

**Project:** Proposed Residential Development at Páirc Chatháin, Drishane Road, Millstreet, Co. Cork

**Project No:** 23029

**Document Title:** Planning Stage Construction and Environmental Management Plan

**Document No:** 23029-ZZ-XX-XX-XX-RP-WDG-CE-002\_P3.0

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Date	Revision	Status	Originator	Checked
23.10.2023	Revision 0	Draft	NF	MW
15.02.2023	Revision 0	P3_Planning	NF	MW

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## 1.0 Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared by Walsh Design Group (WDG) on behalf of Cork County Council for a proposed Housing Development on a site at Páirc Chatháin, Drishane Road, Millstreet, Co. Cork. The CEMP has been prepared in parallel with the Environmental Impact Assessment Report (EIAR) for the project and takes cognisance of the specific mitigation measures outlined in the EIAR.

The CEMP provides a framework from which a construction stage CEMP will be developed to implement the mitigation measures described below which are designed to avoid, minimise, or mitigate adverse construction effects on the environment during construction of the development. The CEMP will be finalised following grant of planning permission and prior to construction to include all relevant conditions imposed by the Planning Authority. Additional mitigation measures may be added following consultation with relevant parties.

Should any ambiguity or contradiction arise in the preparation of the construction stage CEMP between the text of the CEMP, the mitigation measures and planning conditions, the following precedence shall apply:

1. Planning conditions,
2. Mitigation measures,
3. CEMP text.

The Contractor shall comply with any conditions arising from the site constraints identified and specified, all Statutory Regulations governing the works, and any additional measures or modifications that may be imposed on the proposed development by the Local Authority.

### 1.1. Background

Cork County Council are proposing to develop a site to the south of Millstreet town centre, see **Error! Reference source not found.** & **Error! Reference source not found.** The Site will be accessed via Drishane Road, which also serves the existing Old Coach development. The site is bounded to the west by the Old Coach development, to the north by Murphy's Terrace development, to the east farmland and to the south by farmland.



Figure 1: Google Earth Satellite Photo of Millstreet



Figure 2: Google Earth Satellite Photo of the proposed development site.

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## 1.2. Site Description

The site area within the application, redline boundary is approximately 1.10ha and the ITM grid coordinates at the approximate centre of the site are E527708, N589913. This is a greenfield site, currently used as agricultural land. The site generally slopes downwards from the South to the North. The high point of approximately 147.500m in the southern of the site and the low point of approximately 143.000m is at the northern boundary. There are existing trees/ hedge located along the eastern boundary ditch between the proposed development and the farmlands.

## 1.3. Proposed Development

The proposed development on the site would consist of 26 dwelling units including 8 No. 1 Bed Apartments, 16 No. 2 Bedroom townhouses and 2 No. 3 Bed semi-detached units as well as associated green areas, estate roads, boundary treatments, services and all other infrastructure required to develop a housing project. Architectural, Engineering and Landscaping drawings are included in the planning documentation; an outline of the development is shown in the Architect’s site layout in Figure 3.

### 1.3.1. Access Road

Vehicular access to the development will only be possible via Drishane Road. Pedestrian and cycle access will be provided alongside the access road as indicated in the Architect’s Layout drawing, see Figure 3.



Figure 3 - Architect's Site Layout

### 1.3.2. Estate Roads

Estate roads will be constructed to provide circulation routes around the development. Roads will consist of bituminous surfacing on granular capping and subbase layers. Concrete footpaths will be provided. Services such as foul and surface water drainage, water, electricity, public lighting, and telecommunications will be run under or next to the roads. Surface water from the roads and public hardstanding areas will be collected firstly in a selection of SuDS features. Residual runoff that does not infiltrate to the soil in those SuDS features will be conveyed by a local drainage network and discharge to the main drainage network to the west of the site, through the Old Coach development, at the greenfield runoff rate, having been attenuated on site.

### 1.3.3. Housing

The unit breakdown is given in paragraph 1.3 above. The housing units will be of typical domestic construction refer to the planning submission drawings for details. Foundations will be reinforced concrete (RC) strip footings. The buildings will be timber framed inner leaf with masonry/brick outer leaf. Concrete, asphalt or paved parking or driveways will be provided to the front of the units.

