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Construction, Waste & Environmental Management Plan

Residential development at Tubber Lane, Phase 3, Adamstown, Co Dublin

Engineering Service Report

Residential development at Tubber Lane, Phase 3, Adamstown, Co Dublin

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1.0 INTRODUCTION & BACKGROUND

This Construction Environmental Management Plan (CWEMP) has been prepared by POGA Consulting Engineers on behalf of Hugh McGreevy & Sons for a residential development at Tobermaclugg, Adamstown, Co Dublin. The project ecologist, Faith Wilson Ecological Consultant, has also provided input to the plan.

The proposed Phase 3 development will comprise of 455 no. residential units (including a mixture of 2 and 3 storey semi-detached and terraced houses, and duplex units and apartments in 3 and 4 storey blocks), finishing works to the Celbridge Link Road, development of new internal roads and footpaths, site access, public open space, car parking, cycle stores, landscaping, bin stores, foul and surface water drainage, boundary walls and fences, ESB substations and all associated site development works. Private and semi-private open space to serve the proposed units will be provided in the form of balconies, terraces and gardens.

This site is a Greenfield site, therefore there is no demolition and removal of existing buildings required.

2.0 SCOPE

The construction management issues dealt with in this plan include ecology noise and vibration, site traffic management, working hours, pollution control, dust control, road cleaning, compound / public health facilities and staff parking.

This CWEMP is a "live" document and should be updated and a developed as necessary as the scheme progresses.

This plan has been prepared in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, July 2006).

It is likely that the proposed development will be constructed over a 2 year period; however, market conditions and sales at the time will likely dictate the construction programme.

Road opening licence will be sought from SDCC where the works front onto or cross the existing public road network.

The report should be read in conjunction with other consultants' reports and drawings.

3.0 GENERAL SITE SET-UP

This CWEMP has been prepared taking into account the preliminary construction management plan and all recommendations from the Environmental and Ecological Impact Assessment.

No parking of construction related vehicles will be allowed on the adjoining road network. Adequate parking facilities will be made available within the Construction Compound for all site staff and workers during the construction.

No muck, dirt, debris or other material shall be deposited on the public road or verge by machinery or vehicles travelling to or from the site during the construction phase. The developer is to arrange for vehicles leaving the site to be kept clean and muck shifting shall be done in dry weather where possible.

The developer shall provide a condition survey of the public infrastructure that could be affected by construction activities on the site.

Controlled access to the site will be in the form off gates of the existing Adamstown Drive adjacent the site. These gates will be monitored by site personal, separate pedestrian gates will be provided. Roads will be monitored for muck, dust and debris and road sweepers will be used as appropriate.

4.0 SITE SECURITY AND CONSTRUCTION

4.1 SITE SET UP

Prior to any works commencing on site all recommendations from the ecological mitigation report are to be implemented.

Tree and Vegetation Protection Measures

Retained trees and hedgerows will be fenced and protected during the construction phase to ensure that they are not damaged during the works. Protective fencing will be erected **in advance of any construction works commencing** in order to prevent damage to these retained habitats during construction in accordance with BS 5837:2012. The fence to be clad in a green mesh to prevent dust and litter leaving the site that could damage to the hedge and allow fauna travel along the corridor. This will be signed off on by the project ecologist/arborist to ensure they have been erected properly and the vegetation has been protected before any machinery/works are allowed on site. No ground clearance, earth moving, stock-piling or machinery movement will occur within these protected areas.

Contractor Briefing

All site contractors will be briefed by the project ecologist regarding the biodiversity value of the boundary trees and vegetation to ensure that there are no accidental or unintentional actions conducted during the project construction that could lead to a reduction in water quality/damage to same. Such matters often arise through ignorance or by accident rather than as a result of an intentional action.

4.2 SITE SECURITY

The site will be secured with a solid 2.4m high system fence erected along the site boundary with Adamstown Drive and Tubber lane. A secure site will ensure the construction works are contained within the site boundary and cause no disruption to any adjacent properties, traffic or passing pedestrians.

4.3 CONSTRUCTION

The development consists of the construction of 455 residential units in a mix 2, 3 and 4 beds houses, duplex units and apartments.

