PINNACLE
CONSULTING ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT ON OLDCOURT LAP LANDS.

PIN-RP-00-C004-V2

OUTLINE CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- BUILDING INFORMATION MODELLING (BIM)
- CIVIL DESIGN & ENGINEERING
- DUE DILIGENCE
- OFFSHORE & ONSHORE ENGINEERING
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CONTACT DETAILS

Name	Position	Email	Telephone	Mobile
Ronan Kearns	Associate Transportation Planner	ronan.k@iepinnacle.com	01-2311045	0876384042

APPROVALS

	Name	Position	Date
Prepared by	Ronan Kearns	Associate Transportation Planner	02/09/2024
Reviewed by	Ronan Kearns	Associate Transportation Planner	02/09/2024
Approved by	James Mayer	Director	02/09/2024

REVISIONS

Revision By	Date	Context
V1	25/06/2024	Draft
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1 INTRODUCTION

1.1 Introduction

This Outline Construction Traffic Management Plan has been prepared by Pinnacle Consulting Engineers as part of planning application to South Dublin County Council.

Capami Ltd. intend to apply for permission for a Large-scale Residential Development on a site measuring approximately 19.67 hectares located in the townlands of Bohernabreena and Oldcourt, Dublin 24, and within the lands designated for the Ballycullen-Oldcourt Local Area Plan, 2014 (as extended). The development site is located to the east of Bohernabreena Road, north and east of Bohernabreena cemetery, south and south-east of St. Anne's GAA club, south and south-west of the Dodderbrook residential estate, west of the Ballycullen Gate residential development (currently under construction) and west of Oldcourt Road (the R113).

The proposed development consists of 522 no. residential units comprised of 272 no. two and three storey, detached, semi-detached, and terraced houses (53 no. two-bed, 180 no. three-bed, 5 no. two / three bed, and 34 no. four-bed units), 144 no. two and three bed apartment and duplex units in 10 no. three storey duplex blocks, 62 no. one and three bed apartment and duplex units in 31 no. three storey "E" type houses, and 44 no. apartments (8 no. one bed, 19 no. two bed, and 17 no. three bed units) in 7 no. two / three storey apartment blocks, along with a childcare facility of approximately 320 sq.m located on the ground floor of proposed apartment block C.

Private amenity space for the residential units is provided in the form of rear gardens for houses and ground floor terraces / upper floor balconies for apartment and duplex units. The proposed development provides for approximately 5.68 hectares of public open space, including for the delivery of "Oldcourt Park" as identified in Ballycullen-Oldcourt Local Area Plan, 2014 (as extended), and approximately 3,425 sq.m of communal open space associated with proposed residential units.

Vehicular access to the development will be via 4 no. access points, as follows: (i) from the west of the site via 2 no. accesses located off Bohernabreena Road, (ii) from the north of the site via 1 no. access at Dodderbrook Avenue, and (iii) from Oldcourt Road (the R113) to the east, via adjoining residential development. The proposed development includes for pedestrian and cyclist connections and accesses to adjoining lands to the north, east and west, and includes for cycling and pedestrian routes and infrastructure throughout the development.

The proposed development includes for a total of 722 no. car parking spaces, provided in the form of on-street and on-curtilage parking, and a total of 642 no. bicycle parking spaces, provided in designated bicycle storage areas and in the form of short-term visitor spaces.

The proposed development also includes the demolition of existing buildings / structures on the site, landscaping works, boundary treatments, SuDs features, drainage infrastructure, services infrastructure, bin stores, bicycle stores, car parking areas (including EV parking facilities), public lighting etc. and all associated site development works.

Primary access to the proposed development will be through the Ballycullen - Oldcourt LAP Main Link Street (as amended by the proposed application), originally permitted under Reg .Refs. SD17A/0041 & PL 06S.249367 via a signal-controlled Junction with Oldcourt Road and

Bohernabreena Road. Secondary access will be provided via the Dodderbrook estate and a priority-controlled junction on to Bohernabreena Road.

Additional pedestrian and cycle access would be facilitated between the site and the surrounding area such as existing estates and lands via dedicated cycle track and footpath that runs in an east/west direction linking Oldcourt Road and Bohernabreena Road. This follows the alignment of Ballycullen - Oldcourt LAP Main Link Street (as amended by the proposed application), originally permitted under Reg .Refs. SD17A/0041 & PL 06S.249367

The site location is shown in Figure 1.

Figure 1: Site Location (Source: Google Maps)

For exact planning boundary refer to Architect's drawings.

1.2 Background

This Outline Construction Traffic Management Plan (CTMP) has been prepared in consultation with Capami and their sub-contractors. The purpose of the CTMP is to reduce possible impacts which may occur during the construction of the proposed development.

Capami is responsible for ensuring construction activities are managed in accordance with the final CTMP. This Outline CTMP will shape the final plan but is subject to change/revision.

Objectives and measures are also included for the management, design and construction of the project to control the traffic impacts of construction vehicles insofar as it may affect the environment, local residents and the public in the vicinity of the construction works.

1.3 Implementation

Key to the implementation of this CTMP is the dedication of the on-site construction manager who will regularly liaise with and update Capami 's representative and associated team on all environmental and construction programming issues relating to the site. All site personnel are charged with following good practice and encouraged to provide feedback and suggestions for

improvements. All site personnel are also required to ensure compliance with the requirements of the site's CTMP.

1.4 Scope

The objective of this CTMP is to ensure that the residual impacts to the public road network during the construction phase of the project, which have been identified in the application documentation, are minimised and that transport related activities are carried out as safely as possible and with minimum disruption to other road users.

The CTMP has also been prepared for the purpose of identifying appropriate and safe methods of access for construction traffic to the proposed development. This CTMP describes the traffic management for the transportation of construction materials, equipment and personnel along the public road network to facilitate the construction of the proposed development. Light vehicles, such as cars and vans, will be used by site operatives travelling to and from the site. Heavy Construction Vehicles (HCV) will be required to deliver general construction materials, such as concrete, to the site.

This CTMP remains a live document that will be reviewed by the contractor and expanded upon, where necessary, throughout the construction phase of the project. However, this version is considered to be wholly relevant for the expected works.

1.5 Consultation

Capami will act as contractor for this development. Capami has a number of active construction sites and as a result it has engaged in detail consultation with their incumbent sub-contractors to review and sense check the measures contained in this outline CTMP.

While the measures contained in this CTMP are subject to detailed design and the appointment of a project specific sub-contractor , all the pertinent issues have been reviewed by Capami to ensure holistic approach has been taken with regard to the proposed CTMP measures.

2 PROJECT DESCRIPTION

2.1 Introduction

Capami Ltd. intends to apply for permission for a Large-scale Residential Development on a site measuring c.20.3Ha, located in the townlands of Bohernabreena, Oldcourt, and Killininny, Dublin 24. The development site is located to the east of Bohernabreena Road, north and east of Bohernabreena cemetery, south and south-east of St. Anne's GAA club, south and south-west of the Dodderbrook residential estate, west of the Ballycullen Gate residential development (currently under construction) and west of Oldcourt Road (the R113).

The proposed development consists of 523 no. residential units comprised of 253 no. 2, 3 & 4 bed detached, semi-detached and terraced houses, 208 no. 1, 2 & 3 bed duplex units in 20 no. 2 & 3 storey blocks, and 62 no. 1, 2 & 3 bed apartments in 4 no. 3 & 3-4 storey blocks, along with a 2-storey childcare facility of c. 457sq.m.

