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Stage 1 Construction Management Plan

Proposed Residential Development

Devoy Barracks, Naas, Co. Kildare

Client: Land Development Agency

Job No. L086

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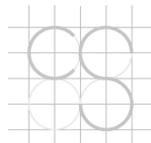
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STAGE 1 CONSTRUCTION MANAGEMENT PLAN

PROPOSED RESIDENTIAL DEVELOPMENT AT DEVOY BARRACKS,
NAAS, CO. KILDARE

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1.0 INTRODUCTION

Cronin & Sutton Consulting have been commissioned by the Land Development Agency, to prepare a Stage 1 Construction Management Plan to accompany a planning application for a development at Devoy Barracks, Naas, Co. Kildare. The Stage 1 Construction Management Plan includes a description of the proposed works and how these works will be managed for the duration of the works on site. This plan will be updated by the contractor and agreed with Kildare County Council (KCC) (by the appointed Contractor) in advance of the construction phase.

The project will be under the control of a main contractor who will be appointed after the approval is granted for the Project Application. Upon appointment and once familiar with the site and having developed a final detailed methodology for the construction of the Development Project, the contractor will prepare a Detailed Construction Management Plan. It is anticipated the detailed plan will be based upon this plan. This Stage 1 Construction Management Plan (CMP) is a preliminary plan which has been prepared to give an outline of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan will be revised by the contractor and expanded to provide a project specific site management plan, incorporating:

- Operational Health & Safety (OH&S) Management Plan;
- Environmental Management Plan including a Waste Management Plan;
- Pedestrian and Traffic Management Plan.

The Construction Management Plan will be integrated into and implemented throughout the construction phase of the project to ensure the following:

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- To manage and control any environmental impacts (noise, vibration, dust, water) that project construction work activities may have on receptors and properties that are located adjacent to project work areas and on the local receiving environment.
- To comply with planning conditions and requirements relating to waste management as required by Kildare County Council.

The proposed Stage 1 Construction Management Plan has been prepared to demonstrate how the appointed contractor and the appointed Project Supervisors will comply with the following relevant legislation, and relevant Best Practice Guidelines:

- Integrated Pollution Prevention and Control Directive (1996/61/EC)
- The Waste Framework Directive (Directive 2008/98/EC)
- Environmental Protection Agency Act 1992,
- Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016.
- Waste Management (Permit) Regulations 1998 (SI No. 165 of 1998)
- Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – June 2006

- Local Government Water Pollution Act 1977

This Stage 1 Construction Management Plan presents the potential environmental impacts and proposed management and monitoring methodologies based on the concept of Best Practice to be implemented at the site.

2.0 SITE LOCATION

The proposed development site is located at Devoy Barracks, Naas, Co. Kildare. The site is located in the administrative jurisdiction of Kildare County Council and has a total area of approximately 4.14 ha.

