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# OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN FOR A RESIDENTIAL DEVELOPMENT

# AT

# WOODBROOK, CO. DUBLIN.

# (PHASE 1)

Report Prepared For

**Aeval UC**

Report Prepared By

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## 1.0 INTRODUCTION

This Outline Construction Environmental Management Plan (CEMP) has been prepared by AWN Consulting Ltd. (AWN) on behalf of Aeval Unlimited Company or submission to An Bord Pleanála (ABP) for the construction of 685 no residential units (207 no. houses, 430 no. apartments and 48 no. duplexes), a childcare facility, pedestrian and cycle paths, internal roads, open spaces, 2 no. replacement golf holes and all associated site and infrastructural works.

This Outline CEMP has been prepared to account for activities at the site during the construction phase of the project.

The main issues that have been considered within this document are as follows;

- Description of works;
- Construction programme and phasing;
- Site logistics;
- Workforce;
- Public relations and community liaison;
- Construction traffic and access; and
- Safety, health and environmental management.

## 2.0 DESCRIPTION OF THE PROJECT

The site is generally bounded by the Old Dublin Road (R119) and St. James (Crinken) Church to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Cork Lodge and woodlands and Woodbrook Golf Clubhouse and car park to the south. The replacement golf hole lands are generally bounded by the existing train line to the west, Shanganagh Public Park to the north and Woodbrook Golf Course to the east and south. The proposed development is within the townlands of Cork Little and Shanganagh, Shankill, Co. Dublin.

In summary, the proposed Strategic Housing Development broadly comprises: -

685no. residential units (207no. houses, 48no. duplex and 430no. apartments) in buildings ranging from 2 to 8-storeys.

1no. childcare facilities (c. 429 sq. m gross floor area).

Provision of Woodbrook Distributor Road / Woodbrook Avenue from the Old Dublin Road (R119) to the future Woodbrook DART Station, including the provision of a temporary surface car park (164no. parking spaces including set down areas and ancillary bicycle parking and storage) adjacent the future Woodbrook DART Station in northeast of site.

Provision of a series of linear parks and green links (Coastal Park and Corridor Park), including 2no. pedestrian / cycle links to Shanganagh Public Park and provision of interim landscaping of future public plaza to serve future Local Centre to allow full north / south connection, supplemented by smaller pocket parks.

Provision of SuDS infrastructure and connection to existing surface water culvert on Old Dublin Road (R119).

Provision of waste water infrastructure (pumping station including 24 hour emergency storage and rising foul main through Shanganagh Public Park to tie-in to existing services at St. Anne's Park Residential Estate).

2no. replacement golf holes on eastern side of railway line.

All ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works.

## 3.0 CONSTRUCTION PROGRAMME AND PHASING

The construction works associated with the development consist of the following principal elements:

- Construction of Phase 2 residential units.

The construction of this development is intended to take place in four sub-phases (Phase 1A, 1B, 1C and 1D) of development, starting from the Old Dublin Road and moving eastwards into the site. The sequence of construction outlined below will be subject to confirmation once the building contract has been awarded.

The overall duration of the project is estimated to be 36 months.

The sub-phases of the Phase 1 development can be summarised as follows:

- Phase 1A – South Western Residential Phase including, temporary haul road, childcare facility, 52 no. houses, 33 no. duplexes and 41 no. apartments and the central Corridor Park linear park;
- Phase 1B - South Central Residential Phase including local pocket park, 96 no. houses and 21 no. apartments;
- Phase 1C - South Eastern Residential Phase including 59 no. houses and 12 no. duplexes; and
- Phase 1D – North Eastern Residential Phase including another local pocket park and landscaped podium courtyards, 368 no. apartments, 3 no. duplexes and the north/south stretch of Woodbrook Avenue.

A Phasing Plan is attached in Figure 1.

There are a number of construction activities involved in a project such as this. The activities (independent of phasing) can be divided into five general categories:

- Excavation – This includes site clearing and earthworks required to prepare the site for building foundations and installing utility services.
- Structure – The structure includes the foundations and the physical frame of the buildings.
- Enclosures – The enclosures for the building will be formed from brick, block work, timber, and glass, with slate roofs, all with the required levels of insulation and water proof membrane.
- Services – The requisite services will be provided including drainage, water supply, telecoms, electricity and lighting.
- Landscaping – The landscaping works include some hard landscaping, roads, footpaths, cycle-paths, bed and tree planting, and significant open spaces, including flood mitigation where required. In addition, there a number of existing trees and hedgerows to be protected on site and incorporated into the new scheme.

