

CS CONSULTING
GROUP

LIMERICK

LONDON

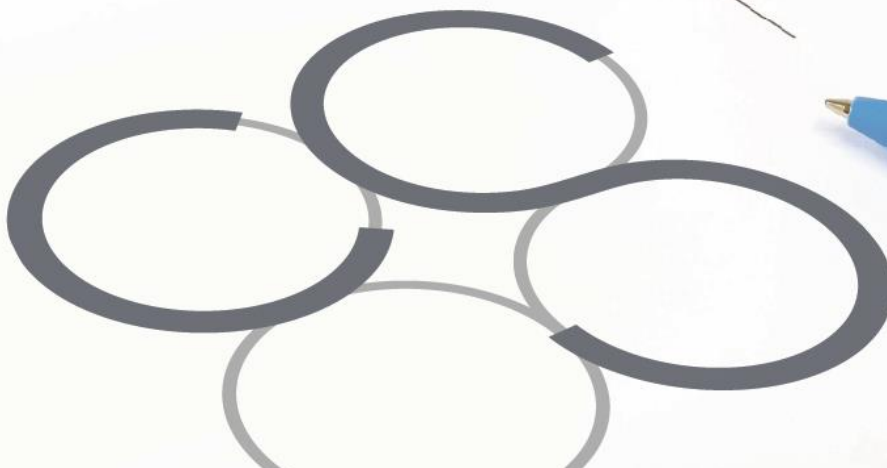
DUBLIN

Stage 1 Construction Management Plan Proposed Residential Development Devoy Barracks, Naas, Co. Kildare

Client: Land Development Agency

Job No. L086

March 2022



STAGE 1 CONSTRUCTION MANAGEMENT PLAN

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

CONTENTS

1.0	INTRODUCTION	1
2.0	SITE LOCATION	4
3.0	EXISTING LAND USE	6
4.0	PROJECT DESCRIPTION	7
5.0	LOGISTICS	8
6.0	ENVIRONMENTAL ISSUES	12
7.0	CONSTRUCTION WASTE MANAGEMENT	19
8.0	CONSTRUCTION TRAFFIC MANAGEMENT	20
9.0	COMPOUND FACILITIES	31
10.0	PROVISIONS FOR CONSTRUCTION	32

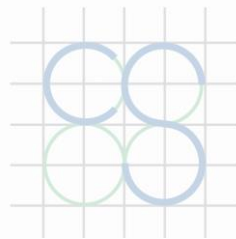
This Report has been prepared by CS Consulting for the benefit of its Client only. The contents of this Report are shared with interested parties for information only and without any warranty or guarantee, express or implied, as to their accuracy, reliability or completeness. This Report cannot be relied on by any party other than the party who commissioned it.

File Location: Job-L086\B_Documents\C_Civil\A-Reports\CMP

BS 1192 FIELD

L086-CSC-ZZ-XX-RP-C-0006-P6

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
L086	GF	GL	OS	31.03.2022	P6
L086	GF	GL	OS	22.02.2022	P5
L086	GF	GL	OS	24.09.2021	P4
L086	SN	GL	GL	12.04.2021	P3
L086	SN	GL	GL	07.04.2021	P2
L086	SN	GL	GL	12.03.2021	P1



CS CONSULTING
GROUP

1.0 INTRODUCTION

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

The project shall be under the control of a main contractor who shall 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 shall prepare a Detailed Construction Management Plan. It is anticipated the detailed plan shall 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 shall 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 shall 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 shall 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 4.1 ha. The location of the proposed development site is shown in Figure 1.

