OCSC

O'CONNOR · SUTTON · CRONIN

MULTIDISCIPLINARY CONSULTING ENGINEERS

W369: HILL STREET, DUNDALK

CONSTRUCTION METHODOLOGY & (EMP)

For

CABRIZ GROUP

14 January 2025

NOTICE

DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION

1.1 APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by CARIZ Group to prepare a Construction Methodology & Environmental Management Plan for the proposed housing development at Hill Street, Dundalk, Co. Louth.

1.2 ADMINISTRATIVE JURISDICTION

The proposed development is located in the jurisdiction of Louth County Council (LCC), and therefore the site-specific assessment on flood risk was assessed with reference to the following:

- Louth County Council Development Plan (2021 – 2027);
- Greater Dublin Strategic Drainage Study (GDSDS);
- The Planning System and Flood Risk Management Guidelines for Planning Authorities (Department of Environment, Heritage and Local Government and the Office of Public Works).

1.3 SITE LOCATION

The subject site is located off the R132 Dublin Road/Hill Street in Dundalk, County Louth. The proposed development site is immediately bound by:

- The R132 Dublin Road/Hill Street, to the south-west;
- The Long Avenue, to the north;
- Mourne View to the east; &
- The Blackwater River to the west and north.

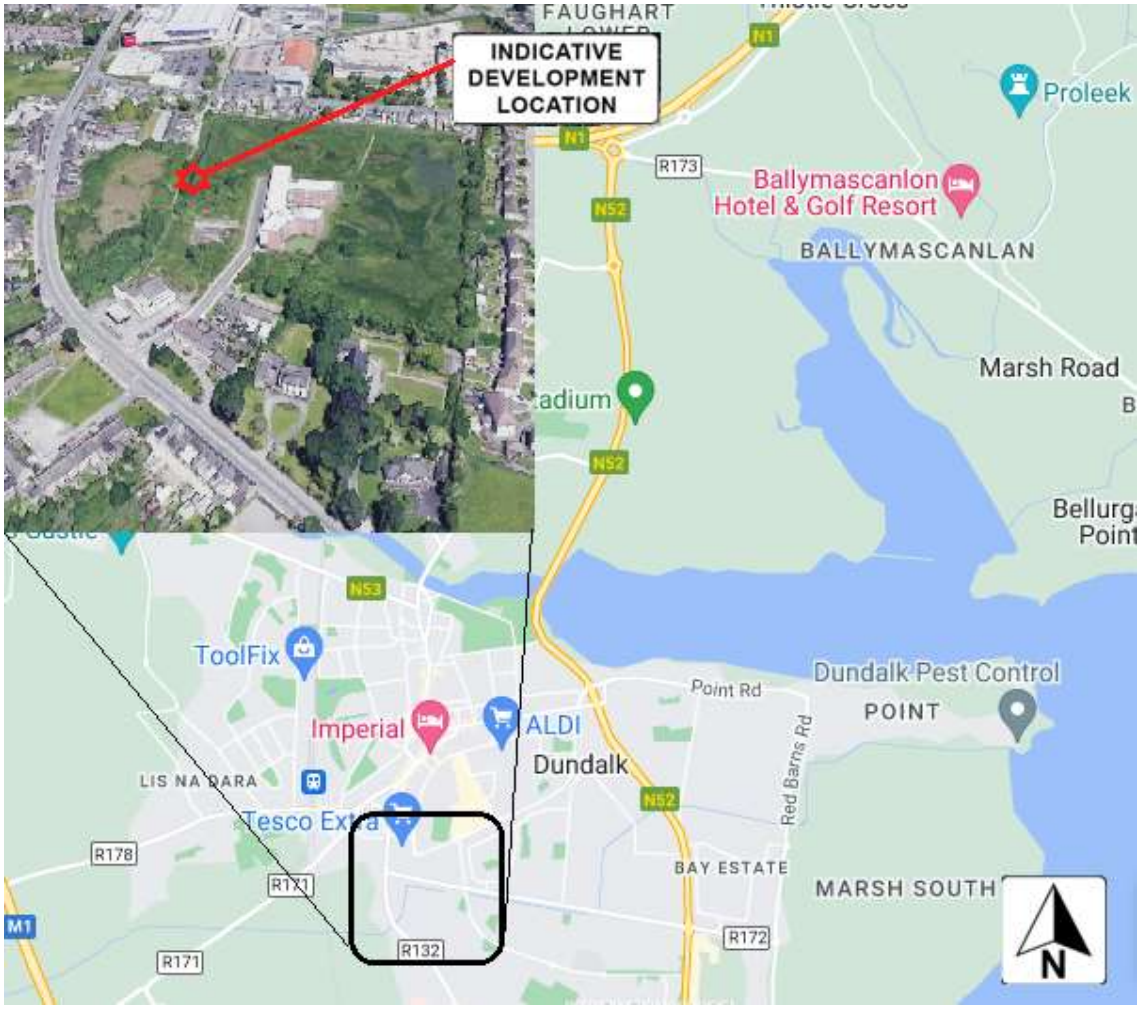


*Figure 1: Site Location (**www.myplan.ie**)*

1.4 EXISTING SITE OVERVIEW

The overall development site area is c.3.054 hectares. The site is currently used as open green space. The development site is bounded by residential properties to the north and west, with an apartment building located to the east and accessed via Mourne View Road with frontage onto Dublin Road / Hill Street. The site is generally flat, but due to the flood risk mitigation measures, levels in the eastern side of the site will be increased.

Currently there is no known archaeological sites connected with this site, an archaeological watching brief will be undertaken during excavation works.

There is no known species of ecological importance on the site, but this will be confirmed and updated by the ecological clerk of works prior to the commencement of construction and monitored throughout the project.

1.5 PROPOSED DEVELOPMENT CONTEXT

The proposed residential development will consist of 194no. apartments in 8no. distinctive blocks (A to H) ranging in height from on to five storeys together with all associated public, communal and private open space, car parking, cycle parking, roads infrastructure and site services. The development will be supported by a childcare facility within Block A with allocated car parking and outdoor play area. The site will be accessed from a new vehicular entrance onto Hill Street and via the existing access road onto Hill Street at Mourne View Hall. There is existing pedestrian/cycle route through the site from Hill Street to Avenue Road which will be maintain and integrated into the landscape masterplan for the site. Proposed buildings are set back by 10m along the river creating a riverside walk featuring play zones and informal kick about spaces with opportunities for sitting/passive recreation. A pedestrian/cycle crossing point is proposed over the Blackwater River to the existing greenway increasing permeability and providing the most direct route to the retail area to the north centred around Tesco and Lidl supermarkets to sustainable modes of transport. Refer to Appendix A for proposed site layout.

2 SCOPE OF CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN

This report has been prepared as an outline construction strategy, setting out construction methods and activities required for the construction of Hillside Apartment Blocks, associated roads, pavements and services and outlines a plan to demonstrate how works can be achieved in a logical, sensible, and safe sequence with the incorporation of specific standard procedure measures to the potential impact on people and the environment. This methodology will be required to be interrogated and developed by the Main Contractor prior to commencing works on site. It is noted that this document should be viewed as an outline plan with the fully detailed Construction and Environmental Management Plan to be developed by the appointed main Contractor in consultation with the developer and Louth County Council planning conditions prior to works commencing on site. The plan also demonstrates proposed construction traffic routes and areas for construction traffic set down and contractors compound areas.
Discussed in the following sections are:

- Construction Management issues
- Pre-Construction Activities
- Foundations & Substructure
- Services
- Superstructure
- Construction access routes
- Construction compounds

3 CONSTRUCTION MANAGEMENT

3.1 OVERVIEW

This report has been prepared as an outline construction strategy, setting out construction methods and activities required for the construction of Hillside Apartments, associated roads, pavements and services and outlines a plan to demonstrate how works can be achieved in a logical, sensible, and safe sequence with the incorporation of specific standard procedure measures to the potential impact on people and the environment. This methodology will be required to be interrogated and developed by the Main Contractor prior to commencing works on site.

In broad terms, the project will be sequenced as follows:

- Pre-construction activities; access/ site set up/ hoarding;
- Site Clearance and demolition works;
- Concrete Strip Foundations;
- Site services;
- Construction of Superstructure;
- Hard and soft landscaping;
- Completion;

3.2 PROJECT DELIVERY

The project is proposed to be constructed in a single phase incorporating all new building works, boundary walls, new road junction / access roads, pedestrian pavements, storm water networks including attenuation tanks, foul water networks including foul sewer pumping chamber. The works will also involve new watermain networks. It is proposed to commence the proposed development in mid-2025 and take approximately 30 months to complete.

3.3 SITE MANAGEMENT

The Main Contractor will be responsible for overall site management for the duration of the proposed works. Discussed below are a number of areas which the Main Contractor will be required to address within their Construction Environmental Management Plan and during the works period.

3.3.1 HEALTH & SAFETY

The Main Contractor will act as PSCS, must progress their works with reasonable skill, care, diligence and to, at all times, proactively manage the works in a manner most likely to ensure the safety and welfare of those carrying out construction works, interacting stakeholders, adjoining residents, and the public. Contractors are further required to ensure that, as a minimum, all aspects of their works and project facilities comply with good industry practice, statutory instruments, and all necessary consents. These will be further expanded and developed within the Main Contractor's Construction Management Plan in relation to Health & Safety requirements.

3.3.2 HOARDING & SITE SECURITY

The construction site will require a site compound located within the redline boundary and perimeter hoarding by the Main Contractor following possession of site to enclose the proposed works. The overarching consideration in all elements of the site set-up will be to ensure the works can be undertaken in a safe manner for members of the public, the Main Contractor and their staff as well as protecting the surrounding environment.

The Main Contractor will commence by erecting suitably robust hoarding around the site perimeter. The hoarding must ensure segregation of the general public from the proposed works areas. This will typically take the form of a standard Heras fence type hoarding. Appropriate access points will be provided to the site through the hoarding.

The proposed hoarding alignment for the main construction phase of the works is indicatively shown in a purple line in Figure 2 below. It is noted that this plan layout may be altered locally during the works to facilitate different works such as foundations, works to proposed road junction, craneage operations, drainage and the like.

Figure 2: Proposed Site Hoarding adjacent to the Proposed Works – Purple Ling

The Main Contractor will be responsible for the security of the site for the duration of the works. The Main Contractor will be required to:

- Install and maintain adequate site hoarding to the site boundary with adequate controlled access and egress points;
- Ensure that the existing greenway access is retained;
- Maintain site security staff at all times;
- Install secure access in the form of turn-styles and gates for staff;
- Ensure restricted access control is maintained to the works;
- Operate a site induction process for all site staff and visitors;
- Ensure all staff have current 'Safe Pass' and Construction Skills Cards;
- Monitor and record all deliveries to site and all material/waste taken off site for disposal to appropriate licences facility.

