



Waterman Moylan
Engineering Consultants

Construction and Environmental Management Plan

Proposed Phase 3 of Aderrig Development
at Adamstown SDZ, Co. Dublin.

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This document has been prepared and checked in accordance with
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We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report is confidential to the Client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

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1. Introduction

1.1 Background of Report

This report has been prepared by Waterman Moylan in support of the proposed Development of **Phase 3** of the **Aderrig Tile** located in the **Adamstown Strategic Development Zone (ASDZ)**, Co. Dublin.

This document has been setup to be a 'living document' which will be updated by the Developer and Main Contractor as the project progresses after Planning has been granted.

The **Construction Management Plan** sets out typical arrangements and measures which may be undertaken during the construction phase of the project to mitigate and minimise disruption/disturbance to the area in and around the site. The purpose of this report is to summarise the possible impacts and measures to be implemented and to guide the Main Contractor who will be required to develop and implement the **Construction Management Plan** on site during the construction period.

This is a draft document; the Contractor is to produce a finalised **Construction Management Plan** adopting the information here within and developing it further.

As is normal practice, the Main Contractor for the project is responsible for the method in which the construction works are carried out and to ensure that best practices and all legal obligations including Local Authority requirements and Health & Safety legislation are complied with. The Main Contractor is also responsible for the design and installation of all temporary works required to complete the permanent works. This plan should be used by the Main Contractor to develop their **Construction and Environmental Management Plan**.

1.2 Site Location

The subject site is approximately 13 km west of Dublin and 2.5 km southwest of Lucan Village.

The site area is 6.36 Ha.

The proposed development includes housing units and associated infrastructure.

The site is located within the Adamstown Strategic Development Zone Lands, which can be seen in Figure 1-1 below: -