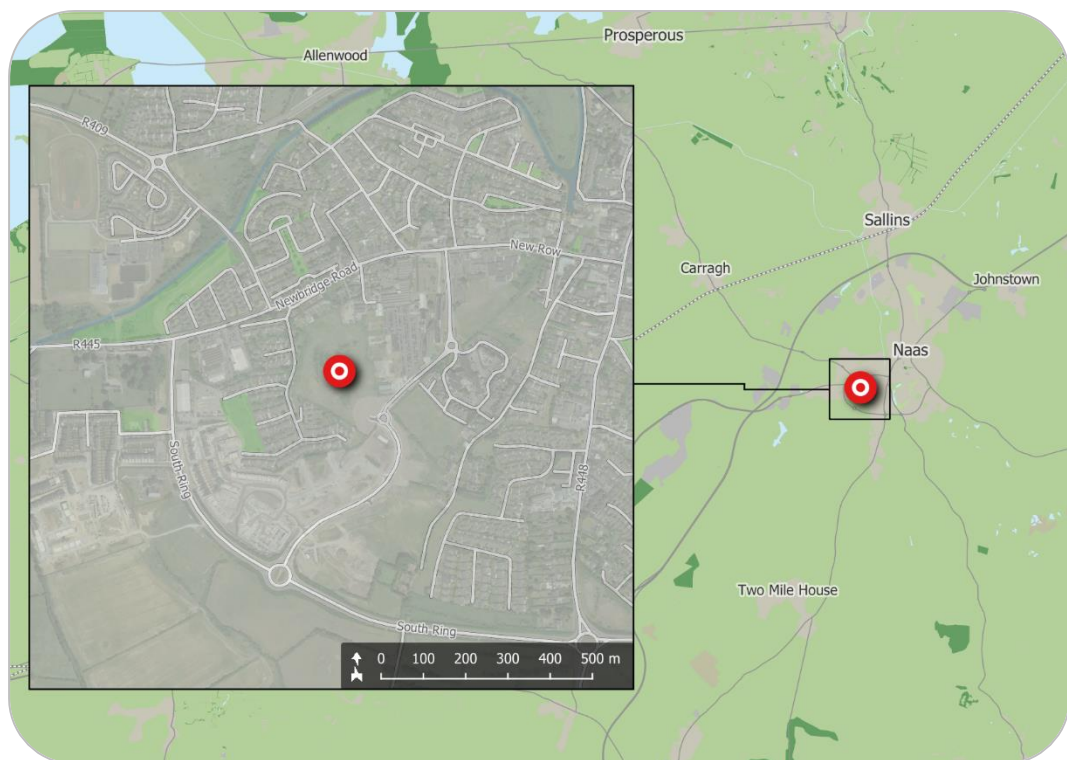


Figure 1 – Location of proposed development site
(map data & imagery: EPA, OSi, OSM Contributors, Google)

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 units of Devoy Terrace and commercial properties and to the south and west by Arconagh residential housing estate.