Due to the existing greenway running through the site, the main contractor will be responsible for managing security along this route, while maintaining access as far as possible, in agreement with Louth County Council and stakeholders.

All staff and operatives will be fully inducted into the security, health and safety and logistic requirements on site. Refer to OCSC Site Compound drawing No W369-OCSC-XX-XX-DR-C-0120-S2-P01 for details.

3.3.3 SITE COMPOUND

The extent of compound and facilities required by the Main Contractor will vary throughout the duration of the works. The initial phase of works involving site set-up, condition surveys, (where and if required) and commencement of siteworks are likely to have limited requirements for Contractor's facilities. As the works advance, the Main Contractor's compound and facilities will be required to be enhanced. It is envisaged that such facilities will be provided within the hard and soft landscaped portions of the development, with locations to be selected by the Main Contractor to best suit their works methodologies and sequencing in agreement with the developer, as the site is divided by the existing greenway, the Main Contractor may choose to arrange compound and facilities in both locations. As the works near completion, the requirements for facilities will be reduced and thus will allow the Main Contractor to remove sections of the compound to be able to complete the hard and soft landscaping works. Possible locations for the Contractors compounds are to be agreed.

3.3.4 SITE ACCESS & EGRESS

As the site is divided by the existing greenway into 2 sections, each will have its own entrance. Plot B will be accessed by an existing road and junction to the R132, taking care to consider the existing residents and users of this road. A new junction has been designed to access Plot A, the contractor may decide to undertake the construction of the new junction first, to allow access to the site, or a temporary access may be proposed to allow initial construction to be undertaken. It is envisioned that the site access drawings off R132 will be as shown in Figure 3:

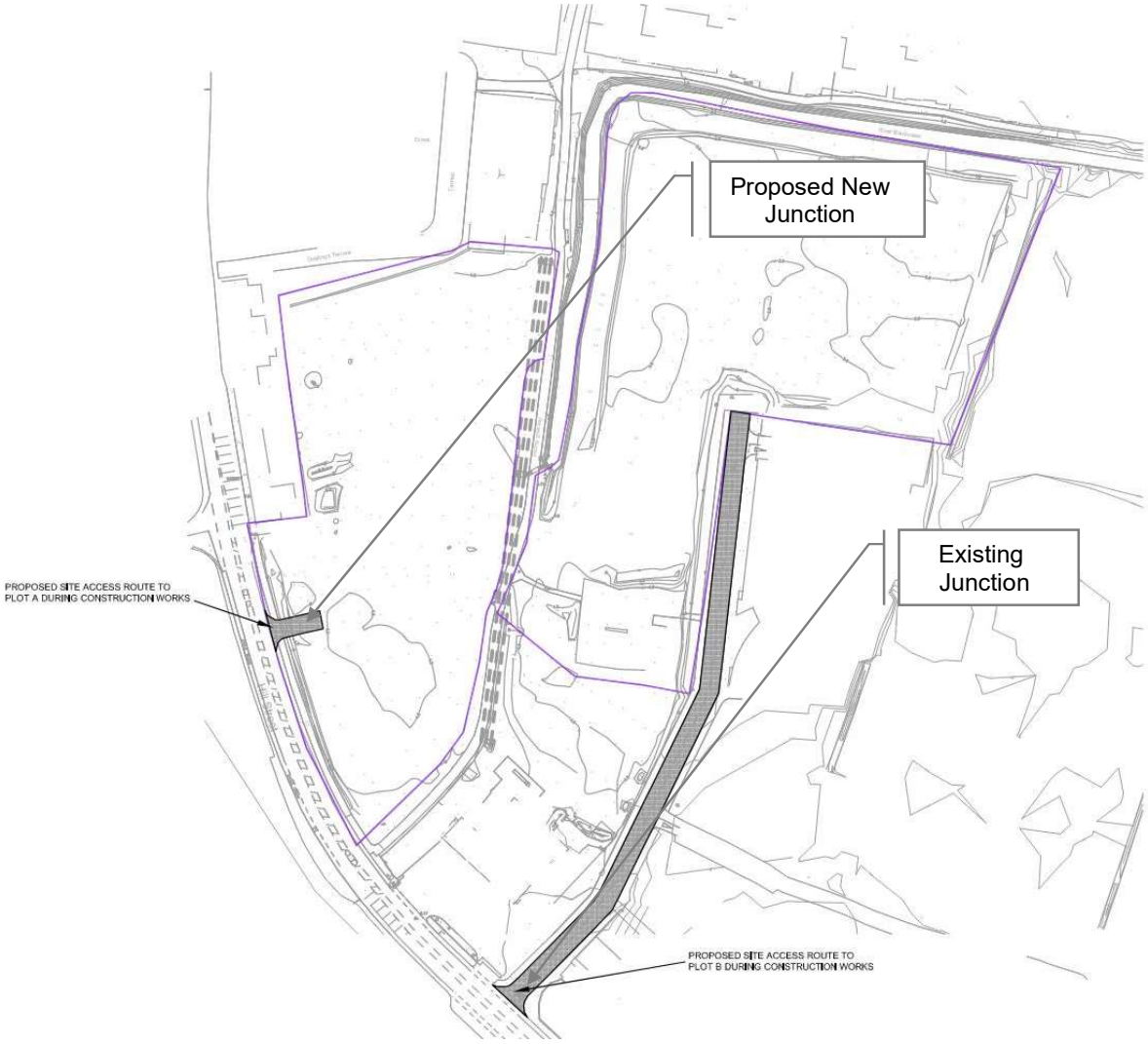


Figure 3:Vehicular and Pedestrian Construction Routes

3.3.5 DELIVERIES TO SITE

Construction deliveries to site will make use of the access and egress point indicated in Figure 5 above. A "just in time" approach will generally be required for delivery of particular materials such as concrete and prefabricated structural elements. That is to say that deliveries of materials will be planned, sequenced, and programmed to ensure that materials as they are required on site. Works requiring multiple vehicle deliveries to site, such as concrete pours, should be planned well in advance. The Main Contractor will be responsible for ensuring that this will not impact upon the movement of the public, pedestrians or vehicles using the existing Hill Street R132 traffic route. The Main Contractor will be required to provide a flagman to direct construction vehicles entering/exiting the site and manage the interaction between public and construction vehicle movements in a safe manner as required.

3.3.6 STORAGE OF MATERIALS ON SITE

There is scope for some storage of materials around the site. Any materials stored on site will be done so in a safe manner. Any fuels or chemicals on site will be stored within double sealed tanks within bunds using standard practice procedures. A dedicated plant refuelling point will be set up on site. All fuels and chemicals required to be stored on site will be clearly marked.

3.3.7 REMOVAL OF MATERIALS FROM SITE

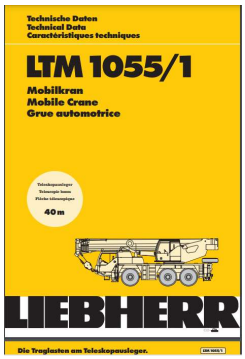
The removal of materials from site will primarily be undertaken during the initial stages of the works. This will involve the removal of excavated material to facilitate the construction of the foundations, attenuation tank and foul water pumping chamber envisaged to be required. This phase of works will need to be managed effectively to ensure that no queuing of trucks occurs on public access routes. All trucks will have a built-on tarpaulin that will cover excavated material as it is being hauled off site and wheel wash facilities will be provided at the site egress location. All vehicles will make use of the access and egress points noted in Section 3.3.4 above. The Main Contractor will be required to provide a flagman to direct construction vehicles entering/exiting the site and manage the interaction between public and construction vehicle movements in a safe manner around the proposed construction vehicular and staff routes.

Earthworks will take place during periods of low rainfall to reduce run-off and potential suspended solids generation. Wheel washers and dust suppression are to be employed on site with regular plant maintenance to ensure minimal sediment build of sediment on roads to minimise risk to surface water drainage.

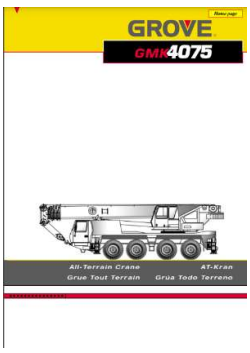
3.3.8 CRANEAGE

The works may require the use of cranes on site. The final chosen structural form of the proposed building works will determine the likely type of cranes, the type and size of crane, mobile cranes or otherwise would be used for the installation of the superstructures and concrete pours. Crane bases may be required and size and location to be advised.

Crane booms vary in length from about 10m to 60m and the payload versus outreach depends on the crane deployed for the task.



5Tonnes @ 20m Outreach



7 Tonnes @20m; 5 Tonnes @24m.

3.3.9 WATER SUPPLY

The Contractor will require a water source for the duration of the works. Water will be required for:

- Contractor's welfare facilities;
- Vehicle washdown (use recycled water where feasible);
- Dust suppression (as applicable);

It is proposed that the Main Contractor will be required to connect to an existing Irish Water Main which is located south of the site adjacent to the R132 road as part of the proposed site set up works for the purpose of water supply during the works in accordance with Irish Water requirements.

3.3.10 GROUNDWATER & SURFACE WATER CONTROL

The proposed surface water has been designed to discharge to the River Blackwater via gravity networks, attenuation tanks, oil interceptor and flow control valves. Currently the site does not drain and has very limited infiltration, currently the site drains mainly by evaporation. The potential to use raingardens and vegetation to reduce the surface water discharge is very limited, although it would provide other potential benefits from an aesthetic and biodiversity standpoint. The site has been designed with this criterion and will not rely on biodiversity to reduce surface water runoff, it is anticipated that the greenfield runoff rate of 2.75 to 3 l/s/ha will be applied to this site and the drainage has been design accordingly.

The Contractor will be required to prepare and implement a site wide Surface Water collection and disposal plan that fully details all measures for groundwater and surface water control for agreement with the local authority prior to discharge of same from site.

As in Plot B, the site currently sits lower that the riverbanks, it is important to manage surface water flow, to avoid a large uncontrolled discharge as it is proposed to increase the level across the site to mitigate flooding from the river. With this context, as the proposed flood mitigation pond base level is at the existing ground level, the pond can be used initially as a construction settlement pond connecting it through potentially through the final attenuation tank to discharge to the River Blackwater via the proposed headwall and flow control system.

In Plot A, as the site currently drains towards the R132 road, it is proposed that this will continue with a settlement pond and flow control to a temporary connection in the road drainage. Details of the proposed collection, treatment, and discharge of surface water during the construction phase is given on drawing No W369-OCSC-XX-XX-DR-C-0120 – refer to Appendix A. The following Figure 4 is an extract from this drawing.