Private amenity space for the residential units is provided in the form of rear gardens for houses and ground floor terraces / upper floor balconies for apartments and duplex units. The proposed development provides for c. 7.38Ha of public open space and c.4,797 sq.m of communal open space associated with proposed residential units.

Vehicular access to the development will be via 4 no. access points, as follows: (i) from the west of the site via 2 no. accesses located off Bohernabreena Road, (ii) from the north of the site via 1 no. access at Dodderbrook Place, and (iii) from Oldcourt Road (the R113) to the east, via adjoining residential development. The proposed development includes for pedestrian and cyclist connections and accesses to adjoining lands to the north, east and west, and includes for cycling and pedestrian routes and infrastructure throughout the development.

The proposed development also includes the demolition of existing buildings / structures on the site (c.3,800sq.m), hard & soft landscaping, boundary treatments, SuDs features, drainage infrastructure, services infrastructure, bin stores, bicycle stores, car parking (including EV parking facilities), bicycle parking, public lighting etc. and all associated site development works.

The proposed schedule of accommodation is outlined in the table below.

Unit Type	No. of Units
Apartments	
1 bed / 2-person Apartment	24
2-bed / 3-person Apartment	6
2-bed / 4-person Apartment	25
3-bed / 5-person Apartment	7
Total Apartments	62
Duplex	
1-bed / 2-person Duplex	27
2-bed / 4-person Duplex	76
3-bed / 5-person Duplex	103
Total Duplexes	206
Houses	
2-bed House	61
3-bed House	160
4-bed House	34
Total Houses	255
Overall Total	523
Creche	457 sq. m

Table 1 Proposed Land Uses

The proposed layout is illustrated in the figure below.

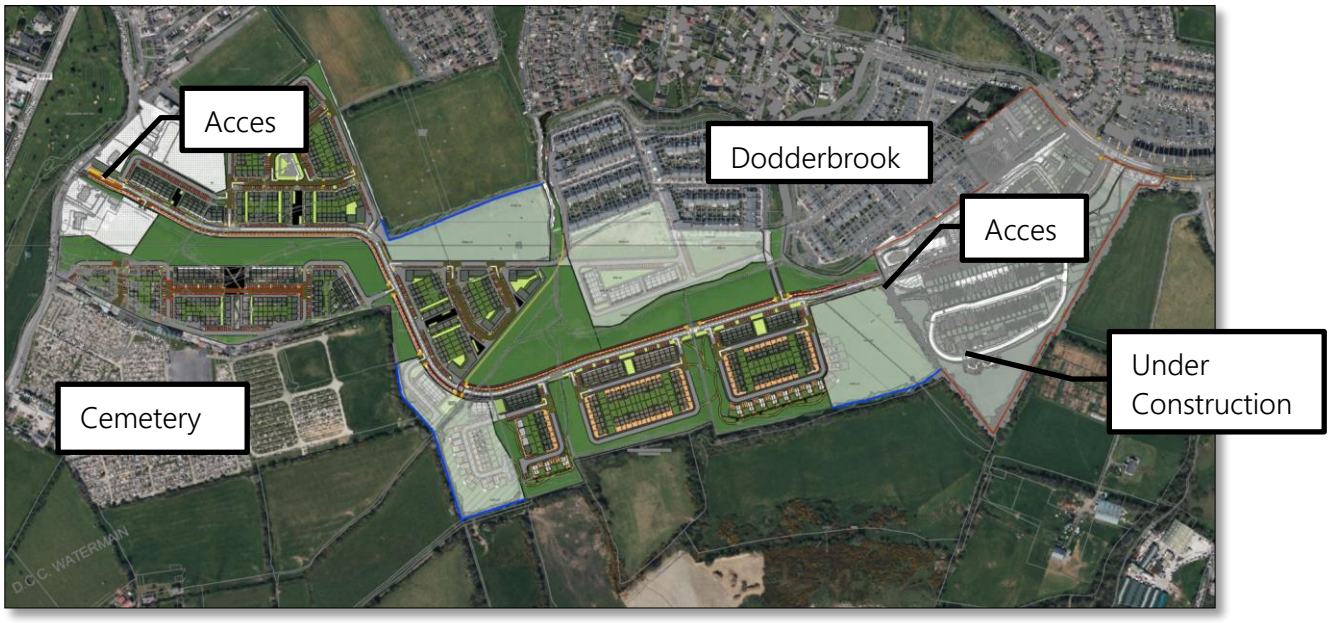

Figure 2 Proposed Layout

2.2 Site Access

The site will be accessed via the partially complete Link Street using an existing signal-controlled junction with Oldcourt Road and a newly constructed signal-controlled junction with Bohernabreena Road. The Link Street is partially built with access off Oldcourt Road.

Additional access will be provided off the Link Street via Bohernabreena Road. The phasing of the development will determine which access is used.

It is noted that there are a number of sites currently under construction which are also accessed off the Link Street.

2.3 Overview

The construction site will be organised so that, where possible, vehicles and pedestrians accessing the site are segregated and can move around safely. The access routes need to be suitable for the persons or vehicles using them, in suitable positions and sufficient in number and size, this is so that incidents can be prevented by the effective management of transport operations throughout the construction process.

Pedestrians and vehicles can be kept apart by management of the following:

- Entrances and exits - provide separate entry and exit gateways for pedestrians and vehicles.
- Walkways - provide firm, level, well-drained pedestrian walkways that take a direct route where possible.
- Crossings - where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly.
- Visibility - make sure drivers driving out onto public roads can see both ways along the footway before they move on to it.

- Obstructions – do not block walkways so that pedestrians have to step onto the vehicle route; and
- Barriers - Where needed, a barrier between the road and walkway.

Vehicle movement will need to be minimised on site due to the restricted areas in which the contractor will have to work. This can be minimised by management of the following:

- Provide car and van parking for the workforce and visitors away from the work area.
- Control entry to the work area.
- Plan storage areas so that delivery vehicles do not have to cross the site.
- People who direct vehicle movements (banksmen) must be trained and authorised to do so.
- Make sure that all drivers and pedestrians know and understand the routes and traffic rules on site.
- Use standard road signs where appropriate.
- Provide induction training for drivers, workers and visitors and send instructions out to visitors before their visit.

The management of construction traffic will be greatly assisted by utilising the following:

- Banksmen - who can be appointed to control manoeuvres and who are trained in the task.
- Clothing - pedestrians on site will wear high-visibility clothing as well as other relevant P.P.E.
- Gatekeeper- The site compound will be self-contained, and it is unlikely that a gate keeper be required. A site operative will be appointed to direct/summon banksmen should one be required.
- Speed limits- speed limits to be restricted on site for all vehicles.

3 CONSTRUCTION TRAFFIC MANAGEMENT

3.1 Introduction

There are multiple factors that influence the traffic generation on a construction site. These factors include, but are not limited to:

- Market conditions
- Detailed design/final cut and fill models
- Program
- Availability of materials
- Availability of staff
- Improvements in construction methodologies i.e., the use of soil stabilisation rather than the importation of suitable material.

An estimate of the construction traffic generation is outlined in Section 3.10 of this report. In the final CTMP, the traffic generation will be calculated based upon final scheme design and construction program. Staffing levels, material deliveries, envisaged plant requirements, and the associated access and traffic and transport impacts, will be calculated based on similar project activities.

3.2 Days and Hours of Construction/Delivers

All deliveries will be notified to the Contractor's Project Manager/Traffic Management Co-ordinator in advance with specific times identified. These will be collated and held in a diary by the Co-ordinator who will manage the deliveries daily. The Co-ordinator will highlight any clashes and anticipated busy periods to streamline the processing of deliveries.

