

**PROPOSED
RESIDENTIAL
DEVELOPMENT
AT COONEY'S LANE
GRANGE,
CO. CORK**

**Construction & Waste
Management Plan**
For SHD Planning Application

Client Westbrook
Housing Company
Ltd

Clyde House
Brian Boru Stl
Cork

Tel: 021 4554040
Fax: 021 4506007
E-mail: info@jhk.ie

CONTENTS	2
1. Introduction	3
2. Construction Waste Management	4
3. Project & General Construction Works.	5
3.1 Existing Site.	5
3.2 Proposed Works	5
4. On-Site Construction Management	7
4.1 Management of Construction Traffic	7
4.2 Noise Control & Monitoring.....	8
4.3 Delivery Times	8
4.4 Access & Egress	8
4.5 Parking	8
5 Environmental & Waste Management Strategy.....	9
5.1 Waste Disposal.....	9
5.2 Waste Material & Management.....	9
5.3 Waste Handling.....	11
5.4 Waste Monitoring & Auditing.....	12
5.5 Foul & Surface Water Discharges.....	12

1 Introduction

Westbrook Housing Ltd. intend to complete the residential development in Grange, Douglas. The development site is located on lands to the east of Cooney's Lane and south of Ardfield Estate.

The lands to date are undeveloped and have been recently re-zoned for residential development . Access to the proposed development will be via the existing local Road Cooney's Lane to the South. The developments completed to date includes as follows.

- Ardfield Estate c. 280 Units (located to the north of the lands)
- A number of individual private dwelling to the south and west of the site.

Westbrook Housing Company Ltd propose an application with An Bord Pleanala for the development of 251 No. Dwellings approx. comprising of mix of 1, 2, 3, 4 & 5 bedroom units and Crèche together with all associated ancillary works including vehicular access, parking, footpaths, drainage, services, landscaping, local road realignment and upgrading and site boundary works. The applicant also proposes to improve Cycle lane and footpath connectivity by constructing a new footpath and cycle lane on the new road alignment which will connect with Ardfield Estate footpaths on Cooney's Lane to the south. Junctions will be upgraded by the entrance to the school to Bellview which will enhance pedestrian and cyclist connectivity in the area in general. A new Greenway is also proposed in the site to cater for pedestrians and this greenway straddles the northern, eastern and southern boundaries and will ultimately connect up with the Ballybrack walkway being developed by Cork County Council

The proposed site development works shall be carried out in accordance with best practice regarding standard environmental protection (e.g. CIRIA 2010 and 2001). Environmental inputs associated with the proposed development will include surface water run-off, waste water and other wastes, however these inputs will be controlled/managed as outlined in this report.

The site is to be developed in four phases as follows :

Phase	1	2	3	4
No of Units	71	41	57	82

2 Construction Waste Management

The main contractor will be appointed to undertake a specific Construction Management Plan for the works.

The objective/purpose of this document is to communicate key environmental obligations that apply to all contractor organisations, their sub-contractors and employees while carrying out any form of construction activity on the proposed development site.

This Construction Environmental Management Plan (CEMP) shall include a dedicated traffic management plan including

- Proposed timescale and scheduling of works including schedule of truck movements
- Agreed haulage routes
- An agreed protocol to be followed by HGV drivers
- Allowable operational times for the HGV's on the road network
- Attendance by the Contractor at Cork County Councils weekly traffic meeting as required

The Construction Environmental Management Plan should also include measures for controlling

pollutants and dealing with surface water runoff during the construction works.

The Noise, Dust and Vibration monitoring outlined in this document is to ensure the construction environment is monitored and managed to minimise any impact to the developments neighbours.