The development will comprise of hard and soft landscaping, provision of public and communal open spaces, new internal roads and new boundary treatments.

The topography of the site is generally flat, but there is a gentle fall from South-West to North-East with a slope of 1 in 80. The FFL of development is generally at or above the existing ground levels; this will reduce the amount of material to be removed from the site.

It is proposed the residential development will be constructed from a mixture of concrete, blockwork, brickwork, timber frame and/or precast concrete. Modular off-site construction will be adopted where possible to help reduce onsite waste and the environmental impact of the scheme.

For the duration of the proposed building works the maximum working hours shall be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 14:00 Saturdays, subject to the restrictions imposed by the local authorities. No working will be allowed on Sundays and Public Holidays. Subject to the agreement of the Local Authority. Out of hours working may be required for the watermain and drainage connections and final junction/road upgrades.

4.4 SURFACE WATER RUN-OFF

All surface water runoff during the construction phase will be managed by collecting such runoff in a closed pipe system and diverting it toward a settlement tank. Only clean water taken from the top of the settlement tank, after passing through a series of baffles, and allowing for sufficient time for the sediments to drop to the bottom of the tank, will be allowed discharge to the public piped network. Surface water run-off from wheel washing and dust suppression will also be directed towards this tank.

The discharge point and volumes will be done by agreement with SDCC.

5.0 CONSTRUCTION WASTE MANAGEMENT PLAN

Hugh McGreevy & Sons will appoint an approved certified and licensed carrier to remove waste from the Adamstown Site. POGA Consulting Engineers have prepared the Construction Waste Management Plan (CWEMP) for the overall framework for the management of all the waste arising on construction phase. Operational waste management from the end users will be provided by the management company when appointed. The current land use is a Greenfield site. The site is made up of the following construction types:

Development	Quantity	Units
Housing Units	455	No.
Commercial	0	m^2
Institutional	0	m^2
Treatment Works	0	m^2
Roads & Footpaths	36355	m^2
Parking	4469	m^2
Parks/ Amenities	18187	m^2

Table 5.1 Construction Types

The purpose of this plan is to ensure that:

1. Where practicable, the company segregates, re-uses and maximises the level of waste which is recovered.
2. Waste disposal costs are reduced and that the company's target reduction in waste.

Disposal is achieved by:

1. Hazardous waste is managed safely and in accordance with legislation regarding disposal, transportation, records and reporting.
2. All waste is handled by licensed contractors.
3. Full records of waste (including hazardous waste) consignments are maintained.
4. Waste management practices of the Client will be in compliance with applicable legislation.

This procedure applies to the management, disposal and recording all wastes generated whether hazardous or not. It also applies to the approved waste developers used by the Client.

5.1 LEGAL REQUIREMENTS

The management of the construction waste must comply with the Waste Management Act, 1996, Waste Management (Hazardous Waste) Regulations 1998 (SI No. 163 of 1998) and Waste, Waste Management (Facility Permit and Registration) Regulations 2007 (SI No. 821 of 2007), Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007), Waste Management (Miscellaneous Provisions) Regulations 1998 (S.I No 164 of 1998), Management (Hazardous Waste) (Amendment) Regulations, 2000. (S.I. No. 73 of 2000).

5.2 WASTE HANDLING

The primary aim of this CWEMP is to ensure that the wastes generated during the course of the project are managed in accordance with the governing Waste Management Legislation and the principles of Waste Hierarchy i.e. prevention, minimization, reuse, recovery and recycling.

Under the Waste Management (collection Permit) Regulations 2007 a waste collection permit, for the appropriate code(s) and destinations, is required by a waste hauler to transport waste from one site to another. Compliance with the Waste Management (Movement of Hazardous Waste) Regulations, 1998 is also required for the transportation of hazardous waste by road. The export of waste from Ireland is subject to the requirements of the Waste Management (Shipment of Waste) Regulations, 2007. The Developer will ensure that the transport and movements of all wastes are carried out in compliance with these requirements.

Waste will only be treated or disposed of at facilities that are licensed to carry out that specific activity (e.g. recycling, landfill, incineration etc.) for a specific waste type. Records of all waste movements and documentation should be held on site.