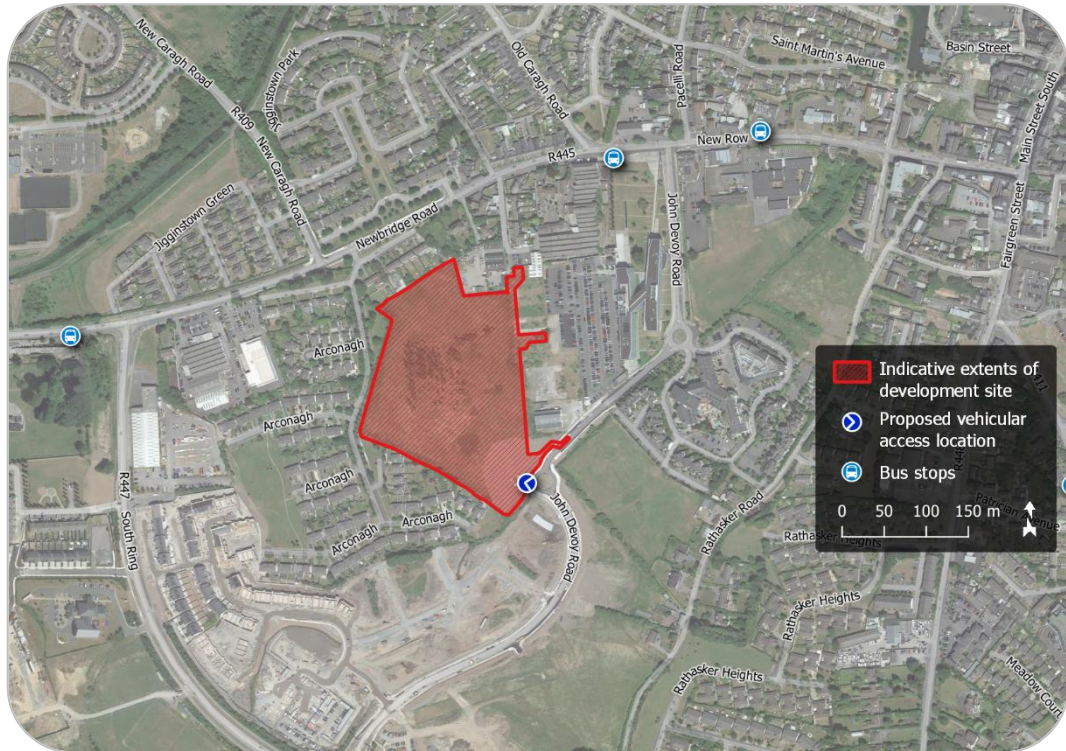


Figure 2 – Site extents and environs
(map data & imagery: NTA, OSM Contributors, Microsoft)

3.0 EXISTING LAND USE

The subject site is greenfield with an overall gross area of approx. 4.1 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 development site is located on John Devoy Road, Naas, Co Kildare, known locally as Devoy Barracks. The nett site area is 3.97 hectares in area, the area of the application is 4.1 hectares.

The site is located to the south-west of the town, close to the town centre, and zoned residential in the current Naas Local Area Plan 2021-2027. Access is proposed via an existing access point on the John Devoy Road along the southern boundary with additional pedestrian access provided to the east, and future pedestrian and cycle connection opportunities provided to the north, west and east.

The revised development is for the construction of 219 no. residential units, comprising of a mix of terraced houses (42 no. 3 bed units), and duplex / apartment units (177 no. in total; 64 no. 1 bed units; 105 no. 2 bed units and 8 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.

The proposed scheme has been developed having regard to the following policy documents:

- Quality Housing for Sustainable Communities 2007
- Urban Design Manual - A Best Practice Guide 2009
- Sustainable Residential Development in Urban areas (Cities, Towns & Villages) 2009 - Guidelines for Planning Authorities
- Sustainable Urban Housing Design Standards for New Apartments 2020
- Guidelines for Planning Authorities
- Design Manual for Urban Roads and Streets (DMURS)
- Kildare County Development Plan 2017-2023
- Naas Local Area Plan 2021–2027

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, duplex and apartment 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 36 months.

5.2 Access to Site

Refer to sub-section 8.2 of this report for details of vehicular and pedestrian site access arrangements.