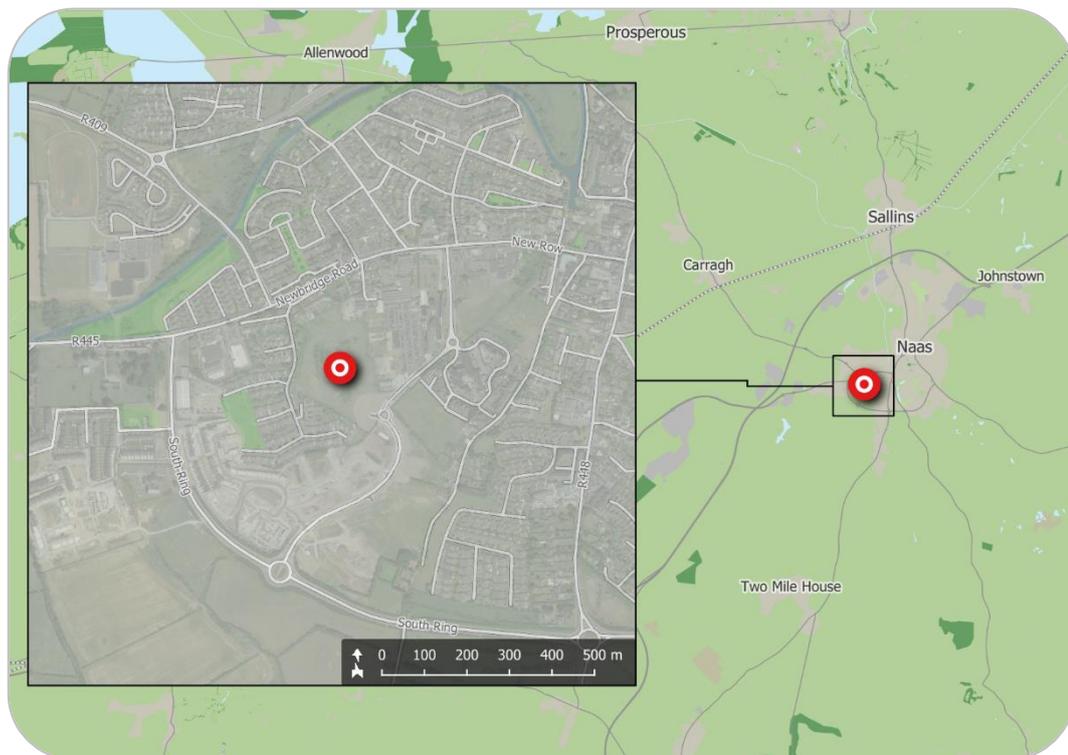


Figure 1 – Location of proposed development site
(map data & imagery: EPA, OSi, OSM Contributors, Google)

The location of the proposed development site is shown in Figure 1. The proposed development site is located at Devoy Barracks, Naas, Co. Kildare. The site is located in the administrative jurisdiction of Kildare County Council and has a total area of approximately 4.14 ha.

The indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

The site is bounded to the east by Kildare County Council Campus, to the north by existing residential and commercial properties and to the south and west by Arconagh residential housing estate.

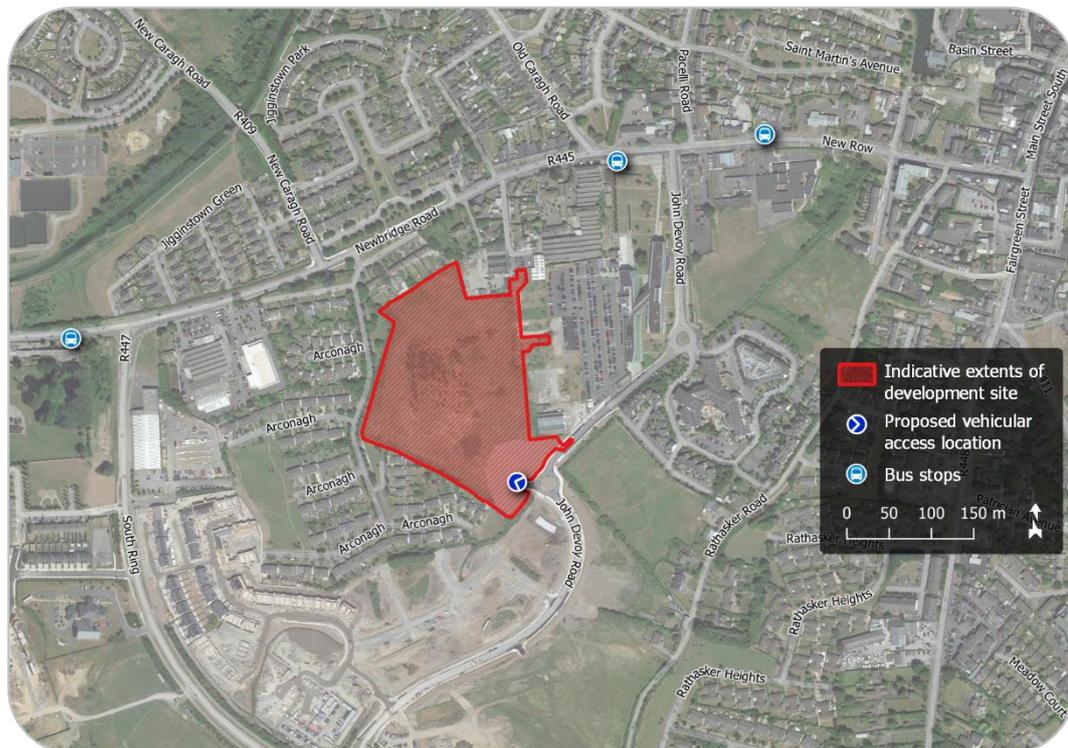


Figure 2 – Site extents and environs
(map data & imagery: NTA, GoCar, OSM Contributors, Microsoft)

3.0 EXISTING LAND USE

The subject site is greenfield with an overall area of approx. 4.14 Ha. The lands fall from a maximum height of 98.15m AOD in the north to a low of 92.50m AOD in the southeast corner of the site and are currently accessed from the recently constructed John Devoy Road to the southeast.

