DCON
SAFETY CONSULTANTS

22 August 2022

Report

Construction Environmental Management Plan (rev 0)

Proposed Residential Development (42nr. Units), Stoney Hill Road, Rathcoole, County Dublin

Romeville Developments Limited

securing right **outcomes**

LOCATION	BLOCKS | BUILDINGS	LEVELS	DISP.	REPORT NO. | REV
STONEY HILL ROAD, RATHCOOLE, COUNTY DUBLIN	42NR UNITS	ALL (ABOVE AND BELOW GROUND)	PSDP	CEMP-DCON-RPT-001-00

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Rev	Originator	Approved	Date
0	Diarmuid Condon	Diarmuid Condon	22 August 2022

1 Executive summary

This Construction Environmental Management Plan (CEMP) has been developed summarising commitments that will be implemented during the construction of the proposed 42nr. Unit Stoney Hill Road Residential Project. The CEMP supports the Malone O'Regan June 2022 Environmental Impact Assessment (EIA) and Enviroguide Ecological Impact Assessment Report. This plan provides a description of the proposed works cross referencing EIA and EcIA chapters that seek to alleviate environmental impacts arising from construction works. The CEMP seeks to review the following:

- Direct impacts – those impacts associated directly with the environmental aspect, such as increased dust, noise, or vibration levels;
- Indirect impacts – those impacts associated indirectly with the environmental aspect, such as transport and disposal of waste;
- Normal situations – progress according to plan;
- Abnormal situations – the project programme not progressing as planned because of unforeseen or unpredictable circumstances; and
- Emergency situations – an unplanned or unwanted situation has occurred, such as fire, explosion, or malicious damage.

The CEMP should be viewed as a live document that will be updated as the development progresses and if any circumstances change arising from:

- Compliance requirements agreed with South Dublin County Council;
- Requirements by other state bodies;
- Concerns raised by local neighbours | residents affected by works;
- Traffic Management Plan(s) prepared by the Contractor; and
- Any specific requirements of the Contractor.

The CEMP will be subject to periodic reviews as part of the management of the construction process. This plan should be read in conjunction with the following supporting information submitted with the Planning Application:

- Natura Impact Assessment Screening;
- Ecological Impact Assessment Report;
- Construction Environmental Management Plan;
- Outline Construction and Demolition Waste Management Plan;
- Infrastructure Design Statement;
- Traffic Impact Assessment;
- Travel Plan | Mobility Management Plan;
- Flood Risk Assessment;
- Landscape Design Statement;
- Arboricultural Impact Assessment;
- Environmental Impact Assessment Screening;
- Landscape and Visual Impact Assessment;
- Archaeological Impact Assessment;

- Aviation Impact Assessment; and,
- All other plans and particulars submitted with the planning application.

As the ultimate controlling mind for the works, Romeville Developments Limited ('the Applicant') through their Project Manager (Virtus Project Management) will take the lead in ensuring that there are suitable and sufficient systems and personnel in place that promote environmental control compliance.

1.1 Report basis

In the preparation of the CEMP, DCON Safety Consultants Limited were cognisant of the following:

- The Environment Act 2003, as amended;
- The Litter Pollution Act 1997 (S.I. No. 12 of 1997);
- Eastern-Midlands Region Waste Management Plan 2015 – 2021 (2015);
- Department of Environment and Local Government (DoELG) Waste Management – Changing Our Ways, A Policy Statement (1998);
- Forum for the Construction Industry – Recycling of Construction and Demolition Waste;
- Department of Environment, Communities and Local Government (DoECLG), A Resource Opportunity - Waste Management Policy in Ireland (2012);
- Department of Environment, Heritage and Local Government, Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (2006);
- FÁS and the Construction Industry Federation (CIF), Construction and Demolition Waste Management – a handbook for Contractors and Site Managers (2002);
- Directive 2008 | 98 | EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives;
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended 2010 (S.I.No.30 od 2010) and 2015 (S.I. No. 27 and S.I. No. 413 of 2003);
- DECLG document '*Circular WPR 07 | 06 - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, published by the DECLG, July 2006*' – referenced but noted as being superseded by current EPA Guidance (2021);
- ProPG document 'Planning & Noise – Professional Practical Guidance on Planning & Noise - New Residential Development May 2017';
- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors;
- CIRIA C692: Environmental Good Practice on Site;
- BPGCS005: Oil Storage Guidelines;
- CIRIA C648: Control of Water Pollution from Linear Construction Projects;
- EU Construction and Demolition Waste Management Protocol – BIBM;
- EPA Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects;
- Environmental Protection Agency (epa.ie);

- IEMA Impact Assessment Guidance, *'A New Perspective on Land and Soil in Environmental Impact Assessment' (Feb 2022)'*; and
- Machinery Directive 2006 | 42 | EC Edition 2.2 – October 2019 (Update of 2nd Edition). All contractors appointed on the project will be required to adhere to this Directive.

The EIA alleviation measures, and environmental monitoring measures are based on the application of best practice guidance and where relevant regulatory compliance limits. Plans created by the Contractor pre-construction will be required to follow the requirements of the EIA.

1.2 Waiver

DCON Safety Consultants Limited are not responsible for any errors or omissions, or for the results obtained from the use of this information by others | contractors

2 Project description

2.1 Works introduction (refer also to Appendix A for site redline drawing)

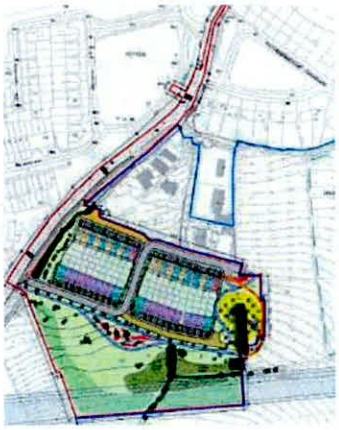
- The proposed development comprises of the demolition of 1 no. residential property and 1 no. ancillary outbuilding and will consist of the construction of a residential development of 42 no. 3 bedroom dwellings in a mix of terraced and semi-detached units. The proposed dwellings will comprise of 2 no. typologies (Typology F and Typology L). Typology F will comprise of 21 no. dwellings and Typology L will comprise of 21 no. dwellings. Typology L are two storey and typology F are two storeys, plus second floor loft accommodation with front dormer windows. The total proposed residential development gross floorspace is circa: 5,622 sq.m; and
- The proposed development also includes 84 no. in curtilage surface car parking spaces, circa 3,281 sq.m public open spaces in an eastern park and a western park, (including proposed play equipment), an additional large parkland to the south of the site of circa 11,797 sq.m comprising the first phase of a linear park, private domestic gardens, a new vehicular, pedestrian and cycle entrance from Stoney Hill Road, an internal road network, including footpaths | cycleways, 3 no. refuse | bin stores, public lighting, landscaping, boundary treatments, drainage and engineering works and all other associated and ancillary development | works.

2.2 Phasing

Works will be delivered under a single construction phase.

