet.
Metal	17 04 codes	Metal waste will be segregated at source and stored in dedicated skips (ferrous/aluminium)
Insulation Materials	17 06 04	Insulating materials will be source segregated and place in designated covered skip in waste management area.
Plastic	17 02 03	Generated primarily from packaging and off-cuts. All recyclable plastic will be segregated at source and stored in a dedicated recycling skip.
Gypsum based construction material	17 08 02	Gypsum waste (off cut or damaged plaster boards) will be stored in designated covered skip in waste management area.
Concrete	17 01 01	Concrete waste
Bricks	17 01 02	Waste likely to be generated during the construction phase of the project. Likely to be broken/damaged construction materials.
Tiles and ceramics	17 01 03	Waste likely to be generated during the construction phase of the project. Likely to be broken/damaged construction materials.
Mixture of Concrete, bricks, tiles, ceramics	17 01 07	Waste will be generated from broken/damaged construction materials.
Mixed Construction & Demolition Wastes	17 09 04	Waste likely to be generated during the construction phase of the project
Mixed Municipal	20 03 01	Waste from on-site canteen.

Hazardous	List of Waste Code	Comments
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30	Paints, glues, adhesives, and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum.
Liquid fuels	13 07	As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in a dedicated, secure area of the site.
Batteries and accumulators	20 01 33 & 34	All batteries and accumulators generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for recycling/recovery/disposal.

5.4.5 General Breakdown of Construction Waste Types (non-soil)

As with all construction projects, whilst the appointed Contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised, it is inevitable that waste will be produced from surplus materials including broken or off-cuts of timber, plasterboard, concrete, tiles and bricks.

The table below shows the breakdown of C&D waste types produced on a typical site based on data from the *EPA National Waste Reports,* the *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned (2015)* and other research reports.

Table 5.2 - Typical breakdown of waste materials generated on a typical Irish construction site

Waste Type	Percentage
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	100

The following table indicates predicted construction waste generation for the Proposed Development based on the information available to date along with the targets for management of the waste streams. The predicted waste amounts are based on an average large-scale development waste generation rate per m², using the waste breakdown rates shown above. The table is indicative and will be refined by the Contactor in development of a detailed Construction Resource & Waste Management Plan that will be maintained and refined over the course of the construction period.

Table 5.3 – Preliminary estimate off-site reuse, recycle and disposal tonnages (assumes GFA of 7967.8 sqm)

Waste Type	Tonnes	Reuse		Recycle		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	286.6	10	28.7	80	229.3	10	28.7
Timber	243.2	40	97.3	55	133.7	5	12.2
Plasterboard	86.8	30	26.1	60	52.1	10	8.7
Metals	69.5	5	3.5	90	62.5	5	3.5
Concrete	52.1	30	15.6	65	33.9	5	2.6
Other	130.3	20	26.1	60	78.2	20	26.1
Total	868.5		197.1		589.7		81.6

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process. These quantities are provisional only and subject to further determination during construction works. The appointed Contractor for the development will be required to prepare a more detailed construction resource and waste management plan prior to work commencing which should refine the above estimated waste figures.

5.5 Methods Proposed for Prevention, Re-use, and Recycling of Waste

5.5.1 Training/Raising Awareness

The CRWMP will be integrated into site operations at the development as soon as the construction commences. The necessity to manage waste in accordance with the objectives of the Plan will form an integral part of site induction for all employees and sub-contractors. As referred to above, the CRWMP is a "Living" document to be developed and maintained by the appointed Contractor over the course of the development.

The Contractor will designate a suitably experienced and qualified person as Construction Resource Manager (RM) for the Contract. The Resource Manager will have overall responsibility for the implementation of the Plan and will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan. At the operational level, the Resource Manager (RM) will be designated to ensure commitment, operational efficiency, and accountability during the construction. The RM will be assigned the direct responsibility to ensure that the discrete operations stated in the Plan are performed on an on-going basis.

Training of site personnel in relation to on-site waste management practices is the responsibility of the Resource Manager and, as such, a waste awareness course will be held for all site crew to outline the provisions and objectives of the Construction Resource & Waste Management Plan and to detail the segregation of waste materials at source. This will be incorporated with other site training needs such as general site induction, dust minimisation health and safety and manual handling.

All site personnel and sub-contractors will be instructed in relation to the provisions of the Construction Resource & Waste Management Plan (CRWMP). Site staff will be informed of the responsibilities which fall upon them due to provisions contained within these documents.

The use of Informative Posters and Toolbox talks will be used to reinforce the key messages within the CRWMP. The need for specialist training, as may be required, will be assessed or provided as required.

Basic waste management training will focus on objectives of the Plan and on legal requirements. Training will describe the materials to be segregated, the storage methods and the location of a dedicated Waste Storage Area (WSA) at the site. A sub-section on hazardous wastes will be incorporated into the training program highlighting risks posed by these wastes to human health and the environment.

5.5.2 Waste Minimisation

As described, excavation of existing below ground soil material is minimised by design levels for the development, and it is intended to re-use excavated subsoil within the development footprint. Given the greenfield nature of the site, the Contractor will be encouraged to consider whether the topsoil can be exported as a by-product material rather than as a waste material. Any such declaration would be subject to EPA agreement.

Further waste minimisation will be achieved by the Contractor ensuring that all building materials are carefully planned-for (ensuring that the correct amounts required are calculated, ordered, and received) in advance of any works undertaken. Careful planning will prevent the over-supply of building materials which will otherwise contribute to site waste. In addition to this, by arranging 'just in time' deliveries, the requirement for site storage and potential material losses will be reduced. The following measures will also be adopted at the site:

- Where practicably possible, consideration will be given to sourcing materials from suppliers who operate under certified environmental and quality standards. In addition to this, every effort will be made to reduce the amount of packaging in which materials are provided to reduce packaging waste on-site.
- 'Just in Time' delivery will be used as far as is reasonably practicable to minimise material wastage.