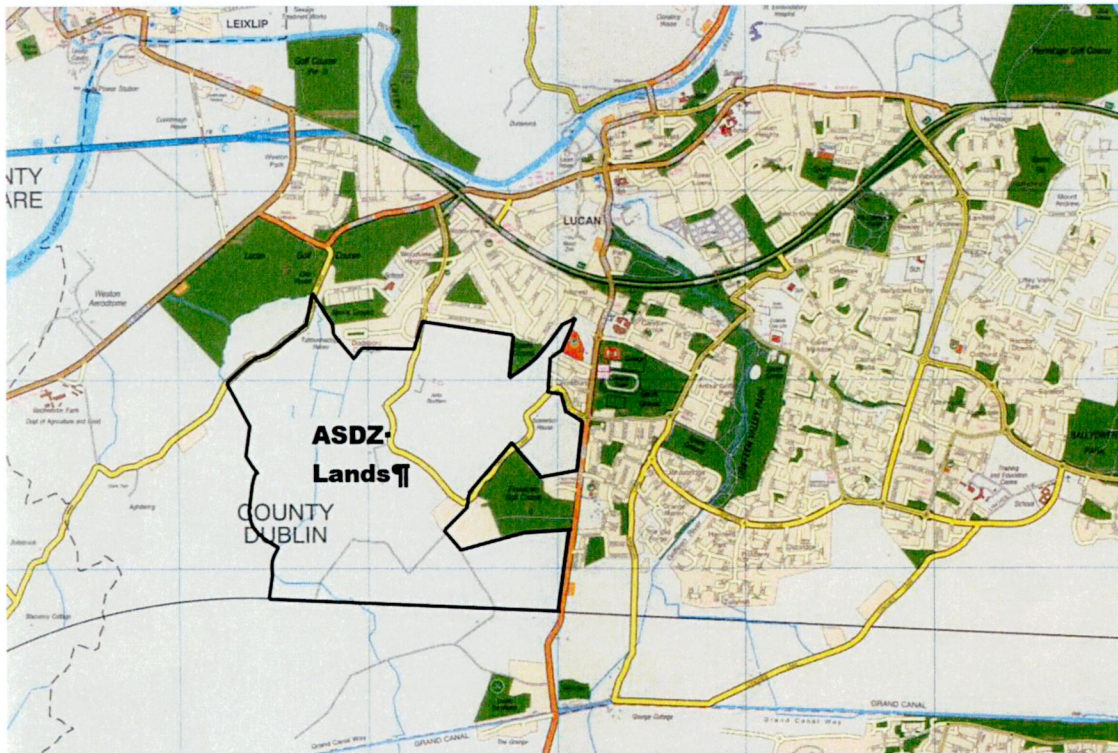


Figure 1-1: ASDZ Location Map

Access to the site will be via:-

- The **Celbridge Link Road** which connects the subject site north to the R403 Tubber Lane Road and then on to the N4 Leixlip Road.
- The **Adamstown Way** which connects the site east via the Stream Road to the Station Road, on to the R120 Newcastle Road.
- Further access can be achieved by the Adamstown Link Road via Adamstown Avenue, which would be an approach from the east.

The location of the Phase 3 Aderrig tile, adjacent developments within the ASDZ lands, and access routes can be seen in Figure 1-2 below: -



Figure 1-2: Phase 3 Aderrig Tile within ASDZ and surrounding roads network

2. The Site and the Surrounding Environs

2.1 Site Description

The Aderrig tile is referred to as the **Development Area 8** within the ASDZ Lands, approximately 13 km west of Dublin and 2.5 km south of Lucan Village.

Quintain Developments Ireland Limited intend to apply for permission for development on 2 No. sites separated by the permitted Celbridge Link Road with a total area of 6.36 Ha in the townland of Aderrig, Adamstown, Lucan, Co. Dublin. The south-western site (5.39 Ha) is generally bound to the east by Celbridge Link Road, to the south and west by undeveloped land and an electrical substation and to the north by the Tubber Lane Development Area. The northern site (0.97 Ha) is generally bound to the east by the undeveloped Primary School site and Aderrig Park Avenue, to the south by Airlie Park Road West, to the west by Celbridge Link Road and the Tubber Lane Development Area and to the north by the Tubbermaclugg Development Area.

This application is being made in accordance with the Adamstown Planning Scheme 2014 (as amended) and relates to a proposed development within the Aderrig Development Area of the Adamstown Strategic Development Zone.

The site is served by existing infrastructure constructed under the ASDZ Strategic Drainage Scheme and the Overall Adamstown Watermain Network Scheme. The existing infrastructure includes wastewater drainage, surface water drainage and watermains built within the existing roads and footpaths around the subject site. The capacities required for this proposal have been previously designed into the overall receiving infrastructure, which was constructed to accommodate the subject site.

The proposed infrastructure, included as part of the proposed development, is directly linked to the infrastructure approved under previous developments, and forms part of the Adamstown SDZ Lands. The capacities required for this proposal have been previously designed into the overall receiving infrastructure, which was constructed to accommodate the subject site and future phases.

Due to the proximity of the train station and bus stops within the vicinity of the Phase 3 development, the option for construction workers to use this public transport infrastructure is a possibility.

There are existing bus routes, for example the Dublin Bus numbers 25, 25A, and 25B services, serving the site along various routes to the south, east and north. A summary of the bus services can be seen below:

- The 25 service travels from Dodsborough Road, stop 3890, via Chapelizod and Island Bridge, terminating in Merrion Square, Dublin 2. Stop 3890 is located approximately 1.27km northeast of Phase 3.
- The 25A service travels from Adamstown/Newcastle Road, stop 4620, via Chapelizod and Island Bridge, terminating in Merrion Square, Dublin 2. The closest 25A bus stop to Phase 3 is the Lucan sports grounds stop which is approximately 1.75km northeast of the development.
- The 25B services travels from the Adamstown train station to Merrion Square in Dublin 2.

Central Boulevard (Adamstown Boulevard) Reg. Ref. SDZ18A/0009 comprises of a 6m wide dual carriageway, a bus lane on either side of the carriageway, a landscaped verge, off-road cycle lanes and footpaths constructed on the eastern boundary of the Aderrig Development Tile. These works have been completed.