### 1.3.4. Landscaped Areas

Several green spaces and landscaped areas are proposed within the development. Refer to the Landscape Architect's design report and drawings for further details.

## 2.0 Development Construction Management

### 2.1. Safety Health and Environmental Considerations

The appointed Contractor will be required to prepare a Construction Health & Safety Plan which will be put in place prior to commencement of the works. At a minimum, this plan will include:

- Construction Health & Safety training requirements,
- Induction procedures,
- Emergency protocols,
- Details of welfare facilities,
- Risk assessments and Method Statements.

### 2.2. Development Phasing

It is envisaged that the development will be completed in one phase, as is commonplace for housing developments of this size. The exact configuration of the construction has not been finalised at this stage.

### 2.3. Works Description

#### 2.3.1. Site Access

Access to the construction site will be via the gate in the existing fencing along the western boundary of the site. At the early stages of construction, the access road within the site may be constructed from unbound stone. The access road will be paved and completed, including street furniture and footpaths, in advance of occupation of the development.



Figure 4 - Construction Site Access

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### 2.3.2. Site Set-up and Security

The first activity to be carried out at the site will be the establishment of site facilities and security. The site office and welfare facilities (site compound) will be confirmed in advance of the commencement of site works. All the sub-contractors as well as the main contractor and project managers will occupy offices within the construction compound. The site parking for all staff, contractors and visitors will also be located in this area. Erection of perimeter hoarding/ fencing will take place at the start of the project alongside the site establishment and security works. The hoarding/ fencing will be installed along the boundaries with neighbouring housing estates and completed phases of the proposed development, except for the dedicated access points. The extent of hoarding/ fencing will be subject to the detailed phasing of the development and will ensure that areas under construction will be fenced off at all times. Gates will be provided at the access points and will be locked outside of working hours. Hoarding will consist of solid painted plywood on a timber support frame or herras fencing. Hoarding/ fencing will be properly designed to be secure and durable and will be maintained until it can be dismantled on completion of the development.

### 2.3.3. Lighting

Lighting will be provided as necessary at construction compounds. Consideration of best practice and guidance in relation to lighting and wildlife impact such as Bats & Lighting Guidance Notes for Planners, Engineers, Architects and Developers (Bat conservation Ireland, December 2010); All lighting will be directional with appropriate cowling installed to minimise light spillage from the site. The height of lamp posts will be restricted (e.g., <8m where possible) to reduce the amount of light spillage to where it is not needed. The lights will be positioned facing away from the woodland and stream to the west, where possible, to minimize impact on bats that may use this area as a commuting route as well as other species who may use this habitat. Where possible all light fittings will be LED, have asymmetrical projection i.e. directional, and with colour temperature of 2700K (warm spectrum preferred by bats). The radiation will be above 500nm to avoid the blue or UV light, most disturbing to bats.

Construction work will generally be confined to daylight hours and lighting will generally not be required for the construction phase. There will however be occasions where the provision of portable lighting will be required such as evening work during later winter/early spring, works on roadways and power floating floors. Where possible and without jeopardising site safety, lights will be pointed down at a 45-degree angle and away from sensitive receptors. The site compound will have external lights for safety and security. This lighting will also be controlled by occupancy/motion sensors so that it will remain at a low output unless activated. This will mitigate light overspill as well as avoiding energy wastage. Construction stage lighting will be designed to minimise the broadcast of light to surrounding areas including sensitive receptors.

### 2.3.4. Site Clearance

To facilitate the earthworks operation, site clearance will have to be carried out to remove vegetation. Removal of woody vegetation shall only take place outside the bird breeding season (1st March to 31<sup>st</sup> August). No removal of habitats or movement of construction machinery will occur outside of the development works area/footprint during the construction phase. Existing trees and hedgerows shall be retained where possible. Temporary surface water management measures will be put in place prior to stripping of topsoil and will remain in place until the completion of the development, or until the completion of each phase. Refer to paragraph 3.1 for details of the surface water management measures.