5.5.3 Non-Soil Waste Material Handling Procedures

- Where waste is unavoidably created, this will be segregated on-site. Non-soil waste materials will be stored in a designated Waste Storage Area (WSA) which will contain labelled skips and receptacles for a variety of recyclable/non-recyclable waste types.
- Waste stored in the designated Waste Storage Area (WSA) will be protected against spillage and leachate generation.
- All waste containers will be suitable for use (free from holes and excessive corrosion) and compatible with the waste they are to contain. In the case of temporary hazardous waste storage, containers will be UN approved containers for the type of waste contained.
- Material will be handled in a manner to minimise the potential for adverse environmental impacts. Material no longer required on the site (material to be discarded) will be removed from site as soon as is practicable using authorised waste collection permit holders and authorised outlet facilities. Such

material will not be allowed to accumulate to levels that cause environmental nuisance (e.g., odour or vermin) at the site.

- As described above, where possible, metal, timber, glass, and other recyclable material will be segregated, stored in a dedicated waste storage area, and removed off-site to a permitted/licensed facility for recycling. The Resource Manager will be responsible for the maintenance of a designated waste storage area where dedicated, suitable skips will be housed to store segregated materials pending collection by an authorised waste haulier. A record of all such skips taken off-site shall be maintained and care will be taken to ensure that skips are not over-filled.
- Office and food waste arising on site will be source separated at least into dry mixed recyclable bins and biodegradable bins.
- Post segregation, the mixing of waste types will not be permitted. In particular, the mixing of hazardous with non-hazardous segregated waste is not permitted.
- The site will be maintained to prevent litter and regular litter picking will take place around the site as required.
- The construction Resource Manager (RM) will be responsible for conducting periodic inspections of waste storage areas and documenting findings including recommendations for improvement.
- The appointed waste contractor(s) will collect and transfer waste materials from these containers as required and subject to instruction by the RM and a full docketing system will be maintained (see Section 5.7.1 below).

The appointed Contractor will be required to further develop and maintain this CRWMP which will be subject to approval prior to the commencement of site works. The detailed Site CRWMP will include the names of designated Construction Resource Manager and licence/permits numbers of all hauliers and outlets that are intended to be used over the course of the Contract. The Contractor will be required to designate intended waste management storage areas. Additional content of the Contractors CRWMP is detailed in Section 5.10 below.

5.6 Waste Haulage and Disposal/Recovery

5.6.1 Waste Hauliers

Waste produced during the construction phase will only be transferred from the site by hauliers that are permitted by the National Waste Collection Permit Office and are fully compliant with Waste Management (Collection Permit) Regulations 2011 (as amended). Upon appointment, the Contractor shall designate preferred hauliers, and throughout the contract shall maintain on-site full, up to date, copies of the relevant collection permits (including full appendices indicated permitted waste types, list of vehicles and permitted outlets on the permit).

5.6.2 Material Outlets

Waste generated from the development will only be transferred to authorised waste management facilities in accordance with the Waste Management Act, 2006 (as amended).

It will be a primary responsibility of the designated Construction Resource Manager to ensure that all such outlets are fully licensed to receive material from the site. In that regard, written confirmation shall be obtained from the proposed authorised Waste Outlet in advance of materials being removed from site by the permitted Haulier. In the case of soil/fill waste, a copy of the relevant waste characterisation/classification reports relevant to the material to be transferred as a waste shall be provided to the outlet in advance. The outlet will be required to review any such reports prior to issuing a written waste acceptance letter to the RM confirming that material is suitable and acceptable under the facility's authorisation.

An up-to-date list of all waste facilities to which material will be transferred will be retained on site and updated as required. Further details including copies of waste licences and permits and letters of acceptance shall be retained on site by the Contractor and shall be available for review by the Client's Representative.

In the case of soil and stone (17 05 04) and mixed construction and demolition waste (17 09 04), there are several licensed waste management facilities located within County Cork and across the south of Ireland that are authorised to accept these waste codes. Outlets for hazardous waste material are less common, and this material would require management by a specialist company (e.g., Enva).

A selection of potential authorised outlets is listed in the following table.

Table 5.4 – Selection of licensed waste management facilities in County Cork that accept soil/C&D waste

Licence/Permit Ref.	Name	Location
WFP-CK-11-0094-05	O'Brien Skip Hire Limited	Ballyrussell Midleton Co. Cork P25 A338
WFP-CK-22-0224-01	Midleton Skip Hire Ltd	Knockgriffin Midleton Co Cork
WFP-CK-10-0054-04	Ballineen Skip Hire	Caher & Connagh Ballineen Co. Cork P47 DP30
WFP-CK-09-0032-05	Country Clean Recycling Unlimited Company	Spa Road Mallow Co Cork P51 PF63
WFP-WCCC-19-0004-02	Thomas Phelan	Halfway House Woodstown Co Waterford X91 E725

This list is indicative only and arrangements will be between the appointed Contractor and outlets. Acceptance of soil/C&D material will depend on categorisation of material and authorisation associated with the waste licence or permit held by the outlet site. Aside from options listed above, there are a number of other material recovery/transfer facilities in the region that are licensed to accept a wide range of non-hazardous material.

5.7 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site in a Waste Register which will be managed by the Contractor's Construction Resource Manager. Vehicle registrations will be checked to verify that the vehicle is listed on its relevant waste collection permit. Up to date waste collection permit appendices will be retained on site and where a vehicle is not on that list, the haulier will be informed and instructed not use the vehicle in question until such time that there is confirmation from the NWCPO confirming that the vehicle is authorised.

A docketing system will be maintained by the Contractor on which details of all waste transferred will be recorded, indicating waste code, date/time of transfer, haulier and vehicle registration, destination location and licence number and other relevant details.

5.7.1 Record Keeping

Records will be kept for each waste transfer operation whereby material leaves the site, for recovery, recycling, or disposal. A system will be put in place to record the tonnage of waste materials leaving the site.

The following statistics will be recorded in the waste register:

- Records of known contaminated material retained on-site.
- Waste taken off-site for reuse Waste taken off-site for recovery.
- Waste taken off-site for recycling Waste taken off-site for disposal.
- For each movement of waste off-site, a signed waste collection docket will be obtained by the waste manager (or delegate) from the contractor. This will be carried out for each material type. This system will also be linked with the delivery records.
- A signed waste acceptance docket will be issued for each movement of waste on-site.
- Associated documentation shall be maintained on-site such as waste facility authorisations number, expiry date, class of waste accepted, weighbridge records, treatment methods for each waste stream accepted i.e., backfilling, crushing, screening, etc. The Construction Resource & Waste Manager will maintain a copy of the waste register for inspection by Client's Representative.