Adamstown Way Reg. Ref. SDZ06A/5 is primarily an east west link with surrounding existing roads which connect the subject site to the existing Adamstown Railway Station to the south of the ASDZ. Adamstown Way road extends to the Phase 3 Aderrig site on the south and contains an array of existing services, such as live gas, electrical, stormwater, foul water and watermain network infrastructure within the road corridor.

Celbridge Link Road (CLR) Reg. Ref. SDZ17A/0009 is primarily a north south link between the R403 Tubber Lane Road and the Station Road. CLR contains an array of existing services, such as live gas, electrical, stormwater, foul water and watermain network infrastructure within the road corridor.

The Aderrig Phase 1 Reg Ref. SDZ20A/0017 is well progressed and Phase 2 SDZ21A/0014 has recently commenced on site works.

2.2 Proposed Development

The site, subject to this planning application, is Aderrig Phase 3. It is a third phase of a four-phase development within the Aderrig Tile Development Area 8 of the ASDZ.

For details of the site layout and phasing of the Aderrig Tile, refer to the accompanying Architects' drawings.

The proposed development will principally consist of 207 No. residential units (64 No. 2-bed, 127 No. 3-bed and 16 No. 4-bed), ranging in height from 2 No. storeys to 4 No. storeys, comprising 75 No. houses (59 No. 3-bed and 16 No. 4-bed) and 132 No. duplexes (64 No. 2-bed and 68 No. 3-bed).

The development will also include: vehicular junctions to access the development from Celbridge Link Road (2 No.) and Adamstown Way (3 No.); internal road, cycle and footpath network; 314 No. car parking spaces; cycle parking; bin storage areas; public, communal and private open space areas, with balconies and terraces facing all aspects; hard and soft landscaped areas; boundary treatments; public lighting; 2 No. sub-stations; and all associated site and development works above and below ground.

For details, please refer to the accompanying architect materials.

3. General Site Set-Up and Pre-Commencement Measures

The following measures will be carried out by the Main Contractor:

1. A general condition survey of the roads and infrastructure in the area prior to any work being carried out on the site. This condition survey to include the roads adjacent to the site and construction delivery route through the SDZ and any approach roads to be agreed with SDCC Roads Maintenance.
2. Prior to any site works commencing, the Main Contractor will investigate/identify the exact location of and tag all (if any) existing services and utilities around and through the site.
3. A site compound including offices and welfare facilities as well as parking to accommodate all operatives will be set up by the Main Contractor. It is assumed it will be located within the development to the northeast of the proposed site on the grounds of the future open space site.
4. No parking of construction related vehicles will be permitted on the adjoining public road network and adequate parking facilities will be made available within the Construction Compound for all site workers during construction.
5. The developer will appoint a Project Manager to manage the construction process on site.
6. Access to the site is highlighted within Section 5 of this report.
7. The vehicular entrance to the site will be provided with suitable wheel washing facilities for vehicles which have operated outside the hardstanding stores area. The wheel washing facility will include a rumble ramp which will assist in removing loose mud from the undercarriage of vehicles leaving the site or alternatives will be agreed with the SDCC local area engineer/inspector when construction commences.
8. A banksman will be employed to control the site access and to monitor the surrounding road network to ensure that the roads and footpaths affected by the construction works are maintained in a safe and tidy condition. Road sweepers will be utilised as required and in agreement with the SDCC local area engineer/inspector.
9. Site security lighting will be located and designed so as not to result in glare on the public road or to impact negatively on any nearby dwellings.

All lighting will be checked by the Project Manager after being installed to ensure that there are no adverse impacts on the public and surrounding dwellings.
10. Typical working hours for the site will be 07:00 to 18:30 Monday to Friday and 08:00 to 14:00 Saturday. No Sunday work is generally permitted. Special construction operations may need to be carried out outside these hours to minimise disruption to the surrounding area, which will be subject to agreement with the Planning Authority.

4. Construction and Demolition Waste Management

Resource & waste management plan for construction & demolition has been prepared as a separate report accompanying this planning application. Please refer to the Waterman Moylan report 22-023r.005.

