

INFRASTRUCTURE

Project

**White Pines Central Residential Development,
Stocking Avenue, Dublin 16**

Report Title

Preliminary Construction Management Plan

Client

Ardstone Homes Limited



DBFL CONSULTING ENGINEERS

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1. WORKS PROPOSAL

This Construction Management Plan (CMP) considers the proposed works associated with the construction of 114 No. residential units on a 2.2 Ha (approx.) site at Stocking Avenue, Dublin 16.

The site, which is currently undeveloped, is located immediately north of the White Pines South development (recently completed by Ardstone Homes Limited). Stocking Avenue runs along the site's northern boundary. Refer to Figure 1.1 below.

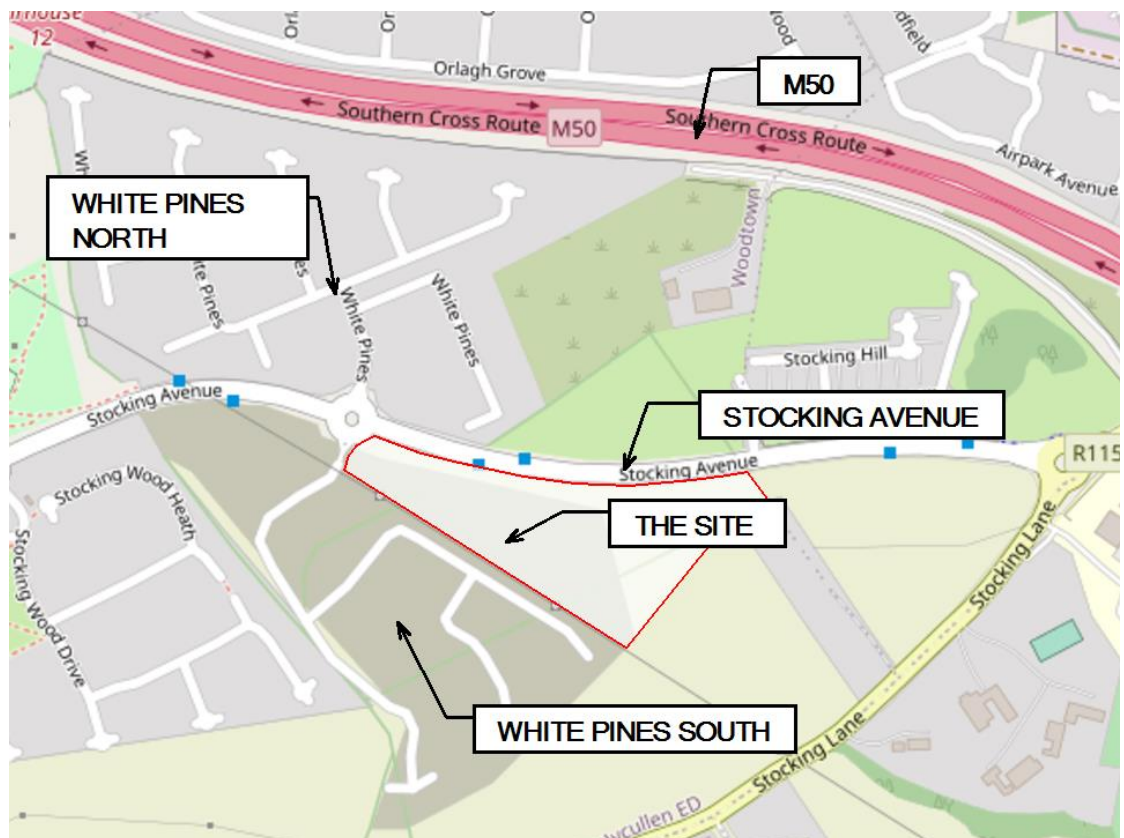


Figure 1.1 Site Location – Extract from EPA Map viewer (Site Boundary Indicative Only).

The site is in the immediate vicinity of several other developments by Ardstone Homes (either recently constructed or recently in receipt of a grant of planning), as noted below (also refer to Figure 1.2).