## 4.0 EXCAVATIONS

### 4.1 Archaeological and Architectural Heritage

An archaeological assessment of the proposed site area was carried out by the Irish Archaeological Consultancy Ltd (IAC) as part of the EIAR submission. The assessment was based on a desk study of published and unpublished documentary sources, as well as a field inspection, geophysical survey and targeted archaeological test excavations of the proposed development area.

Geophysical survey and licensed archaeological testing at the planning stage has sought to mitigate against the risk of large-scale archaeological discoveries.

The archaeological sites discovered within the development area will be preserved by record (archaeological excavation), prior to construction taking place. All topsoil stripping associated with the proposed development will be monitored by a suitably qualified archaeologist.

If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht. Archaeological monitoring during the works will ensure the identification and recording of any additional archaeological remains that may be uncovered as a result of the construction.

### 4.2 Ground Conditions

Ground works will be required to clear the site and to facilitate construction of building foundations, access roads, utilities and landscaping. The Soils Chapter of the EIAR details the existing ground conditions at the site and provides a summary of the anticipated stratigraphy of the soil beneath the site. It is concluded that the site is underlain mostly by topsoil, cohesive deposits and granular deposits.

It is not anticipated that the development site works or excavation works will be deep enough to impact the underlying bedrock geology.

Surplus subsoil generated from excavations for foundations, roads and drainage will be stockpiled and reused on site where possible. However, any subsoil that requires to be removed will be taken for offsite reuse, recovery or disposal as required.

As the site is currently undeveloped, it is not anticipated that any ground contamination will be encountered. Notwithstanding this, excavations will be supervised by a suitably qualified person to ensure any potentially contaminated materials encountered are identified. Any potentially contaminated soils encountered during the construction works will be isolated from clean material and stockpiled for testing by a suitably qualified person.

## 5.0 SITE LOGISTICS

### 5.1 Site Establishment and Security

The first activity to be carried out at the site will be the establishment of site facilities and security. It is anticipated that site establishment works will take approximately four weeks. The site office and welfare facilities (site compound) will initially be established at the south west corner of Phase 1A. The site compound will move as the development progresses. The proposed locations of the initial site compound is shown

in insert 5.1 and in figure 1 of the appendices the additional site compounds can be viewed. All of the sub-contractors as well as the main contractor and project managers will occupy offices in the same area. The site parking for all staff, contractors and visitors will also be located in this area.


***Insert 5.1*** Proposed locations for the Initial Site and Materials Compound

## 5.2 Consents and Licenses

All statutory consents and licences required to commence on-site construction activities will be obtained ahead of works commencing, allowing for the appropriate notice period. These will include, but are not limited to:

- Site notices;
- Construction commencement notices; and
- Licence to connect to existing utilities and mains sewers, where required.

## 5.3 Services and Utilities

Currently the site is an undeveloped greenfield site. Temporary site offices and welfare facilities for construction employees will need to be established. The offices and site

amenities will initially need to have their own power supply (generator), water deliveries and foul water collection until connections are made to the mains networks.

Electrical connections will be made by suitably qualified personnel following consultation with the relevant authorities and will be cognisant of subsequent construction works. High voltage connections will be established for heavy duty equipment and site facilities, as required.

The current electricity facilities near the site of the proposed development are supplied by the ESB through a ring network. All electrical works, including connection to the ESB network will be carried out by a suitably qualified contractor.

Water supply required for welfare facilities, dust suppression and general construction activities will be sourced from the existing 6" public piped supplies running parallel with Old Dublin Road. The existing 6" water supply will be upgraded to a 250mm diameter and connect into an existing 250mm diameter watermain circa 250m to the north of the proposed site as part of the construction works. Although before initial connections to the water supply are made it may need to be trucked onto site. As with electrical works, this will be carried out by a suitably qualified contractor. It will be necessary to service the site with a reliable and safe water supply.