In order to prevent and minimize the generation of wastes, the Developer will ensure that raw materials are ordered so that the timing of the delivery, the quantity delivered and the storage is not conducive to the creation of unnecessary waste. By following a "just in time" approach, this decreases waste, utilises storage space better, reduces

potential losses and damage as well as making the site safer.

The construction work planning will be carried out closely with the waste management developers, in order to determine the best techniques for managing waste and ensure a high level of recovery of materials for recycling. The Developer will continuously seek to improve the waste management process on site during all stages of construction and maximize opportunities for reuse or recycling where they exist.

5.3 PRIMARY WASTE STREAMS

A brief overview of the methods to manage the primary waste streams expected is presented below. The main types of construction waste produced will be:

Concrete, Blocks and Bricks

Waste concrete, blocks and brick will arise during the construction phase. Where possible, this waste will be removed off site to a remote facility and recycled for reuse. Where this cannot be achieved the waste may be crushed and screened and used as fill within the project area where appropriate to do so.

Metals

Where possible all steel and non-ferrous metals will be transported to a metal processing facility for recycling. Skips will be provided for the storage of scrap metal on site and once full will be removed by the waste storage contractor and transported to a metal recycling processing facility in Ireland.

Timber

Timber waste will be stored separately as it is readily contaminated by other wastes and if it is allowed to rot will reduce the recyclability of the other stored wastes. Any pallets will be returned to the supplier for reuse. Offcuts and trimmings will be used in the formwork where possible. The waste wood will be collected by a waste contractor who will transport it to a wood recycling facility for chipping.

Plasterboard

Waste plasterboard from the construction phase will be segregated and stored on site prior to transportation to a recycling facility. The plaster board waste will be processed to produce a recycled gypsum product.

Other wastes (Residual)

Waste materials other than those outlined above can constitute a significant proportion of the total waste generated by a construction site. This waste is normally made up of residual non-recyclable waste such as soiled paper, cloth, cardboard or plastics as well as canteen waste including food. This material will be stored in dedicated waste containers. Container size and collection frequency will be assessed as works proceed.

5.4 WASTE VOLUMES

It is estimated the following volumes of waste is generated on site as part of the construction activity.

Waste Type (EWC Code)	Waste Type (Description)	Volume of waste generated (Tonnes)	Waste re-used within the works (Tonnes)	Waste exported off site (Tonnes)
17 01	Concrete, bricks, tiles and ceramics	123	0	123
17 02	Wood, glass and plastic	5.04	0	5.04
17 03	Bituminous mixtures, coal tar, and tarred products	0	0	0
17 04	Metals (including their alloys)	1.4	0	1.4
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil	47,600	19,600	28,000
17 06	Soil (including excavated soil from contaminated sites), stones and dredging spoil	0	0	0
17 08	Gypsum-based construction material	2.8	0	2.8
17 09	Other construction and demolition waste	0	0	0
Total Waste		47,732	19,600	28,132

Table 5.2 Estimated C&D Waste Arising on site

5.5 ASSIGNMENT OF RESPONSIBILITIES AND TRAINING

C&D Waste Manager

The Construction and Demolition Waste Manager (CDWM) is Fergal Power. The CDWM will have overall responsibility for the management of waste on site. The CDWM will have experience in all aspects of site logistics including waste and materials management. Project goals will include:

- Distinguish reusable materials from materials suitable for recycling
- Ensure maximum segregation at source;
- Co-operate with site manager on best locations for stockpiling reusable materials;
- Separate materials for recovery; and
- Identify and liaise with operators of recovery outlets

The CDWM will be responsible for educating all site staff, sub-contractors and suppliers about the available alternatives to conventional waste disposal. The CDWM will continually identify waste minimization actions on site and these will be updated in the plan.

Training

Copies of the Waste Management Plan will be made available to all personnel on site. All site personnel and subcontractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them. This will typically be carried out during the induction process for all new site staff and subcontractors. Where source segregation and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan. Site notices will be in place to reinforce the key messages of the Waste Management Plan and will be displayed prominently for the benefit of all site staff.