5.3 Phasing of the Development

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

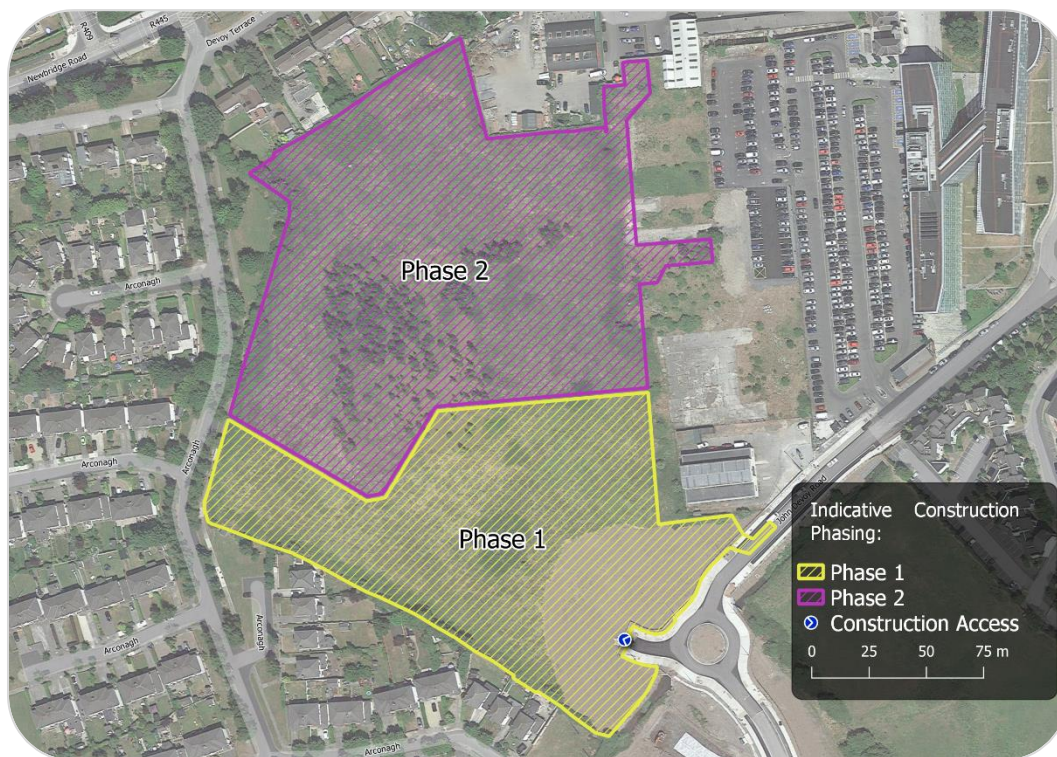


Figure 3 – Indicative Site Phasing Plan

5.4 Protection of Public Areas from Construction Activity

Perimeter hoarding shall 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, shall be kept locked for any time that these areas are not monitored (e.g. outside working hours).

5.5 Site Security

- The site shall be secured with a solid hoarding 2.4m high.
- The site hoarding shall be branded using the appointed Contractors logos, LDA logos etc. Some marketing images or information boards may also be placed on the hoarding.
- Access to site shall be controlled by means of an electronic access control system and camera remote monitoring system for out of hours.

- During working hours, a gateman shall control traffic movements and deliveries.
- All personnel working on site must have a valid Safe Pass card.
- The Contractor shall 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 shall be required on site to assist with superstructure and exterior works. Separate mobile crane visits may be required from time to time. These visits shall 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 shall 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 shall be used to separate and segregate materials.

All deliveries to site shall be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries shall 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 shall 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 shall consist of;

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

Electricity shall be provided to the site via national grid.

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

5.9 Onsite Parking

Refer to sub-section 8.4 of this report for details of onsite parking provision.

5.10 Site Working Hours

Construction operations on site shall 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 shall 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. The Contractor shall implement measures to eliminate where possible and reduce noise levels where not.

Construction noise limits in accordance with the KCC *Third Noise Action Plan 2019 – 2023* and NRA *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (2004) shall be implemented throughout the duration of the proposed works (see Table below). These noise limits shall be enforced using continuous noise monitoring during the construction phase. The noise monitoring station shall be equipped with real-time text / email alerts to notify the site team immediately, in the event that any exceedance takes place. The cause of any exceedance(s) shall be investigated and immediate action taken to reduce noise levels to within the below-listed limits.

Time	dB L _{Aeq} (1hr)	dB L _{Amax}
Monday – Friday (07:00 – 19:00)	70	80
Monday – Friday (19:00 – 22:00)	60	65
Saturday (08:00 – 16:30)	65	75
Sundays and Bank Holidays (08:00 – 16:30)	60	65

Proposed Construction Phase Noise Limits

All construction activities shall be carried out in compliance with the recommendations of BS 5228-1, "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 shall include: -

- A site representative responsible for matters relating to noise will be appointed at the start of the construction phase.
- Noise monitoring stations, which shall be monitored regularly, shall be located on site and at recommended locations to record background and construction noise activity.
- The best means practical shall 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 shall be selected on the basis of incorporating noise reducing systems, and at a minimum be fitted with effective exhaust silencers and mufflers.
- Compressors shall be fitted with acoustically lined covers, which shall remain closed while the machines are in operation.
- Plant such as pumps and generators which are required to work outside of normal working hours shall be enclosed with acoustic enclosures. Temporary hoarding shall be erected around items such as generators or high duty compressors where required.
- As far as reasonably practical, sources of significant noise will be enclosed. Acoustic screens will be used close to noisy operations where required.
- Noisy plant shall be located as far away from noise sensitive facades as practical and as permitted by site constraints.
- There shall be strict adherence to the site working hours stipulated in the Planning Conditions.