Site welfare facilities will be established to provide sanitary facilities for construction workers on site. The main contractor will ensure that sufficient facilities are available at all times to accommodate the number of employees on site. The cabins will initially need to have the foul water collected by a licensed waste sewerage contractor before connection to the sewer line can be made. No foul connections will be available until the pumping station is taken in charge by IW prior to occupation of the first units

## 5.4 Surface Water Drainage

Any adjacent watercourses will be protected from sedimentation and erosion. Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary positive drainage system shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction.

A number of geotextile lined settling basins and temporary moundings will be installed to ensure silts do not flow off site during the construction stage. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed. All inlets to the settling basins will be 'riprapped' to prevent scour and erosion in the vicinity of the inlet.

## 5.5 Material Handling and Storage

During the construction phase there will be a significant amount of construction materials required to be delivered to the site. A material storage area will be located within a secure section of the site compound as shown in figure 1 in the appendices of this report.

Waste receptacles will be stored adjacent to the construction areas as required and will move from west to east in each of the sub-phases as the construction works progress. The segregated receptacles will be maintained close to each other in a designated Waste Storage Area (WSA) insofar as possible and will be clearly signed to identify the types of waste to be placed in each in accordance with the requirements of the Construction & Demolition Waste Management Plan. Segregated skips will be located in the material storage area, as required, and wheelie bins (or other suitable

waste receptacles) for the offices and welfare facilities will be provided in strategic locations around the compound.

The majority of construction waste materials generated will be soil from excavation works. Suitable topsoil will be stockpiled pending reuse across the site for landscaping. Soil requiring removal offsite will be temporarily stockpiled away from watercourses and construction activities. Suitable locations will be determined as site clearance works and excavations progress. Material will be removed from site regularly to ensure there is a minimum stockpiling required.

### 5.6 Visitor Management

Visitors will only be allowed to enter the site in vehicles via the main haul road (northern) or via designated pedestrian access gates. A dedicated, secured footpath to the main site offices will be established for registration and obtaining PPE prior to entering the site. A log will be maintained by security to control access to the site. Visitors will be required to attend a site-specific induction to allow access to the site unless being accompanied by an inducted member of the site team.

### 5.7 Site Working Hours

Site development and building works will only be carried out between the hours of 0700 to 1900 Mondays to Fridays inclusive and between 0800 and 1400 hours on Saturdays There will be no construction works carried out on Sundays or public holidays. Deviation from these times will only take place when written approval is granted by DLRCC in exceptional circumstances.

### 5.8 Employment and Management Workforce

It is estimated that there will initially be 60-70 staff on site on a typical day, however during peak construction periods this is expected to fluctuate up to 250-350 staff and contractors on site per day.

It is anticipated that the key project managers and main contractor representatives will maintain a presence on site for the whole duration of the project and the labour workforce will be determined by the specialist contractors required on site.

All employees working on the site will be required to have a SafePass Card (or similar approved Construction Health & Safety card), manual handling training and the necessary certificates to operate machinery, as required. The details of training required, records maintained, and induction procedures will be outlined in the Main Contractor's Health and Safety Plan(s).

## 6.0 CONSTRUCTION TRAFFIC AND SITE ACCESS

The proposed construction vehicle routes for the site are shown in Figure 2 at the end of this report. It is envisaged all construction traffic including heavy and abnormal loads to be directed to the site via the M11, Wilford Junction and Old Dublin Road thus avoiding Shankill Village. These routes would be used for all the construction works traffic. It is proposed that all vehicles will arrive from the south (M11 exit 5) onto Old Dublin Road, with a right turn into the site, all vehicles exiting the site will be restricted to left turns only, towards the south (M11 exit 5). Appropriate signage and bollards/cones will be erected to this effect

The site will have two proposed haul road entrances off Old Dublin Road, which will ensure very little or no traffic build up on Old Dublin road or surrounding streets.

Construction traffic will access the site via the either one of the proposed haul roads, off Old Dublin Road.

Construction traffic operation would only be limited 0700 to 1900 from Monday to Friday and 0800 to 1300 on Saturday. These times may vary to facilitate specific site requirements and/or construction activities associated with the site. Any variation will be discussed and agreed in advance with DLRCC.

