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CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN

Mooretown Phase 2

Fingal County Council

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Document Register

Document Number	25051-AKM-0001 -XX-RP-Y01-90005
Document Title	CEMP
AKM Job Number	25051
Project Code	25051
Organisation	AKM
Department Code	NA
Volume	XXXX
Level	XX
Type	RP
Role	Planning

Document History

Revision	Description	Produced By	Reviewed By	Approved By	Date
00	CEMP	JK	DO	CK	28/05/2026

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1. Introduction

The proposed development is located on lands at Mooretown, Swords, and forms Phase 2 of the wider Mooretown residential lands. The site is split into northern and southern development parcels located around the permitted Phase 1 development currently under construction. The Phase 2 works will therefore require careful coordination with the Phase 1 construction works, existing temporary compounds, internal haul routes, drainage infrastructure and service connection points.

It comprises 360 no. residential units consisting of a mix of houses, duplex units and apartments, arranged in a combination of terraced, semi-detached and apartment block formats, and 1 no. creche, together with internal roads, pedestrian and cycle links, public open space, greenway connections, drainage infrastructure, SuDS features, utilities and landscaping. The Phase 2 drainage, foul sewer and watermain networks are proposed to connect into the Phase 1 infrastructure, which has been designed to accommodate the Phase 2 flows and demands.

The Housing element of the development comprises:

- Houses including 2-storey and 3-storey dwellings in terraced and semi-detached configurations.
- Duplex units provided in 2-storey over 2-storey format.
- Apartments provided within purpose-built apartment blocks ranging in height as indicated on the drawings.

The unit mix includes a range of:

- 1-bedroom units
- 2-bedroom units
- 3-bedroom units
- 4-bedroom houses

The development also provides a broad mix of unit types and sizes to ensure compliance with the Sustainable Urban Housing: Design Standards for New Apartments, Fingal Development Plan, and national planning policy relating to housing mix and density.

Non-Residential & Ancillary Uses The development also includes:

- A creche facility to serve the proposed development and the wider area.
- Secure bicycle storage facilities distributed throughout the scheme.
- Resident and visitor car parking, including EV charging infrastructure.
- Public open space and communal open space areas.
- Landscaping, boundary treatments and internal roads.
- Pedestrian and cycle connections to adjoining permitted and existing developments.
- Drainage infrastructure including riparian buffer zones and associated green corridors.

The site is steeply graded, generally falling from the south-west towards the north, and contains existing drainage ditches which ultimately discharge towards the Broadmeadow River catchment. Ground investigation information indicates generally poor infiltration characteristics across large parts of the site. These site-specific constraints have informed the proposed construction-stage environmental controls, particularly in relation to surface water management, sediment control, protection of drainage ditches and sequencing of SuDS construction.

This CEMP relates to proposed project for Fingal County Council. The Construction and Environmental Management Plan (CEMP) will act as a method statement which describes the anticipated construction programme and the nature of the activities to be undertaken. It identifies the environmental considerations associated with these activities and outlines appropriate measures that will be implemented for their mitigation.

The objective of this CEMP is to identify the potential issues which are relevant to the project, to address these issues and to provide solutions which are satisfactory to all concerned.

It is intended to be read in conjunction with the project Surface Water Management Plan, Infrastructure Report, Construction Traffic Management Plan, Environmental Impact Assessment Report (EIAR), ecological assessments, landscape proposals and planning drawings. The measures set out herein shall be developed further by the appointed Main Contractor at construction stage, but the principles identified in this document shall be maintained as minimum requirements.

Construction management and planning, with the adoption of environmental best practice, good neighbourhood policies and community engagements will contribute to mitigation of adverse environmental effects and ensuring good construction, environmental, health and safety practices.

The issues that have been considered in this document are as follows:

- Construction program and phasing
- Enabling works
- Infrastructure works
- Description of works
- Site logistics
- Indicative construction methods
- Safety, health, and environmental provision

2. Construction Programme & Phasing

The assumed programme presented in this report is indicative of how the project will be constructed, at each stage of the Development some or all of the following activities will be required:

- Service infrastructure works
- Site clearance and enabling works
- Sub-structure works
- Super-structure works
- External works and finishes

2.1 Construction Programme

The proposed construction sequence is annexed to this plan Appendix A.

The proposed phasing shall be developed to reflect the site constraints and the relationship with the adjacent Phase 1 works. The indicative construction sequence shall generally comprise Phase 2a, Phase 2b and Phase 2c, with Phase 2c requiring consideration of the reuse and/or relocation of the existing construction compound. The exact sequence shall be confirmed by the appointed Main Contractor prior to commencement, but the programme shall ensure that temporary drainage, sediment control, safe access, emergency access and utility diversions/connections are maintained at all times.



Layout of proposed development (Deady Gahan Proposed Site Layout)

Prior to commencement of each phase, the Contractor shall prepare a phase-specific logistics and environmental constraints plan identifying:

- active construction areas;
- temporary and permanent drainage routes;
- existing ditches and water-sensitive areas;
- SuDS areas requiring protection from compaction;
- stockpile and material storage areas;
- site compound and welfare locations;
- construction access and egress routes;
- pedestrian and vehicle segregation; and
- emergency access routes



Construction sequence - To be developed in following sequence:

- Phase 2a (Red)
- Phase 2b (Green)
- Phase 2c (Yellow) - Last phase, to allow continued use of the existing site compound during Phases 2a and 2b

2.2 Site Enabling Works

Site enabling works will include but will not be confined to the following:

- Securing of site boundary and erecting of fencing or hoarding as required
- Service terminations and positive identification of any services on the site by the utility providers
- Provision of temporary power, lighting, and water services
- Set up of site accommodation and welfare facilities
- Appointment of an Independent Environmental Consultant / Ecological Clerk of Works to prepare a regular Environmental Monitoring Report and ensure all mitigation measures are in place.