The construction staged detailed CEMP to be produced and agreed will have full regard to recommendations contained in environmental and/or design related assessments completed as part of the planning application, as

The major Waste Management legislations / regulations that pertain to this project:

- Waste Management Acts, 1996 to 2013
- Waste Management (Licensing) Regulations 2004
- Waste Management (Collection Permits) Regulations 2007, Amendment Regulations 2016
- Waste Management (Hazardous Waste) (Amendment) Regulations, 2000
- Chemical Act 2008, (S.I. 13 of 2008)

3.0 Project & General Construction Works

The Contractor will have to carryout the following works prior to commencing works on site :

1. All Site-Specific Risk Assessment & Construction Stage Safety & Health Plans shall be submitted to the PSDP for Approval.
2. The Site shall be securely and hoarded off from all public areas and fencing shall be erected all along the top of the embankment to the stream.
3. All existing services both underground and over-ground shall be located on site and all necessary diversions and protection measures shall be implemented as per the risk assessments.

3.1 Existing Site

The perimeters of the site are defined by existing boundary fencing to the north, as tram to the south and east and an existing boundary ditch abutting the public road to the west of the site.

Construction traffic to the proposed development site will be facilitated by access from adjoining public roadway to the west of the site.

Vehicular and pedestrian access to the site and compound shall be from the public roadway and footpath to the west. Any construction traffic will be brought onto the site and vehicles, including construction vehicles shall not be allowed to park on the access route referred to above. Any construction vehicles taken off site will be checked before leaving to ensure no debris is deposited onto the public roads and a wash facility will be put in place at the site entrance.

A compound will be set up on site to cater all staff facilities, parking, material deliveries, and storage and segregation of waste. The location will be determined on site to suit the proposed phasing of development on site and will changes as the estate is developed.

3.2 Proposed Works

The proposed works will consist of the development of 251 residential units in four phases :

- Phase 1 will consist of 71 Units
- Phase 2 will consist of 41 Units
- Phase 3 will consist of 57 Units.
- Phase 4 will consist of 82 Units

As part of Phase one works the local road will be re-aligned and a new footpath and cycle lane will be constructed on the development side of the road. The new road shall be re-aligned from the boundary with Ardfield Estate and the southern side boundary. Storm water collection, new public foul sewer public lighting, traffic signage, and road markings shall also be executed as part of the works.

Prior to commencing construction works on site, a Traffic Management Plan and Construction Programme shall be agreed with the Planning Authority and An Garda Síochána Traffic Corps.

A new storm water outfall will be constructed and shall discharge to the existing stream on the eastern boundary of the site. A new foul sewer will be constructed along Cooney's Lane in a northerly direction and this sewer shall connect with the existing public foul sewer at the entrance to Bellview Estate.

The main objective of this plan is to minimise the impact the proposed development works will have on the receiving environment. The main tasks involved in the works in the construction process are listed below :

- Securing site and erection of site security fencing and hoarding
- Site clearance and excavation of topsoil.
- Site excavation to suit road and house formation levels.
- Storage of topsoil and filling material on site and removal of surplus soil off site to a licenced waste facility.
- Construction of all on-site services including storm and foul sewers, watermain, ESB & Comms Ducting, public lighting, roads, and footpaths etc.
- Construction of Individual Housing units and sub-structures.

All excavation works will be carried out on site with heavy track machinery and all soil shall be conveyed by dumper trucks to a designated storage area. Un-usable and un-suitable material will be stored separately and shall be disposed of to a licenced waste facility in compliance with the Waste Management Acts 1996-2008.

4 On-Site Construction Management

4.1 Management of Construction Traffic

A Traffic Impact Assessment (TIA) will be submitted as part of the planning application. A Traffic Management Plan will be developed and informed by the TIA to identify the measures and procedures to be employed to ensure all construction related works and associated traffic are managed properly. The plan will highlight any potential issues and to mitigate the impact and risk that construction related traffic poses to the surrounded environment. Key issues will be addressed as part of this plan such as :

- Proposed Site Traffic & Delivery Routes.
- Public Road Re-alignment and temporary road construction and management of public traffic flows.
- Planning & Management of Delivery times and routes.
- Site Access & Egress.
- Maintenance of Public Roads