- Channels of communication between the contractor and the nearby noise sensitive locations shall be established. This shall allow for the maintenance of good relations and clear channels of communication between the contractor and the occupants of the nearby noise sensitive buildings.
- Plant equipment with low inherent potential for generation of noise will be selected, where practical.
- Where earth movers dump material into dumper trucks, the material fall height shall be minimised as much as practical so that noise generation is minimised.
- Machinery shall be switched off when it is not in use instead of leaving it on idle.
- Diesel engines shall be substituted with electric motors where practical.

6.2 Air Quality and 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 and Dirt Pollution

The Contractor shall ensure that all construction vehicles that exit the site onto the public roads shall not transport dust and dirt to pollute the external

roadways. This shall 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 shall greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system shall be closely monitored by site management personnel particularly during extended dry periods and in accordance with site management methods.

6.4 Harmful Materials

The storage of harmful/hazardous liquids (fuels and chemicals) and materials shall be avoided in so far as is possible. The handling and storage of any potentially hazardous liquids or materials on site shall be controlled and best practice guidance such as that published by the EPA, shall be followed. Storage tank/container facilities shall be appropriately bunded within designated compound areas and sited as far as possible from any

watercourse or surface drain. If hazardous liquids escape during the works, the bunds and other protective measures shall contain the spillage until remedial action, which shall be taken as soon as possible. Harmful material shall be stored on site for use in connection with the construction works only. These materials shall be stored in a controlled manner.

The implementation and effectiveness of these standard best-practice mitigation measures shall be inspected and recorded regularly during the construction period and where deficiencies or faults are identified they will be remedied immediately by the contractor.

6.5 Vibration

The Contractor shall 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 shall 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.

6.6 Storm Water and Waste Management

Storm water and wastewater management procedures shall be drawn up and implemented by the appointed contractor. The purpose of these procedures is to ensure that storm water and wastewater runoff is managed and that there is no off-site environment impact caused by overland storm water flows.

The project environmental management plan shall be developed in detail to include:

- Discharge water from dewatering systems;
- Treatment and disposal of wastewater from general clean-up of tools and equipment;
- A buffer zone of at least 20m separating working machinery from watercourses;
- A prohibition on machinery entering watercourses;
- Refuelling of machinery off-site or at a designated bunded refuelling area;
- Silt trapping and oil interception (to be considered where surface water runoff may enter watercourses).
- All watercourses, drainage ditches and the newly constructed storm water systems shall be protected from ingress of silt, debris and deleterious material during all phases of construction.
- Appropriately designed silt prevention measures shall be installed if necessary and shall be regularly maintained and retained in situ for the duration of the construction phase, until such time as all proposed permanent surface water protection measures are installed and operational.
- Discharge Licences – It shall not be permitted to discharge into any newly constructed storm water systems or watercourse without

adhering to the conditions of the discharge licence and agreeing the same with the Site Manager and Local Authority Area Engineer.

- Discharge of surface water from the construction site shall be via silt / sediment trap and / or temporary hydrocarbon interceptors and shall be monitored to meet any requirements set by the Local Authority/Environmental Protection Agency.
- No discharge shall occur where there is a risk of cement or residue in the discharge.
- Concrete washout – The washing out of concrete trucks on site will not be permitted as they are a potential source of high alkalinity in watercourses. Consequently it is a requirement that all concrete truck washout takes place back in the ready-mix depot.
- Control of spoil and other materials to prevent spillage, and through appropriate handling and selection of spoil / material storage locations.
- Careful siting and bunding of fuel storage facilities and any areas used for the storage of potentially hazardous materials.