To allow for trucks to pull off Dublin Road in peak times there will be a setback between the site boundary stonewall and the southern site entrance gate of a minimum of 20 meters on the haul road.

### 6.1 Traffic Queueing

Material deliveries and collections from site will be planned, scheduled and staggered to avoid any unnecessary build-up of construction works related traffic. In addition, two site entrances and a setback area at the site entrance on the southern haul road will be provided to reduce or eliminate traffic queuing on Old Dublin Road.

### 6.2 Site Hoarding and Security Fencing

Erection of security fencing and hoarding will take place at the start of the project alongside the site establishment and security works on sections that are not currently secured by a stone wall. It is estimated that erection of hoardings and fencing will require 2 weeks to complete. The security fence will be established in conjunction with the current stone wall, around the entire phase 1 development, fronting onto Old Dublin Road.

Site access will be restricted by dedicated security personnel who will check all incoming and outgoing vehicles and workers.

## 7.0 SAFETY, HEALTH AND ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION WORKS

The appointed main contractor will be required to prepare a Construction Health & Safety Plan which will be put in place prior to commencement of the works. At a minimum, this plan will include:

- Construction Health & Safety training requirements;
- Induction procedures;
- Emergency protocols; and
- Details of welfare facilities.

### 7.1 Air Quality

This section describes the site policy with regard to dust management and the specific mitigation measures which will be put in place during construction works. The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following measures have been formulated by drawing on best practice guidance from Ireland, the UK and the US, such as:

- Department of Environment, Heritage and Local Government (DOEHLG), *Quarries and Ancillary Activities, Guidelines for Planning Authorities* (2004) [1];
- US Environment Protection Agency (USEPA), *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition* (periodically updated) (1986) [2];

- The Scottish Office – Development Department, *Planning Advice Note PAN50 Controlling The Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings* (1996) [3]; and
- Institute of Air Quality Management (IAQM), *Guidance on the Assessment of Dust from Demolition and Construction* (2014) [4].

7.1.1 Site Management

The site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors such as watercourses, residents and pedestrians. Dust management during the construction phase will be the most important aspect in terms of minimising the impacts of the project on the surrounding air quality. The following measures will also be implemented to ensure impacts are minimised:

- Complaint registers will be kept detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- Equipment and vehicles used on site will be in good condition such that emissions from diesel engines etc. are not excessive; and
- Pre-start checks will be carried out on equipment to ensure they are operating efficiently and that emission controls installed as part of the equipment are functional.

Dust deposition levels will be monitored on a regular basis in order to assess the impact that site activities may have on the local ambient air quality. The following procedure will be implemented:

- The dust deposition rate will be measured by positioning Bergerhoff Dust Deposit Gauges at strategic locations near the boundaries of the site for a period of 30 (+/- 2) days. Monitoring shall be conducted on a quarterly basis during periods when the highest levels of dust are expected to be generated i.e., during site preparation works and soil stripping activities. The five proposed monitoring locations (D1 – D5) are presented in insert 7.1.
- The exact locations will be determined after consideration of the requirements of Method VDI 2119 with respect to the location of the samplers relative to obstructions, height above ground and sample collection and analysis procedures.
- After each 30 (+/- 2 days) exposure period, the gauges will be removed from the sampling location, sealed and the dust deposits in each gauge will be determined gravimetrically by an accredited laboratory and expressed as a dust deposition rate in mg/m$^2$/day in accordance with the relevant standards.
- Technical monitoring reports detailing all measurement results, methodologies and assessment of results shall be subsequently prepared and maintained by the Site Manager.

A limit value of 350 mg/m$^2$/day will be used in comparison with recorded values.


***Insert 7.1*** Construction stage air quality monitoring locations

### 7.1.2 Dust Control Measures

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design, planning and effective control strategies. The siting of construction activities and stockpiling will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs.

- During working hours, technical staff will be available to monitor dust levels as appropriate; and
- At all times, the dust management procedures put in place will be strictly monitored and assessed.

The dust minimisation measures should be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust generation. In the event of dust nuisance

occurring outside the site boundary, site activities should be reviewed and procedures implemented to rectify the problem. Specific dust control measures to be employed are presented below.

***Site Roads***

Site access routes (particularly unpaved routes) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25% to 80% [5].