On arrival at the agreed locations, drivers must wait and only enter the site accordance with the relevant site procedures They will then be escorted to the appropriate location for unloading by the contractor's Banksmen. No waiting will be permitted on the road network that the general public has access to.

Unloading will be carried out at one of the material storage areas which will be phase dependent. All deliveries will be unloaded by forklift or mechanical means.

The use of machinery, plant, or equipment (which includes pneumatic drills, generators and the movement on and off site of construction vehicles) is NOT PERMITTED outside the following hours:

- Before 07:00 hours on weekdays, Monday to Friday
- Before 09:00 hours on Saturdays
- After 19:00 hours on weekdays, Monday to Friday
- After 13:00 hours on Saturdays
- Note permitted at any time on Sundays, Bank Holidays or Public Holidays

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. This will only be

undertaken in exceptional circumstances. Capami will advise South Dublin County Council in advance if delivers are to take place outside the hours stated.

All access roads used by Capami will be monitored for mud and any construction materials and will be cleared using a shovel/broom and if required a mechanical road sweeper.

3.3 Public Transport

3.3.1 Bus

Bus transport within the vicinity of the proposed development is illustrated in Figure 3.

Figure 3 Bus Stop Locations (Source: TFI Transport Planner)

There are numerous bus operators providing a bus services locally and within walking distance to the site, with further details shown in Table 2 below.

No.	Route	Service		Mon-Fri	Sat	Sun
65B	Poolbeg St. - Citywest	Poolbeg St	First	05:50	05:50	09:00
			Last	23:30	23:30	23:30
		Citywest	First	06:50	07:00	08:30
			Last	23:30	23:30	23:30
		Frequency		Up to 20 services / day	Up to 19 services / day	Up to 15 services / day
175	Citywest – UCD	UCD	First	05:57	08:15	09:22
			Last	00:12	00:14	00:15

		Citywest	First	06:20	07:10	08:14
			Last	23:07	23:10	23:10
		Frequency		Up to 36 services / day	Up to 17 services / day	Up to 16 services / day
15/15B	Clongriffin - Ballycullen Rd.	Clongriffin	First	04:00	04:00	04:00
			Last	02:00	03:30	03:30
		Ballycullen Rd.	First	04:00	04:00	04:00
			Last	03:30	03:30	03:30
		Frequency		Up to 104 services / day	Up to 84 services / day	Up to54 services / day
49	Pearse Street - Tallaght (The Square)	Pearse Street	First	06:10	06:45	10:30
			Last	23:20	23:20	23:30
		Tallaght (The Square)	First	06:15	06:45	09:30
			Last	23:30	23:30	23:30
		Frequency		Up to 37 services / day	Up to 27 services / day	Up to 15 services / day

Table 2 Local Bus Services

The nearest bus stop is located on Killinniny Road, c. 1.3km/16 mins waling time from the development.

3.4 Phasing

It is anticipated that the development will be built over 6 phases as illustrated in the figure below. Note, this image is for illustrative purposes only and subject to change.

For earlier phases, it is anticipated that that access will be via the Oldcourt Road junction. Future phases maybe accessed via the Bohernabreena Junction.

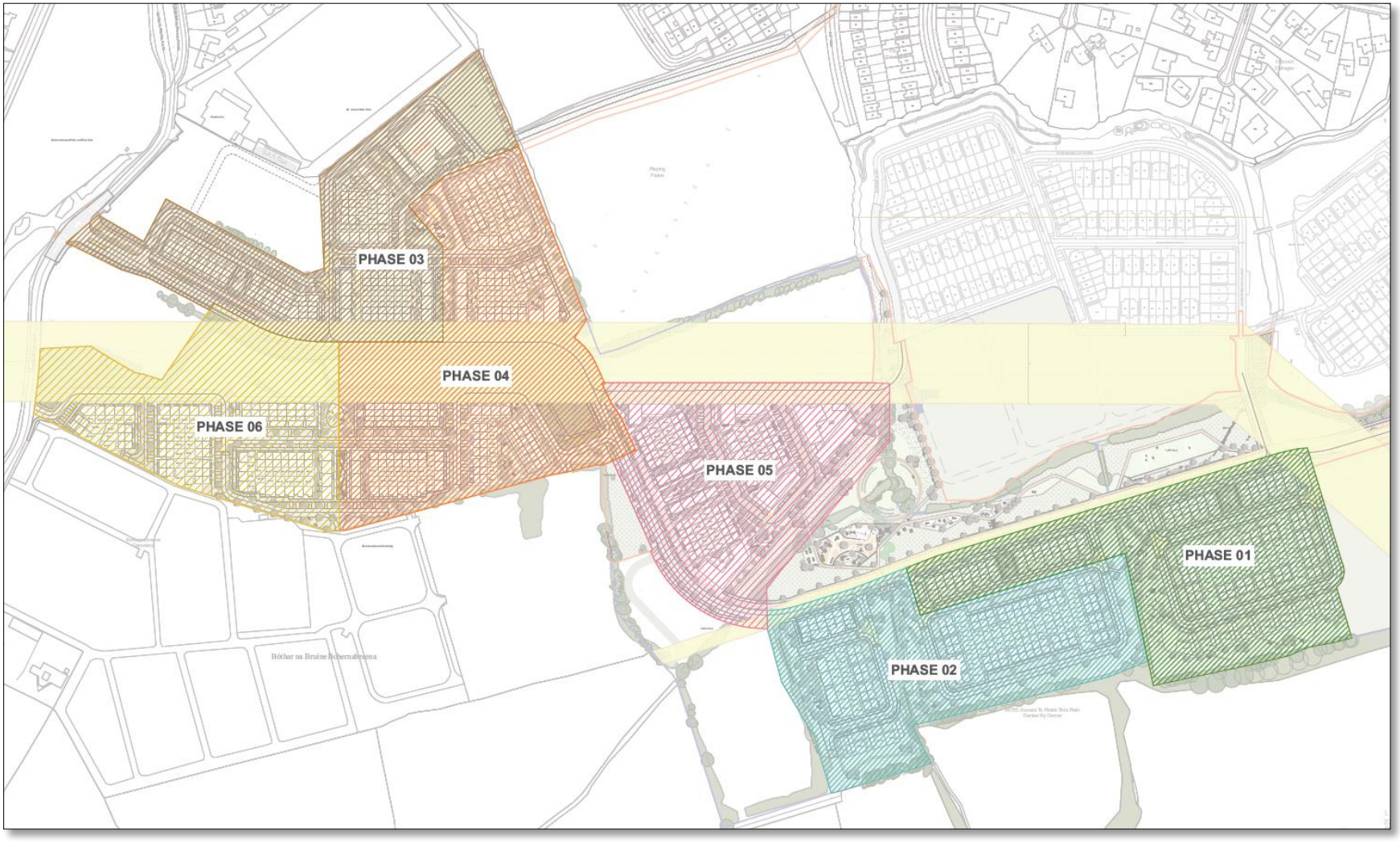

Figure 4 Phasing Layout

3.5 Carpooling

It is well recognised that construction workers tend to make greater use of carpooling than traditional '9-5' workers, possibly due to shared accommodation and travelling from further afield/lower levels of car ownership, which results in a greater level of sharing journeys.

Notwithstanding this, it is proposed that within the site offices or on the staff welfare notice board there will be information on car sharing and a contact number for Capami welfare officer who will have a list of site operatives and their willingness to share journeys so that opportunities for car sharing can be maximised. In the event that a lift to work or home becomes unavailable a registered member of the scheme will be offered an alternative lift home or failing that a taxi/public transport ticket will be provided.