Topsoil will be stripped from the area to be developed and from areas where site won fill may be excavated to bring the development to the correct level. All excavated topsoil will be stored in dedicated stockpiles

with environmental controls in place. Prior to topsoil clearance, an Invasive Species Management Plan and survey is recommended to ensure areas of invasive plant species (if any) are identified and managed prior to or during site clearance works. There is a responsibility on the Environmental Manager or Ecological Clerk of Works (ECoW) to regularly inspect and supervise maintenance of the environmental controls throughout the process.

### 2.3.5. Earthworks

Once surface water management measures are in place and topsoil has been stripped, earthworks operations can commence. This will consist of moving fill from the higher ground at the east to the lower ground to the west. Material will be excavated by 360° excavators and transported to the deposition area by articulated dumpers. The fill will then be placed by dozers and compacted using vibratory rollers. A testing regime will be implemented to ensure the acceptability of the fill and that the degree of compaction is sufficient. Fill will be brought to the required level across the site to allow construction of roads and foundations. An overall earthworks balance has been targeted i.e., no imported fill will be required for the bulk earthworks and no soil will be removed from the site.

### 2.3.6. House Construction

On completion of the bulk earthworks, construction of foundations for housing will commence. The exact construction sequence has not been determined, but it will be similar to that described below:

- Temporary roads will be constructed to provide access to each row of units. This will include the construction of surface water management and silt control infrastructure, including settlement ponds and silt fencing.
- Construction of foundations. It is envisaged that strip foundations will be used on this site. The locations of foundations will be set out on the ground. Importation of certified stone fill will be required for the layers under the floor slabs in compliance with the Building Regulations. Reinforcement will be fixed, formwork installed, and all required ducting placed prior to placement of concrete. Construction of foundations will require concrete deliveries to the site. Controls will be required to prevent any concrete material reaching local watercourses.
- Once foundations have cured, timber frames will be delivered to site and erected, followed by roofs.
- Scaffolding will be erected, and construction of the masonry/brick outer leaf will then be completed.
- Windows and doors will be installed, and first fix plumbing and wiring will be completed prior to external and internal rendering.
- On completion of rendering, second fix, plumbing wiring and carpentry will be completed, followed by floors, painting and finishing.
- At this stage, installation of drainage and services is likely to be underway, and the roads will be completed. Drives, footpaths, boundary walls and lawns will be finished, and final road pavements will be installed.

### 2.3.7. Landscaping

Landscaped areas will be completed at the same time as site completion works. These areas will be brought to a level below the final grading and will be finished with reclaimed topsoil on completion. Seeding and planting will be in accordance with the landscape plan for the site.

## 3.0 Environmental Management

### 3.1. Surface Water

The subject site is on high ground that falls generally from South to North. There are existing road gullies along the existing Old Court estate road.

Surface water will naturally tend to flow away from the higher ground towards the northern boundary. The most sensitive parts of the site in terms of surface water will be northern boundary and sections of the western boundary that border private dwellings.

Run-off into excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts. All run-off will be prevented from directly entering any water courses as no construction will be undertaken directly adjacent to open water.

No significant dewatering will be required during the construction phase which would result in the localised lowering of the water table. There may be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavations are kept safe and relatively dry.

The measures outlined in the following sections will be put in place during the construction phase to ensure protection of surface waterbodies. Construction works will be informed by best practice guidance from Inland Fisheries Ireland on the prevention of pollution during development projects. These measures comply with the following relevant CIRIA and Inland fisheries guidance documents:

- Control of Water Pollution from construction Sites, Guidance for consultants and contractors (C532)
- Environmental Good Practice on Site (3rd edition) (C692)
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016)

### 3.2. Pollution Control

#### 3.2.1. Suspended Solids

Prior to the commencement of topsoil stripping and earthworks operations, the following site-specific surface water management measures will be put in place:

Where possible, significant earthworks operations should be limited to the summer months.