5.7.2 Records of all Necessary Waste Management Consents

All waste contractors must hold a relevant, up-to-date waste collection permit to transport waste. A copy of this authorisation, issued by the National Waste Collection Permit Office (NWCPO), will be retained on-site. All up-to-date appendices must be retained along with the permit. Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a relevant Licence or Waste Facility Permit. In each case, where an authorised outlet agrees to accept material based on soil waste classification results, a copy of a Letter of Acceptance must be maintained on site by the Resource Manager.

Prior to the retention of a permitted waste contractor to transfer material, the Resource Manager shall complete an audit on that company's collection permit (including relevant appendices). The Resource Manager shall be fully satisfied that material will be transferred to appropriately licensed outlets.

5.8 Waste Audit Procedure

The Resource Manager must complete and record regular internal waste audits at the site over the course of the construction period. This will include a review of records for the waste generated and transported off-site (as well as soil materials accepted). If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. Each material type will be examined to see where the largest percentage of waste generation is occurring. The waste management methods for each material type will be reviewed to highlight how improvements can be achieved. Waste management costs will also be reviewed. Results of such audits must be made available for inspection by Client's Representative or their agents. External audits may also be conducted on behalf of the Client, and the RM is required to fully co-operate with these.

Upon completion of the construction phase, a final waste management report will be prepared summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development. The Client/Client Rep. will review the findings of the waste audits over the course of the construction stage.

5.9 Communications/Training

As described above, copies of the Contractor's CRWMP with associated appendices will be made available to all personnel on site.

Training of site personnel will be the responsibility of the Contractor's RM. This can be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

All project personnel (including sub-contractors and other parties working on site) are to receive an environmental induction before commencing work on the project that will include a module on resource management and the CRWMP. As a minimum the following waste related matters will be included in the induction:

- Scope and content of the CRWMP.
- Project commitments and targets.
- List of anticipated resources and wastes and volumes to be generated.

- Procedures for the proper identification and segregation of resources and wastes.
- Temporary storage and the location of the Waste Storage Areas (WSAs).
- Clear instruction on hazardous wastes will be managed.

Posters will be designed to reinforce the key messages within the CRWMP and will be displayed prominently for the benefit of site staff. Waste management and the contents of this Plan will also feature as a dedicated environmental toolbox talk. All sub-contractors will be briefed on the contents of the CRWMP and made aware of the importance of compliance with the Plan.

5.10 Additional Content for Contractors Resource and Waste Management Plan

Upon appointment, the main contractor for will be required to provide a detailed update to the CRWMP. This document will include among other items, details on contractor management with reference to the appointed Construction Resource Manager for the Project, expected volumes of waste, costs for waste management, haulier details and nominated waste outlets.

The following minimum additional information will be included:

- Details of the main Contractor including nominated Project Manager.
- The names, roles, responsibilities, and authority of key personnel involved in waste management including nominated Construction Resource Manager.
- Estimates of waste generation including the types and quantities of waste generated.
- Types and quantities of waste fill to be excavated.
- Measures to reduce waste generation.
- Confirmation of amounts of material to be stored on the site and designated storage areas.
- Measures to reduce nuisance associated with waste management.
- Authorised waste hauliers intended for use during the development and full copies of relevant collection permits.
- Intended waste outlets and full copies of relevant facility licences and/or permits.
- Other relevant items as required by the CRWMP.

The appointed Contractor will be required to develop waste management procedures that will be attached to the CRWMP. These are expected to include the following:

- Procedure for management of any hazardous or contaminated waste to include detailed mitigation measures to avoid issues to health & safety and environment.
- Procedure for excavation and handling/temporary storage of soil to prevent nuisance.
- Procedure for the control of sub-contracts, if applicable, which must include the assessment of the sub-Contractors waste management policies and control capabilities, and the identification and implementation of additional controls needed on such sub-Contractors to fulfil Client requirements and Contractor obligations having regard to waste management.
- Procedure for the segregation and proper storage of materials on-site to facilitate appropriate re-use and recycling. This will refer to soil type waste material and non-soil construction waste.
- Procedure for the control of all documentation relating to the handling, transportation, disposal, or recovery of waste material generated at the site.

Based on anticipated waste arising during the development a variety of waste storage containers and arrangements for managing generated waste will be required, ranging from wheelie bins to dedicated skips within a designated waste storage area to direct haulage and temporary stockpiling in the case of soils/concrete material. The appointed Contractor will be required to submit a Plan highlighting proposed designated waste receptacles and material storage areas.

5.10.1 Review of Plan

The effectiveness of the Construction Resource Waste Management Plan will be monitored, assessed, and audited over the course of the development. The Plan will be reviewed at regular intervals during the construction to ensure maximum effectiveness is maintained. Several revisions of this Plan are likely over the course of the construction of the Proposed Development.

6 ENVIRONMENTAL INCIDENCES AND OCCURRENCES

6.1 Pollution Prevention and Environmental Risk Assessment

The appointed Contractor shall assess the environmental risks associated with each activity prior to its commencement and shall identify the controls to be implemented. The Contractor's risk assessment and method statements (RAMS) shall include an environmental risk assessment and identification of suitable controls to prevent environmental impacts occurring during construction activities.

As part of this process, the Contractor shall establish a list of the substances to be used during the works and shall ensure that, as a minimum, the following information is available at the site and is provided to personnel using the substances:

- Copies of up-to-date Safety Data Sheets (SDSs).
- Details of the environmental controls to be implemented when storing, handling and transporting the substances.
- Details of the health and safety controls to be implemented when storage, handling and transporting the substances.
- The emergency response equipment and resources, including spill response equipment, suitable for deployment in the event of an incident or accident.
- The personal protective equipment (PPE) to be used when handling the substances.

The above information shall also be provided to Rockspring Properties Ltd. and/or their representative.