For staff that chooses to travel to site using cars or other motorised vehicle a vehicle a pooling system will be put in operation by the contractor. Such measures shall be adopted in order to reduce traffic levels on the local road networks.

3.6 Construction Parking

Parking of construction staff vehicles on roads that the general public have access to will not be permitted.

In the initial phase of construction, all construction traffic will access the site via the proposed access off the Oldcourt Road. Later phases maybe accessed via the Bohernabreena Road junctions.

Car parking will be provided for all workers who travel to site using a car in or adjacent to the site compounds, as determined by the construction program.

This car park will be temporary in nature and will be created by laying of a temporary surface for vehicles.

A sample car parking area for Phase 1 is shown in the figure below.

Figure 5 Phase 1 – Car Parking Area

Note, the layout above is for information only and subject to change. The location of site compounds for each phase of the development will be dependent on the appointment of a sub-contractors by Capami. The Final Construction Traffic Management Plan will outline the locations of the site parking for each phase of the development.

3.7 Walking

Capami will ensure construction staff are provided with footpath access from Oldcourt Road and/or Bohernabreena Road. This footpath may take the form of hardstanding areas fenced from vehicular traffic or estate footpaths with appropriate kerb hights.

Figure 6 Pedestrian Walking Routes

The red line indicates pedestrian desire lines which will be segregated from construction traffic using fencing or full height kerbs as mentioned previously.

3.8 Cycling

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

3.9 Haul Route

3.9.1 Background

Materials such as steel and concrete required in the construction of the proposed development are likely to be sourced from manufacturers that are not situated within the immediate vicinity of the proposed development.

The total number of vehicular traffic movements will be determined by the contractor based on the phasing of the proposed development. The use of local roads will be minimised as much as possible, particularly to avoid / minimise the encountering of narrow road widths, poor visibility and unsuitable bearing capacities.

3.9.2 Route Selection

The haul route will be designed to ensure demolition waste, construction materials and construction waste is brought to the M50 in the shortest route as possible. Routes that include schools will be minimised. The final haul route with be agreed with South Dublin County Council.

This will ensure that HGVs and other larger construction and delivery vehicles will spend a minimum amount of time on regional roads and local streets whilst avoiding schools.

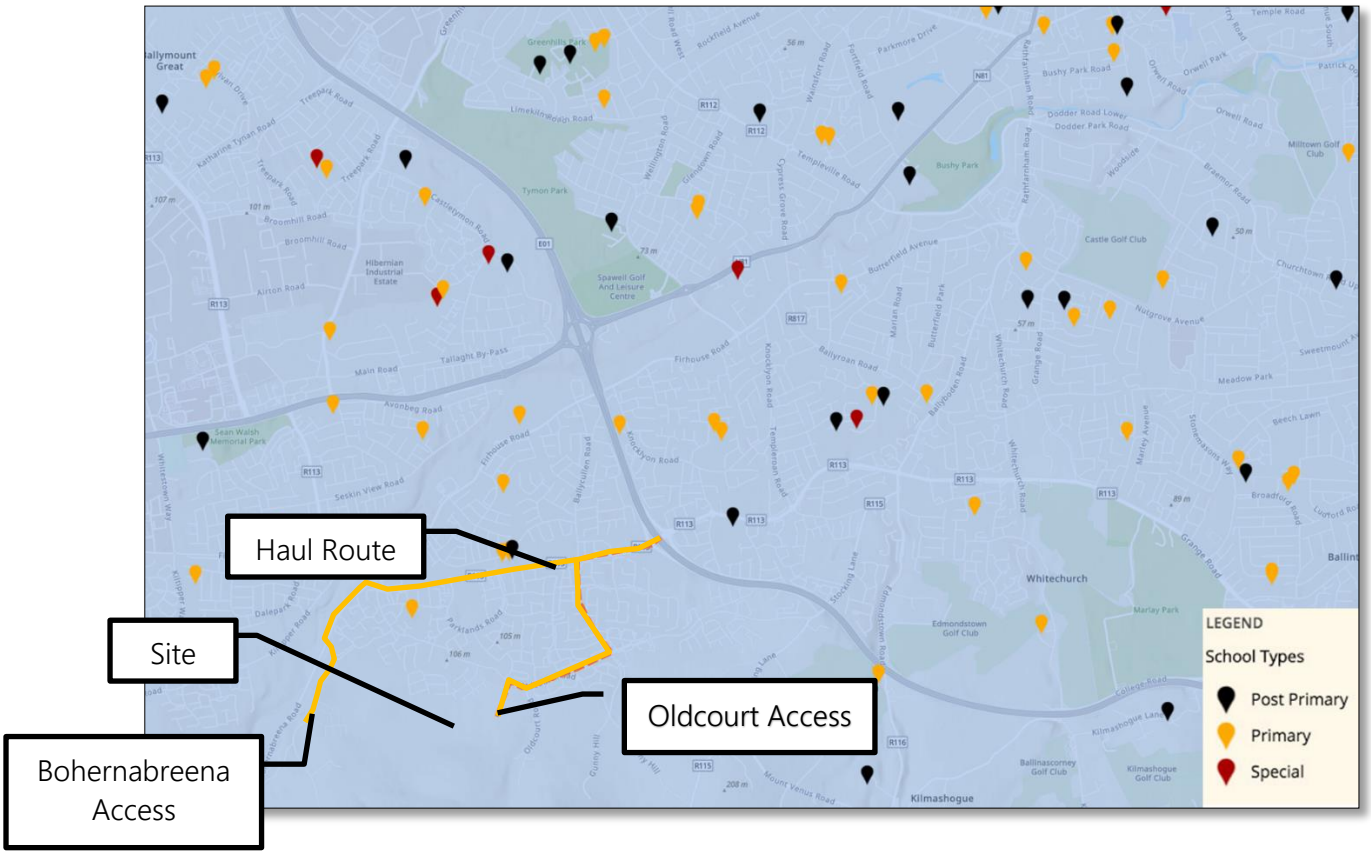

Figure 7 School Locations

3.9.3 Haul Routes

The site compound / materials storage area will be accessed via Link Street for each phase of the development with the exception of Phase 6 which is likely to be accessed via Bohernabreena Road.

The locations of the compounds will change over the various project phases with multiple mobilization and de- mobilization.