2.3 Site location and context

- The site is located within the townland of Rathcoole, Co. Dublin, ca. 500m south of the main street and ca. 15km from Dublin City Centre. A portion of the Site is currently being used as a builder's yard. There is one (1nr.) residential dwelling and one (1nr.) outhouse on the site which are proposed to be demolished. The remainder of the site was formerly agricultural use and contains some inert materials including topsoil, subsoil and stone which are being temporarily stored on the site. These materials originated during the construction works on the adjacent site. These materials will be removed offsite as part of the construction works for the overall development subject to obtaining planning consent;
- The Stoney Hill Road boundary consists of a mixture of hedgerow, earthen embankment and trees. To the north, the



boundary crosses 2nr. properties, one field and an existing domestic dwelling which is proposed to be demolished as part of the proposed works. There is no notable existing natural vegetation running along this boundary. To the eastern boundary there exists a treeline which compromises a mixture of vegetation which runs north to south. Along the southern boundary of the site, water mains traverse the site east to west. There is also a continuation of the treeline along the east boundary that branches to the southwest and east;

- The gradient of the site slopes upwards from north to south with the average slope being gentle;
- The proposed site does not have many mature trees located centrally within. There is a significant hedgerow, running north to south; and
- The site is within the Liffey and Dublin Bay catchment and Liffey_SC_090 sub catchment. The closest watercourse to the Site is the Crockshane Stream approximately 240.00m to the southeast, which flows into the River Camac almost 900.00m northeast of the site. The River Camac flows into the River Liffey, and ultimately into Dublin Bay. The surface water drainage network surrounding the site drains to the River Griffeen, 1.70km northwest of the site. The River Griffeen also enters the River Liffey and flows into Dublin Bay. The level of vulnerability of the site to groundwater contamination via human activities is predominantly High, with an area of Extreme within the east of the site. The main soil is classified as Drumkeeran, with an area of Urban in the northwest and the predominant subsoil is Sandstone and shale till, with a small area of made ground (Made) within the northwest of the site (EPA, 2022).

3 Construction activities

3.1 Site preparation works

Site preparation works will include the '*site establishment*' set up by the Contractor which will include the following:

- Engage with local area stakeholders;
- Setting up of access control to the work areas;
- Secure compound for the storage of all on-site machinery and materials;
- Supplementary temporary hoarding | fencing; and
- Erection of signage.

Prior to commencement of construction, the Contractor will consult records and drawings to establish the location of existing buried services | utilities i.e., electricity, gas, water, foul, drainage etc. Where it is necessary to disconnect services | utilities during the construction works for a notable period, appropriate temporary alternative provisions will be provided.

3.1.1 Site access

The site will be accessed and exited via the Stoney Hill Road. Construction traffic will be generated for the duration of works on site, with levels of vehicles movements varying throughout the construction project depending on activities on-going. Circa 2025- nr. carparking spaces can be made available in areas of the site.

3.1.2 Construction access principles (generally)

- Protection neighbours and members of the public from site activities;
- Public roadways are kept clear always;

- Construction traffic will be limited to certain routes and times of day, with the aim of keeping disruption to existing traffic and local residents to a minimum. To minimise disruption to the local areas, construction traffic volumes will be managed through the following measures:
  - during peak morning and evening hours, ancillary, maintenance, and other site vehicular movements will be discouraged;
  - daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues;
  - access to neighbouring properties will be maintained through all stages of construction;
  - appropriate numbered site staff parking will be provided. In parallel with this, parking restrictions and management measures will be reviewed and implemented as necessary in agreement with the local residents and SDCC to avoid any site parking overspill issues.
- Delivery of materials shall under supervision to avoid contact with persons. Deliveries shall be programmed to avoid high trafficked times minimising congestion and conflict with other deliveries;
- The site construction access strategy will prioritise the:
  - increase the efficiency of construction works; and
  - decrease the disruption of the local transport system from construction works traffic.

3.1.3 Logistics | construction site access strategy

The Contractor's construction compound will be included within the site. It is anticipated that the majority of construction vehicles accessing the sites will come from the M50. Traffic would access the site via Stoney Hill Road. Vehicle movements will be managed by the Contractor's site management on the ground. Following the completion of the demolition and excavation works, the level of HGV traffic will significantly reduce. The remaining concentration of truck movements will occur during the pouring of concrete foundations, delivery of materials etc. and is estimated at an average of 15-20 HGV movements per day.

3.1.4 Abnormal load deliveries

Public safety, driver health & welfare, and delivering on good risk management practices are the cornerstones of transport safety. All identified abnormal loads require public agency engagement e.g. An Garda Síochána, SDCC Roads etc. The safety of other road users is paramount.

3.1.4.1 Movement of abnormal loads

- Road traffic (Permits for Specialised Vehicles) Regulations 2009, S.I. No. 147 of 2009, and Road Traffic (Specialised Vehicle Permits) (Amendment) Regulations 2010, S.I. 461 of 2010, introduce a streamline permit system and list of Designated Routes to be administered by An Garda Síochána for the movement of loads not exceeding 27.40m in length and 4.30m in width on the major inter-urban routes;
- Vehicles and loads exceeding the 4.65m national height limit are not covered under this scheme and require a Local Authority Permit instead;
- Abnormal loads will adhere to the maximum weight limits set down by Road Traffic (Construction and Use of Vehicles) Regulations 2003, S.I. 5 of 2003 and the maximum height limit set down in Road Traffic (Construction and Use of Vehicles) (Amendment) Regulations 2008, S.I.366 of 2008; and

- A *"Permit for Specialised Vehicles"* form when signed by the Garda Síochána grants permission to move abnormal loads as defined under the above Regulations, on inter-urban routes specified in the Schedule of Designated Roads.

Any deviations from the Schedule of Designated Roads in above Regulations require independent authorisation from SDCC and | or the Minister for Transport.

3.1.5 Traffic management coordinator

The Contractor is required to appoint a competent Traffic Management Coordinator (TMC) who will be responsible for the coordination of the Stoney Hill Road site access and all other temporary traffic safety and management matters for the construction stage. The TMC is required to ensure that all traffic management requirements set out in their Traffic Management Plan are adhered to. The site-specific traffic management plan will at a minimum include:

- No temporary | drop off parking on approach access public routes. No unloading or blockages of access routes. Such vehicles will be immediately directed to move;
- The Contractor must seek to eliminate where possible the necessity for reversing of any construction or supply chain vehicle onsite.

3.1.6 Alternative arrangements for pedestrians | vehicles in case of any roadway closure

Aware of the complexity of logistical challenges faced by such work, the Contractor and the Applicant want to prevent traffic congestion due to construction works and negative impacts on the local residential neighbourhood environment in the surroundings of the construction area. It will be a condition of works that the Contractor:

- Maintain access to all local roadways, footways and properties is secured. It is not envisaged with the exception of hoarding construction works (where working space is required to erect hoarding safely) that demolition works will impact on the use of roadways; and
- Should a need arise to provide temporary pedestrian | vehicle access outside the hoarding line, a detailed temporary Traffic Management Plan will be developed in compliance with the requirements of the Department of Transport Chapter 8 Temporary Traffic Measures and Signs for Roadworks manual. This plan will be required to be approved by SDCC prior to implementation with appropriate forward notice shared with all Dublin 8 stakeholders.

All necessary controls will be agreed with SDCC Traffic Section pre commencement of project works.

3.1.7 Construction compound (new build works)

The site compound will include as a minimum offices, accommodation, and welfare facilities. Compounds will be serviced with electrical power, water supply and toilet facilities. Haul routes and storage | staging areas will be established to each block site area.

Storage | staging areas will vary, depending on block spatial allocation and their exact locations will be decided taking ecology, proximity to local rivers, canals, and archaeology into consideration. Fuel storage areas will not be located within 50.00m of any watercourse. Suitably robust hoarding will be erected around the perimeter of each storage | staging area; hoarding will typically be standard plywood to a height of 2.40m.

3.1.8 Overflow carparking

Overflow contractor car parking can be made available in areas of the client landholding, if it is required by the Contractor based on the estimation of required contractor car parking in their CMP.

Signage will be erected at all site access points, across the entire site as well as on strategic location to inform all staff and visitors on-site of the required Personal Protection Equipment (PPE) and associated risks when entering the construction site. The signage will assist first time visitors, operatives, or delivery drivers on where they are, where they are going, where they cannot go and where other items are located. Well drawn site plans must be used to convey the order on site to all visitors.