A Traffic Management Plan and Construction Programme will be developed by the developer to manage the impact of construction related traffic and activities. Control measures can be put in place such as :

- Scheduling of Delivery routes to minimise impact on local traffic and management of delivery times to ensure deliveries are carried out at off-peak times.
- A gated access to be provided at the site entrance to ensure only authorised vehicles can access the site.
- Provision of designated parking facilities within the site for all construction related staff.
- Site Rules and Procedures for Construction traffic to be developed for all construction workers and sub-contractors. All workers and sub-contractors to be inducted on site by Safety personnel before being authorised to works on site. A procedure will be put in place for enforcing such rules and repeat offenders will be disciplined or reused further access to the site.
- Extensive site signage will be provided indicating traffic routes, delivery routes, one-way routes and emergency routes in accordance with the Traffic Management Plan and Traffic Signs Manual.

4.2 Noise Control & Monitoring

All works will be carried out between the hours of 8.00 to 18.00 Monday to Friday and 8.00 to 13.00 on Saturdays. If works must take place outside of these times, the developers shall notify Cork County Council in advance. The site will be subject to internal site audits by site management to ensure compliance with Planning and Environmental legislation.

4.3 Delivery Times

All delivery times shall be scheduled at off-peak times where possible. Where these can't be facilitated or where a large delivery is required advance notice must be given to ensure the deliveries can be facilitated and managed without impacting the local traffic flows.

4.4 Access & Egress

Access and egress to the site will be controlled by the developer. There shall be one point of access from the public road and a turning circle will be provided within the site to facilitate safe egress. Strict rules will be in place governing access such as :

- No site access will be allowed before 8am and after 6pm in general.
- No parking will be allowed on local road or in adjoining estates.
- A security barrier will be provided at the entrance.
- Adequate sight distance to be provided at the entrance.
- A speed limit of 10km/hr to be enforced on site.

4.5 Parking

Parking will be provided on site for construction workers. The parking will be limited and as part of Traffic Management Plan car pooling and other such techniques will be encouraged to minimise the amount of traffic entering the site.

5.0 Environmental & Waste Management Strategy

5.1 Waste Disposal

All site waste shall be managed in accordance with the waste management plan and all statutory provisions. Various procedures will be put in place to :

- Minimise the generation of waste.
- Maximise the re-use of materials on site and recycle recyclable materials.
- Re-use all suitable excavated material where possible.

5.2 Waste Material & Management

Various Waste Materials are expected on site such as :

- Vegetation & Topsoil
- Timber & Formwork
- Concrete and steel rebar.
- Packaging waste such as plastic, cardboard, steel drums, timber pallets and timber.
- Sundry waste such as silicone cartridges and paint tins e.t.c
- General waste and rubbish from welfare facilities and canteen and site offices such as waste water, canteen waste, paper e.t.c.
- Waste from plant and machinery such as tyres, oil, diesel, batteries and grease e.t.c

A temporary segregation area will be constructed at the site for the duration of the construction and demolition phase of the development. This area will include segregated areas for recyclable waste such as gypsum(plasterboard), cardboard, timber, concrete/blocks/tiles etc.

Cardboard

Cardboard will be segregated on site. The cardboard will be flattened and placed in a covered skip or tied and covered, to prevent the card getting wet. A recycling contractor will collect it as required.

Plasterboard

There will be a separate skip for plasterboard at the site. There are a number of specialist contractors that recycle plasterboard and they will be contracted to address this matter.

Reprocessed gypsum powder, which makes up to 94% of the plasterboard, can be reprocessed into new plasterboard or converted for use in soil conditioners for the agricultural industry. The paper, which makes up to 6% of the plasterboard, can be reused in various industries.

Soil/Subsoil

Excess excavated soil will be disposed of off-site or used as filling to suit design levels. Soil will be removed and disposed of by contractors licensed under the Waste Management Act of 1996, the Waste Management (Permit) Regulations of 1998 and the Waste Management (Collection Permit) Regulations of 2001.