Silt fencing will be installed around the perimeter of the site. The location of the silt fencing will be determined in the construction stage CEMP and will be subject to a detailed assessment of the area or phase to be developed. The purpose of the silt fencing is to prevent silt laden water leaving the site and entering neighbouring land with the potential to impact nearby watercourses. A typical silt fencing arrangement is shown below in Figure 5. It will consist of a double layer of geotextile membrane fixed to wooden stakes approximately 600mm high. The membrane will be anchored into the ground to form a continuous barrier to silt laden water from the works site. Silt fences will be monitored via a silt inspection log (to be maintained by the Environmental Manager/ECOW) and periodically maintained during the construction period. Typical maintenance will consist of repairs to damaged sections of membrane and removal of a build-up of silt on

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the upslope side of the fence. Daily silt fence inspections are recommended as part of their operation ensuring that any necessary repairs can be expedited.



Figure 5 - Typical Silt Fencing Arrangement

Drainage ditches will be installed to intercept surface water where there is a risk of significant water flow into excavations or onto adjoining lands. There will also be a requirement to periodically pump water from excavations. All collected and pumped water will have to be treated prior to discharge. The run-off will be directed through appropriately sized settlement ponds in series to remove suspended solids before being discharged, see Figure 6.



**Figure 6 - Settlement Ponds in Series**

Emergency contact numbers for the Local Authority Environmental Section, Inland Fisheries Ireland, the Environmental Protection Agency and the National Parks and Wildlife Service will be displayed in a prominent position within the site compound. These agencies will be notified immediately in the event of a pollution incident.

Site personnel will be trained in the importance of preventing pollution and the mitigation measures described here to ensure same.

The Environmental Manager or ECoW will be responsible for the implementation of these measures. They will be inspected on at least a daily basis for the duration of the works, and a record of these inspections will be maintained.

Any temporary storage of soil, hardcore, crushed concrete or similar material will be stored 50m from any surface water drains. All temporary storage areas should also have surface runoff controls in place to prevent migration of possible materials. There can be no direct pumping of silty water from the works directly to any watercourse. All water from excavations must be treated by infiltration over lands or via settlement ponds, silt busters etc.

### **3.2.2. Flooding**

The subject site is elevated and sloping to a degree that flooding is not anticipated in any event. The flood extent maps drawn up as part of the Southwestern CFRAM Study (floodinfo.ie) show that Millstreet town is elevated enough and is not in any risk category in the CFRAM Study Maps.

### **3.2.3. Control of Cement Run-off**

The washing out of concrete delivery vehicles is a potential source of pollution and shall be carried out in designated wash out areas only, see Figure 7.

Wash-out areas on site will be located more than 50m from any natural watercourse and properly designed with an impermeable liner to contain all cement laden water. No wash-out of ready-mix concrete vehicles shall be located within 10 metres of any temporary or permanent drainage features. Signage shall be erected

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to clearly identify the wash-out areas. Sufficient wash-out areas shall be provided to cater for all vehicles at peak delivery times.

On-site batching of concrete is not envisaged, but ready to use mortar silos are often used for housing developments. These systems involve the delivery and storage of dry cement and aggregates in silos, water is added at the point of delivery to make mortar or plaster. The following controls shall be put in place for the on-site batching of concrete, mortar and render:

- The plant shall be maintained in good condition,
- Delivery of cement shall be means of a sealed system to prevent escape of cement,
- The plant shall be situated on a paved area at least 20m from any temporary or permanent drainage features,
- Emergency procedures shall be in place to deal with accidental spillages of cement or mortar.



Figure 7 - Concrete Truck Washout Area with Impermeable Liner

#### 3.2.4. Accidental Leaks or Spills

No bulk chemicals will be stored within the active construction areas. Temporary oil and fuel storage tanks may be kept in the material storage area in suitable containers and will be stored on appropriately bunded spill pallets as required. Any fuel and oil stored on site shall be stored on bunded spill pallets (approved under BS EN 1992-3:2006). All bunds will be impermeable and capable of retaining a volume of equal to or

greater than 1.1 times (>110%) capacity of the containers stored on them. In the event of a spillage, excess oil or fuel will be collected in the bund.