- A speed restriction of 10 km/hr will be applied as an effective control measure for dust for on-site vehicles;
- Bowsers will be available during periods of dry weather throughout the construction period. Research shown found that the effect of surface watering is to reduce dust emissions by 50% [6]. The bowser will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use; and
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

***Land Clearing/Earth Moving***

During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

The movement of truck containing materials with a potential for dust generation to an off-site location will be enclosed or covered.

***Stockpiling***

The location and moisture content of rubble stockpiles are important factors which determine their potential for dust emissions. The following measures will be put in place:

- Overburden material will be protected from exposure to wind by storing the material in sheltered parts of the site, where possible; and
- Regular watering will take place during dry/windy periods to ensure the moisture content is high enough to increase the stability of the soil and suppress dust.

***Site Traffic on Public Roads***

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

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered at all times to restrict the escape of dust; and
- Road sweepers will be employed to regularly clean the site access route.

***General***

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the satisfactory management of dust by the construction contractor.

## 7.2 Ecology

The key strategies to be undertaken to minimise impact on the local flora and fauna during site clearing and construction are as follows.

- All site clearance and landscaping works will comply with current legislative requirements and best practice;
- Where possible, the removal of trees and tree lines suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1st March to 31st August);
- Should any trees or tree lines be removed that contain features suitable for roosting bats, such work will only be done during the autumn months;
- Regardless of the timing of the proposed works, the advice of a competent bat specialist will be sought in advance;
- An active 'main' badger sett is located on the Phase 1 boundary in the northern part of the site. Although it may be necessary to exclude this sett for future development it will be left undisturbed in-situ as part of the Phase 1 development and mitigation measures to protect the sett will be put in place. These measures will be implemented under licence from the National Parks and Wildlife Service. No other active badger setts have been recorded on the Phase 1 lands however should it be necessary to close any other badger setts on development lands these will be closed and excluded under licence from the NPWS. Such works will be undertaken outside the breeding season (that is, outside the period 1st December to 31st June) and will involve appropriate mitigation of any impacts;
- Any ponds present in the fields to be disturbed 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 will be applied for from NPWS;
- Taking measures to limit the working area during the construction phase will reduce the impacts of the development on adjacent areas. The construction area will be clearly delimited by the site boundary hoarding and machinery should operate only within this allocated site area;
- All construction-related fuel will be contained within specially constructed bunds to ensure that fuel spillages whether accidental or otherwise are fully contained; and
- The measures outlined in Section 5.4 will ensure that silt run-off and potential flooding risks are minimised which will protect any ecological receptors associated with the site.

## 7.3 Noise and Vibration

Noise impacts arising from earthworks and construction activities have the potential to cause annoyance or nuisance to local residents in the area.

The earthworks will generate typical construction activity related noise and vibration sources from use of a variety of plant and machinery such as rock breakers (where required), excavators, lifting equipment, dumper trucks, compressors and generators.

The noise limits to be applied for the duration of the infrastructure works are those specified in the B Category of BS 5228. These limits are summarised below and will be applied at the nearest sensitive receptors to the works.

- Night (23:00-07:00) = 50dB
- Evening (19:00-23:00) = 60dB
- Day (07:00-19:00) = 70dB

The total noise (LAeq) which should not be exceeded during daytime is therefore 70dB.

Vibration limits to be applied for the infrastructure works are those specified in the TII document Guidelines for the Treatment of Noise and Vibration in National Road Schemes (TII, Revision 1, 2004). These limits are outlined below:

Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of;

- Less than 11Hz - 3mm/s
- 11 to 50 Hz - 3 to 8mm/s
- 50 to 110 Hz (and above) - 8 to 11mm/s

Any noise complaints related to activities at the site will be logged and investigated and, where required, measures taken to ameliorate the source of the noise complaint.

All works on site shall comply with BS 5228 2009 which gives detailed guidance on the control of noise and vibration from construction activities. In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

- Avoid unnecessary revving of engines and switch off equipment when not required.
- Keep internal haul roads well maintained and avoid steep gradients.
- Minimise drop height of materials.
- Start-up plant sequentially rather than all together

More specifically the Contractor shall ensure that:

- In accordance with “Best Practicable Means”, plant and activities to be employed on site are reviewed to ensure that they are the quietest available for the required purpose.
- Where required, improved sound reduction methods are used e.g. enclosures.
- Site equipment is located away from noise sensitive areas, as much as physically possible.
- Regular and effective maintenance by trained personnel is carried out to reduce noise and / or vibration from plant and machinery.
- Hours are limited during which site activities likely to create high levels of noise and vibration are carried out.
- A site representative responsible for matters relating to noise and vibration will be appointed prior to construction on site.