5.6 WASTE RECORDING & AUDITING

Waste Records

Full details of all construction waste discarded from site will be recorded during all stages of the project. Each consignment of C&D waste removed from the site will be documented in the form of a Waste Movement Records which will ensure full traceability of the material to its final destination. Printed documents/records from waste disposal companies quantifying exact amount of waste materials removed from site will also be received. This sheet from the disposal company will also identify how much material went to landfill and how much went for recycling. All such records will be retained in a designated location on site and made available for auditing of the waste management plan. All waste logs will be available in up to date digital formats for inspection.

6.0 ENVIROMENTIAL MANAGEMENT

6.1 NOISE IMPACT ON SITE WORKERS & STAFF

The developers are responsible for dangers associated with high noise levels and the impact of the noise levels on the construction workers and site staff.

During the construction works the Contactor shall comply with:

- BS 5228: 2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites, Part 1 and Part 2. 1
- Guidelines for the Treatment of Noise and Vibration in National Road Schemes (NRS, Revision 1, 2004)
- Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5, Noise and Vibration.

It is not foreseen that any excessively noisy activities will be carried out over the entire construction duration. However, due to the nature of the construction, exposure to noise levels in excess of 80 dBA (Safe Working Limit) can sometimes occur. The Developer will carry out a noise assessment in relation to each element of the proposed works at construction stage and control measure will be implemented, these control measures shall include the following:

- The site management team shall assess risk arising from noise prior to each construction activity taking place and describe the action needed to be done. The purpose of this is to minimise the exposure of all workers and site staff to excessive noise levels.
- The site management team shall ensure the proposed control measures are put in place and that their effectiveness and suitability is evaluated on regular a basis.
- The site management team will look at the method of works and selected constructed techniques that will make the work quitter, an example would be using off site construction.
- If the noise exposure surpasses 80 dBA $L_{EX,8}$, 135 dB peak, then hearing protection is mandatory.
- If it is likely that the noise exposure surpasses 85 dBA $L_{EX,8}$, 137 dB peak, then hearing protection is mandatory.

- Avoid unnecessary revving of engines and switch off equipment, generators, etc. when not required.
- Minimise drop height of materials.
- Start-up plant sequentially rather than all together and use silencers where possible.
- Make sure all workers use hearing protection where it is mandatory to do so.

6.2 NOISE IMPACT ON THE SURROUNDING ENVIRONMENT

Construction Phase

Overall acceptable levels of Construction noise for large construction projects are set out in the Transport Infrastructure Ireland (TII) publication Guidelines for the Treatment of Noise and Vibrations in National Road Schemes. The levels should not be exceeded at noise sensitive locations during the construction phase of the development. Table 6.1 below sets out these levels.

Days and Times	Noise Levels (dB re. $2x10^{-5}$ Pa)	
	$L_{Aeq(1hr)}$	L_{Amax}
Monday to Friday 07:00 to 19:00hrs	70	80
Monday to Friday 19:00 to 22:00hrs	60*	65*
Saturdays 08:00 to 16:30hrs	65	75
Sundays & Bank Holidays 08:00 to 16:30hrs	60*	65*

Table 6.1 Maximum Permissible noise levels at the façade of dwelling during construction

*Note ** *Construction activity at these times, other than that required for emergency works, will normally require the explicit permission*

6.3 VIBRATION

Vibration limits to be applied for the construction works are those specified in Transport Infrastructure Ireland (TII) publication Guidelines for the Treatment of Noise and Vibrations in National Road Schemes. 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	11 to 50 HZ	50 to 110 HZ (and above)
3mm/s	3 to 8mm/s	8 to 11mm/s

All works on site shall comply with BS 5228 2009 which gives detailed guidance on the control of noise and vibration from construction activities.

6.4 DUST CONTROL

The greatest potential impact on air quality during the construction phase of the proposed development is from construction dust emissions and the possibility for nuisance dust. The proposed development is moderate in scale and thus the potential for dust soiling 50m from the source is possible. Table 6.4 contains an extract from the TII, Guidelines for the Treatment of Air quality During the Planning and Construction of National Road Schemes (2011).