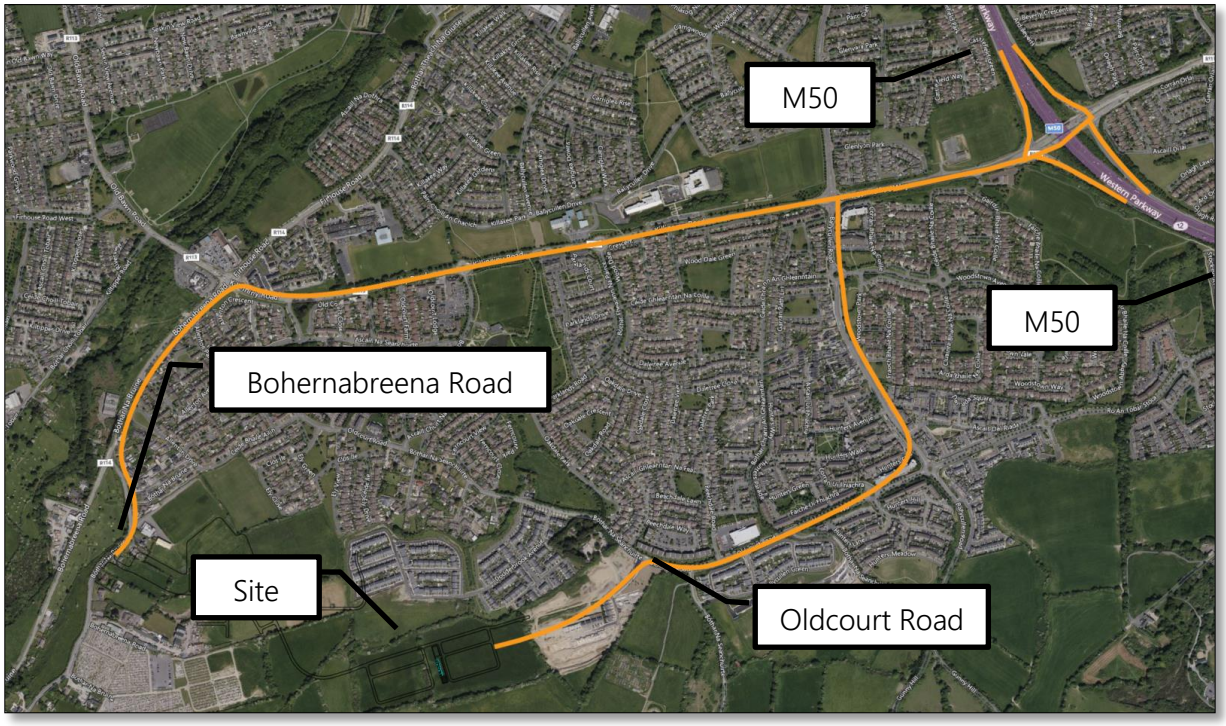

Figure 8 Haul Route to Site

Arrivals and departures to the proposed temporary construction material storage yard are to be carried out in as few vehicle movements as possible in order to minimise potential impacts on the road network.

3.10 Traffic Generation

3.10.1 General

It should be noted that the majority of such vehicle movements would be undertaken outside of the traditional peak hours between 08:00-09:00 and 17:00-18:00, and it is not considered this level of traffic would result in any operational problems on the local road network.

Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, and temporary car parking is provided within the site for contractor's vehicles. Based on the estimated number of construction related trips, the construction traffic will have a negligible impact on pedestrian and cycle infrastructure.

The envisaged traffic generated during the construction period will depend on the phasing which will be determined by Capami. Based on the estimated number of construction related trips, the construction phase will not have a significant effect on the local road network as a result of the construction of the development when compared to the operational traffic volumes.

The majority of traffic generated by delivering materials during the project are envisaged to occur during the following construction elements:

- Site clearance

- Laying of internal road
- Concrete, steel, and other material deliveries to site during the construction of structures

For the construction of the proposed development, it will be necessary to transport the construction materials, equipment, and personnel to and from the work sites. This includes (but is not limited to):

- Establishing the construction site compounds.
- The removal of surplus soil material, suitable surplus excavated material for reuse and unsuitable excavated material, which will be taken offsite to a site permitted for deposition.
- The importation of suitable soil material where required.
- The importation of relevant construction materials and equipment.
- The exportation of demolition and construction waste materials
- Transportation of workers to and from the site.
- The estimated start date on site is Q3 2025 with an estimated construction programme of up to 7 years.
- Several construction traffic movements will be undertaken by heavy goods vehicles, though there will also be vehicle movements associated with the appointed Capami and their staff.

3.10.2 Site Excavation

A 3d terrain model has been produced to estimate the quantum cut and fill that the site will produce. The 3d terrain model suggests that up to 52,268 cu. m of topsoil will be produced. This will be stored on site and used for landscaping. Any balance will be exported off site.

In addition to topsoil, the site will also produce c. 73,178cu. m of cut and 57,894 cu. m of fill. This will require the net cut of c. 15,286 cu. m of soil.

The 3d terrain is shown in Figure 9 below.

Figure 9 Cut and Fill Model

The rate at which net cut that will be generated on site for exploration will depend on phasing. At c. 30 cu. m per load, the exploration of cut on to the site will generate c. 500 HGV movements over the lifetime of the project.

During ground works, various spoil heaps will be created on site. Suitable material will be mounded to create a berm and in turn will allow for the material to be deposited onto the HGVs by excavator when needed.

The road marshal appointed will be responsible to ensure that there is no disruption to traffic or pedestrians and that roadways and paths are kept clean and free of debris.

3.10.3 Demolition & Construction Waste

Whilst it is not possible at this stage to accurately identify the day-to-day traffic movements associated with the construction waste, based on experience of similar sites it is considered that the number of constructions related heavy goods vehicle movements to and from the application site will be on average 2-5 arrivals/departures per day over a 7-year construction period.

3.10.4 Construction Workers

At the peak of construction, it is anticipated that there will be a requirement for approximately c.50 construction workers. This will vary over the lifetime of the project.

With shared trips accounted for, it is estimated that between 30 and 40 trips will be associated with construction workers. It is expected that these workers will be on site prior to the AM peak and depart after the PM peak.

3.10.5 Material handling

The proposed development will have a dedicated loading and unloading area within the curtilage of the proposed development.

All offloading of deliveries to site will occur within the curtilage of the site boundaries and no roadside offloading will be permitted.

Figure 10 Holding Area

In the example above, the HGV can wait adjacent to the site compound, be unloaded and exit via the roads built as part of the cell of houses.

All scheduled deliveries will be supplied with the appropriate site location details in advance to prevent wandering in the locality. A dedicated site marshal will be appointed to ensure that delivery vehicles can securely access and vacate the site. The site marshal shall also be responsible to ensure that clean road and pathway conditions are maintained for the public users.

All material scheduling and ordering will be communicated to the necessary personnel on site at the end of every day for the following day. It is imperative that deliveries are timely and executed efficiently to avoid unnecessary waiting.