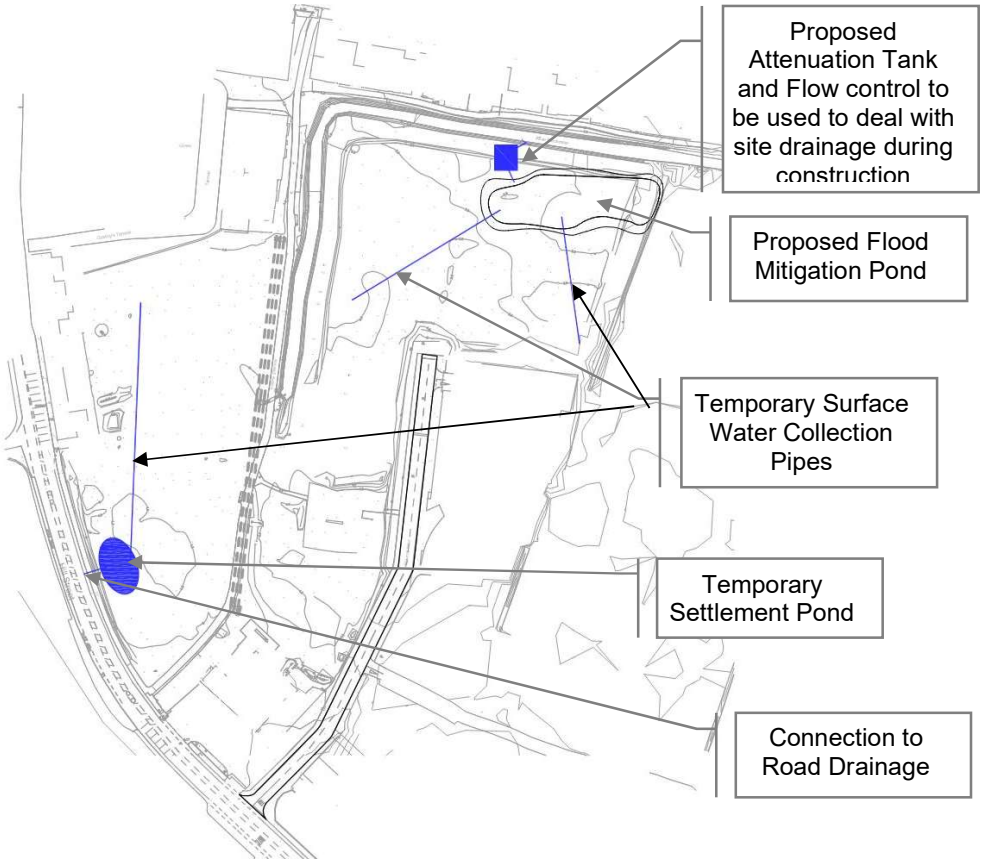


Figure 4: Surface Water Disposal during Construction

Surface Water will be collected via a perforated drain constructed within the engineering fill (commencing at the location of the site offices, oil compound and staff parking) and a temporary linear drain which will flow by gravity into a Silt Trap manhole. Water will be discharged as discussed:

The stone engineering fill, linear drain, settlement ponds, silt trap manholes and flow controls will provide the collection, reduction in flow velocities and filter out sedimentation / pollutant's removal during the construction phase of the works to prevent any unclean water discharging into the River Blackwater north of the site or the road drainage. Refer to drawing No W369-OCSC-XX-XX-DR-C-0120 which details the surface water collection, treatment, and discharge from the site – refer to Appendix A.

If ground water is encountered during excavations, it will be pumped from the excavation and discharged through a pumped main into a temporary surface water manhole (TSWM) which then flows by gravity into a temporary storm water silt trap manhole discharge into the proposed permanent flood mitigation pond.

Causeway Geotech carried out soakaway tests (October 2023) to determine the suitability of the existing ground to permeate surface water to ground. This report determine that was site was not suitable for discharge to ground. A copy of this report is found in the site-specific flood risk assessment:

3.3.11 FOUL DRAINAGE & GREY WATER DISPOSAL.

Currently the site has a wastewater connection point located to the western side of the Blackwater River as identified in the IW feasibility letter. The Contractor will be responsible for provide onsite welfare facilities including a waste management plan to collect wastewater / grey water on site and disposal, the contractor will arrange with IW for all temporary and permanent connections. Under no circumstance is any wastewater/grease/oils to be allowed to enter the existing ground or temporary storm water network.

3.3.12 HOURS OF WORK

It is envisaged that the hours or work for the project will be as follows, unless conditioned otherwise:

- Monday to Friday 7.00am to 7.00pm
- Saturday 8.00am to 2.00pm
- Sundays and Bank Holidays No activity on site

We note that certain activities may be required, subject to prior agreement with the developer and conditions set down in planning by Louth County Council to be undertaken outside of these working hours.

3.3.13 PUBLIC AWARENESS OF ONGOING WORKS

The site is located adjacent to the existing R132 road. The Main Contractor will be required to ensure that all agents, sub-contractors, and suppliers act in a manner to minimise disruption to existing vehicular and pedestrian traffic. Construction staff will be encouraged to remove all Personal Protective Equipment (PPE) and use wash down facilities before leaving the site.

The contractor will be responsible for keeping people informed of site operations, through site signage.

3.3.14 ENVIRONMENTAL MANAGEMENT

The appointed Contractor will be required to be accredited with ISO 14001 Environmental Management Systems and work with the Ecological Clerk of Works.

3.3.15 DUST

A Dust Minimisation Plan will be formulated for the construction phase of the project. Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall put in place a regime for monitoring dust levels in the vicinity of the site during the works using the Bergerhoff Method. The minimum criteria to be maintained shall be the limit specified by the environmental Protection Agency (EPA) for licensed facilities in Ireland which is 350mg/m^2/day as a 30-day average. The Contractor shall continuously monitor

dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project.

The level of monitoring and adoption of mitigation measures will vary throughout the construction works depending on the type of activities being undertaken and the prevailing weather conditions at the time. Additional monitoring and mitigation such as damping down of earth mounds on site would be undertaken if the prevailing weather conditions are dry and windy. It is noted that the stockpiling of excavated material on site is to be minimised with an immediate removal of excavated materials.

Where soil is to be stockpiled it is to be done within the site boundary confines and at a minimum 50m from any watercourse. No soil stockpile is be located under a potential hazard, eg., powerlines that cross the site.

3.3.16 DIRT

There will be small volumes of traffic generated by aspects of the construction works, particularly during the excavations and groundworks phase, it shall be a requirement that the Contractor shall ensure, where appropriate:

- A wheel wash facility shall be provided at each egress point from the site.
- All vehicles shall be required to pass through the wheel wash facility before exiting the site to the public & private road networks. The wheel wash must be kept in place and used throughout the critical dirt generating activities of the construction works.
- A temporary linear drain will be located downstream of the wheel wash facility to ensure no water use din the cleaning process exist the site and is instead diverted into the proposed filtration bed given on drawing No W369-OCSC-XX-XX-DR-C-0120 – Refer to Appendix A.
- Road sweepers shall be retained for the duration of the construction works with an increase in cleaning during the critical dirt/dust generating works. Regular road drain clearing will be implemented.
- Water supplies shall be recycled for use in the wheel wash. All surface waters shall be drained through appropriate pipe networks and filter material prior to discharge from the site. Refer to drawing No W369-OCSC-XX-XX-DR-C-0120.

3.3.17 NOISE

We do not envisage any site operations that will cause excessive noise over and above normal construction activities. The Contractor shall be required to monitor baseline noise levels at the site prior to commencement of the project, with a noise monitoring regime being developed for the duration of the construction works on site. Variation of noise levels from those experienced as part of everyday life in the area can result in disruption. The Contractor shall implement measures to minimise and mitigate noise levels during construction. Specifically, noise levels shall be kept below levels identified in Table 2 below or if further limits as imposed by

the Local Authority. Peak noise levels outside of the one-hour dBA measurement shall be in line with HAS guidelines.

Period over which criterion applies		Noise Impact Criterion ($L_{Aeq, 1hr}$)
Monday to Friday	Day 07:00 to 19:00	75dBA
	Evening: 19:00 to 22:00	60dBA*
	Night 22:00 to 07:00	The higher of 45dBA of the ambient level*
Saturday: Day 08:00 to 14:00 (work outside these hours no higher than 45dB of ambient noise level)		70dBA
Sundays and Bank Holidays	Day 08:00 to 14:00	60dBA*

Note-*Construction activity at these times, other than that required for emergency works, will require the explicit permission of the relevant local authority.

Table 2 – Noise Limit Criteria

Plant machinery will be chosen to avoid significant low-frequency noise emissions which increases nuisance potential to Bats in surrounding areas. Noisier plants will be positioned to optimise screening by other plant machinery. Plant machinery will be turned off when not in use.

3.3.18 VIBRATIONS

Vibration monitoring (as a minimum) of the following areas shall be carried out for the duration of the works: Vibration monitoring stations should continually log vibration levels (including associated frequency) using the Peak Particle Velocity parameter (PPV, mm/s) in the X, Y and Z directions, in accordance with BS ISO 4866: 2010: Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures. Vibration monitors, of both aural and visual type, with real time outputs to be located at agreed points.

The mounting of the recording equipment to the vibrating structure (or surface supporting sensitive equipment) shall comply with BS ISO 5348: 1998: Mechanical vibration and shock – Mechanical mounting of accelerometers. In summary, the following ideal mounting conditions apply:

- The recording equipment and its mountings should be as rigid as possible;
- The mounting surfaces should be as clean and flat as possible;
- Simple symmetric mountings are best, and;
- The mass of the mounting should be small in comparison to that of the structure under test.

The vibration limits for the duration of the construction works shall be set in line with the vibration criteria to be adopted at nearby sensitive on-site historical properties to avoid cosmetic damage, as taken from the German Standard DIN 4150-3 (1999-02) *Structural Vibration – Effects of vibration on structure*.

Traffic light system to be in place consisting of:

- Green-vibrations below all threshold limits-OK to proceed;
- Amber-vibrations exceed first threshold limit (2/3^{rds} of limit)-Stop and check;
- Red-vibrations exceed second threshold-Stop and action.

3.3.19 HARMFUL MATERIALS

Harmful materials will be stored remote from the site works for use in connection with the construction works only. The following on site measures will be included for the works to prevent any spillages of fuels.