The site will be maintained secure and unauthorised access will be strictly prohibited. Where practicable, the original site boundary wall will be retained. Additional perimeter hoarding will be erected, where required, to restrict unauthorised access to the demolition | construction area (refer also to Redline Boundary Drawing in Appendix A). Controlled access points to the site, in the form of gates or turnstiles, will be maintained locked when unattended.

3.2 Deconstruction works (refer to the Aecom prepared Outline C&DWMP)

3.2.1 Demolition activities

The first construction activity on the development will be a series of enabling works. Enabling works accounts for any deemed necessary tree | root protection, demolition of 2nr. structures on the site, to make way for development of the site:

3.2.2 Onsite crushing

Any onsite crushing of necessitates a mobile waste facility permit will first be obtained from SDCC, and the destination of the accepting waste facility will be supplied to the SDCC waste unit. The Contractor will adhere to the following crushing permit application process:

- The Waste Haulage Contractor will email SDCC requesting that the proposed site is added to their crushing permit; and
- Once satisfied with provided Waste Haulage Contractor information, SDCC will issue an appendix to the permit listing the proposed site name.

3.2.3 Invasive plant species survey completion

While there appears to be no evidence of invasive species on site, this may change between the lodgement of the application and the commencement on site, a pre-construction survey will be undertaken to confirm the status of invasive species prior to commencement of works. If at that stage there is evidence of invasive species on site, an Invasive Species Management Plan will be put in place. Imported soils, primarily in the form of topsoil for soft landscape areas, shall be from a defined raw material source (horticultural supplier).

3.2.4 Pre-demolition | Refurbishment Asbestos Survey (RDAS)

A Pre-Refurbishment & Demolition Survey will be carried out in all accessible areas of the properties proposed to be demolished for materials suspected of containing asbestos. The report will identify confirmed and strongly presumed asbestos materials. Identified contaminated material will be taken to a suitably licensed or permitted facility before being exported abroad and disposed of through landfill. The transfrontier shipment of asbestos waste is subject to control procedures under EU and national legislation. All transfrontier shipments of waste originating in any local authority area must be notified to and through SDCC at the National TFS Office. All asbestos removal works will be carried out by a competent contractor in accordance with Asbestos at Work Regulations 2006-2010 (amended) and associated Approved Codes of Practice.

3.2.4.1 Legislation and Codes of Practice

- The Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010 (amended) (S.I. No. 386 of 2006), apply to work where there are confirmed and | or presumed asbestos containing materials present. These regulations apply in particular to any person and | or employer working with or removing asbestos; and
- The Safety, Health and Welfare at Work (Construction) Regulations, 2013 (S.I. No. 291 of 2013 - 2021) applies to any building, installation, repair, demolition and asbestos removal work.

3.2.5 Demolition waste quantities

Demolition works at the site will involve the removal of the existing buildings on site, bituminous and concrete surfaces, and bulk excavation for general site strip and foundation excavations. Demolition figures published by the EPA in the *'National Waste Reports'*[14] and data from previous projects have been used to estimate the approximate break down of demolition waste by type and estimates have also been made for indicative reuse (onsite and | or offsite), recycling and disposal targets.

3.3 New build construction

The Draft Construction Management Plan (CMP) provides a detailed description of the works. The implementation of and compliance with this CEMP will be monitored by the Applicant.

3.4 Excavation works

3.4.1 Ground conditions

A geotechnical site investigation will be carried to determine the typical sequence of stratigraphy consistent across the site e.g.,

- Surfacing | topsoil;
- Fill;
- Made Ground;
- Cohesive Deposits; and
- Bedrock

An environmental investigation will be carried out including Waste Acceptance Classification testing. Material meeting each the following criteria could be encountered:

- Meets Inert WAC Limit;
- Hazardous Limit;
- Meets Non-Hazardous Limit; and
- Meets Inert Landfill Level

The Environmental Risk Assessment and Waste Classification Report will include Dig Plans identifying the zones attributable to each of the above classifications to a depth of 3.00m.

3.4.2 Excavations

Earthworks will consist of site strip, levelling to suit the new buildings, foundations, and trenches for services. The ground floor levels of the building structures are intentionally located close to the existing ground surface level to minimise excavations. Based on the ground conditions encountered, it is envisaged that toothed buckets on standard large excavation plant will be used up to depths of approximately 3.00m below existing ground level(s). Deeper excavations may require mechanical extraction by other means such as

breaking or drilling. It is estimated that approximately 15,000-20,000m^3 will be excavated. Based on the proposed design of the development, it is envisaged that the excavated material generally will be disposed of off-site at a licenced facility as there are limited opportunities for re-use. It is predicted that the volume of material to be disposed of (on a mean average of 18,000m^3) will equate to circa 500 nr. tuck loads, based on a 4-axle truck with an 18-tonne capacity (36m^3). There will be little or no stockpiling of excavated soils. In the event that short term (24 – 48 hour) storage is required, the material will be retained in the designated stockpile storage area. All excavated soils being disposed of will be recorded using a material dispatch log detailing the date of transport, vehicle registration, quantity, type of material and the destination.

3.4.3 Backfill | imported soils

Any suitable excavated material will be temporarily stockpiled for reuse as fill, where possible. Reuse on site is expected to be limited to suitable topsoil material in soft landscaped areas and most of the excavated soil, is expected to be removed off site for appropriate reuse, recovery and | or disposal.

3.4.3.1 Imported soils

Topsoil from the site area will be stockpiled for re-use. Further topsoil, as may be required, will only be imported to site in the park and for the playing pitch. Typically, these materials would come in from a defined raw material source (landscape gardening or horticultural supplier) and would primarily be topsoil.

3.5 Historic contamination onsite

In the event of any evidence of soil contamination being found during either the excavation or the construction works, appropriate remediation measures will be employed. Any contaminated soil will be delineated, removed, and stored on impervious quarantine areas pending testing to confirm appropriate removal and disposal to permitted | licensed waste facilities. Records of disposal will be retained on site for inspection by SDCC.

3.6 Construction of services

3.6.1 Electrical connections

It is anticipated that power will also be required for temporary lighting and temporary signals during the works. If a connection to the existing network is not available a generator will be used on site.

3.6.2 Surface water | drainage system

There is an existing surface water drainage system running in a northerly direction along Stoney Hill Road. It is proposed to add a drainage network running east to west of the proposed development and discharge into the existing surface water sewer by gravity via a single point of connection to the sewer.

Temporary construction surface drainage and sediment control measures, including the use of SUDS, will be provided before earthworks commence. The drainage design follows the natural topography of the site and utilises the existing storm water infrastructure within the surrounding infrastructure where possible.

3.7 Construction duration (estimated)

14-month construction period

3.7.1 Enabling works

3.7.1.1 Preparatory and site set up works (site wide)

- Site cabin delivery and placement;

- Completion of all outstanding required surveys;
- Contractor temporary service installations etc.;
- Construction of appropriate hoarding to neighbouring properties;
- Installation of CCTV coverage or other agreed security means;
- Set up of required noise | dust | vibration monitoring stations | receptors in predetermined areas closest to sensitive locations as defined by the grant of planning;
- Review environmental controls defined within the EIA;
- Review of pest control needs i.e., pigeons | rats (specialist contractor);
- New builder's supply main board to be installed in an appropriate determined location agreed between the M&E designer, contractor, and temporary works electrician;
- New main board will also feed the following:
  - site security load | requirements; and
  - all storage area requirements.
- Site-wide contractor supply and distribution will be agreed with the ESB.

