

Project

**Strategic Housing Development at Southgate,
Drogheda, Co.Meath**

Report Title

Construction Management Plan

Client

Rockmill Ltd

INFRASTRUCTURE



DBFL CONSULTING ENGINEERS

July 2021

Job Title: Strategic Housing Development at Southgate, Drogheda, Co.Meath

Job Number: 190081

Report Title: Construction & Environmental Management Plan

Report Reference: 190081-Rep-005

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Date: July 2021

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Revision	Issue Date	Description	Prepared	Reviewed	Approved
Draft	30.11.2020	Planning Stage 3 – For Review	AO'S	DCG	DMW
Final	05.07.2021	Planning SHD Stage 3	ASM	DMW	DMW

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1. WORKS PROPOSAL

This Construction Management Plan is for the works associated with the construction of the proposed residential development in the townland of Southgate, Drogheda, County Meath. The proposed development comprises 201 residential units in 5 blocks and associated infrastructure on a site area of circa 1.65ha. The construction management issues addressed in this plan include noise and vibration, traffic management, working hours, pollution control, archaeology, arboriculture, dust control, road cleaning, compound / public health facilities and staff parking.



Figure 1 Site Location

2. SITE ENABLING WORKS

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

- Securing of site boundary and erecting of fencing or hoarding as required.
- Service terminations and positive identification of any services on the site by the utility providers.
- Provision of temporary power, lighting and water services.
- Set up of site accommodation and welfare facilities.

- Archaeological monitoring.
- Identification of the trees that are required to be removed and the removal of these along with scrub and vegetation, in consultation with the appointed Arborist.
- Identification of any hazardous materials on site or in the structures that are required to be demolished during the course of the construction.

2.1 Indicative Enabling Works Methodology

The outline of methodology is as follows:

Live services will be terminated and where possible will be removed off site, with the cooperation of the utility providers.

Temporary power and water services will be arranged for the site accommodation and welfare facilities. The site accommodation and welfare facilities will be set up in a location as not to be in the way of the construction, and at a point close to the site entrance.

On the set up of the site accommodation, the identification and survey of areas of archaeological concern will commence in consultation with the appointed Archaeologist.

Any protected trees will be secured, and the subsequent hard fencing will be placed to protect the trees and the root zone below the tree. This will be carried out in consultation with the appointed Arborist. Following the fencing of any protected trees, the remaining trees that are required to be removed will have to be identified and removed along with the scrub on site.

During any demolition works, where practical, materials will be segregated, considering the constraints of safety and space on site. Dust suppression will be carefully monitored and controlled with the careful use of water.

Noise levels will be controlled and works undertaken in such a way as to minimise the detrimental impact on adjoining property and local residents.

2.2 Infrastructure Works

The site infrastructure works include the provision of the permanent entrance to the site and the permanent connection of all the utilities and services required for the site.

2.2.3 Utility Infrastructure

Provision of the permanent infrastructure to the site will be carried out as early as possible in the programmed works as to possibly incorporate the temporary site requirements with the permanent requirements.

Engagement with the service and utility providers will be entered into early in the design stage to allow for adequate planning of utility infrastructure.

It is the aspiration of the applicant to minimise disruption of existing services and public roads and pathways in the providing of services to the site, this will be done in consultation with the service providers and Meath County Council.

Where possible services will be provided to 'future-proof' the development.

3 SAFETY, HEALTH AND ENVIRONMENT

3.1 General Health, Safety and Environmental Consideration

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

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

- Planning approvals from An Bord Pleanála and Meath County Council.
- Requirements of Meath County Council.

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

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

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

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

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

A site-specific Safety Statement and a detailed Construction Stage Safety & Health Plan will be compiled prior to any works on site and will be in accordance with the Health & Safety Authority and Meath County Council guidelines.

4 NOISE & VIBRATION

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.
- 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.

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

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

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

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

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

<u>Less than 11Hz</u>	<u>11 to 50 Hz</u>	<u>50 to 110 Hz (and above)</u>
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. In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

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

More specifically the Contractor shall ensure that:

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

A site representative responsible for matters relating to noise and vibration will be appointed as part of this Construction & Environmental Management Plan.

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

All vehicles and mechanical plant used for 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 compressors shall be "sound reduced" models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use. 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.

All ancillary plant, such as generators and pumps, shall be positioned to ensure minimum noise disturbance. If operating outside the normal working week acoustic enclosures shall be provided.

5 TRAFFIC MANAGEMENT

As part of Construction Stage Safety Plan for the works, a Traffic Management Plan (TMP) will be prepared in accordance with the principles outlined below, and shall comply with the requirements of:

- Chapter 8 of the Department of the Environment Traffic Signs Manual, current edition, published by The Stationery Office, and available from the Government Publications Office, Sun Alliance House, Molesworth Street, Dublin 2;
- Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board;
- Any additional requirements detailed in the Design Manual for Roads and Bridges & Design Manual for Urban Roads & Streets (DMURS);

All construction traffic will enter the site via the existing roundabout at the north west corner of the site and will be routed to the site via the primary road network in the area.

In general, the impact of the construction period will be temporary in nature and less significant than the operational stage of the future development proposed. During the

construction of the proposed infrastructure works, all excavated suitable material will be reused for construction and fill activities where possible and appropriate. Any unsuitable material will be disposed of off-site at a suitably licensed landfill facility.

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 site development works and materials delivery vehicles.

On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic, and will generally depart after 18:00. It should be noted that a large proportion of construction workers would likely travel in shared transport.

6 WORKING HOURS

For the duration of the proposed infrastructure works the maximum working hours shall be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 15:00 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 authorities out of hours working may be required for the watermain connection.

7 ECOLOGICAL SENSITIVITY OF THE SITE

An ecological assessment has been carried out of the subject site by Open Field Ecological Services.