- Ardstone has recently been granted permission for the development of "White Pines Retail" to the north-west of the site (Application Ref SD19A/0345).

- Ardstone have also completed 177 Dwellings on the northern side of Stocking Avenue (known as "White Pines North", Application Ref. SD14A/0222) and 106 dwellings on the southern side of Stocking Avenue (known as "White Pines South", Application Reg. Ref. SD10A/0041).
- Ardstone are also advancing an SHD application for other lands north of Stocking Avenue (known as "White Pines East"), which comprises of approximately 200 -300 no. residential units. This development will be accessed via Stocking Avenue. This development is currently in the planning process and has not been granted planning permission yet, however, it has been included as a committed development for this traffic network modelling assessment for robustness.



Figure 1.2, Extract from Google Earth (Site Boundary Indicative Only)

The “White Pines Central” project is currently at planning stage and as such input from the contractor has not been incorporated into this document.

On appointment of a contractor a detailed CMP shall be prepared. The detailed CMP shall incorporate the requirements of the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (DoEHLG, 2006).

The development will also include the following associated engineering infrastructure:

- Provision of three access points from White Pines South (along the site’s southern boundary) facilitating primary vehicle access via the existing roundabout on Stocking Avenue and existing road network within White Pines South.
- Provision of a secondary access point (normally bollarded) to Stocking Avenue in the north-east corner of the site (facilitating access for emergency services / residents should the primary access route become unpassable due to an accident). This access point will also facilitate permeability for pedestrians and cyclists.
- Provision of additional access points onto Stocking Avenue to accommodate pedestrian permeability.
- Provision of internal site roads including associated footpaths.
- Provision of surface water drainage, foul drainage and water supply infrastructure.

The construction management issues addressed within this plan include the following:

- Health and Safety
- Working Hours
- Traffic Management
- Stripping of Topsoil
- Excavation of Subsoil
- Importation of fill
- Erosion and Sediment Control
- Accidental Spills and Leaks
- Waste Management
- Noise and Vibration
- Air Quality and Dust Control

- Landscape and Visual Impact
- Material Assets – Site Services
- Site Compound Facilities and Parking

This Preliminary Construction Management Plan shall be referenced in all tender and contract documentation for the proposed works and is to be read in conjunction with all relevant Engineering and Architectural documentation.

2. COMPLIANCE WITH GENERAL SAFETY REQUIREMENTS

The Contractor shall be responsible for overall management of the site for the duration of the proposed works and must progress their works with reasonable skill, care, diligence and to proactively manage the works in a manner most likely to ensure the safety and welfare of those carrying out construction works.

The Contractor shall comply with all relevant Statutory requirements such as the 2005 Safety Health and Welfare at Work Act, The Construction Regulations (SI 291 of 2013), the General Application Regulations (SI 299 of 2007), etc. (and any amendments thereof).

In addition, the Contractor shall comply with all the reasonable safety requirements of the Client, the Project Supervisor for the Design Process and the Project Supervisor for the Construction Stage.

3. WORKING HOURS

For the duration of the proposed infrastructure works, the maximum working hours shall be 07:00 to 19:00 Monday to Friday (excluding bank holidays) and 09:00 to 13:00 Saturdays, subject to the restrictions imposed by the local authority.

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 water main connections, foul drainage connections etc.

4. TRAFFIC AND TRANSPORTATION

A Construction Traffic Management Plan (CTMP) will be prepared by the contractor for agreement with South Dublin County Council prior to commencing the site works.

The CTMP will be prepared in accordance with the guidelines noted below:

- Department of Transport Traffic Signs Manual 2010 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010)
- Any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS)

The contractor shall prepare a detailed construction traffic management plan for works at that interface with the existing road network and obtain all required road opening licenses from South Dublin County Council.

Construction Traffic will consist of the following categories:

- Private vehicles owned and driven by site staff and management
- Construction vehicles e.g. excavation plant, dump trucks (including trucks for delivery of imported fill to site.
- Materials delivery vehicles involved in site development works

On-site employees will generally arrive before 08:00, thus avoiding morning peak hour traffic. These employees will generally depart after 16:00. It should be noted that a large proportion of construction workers would arrive in shared transport.