3.7.1.2 Hard demolition (2nr. structures)

Hard demolition of all structures. Works include the safe removal of all building structural members, external façades, and roof finishes. The Contractor shall:

- Remove all debris and rubbish from the site area to licensed tips;
- Disposal or re-use of demolition materials will be carried out in accordance with the Development Construction and Demolition Waste Management Plan as prepared by AWN Consulting. Records shall be forwarded to the Applicant project manager for information on the quantities disposed;
- Ensure, following the demolition of the buildings (or part thereof), the site shall be left in a tidy and safe condition in agreement with the Applicant project manager;
- Ensure measures shall be taken to ensure that the existing services in the vicinity of each structure are not affected by the demolition works; and
- Seal by means of grouting all drainage within the curtilage of the site not to be removed during demolition of the buildings. Sealing shall only be up to the last manhole within the site.

3.7.1.3 Asbestos removal (where found present)

- Licenced asbestos containing material removal in adherence with agreed works phasing plan;
- Non-licenced asbestos containing material removal in adherence with agreed works phasing plan; and
- Reoccupation certification will be provided for all areas prior to soft strip works being undertaken.

3.7.1.4 Soft strip works (subject to safe isolation of electrical, gas and water services within each building | structure)

- Soft strip areas deemed to be safe and not contaminated within each structure – works included removal of all non-load bearing internal structures, finished and FF&E; and

- Soft strip of contaminated areas posts Lead | ACM deep clean and clearance certification receipt of all non-load bearing internal structures, finishes and FF&E:
- carefully cut interface of demolition works and existing retained structure; and
- primary elements of building structures not to be disturbed during soft strip works.

3.8 Materials – source and transportation

The selection and specification of construction materials will be informed by the local availability of these materials. Within the necessary constraints of performance, durability and cost, construction materials will be sourced from local suppliers and manufacturers, where possible.

3.9 Health and safety

The Development Construction Management Plan is the overall development governance and control document that will act as the boilerplate template for all site-specific health & safety documentation complying with the relevant planning condition and other documentation required under the Safety, Health and Welfare at Work (Construction) Regulations, 2013 – 2021. The Preliminary Safety & Health and Construction Stage Health & Safety Plan will be reviewed as the development progresses. The contents of the Health and Safety Plan will comply with the requirements of the Regulations. Safety on site will be of paramount importance. During the selection of the relevant contractor and the respective subcontractors their safety records will be investigated. Only contractors with the highest safety standards will be selected.

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 6-point personal protective equipment prior to going on to the site and will undergo a safety briefing by a member of the site safety team. Regular site safety audits will be carried out throughout the construction programme to ensure that the rules and regulations established for the site are complied with at all times. At any time that a potentially unsafe practice is observed, the site safety manager will have the right as well as the responsibility to halt the work in question, until a safe system of working is again put in place.

3.10 Employment and accommodation

Office accommodation and other construction facilities will be located on site for the construction phase. All units will be of a high standard in accordance with statutory regulations as a minimum and the current Government Covid 19 Transitional Procedures. The co-ordination of people and materials on site will be one of the key activities throughout the construction phase of each property type. The Draft CMP will designate, timings, and parking arrangements. It is envisaged that typical working hours during the construction phase will be as follows:

3.10.1.1 Working Hours

- The Applicant will establish a Client Liaison Officer (CLO) so that particular issues | complaints may be quickly identified and responded to. CLO details will be shared with residents;
- Working hours are determined and conditioned by the Grant of Permission - envisaged working hours is 07:00 – 18:00 Monday to Friday and 08:00 – 14:00 on Saturday.

- It is recognised that there may be circumstances where the restriction on hours of work cannot be adhered to e.g., concrete pours, power floating works, works on or adjoining the Luas line outside Luas operating hours etc. In these circumstances the Contractor will be required to provide written agreement with SDCC before any works start outside normal hours;
- Where out of hours works are noise sensitive, such exceptional events will only be permitted to be undertaken when all other alternatives have been considered and exhausted. Any night-time operations in particular will comply with good alleviation practices as specified by British Standards or similar;
- All such works above will be preceded by written approval from the Planning Authority, showing evidence of consultative communications with local residents and businesses. The Contractor in these circumstances must ensure that appropriate notice (10 working days) is given to the CLO to update SDCC and local residents;
- Deliveries will be sequenced 'just in time' to ensure that their arrival and departures time are outside high traffic interface periods. Delivery vehicles are to enter and exit the site through an agreed travel plan detailed within the CMP. The Contractor is responsible to ensure compliance with this;
- Deliveries are not permitted to hold | temporary wait on any approach public roadway unless previously agreed with SDCC Roads and Traffic Department;
- Operatives may access their site prior to 7:00 but are not permitted to operate construction machinery before 07:00; and
- No significant work will commence before 07:00 with no vehicles queuing on public roadways unless otherwise agreed with SDCC Roads. Vehicle engines will be required to be turned off while onsite before 07:00.

4 Construction phase environmental impacts and alleviation measures (refer also to Sections 7.1.3 to 7.1.7 within the Ecological Impact Assessment Report)

4.1 Introduction

The development will generate emissions during the construction phase these include emissions to air (dust, noise, and vibration), construction traffic, surface water run-off or infiltration to groundwater. In addition, leaks or spills from fuel storage areas and construction plant and equipment will have the potential to impact on soil, surface water and groundwater quality. The CEMP includes emission limits for the various environmental media that require monitoring. The emission limits presented below have been established having regard for the limits outlined in the ERA and best practice guidance for the respective media. They include for Trigger and Action Limits the details of which are discussed further in the relevant subsections below.

The Applicant will establish a Community Liaison Officer (CLO) so that particular issues or complaints in relation to construction related impacts including environmental issues may be quickly identified and addressed. Issues in relation to environmental nuisance will be addressed by an Environmental Monitoring Officer who will brief the CLO who will then update the key stakeholders on the actions being taken to alleviate environmental complaints and or breeches of environmental monitoring limits.

4.2 Environmental Monitoring Officer

As will be expected to be required, An Environmental Monitoring Officer (EMO) will be appointed by the Applicant. The EMO will review the Contractor's CEMP to ensure that it meets the requirements of this Plan. The EMO will also review monitoring reports to be prepared by

the Contractor based on the requirements specified in CEMP to ensure that the construction does not impact on the environment and surrounding residential occupants and the general public.

The role of the EMO will be discussed with the Environment Section of SDCC. The EMO will act as liaison between the Contractor, SDCC and the Community Liaison Office and will be the single point of contact to ensure compliance with the implementation of the contractor's CEMP and compliance with emission limits for environmental media where these are specified. The EMO will review monitoring reports prepared by the Contractor and provide summary of reports assessing compliance with the limits for surface water quality, noise, vibration, and dust specified in the CEMP. The EMO will also report on any incidents such as spills or leaks and how such incidents were dealt with to alleviate environmental impacts. These summary reports will be made available for review by SDCC and interested parties. In the event of an exceedance of Trigger Limit the Contractor will be obligated to implement the following measures:

- Repeat measurement to confirm findings;
- Identify source(s) of impact;
- Inform EMO;
- Check monitoring data, all plant, equipment, and relevant Contractor's working methods; and
- Discuss alleviation measures with EMO;

The Contractor will be required to prepare a Construction Stage Environmental Management Plan (EMP) having regard for this CEMP. Following a review and approval of the Contractors EMP the CEMP will be updated accordingly to reflect the precise details of the various measures to alleviate environmental risk as outlined in the EIA.

4.3 Noise

An environmental noise study will be conducted at the site in order to quantify the existing noise environment. The survey will be conducted in general accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

Noise measurement locations will be selected to represent the noise environment at noise sensitive location surrounding the proposed development. The locations were chosen to capture how noise levels in the area around the site vary from the relative noise levels along approach roads. Two unattended locations will be chosen to capture how the noise levels vary from day to night and to inform the inward noise impact assessment, and one unattended location was chosen to measure daytime noise levels and observe the different contributors to noise in the existing environment.