5. Deliveries

The primary issues that affect construction projects include:

- General site access and egress;
- Interaction with existing facilities and operations;
- The location and amount of parking;
- The timing and extent of material deliveries;
- Traffic conflicts with both existing vehicles and other construction traffic;
- Traffic congestion and conflicts on external roads;
- Signage and directions;

The Main Contractor will take a proactive role in the management of construction traffic generated by the construction works and will appoint a Construction Manager who will be responsible for the development and implementation of the CMP.

The Main Contractor will be obliged to appoint a Temporary Traffic Management Designer who will provide the Construction Stage Traffic Management Plan.

Actions which will be implemented to manage these construction traffic issues and to minimise their conflicts with other activities are detailed below.

Site access routes for construction related traffic and deliveries can be seen in Figure 5-1 below which shows the surrounding road network and the location of the proposed subject site and the Contractors construction compound and parking area access point.

It is assumed that the Contractor's site compound and parking area will be located to the northeast of the proposed site on the grounds of the future open space site.

The proposed site access will be from the Celbridge Link Road.

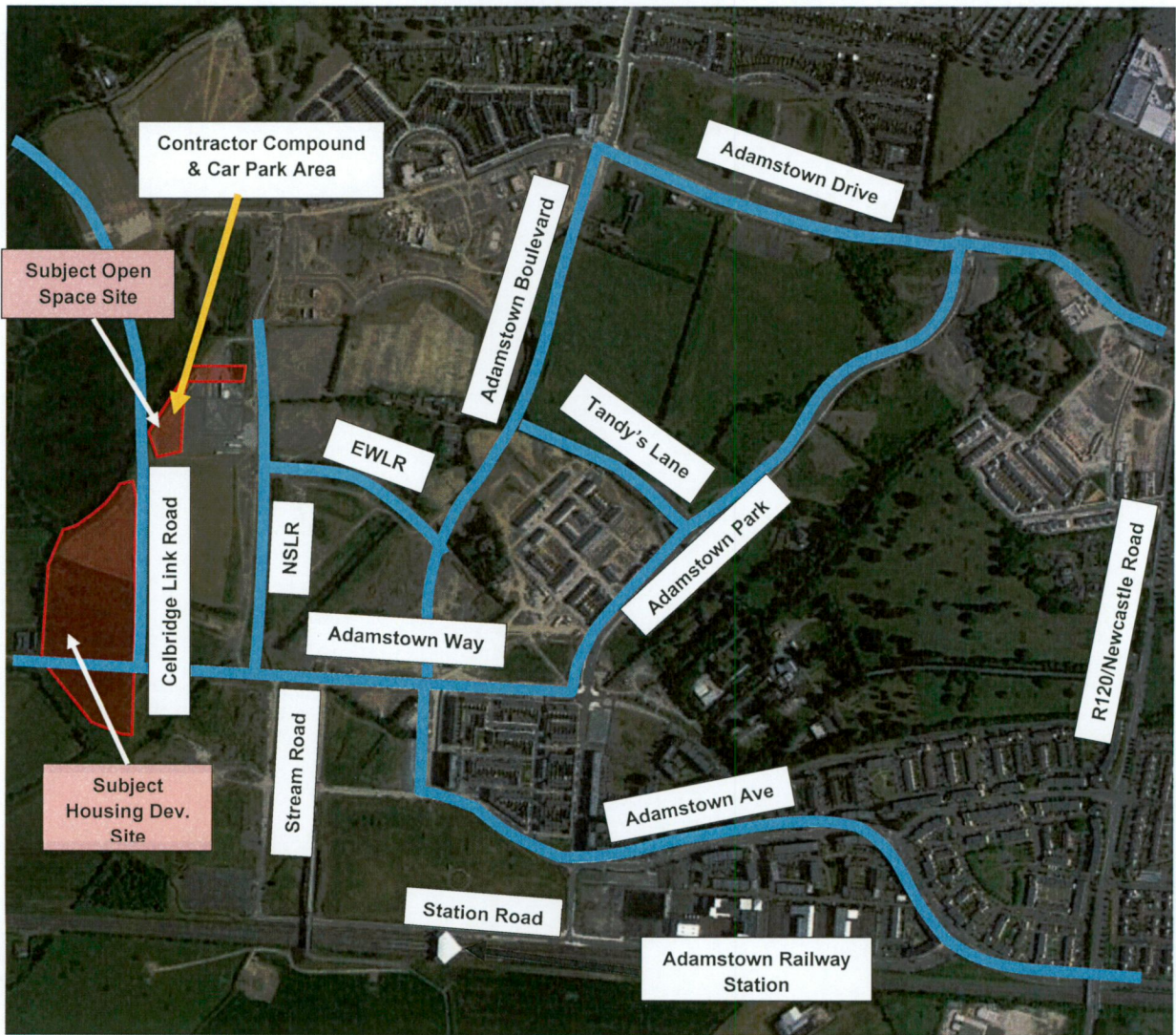


Figure 5-1: Site Access Routes & Surrounding Road Network

5.1 Traffic Management Measures

All traffic management control measures will comply with:

- Department of Transport Traffic Signs Manual, Chapter 8 Temporary Traffic at Roadworks October 2010,
- Guidance for the Control and Management of Traffic at Roadworks 2007,
- Safety Health and Welfare (Construction) Regulations 2013
- Safety Health and Welfare at Work (General Application) Regulations 2007.

Signage and traffic management measures will be revised to reflect the progress of the work and any other significant changes that occur.

The Construction Manager will be responsible for providing the external directional signage and on-site signage regarding traffic management.

On-site signage, speed limits and speed reducers will be used to ensure drivers use appropriate routes through the site and to and from the site access points.

The following Traffic Management measures will be implemented during the construction period:

1. Construction traffic will use designated access and egress routes to the project. The site access gates will be clearly marked "For Construction Access Only".
2. No parking for staff or visitors will be allowed outside the confines of the site boundaries. Sufficient parking will be provided within the site itself.
3. No material deliveries will be permitted to unload outside the confines of the site boundaries.