A noise and vibration monitoring specialist will be appointed to periodically carry out independent monitoring of noise and vibration during random intervals and at sensitive locations for comparison with limits and background levels. It is proposed that noise and vibration levels be maintained below those outlined above as part of these infrastructure works.

## 7.4 Waste Management

This section outlines the measures that will be undertaken to minimise the quantity of waste produced at the site and the measures to handle the waste in such a manner as to minimise the effects on the environment. A site specific Construction and Demolition Waste Management Plan (C&D WMP) has been prepared by AWN Consulting and will be employed to ensure sustainable and effective waste management throughout the construction and demolition phases of the project.

Adherence to the C&D WMP prepared for the construction works will ensure that the management of waste arising is dealt with in compliance with the provisions of the *Waste Management Acts 1996 – 2011* as amended [7], associated Regulations [7], the *Litter Pollution Act of 1997* as amended [8] and the *Eastern-Midlands Region Waste Management Plan 2015 – 2021* [9], and achieve optimum levels of waste reduction, re-use and recycling.

Typical waste materials that will be generated from the construction works will include:

- Soil and stones;
- Concrete, bricks, tiles and ceramics;
- Wood, glass and plastics;
- Metals;
- Gypsum-based construction material;
- Paper and cardboard;
- Mixed C&D waste; and
- Chemicals (solvents, paints, adhesives, detergents etc.).

The management of all hazardous waste arisings, if they occur, shall be coordinated in liaison with Health and Safety Management.

### 7.4.1 Waste Minimisation

Waste minimisation measures proposed are summarised as follows (and are described in more detail in the C&DWMP):

- Materials will be ordered on an ‘as needed’ basis to prevent over supply;
- Materials will be correctly stored and handled to minimise the generation of damaged materials;
- Materials will be ordered in appropriate sequence to minimise materials stored on site; and
- Sub-contractors will be responsible for similarly managing their wastes.

All wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste

### 7.4.2 Waste Storage

A dedicated and secure compound containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities, will be established within the active construction phase of the development site. Additionally, skips and/or bins will be located in the materials storage area adjacent to the site compound.

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

waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Dublin Region that provide this service.

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

7.4.3 Responsibility

It will be the responsibility of the construction manager to ensure that a written record of all quantities and natures of wastes removed from the site are maintained on-site in a waste file (in hardcopy or electronically).

It is the responsibility of the project manager or his/her delegate that all contracted waste haulage drivers hold an appropriate waste collection permit for the transport of waste loads and that all waste materials are delivered to an appropriately licenced or permitted waste facility in compliance with the relevant Regulations as outlined in the C&DWMP.

The contractor, as part of regular site inspection audits, will determine the effectiveness of the waste management stratergy and will assist the project manager in determining the best methods for waste minimisation, reduction, re-use, recycling and disposal as the construction phase progresses and waste materials are generated.

Prior to commencement of the excavation and construction activity and removal of any waste off-site, details of the proposed destination of each waste stream will be provided to DLRCC.

## 7.5 Surface Water Management

The following measures will be put in place during the construction phase to ensure protection of surface waterbodies. These measures are in compliance with the following relevant CIRIA guidance documents:

- Control of Water Pollution from construction Sites, Guidance for consultants and contractors (C532) [10]; and
- Environmental Good Practice on Site (3rd edition) (C692) [11].

7.5.1 Pollution Control

***Storage***

Any temporary storage of spoil, hardcore, crushed concrete or similar material will be stored a minimum of 10m away from any surface water drains. In order to minimise the risk of contamination, the stockpiled material will be removed off-site as soon as possible. Surface water drain gratings in areas near or close to where stockpiles are located will be covered by appropriate durable polyurethane covers or similar.

***Concrete Run-off***

No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within 10 meters of an existing surface water drainage point. Wash-outs should only occur in designated areas with an impervious surface.