6.2 Notification, Management and Communication of Environmental Incidents

As referred to in Section 3.3, the Contractor (CEM) is responsible for managing any incidents or emergency situations that arise during construction of the development. All such environmental incidents will be notified to the Client or their representative within 24-hours of occurrence.

The Contractor shall establish within its management system, a system for notification, management and communication of environmental incidents that occur at the site during construction.

The updated CEMP will provide details on the criteria utilised to rank an incident and will typically include:

- The potential environmental impact.
- The broader impact on human health.
- The remedial action necessary.
- The likely timescale of short term and longer-term environmental consequences.
- The environmental consequences of likely response action.
- Any injury or loss of life caused by the incident.

As guidance, the Contractor will refer to the five-tier classification system as set out in the EPAs Guidance to Licence holders on the Notification, Management and Communication of Environmental Incidents.

7 EMERGENCY PREPAREDNESS AND RESPONSE

7.1 Emergency Response Plan

The Contractor will be required to develop and maintain an Emergency Response Plan. The Sections below provide an overview of procedures and measures to be adopted in the event of an emergency. This will be a working document that requires updating throughout the various stages of the Proposed Development. It will be the Contractor's responsibility to ensure site staff are trained in the implementation of the Emergency Response Plan as well as the Construction Health & Safety Plan referred to in Section 3.1.

7.2 Initial Steps

In the event of an emergency situation, the Contractor will carry out the following:

- Establish the scale of the emergency situation and identify the number of personnel, if any, have been injured or are at risk of injury.
- Make safe the area if possible and ensure that there is no identifiable risk exists with regard to dealing with the situation e.g., if a machine has turned over, ensure that it is in a safe position so as not to endanger others before assisting the injured.
- Contact the required emergency services.
- Take any further steps that are deemed necessary to make safe or contain the emergency incident e.g., cordon off an area where an incident associated with electrical issues has occurred.
- Contact any regulatory body or service provider as required.
- Contact the next of kin of any injured personnel where appropriate.

7.3 Site Evacuation

A site evacuation/fire drill procedure will be established to provide the basis for carrying out the immediate evacuation of all site personnel in the event of an emergency. The following steps will be taken:

- Notification of the emergency situation. Provision of a siren to notify all personnel of an emergency situation.

- An assembly point will be designated in the construction compound areas and will be marked with a sign. All site personnel will assemble at designated points.
- A roll call will be carried out to account for all personnel onsite.
- The Contractor will advise the Client or their representative when all personnel have been accounted for. At this time, the Contractor will decide the next course of action which be determined by the situation that exists at that time. The Contractor will advise all personnel accordingly.

All personnel will be made aware of the evacuation procedure during site induction. The Fire Services Acts of 1981 and 2003 require the holding of fire safety evacuation drills at specified intervals and the keeping of records of such drills.

7.4 Spill Response & Control Measures

The following steps provide the procedure to be followed in the event of any significant spill or leak:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If possible, cover or bund off any vulnerable areas where appropriate such as drains or watercourses.
- If possible, clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Contractor immediately giving information on the location, type, and extent of the spill so that they can take appropriate action and further investigate the incident to ensure it has been contained adequately.
- A Representative for Rockspring Properties Ltd. will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The Contractor will notify the appropriate regulatory body such as Cork County Council and the EPA, if deemed necessary.

In relation to the prevention of pollution to soils and waters, the Emergency Response Plan will include the following information:

- Containment measures.
- List of appropriate equipment and clean-up materials.
- Maintenance schedule for equipment.
- Details of trained staff, location, and provision for 24-hour cover.
- Details of staff responsibilities.
- Notification procedures to inform the relevant environmental authorities: Cork County Council and the EPA.
- Audit and review schedule.
- Telephone numbers of Cork County Council Drainage and Pollution Control Divisions; and
- List of specialist pollution clean-up companies and their telephone numbers.

7.5 Emergency Access

The Contractor will maintain emergency access routes throughout construction and identify site access points for each working area.

7.6 Extreme Weather Events

The Contractor will consider the impacts of extreme weather events and related conditions during construction. The Contractor will use a short to medium range weather forecasting service from Met Éireann or other approved meteorological data and weather forecast provider to inform short to medium term programme management, environmental control, and mitigation measures. The Contractor must consider all relevant measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements for staff. As appropriate, method statements should also consider extreme weather events where risks have been identified.

7.7 Environmental Incidents

All environmental incidents (including emergency situations and accidents that can have an impact on the environment) will be managed in accordance with the following procedure. In the event of an incident, the Contractor shall:

- Carry out an investigation to identify the nature, source and cause of the incident and any emission arising from the incident.
- Isolate the source of any such emission.
- Evaluate the environmental pollution, if any, caused by the incident.
- Identify and execute measures to minimise the emissions/malfunction and the effects thereof.
- Identify the date, time, and place of the incident.
- Notify all relevant authorities including Cork County Council.
- Notify Rockspring Properties Ltd. or their representative within 24 hours of the incident occurring.

The Contractor shall implement a process within 48 hours of the incident occurring, or as otherwise agreed:

- Identify and put in place measures to avoid reoccurrence of the incident.
- Identify and put in place any other appropriate remedial actions.
- Carry out environmental monitoring where required.

Details of close-out of all incidents shall be submitted to the Client or their representative in the monthly environmental report.

8 COMMUNICATIONS PLAN

8.1 Community and Stakeholder Engagement

The Contractor will take all reasonable steps to engage with stakeholders in the local community, focusing on those who may be affected by the construction works including nearby residents, businesses, community resources, and specific vulnerable groups. A Project Liaison Officer (PLO) will be appointed before any construction works commence to manage all public relations issues relating to the construction works. The PLO will be responsible for community liaison matters, information issues, press related matters, liaison with relevant authorities, the public, and the media regarding the Contractor's operations. The PLO will also be responsible for informing the local community in advance of any activities being undertaken in their areas. The PLO will be required to liaise with the Gardaí, property owners, resident groups, and other bodies with respect to traffic management, construction and all other public relations matters which may arise.