4.3.1 Construction noise

The construction phase will involve site clearance, excavation and the construction of buildings and structures associated with the proposed development. Structures planned to be demolished will necessitate a variety of items of mobile plant to be used, such as excavators, lifting equipment, dumper trucks, compressors, generators etc. There will be vehicular movements to and from the site that will make use of the existing roads and site access points.

A number of measures will be employed by the Contractor to minimise the potential noise and vibration disturbance in the surrounding area. The Contractor will ensure compliance with the construction noise and vibration limits recommended in the Transport Infrastructure Ireland (TII) document *'Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes'* 2014. BS 5228 (2009+A1:2014) and the *Code of Practice for noise and vibration control on construction and open sites – Noise and vibration*.

4.4 Vibration

The main potential source of vibration during the construction programme is associated with demolition and ground-breaking activities. In terms of any piling, low vibration methods involving bored or augured piles will be used where possible in order to minimise vibration levels from this activity. Reference to BS 5228 (2009 +A1 2014) – Part 2: Vibration, includes measured vibration levels during rotary bored piling for different ground conditions and varying pile diameter. The data indicates that at distances of 10m, measured PPV values are typically below 1mm | s with individual events during driving casing or auger hitting rock at or below 3mm | s. Considering the low vibration levels at close distances to the piling rigs, vibration levels are not expected to pose any significance in terms of cosmetic or structural damage to buildings in proximity to the development works. In addition, the range of vibration levels is typically below a level which would cause any disturbance to occupants of adjacent buildings.

During certain demolition activities, there is also potential for vibration to be generated through the ground. It is possible that vibration levels will be detectable within adjacent buildings for short periods of time, depending on the level of breaking activity used. Notwithstanding the above, any construction activities undertaken on the site will be required to operate below the recommended vibration criteria set out in current guidance.

4.5 Dust

Dust emissions are likely to arise from the following activities during the construction works:

- Site earthworks;
- Wind blow from temporary stockpiles;
- Handling of construction materials;
- Landscaping;
- Construction traffic movements.
- Spraying of exposed earthwork activities and site haul roads during dry weather using mobile bowser units;
- Provision of wheel wash for all other construction site activities;
- Control of vehicle speeds and speed restrictions; and
- Sweeping of hard surface roads.

The following measures will be implemented where construction works occur in proximity to sensitive receptors:

- Provision of hoarding of 2.40m high at a minimum;
- Covering of stockpiles and locating stockpiles away from sensitive receptors;
- Locating plant away from sensitive receptors.

The following avoidance, remedial or reductive measures will be implemented as part of the dust minimisation plan:

- Vehicle speed limits will be enforced at the construction site. Site traffic is restricted to 10 km | hr. This will help to minimise the occurrence of dust re-suspension;
- Vehicles delivering or removing materials on site will be loaded carefully to reduce the risk of spillage from the vehicles onto nearby roads;

- Exhaust emissions from vehicles operating within the site, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the Contractor through regular servicing of machinery;
- Surrounding public roads used by trucks to access to and egress from the site will be inspected regularly and cleaned, using an approved mechanical road sweeper, when required. Roads will be cleaned subject to local authority requirements. Site roads will be cleaned on a daily basis, or more regularly, as required;
- During very dry periods when dust generation is or during windy periods, construction areas and vehicles delivering material with dust forming potential will also be sprayed with water, as appropriate. Wheel wash facilities will be provided for all other construction activities for use by all vehicles exiting the site prior to them entering onto the surrounding public roads. These facilities will contain rumble grids to remove excess mud and other waste from wheels, ensuring that these potential dust producing materials are not released onto surrounding public roads. The wheel wash facilities will be self-contained, ensuring that wastewater discharges to nearby water bodies are not necessary. The facilities will be located away from sensitive receptors, where possible;
- Areas where materials will be handled and stockpiled will be positioned away from main site access roads. These areas will also be designed to minimise their exposure to wind – all stockpiles shall be kept to the minimum practicable height with gentle slopes;
- There shall be no long-term stockpiling on site and storage time will be minimised;
- Material drop heights from plant to plant or from plant to stockpile will be minimised;
- Daily inspections will be undertaken to monitor tidiness;
- A regular program of site tidying will be established to ensure a safe and orderly site;
- If necessary, scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;
- Food waste will be strictly controlled on all parts of the site;
- Loaded lorries, delivery vehicles and all trucks for the movement of materials on and off site will be covered. Skips will also be covered. The Contractor will ensure that delivery agents are compliant in this regard;
- Surrounding roads used by trucks to access to and egress from the site will be inspected regularly and cleaned, using an approved mechanical road sweeper, when required. Roads will be cleaned subject to local authority requirements. Site roads will be cleaned on a daily basis, or more regularly, as required;
- Road edges and footpaths will be cleaned using a hand broom with controlled damping; and
- In the event of any fugitive solid waste escaping the site, it will be collected immediately and removed to storage on site, and subsequently disposed of in the normal manner.

The degree of implementation for some of the above alleviation measures (water spraying etc.) will be determined by rainfall levels on site. The use of excessive levels of water to suppress dust will be minimised when not required. This will help limit potential drainage related impacts on site.

4.5.1 Dust monitoring

Dust deposition monitoring will be carried out at the nearest sensitive receptors to the proposed development for the duration of the construction works to ensure the effectiveness of the measures outlined above.

Bergerhoff Dust Deposit Gauges will be positioned at each sensitive receptor. Results will be compared with TA Luft guidelines. The precise location of the dust gauges were set by a qualified air quality expert to ensure that dust gauge locations are positioned in order to best determine potential dust deposition in the vicinity of site boundaries and existing buildings.

Dust monitoring will be completed monthly with the results reported to the EMO. Quarterly Monitoring reports detailing all measurement results shall be prepared and submitted to the EMO for review. Reports will be maintained on site for inspection if | when required by SDCC.

Where exceedance of dust emission limits occurs on a monthly basis or where complaints are received an assessment will be undertaken to identify the source(s). This will include an assessment of the construction works taking place, potential off-site sources, and meteorological conditions. Should the construction works taking place be identified as the primary cause of the exceedance, the Contractor will ensure that the alleviation measures listed above are improved upon. Should exceedances of the guideline limit value continue to occur following these improvements, the Contractor will provide alternative alleviation measures and | or will modify the construction works taking place.

4.6 Carbon emissions

The following alleviation measures will be implemented to minimise CO_2 emissions:

- Materials required for the construction works will be sourced locally where possible;
- A detailed Construction Traffic Management Plan will be implemented in full. This plan will seek to minimise congestion and encourage car sharing and the use of public transport by site personnel;
- 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;
- The regular maintenance of plant and equipment will be carried out;
- The Contractor will be required to implement an Energy Management System for the duration of the works. This will include the following at a minimum:
  - Use of thermostatic controls on all heating systems in site buildings;
  - The use of insulated temporary building structures;
  - The use of low energy equipment and power saving functions on all computer systems;
  - The use of low flow taps fittings and showers; and
  - The use of solar | thermal power to heat water for the on-site welfare facilities including sinks and showers.