2.3 Indicative Enabling Works Methodology

The methodology for the completion of the enabling works will be finalised during the construction tender and appointment stage. The outline of methodology is as follows:

- Live services will be terminated and where possible will be removed off site, with the cooperation of the utility providers
- Temporary power and water services will be arranged for the site accommodation and welfare facilities.
- The site accommodation and welfare facilities will be set up in a location so as not to be in the way of the construction, and at a point close to the site entrance
- During any demolition works, where practical, materials will be segregated, considering the constraints of safety and space on site.
- Mitigation including Dust suppression will be carefully monitored and controlled with the careful use of water
- Noise levels will be controlled and works undertaken in such a way as to minimise the detrimental impact on adjoining property.

2.4 Infrastructure Works

The site infrastructure works include the provision of the permanent boundary fence / construction access to the site and the permanent connection of all the utilities and services required for the site.

Utility Infrastructure:

- Provision of the permanent infrastructure to the site will be carried out as early as possible in the programmed works as to possibly incorporate the temporary site requirements with the permanent requirements.
- Engagement with the service and utility providers will be entered into early in the design stage to allow for adequate planning of utility infrastructure.
- It is the aspiration of the applicant to minimise disruption of existing services and public roads and pathways in the providing of services to the site, this will be done in consultation with the service providers and the Local Authority.
- Prior to any works on site or on the boundaries to connect services a desktop study followed by a physical survey will be carried out to identify all existing services. As part

of the physical survey, trial holes, slit trenching and CAT scans may be required.

- Utilisation of single trenches for multiple services where possible will be encouraged.
- Where possible services will be provided to 'future-proof' the development.

The Phase 2 infrastructure works are to be coordinated with the Phase 1 infrastructure currently under construction. The foul drainage network for Phase 2 will connect to the Phase 1 foul network, including the approved on-site pumping station for the northern development parcel and gravity connections to Phase 1 spurs for the central-western and southern areas. Similarly, the water supply network will connect to the Phase 1 water distribution network via 150 mm diameter connection spurs allowed for within the Phase 1 design.

2.5 Road Infrastructure

Access to the site is via the existing road network. On site restricted one-way systems may need to operate. See site logistics map in section 4.

3. Construction Traffic and Site Access

3.1 Construction Route and Access

Construction access shall be taken via the existing Phase 1 access arrangements and internal routes, unless otherwise agreed with Fingal County Council. Construction traffic shall not be permitted to use informal access points across adjoining lands, public open space or completed residential areas. Access routes shall be coordinated with the Phase 1 contractor where works overlap or where shared internal roads, haul routes, temporary compounds or service corridors are affected.

Certain trades will require on-site parking due to the need to transport specialist equipment and plant.

Site access gate will be established, as well as dedicated pedestrian access routes.

Provision of wheel cleaning facilities will be made available on-site (if required) where it is deemed necessary or if space constraints do not permit this, the provision of power washing facilities for lorry wheels prior to egress off the site onto the public road to maintain the road in a clean condition.

A road sweeper will also be utilised as required on the public road at vehicular access / egress points (if ever required).

3.2 Off Loading and Storage Areas

Vehicles will be directed to the delivery points for holding/off-loading/storage, these deliveries will be controlled by a dedicated person allocated to overseeing all deliveries and controlling the entrance.

All deliveries will be notified to the site management team prior to the deliveries.

No large deliveries will be allowed to site during peak traffic times for the area.

3.3 Personnel and Vehicle Segregation

All pedestrian routes will be adequately segregated from vehicular routes across the site. All vehicle crossing points will have appropriate signage to alert pedestrians of vehicle crossing points.

All site operatives will be given a specific site induction, giving information on the pedestrian access routes.

3.4 Temporary Road Closures

Road closures are not anticipated at this stage, however if they are required for the delivery of large items of plant or materials then such temporary road closures will be planned and approval will be sought from the Local Authority and other relevant authorities.

4. Site Logistics

General Principles

The logistics arrangement shown in Figure 1 is indicative and shall be developed by the Main Contractor prior to commencement. The existing compound/site office shown in green shall remain in its current location throughout Phases 2a and 2b, and shall only be relocated to the proposed location shown in red at the commencement of Phase 2c, subject to confirmation of detailed phasing, temporary drainage arrangements, safe access and separation from sensitive drainage features. At that stage, due to the limited external space available once the apartment building and creche are constructed, the compound function shall be accommodated within the structure of the apartment building completed during Phase 2a, with the internal rooms and bathrooms repurposed as site offices and welfare facilities (canteen, drying room, toilets), and the adjacent open area and parking spaces used as the contractor car park and external storage / laydown area. The compound shall be located in the apartment area, away from ditches and the archaeological area, and the apartment building shall not be handed over until the Phase 2c works are fully completed and the compound has been demobilised.



Figure 1 Site Logistics Map – Existing Compound / Site Office (Green) to be relocated to new location (Red) Other Facilities (Details to be confirmed).

4.1 Site Establishment and Security

- Advance warning signs indicating “Construction Traffic Crossing” will be erected at the site or on adjoining roads if required for safety.
- At site set up stage the site will be made secure, and the general public will be separated from the site by means of fencing and hoarding
- All site facilities will be contained within the site area
- The entrance is controlled by site personnel (gateman) for deliveries
- Site lighting will be set up with consideration for adjoining properties
- The use of truck horns shall be banned and shall be indicated by signage at the site entrances.
- Refuelling of site plant and vehicles shall only be conducted at a dedicated location using drip trays or shall be conducted by using a mobile refuelling vehicle fitted with spill kits.

4.2 Consent and Licenses

All statutory consents and licenses required to commence an onsite activity will be obtained ahead of work commencing and giving the appropriate notice periods. These will include:

- Construction notices
- Connections to existing utilities and main sewers
- License to discharge from the site to public systems

4.3 Access and Egress

- Access will be via the existing access points.
- Access will be strictly controlled via security personnel at each of the access points to the site.