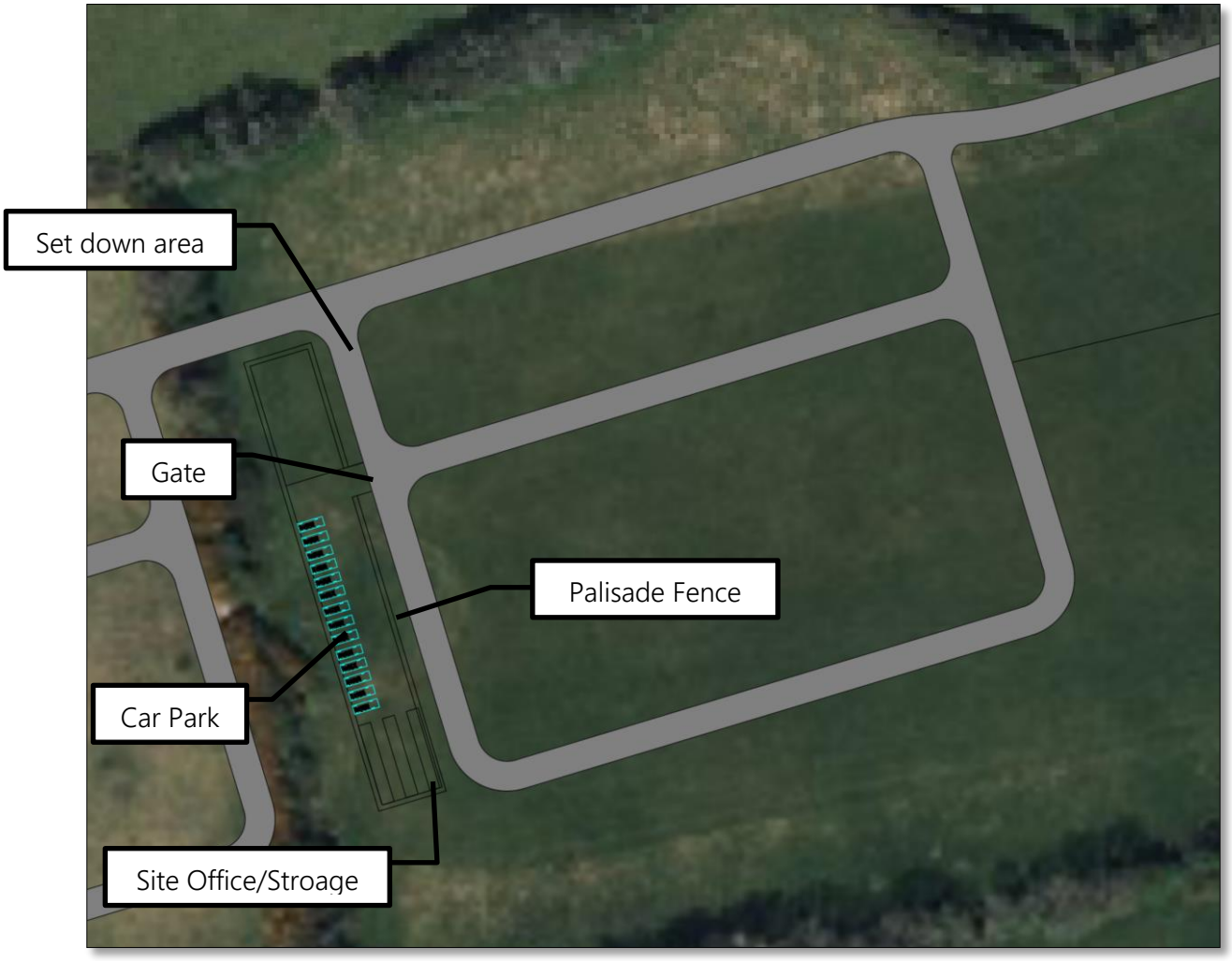

Figure 11 Material Set Down Area

Within the site compound there will be a spill kit in the event of a fuel leak.

3.11 Construction Impact

The construction phase of the development will likely have less of an impact on the locally highway network when compared to the operational phase. This impact will be temporary in nature.

3.12 Summary

Arrivals and departures to the sites are to be carried out in as few vehicle movements as possible to minimise parking requirements and potential impacts on the local road network.

The proposed development will have a dedicated loading and unloading area within the curtilage of each phase of the proposed development.

It is anticipated that each phase of the development will be accessed via the Link Street with access to the external road network via Oldcourt Road and Bohernabreena Road junctions. Which junction is used will be phase dependent.

Construction traffic will not be permitted to use estate roads to access the site.

Construction traffic will be restricted to the primary routes and will avoid using residential routes ,where possible. Material scheduling will dictate the timely delivery of supplies to site during off peck periods when traffic flow has eased, and pedestrian numbers are lower.

4 CONSTRUCTION TRAFFIC MANAGEMENT

4.1 General

This section outlines the content of the final Construction Traffic Management Plan (CTMP) which shall be prepared prior to construction of the proposed development.

The CTMP shall be termed a 'Live Document ', such that any changes to construction programme or operations can be incorporated into the CTMP.

On finalisation of the CTMP, the contractor shall adopt the plan and associated monitoring measures. The final CTMP shall address the following issues (including all aspects identified in this outline CTMP):

- Site Access & Egress.
- Traffic Management Signage.
- Routing of Construction Traffic / Road Closures.
- Timings of Material Deliveries to Site.
- Traffic Management Speed Limits.
- Road Cleaning.
- Road Condition.
- Road Closures.
- Enforcement of Construction Traffic Management Plan
- Details of Working Hours and Days.
- Details of Emergency plan.
- Communication.
- Construction Methodologies; and
- Particular Construction Impacts
- These items are explained in detail in the remainder of this section of the report.

4.2 Site Access and Egress

Access to the site will be via a newly formed access off the Link Street via Oldcourt Road Signal Controlled Junction, Bohernabreena Road Signal Controlled Junction and Bohernabreena Road.

Oldcourt Road will be a communal road with access allowed for by multiple Capami sites. Capami will provide security fencing where their site is accessed off the Link Street . Access to the site will be gated. The gate will be set back off the external road network to ensure that vehicles entering the site can do so without causing an obstruction on the main carriageway.

The contractor shall provide advanced warning signs, in accordance with Chapter 8 of the Department of the Environment's Traffic Signs Manual 2019, on the approach to proposed site access locations a minimum of one week prior to construction works commencing.

There will be heras fencing secured to a minimum height of 2 metres surrounding the construction site or solid panel hoarding in areas with high/low viewing panels to help reduce unauthorised access to the constriction compound.

This fence will be checked daily and maintained as necessary, and it will be the responsibility of the Site Manager to open and lock the gates each working day to ensure the site is not left open and unattended at any time.

Access to the construction site will only be to authorised persons. During afterhours, security will be employed by Capami to ensure no unauthorised access.

Where possible, construction traffic and non-construction traffic will be separated for all modes of transport within the construction area. Where the construction programme requires mixing of traffic, additional temporary traffic management measures will be put in place.

4.3 National Road Network

Access to the site along the National Road Network will be via the M50. It is anticipated that the majority of construction related traffic will travel along the M50 at which point construction traffic will enter the regional/local road network.

4.4 Regional & Local Road Network

The majority of access / egress to proposed sites shall be facilitated from the local road networks using the Link Street with access to the external road network via Oldcourt Road and Bohernabreena Road

To mitigate against possible restrictions in visibility requirements, it is proposed that the contractor shall use a safe system of permanent flag men for the control of traffic during all access / egress operations at each site location, if required.

Depending on the phasing, the Link Street will be used for works traveling via public transport using the Oldcourt Road or Bohernabreena access. This will also be the case for operatives travelling by foot or bike.

4.5 Traffic Management

4.5.1 Signage

The contractor shall undertake consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements. Such signage shall be installed prior to works commencing on site.

Proposed signage may include warning signs to provide warning to road users of the works access / egress locations and the presence of construction traffic. All signage shall be provided in accordance with the Department of Transport's Traffic Signs Manual, Chapter 8 – Temporary Traffic Measures and Signs for Roadworks.

In summary, the contractor will be required to ensure that the following elements are implemented:

- Consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements.

- Provision of temporary signage indicating site access route and locations for sub contactors and associated suppliers; and
- Provision of general information signage to inform road users and local communities of the nature and locations of the works, including project contact details.

4.5.2 Traffic management for road works.

In accordance with plans and drawings submitted to the planning authority, and subject to the necessary approval of Irish Water and in agreement with the Roads and Transport Department of the Local Authority (SDCC), road works are required to facilitate the proposed development.

A specific Traffic Management Plan (TMP) will be required by the Local authority in conjunction with the application for a road opening licence, in advance of carrying out these road works. The TMP design and service will be provided by an independent specialist and will deal with the efficient management of traffic and pedestrians, mitigating all potential safety risks to users, whist maintaining effective operation of the carriage way.