4.7 Land, soils, and groundwater

The employment of the following good construction management practices will minimise the risk of pollution of soil and groundwater:

- The Contractor will not undertake any works within sensitive catchment areas or protection zones. These areas will be clearly fenced off to avoid encroachment by construction plant and equipment;
- Excavation and the stripping of topsoil or the placement of soil stockpiles etc. will not be undertaken until absolutely necessary as this can lead to sediment run off and leaching of nutrients from soils into nearby waterways. Excavated material shall undergo earthworks testing in accordance with the TII Specification for Road Works (SRW) to establish its suitability for reuse as engineering fill;

- Appropriate safe slope angles and a suitable drainage system will be used for all excavated slopes, while such slopes will also be monitored by the Contractor during the construction works to ensure their stability;
- Where slopes become unstable due to high groundwater table and inflow during construction, pumping locations shall be constructed in order to drain the water table below the level of the granular material and | or cut level for the duration of the construction and slope stability shall be monitored. This will prevent water from flowing from the slope surface and causing erosion;
- No stockpiling of soils will be undertaken within 50.00m of any watercourse. It is proposed to excavate and load soil and subsoil directly to haulage vehicles for removal off the site. However, in the event that excavated soil are not immediately reused they will be stockpiled temporarily to minimise the effects of weathering. Care will be required in re-working this material to minimise dust generation, groundwater infiltration and generation of runoff. As part of the development of the Contractors EMP, the location of stockpiled materials will be agreed with the EMO and the Project Ecologist in advance of placement to ensure they do not impact on surface waters or sensitive habitats;
- Good housekeeping (daily site clean-ups, use of disposal bins, etc.) on site during construction, and the proper use, storage and disposal of substances and their containers will prevent soil contamination;
- Groundwater pollution will be minimised by the implementation of good construction practices by the Contractor. Such practices will include adequate bunding for all potentially contaminating liquids including fuel and lubricating oils and chemicals, wheel wash and dust suppression on site roads, and regular plant maintenance to ensure ecologically protected sites and sensitive receptors;
- Materials such as, fuels, chemicals, lubricants, and hydraulic fluids will be carefully handled to avoid spillages. These materials will be stored within double sealed tanks with bunds to prevent any seepage of same into the groundwater. A fuel filling point will be set-up on site with all plant to be brought to this point for filling. Potential pollutants will also be secured against vandalism and will be clearly marked. Any spillages will be immediately contained, and contaminated soil removed from the site and disposed of in a licensed waste facility; and
- Local dewatering and collection of groundwater during construction may require disposal. Disposal of groundwater during construction will be to the surface water sewer system following suitable pollution control and attenuation measures. The precise measures to be used will be agreed in advance with the EMO and Project Ecologist.

4.7.1 Groundwater monitoring

The excavations will encounter the water table and dewatering will be required. This will result in a local lowering (c.2.00m) of the water table in the immediate vicinity of the foundation footprint. Even during the dewatering process the water table will rebound a short distance from the excavation due to the relatively low permeability of the subsoil and the nature of the underlying bedrock (mudstone). The dewatering will therefore result in a slight, negative, temporary effect on the water table around the excavation footprint. The water from the excavation dewatering programme is expected to be clean. It is likely however that this water will contain suspended soil particles associated with the excavation works. The water will be discharged to the Irish Water storm sewer that will be regulated by a trade effluent discharge license. The licence will specify the emission limit values (ELVs) that must be complied with to ensure the discharge does not adversely affect the water quality at the final discharge point of the storm sewer.

4.8 Surface water

All collected surface water from the site drains to combined sewers located on Stoney Hill Road. There are no sustainable drainage systems or flow control devices in place at the site. In storm events, un-attenuated and untreated surface water discharge can contribute significant flows to the combined sewers. The foul and combined sewer flows in this area discharge to the Wastewater Treatment Plant (WwTP) in Ringsend. Surface water discharge to the combined sewer system contributes to inundation of this system in storm events and recurring untreated discharge of combined sewer flows to open water bodies in Dublin Bay through combined sewer overflows. Surface water run-off from surface construction activities has the potential to become contaminated. The main contaminants arising from surface construction activities include:

- Suspended solids: arising from ground disturbance and excavation;
- Hydrocarbons: accidental spillage from construction plant and storage depots;
- Faecal coliforms: contamination from coliforms can arise if there is inadequate containment and treatment of onsite toilet and washing facilities; and
- Concrete | cementitious products: arising from construction materials.

These pollutants pose a temporary risk to surface water quality for the duration of construction if not properly contained and managed. Suspended solids, which can include silt, affect surface water turbidity, and are considered to be the most significant risk to surface water quality from construction activities. Suspended solids can also reduce light penetration, visually impact the receiving water, and damage the ecosystem. Potential construction activities that could generate suspended solids include:

- Water removal from surface excavations as a result of rainfall or groundwater seepage;
- Wash water;
- Runoff from exposed work areas and excavated material storage areas; and
- Cement washdown areas: The potential for cement to increase the pH of water above a neutral range, which is typically pH 6 to 9.

Potential activities that could generate the other pollutants listed above include:

- Inappropriate handling and storage;
- Leakage of temporary foul water services; and
- Solid wastes being disposed or blown into watercourses or drainage systems.

4.8.1 Surface water alleviation measures

Prior to construction the Contractor will prepare a detailed Construction Environmental Management Plan for enabling and new build works. Plans will incorporate all alleviation measures which will apply for the prevention of pollution to all waters during construction in compliance with the requirements of the EIA.

4.9 Surface water monitoring parameters

As well as daily visual checks on quality the parameters outlined in the EIA, surface water will be monitored and analysed during construction, in order to ensure maintenance of water quality protection. This is in accordance with Transport Infrastructure Ireland (TII)'s 'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan.' It is considered that the parameter limit values (Guide | Mandatory) defined in the Freshwater Quality Regulations (EU Directive 2006 | 44 | EEC) could act as a trigger value for

the monitoring of surface water i.e., the monitoring programme should be able to demonstrate compliance with the limit values for all surface water targeted sampling.

The monitoring parameters are as presented in the ERA will be discussed and agreed with SDCC.

4.10 Biodiversity

A Habitat Management Plan (HMP) will be prepared for the development by the Contractor. The HMP will seek to detail how habitats will be retained, protected, and managed during the construction phase. In order to ensure that alleviation measures proposed in the HMP are complied with and to monitor the construction phase, Ecologist Consultants will be appointed for the duration of the project and for an appropriate period of time following completion.

4.10.1 Implementation of a HMP

The Contractor shall be responsible for ensuring a HMP is implemented. The Contractor's Site Manager shall:

- Liaise with the Project Ecologist (PE) in terms of implementation of the plan;
- The contractor shall schedule meetings with the Project Ecologist to discuss progress towards completing the Fisheries Protection Measures and involve the Project Ecologist as necessary;
- Report and record any incidents resulting in damage to or destruction of habitats, and injury or death to fauna;

The primary responsibilities of the PE will be to:

- Act as the primary on-site ecological contact for the implementation of the HMP;
- Ensure compliance with all recommendations of the HMP during regular site inspections;
- Request relevant records and documentation from the contractor where necessary;
- Attend routine meetings with the contractor;
- Keep detailed records of any ecological incidents and report these;
- Keep records of any variations to construction methods or design brief and modify HMP recommendations; and
- Produce the staged monitoring reports on flora and fauna as detailed in the Schedule of Reporting Requirements. The Project Ecologist will submit these to the EMO. The Project Ecologist will also act as overall technical advisor to the project regarding implementation of the HMP actions.

Typical habitats and species directly or indirectly affected by the development include:

- Recolonising bare ground;
- Tall herb swamp | reed and large sedge swamps;
- Faunal species;
- Breeding birds; and
- Bats.

4.11 Fisheries protection measures

The aim of the Fisheries Protection Measures (FPMs) is to ensure the protection of existing drains that may run into local rivers. These measures were prepared following consultation

with Inland Fisheries Ireland (IFI). The Project Ecologist will act as the primary on-site ecological contact for the implementation of the FPMs including:

- Ensure compliance with all recommendations of the FPMS during regular site inspections;
- Request relevant records and documentation from the contractor's Site Manager (SM) where necessary;
- Attend routine meetings on FPMs;
- Keep detailed records of any ecological incidents and report these to the Project Manager;
- Keep records of any variations to construction methods or design brief and modify FPMS recommendations in consultation with the Project Manager; and
- Produce the staged monitoring reports on flora and fauna as detailed previously in this report.