4.0 PROJECT DESCRIPTION

The proposed development is for the construction of 221 no. residential units, comprising a mix of terraced houses (36 no. 3-bed units), and duplex/apartment units (185 no. in total, including 63 no. 1-bed units, 111 no. 2-bed units, and 11 no. 3-bed units) ranging in height from 2 to 5 storeys, a 59-place childcare facility, public and communal open spaces, and all associated site works and infrastructure.

5.0 LOGISTICS

5.1 Construction Program & Phasing

Subject to a successful grant of planning, the development is proposed to be constructed on the following basis;

- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes adjacent to the site;
- Site clearance;
- Reduced level excavations and piling mat to soft spot areas;
- Foundations piled and strip, ground beams and floor slabs;
- Site services installations (drainage, power, water and the like);
- Construct house frames and blockwork;
- Finish interior and exterior landscaping

Please note the above shall be carried out in accordance with the particular construction phase.

Upon a favourable grant of permission it is envisaged that the construction period for the project shall be circa 30 months.

5.2 Vehicular Access to Site

The site is currently accessed from the existing arm off the roundabout on the John Devoy Road to the south east of the development site. Generally, all access and egress for deliveries will be via the John Devoy Road. It may also be beneficial to install a pedestrian only entrance to the site to segregate vehicular and pedestrian movements to and from site.

A second construction access route maybe required via the Arconagh Road to the west of the development site, as the elements of the development are completed and become occupied or to facilitate the phasing of the development as set out in Section 5.3 below. These details will be agreed

between the contractor and Kildare County Council if the secondary access becomes a requirement to facilitate segregation of construction traffic and occupants of the development.

Security personnel will be present at the entrance/exit of the site to ensure all exiting traffic will do so safely. A wheel wash will be installed at all vehicular exits from the site to prevent any dirt being carried out into the public road. If necessary, a road sweeper will be used to keep public road around the site clean.

5.3 Phasing of the Development

At present it is anticipated that the delivery of the proposed development will be in 2 no. separate phases, please see indicative phasing map in figure 3 below.