4.4 Material Storage and Handling

- The Developer will strive to maintain a tidy site and to operate a “just in time” policy for the delivery and the supply of materials for the works, particularly the final phase of the works when on site storage will be at a minimum
- Materials will be stored on site so as to minimise the risk of damage
- Materials shall be unloaded and stored within the materials storage area in the site compound. All vehicle oils and lubricants and liquid construction materials shall be stored in a secure bunded storage container
- Spill kits shall be located in the site compound to ensure any accidental spillages are cleaned and the waste material shall be placed in a dedicated labelled impermeable waste container for subsequent off-site disposal at a permitted facility.
- A mobile crane/teleporter will be used for general unloading during the structural and envelope works. Unloading over the public roadway and path will be avoided

4.5 Protection of Adjacent Areas

- Work areas will be segregated from the adjacent areas by a hoarding fence.
- All hoarding will be designed by a competent Structural Engineer to resist wind loads.
- All services to be maintained will be protected by the setting up of exclusion zones so heavy plant cannot drive over it.
- All materials being hoisted by crane or other means will be managed by a Banksman.

4.6 Crane Operations

- A mobile crane may be used for elements of the superstructure
- Loading areas will be used to minimise storage on site, and “just in time” deliveries for each floor level will be used to load materials before the floor for the next level is placed
- Detailed lifting plans and RAMS (Risk Assessment / Method Statements) will be compiled for all activities involving cranes.

4.7 Site Accommodation

- It is the intention to provide a main site accommodation and welfare facility on site. The location of these facilities has been determined and marked on site logistics map
- The principal contractor will be responsible for providing canteen and welfare facilities for the on-site operatives
- These facilities will be maintained by the main contractor

4.8 Visitor Management

- Visitors will only be allowed to enter the site via designated vehicular / pedestrian access gates and must report to the site security office to sign-in and for obtaining any additional PPE required
- Visitors will be expected to attend a specific site safety briefing and will always be accompanied by a member of the site team

5. Description of Works and Indicative Construction Methods

5.1 Construction Sequence

The construction sequence shall be arranged so that temporary surface water controls are installed prior to bulk earthworks, site clearance or topsoil stripping. Stripping of vegetation and topsoil shall be limited to the minimum area required for the active phase of works. Exposed ground shall be stabilised as soon as practicable through placement of sub-base, landscaping, temporary seeding or other suitable measures.

SuDS features shall be protected during construction. Infiltration surfaces, permeable paving sub-base areas, swales, rain gardens, bioretention tree pits and detention areas shall not be used for uncontrolled storage of materials, parking or trafficking by heavy plant. Where early construction of SuDS features is required for temporary drainage or sediment control, these features shall be inspected, cleaned and reinstated before handover.

- Secure site and set up contractor welfare facilities and site accommodation
- Locate and terminate existing live services
- Install tree protection and remove trees that are required to be felled
- Demolish existing structures on site if applicable
- Excavate and remove material to the required formation. This will require a bulk excavation and removal from the site
- Maintain existing entrances and incorporate new roads and hard standing as required
- Make good and install any finished boundary treatments that can be installed at this stage
- Appoint an Environmental Consultant to prepare a Monthly Environmental Monitoring Report and ensure all noise mitigation measures are put in place

5.2 Sub-Structure

- Excavate foundations
- Archaeological Monitoring
- Excavate, lay, and test underground drainage
- Coordinate and install all incoming services

5.3 Superstructure

- Foundations
- Floor
- Steel frame elements (Joists, Roof trusses)
- Structure
- Roof work

5.4 Fit Out and Finishes

- Fit out of the residential units will use traditional fit out techniques and finishing trades
- Gardens and public open space areas will be landscaped and planted in accordance with the landscaping proposals for the scheme.

6. Safety, Health, and Environmental

6.1 General Health, Safety and Environmental Consideration

Construction and demolition works will be carried out in such a way as to limit, as far as practicable, adverse environmental impact.

Works will be carried out in accordance with the following general provisions:

- Planning approvals from the Local Authority
- Requirements of the Local Authority

In accordance with the HSA requirements a Project Supervisor Construction Stage (PSCS) will be appointed for the construction.

As part of the Construction Method Statement, the process will ensure that construction techniques and materials used are a fundamental consideration of the design and intended long-term use, the aim below is achieved:

- Design for durability and low maintenance
- Design for flexibility and adaptability
- Use of materials from sustainable sources
- Use of local materials where possible

Safety, health, and environmental issues on the Development are a primary consideration in the construction methods adopted. The construction team will develop detailed health and safety plans, specific environmental, fire and accident procedures to suit the construction sequence of the Development.

Contractors involved in the Development will ensure that all non-English speaking employees are provided with relevant Health and Safety information in their national language.

All contractors will be required to adopt the relevant skills certification required for that element of the works.

A site-specific Safety Statement and a detailed Construction Stage Safety & Health Plan have been prepared in relation to works on site and are in accordance with the Health & Safety Authority and Local Authority guidelines.

6.2 Control of Substances Hazardous to Health

The strategy for controlling all substances and all work processes that may generate hazardous substances will have to be addressed and control measures put in place.

Some of the control measures to be employed include the following:

- All fuel and chemicals to be stored in designated areas, with deliveries of hazardous materials supervised
- Storage tanks and container facilities will be appropriately banded
- In the case of spills or discharges, remedial action will be taken as soon as possible in accordance with company procedures

- Personal protective equipment (PPE) suitable to the pertaining conditions will be used by all site personnel

6.3 Environmental, Emergency and Accident Procedure

Measures will be carried out to avoid environmental incidents, however if these occur then the following types must be reported to the responsible person in the construction team as per the Accident and Emergency Procedures.