- Designation of bunded refuelling areas on site;
- Provision of spill kit facilities across the site and personnel trained in its use;
- Where mobile fuel bowsers are used, the following measures will be taken:
    - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
    - The pump or valve will be fitted with a lock and secured when not in use;
    - All bowsers to carry a spill kit and operatives must have spill response training;
    - Portable generators or similar fuel containing equipment will be placed on drip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during construction, the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around site, they should be done so secured and on spill pallets;
- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

3.3.20 INVASIVE SPECIES PREVENTION MEASURES

Good construction site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (e.g., Rhododendron, Japanese Knotweed, Giant Rhubarb etc.) by thoroughly washing vehicles prior to entering the site. Wheel washes will be provided at both plots prior to leaving the site. Materials used on site will be confirmed to be from a clean source that is free of invasive species.

3.3.21 SITE DRAINAGE

As construction advances there may be a small requirement to collect and treat surface water within the site in addition to the measures outlined on drawing No W369-OCSC-XX-XX-DR-C-0120. This will be completed using perimeter swales at low points around the construction areas, and if required water will be pumped from the swales into sediment bags prior to overland discharge allowing water to percolate naturally to ground. Daily monitoring and inspections of site drainage during construction will be carried out. A log will be maintained of daily inspections and status of drainage features. The log will be available on site for inspection.

3.3.22 SOIL RESOURCES

All soil resources, grades of earthworks, fill in aggregate materials will be clearly identified;

An assessment of soil resources will be undertaken to identify the potential for use within the works; and,
A sustainable use for any surplus soil on the site (both topsoil and subsoil) will be identified, where possible, in line with legal requirements.

Appropriate storage areas will be utilised for each category of soil, fill and aggregate material - designated storage areas will be assigned for each category;

Bulk site deliveries will be stored in designated areas, illustrated on a site layout plan, and will be distributed as required to the correct locations;

Storage areas will be selected in order to reduce transport movements and to ensure that the possibility of erosion, flooding, cross contamination and material decay are minimised;

Careful consideration will be given to the location of soil storage mounds. The location will be as near as possible to the point of excavation and final placement to ensure that the material movement around the site is limited. Soil storage mounds will be located in areas that do not require handling or distribution until required for restoration. Different soil types will be stored in separate, not overlapping mounds and topsoil will be stripped from any areas used for subsoil storage; and,

Soil will be temporarily stored in stockpiles in order to maintain soil quality and minimise damage to the soil physical (structural) condition so that it can be easily reinstated once respread.

Soil will be stockpiled in such a way so as not to cause soil erosion, pollution to watercourses, or increased flooding risk to the surrounding area;

It will be ensured that all stockpiles have suitably designed protection - where required, stockpiled material will be seeded to limit the potential for erosion and proliferation of weeds;

Soil stripping will be timed to be carried out during dry weather, where possible;

The minimum amount of compaction should be applied when forming soil storage mounds and it should not be driven across. Topsoil mounds will be no greater than 2 m in height, and subsoil mounds no greater than 3 m unless limited space within the site necessitates this. Stockpiles will be covered were necessary to provide further protection; and,

Several methods will be employed in order to prevent contamination of soils from chemicals or other materials including appropriate chemical storage in the site compound, the use of plant nappies under all static plant, appropriate training in materials handling and storage, secure material storage areas across the site and implementation of dampening down method where dust generation has been identified. In addition, spill kits will be deployed for any spills or leaks occurring by the on-site training spill response team.
Soil moisture and soil consistency are major factors when deciding on the size and height of the stockpile and the method of formation.

As a general rule, if the soil is dry when it goes into the stockpile, the majority of it should remain dry during storage and therefore enable dry soil to be excavated and respread at the end of the storage period. Soil in a dry state is less prone to compaction, is more likely to retain a portion of its structure and will break down into a suitable tilth for landscaping. Any anaerobic soil also usually becomes re-aerated in a matter of days.
Soil stockpiled wet in consistency is easily compacted by the weight of soil above it and from the machinery handling it. In a compacted state, soil in the core of the stockpile remains wet and anaerobic for the duration of the storage, is difficult to handle and does not typically break down to a suitable tilth. A period of further drying and cultivation is then required before the soil becomes re-aerated and acceptable for landscaping. If the soil is wet, then stockpiling in windrows until the soil has dried out and them collating into stockpiles is the preferred methodology.

3.4 WASTE MANAGEMENT

3.4.1 INTRODUCTION

The appointed contractor will be responsible for the preparation of a detailed site-specific resource and waste management plan (RWMP) to be submitted to the developer prior to commencement of works. Discussed below are key areas that will be developed upon by the Main Contractor in their detailed plan.

3.4.2 WASTE MANAGEMENT IN IRELAND

Overarching Legislation

The overarching legislative instruments governing waste management in Ireland are as follows:

- Waste Management Act 1996 (S.I. No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2001 (No. 20 of 2011)
- Sub-ordinate legislation includes:
- European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) as amended 2011 (S.I. No. 323 of 2011) and 2016 (S.I. 315 of 2016);
- Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended 2008 (S.I. No. 87 of 2008), 2015 (S.I. No. 197 of 2015) and 2016 (S.I. No. 24 and 346 of 2016);
- Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008), 2014 (S.I. No, 320 and No. 546 of 2014) and 2015 (S.I. No. 198 of 2015);
- Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004), 2010 and (S.I. No. 350 of 2010);
- Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended 2003 (S.I. No. 61 of 2003) as amended 2004 (S.I. No. 871 of 2004), 2006 (S.I. No. 308 of 2006) and 2007 (S.I. No. 798 of 2007);
- Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997);
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015) as amended 2011 (S.I. No. 434 of 2011) as amended 2012 (S.I. No. 221 of 2012);
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014);
- European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended 2014 (S.I. No. 349 of 2014) and 2015 (S.I. No. 347 of 2015);
- Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009);
- European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 191 of 2015);
- Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000);
- Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended;
- Waste Management (Movement of Hazardous Waste) Regulations 1998 (S.I. No. 147 of 1998);

- European Communities (Transfrontier Shipment of Waste) Regulations 1998 (S.I. No. 147 of 1998) as amended 1994 (SI 121 of 1994);
- European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015).
- Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended by Protection of the Environment (amendment) Act 2003 as amended;
- Planning and Development Act 2000 as amended (S.I. No. 30 of 2010) and 2015 (S.I. No. 310 of 2015);
- Protection of the Environment Act 1992 as amended 2003 (S.I. No. 413 of 2003) and by Planning and Development Act 2000 as amended (S.I. No. 30 of 2010).

The above Acts and Regulations transpose European Union policy and Directives into Irish law. The over-riding 'Duty of Care' principle implies that the producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal.). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to transport waste to the final waste disposal site.

A waste collection permit, issued by the National Waste Collection Permit Office (NWCPO), must be held by every waste contractor engaged on the project. Waste receiving facilities must also be appropriately permitted or licensed to accept waste. Operators of such facilities cannot receive any waste, unless in possession of a waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments or a waste licence granted by the Environmental Protection Agency (EPA). The permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled and/or disposed of at the specified site.

National Waste Management Policy

The 1998 '*Changing Our Ways*' policy document by the Irish Government identified objectives for the prevention, minimisation, reuse, recycling, recovery, and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within an initial five-year period with incremental increases to at least 85% by 2013. A waste industry task force of the *Forum for the Construction Industry* released '*Recycling of Construction and Demolition Waste*' recommending the development of a voluntary construction industry programme to meet Government objectives for the recovery of C&D waste. '*A Resource Opportunity - Waste Management Policy in Ireland*' published in 2012 stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. In respect of C&D waste, the report commits to undertaking a review of specific producer responsibility requirements for C&D projects above a certain threshold. The National Construction and Demolition Waste Council (NCDWC) published '*Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects*' in 2006 in conjunction with the Department of the Environment, Heritage, and Local Government (DoEHLG). The Guidelines outline the issues that need to be addressed at the pre-planning stage

of a development all the way through to its completion. These Guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle, and reuse wastes;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for waste manager and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e., waste recycling companies, Limerick City and County Council etc.

In accordance with Section 3 of the Guidelines Construction and Demolition Waste Management plans should be submitted as part of development proposals for projects in excess of any of the following thresholds:

- New residential development of 10 units or more;
- New developments other than above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,000m^2;
- Demolition/renovation/refurbishment projects generating in excess of 100 cubic metres in volume of construction and demolition waste, and;
- Civil engineering projects in excess of 500 cubic metres of waste materials used for development works on the site.

3.4.3 WASTE CATEGORISATION

Typical non-hazardous and hazardous waste streams generated by construction and demolition activities at typical sites are shown in Table 3 along with their accompanying European Waste Code (EWC) Classification. It is anticipated that the non-hazardous materials listed above will be encountered during the proposed works with the potential for some of the hazardous materials as discussed over.

Waste Materials Categorisation		
Category	Description	Code
Non-Hazardous	Metals	17 04
	Wood, glass, plastic	17 02
	Soil, stones, dredged soils	17 05
	Gypsum based materials	17 08
	Cardboard	15 01 01
	Glass	17 02 02
	Bituminous mixtures, coal tar, tar products	17 03

	Concrete, bricks, tiles, ceramics	17 01
Hazardous	Electrical and Electronic Components	16 02
	Liquid Fuels	13 07
	Wood Preservatives	03 02
	Batteries	16 06
	Soil and stones containing dangerous substances	17 05 03
	Waste construction material containing asbestos	17 06 05
	Other construction and demolition wastes containing dangerous substances	17 09 03s

Table 3 – Waste Material Categorisation

Non-Hazardous Materials

The classification of materials as non-hazardous and/or hazardous will be based on the www.hazwasteonine.com web based system as well as classification using Waste Acceptance Criteria in accordance with the European Communities (EC) Council Decision 2003/33/EC, which establishes criteria for the acceptance of waste at landfills.

In addition, non-hazardous waste materials are likely to be generated during all phases of the construction works from casting of concrete, through to completion of structures and mechanical and electrical services etc.

Hazardous Materials

There is the potential for hazardous materials to be uncovered, particularly during the demolitions and excavations phases of the project as discussed below:

- ***Contaminated Soil***

  The building works will require excavations to facilitate foundation construction, together with installation of below ground services Given the greenfield nature of the site, there is little potential for the soil to have elements of contaminant contained within it. An initial assessment of the site will be undertaken by OCSC to classify the materials to be encountered on site from a waste soils perspective. The Main Contractor will be responsible for the classification of all material to be removed from site and compliant disposal in accordance with the Wate Management Act 1996 as amended and all relevant Regulations.

- ***Fuels/Oils***

  There will be no site storage of fuels or oils during the demolition, excavation, or construction phases of the project. Provided that these requirements are adhered to, and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the site.

3.4.4 WASTE ARISINGS

The Environmental Protection Agency (EPA) produce figures on the amounts of waste generated by various developments. These figures are contained in EPA databases. The split between individual C&D waste categories is shown in Table 4.