4. Continuous material deliveries, such as major concrete pours, will be phased and delivery vehicles will be timed, where possible, to ensure that delivery trucks are not parked on the public road awaiting access to the delivery area.
5. All routine material deliveries will be timed to arrive at the site outside peak traffic hours on the local road network, wherever possible.
6. Removal of waste material from the site will be timed to leave the site outside peak traffic hours on the local road network, wherever possible.
7. The Main Contractor will arrange for an information package to be issued to staff and haulage sub-contractors advising them of the routes for HGV's, parking restrictions and the timing of deliveries or collections to and from the site.
8. The Main Contractor will manage the access point to the site, ensuring that all vehicles leaving the site are clean and will direct vehicles to the wheel wash if necessary.
9. The Main Contractor will ensure that the public roads adjacent to the site are always kept clear and clean.

10. Temporary road closures and relocations during the construction period, if required, will be subject to coordination with the Local Authority, Fire Brigade, Dublin Bus, the Gardai and other appropriate authorities. Existing hydrants will remain accessible or will be relocated, if required, following approval with IW & SDCC.
11. The Construction Manager/Site Manager will review and analyse the cause of detected non-conformance related to traffic management and develop a corrective action to prevent recurrence.
12. Prior to commencing any works on the public road, a detailed temporary traffic management plan will be prepared by the Contractor and agreed with South Dublin County Council.

5.2 Traffic Management Implementation

The Construction Manager will report to the Developer, when required, on the implementation of the Construction Management Plan. The Construction Manager will periodically update the plan to reflect the progress of the construction works and to consider any significant changes. These changes will include, but are not limited to:

- Access points in use;
- Location of parking areas;
- Variations to traffic management plans.

6. Parking and Storage

A site compound including offices and welfare facilities, as well as parking to accommodate all working staff, will be set up by the Main Contractor. This secure compound is to be located north of the subject site. For detail of the location of the site compound please refer to Section 5 of this report.

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

The Main Contractor will be required to schedule delivery of materials strictly daily.

7. Dust and Dirt Control

Excavation activities will by their nature generate mud during wet periods and dust during dry periods. Mud and dust on site will be controlled as far as practical using water bowsers during dry periods and by mechanical street sweepers as required. Suitable wheel washing facilities will be provided.