8.2 Regular Consultation and Public Communications

As referred to in section 3.2, the appointed Contractor will be required to prepare a Community Liaison Plan, which will include details of how community, road users and affected residents will be notified in advance of the scheduling of major works, associated traffic management and on the progress of the construction works. The Contractor will facilitate regular consultation in accordance with the specifications and cooperate with this plan. Where communications are related to environmental issues, the CEM will be informed and engaged with, as appropriate. Details of the available communication channels and designated points of contact for members of the public to contact during construction will be established in advance of the commencement of construction and displayed around the site.

8.3 Advance Notice of Works

Through the appointment of a PLO, the Contractor will ensure that local residents, businesses, occupiers, general users of the area and stakeholders are informed in advance of construction activities that may affect them. Relevant obligations and procedures in relation to advance notice of works will be identified in the Communications Management Plan. All notifications will detail the nature, estimate duration, and working hours. All notifications will include a project-specific contact number to which any enquires can be directed. The

Contractor will be responsible for preparing and issuing the notifications subject to the relevant approval and consents.

8.4 Complaints

All complaints of an environmental nature will be recorded. A Complaints Register for internal communication and for receiving, documenting, and responding to environmental complaints from external parties will be established and maintained by the Contractor. When a complaint is received, the following information must be taken:

- Date and time of the complaint are recorded.
- Name of complainant (if provided).
- Nature of complaint.
- All complaints received from external sources must be reported to the Construction Environmental Manager and senior site management.

After a complaint is received the following action will be taken:

- Complaints will be investigated on site as soon as possible after the complaint has been received.
- Works may be stopped in the particular area.
- Remedial action will be taken to ensure the complaint is closed out (plant or equipment removed from site, works in particular areas ceased, etc.).
- All environmental complaints will be recorded in the complaints register.
- The register will be maintained by the Construction Environmental Manager who will allocate responsibility for resolving any issues and follows up complaints to ensure they are resolved.
- Any issues to be resolved or followed up must be added to the site action register by the Construction Environmental Manager and all actions closed out and dated where applicable.
- Environmental complaints shall be forwarded to Rockspring Properties Ltd. and/or their representative within 24 hours and recorded in the main Contractor weekly progress report and monthly programme updates.
- Complaints should be reported to relevant authorities depending on contract documents and agreements, for example:
    - Cork County Council

  - EPA
  - Other relevant authorities/third parties required per construction contract.
- Complaints will be reviewed during internal audits by the CEM and by Rockspring Properties Ltd. / their Representative during external audits.

9 CEMP – COMPLIANCE AND REVIEW

Routine inspections of construction activities will be carried out on a daily and weekly basis by the CEM and to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with this CEMP.

Environmental audits will be carried out during the construction of the project. In contrast to inspection activities, audits are designed to shed light on the underlying causes of non-compliance and not merely detect the non-compliance itself. In addition, audits are the main means by which system and performance improvement opportunities may be identified. Environmental audits will be carried out by contractor staff or alternatively by external personnel acting on their behalf. It is important that an impartial and objective approach is adopted. Environmental audits will be conducted at planned intervals to determine whether the CEMP is being properly implemented and maintained. The results of environmental audits will be provided to project management personnel.

9.1 Environmental Records

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

- Management Plans.
- Relevant Licences.
- Register of Environmental Incidents.
- Register of Environmental Complaints.
- Corrective Actions Reports.
- Records of Environmental Inspections and Audits.
- Records of environmental training.
- Environmental Monitoring Data (where applicable).

- Soil monitoring reports (where applicable) and details of waste classification.
- Waste and chemical inventories.
- Details of retained environmental specialists.
- Health and Safety records.
- Correspondence with Regulatory Bodies.
- Waste transfer records and all relevant permits, licences, and letters of acceptance.
- Details of revisions to the CEMP.

9.2 Review of Plan

As per the section above, the effectiveness of the Plan will be strictly monitored, assessed, and audited. The CEMP should be read in conjunction with other supporting documentation that accompanies the planning application as detailed in Section 1 above.

The Plan will be reviewed at regular intervals, most notably by the appointed Contractor following the granting of planning permission to incorporate all conditions and obligations which are contained within the planning permission. The CEMP will also require updating by the selected Contractor to identify relevant personal to occupy the key positions identified in the Plan and to identify, assess and satisfy the contract performance criteria as set out by the various stakeholders. The CEMP due to its structure and nature is a "dynamic" document and will also require regular updating and revision throughout the construction period. Therefore, this is a working document and will be developed further prior to and during construction.

Triggers for amendments to the CEMP will include:

- When there is a perceived need to improve performance in an area of environmental impact.
- As a result of changes in environmental legislation applicable and relevant to the project.
- Where the outcomes from auditing establish a need for change.
- Where additional information becomes available as a result of site investigation.
- Where Work Method Statements identify changes to a construction methodology to address high environmental risk and
- As a result of an incident or complaint occurring that necessitates an amendment.