4.11.1.1 Alleviation measures

- Works that may require "instream" work will take place May-September only;
- Passage for fish upstream and downstream will not be impeded;
- Prior to any machinery working on site for any purpose, the working area will be marked out with wooden stakes and where necessary, hazard tape deemed will be erected to identify the working limits;
- Working limits to be checked at the end of every day by the contractor;
- Provision of measures to prevent the release of sediment during the construction work will be installed prior to any site clearance. In respect to works in the river these measures may include but not be limited to the use of silt fences, sedimentation mats etc.;
- Provision of exclusion zones and barriers (sediment fences) between earthworks, stockpiles, and temporary surfaces to prevent sediment washing into the receiving water environment;
- Temporary construction surface drainage and sediment control measures will be in place before earthworks commence;
- If pouring of cementitious materials is required for the works adjacent to the river, surface water drainage features, or drainage features connected to same, this will be carried out in the dry;
- Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to surface water. Concrete washout areas will be located remote from any surface water drainage features to avoid accidental discharge to drains;
- No storage of hydrocarbons or any polluting chemicals will occur within 50.00m of the surface water network. Fuel storage tanks will be bunded to a capacity at least 110% of the volume of the storage tank (plus an allowance of 30mm for rainwater ingress). Refuelling of plant will not occur within 50.00m of the surface water network and only in bunded refuelling areas;
- Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures;
- Implementation of measures to minimise waste and ensure correct handling, storage, and disposal of waste;
- If any heavily contaminated land is encountered during construction, it will be removed off-site and be disposed of at a licenced waste facility;

- Contaminated groundwater, if encountered on site, could result in contaminated waters being discharged from the construction site. Any such contaminated waters will be treated via the appropriate measure's dependent on the nature of the contamination prior to discharge to the surface water network;
- If dewatering is required, water must be treated prior to discharge to the existing sewer or watercourse. This will include treatment via petrol interceptor and treatment for silt removal either via silt trap, settlement tanks or ponds;
- There will be no direct pumping of contaminated water from the works at any time;
- Foul drainage from site offices and compounds, where not directed to the existing wastewater network, will be contained, and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations, to prevent the pollution of watercourses;
- An Emergency Response Plan detailing the procedures to be undertaken in the event of flooding, a spill of chemical, fuel or other hazardous wastes, a fire, or non-compliance incident is summarised below; and
- Ensure site staff are trained in the implementation of the Emergency Response Plan and the use of any spill control equipment as necessary;

To ensure that FPMs actions are achieving the required objective, supervision and monitoring is required. Visual checks of the river and outflow will take place on a daily basis and twice per day during the installation of the outfall and the earthworks stage for the attenuation pond. A log of observations will be maintained on site and available for inspection at any time.

4.12 Landscape and visual

During the construction phase, all site areas within view of any local dwelling will be enclosed with robust and visually impermeable hoarding or boundary wall to a minimum height of 2.40m.

4.13 Resource & waste management (refer also to the Aecom prepared Outline C&DWMP)

Waste will be produced from surplus materials such as broken concrete blocks or off-cuts of timber, plasterboard, tiles, bricks, etc. during the construction phase. Waste from the oversupply of materials, packaging (cardboard, plastic, timber) and typical municipal wastes from construction employees including food waste will also be generated. The recommended waste management alleviation for the construction phase of the proposed development is included in the Construction and Demolition Waste Management Plan (C&DWMP) which seeks to meet the requirements of the '*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects* (DoEHLG, 2006)'.

Implementation of the Plan will ensure effective waste management and minimisation, reuse, recycling, recovery, and disposal of waste material generated during the construction phase of the project. Where waste generation cannot be avoided this Plan will maximise the quantity and quality of waste delivered for recycling and facilitate its movement up the waste hierarchy away from landfill disposal and reduce its environmental impact. The Contractor's C&DWMP must detail the intended practice for the management of waste arising from the construction and demolition processes and in particular the management of hazardous waste and recyclable materials. In particular the Plan shall specifically address the following points:

4.13.1 Overall waste management

- Analysis of waste arising | material surpluses;'

- Specific Waste Management objectives of the Project including waste minimisation and the potential to reuse, and process materials generated on site in the construction phase;
- Methods proposed for Prevention, Reuse and Recycling;
- Waste Handling Procedures;
- Waste Disposal Procedures, including tracking of waste to final destination;
- Waste auditing; and
- Record keeping, including gate receipts for waste brought to authorised Waste Handling Facilities.

4.13.2 Waste compound

- Details of the provision of a resolute and secure compound, containing bins and skips into which all waste generated by construction site activities will be placed;
- Responsibility for provision of signage and verbal instruction to ensure proper housekeeping and segregation of construction waste materials; and
- Responsibility for identification of Permitted Waste Contractors who shall be employed to collect and dispose of waste arising from the construction works.

4.13.3 Waste reuse and recycling management

- Identification of potential for Reuse of Inert Wastes; and Proposed management measures.

4.13.4 Hazardous waste

- Identification and management of any Hazardous Wastes likely to arise during the construction process; and
- In the event that hazardous soil, or historically deposited hazardous waste is encountered during the work, the Contractor must notify SDCC Environmental Enforcement Section, and provide a Hazardous | Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant alleviation, destination for authorised disposal | treatment, in addition to information on the authorised waste collector(s).

4.13.5 Construction waste

4.13.5.1 Waste management (collection Permit) Regulations, 2007 as amended

- Waste from the proposed development may only be collected by the holder of a waste collection permit or a local authority. Waste collection permits are granted in accordance with the Waste Management (Collection Permit) Regulations, 2007 as amended. Waste storage and collection areas on site should be designed to prevent environmental pollution.

4.13.5.2 Waste management (shipments of Waste) Regulations 2007 S.I. No. 419

- Where waste from the proposed development is exported outside of Ireland for recovery or disposal the national TFS office within South Dublin County Council must be notified. Certain financial guarantees must be in place and certified issued by the national TFS officer prior to the waste movement taking place.

4.13.5.3 Construction stage waste

- During actual construction activities, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete tiles, glass etc., some packing waste is also expected to be produced. Surplus soil | gravel is expected to be produced due to cut | fill activities;
- This is anticipated to consist of surplus of materials arising from cut-offs of concrete blocks, bricks, tiles, timber joists, steel reinforcement etc.; and

- Waste from packaging and oversupply of materials is also expected.

4.13.6 Roles & training for waste management and site crew Waste Manager

- A dedicated Waste Manager will be appointed by the Contractor to ensure commitment, efficiency and site protocols upheld during construction stage;
- The role of the Waste Manager will be to record, oversee and manage everyday handling of waste on the site;
- Their training will be in setup and maintaining record keeping systems and how to produce an audit to ensure waste management targets are being met; and
- They shall also be trained in the best methods for segregation and storage of recyclables. They will also be familiar with the suitability of material reuse and know how to implement the C&D.

4.13.7 Tracking and documentation procedures for off-site waste

The Waste Manager will maintain a copy of all waste collection permits. If waste (soil & stone) is being accepted on-site, a waste docket must be issued to the collector. If the waste is being transported to another site, a copy of the waste permit or EPA Waste Licence for that site must be provided to the waste manager. If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) document must be obtained from South Dublin County Council (as this is the relevant authority on behalf of all authorities in Ireland) and kept on-site along with details of the final destination (permits, licences etc.). As well as a waste collection docket, a receipt from the final destination of the material will be kept as part of the on-site waste management records. All information will be entered in a waste management system to be maintained on-site.

4.13.7.1 Record keeping

Records shall be kept for each material leaving the site for all types of use or disposal. This shall take the following basic outline form:

- Waste taken for reuse off site;
- Waste taken for recycling;
- Waste taken for disposal; and
- Reclaimed waste materials brought to site for reuse.