The overall strategy in the event of a spillage will be to “Stop-Contain-Notify” in the event of:

- Spills or discharge to the atmosphere, water supplies, sewage systems, rivers, and other watercourses, or to the ground:
 - Any chemical products
 - Oils or fuels
 - Effluent/fumes and gases
 - Waste or contaminated materials
- Damage to existing:
 - Trees and wildlife
 - Flora and existing local habitats
- Any environmental incidents that could lead to:
 - Local Authority or regulatory enforcement
 - Public complaint

Emergency routes and procedures will be continuously adapted to suit the construction sequence and stage of the Development. An Emergency and Evacuation Plan will be prepared following the guidelines detailed below and updated on a regular basis during construction.

- Definition of the management organization and responsibility for safety
- Definition of appropriate fire prevention measures, including good housekeeping of site, welfare facilities and offices
- Adequate provision of fire extinguishers across the site
- Use of non-flammable/fire retardant materials for protection of finished works.
- Safe use and safe storage of flammable materials of all categories, whether solid, liquid or gas
- Appropriate waste management procedures
- Monitoring the type and frequency of fire inspections/audits
- Development of evacuation plans, to include escape routes, muster stations, means of sounding alarms and general emergency procedures
- Site safety inductions and fire drills
- The application of permit systems for Hot works, Confined Space Entry and Electrical Access Control
- The provision of first aiders. Checking of emergency routes are available and unobstructed at all times
- Liaison with the emergency services and occupants of the adjacent buildings

First aid facilities will be established and at least one trained first aider will be present on-site at all times. In addition, trained Fire Wardens / Fire Marshalls will be in place on-site to address fire safety.

6.4 Particular Health, Safety & Environmental Considerations

Work in Proximity to Trees

Contractors appointed for works in close proximity to trees and in consultation with the arboriculture and landscape consultants undertake specific tree protection measures and procedures for the execution of their works to protect the trees.

Where trees are identified for retention construction will be undertaken in accordance with the relevant guidelines.

6.5 Air Quality

General Provisions

Construction and demolition works will be carried out in such a way as to limit the emission to air of pollutants, employing best practices.

- The site will be managed in accordance with the CEMP to minimise potential effects on air quality from construction
- The overloading of tipper trucks exiting the site shall not be permitted.
- Air monitoring will be undertaken throughout the construction period as may be deemed necessary.
- The storage and handling of construction materials can be significant dust emission source. The appropriate dust control measures will greatly reduce dust emissions from these sources and ensure that the adverse effect will be reduced or eliminated. These include covering waste skips, scaffold netting, use of water to suppress dust, provision of hard stand access for truck and vehicles.
- Handling and storage areas will be sited as far away as is reasonably and practically possible from public/residential areas. Prolonged storage of materials will be avoided where possible. Transportation of materials that may be dusty will be sheeted down to prevent any escape of materials.
- The burning of materials is prohibited on all The Developer project sites.
- A programme of dust deposition monitoring shall be implemented at the site boundaries during the construction phase activities to ensure that the air quality standards relating to dust deposition are not exceeded. Where levels exceed specified air quality limit values, dust generating activities shall immediately cease and enhanced mitigation measures shall be implemented.

6.6 Construction Plant

Construction plant can be a significant source of emission although control measures can be implemented to minimise any adverse impacts. The following measures will be employed:

- Site plant and equipment will be serviced regularly and maintained in good condition and in accordance with the manufacture's specifications. Allowing for economic constraints, the plant will be selected on the basis of which has the least potential for dust and emissions

- Appropriate signage shall be erected on all access roads in the vicinity of the site to inform HGV drivers
- Plant will not be left running when not in use
- Plant with dust suppression equipment will be used where practicable

6.7 Vehicle Movements

Vehicle movement may result in dust emissions and exhaust emissions. However, a number of control measures can be adopted to eliminate or minimise such emissions:

- Regular cleaning of hard surfaces at the site entrance
- Ensuring that materials are transported appropriately (sheeting used over dusty materials)
- Confinement of plant and machinery to designated haul routes on site
- Speed restrictions on site will be enforced (15 km/h)
- Hoarding to site boundaries where practical which will aid in the reduction of windblown dust-off site

6.8 Dust

Dust control will be best achieved at sources, and if possible, activities will be carried out in a manner as to preclude dust generation.

If dust is generated, steps will be taken to protect workers in the vicinity who shall, as a minimum, be issued with appropriate dust masks. Dust will, as far as is reasonably practicable, be contained in the area where it was generated. Dust suppression will be carried out to ensure that dust nuisance affecting neighbouring properties is minimised.

Dust emissions from construction will be controlled through careful pre-project planning and effective site management. The following control measure and good practices, will be employed:

- Burning of materials is prohibited on all The Developer Project sites
- Loading and unloading will only be permitted in designated areas
- Provision of water sprays in dust sensitive locations will be introduced, e.g., demolition areas, concrete cutting etc.

6.9 Ecology

All construction works will be carefully controlled in terms of potential environmental effects through implementation of this CEMP and consultation with the relevant bodies. As part of the construction process, protective fencing will be provided to protected trees, which in turn will provide protection to the ecology.

Procedures to minimise risk of pollution potential incidents will be put in place.

6.10 Noise and Vibration

General Provision

The site is located adjacent to existing and permitted residential areas and will interface with the Phase 1 development. The Contractor shall therefore identify noise-sensitive receptors prior to commencement, including occupied dwellings, completed Phase 1 areas, nearby residential streets and any community facilities. High-noise activities such as breaking, cutting, piling, compacting, extended concrete pours or road construction shall be programmed to minimise disturbance where practicable.

Where works are required close to occupied dwellings or completed Phase 1 areas, the Contractor shall provide advance notification to affected residents and Fingal County Council, where required. Complaints relating to noise or vibration shall be logged, investigated and responded to promptly, with additional mitigation implemented where necessary. During the construction of the works the following codes and regulations will be adhered to:

- BS 5228:2009+A1 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites, Part 1 and Part 2
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (as amended), Part 5 Noise and Vibration.