Waste Types	%
Metals	2.2
Concrete, Brick, Tile, Gypsum	7.2
Bituminous mixtures	1.3
Mixed C&D waste	4.5
Soils & Stones	84.8
Total	100

Table 4 – Waste Generation

Further figures are available for typical overall waste generation figures for construction sites based on the type and scale of development.

It should be noted that until final materials and methods of construction have been determined it is not possible to predict with a high level of accuracy the construction waste that will be generated. These details will be required to be included by the Main Contractor in their RWMP to be prepared and agreed with LCC in advance of works commencing on site.

Site Waste Management Operations

Waste materials generated will be segregated on site where it is practical. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled.

Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2008, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments. Waste arising shall be handled by an approved waste contractor holding a current waste collection permit. All waste arising requiring disposal off-site will be disposed of at a facility holding the appropriate licence or permit, as required.
Written records will be maintained by the contractor(s) detailing the waste arising throughout the construction and demolition phases, the classification of each waste type, the contact details and waste collection permit number of all waste contactors who collect waste from the site and the end destination and waste facility permit

or licence number for all waste removed and disposed off-site. Dedicated bunded storage containers will be provided for hazardous wastes such as batteries, paints, oils, chemicals etc., if required.

3.4.5 RECORD KEEPING, AUDITING & CONSULTATION

Record Keeping

Records will be kept for each waste material, which leaves the site, either for reuse on another site, recycling, or disposal. A system will be put in place to record the construction waste arisings on site.
The Waste Manager or a member of his team will record the following:

- Waste taken for Reuse off-site (i.e., for capping of landfill cells or at another site);
- Waste taken for Recycling;
- Waste taken for Disposal;
- Reclaimed waste materials brought on-site for reuse.

For each movement of waste on- or off-site, the Waste Manager will obtain a signed docket from the contractor, detailing the weight and type of the material and the source and destination of the material. This will be carried out for each material type. This system will also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined.

The system will allow the comparison of these figures with the targets established for the recovery, reuse, and recycling of construction waste and to highlight the successes or failures against these targets.

Outline Waste Audit Procedure

The appointed Waste Manager on site will be responsible for conducting a waste audit at the site. A review of all the records for the waste generated and transported on- or off-site will be undertaken. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained.

A Summary Report will be prepared and compared with the established recovery/reuse/recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved. Waste management costs will also be reviewed.

Consultation

Consultation with waste contractors and CABRIZ Group Limited / Louth County Council through the construction phase will be pursued to ensure best practices for waste management are being followed on site.

3.5 CONSTRUCTION TRAFFIC

The proposed development will have a certain amount of construction traffic to facilitate the works. The construction access strategy to serve the site will still need to be developed by the Main Contractor in a manner

taking cognisance of the existing road junction and access road of both pedestrian and vehicular traffic on the R132 road adjacent to the site.

It is envisaged that construction will be via the existing site entrance at the southeast of the site.

1.1.1 TRAFFIC GENERATION

It is envisaged that traffic will be generated for the duration of the works by the proposed development. This will be from a number of sources:

- Hauling of excavated material off site;
- Hardcore and Small Volumes of Concrete deliveries;
- Deliveries of reinforcement & formwork to site;
- Deliveries of prefabricated structural steel elements if required;
- Deliveries of Timber Products
- Deliveries of building services equipment to site;
- Construction Workers.

Designated parking for construction workers will be provided within the site adjacent to the main site compound(s).

The levels of construction traffic will vary during the weeks with peak volumes predicted to be during the following activities:

- **Foundations**
  The foundation excavation work will require hauling of spoil off site. This will occur in tandem with deliveries for concrete and reinforcement for the foundations.
- **Concrete pours**
  Concrete pours will be required throughout the works, with the size/volume of same dependant on the final structural form selected. The concrete works will be required to be carefully planned, sequenced, and managed by the Main Contractor to ensure that works can be undertaken without undue disruption to the neighbourhood.
- **Deliveries of Prefabricated structural elements**
  The selection of the chosen structural form for the roof may necessitate the delivery of prefabricated steel / timber elements. These deliveries will need to be carefully planned, sequenced, and managed by the Main Contractor to ensure that they are undertaken at the appropriate time in the works sequence so as not to cause undue disruption to the neighbourhood.
- **Vehicle Maintenance and Refuelling**
  All site plant is to be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All major repair and maintenance operations

will take place off site. Vehicles will never be left unattended during refuelling. Plant refuelling methodology will be overseen and methodology agreed with by an ecological Clerk of Works.

Only dedicated trained and competent personnel will carry out refuelling operations and plant refuelling procedures shall be detailed in the contractor's method statements.

1.1.2 CONTENTS OF TRAFFIC MANAGEMENT PLAN

The Construction Phase Traffic Management Plan will be prepared by the appointed Contractor and shall identify:

- Primary Contact Name;
- Primary Contact Mobile Phone Number;
- Secondary Contact Name;
- Secondary Contact Mobile Phone Number.

The primary contact shall act as a Liaison Officer with the Local Authority, Gardai, local residents and businesses.

The Construction Stage Traffic Management Plan is to be formulated with reference to the DTO publications *"Traffic Management Guidelines Manual"* and the Traffic Signs Manual". The document should contain information on the following issues:

- Temporary signage (type and location);
- Temporary road markings (type and location);
- Temporary changes to existing signage and markings required to enable a road closure within the estate, if applicable;
- Location of proposed temporary traffic signals, if applicable;
- Arrangements for local access and pedestrian access;
- Proposed lighting arrangements;
- Proposals for the use of flagmen;
- Proposals to erect barriers;
- Proposals for pedestrian movements including those of mobility impaired affected by the works;
- Arrangements that will apply during the road works.

4 PRE-CONSTRUCTION ACTIVITIES

4.1 PRIOR TO COMMENCEMENT OF DEVELOPMENT

Prior to any site works commencing, the Main Contractor will carry out the following:

1) Prior to the mobilisation of any works onsite, an Ecological Clerk of Works (ECoW) will give a toolbox talk on the sensitivity of the work site to all workers. The ECoW will provide site-specific practical and proportionate assistance to the contractor to achieve compliance with environmental legislation and oversee the works.
2) Investigate / identify the exact location of and tag all existing services and utilities around and through the site with the assistance of the relevant Local Authority and utility companies, where applicable.

4.2 SITE SET UP, SECURITY AND HOARDING LINES

Temporary hoarding lines and site security will be set up to site boundary lines, as required for the duration of the works.

The Contractors traffic management plan will identify staging areas, delivery of materials, take account of pedestrians and cyclists on the pavements south of the site adjacent to the R132 Road, strategy for any large concrete pours, removal of demolition waste material, traffic routes etc.

Access gates will be operated by a flagman who will divert incoming / outgoing vehicles / pedestrians and general traffic as necessary.

A number of surveys will be required prior to works commencing on site. This includes:

- Baseline readings for noise, vibration, dust etc in advance of the establishment of monitoring regime and action of same;
- Surveys to identify toxic/hazardous materials which may be present on site.

5 FOUNDATION AND SUB STRUCTURE WORKS

5.1 OVERVIEW

A detailed site investigation of the entire site will be undertaken by Causeway Geotech Ltd. to inform the proposed foundation solution upon planning approval. A topographical survey has been supplied by Douglas Wallace – Refer to figure 5.

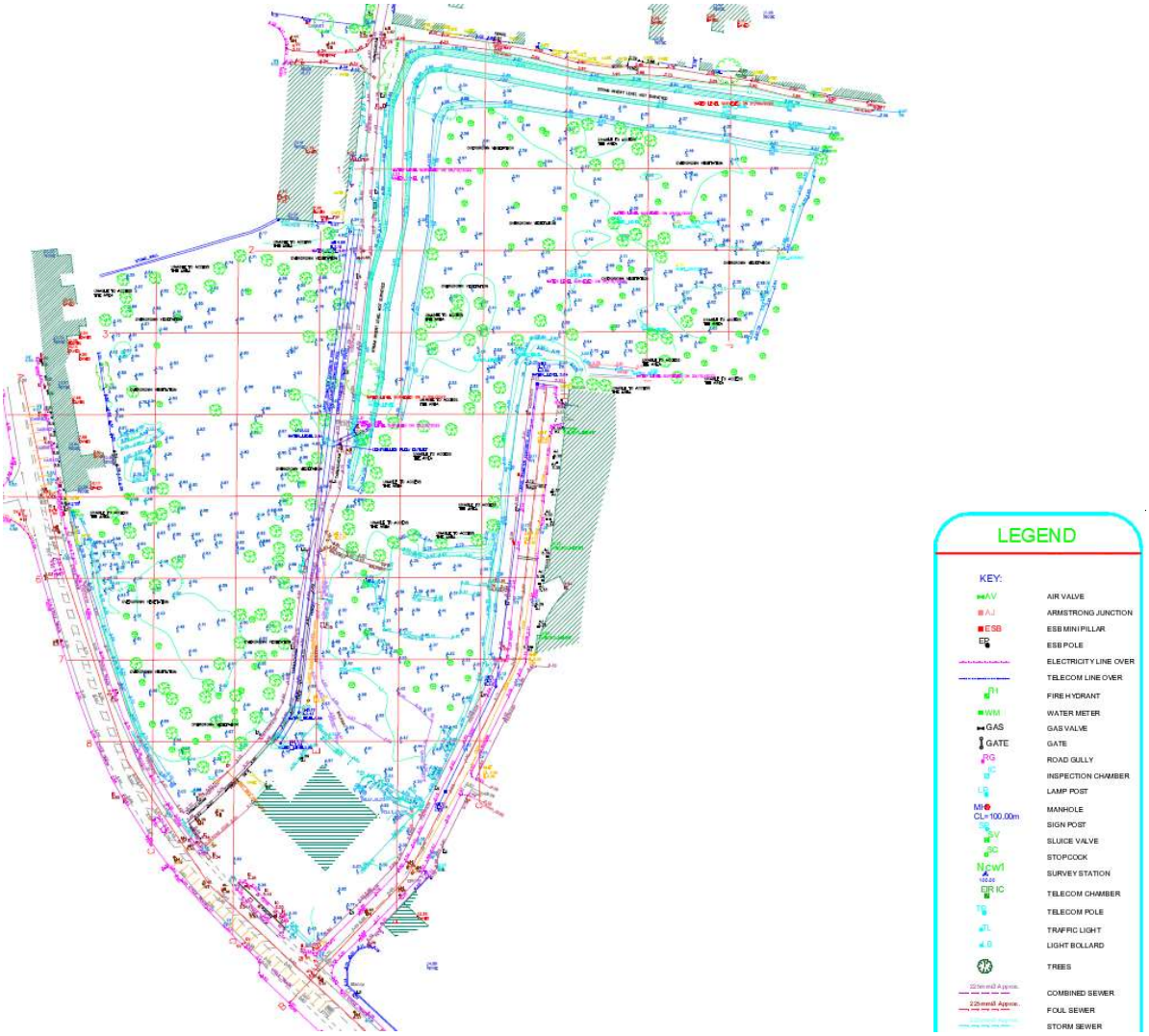


Figure 5:Topographical Survey

5.2 FOUNDATIONS

According to the draft trial pits and boreholes information received from Causeway Geotech Ltd., the existing top 2m of ground consists of mainly made ground followed by soft silt/clay. There will be approximately 1.5m deep of fill material added to raise the ground up to its final level. Pending on the final site investigation foundation recommendation, two foundation system will be considered. For reasonable ground condition, strip

foundations with trench fill concrete down to approved bearing stratum can be used. For poor ground condition, pile foundation will be required with reinforced concrete ground beam spanning between to support the superstructure. Refer to Figure 6 and 7 showing typical foundation layout.