Reference should be made to this specialist report and all construction works proposed shall take account of any recommendations included in the ecological assessment, including the appointment of an ecological clerk of works.

8 POLLUTION CONTROL

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 contractor will be required to co-operate fully with the Environmental Section of Meath County Council.

As part of the overall construction methodology, the following issues have been identified as being of risk and/or concern to pollution and will be addressed;

- Contamination of Watercourse / Groundwater – There is a risk that ground water could become contaminated with lime from cement, but there are no drainage ditches at the site of the Proposed Development and there is no water course linking the Site of the Proposed Development to the Stagrennan Stream or the Boyne Estuary. The measures proposed to be put in place to mitigate any potential damage from the effluent of contaminated ground water would be to create an exclusion zone, as far as reasonably practicable, by the erection of a visible 1.0m high barrier along the watercourse. This will be formed by means of steel road pins, which will be used to support a PVC 'orange' barrier with warning signs appropriately fixed at regular intervals. The signs shall read 'NOTICE – NO DISCHARGE OF ANY KIND IS PERMITTED IN THIS VICINITY OR BEYOND THIS EXCLUSION ZONE'
- Sediment & Erosion – Similar to the above, adjacent watercourses/groundwater need to be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the construction phase. To prevent this from occurring, surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary positive drainage system shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction. A series of geotextile lined cascading, high level outfall, settling basins will be installed upstream of the agreed discharge point. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled

out and removed before being discharged in a controlled manner to the agreed outfall.

- Over Ground Oil / Diesel Storage – Only approved storage system for oil / diesel within the site will be permitted, (i.e. all oil / diesel storage to be located within a designated area placed furthest away from adjacent watercourses and contained within constructed bunded areas e.g. placed on 150mm concrete slab with the perimeter constructed with 225mm solid blockwork rendered internally). The bunded area will accommodate the relevant oil / diesel storage capacity in case of accidental spillage. Any accidental spillages will be dealt with immediately on site by containment /removal from site.
- Concrete Washout – The washing out of concrete trucks on site will not be permitted as they are a potential source of high alkaline discharges to watercourses. Consequently, it is a requirement that all concrete truck washout takes place back in the ready-mix depot.
- Disposal of Wastewater off Site – The Site Management Team will maintain a record of all receipts for the removal of toilet or interceptor waste off site to insure its disposal in a traceable manner. These will be available for inspection at all times by the Environmental Section of Meath County Council.
- Road Sweepers / Cleaning – The cleaning of public roads in and around the subject site will be undertaken to reduce environmental impacts.

9 ARCHEOLOGY

An Archaeology report has been completed for the site by Archer Heritage. Any information relating to Archeology and associated items can be found in this report. Any items highlighted in this report will be addressed prior to and during the construction phase of the development.

10 ARBORICULTURE

A tree protection strategy / requirements report was prepared by Charles McCorkell Arboricultural Consultancy and should be referred to for a detailed description of the tree protection strategy to be adopted in tandem with this Construction & Environmental Management Plan for the proposed development.

The above report specifically outlines the main requirements in relation to the existing trees on the subject site and these are summarised as follows;

- Identification of existing trees to be removed for access and site development purposes
- Retention of existing trees
- Site Monitoring During Construction Works

Reference should be made to this specialist report for further details and all construction works proposed shall take account of same.

11 DUST CONTROL

During the proposed infrastructure works the following mitigation measures shall be implemented to minimise dust emissions:

- Construction techniques shall minimise dust release into the air.
- Spray exposed site haul roads during dry and / or windy weather.
- Provide wheel washing facilities at all exit points.
- Provide tarpaulins over all unacceptable excavated materials being carted off site.
- Control vehicle speeds and impose speed restrictions, (speed can mobilise dust).
- Sweep hard surface roads, inside and outside the site, to ensure roads are kept clear of debris, soil or other material.
- Located any stockpiles away from sensitive receptors, (i.e. receptors sensitive to dust release).

During dry spells and if deemed necessary, monitoring of dust levels shall be carried out using the Bergerhoff Method i.e. analysis of dust collecting jars left on-site (German Standard VDI 2119, 1972). Results will be compared to the TA Luft guidelines (TA Luft,

1972). Should an exceedance of the TA Luft limit occur during, additional mitigation measures, for example more regular spraying of water, shall be implemented.

12 ROAD CLEANING / WHEEL WASHING

Provision will be made for the cleaning by a road sweeper etc. of all access routes to and from the site, during the works, (i.e. at the roundabout which links Park Heights and The Boulevard within Grangerath Estate and all roads within 500m of the site boundary). Road cleaning shall be undertaken daily during the completion of the works. A wheel wash facility will also be provided on site to clean site traffic leaving the site. Wastewater generated at this washing facility will be suitably treated on site and all settled silts will be disposed offsite to a licensed landfill.

All road sweeping vacuum vehicles will be emptied off site at a suitably licensed facility.

13 COMPOUND FACILITIES / PARKING

The construction compound for the infrastructure works shall be generally located as per Figure 2 below. The compound shall be constructed using a clean permeable stone finish and will be enclosed with security fencing. Site accommodation to be provided will include suitable washing / dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. 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 parking and these areas will be separate from designated machinery / plant parking.

Shannon Homes will strive to maintain a tidy site and to operate a "just in time" policy for the delivery and the supply of materials for the works, particularly the final phase of the works when on site storage will be at a minimum.

A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.

A series of 'way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.

On completion of the works all construction materials, debris, temporary hardstands etc. from the site compound will be removed from the site compound area off site.

A teleporter will be used for general unloading during the structural and envelope works. Unloading over the public roadway and path will be avoided.



Figure 2 Indicative Site Compound Location