The general mitigation principles and methods will include:

- Avoidance of unnecessary revving of engines and switching off the equipment when not required
- Preventing HGVs from queueing on any local or public road
- Keeping internal haul roads well maintained
- Minimise drop heights of materials
- Start-up plant sequentially rather than together
- Where possible keep site equipment away from sensitive areas
- Regular maintenance of plant and equipment
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract
- Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures;
- Limiting the hours during which Site activities which are likely to create high levels of noise or vibration are permitted;
- Monitoring levels of noise and vibration during critical periods and at sensitive locations.
- Selection of plant with low inherent potential for generation of noise and/or vibration
- Erection of good quality site hoarding to the site perimeters which will act as a noise barrier to general construction activity at ground level
- Erection of barriers as necessary around items such as generators or high duty

compressors; and situate any noisy plant as far away from sensitive properties as permitted by site constraints.

As the buildings within the proposed development rise above ground, there will be some noise from scaffolding and form work erecting

On occasions it may prove necessary to carry out noisy activities outside normal working hours, these activities will be discussed with the affected parties before they are carried out.

No heavy construction equipment/machinery (to include pneumatic drills, construction vehicles, generators etc) shall be operated on or adjacent to the construction site before 07:00 or after 19:00 Monday to Friday, and before 08:00 and 14:00 on Saturdays.

No activities shall take place in site on Sundays or bank holidays. No activity, which would reasonably be expected to cause annoyance to residents within the vicinity, shall take place on site between the hours of 19:00 and 7:00. No deliveries of materials, plant or machinery shall take place before 07:00 or after 19:00. Delivery of materials shall be organised, so the deliveries are minimised at the morning and evening periods of peak traffic flow.

6.11 Soil and Contamination

Existing Conditions

Site investigation information for the wider Mooretown lands identified predominantly slightly sandy, slightly gravelly silty clay soils, with made ground encountered in 4no. trial pits as detailed in the Ground Investigation Report. Infiltration testing indicated poor infiltration characteristics in large parts of the site. The Contractor shall take account of these ground conditions when planning earthworks, temporary drainage, dewatering, stockpile locations and sediment control measures.

Excavated material shall be assessed for suitability for reuse within the development where practicable. Where material is unsuitable for reuse, it shall be classified, handled and removed off-site in accordance with the relevant waste legislation and the project Site Waste Management Plan. Any unexpected made ground, odour, staining, asbestos-containing material or suspected contamination encountered during excavation shall be isolated and assessed by a suitably qualified person before works continue in that area.

Strategy

The strategy for controlling and mitigating potential adverse environmental or health and safety effects during construction will be to adopt the procedures and methods set out within this CEMP.

Operation Control

The strategy for controlling and mitigating potential adverse environmental or health and safety effects during construction will include the following, as appropriate:

- Identification and assessment of the potential for residual ground contamination to be

presented prior to the start of any excavation works.

- Minimisation of potential risks to site workers as required by the Safety, Health, and Welfare (Construction Regulations) 2013.
- Testing and sampling of excavated soils to assess the suitability of materials for re-use on site.
- Dust suppression from any contaminated soils by the regular use of water spray during any dry conditions, sheeting of haulage vehicle loads.
- Stockpiling of contaminated materials will be avoided where possible.
- Stockpiles will be treated to prevent windblown dust.
- Adequate drainage will be designed and installed during construction work to manage surface water runoff.
- The handling and storage of any potentially hazardous liquids on site, e.g., fuels and chemicals, will be controlled in accordance with best practice guidelines. Storage tanks/container facilities will have appropriate bunding within the designated area.
- If hazardous liquids escape, remedial action will be taken as soon as possible.
- Where unforeseen contamination is identified during the course of the work, specific investigations will be carried out in the areas in question and appropriate health and safety procedures will be implemented during the removal of the material.

A strategy will be prepared to identify, analyze, segregate and control existing contaminated materials on site.

Procedures will be drawn up to control all potentially contaminated materials brought to site.

6.12 Waste General Provision

All works carried out as part of these works will comply with all Statutory Legislation including the Waste Management Act & Local Government (Water Pollution) Acts, and the contractor will cooperate in full with the Environmental Section of the Local Authority.

The disposal of waste generated during construction, including bulk excavation, will be managed to maximise the environmental and development benefits from the use of surplus materials and to reduce any adverse effects of disposal. In general, the principle of waste management hierarchy, which favours waste minimisation, re-use material and recycle over disposal to landfill will be favoured.

Construction and Demolition Waste

Methods for waste reduction will form the basic strategy for construction waste management from the start. Where possible materials will be re-used. Careful extraction of materials will be undertaken to ensure that the highest proportion of the materials can be re-used. This will reduce the level of new materials required for the proposed site. This in turn reduces the impact on new resources and carbon emissions associated with the extraction, manufacture, and transportation of materials to the site. Undertaking the enabling works upfront ensures that more time can be spent on the careful recovery of materials on site. Where appropriate, excavated material from development sites should be reused on the subject site. If any of the excavated soil is found to be clean/inert, the site manager will investigate whether nearby construction sites may require clean fill material, to both minimise the costs of transport and to reuse as much material as possible. Any material used on another site will be done under Article 27 of the

European Communities (Waste Directive) Regulations 2011.

Control during Construction

The contractor will ensure minimisation of waste arising on site and reuse where possible, either directly or by recycling, waste monitoring and setting of targets. Recyclable materials such as metal, timber, cardboard, and office paper will be put in colour coded bins, ready for collection by the appropriate contractor.

Initiatives to reduce other waste streams include as far as practically possible:

- Minimising raw material waste through analysing design and construction techniques where possible.
- Liaison with suppliers to enable packaging materials to be sent back for reuse, the use of off-cuts where possible and the recycling of off-cut materials by suppliers.
- Engaging contractors in the process of maximising the use of recycled aggregates for hardcore
- The entrance to the site will be kept clean as to minimise dust and pollution to the water course.

To ensure compliance with legislative requirements, only local authority licensed waste haulers, waste contractors are permitted to collect and remove waste from site. All waste removed from site will be deposited at a licensed waste facility.