The public roads which provide access to the site will be monitored and cleaned as necessary to ensure that the road is free from any deleterious materials arising from the construction works.

Nuisance dust emissions from construction activities are a common and well recognised problem. Fine particles from these sources are recognised as a potential significant cause of pollution.

The Main Contractor will be required to demonstrate that both nuisance dust and fine particle emissions from the site are adequately controlled and are within acceptable limits.

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

7.1 Mitigation Measures

The following are techniques and methods which are widely used currently throughout the construction industry to control dust and dirt emitting from the site, and which may be used in the proposed Aderrig Phase 3, Adamstown development.

1. The existing roads for access to the site are all surfaced and no dust is anticipated arising from unsealed surfaces.
2. A regime of 'wet' road sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
3. Footpaths immediately around the site can be cleaned by hand regularly, with damping as necessary.
4. High level walkways and surfaces such as scaffolding can be cleaned regularly using safe 'wet' methods, as opposed to dry methods.
5. Vehicle waiting areas or hard standings can be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
6. Vehicle and wheel washing facilities can be provided at site exit(s) where practicable. If necessary, vehicles can be washed down before exiting the site.
7. Netting can be provided to enclose scaffolding to mitigate escape of air borne dust from the existing and new buildings.
8. Vehicles and equipment will not emit black smoke from exhaust system, except during ignition at start up.

9. Engines and exhaust systems should be maintained so that exhaust emissions do not breach stationary emission limits set for the vehicle / equipment type and mode of operation.
10. Servicing of vehicles and plant should be carried out regularly, rather than just following breakdowns.
11. Internal combustion plant should not be left running unnecessarily.
12. Where possible fixed plant such as generators should be located away from residential areas.
13. The number of handling operations for materials will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily.
14. The transport of dusty materials and aggregates should be carried out using covered / sheeted lorries.
15. Material handling areas should be clean, tidy and free from dust.
16. Vehicle loading should be dampened down and drop heights for material to be kept to a minimum.
17. Drop heights for chutes / skips should be kept to a minimum.
18. Dust dispersal over the site boundary should be minimised using static sprinklers or other watering methods as necessary.
19. Stockpiles of materials should be kept to a minimum and if necessary, they should be kept away from sensitive receptors such as residential areas etc.
20. Stockpiles where necessary, should be sheeted or watered down.
21. Methods and equipment should be in place for immediate clean-up of spillages of dusty material.
22. No burning of materials will be permitted on site.
23. Earthworks excavations should be kept damp where necessary and where reasonably practicable.
24. Cutting on site should be avoided where possible by using pre-fabrication methods.
25. Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc., which minimise dust emissions and which have the best available dust suppression measures, should be employed.
26. Where scabbling is to be employed, tools should be fitted with dust bags, residual dust should be vacuumed up rather than swept away, and areas to be scabbled should be screened off.
27. Wet processes should be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
28. Where possible pre-mixed plasters and masonry compounds should be used to minimise dust arising from on-site mixing.
29. Prior to commencement, the Main Contractor should identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions. Furthermore, the Main Contractor should prepare environmental risk assessments for all dust generating processes, which are envisaged.

30. The Main Contractor should allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.

8. Surface Water

Following completion of any required initial dewatering of excavations for the drainage pipes, water supply, utilities and foundations, it is expected that flows of water into the excavation will be relatively small. These flows will be managed by sump pumping as required.

During any discharge of surface water from the excavations the water will be pre-treated and sediments removed before discharging via the existing surface water pipes (not into the Tobermaclugg Water Feature/Stream to the east), the quality of the water will be regularly monitored visually for hydrocarbon sheen and suspended solids. Periodic laboratory testing of discharge water samples will be carried out in accordance with the requirements of the discharge licence obtained from the Local Authority.