10 REFERENCES

- CIRIA Technical Note 138 'Planning to reduce noise exposure in construction' – a good source of guidance on design and assessment for noise control (ISBN 0 86017 317 8).
- British Standard BS 5228 'Noise and vibration control on construction and open sites', particularly Parts 1, 2 and 4 – a good design and management guide for control of noise and vibration.
- CIRIA (2001) Guideline Document C532 Control of Water Pollution from Construction Sites
- Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes, NRA, 2011
- Southern Waste Management Plan, 2015 – 2021, Southern Regional Waste Office
- Cork County Development Plan (2022 – 2028), June 2022.
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects, June 2006
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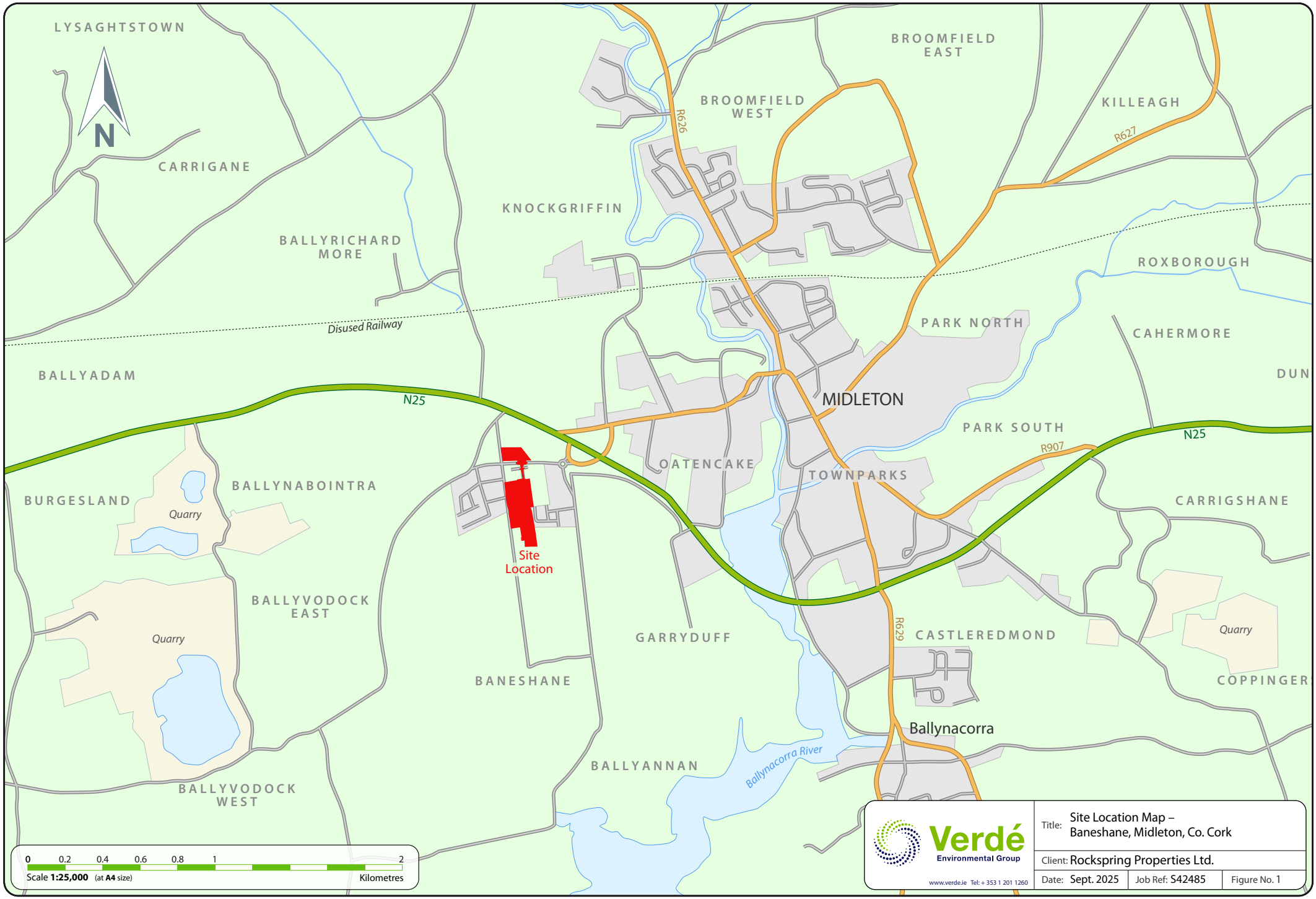
FIGURES