Waste delivery dockets must be completed and given to site management for recording purposes.

Suitable protection measures will be incorporated in the design of the waste management area to prevent pollution, and regular inspections carried out to ensure that stored waste is covered to prevent accidental spillage and from being blown away.

6.13 Water Resource

The works will be carried out and working methods adopted to ensure that construction activities do not adversely affect surface water and ground water quality. The most damaging being concrete leachate, oils and chemicals and suspended solids.

The following best practice measures will be adopted:

- Use of silt fences and silt bags to contain surface water run-off from the site.
- Silt removed from temporary traps and drains to be buried safely on site when dry.
- Discharge to public sewers – after prior agreement with the local authority
- The existing storm water drainage system will be retained where possible during construction, with modifications as necessary to prevent ingress of debris.
- Control of spoil and other materials to prevent spillage.
- All petroleum-based products to be stored in a bunded compound.
- Fill areas for construction vehicles to be a minimum of 30m away from watercourses.
- Filling areas for construction vehicles to be impermeable.
- Oils/Fuels/Hazardous Wastes will be stored in bunded areas or in bunded containers.
- Washout from concrete trucks will be contained or prohibited on site.
- All drainage arrangements will be determined in consultation with the Local Authority

- Surface water arising during excavation works shall not be discharged directly to the surface water system unless it has first passed through appropriate sediment treatment and the discharge arrangement has been agreed with the relevant authority.
- Sediment control will be implemented where surface water is contaminated with silt.

Surface water management is a key construction risk for this site due to the existing drainage ditches, steep site gradients, poor infiltration characteristics and downstream connection to the wider drainage network. The Contractor shall implement a Construction Surface Water Management Plan prior to commencement of works and shall update it as the works progress.

6.14 Waste Management Plan

At the outset a site waste management plan will be produced for this project. This will include a waste forecast identifying options for reuse, recycling, and avoidance of landfill and to record actual waste.

7. Work Force

7.1 Employment and Management of Workforce

Typical Working Hours

During construction phase, no heavy construction equipment/machinery shall be operated on or adjacent to the construction site before 7:00am or after 7:00pm, Monday to Friday, and before 8:00am and after 2:00pm on Saturdays. No activities shall take place in site on Sundays or Bank Holidays. No activity which would reasonably be expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 7:00pm and 7:00am, no deliveries of materials, plant or machinery shall take place before 7:00am or after 7:00pm.

If there is an occasion when work must be carried on outside daytime hours, the Environmental Health Department of the planning authority, local residents and businesses in areas which are likely to be affected by noise from the proposed works should be notified in advance e.g., in letter or leaflet or advertisement.

The PSCS will liaise with the Client to agree specific arrangements for activities outside of normal working hours that will minimise the risk and disruption to residents and members of the public. All reasonable precautions will be taken for the operation of plant and equipment to avoid nuisance and excess noise impact on the surrounding residents.

7.2 Temporary Site Accommodation

Site accommodation will be contained within the site boundary. The principal welfare accommodation will comprise of site offices, toilets, canteen, and drying rooms. These will be prefabricated where possible.

Preventative pest control measures will be put in place, and regular inspections will take place to ensure good housekeeping.

7.3 Site Security

It is intended to provide a fully enclosed site. This will be accomplished through a combination of IBEX fencing, palisade fencing, timber hoarding and a security-controlled access gate.

Designated vehicular and pedestrian access will be established and all other potential access points to the site secure so far as is reasonably practicable. It is proposed to use a "Monitored Security Camera" system on site with direct link to the external security.

8. Environmental Management

8.1 Construction Phase Measures - Pollution Prevention

Works will follow best practice guidance as outlined in Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016). The risk of any significant impact on water quality in any receiving water bodies is considered to be low. Best practice will be always implemented in relation to all construction activities to avoid any accidental pollution events occurring to the wet ditches in the area or polluting the ground water table.

This will include the following actions:

- SuDS will be constructed in line with manufacturer's guidelines / best practice methods
- During construction, any surfaces which are intended to enable infiltration must be protected from compaction. This includes protecting from heavy traffic or storage materials.
- Water contaminated with silt will not be allowed to enter a watercourse or drain as it can cause pollution. All parts of the drainage system will be protected from construction runoff to prevent silt clogging the system and causing pollution downstream. Measures to prevent this include soil stabilisation, early construction of sediment management basins, channelling run-off away from watercourses and surface water drains and erosion prevention measures.
- Following construction, subsoil that has been compacted during construction should be broken up prior to the re-application of topsoil to reinstate the natural infiltration performance of the ground.
- Areas of SuDS that have been compacted will be refurbished.
- Pipe systems and orifices will be checked for blockages or partial blockages.
- Silt deposited during construction will be removed.
- Soils will be stabilised and protected from erosion whilst planting becomes established.
- Hydrocarbons or any hazardous chemicals will be stored in specific bunded areas. Refuelling of plant and machinery will also be carried out in bunded areas to minimise risk of any potential pollutants being discharged from the site.
- Pollution control measures will be implemented to control run-off from the site and prevent run-off which is potentially contaminated with sediments or hazardous chemicals entering the drainage network.
- Pouring of cement-based materials for works will only be carried out in dry conditions. Pumped concrete will be monitored to ensure there is no accidental discharge. Mixer washings and excess concrete will not be discharged directly into the drainage network. Concrete washout areas will be created to avoid any accidental discharge from the proposed development site.
- 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.

- A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available on site. Construction staff will be familiar with the emergency procedures and use of the equipment.

8.2 Protection of Existing Drainage Ditches, SuDS Areas and Surface Water Flow Paths

The existing site contains drainage ditches and flow paths which convey surface water through the wider Mooretown lands towards the downstream receiving drainage network and Broadmeadow River catchment. These features shall be treated as environmentally sensitive receptors during the construction phase.