In general, the impact of the construction period will be temporary in nature.

HGV vehicle movements not expected to exceed 5 vehicles per hour during the busiest period of construction works.

Excavated material will be reused as part of the site development works where possible to minimise truck movements to and from the site (e.g. use as non-structural fill under green areas).

Access for construction of the development will be via the proposed secondary access point to Stocking Avenue (in the north-east corner of the site). This will be the only construction to the site. There will be no access for construction traffic via the access road off the Stocking Avenue Roundabout which currently serves "White Pines South".

All construction traffic will be routed to the site via the primary road network in the area (i.e. M50 Motorway, Ballycullen Road and Stocking Avenue).

Queuing of material delivery vehicles to the site will not be permitted on Stocking Avenue. Wheel wash facilities will also be provided and adjacent public roads swept as required.

5. SOILS AND GEOLOGY

Site development works will include moving topsoil stockpiles, excavation of subsoil layers and the importation of fill. These activities have potential to expose the soils and geological environment to pollution.

The contractor shall obtain approval of their proposed erosion and sediment control measures from South Dublin County Council's Environment Section prior to commencing works on site.

The following measures are to be implemented in order to mitigate against such risks.

Topsoil

- Two stockpiles of topsoil are located at the eastern end of the site (stripped from the applicant's adjacent development, White Pines South). This material will be reused on site (incorporated into landscaping of back gardens and open space areas)
- Existing topsoil stockpiles will be protected for the duration of the works
- Phasing of the works shall minimise the need for movement / double handling of topsoil stockpiles

Excavation of Subsoil Layers

- The duration that subsoil layers are exposed to the effects of weather will be minimised
- Disturbed subsoil layers will be stabilised as soon as practicable (e.g. backfill of drainage trench, construction of road capping layers, construction of building foundations and completion of landscaping)
- Stockpiles of excavated subsoil material will be protected for the duration of the works, stockpiles of subsoil material will be located separately from topsoil stockpiles

Weather Conditions

- Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion

Dust Control

- Dust suppression practices are to be implemented during movement of topsoil stockpiles, excavation of subsoil layers and importation of fill as outlined in Section 9 of this Preliminary Construction Management Plan

Importation of Fill

- Materials imported to site will be natural stones sourced from locally available quarries, greenfield / inert soil imported under a Waste Permit issued by the local authority; or materials that have been approved as by-products by the EPA in accordance with the EPA's criteria for determining a material is a by-product, per the provisions of article 27(1) of the European Communities (Waste Directive) Regulations, 2011.
- Imported fill materials will be granular in nature and used in the construction of road pavement foundations, drainage and utility bedding and surrounds.
- Materials will be brought to site and placed in their final position in the shortest possible time. Any imported material will be kept separate from material excavated from the site. All excavation to accommodate imported material will be precisely coordinated to ensure no surplus material is brought to site beyond the engineering requirement.
- No large or long-term stockpiles of imported fill material will be held on the site. At any time, the extent of fill material held on site will be limited to that needed in the immediate vicinity of the active work area.
- Smaller stockpiles of fill where required, will be suitably protected to ensure no sediment laden runoff enters existing surface water drains. Such stockpiles are to be located in order to avoid double handling.

6. WATER AND HYDROGEOLOGY

The following measures are to be implemented during the construction phase in order to mitigate risks to the water and hydrogeological environment.

Erosion and Sediment Control

- Measures will be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches)
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate
- On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion
- Surface water discharge points during the construction phase are to be agreed with South Dublin County Council's Environment Section prior to commencing works on site

Accidental Spills and Leaks

- All oils, fuels and other chemicals will be stored in a secure bunded hardstand area
- Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets (when not possible carry out such activities off site)
- A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment

Concrete

- Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed of on site
- Pumped concrete will be monitored to ensure there is no accidental discharge
- Mixer washings are not to be discharged into surface water drains

Wheel Wash Areas

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

7. WASTE MANAGEMENT

The principle of 'Duty of Care' in Waste Management Act 1996-2008 states that the waste producer is responsible for waste from the time it is generated through to its legal disposal (including its method of disposal). Waste materials generated by earthworks, demolition and construction activities will be managed according to the Department of the Environment, Heritage and Local Government's 2006 Publication – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects.