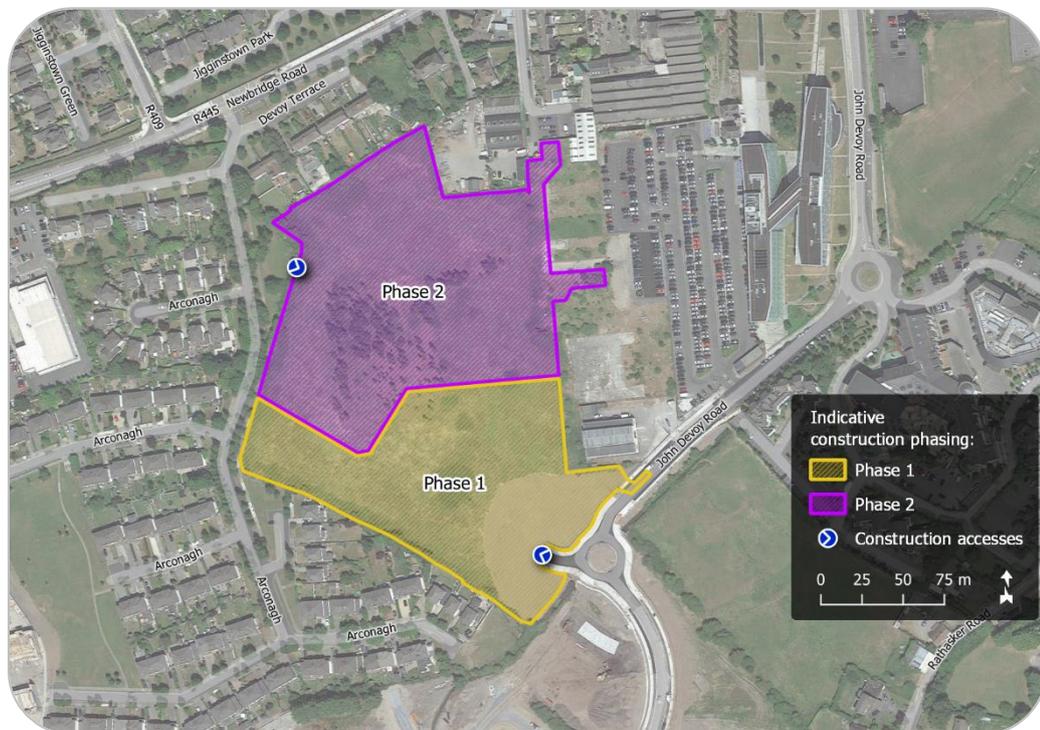


Figure 3 – Indicative Site Phasing Plan

5.4 Protection of Public Areas from Construction Activity

Perimeter hoarding will be provided around the site to provide a barrier against unauthorized access from the public areas. Controlled access points to the site, in the form of gates or doors, will be kept locked for any time that these areas are not monitored (e.g. outside working hours).

5.5 Site Security

The site will be secured with a solid hoarding 2.4m high.

The site hoarding will be branded using the appointed Contractors logos etc. Some marketing images or information boards may also be placed on the hoarding.

Access to site will be controlled by means of an electronic access control system and camera remote monitoring system for out of hours.

During working hours, a gateman will control traffic movements and deliveries.

All personnel working on site must have a valid Safe Pass card.

The Contractor will provide site security staff on the site at all times.

5.6 Material Hoisting & Movement Throughout the Site

It is not envisaged that a tower crane will be required on site to assist with superstructure and exterior works. Separate mobile crane visits may be required from time to time. These visits will be coordinated with the other site activities to ensure all risks are correctly assessed and mitigated against.

Hoists and teleporters may also be utilised as required during the project to facilitate material movement into the structures and waste movements out of the buildings. With the commencement of the fit-out activities, hoists

strategically positioned will play a key role for successful project delivery. They are also less susceptible to being affected by inclement weather conditions.

5.7 Deliveries & Storage Facilities

It is proposed that unloading bays are provided for deliveries to the site within the hoarding perimeter. They should be accessible by mobile crane, fork lifts and teleporters. Appropriately demarcated storage zones will be used to separate and segregate materials.

All deliveries to site will be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries will be scheduled outside of rush hour traffic periods to avoid disturbance to pedestrian and vehicular traffic in vicinity of the site.

Deliveries of materials to site will generally be between the hours of 07:00 and 19:00, Monday to Friday, and 08:00 to 14:00 on Saturdays. There may be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

5.8 Site Accommodation

On-site facilities will consist of;

- Materials storage area;
- Site office & Meeting Room;
- Staff welfare facilities i.e. toilets, drying room, canteen, etc.

Electricity will be provided to the site via national grid.

Water supply to the site will be provided by means of a temporary connection to the public water main. Similarly, a temporary connection for foul water drainage will be made to the public network.

5.9 Site Parking

Due to the location and restricted nature of the site, there will be on-site parking. Areas will be identified for car parking to avoid congestion in the surrounding areas.

Construction staff will also be encouraged to use public transport and information on local transportation will be published on site

5.10 Site Working Hours

Construction operations on site will generally be subject to a planning permission and conditions. However, it may be necessary for some construction operations to be undertaken outside these times, for example; service diversions and connections, concrete finishing and fit-out works, etc.

Generally working hours will be between the hours of 07:00 and 19:00, Monday to Friday, and 08:00 to 14:00 on Saturdays.

6.0 ENVIRONMENTAL ISSUES

6.1 Noise

Noise monitoring may be requested by the local authority for elements of the construction works. Noise monitoring if requested shall be carried out for a period of at least 2 weeks prior to any works commencing, in order to establish a baseline, and communicating the results to KCC in the form of baseline reports.

Variation of noise levels from those experienced as part of everyday life in an area can result in extreme disruption, in particular at this sensitive site adjacent to residential areas and equestrian facilities. The Contractor shall implement measures to eliminate where possible and reduce noise levels where not.

All construction activities will be carried out in compliance with the recommendations of BS 5228, "Noise Control on Construction and Open Sites Part 1" and comply with BS 6187 "Code of Practice for Demolition". These measures are employed to ensure compliance will include: -

- Noise monitoring stations, which will be monitored regularly, will be located on site and at recommended locations to record background and construction noise activity.
- The best means practical will be used to minimize the noise produced by all on site operations.
- Proper maintenance of all operating plant to ensure noise emission compliance.
- All operating plant will be selected on the basis of incorporating noise reducing systems, and at a minimum be fitted with effective exhaust silencers.
- Compressors will be fitted with acoustically lined covers, which will remain closed while the machines are in operation.