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 CONSTRUCTION TRAFFIC MANAGEMENT

8.1 Works-Specific Construction Traffic Management Plan (CTMP)

Prior to works commencing on site, the lead Contractor appointed to the project will be required to develop a detailed works-specific Construction Traffic Management Plan (CTMP), reflecting the specifics of their final site management and construction methodologies. This plan shall be prepared in consultation with the Design Team, with Kildare County Council, and with An Garda Síochána, and shall be updated as required throughout the project.

The principal objective of the CTMP is to proactively manage the impacts of all construction traffic related to the proposed development, upon both the public (off-site) and internal (on-site) environments. It shall aim to ensure that the safety of the public and of construction workers is maintained at all times, that disruptions are minimised, and that all operations are undertaken within a risk-controlled environment. It is noted that the impact of the construction works on the surrounding road network will be temporary in nature.

The final CTMP will be prepared in accordance with the principles outlined below and shall always comply with:

- 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;
- the *Guidance for the Control and Management of Traffic at Road Works* (June 2010) prepared by the Local Government Management Services Board;
- the *Construction Site Traffic Management Plan (CSTMP) Guidance* prepared by the Health and Safety Authority; and

- any additional requirements detailed in TII standards or in the *Design Manual for Urban Roads and Streets (DMURS)*.

Issues addressed in the CTMP shall 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 with local residents, Kildare County Council, An Garda Síochána, and contractors engaged in the construction of other nearby development projects.

Among the traffic management measures to be included in the CTMP are:

- Securely fencing off the site from adjacent properties, public footpaths and roads during the pre-construction phase.
- Providing signage on the surrounding road network to define the access and egress routes for the development.
- Strictly controlling the traffic generated by the construction phase of the development in order to minimise the impact of this traffic on the surrounding road network.
- Adequately signposting and enclosing all road works to ensure the safety of all road users and construction personnel.
- Accommodating all unavoidable personnel and visitor vehicle parking demands on-site or within designated off-site parking areas.

- Implementing a programme of street cleaning as required.
- Making arrangements to facilitate the delivery of abnormal loads to the site.
- Implementing measures to avoid queuing of construction traffic on the adjoining road network.

The following specific traffic control and marshalling measures are to be included in the CTMP, to minimise the potential for obstruction of surrounding streets:

- At no time will construction associated vehicles be stopped or parked along haulage routes.
- Haulage vehicles will not travel in convoys of greater than two vehicles at any time.
- Haulage vehicles will be spaced by a minimum of 250m at all times.
- At no time will 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, in areas accessed via the main construction site access.

8.2 Access to Site

The site is currently accessed from an existing spur off the roundabout on John Devoy Road, at the south-eastern boundary of the development site. Generally, all access and egress for construction traffic (including deliveries) shall be via this existing access. It may also be beneficial to install a separate pedestrian-only entrance to the site, to segregate vehicular and pedestrian movements.

Security personnel will be present at the entrance/exit of the site to ensure all exiting traffic will do so safely. A self-contained wheel wash system will

be installed at the exit from the site, to minimise dirt being carried out into the public road, and a road sweeper will be employed as required to keep public roads around the site clean.

The vehicular access to the construction site shall include the following design elements:

- Sufficient entrance width to permit two rigid body vehicles to pass one another (i.e. one can enter while another waits to leave).
- An entrance gate set back a minimum of 18m from the public road edge, to ensure that vehicles may leave the road completely before having to stop.
- Appropriate sight lines for vehicles exiting onto the public road, to be ensured by removing existing visual obstructions and by appropriate design of perimeter hoarding.
- Directional signage for site traffic and advance warning signage for all other road users.

Revised access measures may be developed further as part of the final Construction Traffic Management Plan (CTMP) to be prepared by the Contractor.

8.3 Construction Traffic Routes

Heavy Goods Vehicle (HGV) traffic to and from the site will follow a designated route to/from the south along John Devoy Road, which allows access to and from the M7 motorway via the R448 (South Ring) and R445 regional roads. This ensures that heavy construction vehicles avoid residential streets to the greatest extent possible. The precise designated route may be adjusted by the Contractor at a later stage and agreed with Kildare County Council as part of the final Construction Traffic Management Plan (CTMP).