The surface water from the site during the construction phase will be pre-treated within the site before connecting into the existing drainage in the North South Link Road, which ultimately discharges through the underground constructed surface water pipe network laid parallel the eastern boundary of the subject site. This network discharges into the Backweston/Tobermaclugg Stream northeast of the Lucan Golf Course, from there connects into the Attenuation Pond located just south of the N4 roadway, which in turn discharges to the River Liffey in the vicinity of the Lucan Village.

Refer to the Waterman Moylan Engineering Assessment and Flood Risk Assessment Report for the details of the surface water discharge points.

9. Noise Assessment and Control Measures

The Main Contractor will deal with the immediate dangers to hearing etc. associated with high noise levels and the impact of same on construction operatives, by means of risk assessment and mitigation/precautionary measures and equipment, all pursuant to the current health and safety legislation and B.S.5228 Noise Control on Construction and Open sites.

Current legislation limits, assessment period of 8 hours of one week (noisiest 8 hours likely to experience):

- Lower Action Value (LAV) – 80 dBA $L_{EX,8}$, 135 dB Peak – Hearing Protection will be made available and information will be provided.
- Upper Action Value (UAV) – 85 dBA $L_{EX,8}$, 137 dB Peak – Use of Hearing Protection is mandatory, measures to eliminate the noise as much as possible will be applied.
- Exposure Limit Value (ELV) – 87
- dBA $L_{EX,8}$, 140 dB Peak – Not to be exceeded

Protection by ear plugs/muffs given by their Signal-to-Noise Ratio (SNR) or Noise Reduction Rating (NRR) is typically 20 – 30 dB.

- Exposure = $L_{EX,8} - (SNR - 10)$

As a guide, if it is difficult to hear a normal conversation at 2m or a workplace is consistently noisier than a busy street, it is likely that the noise levels in the area are above 80 dBA.

9.1 Potential Noise Sources

It is not envisaged that any excessively noisy activities to be carried out over extended periods of time during the construction stage. However, due to the nature of the construction works, exposure to noise levels more than 80 dBA (Safe Working Limit) may occur occasionally. The Main Contractor will carry out a noise assessment in relation to the proposed works at construction stage. The noise assessment will identify, but not limited to, the following steps in its analysis; -

1. Potentially Hazardous Activities
2. Potential Hazards
3. Persons at Risk
4. Risk of Exposure to the Potential Hazard
5. Risk Assessment before the Implementation of Control Measures
6. Risk Assessment after the Implementation of Control Measures
7. Control Measures Implemented by: Site Manager / Works Supervisor

10. Erosion and Sediment Control

10.1 Run-Off to Ditches

Significant quantities of waste and potential pollutants can be generated during construction. Controls must be put in place to prevent these pollutants from washing into the local storm water system.

The surface water from the site will initially be treated within the site and then pass through the existing surface water system constructed in the Celbridge Link Road and Adamstown Way.

Protection of the water courses is paramount during the construction stage of the subject development. Temporary measures will be put in place to remove sediments, oils and pollutants.

The recommendations as outlined in the Eastern Regional Fisheries Board document outline the following seven items to be considered for the protection of adjacent water courses during the construction stage:

1. Fuels, oils, greases and hydraulic fluids must be stored in bunded compounds well away from the watercourse. Refuelling of machinery, etc., should be carried out in bunded areas.
2. Runoff from machine service and concrete mixing areas must not enter the watercourse.
3. Stockpile areas for sands and gravel should be kept to minimum size, well away from the watercourse.
4. Runoff from the above should only be routed to the watercourse via suitably designed and sited settlement ponds/filter channels.
5. Temporary Settlement ponds should be inspected daily and maintained regularly.
6. Temporary crossings should be designed to the criteria laid down for permanent works.
7. Watercourse banks should be left intact if possible. If they must be disturbed, all practicable measures should be taken to prevent soils from entering the watercourses.

The main pollutants of site water are silt, fuel/oil, concrete and chemicals. See Table 10-1 below for a list and brief description of pollution prevention measures.