Refuelling of vehicles and the addition of hydraulic oils or lubricants to vehicles will be undertaken off site where possible. Where this is not possible, filling and maintenance will take place in a designated material storage compound, which is located at least 10 metres from any temporary or permanent drainage features. Spill protection equipment such as absorbent mats, socks and sand will be available in clearly marked bins/silos and in construction vehicles to be used in the event of an accidental release during refuelling. Training will be given to site workers in how to manage a spill event.

The following mitigation measures will be taken at the construction site to prevent any spillages to ground of fuels during machinery activities and prevent any resulting soil and/or groundwater quality impacts:

- Refuelling will be undertaken off site where possible,
- 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,
  - Any pump or valve will be fitted with a lock and will be secured when not in use,
  - All bowsers to carry a spill kit and operatives must have spill response training; and
  - Portable generators or similar fuel containing equipment will be placed on suitable drip trays,
  - Weekly checks of spill kits will be carried out to ensure they are sufficiently stocked.

### 3.2.5. Monitoring

Daily checks will be carried out and recorded in a Surface Water Management Log to ensure surface water drains are not blocked by silt, or other items, and that all storage is located the required distance from surface water receptors. A daily log of inspections will be maintained, and any significant blockage or spill incidents will be recorded for root cause investigation purposes and updating procedures to ensure incidents do not reoccur.

## 3.3. Noise Vibration & Dust Control

Construction of the development has the potential to create significantly increased noise and dust levels locally unless adequate controls are put in place. Earthworks operations will involve the use of heavy construction plant. Stockpiles of material and haul roads could become dusty in dry weather. Road and housing construction are also potential sources of noise and dust.

### 3.3.1. Noise Control

Specific noise abatement measures shall comply with the recommendations of BS5228-1 2009. These measures will include:

- No plant used on site will be permitted to cause an ongoing public nuisance due to noise,
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations,
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract,
- Compressors and generators will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers,

- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use,
- Any plant, such as generators or pumps, required to operate outside of permitted working hours for lighting, pumping etc. will be surrounded by an acoustic enclosure or portable screen,
- Location of plant shall consider the likely noise propagation to nearby sensitive receptors.

The earthworks will generate typical construction activity related noise and vibration sources from use of a variety of plant and machinery such as rock breakers (where required), excavators, lifting equipment, dumper trucks, compressors, and generators. The noise levels shall comply with the mitigation measures and any planning conditions.

A designated noise liaison will be appointed to site during construction works. Any complaints will be logged and followed up in a prompt fashion. In addition, prior to particularly noisy construction activity, e.g., excavation close to a property, etc., the site contact will inform the nearest noise sensitive locations of the time and expected duration of the works.

All works on site shall comply with BS 5228 2009+ A1 2014 (Parts 1 & 2) which gives detailed guidance on the control of noise and vibration from construction activities. In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

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

### 3.3.2. Vibration Control

Vibration limits to be applied for the infrastructure works will be those specified in the TII document Guidelines for the Treatment of Noise and Vibration in National Road Schemes (TII, Revision 1, 2004).

Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration shall comply with the mitigation measures and any planning conditions.

### 3.3.3. Dust Control

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design, planning and effective control strategies. The siting of construction activities and soil stockpiles will take note of the location of sensitive receptors and prevailing wind directions to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations onsite or using effective control measures quickly before the potential for nuisance occurs.

- During working hours, technical staff (e.g., Environmental Manager/ECOW) will be available to monitor dust levels as appropriate; and
- At all times, the dust management procedures put in place will be strictly monitored and assessed.

The dust minimisation measures will be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust



generation. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and procedures implemented to rectify the problem. Dust levels shall comply with the mitigation measures and any planning conditions.

Specific dust control measures to be employed shall be as follows:

### Site Routes

Site access routes (particularly unpaved areas) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions.

- A speed restriction of 15 km/hr will be applied as an effective control measure for dust for onsite vehicles or delivery vehicles within the vicinity of the site.
- Bowers will be available during periods of dry weather throughout the construction period, with water sourced from the mains supply. The bowser will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use.
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced areas shall be restricted to essential site traffic only.

### Demolition/Excavation

Demolition and excavation work during periods of high winds and dry weather conditions can be a significant source of dust.