8.4 Onsite Parking

Sufficient car parking for construction personnel shall be provided on site during construction works, to avoid congestion or nuisance parking in surrounding areas. Construction staff shall however be encouraged to use public transport to the greatest extent possible, and information on local transportation shall be published on site.

8.5 Existing Traffic Flows

Full turning movement classified traffic counts were carried out by Irish IDASO Ltd, on behalf of CS Consulting, over a 12-hour period (07:00–19:00) on Tuesday the 30th of November 2021. Count information was obtained at the following 5no. sites (see Figure 3):

- J1. Newbridge Road (R445) / John Devoy Road / Pacelli Road
(4-arm signal-controlled junction)
- J2. John Devoy Road / Osprey Hotel Access
(4-arm roundabout junction)
- J3. John Devoy Road / Áras Chill Dara Access
(3-arm priority-controlled junction)
- J4. John Devoy Road / Development Site Access
(3-arm roundabout junction)
- J5. South Ring (R447) / John Devoy Road
(3-arm roundabout junction)

The peak hour traffic flows across all 5no. survey sites were found to be between 08:15 and 09:15 (AM peak hour) and between 16:45 and 17:45 (PM peak hour).



Figure 3 – Surveyed road junction sites
(map data & imagery: OSM Contributors, Google)

Table 1 – Existing Weekday Peak Hour Traffic Flows at Surveyed Junctions

Time Period	Total Junction Traffic Movements (Passenger Car Units)				
	J1	J2	J3	J4	J5
Survey Year 2021					
AM Peak Hour (08:15-09:15)	1186	387	330	272	1937
PM Peak Hour (16:45-17:45)	1084	351	269	220	1479
Baseline Year 2022					
AM Peak Hour (08:15-09:15)	1208	393	336	278	1976
PM Peak Hour (16:45-17:45)	1105	358	274	224	1509

8.6 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 shall be during the construction and road

paving phases, which may require the removal of spoil from the site and/or the importation of soil and aggregate. The final programming and scheduling of any such material transfer shall be determined by the lead contractor appointed to the project. Under a 'worst-case' scenario, however, it is possible that up to 4no. such HGV trips may be made to the site each hour (one HGV arrival and one HGV departure every 15 minutes). This would equate to total movements of 18 Passenger Car Units (PCU) in each of the background peak hours.

In addition to HGV traffic, periodic deliveries of materials to site shall be made by Light Goods Vehicles (LGV). To the extent possible, these shall be scheduled to take place outside of the background peak traffic hours. Such trips are also unlikely to occur frequently during the stages of construction that require bulk excavation or the importation of fill materials; LGV trips are therefore unlikely to occur in significant numbers at the same time as HGV trips take place. For the purposes of estimating a worst-case construction traffic generation scenario, however, 5no. LGV arrivals and 5no. LGV departures (total traffic movements of 10 PCU) are assumed in each of the background peak hours.

As some car parking for construction personnel shall be provided on site during construction works; some vehicular trips shall also be made to and from the site each day by construction personnel commuting to and from work. The majority of these trips are expected to fall outside the background traffic peak hours. In the worst-case scenario, it is assumed that 5no. such light vehicle trips may be made to the site during the AM peak hour, and 5no. such trips may be made from the site during PM peak hour.

The anticipated worst-case scenario vehicular trip generation of the subject site during construction is summarised in Table 2.