Table 10-1: Pollution Prevention Measures

Source	Action
Detergents	Use of detergents should be carried out in designated areas draining to the foul sewer.
Fuel/Oil	Fuel/oil stores must be located away from the site drainage system and the edge of watercourses.
	Ensure adequate measures are identified to prevent or contain any spillage such as creating a fall away from any drainage grid or blocking drainage points.
	Prevent oil pollution by: <ul style="list-style-type: none"> • Suitable bunded storage of fuel/oil, and use of drip trays under plant, and • An oil separator, and/or • On-site spill-kit • Commercially available absorbent granules, pads or booms.
Material Storage	Store drums, oil and chemicals on an impervious base and within a secured bund.
	Ensure topsoil and/or spoil heaps are located at least 10m away from water courses. Consider seeding them or covering with a tarpaulin to prevent silty runoff and losses due to wind.
Leaks and Spills	Storage facilities are to be checked on a regular basis to ensure any leaks or drips are fixed to prevent loss and pollution.
	Ensure appropriate spill response equipment is located near to the material in case of containment failure or material spills and ensure site staff know how to use it.
	Adequate stocks of absorbent materials, such as sand or commercially available spill kits and booms should be always available.
Litter	Provide waste bins on-site as appropriate.
Construction Vehicles	Provide vehicle wheel washing.
Concrete, Cement and Bentonite	Washout of these materials should be carried out in a designated, impermeable contained area. The washout water itself should be disposed of off-site, or discharged to the foul sewer if authorised.

10.2 Sediment Control

Construction runoff can be heavily laden with silt which may block road gullies and reduce the hydraulic capacity in pipes and rivers, contributing to ponding and flooding. Continued development without appropriate controls will ultimately keep maintenance costs elevated, whether that be in cleaning gullies, jetting pipes or dredging. Sediment control plans can be implanted on site to mitigate these issues.

Sediment basins and traps should be installed before any major site grading takes place. Additional sediment traps and silt fences should be installed as grading takes place to keep sediment contained on site at appropriate locations.

Key runoff-control measures should be in conjunction with sediment traps to divert water from planned undisturbed areas away from the traps and sediment-laden water into the traps. Diversions should be installed above the areas to be disturbed before any grading operations. Any perimeter drains should be installed with stable outlets before opening major areas for development. Any additional facilities needed for runoff control should be installed as grading takes place.

During grading operations temporary diversions, slope drains, and inlet and outlet protection installed in a timely manner can be very effective in controlling erosion and sediment build up.

The main run-off conveyance system with inlet and outlet protection measures should be installed early and used to convey stormwater run-off through the development site without creating gullies or channels. Install inlet protection for storm drains as soon as the drain is functional to trap sediment on site in willow pools and to allow the flood flows to enter the storm drainage system safely. Install outlet protection at the same time as the conveyance system to prevent damage to the receiving waters.

10.3 Sediment Control Measures

Sediment entrapment facilities are necessary to reduce sediment discharges to downstream properties and receiving waters. All run-off leaving a disturbed area should pass through a sediment entrapment facility before it exits the site and flows downstream.

- Straw Bales

Straw bales can be placed at the base of a slope to act as a sediment barrier. These are not recommended for use within a swale or channel. Straw bales are temporary in nature and may perform for only a period of weeks or months. Proper installation and maintenance are necessary to ensure their performance.

- Silt Fencing

A silt fence is made of a woven synthetic material, geotextile, and acts to filter run-off. Silt fencing can be placed as a temporary barrier along the contour at the base of a disturbed area, but is not recommended for use in a channel or swale. The material is durable and will last for more than one season if properly installed and maintained. Silt fencing is not intended to be used as a perimeter fence or in area of concentrated flow. If concentrated flow conditions exist, a more robust filter should be considered.

- Silt Barriers

Silt barriers can also be temporarily installed in any road gullies of partially constructed roads to prevent sediment movement into downstream drainage systems or SUDS components.

When the catchment area is greater than that allowed for straw bale barriers or silt fences, runoff should be collected in diversion drains and routed through temporary sediment basins.

- Diversion Drains

Diversion drains are simple linear ditches, often with an earth bund, for channelling water to a desired location. If the drains are being eroded, they can be lined with geotextile fabric or large stones or boulders.

UK and Ireland Office Locations