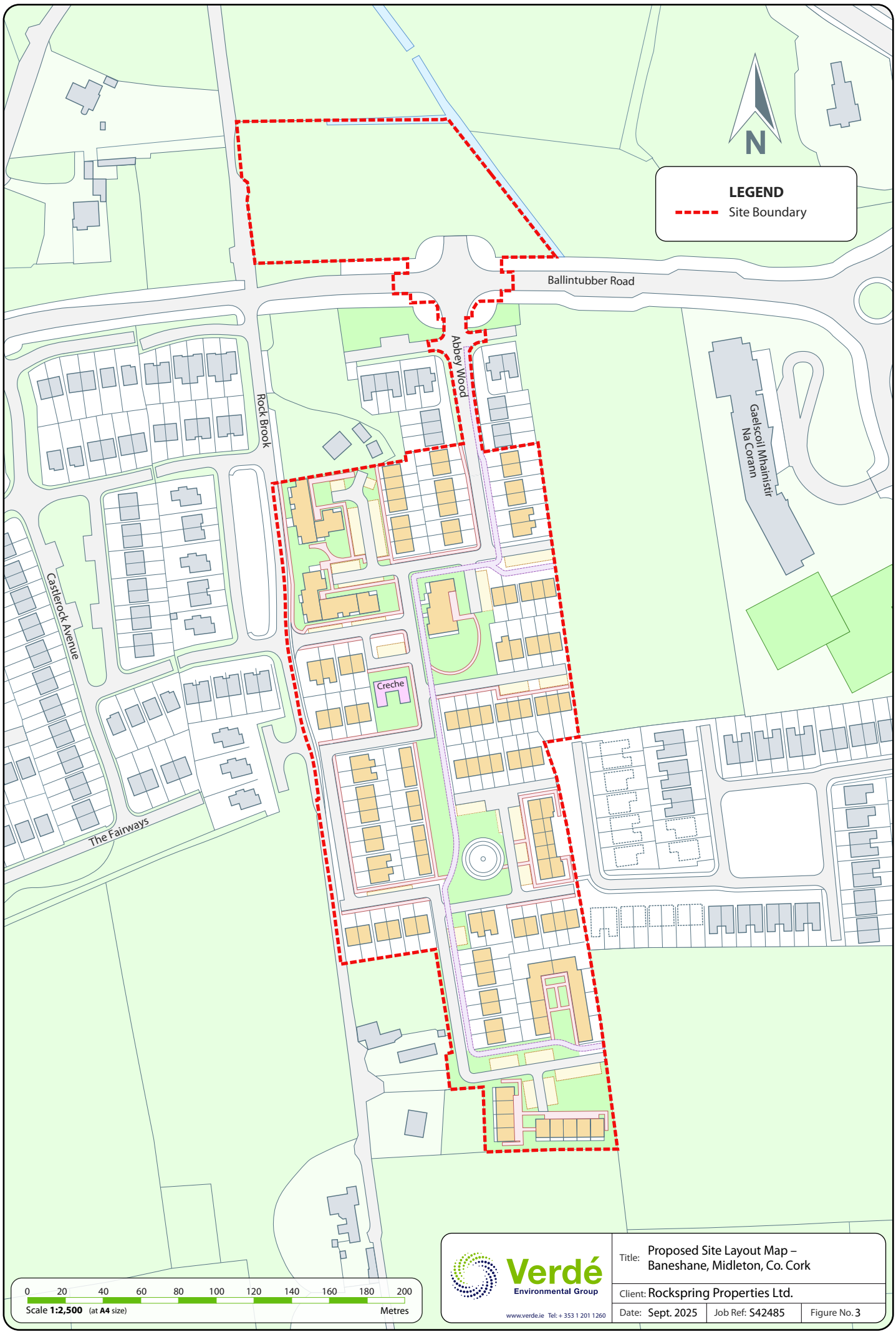

LYSAGHTSTOWN
N
CARRIGANE
BALLYRICHARD MORE
KNOCKGRIFFIN
BROOMFIELD WEST
BROOMFIELD EAST
KILLEAGH
R626
R627
ROXBOROUGH
Disused Railway
PARK NORTH
CAHERMORE
DUN
BALLYADAM
N25
MIDLETON
PARK SOUTH
R907
N25
OATENCAKE
TOWNPARKS
BURGESLAND
BALLYNABOINTRA
Quarry
Site Location
CARRIGSHANE
BALLYVODOCK EAST
Quarry
GARRYDUFF
R629
CASTLEREDMOND
Quarry
BANESHANE
COPPINGER
Ballynacorra
BALLYANNAN
Ballynacorra River
BALLYVODOCK WEST
0 0.2 0.4 0.6 0.8 1 2
Scale 1:25,000 (at A4 size) Kilometres
Verdé Environmental Group
www.verde.ie Tel: + 353 1 201 1260
Title: Site Location Map – Baneshane, Midleton, Co. Cork
Client: Rockspring Properties Ltd.
Date: Sept. 2025
Job Ref: S42485
Figure No. 1

Verdé Environmental Group
www.verde.ie Tel: + 353 1 201 1260

Title: Aerial Site Layout Map – Baneshane, Midleton, Co. Cork

Client: Rockspring Properties Ltd.

Date: Sept. 2025 | Job Ref: S42485 | Figure No. 2



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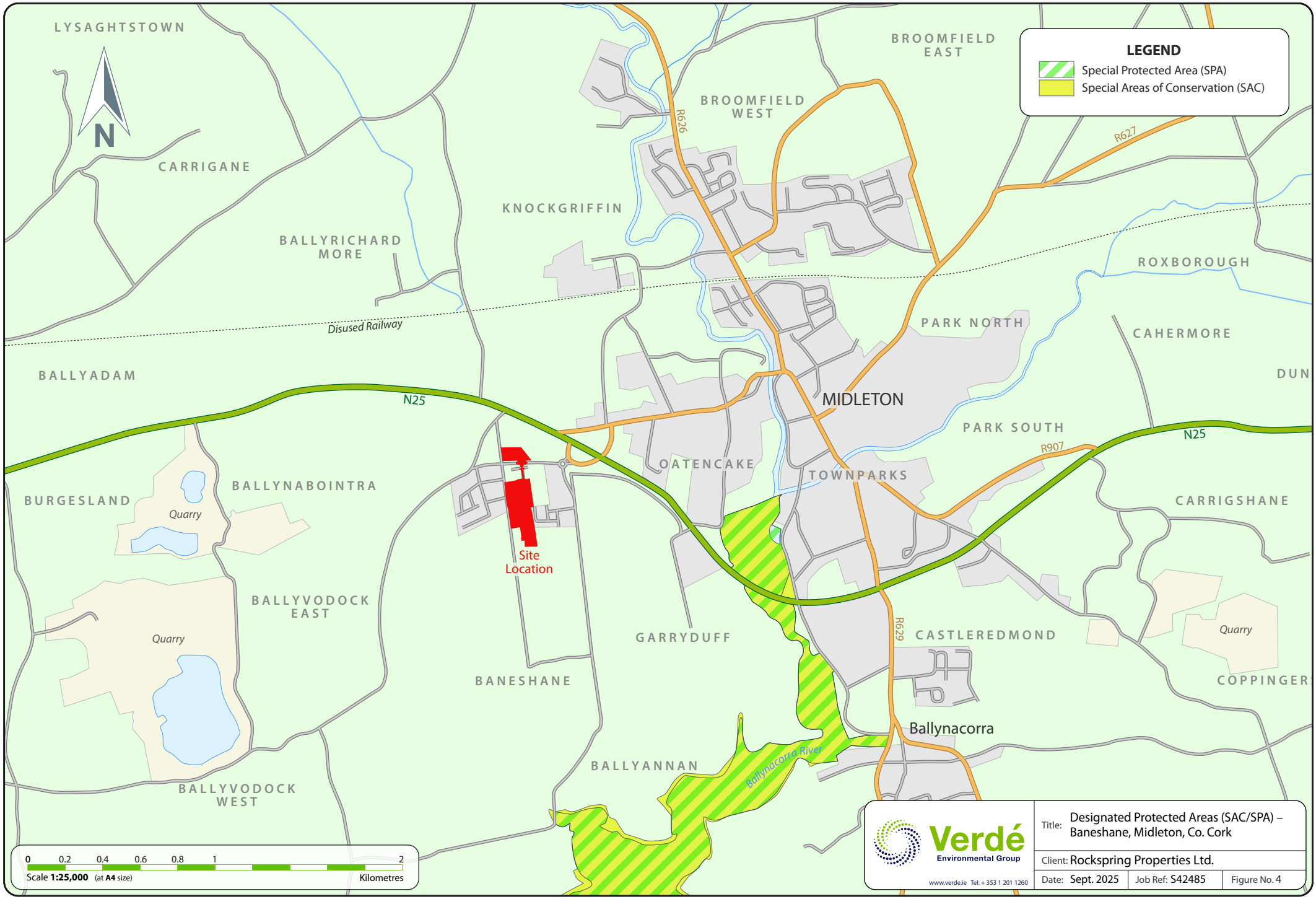
www.verde.ie Tel: + 353 1 201 1260

Title: Proposed Site Layout Map – Baneshane, Midleton, Co. Cork

Client: Rockspring Properties Ltd.