Plastic

As plastic is now considered a highly recyclable material, much of the plastic generated during construction will be diverted from landfill and recycled. Clean plastic will be segregated at source and kept as clean as possible and stored in a dedicated covered skip.

Timber

There will be timber waste generated from the construction work as off-cuts or damaged pieces of timber. Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc, will all be recycled. It will be stored on site in a designated skip, and collected by a recycling contractor. Such companies shred the timber and use it for manufacture of wood products or for landscaping (wood chips etc).

Scrap Metal

Steel is a highly recyclable material and there are numerous companies that will accept waste steel and other scrap metals. A segregated skip will be available for steel storage on site pending recycling.

5.3 Waste Handling

All soils will be either reused on site (e.g. for landscaping) or removed off-site. If removed off-site waste permits will be obtained as required.

Any excavated rock (if encountered) will be processed on site for reuse as fill material under structures, hard standings and roads. Surplus rock will be stored on site for future filling or carted off site to approved licensed facilities.

Skips and bins will be provided in the contractor's compound for construction wastes outlined above.

It is not anticipated that there will be any need for hazardous waste on-site, however if required, the management of hazardous waste will comply with current legislation:

- The Waste Management Acts (WMA) 1996 to 2005
- Waste Management Regulations 1998;

Waste materials will be stored separately on site, i.e. there will be a designated area with specific receptacles or bays for each material taken from the demolition and construction phase. Bins or skips used on site will be transportable to this location. Forklifts will be used to transport skips and containers around the site. By having segregated wastes at source, it can be arranged that a waste contractor/recycler will collect the materials as necessary.

The waste materials will be stored in the specifically designated compound.

All waste collected from the site will be by a permitted waste contractor, under the Waste Management (Collection Permit) Regulations 2001.

The contractor will provide the waste manager on site with documentation of the waste to be removed and a copy of the waste collection permit. Prior to the waste leaving the site, the waste manager will have documentation to show where the waste is being taken to, and that the facility is licensed to accept the particular waste. A receipt will be issued for each load that leaves the site.

Some wastes may be transported to another site for reuse on the site. The manager will be in contact with other sites to ensure that as much waste is reused as possible, such as concrete for fill purposes etc. All wastes leaving the site will be placed in appropriate containers. Any concrete, soil, gravel, or broken stone transported off site will be covered to prevent dust or particle emissions from the load.

One of the Contractor's senior staff will be appointed as a waste manager to ensure commitment, operational efficiency and accountability. The waste manager will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid him/her in the organisation, operation and recording of the waste management system on the site.

The waste manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site.

The waste manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for the waste management on site. He/she will be also trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and know how to implement the construction and demolition waste management plan.

The training of the site crew is the responsibility of the waste manager. A waste training program will be organised. A basic awareness course will be held for all site crew to outline the waste management plan and to detail the segregation of waste materials at source. This should be incorporated into the induction course, or safety-training course.

5.4 Waste Monitoring & Auditing

A record of all wastes leaving the site shall be kept whether it is for landfill, recycling or use on other sites. A recording system will be put in place to record all these waste streams leaving site.

A record shall be taken for the following :

- Waste taken for landfill
- Waste taken for re-use.
- Ant reclaimed waste brought on site.
- Records for waste movements including, type, quantity and destinations. Signed dockets to be provided by contractor.

The waste manager on site will be responsible for conducting a waste audit at the site. All documentation shall be checked and a summary report will be prepared and compared with the established recovery/reuse/recycling targets for the site. All waste management methods for all materials can then be reviewed to see how targets can be met or improved.

5.5 Foul & Surface Water Discharges

There is a stream on the south and eastern boundaries of the site and as such control measures need to be implemented to manage surface water run-off from the site.