Table 2 – Maximum Peak Hour Construction Traffic Generation

Time Period	Heavy Goods Vehicles	Light Vehicles	TOTAL (PCU) ¹
Arrivals			
AM Peak	4	10	19
PM Peak	4	5	14
Departures			
AM Peak	4	5	14
PM Peak	4	10	19
Total Trips			
AM Peak	8	15	33
PM Peak	8	15	33

8.7 Peak Hour Construction Traffic Distribution

Table 3 – Max. Peak Hour Construction Traffic at Surveyed Junctions

Time Period	Surveyed Junctions				
	J1	J2	J3	J4	J5
HGV Traffic (vehicles)					
AM Peak	0	0	0	0	8
PM Peak	0	0	0	0	8
Light Vehicle Traffic (vehicles)					
AM Peak	1	1	1	3	8
PM Peak	2	1	1	3	7
Total Traffic (PCU)					
AM Peak	1	1	1	3	16
PM Peak	2	1	1	3	15

Heavy and light vehicular construction traffic to and from the development site is expected to be distributed across the local road network as described in sub-section 8.3. Table 3 gives the maximum resultant numbers

¹ 1 Light Vehicle (car or LGV) = 1 PCU; 1 HGV = 2.3 PCU

of trips expected to pass through each of the traffic survey locations described in Section 8.5, in each of the background peak hours.

8.8 Proportional Increase in Traffic

Table 4 gives the maximum predicted increase in total vehicle movements (PCU) at each of the surveyed road junctions, in either peak hour period, as a result of the construction traffic flows given in Table 3.

Table 4 – Max. Increases in Traffic at Surveyed Junctions

Junction Survey Site	General Traffic Flows at Junction (Year 2021) ²		Max. Construction Traffic Trips Through Junction		Proportional Increase	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
J1	1186	1084	1	2	0.01%	0.01%
J2	387	351	1	1	0.2%	0.2%
J3	330	269	1	1	0.3%	0.3%
J4	272	220	3	3	1.1%	1.3%
J5	1937	1479	16	15	0.8%	1.0%

As shown in Table 4 construction traffic is predicted to result in a maximum increase of 1.3% in the PM peak hour traffic movements at any of the 5no. surveyed road junctions nearby. It is therefore not considered necessary to conduct detailed operational assessment of the surrounding road network performance during the development's construction phase.

The increase in traffic due to construction work shall be minor and can readily accommodated within the existing road network as described above. However, the site is in a residential area where restricted road and junction space is shared with vulnerable road users and the flow of

² Total surveyed vehicle movements (PCU/hour).

construction traffic shall need to be marshalled and regulated to ensure that potential conflicts are avoided as much as possible.

8.9 Minimisation of Construction Vehicle Movements

Construction vehicle movements shall be minimised through:

- Consolidation of delivery loads to/from the site and management of large deliveries on site to occur outside of peak periods.
- Use of precast/prefabricated materials where possible.
- Re-use on site where possible of 'cut' material generated by the construction works, through various accommodation works.
- Provision of adequate storage space on site.
- Development of a strategy to minimise construction material quantities as much as possible.
- Minimisation of construction staff vehicle movements by promoting the use of public transport.

8.10 Minimisation of Staff Vehicle Movements

Construction staff vehicle movements to and from the site shall be minimised by promoting more sustainable means of transport among construction personnel. The following headings identify some of the measures to be adopted in this regard.

8.10.1 Cycling

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

8.10.2 Public Transport

Construction staff shall be encouraged to use public transport as means to travel to and from the site. An information leaflet shall 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.

8.11 Maintenance of Public Roads

A Visual Condition Survey (VCS) shall be carried out of all surrounding roads prior to any site works commencing. The Contractor shall liaise with Kildare County Council's Roads & Traffic Department to agree any changes to load restrictions and construction access routes for the site. Measures shall be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

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

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

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

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

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

A "Just in Time" approach shall 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 shall be carried out to identify existing services. All services on site shall 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 shall involve a bulk excavation and removal of material during the construction of the building foundations.

The Contractor shall 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.

The strategy for controlling and mitigating potential adverse environmental impacts during construction excavation shall also include the following, as appropriate:

- If required, sampling and testing of excavated spoil in order to assess the suitability of materials for reuse on site.
- Dust suppression from soils by the regular use of water sprays during any dry conditions, sheeting of haulage vehicle loads.
- Should invasive weeds be found, they will be treated as controlled waste and disposed of off- site at a landfill site that is licensed to receive such material.

10.5 Site Service Installations

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

10.6 Construction Stage

The residential units are 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.