### *Accidental Spills and Leaks*

No bulk chemicals will be stored within the active construction areas. Temporary oil and fuel storage tanks will be kept in the material storage area in suitable containers and will be appropriately bunded as required. Refuelling of vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated areas of the site, where possible, which will be kept away from surface water gulleys or drains. Spill protection equipment such as absorbent mats, socks and sand will be available to be used in the event of an accidental release during refuelling. Training will be given to appropriate site workers in how to manage a spill event.

### *Monitoring*

Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items, and that all storage is located at least 10m from surface water receptors. A regular log of inspections will be maintained and any significant blockage or spill incidents will be recorded for root cause investigation purposes and updating procedures to ensure incidents do not reoccur.

## 8.0 SUMMARY

This Outline CEMP sets out the overall management strategy for construction works on the Woodbrook Phase 1 Residential Project. The Outline CEMP aims to ensure the management of construction activity is carried out in a planned, structured and considerate manner which minimises the impacts of the works on the local environment, residents and commercial activities in the vicinity of the site. Due to the nature of construction works, there may be unforeseen events which occur at the site and the project team will actively manage any changes and discuss with the relevant authorities, where required.

The project team are committed to ensuring that the construction activities to be carried out are pro-actively managed so as to minimise potential impacts. The Construction Environmental Management may be updated by the construction contractor (once appointed) or design team prior to the start of site works.

## 9.0 REFERENCES


1. Department of Environment, Heritage and Local Government (DOEHLG), *Quarries and Ancillary Activities, Guidelines for Planning Authorities* (2004).
2. US Environment Protection Agency (USEPA), *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition (periodically updated)* (1986).
3. The Scottish Office – Development Department, *Planning Advice Note PAN50 Controlling the Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings* (1996).
4. Institute of Air Quality Management (IAQM), *Guidance on the Assessment of Dust from Demolition and Construction* (2014).
5. UK Office of Deputy Prime Minister, *Controlling the Environmental Effects of Recycled and Secondary Aggregates Production Good Practice Guidance* (2002).
6. USEPA, *Fugitive Dust Technical Information Document for the Best Available Control Measures* (1997).
7. Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No. 20 of 2011). Sub-ordinate and associated legislation includes:
    - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended 2011
    - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended
    - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended
    - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended
    - Waste Management (Packaging) Regulations 2014 (S.I. No. 282 of 2014)
    - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
    - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
    - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
    - Waste Management (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
    - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
    - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 191 of 2015)
    - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended
    - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007)
    - Waste Management (Movement of Hazardous Waste) Regulations 1998 (S.I. No. 147 of 1998)
    - The European Communities (Transfrontier Shipment of Hazardous Waste) Regulations 1988 (S.I. No. 248 of 1988)
    - European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No. 324 of 2011)
    - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended
8. Litter Pollution Act 1997 (No. 12 of 1997) as amended
9. *Eastern-Midlands Region Waste Management Plan 2015 – 2021* (2015)
10. Construction Industry Research and Information Association (CIRIA) *Control of Water Pollution from construction Sites, Guidance for consultants and contractors (C532)*.
11. CIRIA, *Environmental Good Practice on Site* (3rd edition) (C692).