- Plant such as pumps and generators which are required to work outside of normal working hours will be enclosed with acoustic enclosures.
- There will be strict adherence to the site working hours stipulated in the Planning Conditions.

6.2 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall monitor dust levels in the vicinity of the site using a Bergerhoff gauge instrument or in accordance with KCC Planning conditions. Records shall be kept of such monitoring for review by the Planning Authority. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m²/day.

The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project.

6.3 Migrating Dust & Dirt Pollution

The Contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport dust and dirt to pollute the external roadways. This will be achieved through a combination of the following measures:

- Ensuring construction vehicles have a clean surface to travel on within the site (i.e. haul road)
- Ensuring all construction vehicles are inspected by the gateman for cleanliness prior to exiting the site
- Providing a "Full-Body Self Contained" wheel wash shall be constructed and located within the site confines

- Ensuring an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site. If conditions necessitate, a manned power washer shall be put in place to assist the wheel wash system
- A dedicated road sweeper shall be retained for the duration of the haulage works; and Water supplies shall be recycled for use in the wheel wash. All waters shall be drained through appropriate filter material prior to discharge from the site

The use of appropriate water-based dust suppression systems will greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system will be closely monitored by site management personnel particularly during extended dry periods and in accordance with site management methods.

6.4 Harmful Materials

Harmful material will be stored on site for use in connection with the construction works only. These materials will be stored in a controlled manner. Where on-site facilities are used there will be a bunded filling area using double bunded steel tank at a minimum.

6.5 Vibration

The Contractor will be required to carry out their works such that the effect of vibration on the adjoining buildings and surroundings is minimised and does not cause any damage.

The Contractor will be required to comply with the requirements of the planning permission for any vibration limits for the works. In the absence of any Local Authority requirements, the table below shall set the limitations: -

Trigger values for vibration (measurements of peak particle velocity – PPV):

	PPV above 50Hz PPV	at 50Hz or below
Level 1:	10mm/s	10mm/s
Level 2:	12mm/s	10mm/s
Level 3:	15mm/s	10mm/s

Administrator, Engineer, Client and Contractor is to establish background vibrations prior to commencement.

7.0 CONSTRUCTION WASTE MANAGEMENT

A Construction Waste Management Statement has been prepared by Cronin & Sutton Consulting which forms part of this application.

Please refer to this report for details on waste management during the construction and operational phases of the project.

8.0 TRAFFIC MANAGEMENT

8.1 Access to the Site

The site is currently accessed from the existing arm off the roundabout on the John Devoy Road to the south east of the development site. Generally, all access and egress for deliveries will be via the John Devoy Road.

A second construction access route maybe required via the Arconagh Road to the west of the development site, as the elements of the development are completed and become occupied or to facilitate the phasing of the development as set out in Section 5.3. These details will be agreed between the contractor and Kildare County Council if the secondary access becomes a requirement to facilitate segregation of construction traffic and occupants of the development.

8.2 Vehicle Movements During Construction

The major construction items include site clearance, road paving, construction, and finishings. It is anticipated that the peak of HGV movements to and from the site will be during the construction and road paving phases. The peak LGV movements to and from the site will be during the finishings phase. It is anticipated that the construction traffic impact on the surrounding local road network to the proposed development site will be minimal.

The Contractor must submit a Construction Traffic Management plan to the Local Authority for approval. Haulage vehicle movements should be fully coordinated to comply with the requirements of the Layout and requirements herein.

At no time should construction associated vehicles be stopped or parked along the routes;

- Haulage vehicles should not travel in convoys of greater than two vehicles at any time;
- Haulage vehicles should be spaced by a minimum of 250m at all times;
- Strictly at no time should haulage vehicles be parked or stopped at the entrance to the site;
- All loading of excess material will occur within the site boundary;
- All off-loading of deliveries will take place within the site, away from the public road and will access via the construction site access.

The routes to and from the site shall depend on where the construction material will be transported from. Appropriate routes will be identified by the Contractor and agreed with the Local Authority as part of the Contractors more detailed construction management plan.

The increase in traffic due to construction work will be minor and can be readily accommodated within the existing road network. However, the site is in a residential area where restricted road and junction space is shared with vulnerable road users and the flow of construction traffic will need to be marshalled and regulated to ensure that potential conflicts are avoided as much as possible.