Prior to commencement, the Contractor shall prepare a drainage constraints plan identifying all existing ditches, temporary drainage routes, proposed discharge points, settlement/treatment locations, SuDS areas and monitoring points. No uncontrolled runoff from stripped ground, excavations, stockpiles, concrete works or haul roads shall be permitted to discharge directly to any ditch, drain, surface water sewer or watercourse.

Temporary drainage measures shall be installed in advance of major earthworks. These may include silt fences, settlement tanks, settlement ponds, check dams, silt bags, cut-off drains, proprietary treatment systems and Class 1 full retention petrol interceptors where appropriate. These measures shall be inspected daily when earthworks, pumping, concreting or rainfall events are occurring, and maintained until the contributing catchment has been stabilised.

8.3 Measures to Reduce Impacts on Habitat Loss

Full habitat protection and landscape mitigation measures, including the treatment of retained hedgerows, woodland and high-value field boundaries in accordance with BS5837:2012, are set out in Section 9.1.3.

8.4 Measures to Reduce Impacts on Bats

Full mitigation measures relating to bats, including roost assessment, the installation of bat boxes, and construction-phase lighting controls, are set out in Sections 9.1.4 and 9.2.1.

8.5 Measures to Reduce Impacts on Birds

Full mitigation measures relating to nesting birds, including the avoidance of the bird-nesting season (1 March to 31 August) and the requirement for pre-clearance surveys by a suitably qualified ecologist, are set out in Sections 9.1.3 and 9.1.4. Provisions for the installation of bird boxes to enhance the ecological value of the site are also included.

8.6 Measures to Reduce Impacts on Amphibians

Full mitigation measures relating to amphibians, including the inspection of ponds and wet areas by a suitably experienced ecologist prior to works being undertaken, are set out in Section 9.1.4.

8.7 Measures to Reduce Impacts of Invasive Species

Full mitigation measures relating to the prevention of the spread of invasive species, including biosecurity protocols to be implemented during construction, are set out in Section 9.1.3.

8.8 Protection and Handover of SuDS Infrastructure

The proposed development incorporates SuDS features including permeable paving, swales, bioretention systems/rain gardens/tree pits, detention basins and below-ground storage. These features form part of the permanent surface water management strategy and shall be protected during construction to ensure that their hydraulic and treatment performance is not compromised.

The Contractor shall not use SuDS areas for uncontrolled storage, parking, haul roads or washout. Where temporary construction use cannot be avoided, the area shall be protected using suitable temporary surfacing and shall be inspected, cleaned and reinstated before completion. Any silt deposited in SuDS features during construction shall be removed. Pipe systems, flow controls, orifices and outfalls shall be checked for blockages prior to handover.

Prior to completion, the Contractor shall provide as-built records, inspection records, cleaning records and confirmation that SuDS features have been reinstated and are operating as intended.

8.9 Complaints / Records

A complaints and environmental records procedure shall be maintained for the duration of the works. Complaints relating to dust, noise, vibration, traffic, surface water runoff, mud on roads, odour, lighting or general construction nuisance shall be logged and investigated by the Contractor. The record shall include the date and time of complaint, complainant details where available, location, nature of complaint, weather conditions where relevant, investigation findings, corrective action and close-out date.

Where corrective measures are implemented, the complainant and/or Fingal County Council shall be updated as appropriate. Records shall be retained by the Contractor and made available for inspection.

9. Biodiversity Mitigation and Monitoring Measures

This section incorporates the biodiversity mitigation and monitoring measures identified in the Environmental Impact Assessment Report (EIAR) prepared for the proposed development. These measures shall be implemented in full by the Main Contractor during the construction phase, under the supervision of the appointed Project Ecologist. Operational phase measures are included for completeness and handover.

9.1 Mitigation Measures – Construction Phase

9.1.1 Incorporated Design Mitigation

The proposed development incorporates a comprehensive landscape design, with biodiversity-focused planting (refer to Chapter 14 (Landscape & Visual) and the Landscape and Green Infrastructure Report and associated drawings, prepared by SRLA, the project landscape architects, and submitted as part of this application under separate cover). The planting and long-term management proposed will greatly enhance the biodiversity resource on the proposed development site by creating new, pollinator-friendly habitats.

9.1.2 Designated Conservation Areas

No designated conservation areas will be impacted in any way by the proposed development, and no mitigation measures are required in this regard. Refer to the AA Screening Report that accompanies the planning application for full details in relation to European designated sites.

9.1.3 Habitats

- The high value field boundaries will be retained and protected in so far as is feasible and incorporated into the landscaping of the proposed development.
- All of the retained hedgerows and woodland will be treated in accordance with British Standard BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations, with protective fencing being installed prior to commencement of development.
- All site clearance and landscaping works will comply with current legislative requirements and best practice. The clearance of any vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the construction programme require vegetation clearance between March and August, and this is unavoidable, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.
- The planting proposed for the development will, wherever possible, comprise an appropriate mixture of native trees and shrubs, preferably of local provenance. The planting will also incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. It will take account of and implement the relevant objectives of the All-Ireland Pollinator Plan 2021–2025.

- Species listed on Schedule 3 of the Birds and Habitats Regulations, 2011–2015, such as Japanese knotweed and giant hogweed, have not been recorded on the site. Nevertheless, appropriate biosecurity measures will be implemented during the construction phase of the proposed development to ensure that no invasive species are introduced, either deliberately or inadvertently, to the site.
- The following recommendations from Inland Fisheries Ireland 'Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters' (2016) will be implemented as necessary:
 - No direct discharges shall be made to waters where there is potential for cement or residues in discharge.
 - The pH of any and all discharges made from and during construction works shall be in the range of 6.0 – 9.0 units and shall not alter the pH of any receiving fisheries waters by more than +/- 0.5 pH units.
 - The level of suspended solids in any discharges to fisheries waters as a consequence of construction works shall not exceed 25 mg/l, nor result in the deposition of silts on gravels or any element of the aquatic flora or fauna.