- During dry and windy periods, and when there is a likelihood of dust nuisance, watering shall be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust,
- During periods of very high winds (gales), activities likely to generate significant dust emissions will be postponed until the gale has subsided. The movement of truck containing materials with a potential for dust generation to an off-site location will be enclosed or covered.

### Stockpiling

The location and moisture content of stockpiles are important factors which determine their potential for dust emissions. The following measures will be put in place:

- Overburden material will be protected from exposure to wind by storing the material in sheltered parts of the site, where possible,
- Regular watering will take place during dry/windy periods to ensure the moisture content is high enough to increase the stability of the soil and suppress dust,
- Permanent or long-term stockpiles of topsoil shall be seeded to limit dust emission.

## 3.4. Construction Traffic Management

It shall be the responsibility of the Developer and their appointed PSCS to implement and oversee a Construction Site Traffic Management Plan (CSTMP). The following list is a preliminary estimation of the daily traffic movements that will be generated by construction on the site:

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- **Construction Workers / Site Staff** - Maximum number 30/day, generating 70 traffic movements,
- **Net Importation of fill material** - As required, less than 20 loads /day, generating 40 truck movements,
- **General Construction materials delivery (truck/ Van)** - On average 15 number/day, generating 30 traffic movements,
- **Construction Waste Removal** - When required, less than 30 loads/day, generating 60 truck movements.

It is recommended that the PSCS follow the guidance provided by the HSA in preparing the CSTMP. The HSA guidance document (Figure 3) and online fillable forms provide a framework of 6 main headings around which a full and detailed CSTMP can be formed. The headings are as follows:

1. **Information** – general site and responsible personnel information,
2. **Training** – proof of training or provision of training for relevant staff,
3. **Temporary Works** – Details of all temporary works relating to site traffic,
4. **Hazards** – Identification of hazards and risk assessments for same,
5. **Controls** – actions taken to mitigate risks identified,
6. **Resources** – equipment required to implement the plan i.e., hoarding, barriers, lighting signs etc.



Figure 8: HSA Construction Site Traffic Management Plan Guidance

The CSTMP shall outline issues which are relevant to the project and to provide solutions which are satisfactory to all concerned. The issues which we believe to be important are as follows:

- Proposed Traffic Routes – Planning and Management of same,
- Construction traffic logistics,
- Planning and management of expected traffic flow rates,
- Planning and management of delivery times,
- Site access and egress,
- Maintenance of public roads,
- Communication with local authorities and neighbours.

There are specific traffic management issues which the applicant can control. These are listed as follows:

- Extensive and thorough site rules for site traffic. This is issued to all sub-contractors at pre-appointment stage and shall ensure that they are contractually bound,
- Detailed delivery routes and times as a part of the rules which are in accordance with this traffic management plan – the options for delivery routes are limited by the fact that there will only be one entrance to the development site and traffic will approach on the Drishane Road through Old Court Estate,
- Gated access and egress will be established at the entrance to the development site allowing in only authorised traffic which has arrived at the appointed time and by the appointed route,
- Approved contractor parking for all construction related personnel – this will be provided internally within the secured development site area.

The rules regarding access routes, clearways, minimum road width, parking near hydrants, etc. will be relayed to all site staff. Any driver who breaches the rules will be noted and reported to their employer and any driver who consistently or knowingly breaks the rules will be refused further access to the site.

Signage will be erected along emergency vehicle routes, and critical areas such as assembly points and means of escape will be kept clear.

To ameliorate/mitigate impacts on the surrounding area and, to mitigate noise levels emanating from the site, all site development and building works will be carried out only during those hours stipulated by the County Council in conditions attached to the planning grant. Any deviation from these times shall be submitted to Cork County Council for approval.

#### **3.4.1. Planning and Management of Delivery Times**

In relation to deliveries to the site, all large deliveries will have to be notified to site management at least 24 hours in advance. No large deliveries will be allowed to the site during peak traffic times for the area. All deliveries must enter the site at the designated entrance and report to the site security man who in turn will contact the relevant persons to take charge of unloading, etc.