Assessment Criteria for the Impact of Dust Emissions from Construction Activities, with Standard Mitigation in Place

Source		Potential Distance for Significant Effects (Distance from source)		
Scale	**Description**	**Soiling**	**PM_{10} a**	**Vegetation effects**
Major	Large construction sites, with high use of haul routes	100 m	25 m	25 m
Moderate	Moderate sized construction sites, with moderate use of haul routes	50 m	15 m	15 m
Minor	Minor construction sites, with limited use of haul routes	25 m	10 m	10 m

[a] Significance based on the 2005 standard, which allows 35 daily exceedences/year of 50 µg/m³

Table 6.4 - TII Assessment criterial for the impact of Dust Emissions from construction activities.

The critical values are concentrating on particles of dust which are less than 10 microns (PM10) and less than 2.5 microns (PM2.5). The EU ambient air quality standard sets out ambient air quality limit values for PM_{10} and $PM_{2.5}$ values and these limits are noted below in Table 6.5.

Table 4.1 Air quality standards for the protection of health, as given in the EU Ambient Air Quality Directives

Pollutant	Averaging period	Legal nature and concentration	Comments
PM_{10}	1 day	Limit value: 50 µg/m³	Not to be exceeded on more than 35 days per year
	Calendar year	Limit value: 40 µg/m³	
$PM_{2.5}$	Calendar year	Limit value: 25 µg/m³	
		Exposure concentration obligation: 20 µg/m³	Average Exposure Indicator (AEI) (*) in 2015 (2013-2015 average)
		National Exposure reduction target: 0-20 % reduction in exposure	AEI (*) in 2020, the percentage reduction depends on the initial AEI

Table 6.5 – From EU report "Air quality in Europe – 2017 Report"

Construction dust tends to be deposited within 200m of a construction site, but the majority of the deposition occurs within the first 50m. The only receptors site within close proximity to the site is the existing housing constructed as part of phase 1. In order to minimise dust emissions through construction, a series of mitigation measures are proposed below.

Measures to control dust will include:

- Hard surface roads should be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and windy conditions.
- Vehicles exiting the site shall make use of a wheel wash facility, prior to entering onto public roads. Refer to section 6.5 of this report for details.
- Vehicles using site roads will have their speed restricted, and this speed restriction will be compulsory for all site traffic. On any un-surfaced site road, this will be 10 kph, and on hard surfaced roads it will be 15kph.
- Vehicles delivering material with dust potential (soil, aggregates) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. Refer to section 6.5 of this report for details.
- Wind breaks and barriers to be provided on sensitive receptors sites such as the boundary with the neighbouring housing to the west.
- Gravel will be provided at site exit points to remove caked on dirt from tyres and tracks.
- No on-site burning of material will be permitted.
- Material handling systems and site stockpiling of materials will be located in sheltered areas to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods. Covering stockpile material may also be required.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.

Provided the dust minimisation measures outlined are followed, in our opinion the air quality impacts during the construction phase will not be significant.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

All works carried out as part of these infrastructure works will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the developer will co-operate in full with the Environmental Section of SDCC.

All surface water runoff used as part of the site dust suppression activities will be managed by collecting such runoff in settlement tank. Only clean water taken from the top of the settlement tank, after passing through a series of baffles, and allowing for sufficient time for the sediments to drop to the bottom of the tank, will be allowed discharge to the public piped network.

6.5 ROAD CLEANING / WHEEL WASHING

On this site, the main source of any potential environmental problem will be the visibility of debris or dust on public roads. Wheel washing will be implemented and road sweeping will be carried out as required. Power washing of wheels will be carried out as required.

Figure 6.3 – Example of wheel washing of truck as it leaves site

Discharge from any vehicle wheel wash areas is to be directed to on-site settlement area, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility.

Provision will be made for the cleaning of all access routes to and from the site during the course of the works, particularly Celbridge Link Road within 500m of the site access.

Road cleaning can be adjusted as necessary to take account of highly intensive phases of the works and in particular during the "Earth Shifting" phase of the project (i.e. foundation and basement construction) is being carried out. This will be carried out using a mechanical road sweeper, an example of which is shown in Figure 6.4 below.