4.6 Programming

The proposed development will have multiple phases. In order to reduce impacts on local communities and residents adjacent to the proposed sites, it is proposed that:

- The contractor will be required to liaise with the management of other construction projects and the Local Authorities to co-ordinate deliveries.
- The contractor will be required to schedule deliveries in such a way that construction activities and deliveries activities do not run concurrently e.g., avoiding pouring of concrete on the same day as material deliveries in order to reduce the possibility of numerous construction delivery vehicles arriving on site simultaneously, resulting in build-up of traffic on road network.
- The contractor will be required to schedule deliveries to and from the proposed materials storage yard such that traffic volumes on the surrounding road network are kept to a minimum.
- HGV deliveries to the development site will be suspended on the days of any major event in the area that have the potential to cause larger than normal traffic volumes.
- The contractor will be required to interact with members of the local community to ensure that deliveries will not conflict with sensitive events such as funerals.
- HGV deliveries will avoid passing schools at opening and closing times where it is reasonably practicable.
- Deliveries of materials to site will only be permitted between the hours of 07:00 and 19:00 Monday to Friday, and 09:00 to 13:00 on Saturdays. No deliveries will be scheduled for Sundays or Bank Holidays.
- 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. This will only be undertaken in exceptional circumstances. Capami will advise South Dublin County Council in advance if delivers are to take place outside of the standard condition hours.

The construction period for the proposed development is anticipated to be approximately 7 years from the commencement of the site works. This is subject to change and dependent on market conditions.

4.7 Recommended Traffic Management Speed Limits

Adherence to posted / legal speed limits will be emphasised to all staff / suppliers and contractors during induction training.

Drivers of construction vehicles / HGVs will be advised that vehicular movements in locations, such as local community areas, shall be restricted to 50 km/h. Special speed limits of 30 km/h shall be implemented for construction traffic in sensitive areas such as school locations. Such recommended speed limits will only apply to construction traffic and shall not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

4.8 Spoil

This will require the net cut of c. 15,286 cu. m of soil. Spoil will be exported from the site using 8-wheeler muck away lorries

The lorries will arrive at site and will be marshalled onto the site by the traffic marshals. The lorries will be loaded with an excavator. The lorry will be covered prior to leaving site. The traffic marshal will escort the vehicle off site and once the vehicle is on its way, the next vehicle will be called in.

The phasing of the development will determine the location of any potential spoil heap(s).

4.9 Road Cleaning

It shall be a requirement of the works contract that the contractor will be required to carry out road sweeping operations to remove any project related dirt and material deposited on the road network by construction / delivery vehicles. All material collected will be disposed to a licensed waste facility.

4.10 Road Condition

The extent of the heavy vehicle traffic movements and the nature of the payload may create problems of:

- Fugitive losses from wheels, trailers or tailgates; and
- Localised areas of subgrade and wearing surface failure.

Capami shall ensure that:

- Loads of materials leaving each site will be evaluated and covered if considered necessary to minimise potential dust impacts during transportation.
- The transportation contractor shall take all reasonable measures while transporting waste or any other materials likely to cause fugitive loses from a vehicle during transportation to and from site, including but not limited to:
    - Covering of all waste or material with suitably secured tarpaulin/ covers to prevent loss; and
    - Utilisation of enclosed units to prevent loss.

- The roads forming part of the haul routes will be monitored visually throughout the construction period and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required.

In addition, the contractor shall, in conjunction with the local authority:

- Undertake additional inspections and reviews of the roads forming the haul routes one month prior to the construction phase to record the condition of these roads at that particular time.
- Such surveys shall comprise, as a minimum, a review of video footage taken at that time, which shall confirm the condition of the road corridor immediately prior to commencement of construction. This shall include video footage of the road wearing course, the appearance and condition of boundary treatments and the condition of any overhead services that will be crossed. Visual inspections and photographic surveys will be undertaken of bridges and culverts that are along the haul roads, if required.
- Where requested by the local authority prior to the commencement of construction operations, pavement condition surveys will also be carried along roads forming part of the haul route. These will record the baseline structural condition of the road being surveyed immediately prior to construction.
- Throughout the course of the construction of the proposed development, on-going visual inspections and monitoring of the haul roads will be undertaken to ensure any damage caused by construction traffic is recorded and that the relevant local authority is notified. Arrangements will be made to repair any such damage to an appropriate standard in a timely manner such that any disruption is minimised.
- Upon completion of the construction of the proposed development, the surveys carried out at preconstruction phase shall be repeated and a comparison of the pre and post construction surveys carried out. Any damage found will be remediated.

4.11 Vehicles

The following is a non-exhaustive list of possible vehicles that will be used:

- HGV
- Rigid Truck
- Box Van
- Panel Van
- Concrete Truck
- Concrete Pump Truck
- Mobile Crane (various sizes)
- JCB (various sizes)
- Excavators (various sizes)
- Dump Truck
- Specialist vehicles maybe required on occasion.

4.12 Road Closures

During the course of the works, it is not envisaged that road closures will be required for any extended period of time. Temporary or partial road closures maybe required to facilitate utility connections such as watermain, foul water, surface water etc.

Should works be required on the external road network, road opening licences will be sought from the Local Authority via the Road Management Office.

4.13 Enforcement of Construction Traffic Management Plan

All project staff and material suppliers will be required to adhere to the final CTMP. As outlined above, the contractor shall agree and implement monitoring measures to confirm the effectiveness of the CTMP.

4.14 Details of Working Hours and Days

Deliveries of materials to site will only be permitted between the hours of 07:00 and 19:00 Monday to Friday, and 09:00 to 13:00 on Saturdays. No deliveries will be scheduled for Sundays or Bank Holidays.

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. This will only be undertaken in exceptional circumstances. Capami will advise South Dublin County Council in advance if delivers are to take place outside of the standard condition hours.

All access roads used by Capami will be monitored for mud and any construction materials and cleared using a shovel and broom and if required a mechanical road sweeper.

4.15 Emergency Procedures During Construction

Capami shall ensure that unobstructed access is provided to all emergency vehicles along all routes and site accesses. The contractor shall provide to the local authorities and emergency services, contact details of the contractor's personnel responsible for construction traffic management. In the case of an emergency the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112.
- Exact details of the emergency / incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner.
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer.
- All construction traffic shall be notified of the incident (where such occurs off site).
- Where required, appointed site first aiders will attend the emergency immediately; and
- The Safety Officer will ensure that the emergency services are en-route.

4.16 Communication

The contractor shall ensure that close communication with the relevant local authorities and the emergency services shall be maintained throughout the construction phase. Such communications shall include:

- Submissions of proposed traffic management measures for comment and approval.

- On-going reporting relating to the condition of the road network and updates to construction programming; and
- Information relating to local and community events that could conflict with proposed traffic management measures and construction traffic in order to implement alternative measures to avoid such conflicts.

The contractor shall also ensure that the local community is informed of proposed traffic management measures in advance of their implementation. Such information shall be disseminated by posting advertisements in local newspapers and delivering leaflets to houses in the affected areas. Such information shall contain contact information for members of the public to obtain additional information and to provide additional knowledge such as local events, sports fixtures etc. which may conflict with proposed traffic management measures.

4.17 Dust and Dirt Control

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

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

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

The following are techniques and methods which are widely used currently throughout the construction industry, and which may be used in the proposed development.

- The roads around the site are all surfaced, and no dust is anticipated arising from unsealed surfaces.
- Vehicles travelling on any unsurfaced site roads will have their speed restricted to 20 kph.
- A regime of 'wet' road sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
- Footpaths immediately around the site can be cleaned by hand regularly, with damping as necessary.
- High level walkways and surfaces such as scaffolding can be cleaned regularly using safe 'wet' methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings can be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
- Netting can be provided to enclose scaffolding in order to mitigate escape of air borne dust from the existing and new buildings.
- Vehicles and equipment shall not emit black smoke from exhaust system, except during ignition at start up.