#### **3.4.2. Site Access and Egress**

Access and egress to the site will be controlled by the developer and their appointed main contractor. The access for construction traffic for the development will have to be via the single entrance. As development progresses and dwellings are occupied the traffic management plan and the location of the site compound will need to be continuously reviewed to minimise disruption to residents. The developer will provide information on the requirements of the site traffic access rules to all stakeholders, which will include the following:

- The prescribed access routes. The route identified shall be monitored and updated as required by construction sequencing and shall be followed at all times by drivers entering and exiting the site,
- No site access before the permitted start times,
- No site access after the permitted finish times,
- Strictly no parking on any access road to the site,
- Minimise disruption to any developed/occupied phases,
- No vehicle may park on or around any footpaths in the adjoining areas,

- Caution must be exercised entering and leaving the site,
- All vehicles must stop at the security barrier,
- All instructions from the developer or development staff must be obeyed,
- Vehicles leaving the site must do so only at an appropriate break in the traffic, and must not force their way into traffic,
- Only vehicles with specific business on the site can enter the site, once permission has been granted by the developer and/or his staff,
- Heavy vehicle drivers must check their tyres for lodged stones, and remove them prior to returning to the public roads,
- Site speed limit proposed is 15 kph.

### 3.4.3. Maintenance of the Public Road

For the duration of the construction period there will be a power washer and wheel wash located inside the main entrance to the site. This will wash the wheels and undercarriages of all vehicles leaving the site to ensure no debris leaves the site on vehicles. Adequate provision will be made on site for drainage of this area. All truck drivers must also inspect their vehicles before they leave the site for stones caught in their tyres or any other debris.

There will be parking spaces at the site compound, reserved for staff, clients, and visitors. This will be located adjacent to the site compound. On street parking will not be acceptable under any circumstances.

Unauthorised entry will not be permitted and will be prevented by a security system which will be in operation during construction.

The wastewater sewer, potable water supply and electrical and telecoms ducting shall require connections to existing infrastructure in the public realm. Works within public areas will be given priority, in terms of available staff and traffic management, to ensure that this component of the overall development is completed as expeditiously as possible, to minimise disruption. As part of any works (i.e., provision of services) within public roads/areas in the vicinity of the site, it will be ensured that these roads/areas will be re-instated to the satisfaction of Cork County Council.

## 3.5. Local Stakeholder Involvement

The Developer will, as required, liaise with owners of local properties in advance of works commencing onsite and coordinate works to have minimum impact on the operation of local properties. All signage used will meet the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual.

## 3.6. Waste Management

This section outlines the measures that will be undertaken to minimise the quantity of waste produced at the site and the measures to handle the waste in such a manner as to minimise the effects on the environment. A site-specific Construction Waste Management Plan (WMP) has been prepared and will be employed to ensure sustainable and effective waste management throughout the construction and demolition phases of the project. Adherence to the WMP prepared for the construction works will ensure that the management of waste arising is dealt with in compliance with the provisions of the Waste Management Acts 1996 – 2015 and amendments. The waste management hierarchy to be adopted will be as follows:

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1. Prevention and Minimisation,
2. Reuse of Waste,
3. Recycling of Waste,
4. Disposal.

Typical waste materials that will be generated from the demolition and construction works will include:

- Soil and Stones,
- Concrete, bricks, tiles and ceramics,
- Wood, glass and plastics,
- Metals,
- Gypsum-based construction material,
- Paper and cardboard,
- Mixed C&D Waste,
- Chemicals (Solvents, paints, adhesives, detergents etc.)

The management of all hazardous waste arisings, if they occur, shall be coordinated in liaison with health and safety management.

### 3.6.1. Waste Minimisation

Waste minimisation measures proposed are summarised as follows (and are described in more detail in the CWMP):

- Materials will be ordered on an 'as needed' basis to prevent over supply,
- Materials will be correctly stored and handled to minimise the generation of damaged materials,
- Materials will be ordered in appropriate sequence to minimise materials stored on site,
- A waste tracking log will be established,
- Sub-contractors will be responsible for similarly managing their wastes,
- All wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste.

### 3.6.2. Waste Storage

The main waste storage area will be situated in the site compound A dedicated and secure area containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities, will be established within the development.