# APPENDICES
# FIGURES

**Figure 1** – Phasing Plan
**Figure 2** – Construction Traffic Management Plan Overview

**Figure 1** – Phasing Plan

Shanganagh Cemetery

First Main Site Compound

Second Main Site Compound

Phase 1D

1C/D

1A/B

Phase 1A

Phase 1B

Phase 1C

Temporary Haul Road

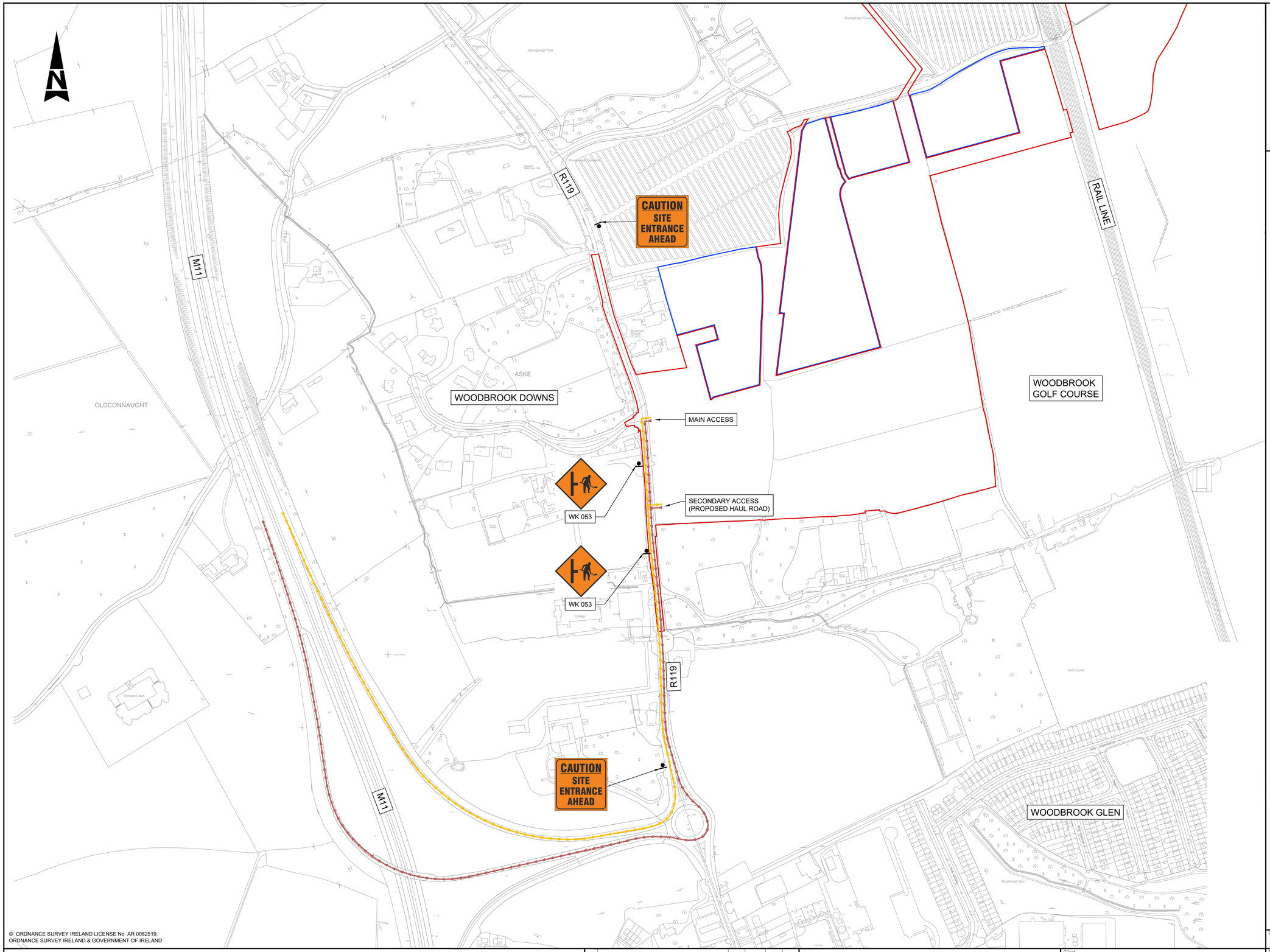
DUBLIN ROAD

St James's Lodge

St James' Church (C of I)

Coach House

**Figure 2** – Construction Traffic Management Plan Overview






GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

LEGEND:

- SITE BOUNDARY
- LAND OWNERSHIP BOUNDARY
- CONSTRUCTION TRAFFIC - IN
- CONSTRUCTION TRAFFIC - OUT

| R v | Description | By | Date | Chk'd | Auth |
|---|---|---|---|---|---|

Purpose: INFORMATION

Client:

Title: CONSTRUCTION TRAFFIC ROUTE LAYOUT

Project: WOODBROOK DEVELOPMENT

Original Scale: 1:2500 at A1, 1:5000 at A3

| Design/Drawn | Checked | Authorised |
|---|---|---|
| Date | Date | Date |

Status:

Drawing Number:

Rev:

100 0 10

A1

DO NOT SCALE

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Date: Sep 05, 2019 - 10:06am
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