9.1.4 Fauna

Nesting Birds

Where feasible and practicable, the clearance of scrub and other vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the construction programme require vegetation clearance between March and August, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.

Otters and Other Large Mammals

There will be no impacts on otters and no mitigation is required. No badger setts will be in any way affected by the proposed development, and no mitigation measures will be required for the protection of badgers. Nevertheless, a watching brief will be maintained by the Project Ecologist throughout the construction phase, in the event that badgers should establish a territory at the site.

Bats

No bat roosts have been recorded at the proposed development site, and it will not be necessary to apply for a derogation licence under Regulation 54 or 55 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. There are no suitable structures (natural or manmade) available for use by roosting bats within the subject site.

Installation of Bat and Bird Boxes, and Hedgehog Access Points

Notwithstanding the lack of roosting potential of the site, it is proposed to install bat (and bird) boxes within the proposed development. The reason for the installation of habitat boxes is not to provide replacement roosts/nesting; rather, it is to augment the overall ecological value of the site. This will contribute to maximising the ecological value of the proposed development.

To that end, a number of bat and bird boxes will be erected, with advice from the Project

Ecologist, in appropriate areas. The boxes proposed are as follows (this list is subject to revision based on the availability of suitable boxes in the future):

- 6 no. 2FN bat boxes (or similar) will be incorporated into the site within the north-western corner where a park is proposed. These shall be installed at least 3 metres high, with a clear drop below (as bats need to drop to start their flight).
- 6 no. assorted wooden or woodcrete bird boxes, suitable for use by robins, blue tits and tree creepers, will also be installed.
- 6 no. insect hotels, to be distributed through the landscaped areas, as advised by the Project Ecologist during the construction phase.

The installation of boxes that can accommodate swifts will increase the available nesting potential of the proposed development site for this species, which has not been recorded at the subject site, has undergone significant decline in recent years, and has now been placed on the Red List of Birds of Conservation Concern in Ireland (BoCCI). Where feasible (i.e. where topography allows), hedgehog access points shall be incorporated into the site from garden fences and perimeter walls.

Any ponds/wet areas found will be inspected by a suitably experienced ecologist prior to works being undertaken. Should any frog spawn or tadpoles be discovered, a licence to remove frog spawn may be required from NPWS.

9.1.5 Water Quality, Dust and Other Emissions

The surface water mitigation measures proposed in Chapter 10 (Hydrology) of the EIAR, and in the Surface Water Management Plan and Outline Construction Management Plan (all submitted as part of this application under separate cover), will ensure that no sediment contamination, contaminated run-off or untreated wastewater will enter any on-site surface water ditches as a result of the construction of the proposed development. Refer also to the Appropriate Assessment Screening Report.

The measures set out in Chapter 11 (Air Quality) of the EIAR will be implemented to ensure that no air-related impacts arise on biodiversity. No further mitigation measures, in the context of biodiversity, are required.

9.2 Mitigation Measures – Operational Phase

9.2.1 Lighting

Increased artificial lighting has the potential to impact on bat feeding and commuting behaviour. The proposed lighting for the proposed development has been designed in accordance with the following guidelines:

- Bat Mitigation Guidelines for Ireland – V2 (IWN no. 134);
- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010);
- Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023.

9.2.2 Water

There will be no impacts on foul water treatment capacity at the Swords WwTP as a result of the proposed development. No mitigation measures are required.

There will be no impacts related to surface water as a result of the proposed development. The proposed development is designed in accordance with the principles of SuDS as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GSDS), which addresses the issue of sustainability by requiring designs to comply with a set of drainage criteria which aim to minimise the impact of urbanisation by replicating the run-off characteristics of the greenfield site.

The criteria provide a consistent approach to addressing the increase in both rate and volume of run-off, as well as ensuring the environment is protected from any pollution from roads and buildings. No corresponding mitigation measures are required. The proposed surface water design is also in line with the following standards:

- The Greater Dublin Strategic Drainage Study (GSDSDS), Volume 2;
- The Greater Dublin Regional Code of Practice for Drainage Works;
- British Standard BS EN 752:2008 (Drains and Sewer Systems Outside Buildings);
- Part H of the Building Regulations (Building Drainage);
- Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas, Department of Housing, Local Government and Heritage.

No mitigation is proposed for the operational phase of the proposed development, once the measures required during the construction phase are implemented.

9.3 Monitoring Measures

9.3.1 Construction Phase

A suitably experienced Project Ecologist will be appointed for the duration of the construction phase, and regular monitoring of all related works will take place to ensure the correct and full implementation of all mitigation measures. The Project Ecologist will ensure that all construction works take place in accordance with planning conditions, this CEMP and the mitigation measures set out in the EIAR.

Vegetation clearance will only be permitted outside the bird-nesting season. Should vegetation clearance be required during the bird-nesting season, and should this work be unavoidable, such clearance will take place only after the Project Ecologist has undertaken a survey to ensure that no active bird nests or recently fledged birds are present. Pre-construction surveys will be required to ensure that any necessary tree felling or works to buildings continue to have no impact on roosting bats.

Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development will ensure mitigation measures are working satisfactorily.

Monitoring of all fuel and oil storage areas will also be undertaken to ensure that all related mitigation measures are being implemented effectively.

9.3.2 Operational Phase

No long-term ecological monitoring is required, other than post-construction monitoring of the bat and bird boxes and insect hotels. The bat and bird boxes and insect hotels installed on the site will be checked annually for a period of two years post-completion of the works, to ensure that they continue to be accessible to these species. If necessary, they will be repositioned within the site.

On completion of construction, the lighting installed will be reviewed by the Project Ecologist and a bat specialist, to ensure that it is operating according to the approved specifications. The landscape architect will similarly ensure that all works undertaken are in full compliance with the landscape specification. The arborist will ensure that all hedgerow and tree management measures are fully implemented. All monitoring tasks will be recorded and logged for inspection by the site manager.