Waste materials generated will be segregated at the site compound, where it is practical to do so. Where the on-site segregation of certain waste types is not practical, offsite 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.

The site Construction Manager will ensure that all staff are informed of the requirements for segregation of waste materials by means of clear signage and verbal instruction. Appointed employees will be made responsible for ensuring good site housekeeping.

### 3.7. Invasive Species

Construction works within the proposed works areas could potentially disturb stands of invasive plants and/or soils contaminated with invasive plant material, should such species be identified during site surveys. In addition to lands within the proposed works areas, there is an identified risk of invasive plant species being spread onto neighbouring lands and onto public roads and other locations. Construction works could therefore result in the spread of invasive plant species both in-situ and ex-situ. The following measures are proposed to prevent the inadvertent spread of invasive plant species:

1. The Contractor will prepare an Invasive Alien Species (IAS) Management Plan for the works. The Plan must be clearly communicated to all site staff and must be adhered to if it is to be implemented successfully,
2. Prior to the development and landscaping works an updated survey by an appropriately experienced ecologist will be carried out to establish the full extents of the invasive plant species within the proposed development site boundary,
3. In accordance with the Tii guidance this survey will produce accurate 1:5000 scale mapping for the precise location of invasive species. The pre-construction surveys will be undertaken by suitable ecologists with competence in identifying the species concerned having regard to any seasonal constraint,
4. Areas of invasive species will be fenced off and signage installed where no works will take place within this area until such time as they can be eradicated/managed,
5. The invasive species will be appropriately managed (aiming for eradication) prior to any vegetation clearance works occurring where these species were identified.

For the best available methods of control and eradication refer to the NRA Guidelines (2010) and Fennell *et al.* (2018). It is recommended that a suitably experienced contractor is employed to undertake the invasive species eradication programme at the site. Several approaches are available for the control of invasive plant species consisting of chemical control, physical control, or a combination of both. For example, manual control may only work for small, new infestations such as young Buddleia shrubs, but a combination of manual and chemical control may be required to ensure the complete eradication of more established shrubs. The specialist contractor will advise/finalise the best approach based on their knowledge of the species in question.

## 4.0 Roles and Responsibilities

### 4.1. Construction Manager

The Construction Manager will have overall responsibility for the site during the construction phase. This will include implementation of the CEMP. The Construction Manager shall:

- Manage all construction staff and subcontractors to ensure the requirements of the CEMP, planning permission and all legislative requirements are complied with,
- Cooperate with the Environmental Manager to ensure that the works do not pose an environmental risk,
- Ensure all monitoring plans are maintained throughout the construction phase,
- Be responsible for implementing all response plans and notifying relevant bodies of any incidents.

### 4.2. Environmental Manager or Ecological Clerk of Works (ECoW)

The Environmental Manager will be responsible for all environmental monitoring during the construction phase. The duties of the Environmental Manager are summarised as follows:

- Carry out (or manage) all environmental monitoring and maintain auditable logs of all environmental requirements,
- Liaise with statutory bodies in relation to environmental issues,
- Prepare regular environmental reports and maintain the CEMP,
- Carry out environmental site audits to ensure the works are carried out in accordance with the CEMP. Advise the Construction Manager of non-conformances and areas for improvement.
- Review the Contractor's method statements with respect to environmental issues.
- Monitor compliance with the mitigation measures and any planning conditions relating to the environment.
- Assist the Construction Manager in the notification and investigation of all environmental incidents.
- Act as a point of contact to allow all site staff to take responsibility for and report environmental issues.
- Provide education and toolbox talks for all site staff and maintain an Environmental Notice Board.

## 5.0 Conclusion

This planning stage CEMP sets out the overall management strategy for construction works for the proposed development. The CEMP aims to ensure the management of construction activity is carried out in a planned, structured, and considerate manner which minimises the impacts of the works on the local environment, residents, and commercial activities in the vicinity of the site. Due to the nature of construction works, there may be unforeseen events which occur at the site and the project team will actively manage any changes and discuss with the relevant authorities, where required. The project stakeholders are committed to ensuring that the construction activities to be carried out are actively managed to minimise potential issues.