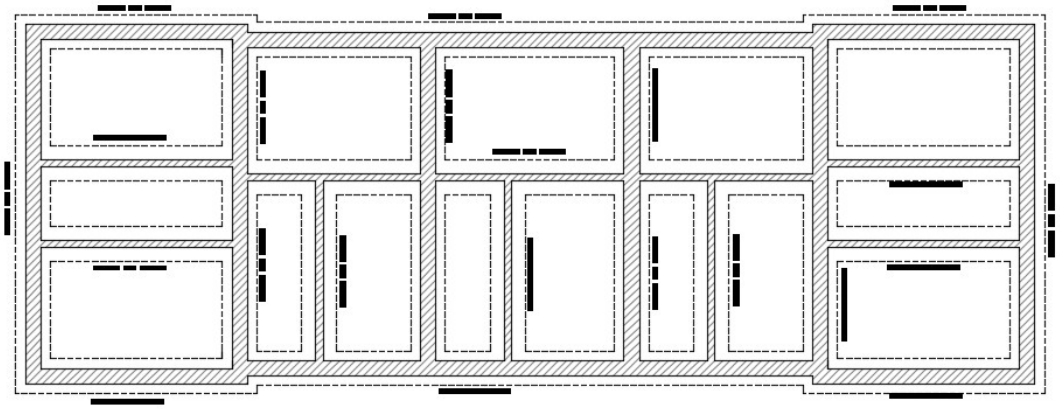


Figure 6: Typical Strip Foundation Layout

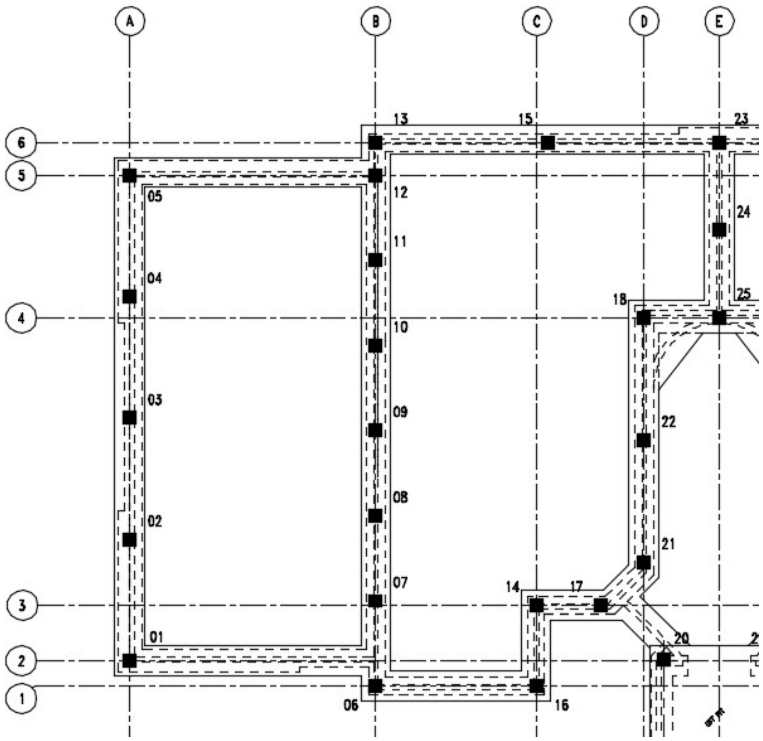


Figure 7: Typical piles and ground beams foundation layout

5.3 STRIP FOUNDATIONS

The actions required to form the concrete Strip Footing will consist of:

- Excavation of materials to approved formation.
- Installation of trench support if ground is not stable during excavation.
- Pouring trench fill concrete up to foundation level.
- Placement of reinforcement.
- Pouring concrete to form strip/pad foundation.
- Removing formwork when concrete is cured.

The following Figures 8 & 9 show typical strip foundation details.

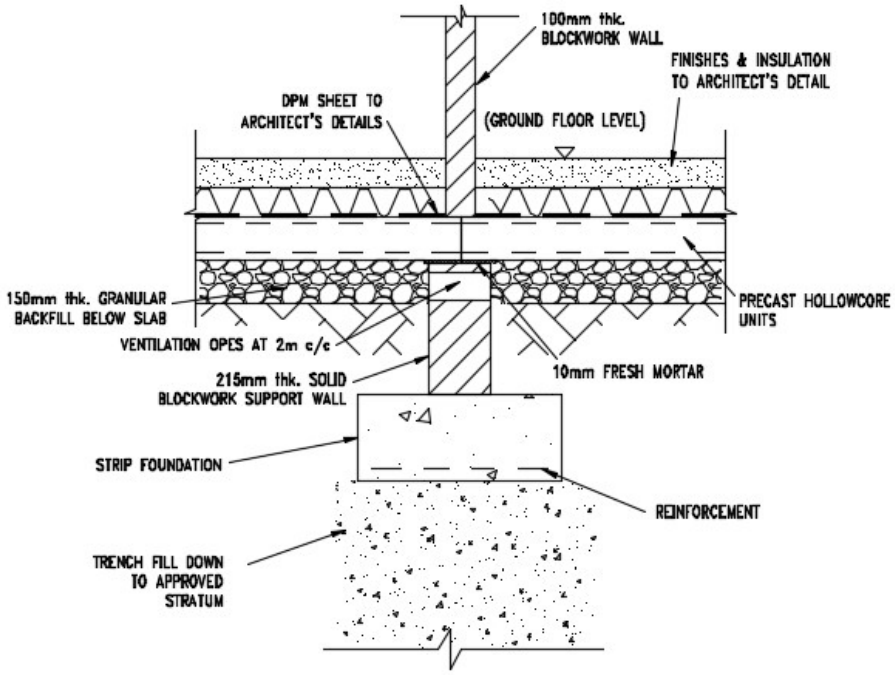


Figure 8: Typical internal foundation section through strip footing to support superstructure

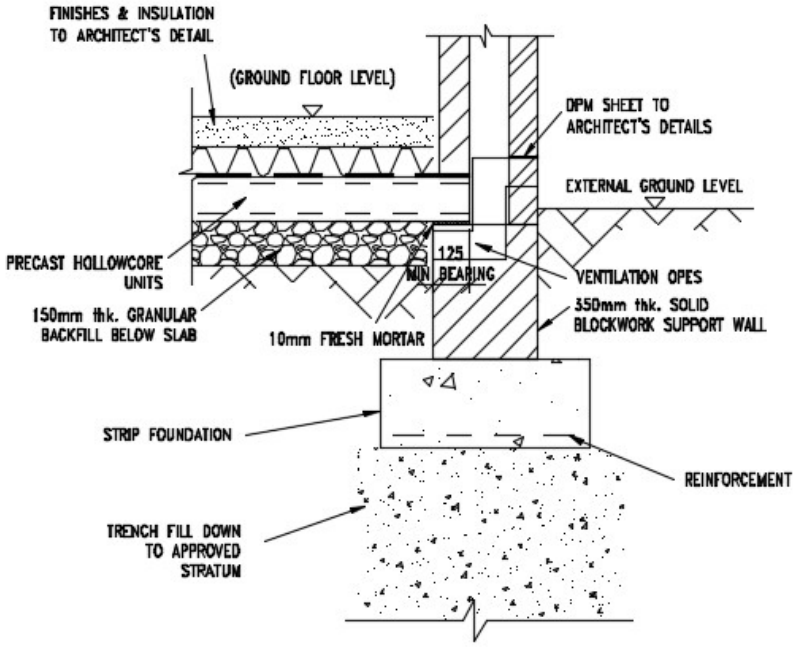


Figure 9: Typical external foundation section through strip foundation to support superstructure

5.4 PILE FOUNDATIONS & GROUND BEAMS

The actions required to form the pile foundation will consist of:

- Formation of piling mats.
- Setting out and Installation of piles.
- Pile cut off to ground beam formation level.
- Placement of temporary formwork for ground beams.
- Placement of ground beams reinforcement.
- Pouring concrete to form ground beams.
- Removing formwork when concrete is cured.

The following Figures 10 & 11 show typical piling foundation details.