A CWMP has been prepared by AWN, has been included in Appendix 13.1 of the EIAR submitted with this application.

The following measures are to be implemented during the construction phase in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle waste in such a manner as to minimise the effect on the environment

This project is currently at planning stage and as such input from the contractor has not been incorporated into this document. On appointment of a contractor a detailed CMP shall be prepared. The detailed CMP shall incorporate the requirements of the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (DoEHLG, 2006).

- Copies of the final Construction Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed on the objectives of the Construction Waste Management Plan and informed of their responsibilities.
- The nominated Construction Waste Manager responsible for implementation of this Construction Waste Management Plan will be identified prior to construction commencement and will arrange for a waste audit of the project once construction has fully commenced on site (and of any facilities to which waste from the project is delivered as required).
- Building materials should be chosen with an aim to 'design out waste'
- All wastes segregated at source where possible
- On-site segregation of non-hazardous waste materials into appropriate categories. All waste material will be stored in skips or other suitable receptacles in a designated area of the site

- On-site segregation of hazardous waste materials into appropriate categories. Hazardous waste will be separately stored in appropriate lockable containers prior to removal from site by an appropriate waste collection licence holder.
- Waste bins, containers, skip containers and storage areas will be clearly labelled with waste types which they should contain including photographs as appropriate.
- The site will be maintained to prevent litter and regular litter picking will take place throughout the site.
- Materials will be ordered on a 'just in time' basis to prevent over supply and site congestion (i.e. to minimise materials stored on site)
- Materials will be correctly stored and handled to minimise the generation of damaged materials
- Left over materials (e.g. timber off-cuts) shall be re-used on site where possible
- All waste leaving the site will be recycled, recovered or reused where possible
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities

8. NOISE AND VIBRATION

During the works the contractor shall comply with the requirements of BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014 (Code of Practice for Noise and Vibration Control on Construction and Open Sites), Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5 Noise and Vibration and implement all construction phase mitigation measures identified in EIAR Chapter 12, Noise and Vibration.

In particular, the following practices are to be implemented during the construction phase:

- Limiting the hours during which site activities that are likely to create high levels of noise and vibration are permitted
- Erection of a barrier (e.g. Standard 2.4m high construction hoarding) to remove direct line of sight between noise source and receiver when construction works are being carried out in proximity to noise sensitive receivers
- Establishing channels of communication between the contractor, local authority and residents
- Appointing a site representative responsible for matters relating to noise
- 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
- Selection of plant with low inherent potential for generation of noise
- Siting of noisy plant as far away from sensitive properties as permitted by site constraints and implementation of noise reduction measures such as acoustic enclosures
- Avoid unnecessary revving of engines and switch off plant when idle
- All vehicles and mechanical plant used for the purpose of the works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order. In addition, all diesel engine powered plant shall be fitted with effective air intake silencers.
- All ancillary pneumatic percussive tools shall be fitted with mufflers or silences of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used.

Noise Limits

Noise Limits to be applied for the duration of construction works are as set out in the National Roads Authority (NRA) Guidelines for Treatment of Noise and Vibration in National Roads Schemes (summarised below in Figure 9.1) and BS 5228-1:2009+A1:2014 (Code of Practice for Noise Control on Construction and Open Sites).

Date ^a	Noise Level (dB re 2x10 ⁻⁵ Pa) ^a	
	L _{Aeq} (1hr) ^a	L _{Afmax} ^a
Monday to Friday 07:00 to 19:00hrs ^a	70 ^a	80 ^a
Monday to Friday 19:00 to 22:00hrs ^a	60* ^a	65* ^a
Saturdays 08:00 to 16:30hrs ^a	65 ^a	75 ^a
Sundays & Bank Holidays 08:00 to 16:30hrs ^a	60* ^a	65* ^a

Figure 9.1, NRA Guidelines for Maximum Permissible Noise Levels at the Façade of Dwellings During Construction.