For any movement of waste, a docket shall be signed and recorded by Waste Manager, detailing type and weight of material and source or destination. This will be readily comparable with all delivery records to site, so a waste generation percentage for each material can be determined. This will allow ease of comparison of figures with targets established for the recovery, reuse, and recycling of Construction waste. It will also highlight the source of failure in meeting these targets.

4.13.7.2 Waste audit procedure

The Waste Manager shall perform audits at the site during the complete construction phase of the works. This shall ensure that all records are being maintained for all movements of all materials. Records shall also be readily available for comparison with the site's targets. At completion of the Construction phase a final report will be prepared outlining the results of the Waste Management process and the total reuse, recycling, and recovery figures for the site.

4.13.8 Consultation with relevant bodies

SDCC will be consulted throughout the construction phase to ensure that all available waste reduction, reuse, and recycling options are being explored and utilised and that compliant Waste Management is being carried out at the site. Specialist companies, wherever required,

will be contacted to determine their suitability and each company's record reviewed to ensure relevant current collection permits | licenses are held. Companies will also be contacted to gather information regarding treatment of hazardous materials, if required (although not anticipated for this site), costs of handling and the best methods of transportation for recycling or reuse when hauling off site.

4.13.9 Pest control

The Contractor will be required to adopt an Integrated Pest Management Plan as part of the works. This plan will establish a sustainable approach to managing pests in order to minimise health and environmental risks throughout the construction works and is to be prepared in accordance with the guidelines set out in the *'Rodent Control for Construction Industry' information* leaflet as issued by the Health Service Executive, Environmental Health Service, 2009. The Contractor will be responsible for ascertaining if the proposed lands are currently infested rodents and other pests. If so, any lands will be required to be disinfested by a pest control specialist, as is possible given the nature of the site. Throughout the works, the Contractor will be responsible for ensuring that a good standard of hygiene is maintained to limit the attraction of rodents and other pests to the site. Measures are to include, but are not limited to the following:

- Waste food, empty food tins, and other waste to be stored in bins with sealed lids;
- Accumulations of construction debris which may provide harbourage for rodents are to be cleared away regularly and in a timely manner; and
- Stocks of building material are to be neatly stored.

The Contractor shall implement measures to prevent infestations during the proposed works. This will include infestation of existing and proposed drains, sewers, ducts, and nearby properties. Measures are to include, but are not limited to the following:

- Removal of all existing refuse from site;
- During the laying of new drains, the sewers, open pipe ends, and utility access holes are to be protected against entry by rodents when work is not in progress – particularly at night-time; and
- Surface water pipes discharging into watercourses to be fitted with an antiflood flap valves at outlet points.

A finalised Pest Control Management Plan is required to be submitted by the Contractor to the Applicant prior to commencement of works.

5 Environmental emergency response plan (refer also to Sections 7.1.3 to 7.1.7 in the Ecological Impact Assessment Report)

Emergency response preparedness will be addressed in detail by the selected contractor. Environmental emergencies at the site requiring intervention will include:

- Discovery of a fire within the site boundary;
- Uncontained spillage | leak | loss of containment incident; and
- Discovery of material of archaeological interest.

A list of site emergency contact numbers and the general emergency response actions will be compiled by the Contractor and posted at strategic locations throughout the site, such as the main site entrance, safety stop-boards and contractor cabins. The emergency contact number list will be updated by the Contractor to include their safety representative contact name and telephone number. An example of emergency response actions is as follows for action to be taken in the event of a spillage:

- IF SAFE, stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers;
- IF SAFE (USE PPE), contain the spill using the absorbent spills material provided. Do not spread or flush away the spill;
- Cover or bund-off any vulnerable areas where appropriate;
- If possible, clean up as much as possible using the absorbent spills materials;
- Do not hose the spillage down or use any detergents;
- Contain any used absorbent material so that further contamination is limited;
- Note: This material is a waste and must be treated as such. The Safety Data Sheet (SDS) for the material will determine whether the spill material is hazardous or non-hazardous and will need to be disposed of accordingly;
- Notify the Development Teams Construction Safety Representative at the earliest opportunity; and
- An incident investigation will be performed in accordance with procedures and the report sent to the Development team Project Manager.

The Contractor will ensure that fully detailed records are maintained of any 'incident | event' likely to cause harm to the environment. Contractors who report an incident will ensure details are identified and recorded.

Environmental incidents will be recorded on an appropriate form.

Complaints and Follow up Actions on the construction site will be managed by the contractor's Contracts Manger in liaison with the Project Manager and contractors will ensure that all complaints are recorded according to Client requirements. A complaints log will be kept and any complaint from interested parties will be actioned and recorded.

The Contractor will be responsible for ensuring that a full record and copy of all Safety Data Sheets (SDS) pertaining to their works is kept on file and up to date in their site offices. The Contractor will also retain a duplicate copy of all SDSs held.

Appendix A – Development site redline boundary drawing

Figured dimensions only to be taken from this drawing. DO NOT SCALE. All contractors must visit the site and be responsible for checking all setting out dimensions and notifying the architect of any discrepancies prior to any manufacture or construction work.

NOTES:

north

Total no. units :	**48**
Open space:	
Site Area outlined in Red:	**18,153 m²** **1.815 ha** **4.486 acres**
Open Space	**2,471 m²**
13.6 % of site area	

Application Site outlined in Red

Other Lands in Ownership of Applicant outlined in Blue

A	02/22	pu	Issued for Comment

Issued for Comment

Romeville Developments Ltd.

Proposed Residential Development
Stoney Hill Road, Rathcoole,
Co. Dublin

Overall Site Plan

Drawn	Checked	Paper Size	Scale	Date
ac	pu	A1	1:1000	Feb 2022
Project No.		Drawing No.		Revision
17-098		101		A

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Appendix B – Proposed works dwg

1. All boundaries, dimensions and levels are to be checked on site before construction and any discrepancies are to be reported to the Architect.
2. Partial Service: Any discrepancies with site or other information is to be advised to the Architect and direction or approval is to be sought before the implementation of the detail.
3. Block and site plans are reproduced under license from the Ordnance Survey.
4. Do not scale this drawing.
5. For the purpose of coordination, all relevant parties must check this information prior to implementation and report any discrepancies to the Architect.

HOUSE TYPE LEGEND KEY

42 UNITS

Type	Description	Units
TYPE F1	TERRACED/END OF TERRACE 3 BEDROOM / 5 PERSON / 3 STOREY	09
TYPE F2	TERRACED 3 BEDROOM / 5 PERSON / 3 STOREY	08
TYPE F3	END OF TERRACE 3 BEDROOM / 5 PERSON / 3 STOREY	02
TYPE F4	END OF TERRACE 3 BEDROOM / 5 PERSON / 3 STOREY	02
TYPE L1	TERRACED/END OF TERRACE 3 BEDROOM / 5 PERSON / 2 STOREY	17
TYPE L2	TERRACED/END OF TERRACE 3 BEDROOM / 5 PERSON / 2 STOREY	04

LEGEND

- SITE BOUNDARY: 2.9 HA /7.19 AC
- OTHER LANDS IN POSSESSION OF APPLICANT
- DESIGNATED PART-V UNITS

AREA SCHEDULE

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

N

PLANNING - DRAFT

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Client
Romeville Developments Ltd.

Project
Rathcoole

Drawing
PROPOSED SITE LAYOUT 1-500

Job No	Reg No	Rev No	Status
2227	(P)007	-	PLANNING - DRAFT
Scale	**Date**	**Drawn by**	**Checked by**
1:500@A1	Jul-22	JFK	FW

Revisions
REV No DATE NOTE