Figure 6.4 – Typical Road Sweeper

Truck loads per day off site will be kept at a minimum. Where possible, trucks will be unutilised to on both legs of their visit, i.e. delivering construction materials to site such as stone, and removing demolition waste for recycling.

Deliveries to site will be managed such that they arrive during off peak hours. Special consideration will be given to minimise disruption to surrounding residential roads and avoiding school start and finish times.

6.6 ODOUR CONTROL & LIGHTING

A power supply is readily available from ESB Networks to power both the compound and the construction site to avoid the use of diesel generators to prevent noise and odour pollution. Temporary site lighting will be installed to provide safe and well lighted walkways around the site compound and task lighting to the construction site.

6.7 ENERGY EFFICIENCY

Energy efficiency simply means using less energy to perform the same task – that is, eliminating energy waste. Energy efficiency brings a variety of benefits: reducing greenhouse gas emissions, reducing demand for energy imports, and lowering costs of construction, this will be achieved by: -

- Electrical equipment to be will be switched off when not in use.
- Non-essential lighting will also be turned off when not in use
- Office equipment to be switched off nightly and at weekends
- All electrical equipment to be kept in good order by a qualified electrician.
- Ensure that water is not wasted; taps will be turned off, leaks repaired
- All plant and machinery turned off when not in use to conserve fuel
- plant such as generators, lighting towers not to be used unnecessarily

6.8 TREES & TOPSOIL SCREENING

Please refer to landscape Architects drawings for any tree protection locations and protection details and Section 4.1 above. All topsoil used for landscape works will be recovered for the site where possible. Any imported topsoil will be screened for invasive species and sourced from reputable landscape suppliers.

6.9 ERECTION OF BAT & BIRD BOXES

Eight no. Schwegler 2F bat boxes and 20 no. mixed bird nesting boxes will be supplied by the contractor and erected (under the supervision of the project ecologist) on trees on site to provide roosting potential for bats.

7.0 TRAFFIC MANAGEMENT

The traffic management plan for the site will be coordinated with SDCC in advance of commencement on site and the provisions of this plan including erection of signage on public roads will be agreed with the Council. The traffic management plan shall be updated appropriately to ensure coordinated and effective traffic management practices and arrangements are in place throughout the construction period.

7.1 SITE ACCESS

External to the site, traffic will include construction workers travelling to site and materials deliveries which will include small delivery vans, large rigid trucks, articulated trucks and trailers, and concrete trucks. Excavated material will be removed off site during the first few months of the project as bulk excavation.