BS 5228 applies a noise limit of 70 dBA between 07:00 am and 19:00 pm outside the nearest window of the occupied room closest to the site boundary in suburban areas away from main road traffic and industrial noise.

For the duration of construction works, a daytime noise limit (07:00 am to 19:00 pm) of 70 dBA shall apply (in accordance with the requirements of BS 5228 and generally in agreement with the NRA guidelines).

Vibration Limits

Vibration Limits to be applied for the duration of construction works are as set out in BS 5228-2:2009+A1:2014 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385: 1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in Figure 9.2.

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of ^a		
Less than 4Hz ^a	15 to 40Hz ^a	40Hz (and above) ^a
12 mm/s ^a	12.5 mm/s ^a	50 mm/s ^a

Figure 9.2, Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration

9. AIR QUALITY AND CLIMATE

The primary air quality impact during the construction phase relates to nuisance dust emissions.

The following dust suppression practices are to be implemented during the construction phase (as well as implementing all construction phase mitigation measures identified in EIAR Chapter 11, Air Quality and Climate):

- The Contractor shall prepare a dust minimisation plan which shall be communicated to all site staff
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly (on any un-surfaced site road, this will be 20 kph and on hard surfaced roads as site management dictates)
- Vehicles delivering material with dust potential (soil, aggregates etc.) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust
- Public roads outside the site will be inspected on a daily basis for cleanliness and cleaned as necessary
- Debris, sediment, grit etc. captured by road sweeping vehicles is to be disposed off-site at a licensed facility
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate prior to entering onto public roads
- Material handling systems and site stockpiling of materials will be designed and laid out 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
- 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

Monitoring of dust deposition levels (via the Bergerhoff method) shall take place at a number of locations at the site boundary of the proposed development to ensure that dust nuisance is not occurring at nearby sensitive receptors. This monitoring aims to ensure that the dust mitigation measures outlined above remain effective.

10. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Proposed construction phase mitigation measures include (but are not limited to) those noted below:

- Establishment of tree protection measures as required (no-dig construction zones, tree protection fencing and existing hedgerow retention). Any trees which are not to be taken down shall remain undisturbed and undamaged
- Tree protection fences if required are to be constructed in accordance with BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"
- A 'Construction Exclusion Zone' notice shall be placed on tree protection fencing at regular intervals
- Tree Protection Zones are not to be used for car parking, storage of plant, equipment or materials
- A post construction re-assessment of any retained trees shall be carried out

Regarding visual impact, Landscape and Visual Impact are to be mitigated by implemented including erection of site hoarding to restrict views of the construction activity e.g. standard 2.4m high construction hoarding.

11. MATERIAL ASSETS: SITE SERVICES

General

- Contractor to prepare Method Statement detailing proposals for works in the vicinity of existing utilities (method statement to be agreed with PSDP).

Existing Underground Services

- The location of all existing underground services are to be confirmed by the contractor prior to commencing any works on site.

Existing Overhead Services

- Existing HV overhead lines traverse the site adjacent to its southern boundary.
- Contractor to comply with ESB' Code of Practice for Avoiding Danger from Overhead Electricity Lines including but not limited to creating crossing points under HV overhead lines and erecting height-restricting goalposts.

12. SITE COMPOUND FACILITIES AND PARKING

The exact location of the construction compound is to be confirmed in advance of commencement of the works (and agreed with South Dublin County Council).

- The construction compound will include adequate welfare facilities such as wash rooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply
- Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials
- The construction compound will be enclosed by a security fence
- Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure
- A permeable hardstand area will be provided for staff carparking
- A separate permeable hardstand area will be provided for construction machinery and plant
- The construction compound will include a designated Construction material recycling area
- A series of way finding signage will be provided to direct staff, visitors and deliveries as required
- All construction materials, debris, temporary hardstands etc. in the vicinity of the site compound will be removed off-site on completion of the works