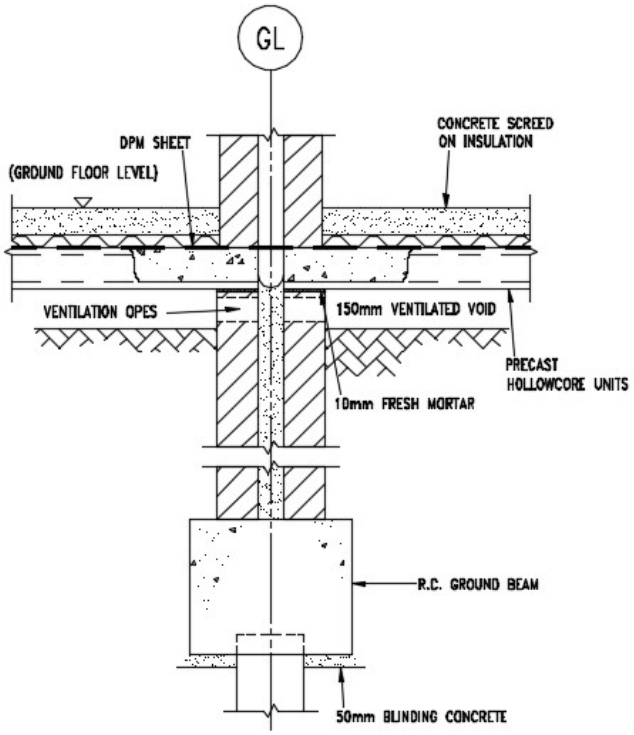


Figure 10: Typical internal foundation section through pile foundation for proposed buildings

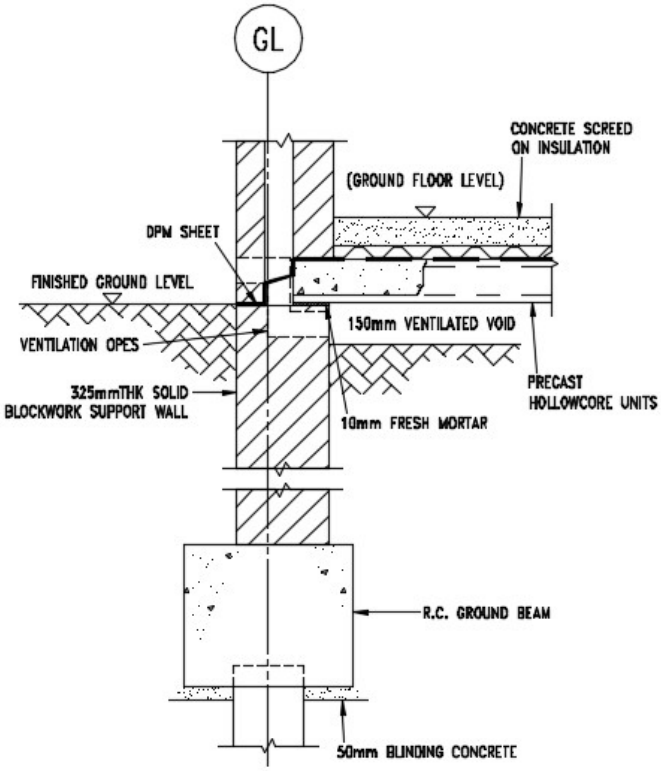


Figure 11: Typical external foundation section through pile foundation for proposed buildings

Where concrete is delivered to site only chute cleaning will be permitted with the minimal volume of water possible. No washing of any plant used in concrete transport will be allowed on site. All foundation bases are to be free of any standing water prior to concrete pours with provision of plastic (or similar) covering material to be on standby in the event of sudden rainfall. Planned concrete pours are to be coordinated with weather forecasting. Refer to section 3.3.10 for ground water and surface water control.

5.5 STORM WATER ATTENUATION TANKS

All proposed developments must ensure that a comprehensive sustainable urban drainage system, SuDS, is incorporated into the development. SuDS requires that post development run-off rates be maintained at equivalent, or lower, levels than pre-development greenfield runoff levels. Thus, the development must be able to retain, within its boundaries, storm water volumes from extreme storm events up to a 1 in 100-year storm event, more commonly expressed as a 1.0%f AEP with additional 20% for climate change included (Annual Exceedance Probability). Any new development must have the physical capacity to retain storm water volumes as directed under the GDSDS and, if necessary, release these attenuated surface water volumes to an outfall at a controlled flow rate. A further component of the SuDS protocols is to increase the overall water quality of surface water runoff before it enters a natural watercourse or into a public sewer, which ultimately discharges to a water body. This is to ensure the highest possible standard of storm water quality.

The proposed surface water drainage network incorporates a variety of SuDS features to reduce flood risks and improve water quality. Details of the proposed Storm Water network and attenuation tanks are given on drawing No W369-OCSC-XX-XX-DR-C-0504.

Storm water is to be attenuated separately at each block before joining the main carrier pipes and discharging into the River Blackwater via a pumped and Gravity fed pipe network, ending with a Hydrobrake to limit the discharges to existing greenfield runoff rates. Refer to Figure 12 for proposed Attenuation Tank System. It also proposed to provide raingarden strips to the front of the site, east and west of the access road. Refer to Landscape Architect details for biodiversity details to be incorporated into the proposed drainage development strategy.

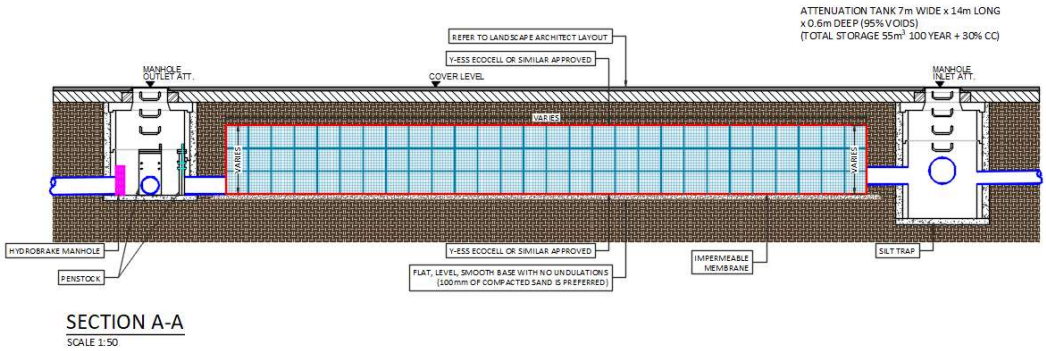


Figure 12: Typical Section Attenuation Tank System

The actions required to install the Storm Water Attenuation tank will consist of:

- Excavation of materials to approved formation.
- Placement of sand blinding bedding layer
- Installation of Modular Attenuation Units wrapped in non-impermeable membrane and including granular bedding, clause 505 and distribution pipe(s).
- Backfill sides with granular backfill material Class 6N.
- Backfill over top of tank using suitable granular fill and clat material
- Refer to Figure 13 for typical installation and construction details.

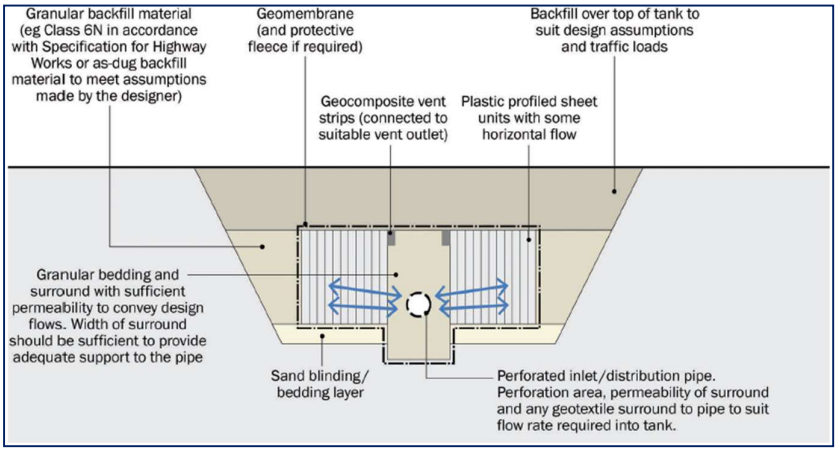


Figure 13: Typical Section of Geocellular System (CIRIA C753)

6 SITEWORKS

6.1 OVERVIEW

The siteworks for the proposed development will entail the installation of all required below ground services adjacent to the proposed housing units and road improvement works as well as the proposed landscaping works.

6.2 SITE SERVICES

A variety of services will be required to be constructed to provide functionality to the proposed development. These services will include items such drainage, water supply & power supply. Exact requirements to be confirmed.
The site services works are likely to proceed following completion of the foundations and will continue throughout the superstructure works.

The site services work will generally involve where required:

- Excavation of services trench;
- Placing of bedding as required for each service;
- Placing of service pipe/conduit within the trench;
- Placing of warning tape as required by each utility;
- Backfilling of trench.

6.3 HARD & SOFT LANDSCAPING

The externals to the proposed housing units and road works are made up of a number of differing soft and hard landscaping finishes. Refer to Landscape Architect layout.
The soft finishes may include:

- Grassed areas;

The hard landscaping may include:

- Pathways;
- Communal areas;

The hard landscaping works for the site are there to enhance the overall design, compliment the soft finishes and allow for pedestrian to and around the proposed works. The hard and soft landscaping works will be undertaken following the completion of the main elements of construction in accordance with Landscape Architect details.

The soft landscaping works will involve:

- Scrapping of existing topsoil to allow natural recolonisation and concurrently applying native Irish seed. This habitat will require low maintenance into the future: two moving session a year spring and autumn.
- Native trees and shrubs sourced in Ireland to enhance biodiversity. Planting to follow the IW Document No I1-AMT-GL-021 Biodiversity Guidance for Irish Water which will help deliver maximum benefit for biodiversity through the project delivery.
- Seeding of grass;
- Placing of furniture and fittings.

The hard landscaping works will involve:

- Placing and compacting of hardcore sub-base;
- Placing of furniture and fittings.

7 OUTLINE CONSTUCTION PROGRAMME

7.1 OVERVIEW

At this stage of carrying out this assessment, a contractor has not yet been appointed to undertake the construction works. However, the information and parameters within this document will form part of any construction documentation issued and the appointed contractor will be required to comply with the outline methodology described.

This statement describes the anticipated programme of construction works and the key activities that will be undertaken on the site in relation to the development.

As part of the construction process the main contractors will be required to submit a statement demonstrating how they will comply with the Management Plan and, after appointment, provide detailed documentation to demonstrate this compliance.

It is envisaged that construction works would commence in mid-2025 with a completion date of late 2027. Below ground Works to be planned to coincide with low to no rainfall periods.