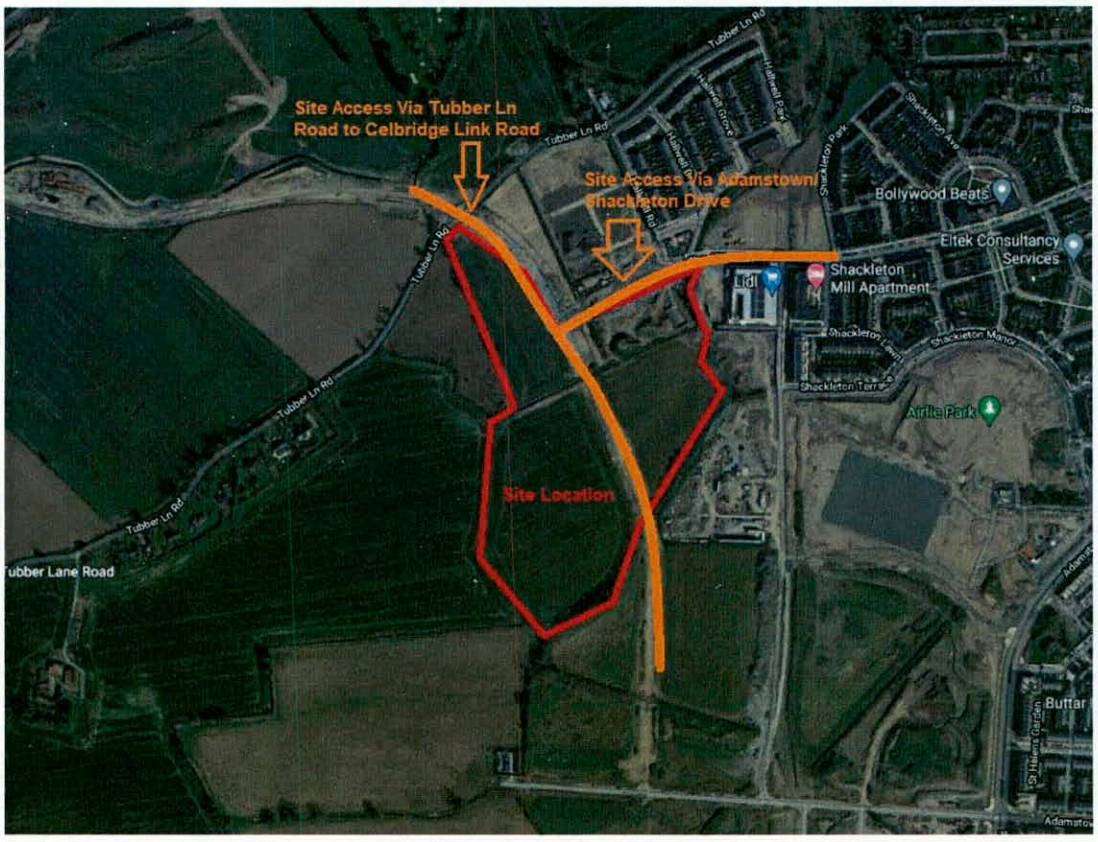

Figure 7.1 – Site access plan

The Developer will organise deliveries to minimise congestion on public roads by avoiding peak traffic periods where possible. During particularly busy periods such as during concrete pours, trucks will be queued up inside the site.

Deliveries will be on a "just in time" basis and this system will be strictly controlled between our Site Supervisors and our Purchasing Manager who will organise the deliveries. The Site Supervisors with contact details for suppliers who will make contact to ensure drivers are made aware of the site location and the correct route to site in accordance with this plan.

All deliveries and the removal of material will access the site via this route from Dodsborough Road. Deliveries and the removal of material off site will avoid peak traffic hours where possible (8.00am-9.00am and 4.30pm-5.30pm).

7.2 SITE PARKING, COMPOUND & ACCESS CONTROL

While parking will be available in the compound area of the site, workers will be encouraged use public transport where possible to reduce congestion on public roads. Public transport options include Rail to Adamstown Station and bus services are readily available.

Controlled access to the site, in the form of gates will be monitored by site personnel. These will be locked and secured to prevent unauthorised access during periods when these are not monitored by site personnel. (E.g. outside working hours). CCTV will also be used for periods outside working hours to prevent unauthorised site access.

The compound shall be constructed using a clean permeable stone finish. Site accommodation to be provided will include suitable-washing / dry room facilities for construction staff, sanitary facilities, office accommodation etc. Refer to Figure Appendix A for proposed location.

The compound will contain an area containment of all construction-related fuel and oils, it is proposed to use specially bunded HDPE tanks for all fuel stored on site.

On completion of the works all construction materials, debris, temporary hardstanding's, etc. from the Site Compound will be removed off site and the site compound area reinstated in full.

7.3 SITE TRAFFIC

To avoid unnecessary traffic, during the site clearance works, all excavated suitable material will be reused for construction and filling where possible and appropriate. Any unsuitable material will be put in the appropriate waste stream and sent for recycling or disposed of off-site as outlined in Section 6.0.

Construction vehicle movements will be minimised through; -

- Consolidation of delivery loads to/from the site and managing larger deliveries to occur outside peak periods,
- Use of precast/prefabricated materials where feasible,
- Adequate storage space on site,
- A strategy to minimise construction material quantities.

Deliveries and the removal of material off site will avoid peak traffic hours where possible (8.00am-9.00am an 4.30pm-5.30pm) to minimise disruption to the local residences and schools.

Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction and supervisory staff.
- Excavation plant and dumper trucks involved in the construction and site development works and arterials delivery vehicles.

8.0 APPENDIX

APPENDIX A
Site Plan showing initial site set up & Waste Management Area