8.3 Minimise Construction Vehicle Movements

Construction vehicle movements will be minimized through:

- Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak periods;
- Use of precast/prefabricated materials where possible;
- 'Cut' material generated by the construction works will be re-used on site where possible, through various accommodation works;
- Adequate storage space on site will be provided;
- A strategy will be developed to minimise construction material quantities as much as possible;
- Construction staff vehicle movements will also be minimised by promoting the use of public transport.

The following headings identify some of the measures to be encouraged

Cycling

Cycle parking spaces will be provided on the site for construction staff and lockers will be provided to allow cyclists to store their clothes.

Public Transport

Construction staff will be encouraged to use public transport as means to travel to and from the site. An information leaflet will be provided to all staff as part of their induction on site highlighting the location of the various public transport services in the vicinity of the construction site.

Public Roads

A Visual Condition Survey (VCS) will be carried out of all surrounding roads prior to any site works commencing. The Contractor will liaise with Kildare County Council's Roads & Traffic Department to agree any changes to load restrictions and construction access routes for the site. Measures will be put in

place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads will be continuously maintained for emergency vehicle access.

The following measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- A regular program of site tidying will be established to ensure a safe and orderly site;
- Scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;
- Food waste will be strictly controlled on all parts of the site;
- Mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate;
- Wheel wash facilities will be provided for vehicles exiting the site;
- In the event of any fugitive solid waste escaping the site, it will be collected immediately and removed.

8.4 Project Specific Traffic Management Plan

A detailed project specific traffic management plan will be developed by the Contractor and agreed with the Local Authority and an Garda Síochána prior to works commencing on site. This plan will be updated as required throughout the project.

Issues addressed in the Traffic Management Plan will include:

- Public safety
- Construction traffic routes
- Deliveries' schedule

- Special deliveries (wide and long loads)
- Traffic flows
- Signage and lighting
- Road opening requirements
- Road closures
- Lighting

A liaison officer will be appointed as a point of contact for local residents, the Local Authority and an Garda Síochána.

9.0 COMPOUND FACILITIES

The construction compound for all of the works shall be entirely within the site boundary. The compound shall be constructed using a clean permeable stone finish and shall be enclosed with security fencing. Site accommodation to be provided shall include suitable washing / dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound shall be security controlled and all site visitors shall be required to sign in on arrival and sign out on departure.

A permeable hardstand area shall be provided for limited staff parking and these areas shall be separate from designated machinery / plant parking.

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

A series of 'way finding' signage shall be provided to direct 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 shall be removed off site and the site compound area reinstated in full on completion of the works.

10.0 PROVISIONS FOR CONSTRUCTION

10.1 Hoarding, Set-up of Site & Access/Egress Points

The site area will be enclosed with hoarding, details of which are to be agreed with Kildare County Council. Hoarding panels will be maintained and kept clean for the duration of the project.

This will involve erecting the hoarding around the proposed site perimeter in line with the finished development description. The hoarding will be well maintained and painted. Some hoardings may contain graphics portraying project information.

A “Just in Time” approach will be required for the delivery of particular building materials such as concrete formwork etc.

10.2 Removal of Services

Prior to any works a utility survey will be carried out to identify existing services. All services on site will be disconnected, diverted or removed as agreed with service providers.

10.3 Site Clearance

The site is greenfield and does not generate any significant vehicular traffic. The following is a high-level method statement for the clearance of the site:

- Establish a site set-up and welfare facilities;
- Carry out an invasive species survey using a qualified and approved surveyor;
- Carry out a detailed services survey of the site to identify all buried services, determine what services are live, redundant and potentially serve neighbouring properties.

- Carry out any necessary services diversions and decommissioning works.

10.4 Excavation

This development will involve a bulk excavation and removal of material during the construction of the building foundations.

The Contractor will prepare a Construction Waste Management Plan 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, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

10.5 Site Service Installations

Drainage, power, water and the like will be installed to serve the proposed development.

10.6 Construction Stage

The housing is proposed to be constructed on the following basis;

- Reduced level excavations;
- Traditional strip foundations, ground beams and floor slabs;
- Construct house frames and blockwork;
- Finish interior and exterior landscaping

Please note the above shall be carried out in accordance with the particular construction phasing, see Section 5.3 above.