7 Verification

This report was compiled and verified by:

Tom Duggan AENG, MIEI, MICS

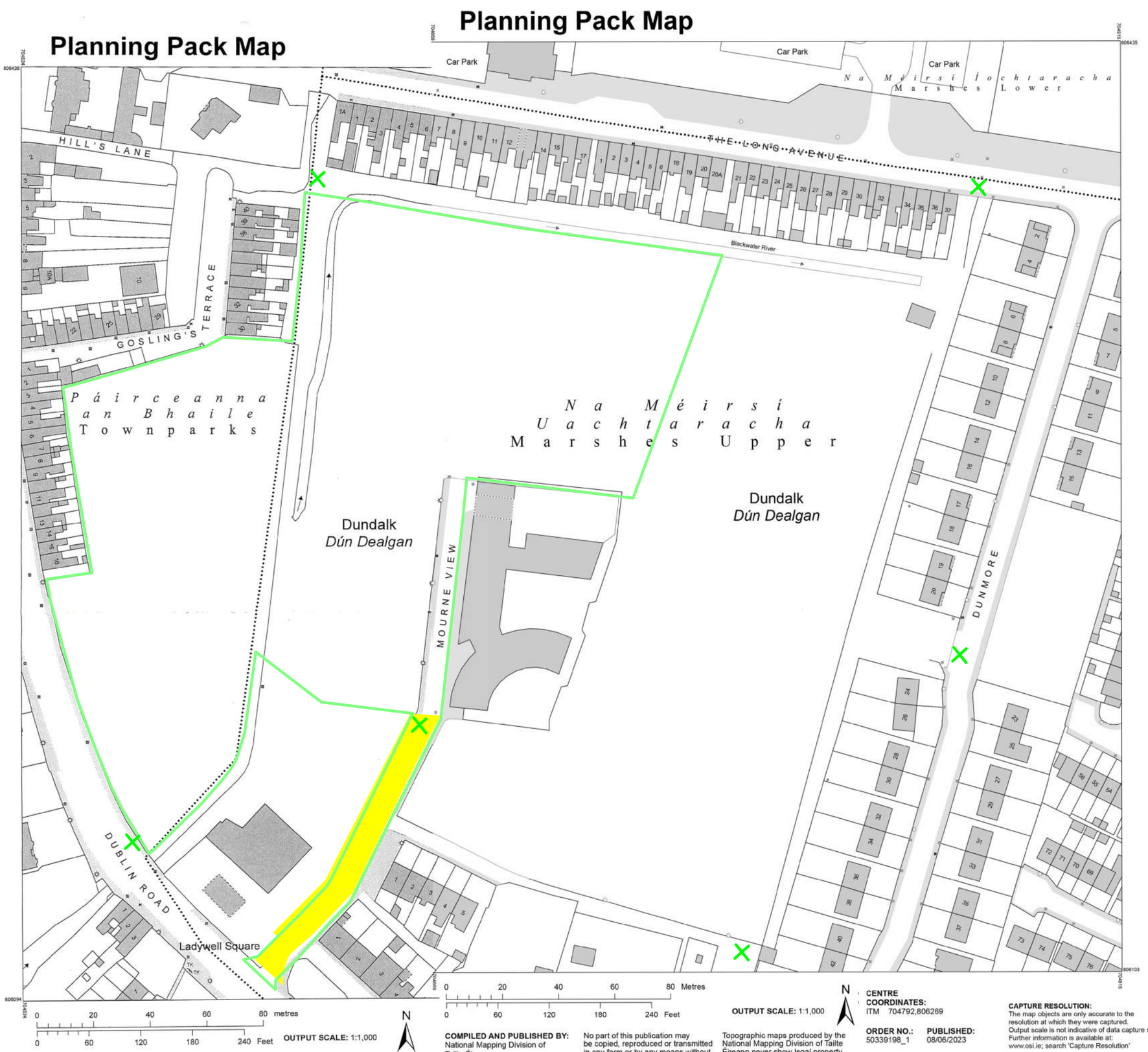
Senior Civil Engineer

O'Connor Sutton Cronin & Associates

Appendix A SITE PROPOSALS

Planning Pack Map

Planning Pack Map



Right of way

Extent of site

Locations of site notices

OUTPUT SCALE: 1:1,000

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Dublin 8,
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ITM 704792,806269

ORDER NO.: 50339198_1

PUBLISHED: 08/06/2023

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1:1,000
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MAP SHEETS:
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1702-02
1702-06
1702-07

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LEGEND:
To view the legend visit www.osi.ie and search for 'Large Scale Legend'

Tailte Éireann

KEY

SITE BOUNDARY

MATERIALS

- ROAD SURFACE TO ENGINEER DETAIL
- PROPOSED PERMEABLE CONCRETE PAVING SETTS
- PROPOSED PERMEABLE CONCRETE PAVING TO PARKING
- CROPPED SETTS NATURAL STONE
- PROPOSED INSITU CONCRETE WITH SELECTED FINISH 1
- RESIN BOUND PAVEMENT BEIGE
- PINE BARK PLAY GRADE
- RUBBERIZED SAFETY SURFACE PLAY GRADE
- PROPOSED COMPOSITE DECK
- CONCRETE PAVING SETTS LINEAR
- PROPOSED INSITU CONCRETE WITH SELECTED FINISH 2

FURNITURE ELEMENTS

- PROPOSED BENCH
- PROPOSED PLAY EQUIPMENT
- PROPOSED EXERCISE EQUIPMENT
- LIGHT COLUMNS
- PROPOSED CYCLE PARKING
- PROPOSED BIN STORAGE
- PROPOSED CYCLE LOCKERS

SOFT LANDSCAPING

- PROPOSED AMENITY LAWN
- PROPOSED GROUND COVER AND HERBACEOUS PLANTING
- PROPOSED BUFFER PLANTING
- PROPOSED RIPARIAN PLANTING
- PROPOSED MEADOW / RAIN GARDEN
- PROPOSED BACKYARD
- PROPOSED NATURAL BOULDERS IN SOFT LANDSCAPE
- PROPOSED TREE
- SHRUB TALL
- EXISTING TREE RETAINED REFER RELEVANT DRAWING FOR RPA DETAIL

TREES

- Acer campestre 'Elsrijk'
- Liriodendron tulipifera
- Quercus robur 'Fastigiata Koster'
- Sorbus commixta 'Olympic Flame'
- Gleditsia triacanthus 'Sunburst'
- Populus tremula
- Liquidambar styraciflua
- Alnus incana
- Tilia cordata 'Greenspire'
- Robinia pseudoacacia
- Prunus avium
- Amelanchier lamarkii

GROUND COVER AND HERBACEOUS PLANTING

- Liriope muscari
- Dryopteris erythrosora
- Euphorbia amy. Robbiae
- Brunnera macrophylla
- Helleborus 'Irish Luck'
- Sarcococca humilis
- Sarcococca hookeriana var. digyna 'Purple Stem'
- Hypericum × hidcoteense 'Hidcote'
- Lavandula angustifolia 'Hidcote'
- Perovskia atriplicifolia 'Blue Spire'
- Rosmarinus officinalis
- Berberis thunbergii f. atropurpurea
- Abelia × grandiflora

NOTES

FOR PLANNING

REVISION / DESCRIPTION	DRAWN	CHECKED	DATE
P01 UPDATES			12.12.24
P00 FIRST ISSUE			10.05.24

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PROJECT TITLE

Hill Street Dundalk

PROJECT NUMBER

P3001117

DRAWING TITLE

Landscape Plan
General Arrangement

SCALE @ A1
1:500

DATE
12.12.24

DRAWING No.

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REVISION
P01

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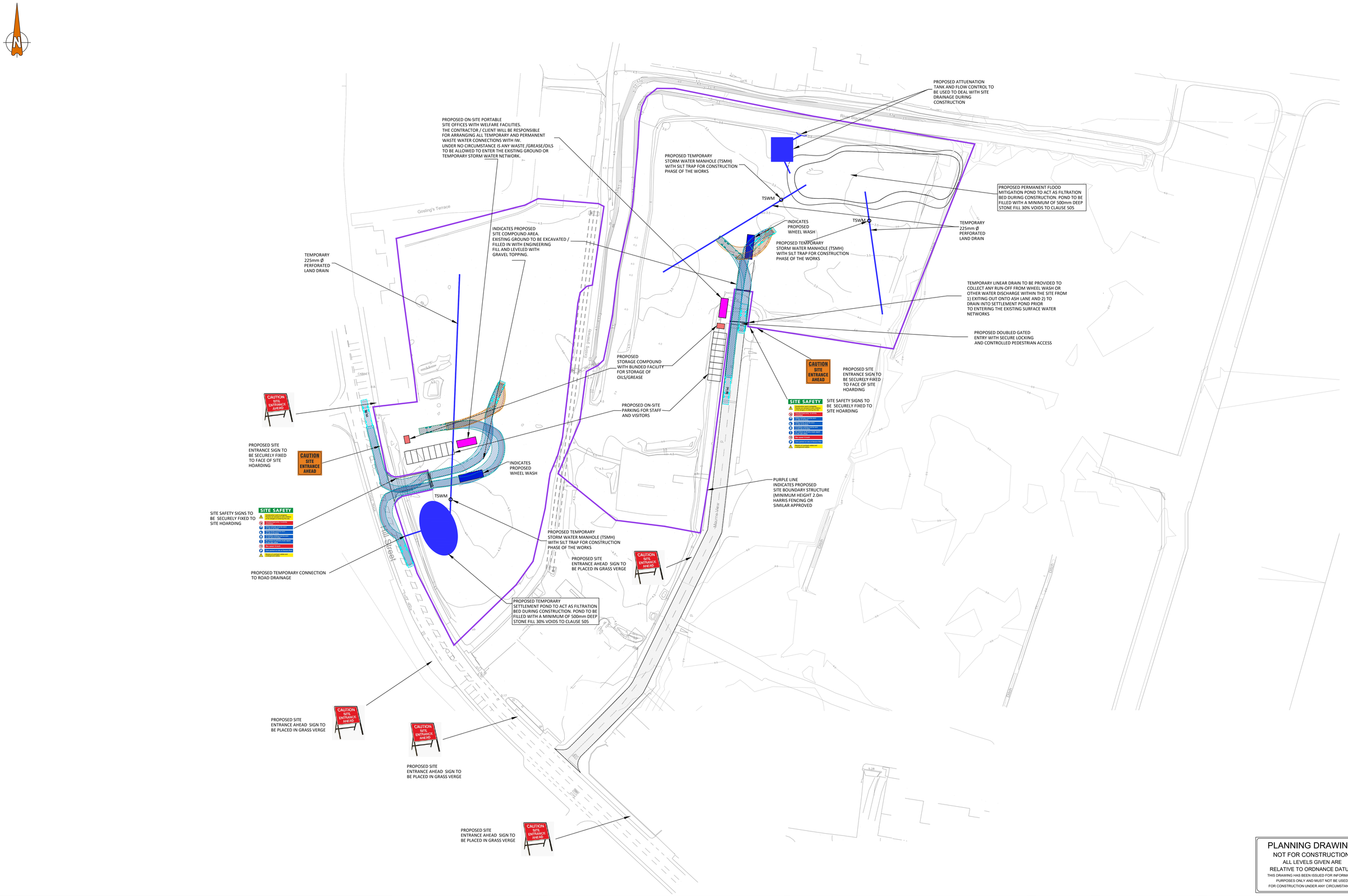

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Rev No.	Date	Revision Note	Drn by	Chkd by
P01	11.07.24	ISSUED FOR STAGE 2 LRD SUBMISSION	AD	TD
P02	10.01.25	ISSUED FOR PLANNING	AD	TD

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Client: CABRIZ GROUP
Project: PROPOSED RESIDENTIAL & CRECHE DEVELOPMENT AT HILL STREET, DUNDALK
Title: PROPOSED SITE COMPOUND LAYOUT AND CONSTRUCTION DRAINAGE WORKS

Code	Originator	Zone	Level	Type	Role	Number	Status	Revision
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