- Engines and exhaust systems will be maintained so that exhaust emissions do not breach stationary emission limits set for the vehicle / equipment type and mode of operation.
- Servicing of vehicles and plant will be carried out regularly, rather than just following breakdowns.
- Internal combustion plant will not be left running unnecessarily.
- Exhaust direction and heights will be such as not to disturb dust on the ground and to ensure adequate local dispersal of emissions.
- Where possible fixed plant such as generators will be located away from residential areas.
- The number of handling operations for materials will be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
- The transport of dusty materials and aggregates will be carried out using covered / sheeted lorries.
- Material handling areas will be clean, tidy and free from dust.
- Vehicle loading will be dampened down and drop heights for material to be kept to a minimum.
- Drop heights for chutes / skips will be kept to a minimum.
- Dust dispersal over the site boundary will be minimised using static sprinklers or other watering methods as necessary.
- Stockpiles of materials will be kept to a minimum and if necessary, they will be kept away from sensitive receptors such as residential areas etc.
- Stockpiles were necessary, will be sheeted or watered down.
- Methods and equipment will be in place for immediate clean-up of spillages of dusty material.
- No burning of materials will be permitted on site.
- Earthworks excavations will be kept damp where necessary and were reasonably practicable.
- Cutting on site will be avoided where possible by using pre-fabrication methods.
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, will be employed.
- Where scabbling is to be employed, tools will be fitted with dust bags, residual dust will be vacuumed up rather than swept away, and areas to be scabbled will be screened off.
- Wet processes will be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
- Where possible pre-mixed plasters and masonry compounds will be used to minimise, dust arising from on-site mixing.

- Prior to commencement, Capami will identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, Capami will prepare environmental risk assessments for all dust generating processes, which are envisaged.
- Capami will allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues will be displayed on the site boundary, this notice board will also include head/regional office contact details.

4.18 Noise Control

Capami will deal with the immediate dangers to hearing etc. associated with high noise levels and the impact of same on construction operatives, by means of risk assessment and mitigation / precautionary measures and equipment, all pursuant to the current health and safety legislation.

Capami will carry out a noise assessment in relation to the proposed works at construction stage. This noise assessment will be carried out by a competent person (or specialist firm) with specialist training in this area.

The noise assessment will include the following steps: -

- Identify and list all construction work activities where there is likely to be a significant noise hazard.
- Determine the hazards / nuisance.
- Identify all third parties likely to be exposed to the nuisance.
- Measuring the risk: The level of noise in dBs
- Considering and Implementing Control Measures.
- Control exposure to noise.
- Record the findings of the noise assessment.
- Review and revise.

4.19 Protection of Surface Waters

If applicable, Capami will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.

Where required, settlement pond / silt trap will be installed. Straw bales will be placed at the outfall of the settlement ponds to the overflow. These measures will be implemented and maintained during the construction phase to prevent surface water runoff from discharging directly into the local water course.

Settlement ponds / silt traps as outlined above will be provided to prevent silt runoff into the existing ditches / watercourses during the drainage works.

Regular testing of surface water discharges will be undertaken at the outfall from the subject lands.

Where silt control measures are noted to be failing or not working adequately, works will cease in the relevant area.

All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks / containers with the capacity to hold 110% of the volume of chemicals and fuels contents. Bunds will be located on flat ground a minimum distance of 50 m from any watercourse or other water conducting features.

All existing services will be located using service records, GPR surveys and slit pumps to ensure that their position accurately identified before excavation works commence.

4.20 Co Ordination

Capami will establish a holding area on the onsite that could accommodate up to 2 concrete trucks, Capami will also provide a traffic marshal at the site. The holding area will be utilised to prevent congestion of Link Street from construction traffic.

All vehicles will be tracked by the traffic marshals who will report back to the logistics manager. The logistics manager will control the deliveries with help from the traffic marshals and the gateman. Unscheduled vehicles will be turned away. If deliveries are taking longer to offload, then the following deliveries will be notified of any timing issues.

A copy of the delivery schedule will be issued to the traffic marshals, gateman and Capami' supervisors every morning so everyone is aware and can make provision for when their delivery arrives.

The traffic marshals will be trained and competent and they will undergo ongoing assessments by the logistics manager to ensure they are carrying out their duties with due care and diligence.

4.21 Refuelling

Construction plant and equipment will only be parked over-night within the site compound. Construction plant and equipment will be checked daily for any visual signs of oil or fuel leakage, as well as wear and tear.

Fuel will not be stored on site for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. For any liquid other than water, this will include storage in suitable tanks and containers which will be housed in the designated area surrounded by bund wall of sufficient height and construction so as to contain 110 percent (110%) of the total contents of all containers and associated pipework. The floor and walls of the bunded area will be impervious to both water and oil. The pipes will vent downwards into the bund.

The refuelling of vehicles, plant and equipment will only be carried out at the designated refuelling locations within the site storage compound, which must employ pollution control mechanisms to prevent escape of fluids.

The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

All small plant such as generators and pumps will be bunded and stood in drip trays capable of holding 110% of their tank contents.

Waste oils, empty oil containers and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Act, 1996.

Figure 12 Fuel Refill Area

4.22 Site Tidiness and Housekeeping

Capami will ensure that road edges and footpaths are swept on a regular basis.

Any and all waste materials arising during the works will either be immediately taken to a location from which discharge to local water courses cannot take place, or temporarily stored/covered to prevent washout.

All sub-contractors will be responsible for the clearance of their plant, equipment and any temporary buildings upon completion of construction. The site will be left in a safe condition.

4.23 Monitoring, Inspection and Record Keeping

Routine inspections of construction activities will be carried out on a daily basis by the contractor staff to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with the Project CEMP and associated documentation are being adhered to during construction.

The Contractor will develop their own site inspection programme, which will include an inspection procedure and relevant forms to record any issues.

Only suitably trained staff will undertake environmental site inspections.

Capami will keep records of works undertaken.

5 CONCLUSION

5.1 Conclusion

This Construction Traffic Management Plan will form part of the construction contract and is designed to reduce possible impacts which may occur during the construction of the proposed development.

Capami will be responsible for ensuring that it and its sub-contractor manages the construction activities in accordance with this Construction Traffic Management Plan and shall ensure that any conditions of planning are incorporated into the final Construction Traffic Management Plan prepared by the appointed works contractor.

Appendix A COMPLAINTS FORM

PINNACLE
CONSULTING ENGINEERS

Complaint's form

Name of site:	
Name of Complainant:	
Complainant contact details:	
Time & Date of Complaint:	
Nature of Complaint:	
Likely cause of Complaint:	
Weather Conditions:	

Investigation & Follow up:	

PINNACLE
CONSULTING ENGINEERS

NORWICH

Pinnacle House
3 Meridian Way
Norwich
NR7 0TA

T: +44 (0)1603 327170

LONDON

The Harley Building
77-79 New Cavendish Street
London
W1W 6XB

T: 01707 527630

WELWYN GARDEN CITY

Alchemy House
Bessemer Road
Welwyn Garden City
AL7 1HE

T: +44 (0)1707 527630

DUBLIN

Grosvenor Court
67A Patrick Street
Dun Laoghaire
County Dublin, Irelan

T: +353 1 231 1041

FRANKFURT

Nieder-Ramstädter Str.
25 Ober-Ramstadt
D-64372
Frankfurt

T: +49 (0) 6154 / 63 410

www.pinnacleconsultingengineers.com