Date: Sept. 2025 | Job Ref: S42485 | Figure No. 3


LEGEND
Special Protected Area (SPA)
Special Areas of Conservation (SAC)
N
LYSAGHTSTOWN
CARRIGANE
BALLYRICHARD MORE
KNOCKGRIFFIN
BROOMFIELD WEST
BROOMFIELD EAST
R626
R627
ROXBOROUGH
Disused Railway
PARK NORTH
CAHERMORE
DUN
BALLYADAM
N25
MIDLETON
PARK SOUTH
R907
OATENCAKE
TOWNPARKS
BURGESLAND
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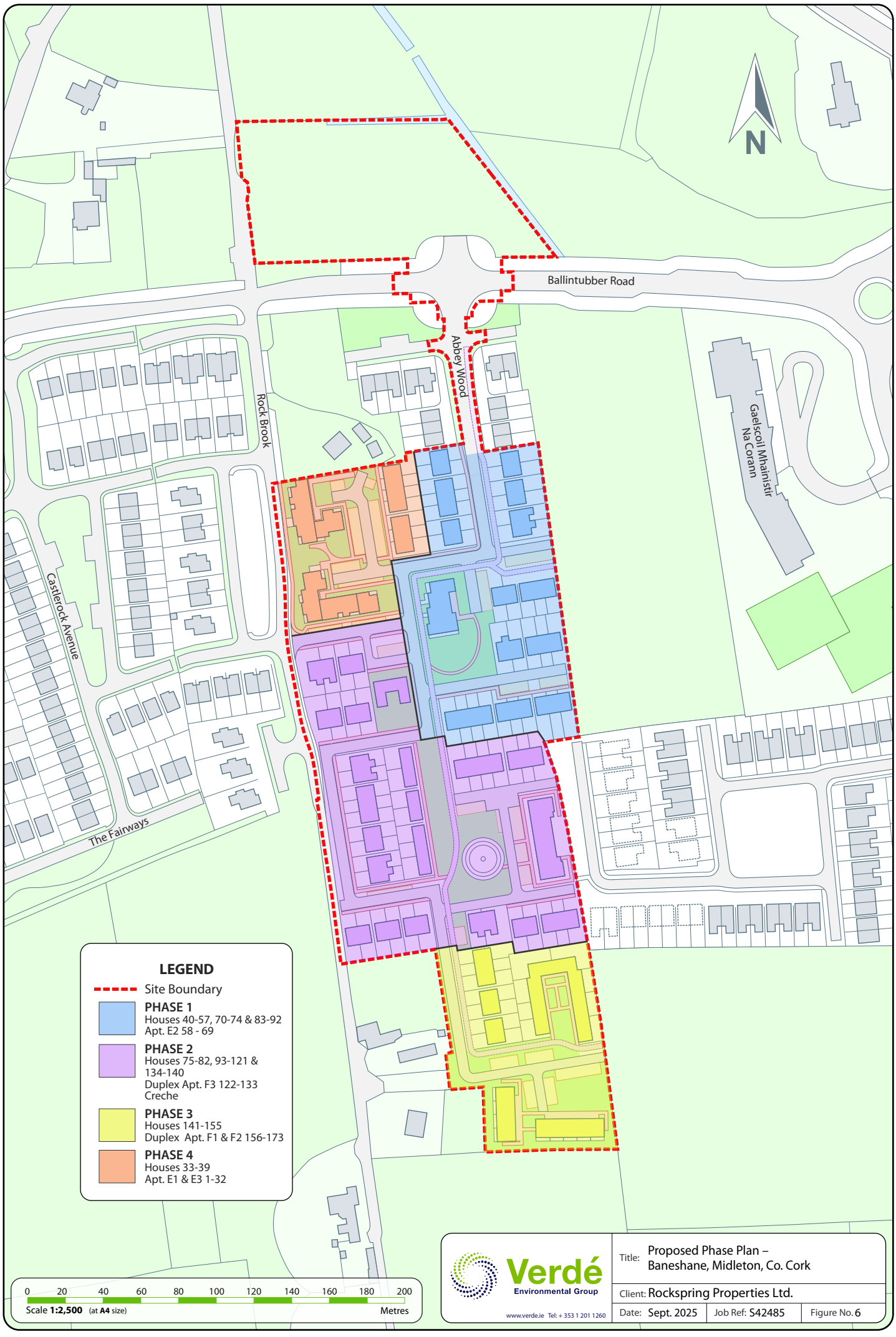
Quarry
Site Location
CARRIGSHANE
BALLYVODOCK EAST
Quarry
GARRYDUFF
R629
CASTLEREDMOND
Quarry
BANESHANE
COPPINGER
Ballynacorra
BALLYANNAN
Ballynacorra River
BALLYVODOCK WEST
0 0.2 0.4 0.6 0.8 1 2
Scale 1:25,000 (at A4 size) Kilometres
Verdé Environmental Group
www.verde.ie Tel: + 353 1 201 1260
Title: Designated Protected Areas (SAC/SPA) – Baneshane, Midleton, Co. Cork
Client: Rockspring Properties Ltd.
Date: Sept. 2025
Job Ref: S42485
Figure No. 4

Verdé Environmental Group
www.verde.ie Tel: + 353 1 201 1260

Title: Site Compound Location – Baneshane, Midleton, Co. Cork

Client: Rockspring Properties Ltd.

Date: Sept. 2025 | Job Ref: S42485 | Figure No.5



Verdé Environmental Group

www.verde.ie Tel: + 353 1 201 1260

Title: Proposed Phase Plan – Baneshane, Midleton, Co. Cork

Client: Rockspring Properties Ltd.

Date: Sept. 2025 | Job Ref: S42485 | Figure No. 6

ATTACHMENT A

FACILITY PERMITS AND LICENCES

ATTACHMENT B

WASTE ACCEPTANCE LETTERS

ATTACHMENT C

WASTE COLLECTION PERMITS

ATTACHMENT D

WASTE DISPATCH LOG

ATTACHMENT E

WASTE TRANSFER DOCKETS