This section of the report sets out the potential sources of water pollution and other environmental issues that may arise during the construction works. Methods are proposed and discussed for controlling pollution and water runoff from the site during the construction works. Reference is made during this section to CIRIA C532 *Control of water pollution from construction Sites*.

The site is in close proximity to the Ballybrack Stream and construction works will require to be controlled, in particular, controlled surface water runoff procedures implemented.

This will include best practice standards and environmental guideline to safeguard qualifying interests.

Specific details will be provided by the contractor on development of the detailed Construction Management Plan at construction stage to be agreed in full with the Council's Environmental Department where necessary.

5.5.1 Sources of Water

The following are the sources of water that are likely or that may be encountered during the construction works.

- **Rainwater**

The primary source of water to the site is rainwater. The anticipated average annual rainfall at the site is anticipated to be in the region of between 800 and 1200 mm annually. The rainfall amounts vary by the season and can be as much as 50 mm over a 24 hour duration. Heavy rainfall can have a significant effect on the site and can cause flooding and the overwhelming of site drainage systems. Flooding can have an effect on stored site materials that would not normally pose a risk. The contractor will be required to ensure that materials are therefore properly stored on site and to plan site activities to ensure that works such as heavy excavation, drainage and foundation works are postponed during adverse weather conditions.

- **Surface Water;**

Surface waters tend to include watercourses and waterbodies.

In the case of the proposed development site, the large waterbody adjacent to an existing stream on the southern and eastern boundaries. The stream is located c. 10m below the site level and as such does not pose a site specific risk in terms of flooding.

- **Groundwater.** There is no basements proposed as part of these works so ground water is not envisaged to be an issue. The contractor will be required, in advance of and during site establishment, to undertake a series of site investigation measures such as trial holes and bore holes to establish the ground water levels.

5.5.2 Sources of Water Pollution

- **Suspended Solids**

The contractor is to employ measures to ensure that water pollution does not arise as a result of suspended solid pollution. Sources of suspended solid pollution include, excavation, earth stock piles, plant and wheel washing, build up of mud on site roads. Good practice construction measures are proposed in the following sections that the contractor will be required to employ to ensure that suspended sediments from the above potential sources do not enter the watercourse.

- **Oils and Hydrocarbons;**

Oils are a potential source of pollutants on a construction site. Diesel, lubricating oil, fuel, petrol and hydraulic fluids are used quite readily on construction sites for various types of machinery and refuelling and maintenance are required regularly on sites. The contractor will need to employ good practice measures to prevent these potential pollutants entering the water course. These measures will include bunded areas for the storage of fuels, regular maintenance of machinery to ensure that no leakages occur, measures to protect the site from vandalism and the provision of a designated refuelling area on site or refuelling off site.

- **Concrete and Cement Products**

It is important the cement products are carefully stored to withstand various weather conditions such as heavy rainfall and high winds to prevent run off and dust pollution. Concrete products can cause contamination during wash down of the trucks which can cause a large volume of uncontrolled runoff. Good practice measures can be employed on site to prevent such uncontrolled runoff by the use of a special impermeable bunded slab with a collection point and siltation for such operations.

5.5.3 Management of Surface Water

Surface water run-off associated with the construction stage will generally percolate to ground. Where surface water run-off occurs at site during the operation phase, it will be managed and controlled prior to discharge into the outfall sewer by implementing standard environmental controls (CIRIA 2010 and 2001).

- Sediment traps (such as earthen berms and / or settlement ponds) shall be provided for to prevent run-off from the site. Surface water run-off shall be outed to settlement ponds to allow primary and secondary settlement of sediments with outfall manholes downstream in which final settlement can take place and the outfall monitored.
- Some Excavations works will require works below ground level and to control the groundwater in the areas being excavated the contractor will require to isolate the area by digging trenches to the perimeter of the foundation area with suitable falls and sumps. The perimeter drain in an large open excavation should include French drains in accordance with CIRIA's Good Environmental Practice on Site Guidelines.
- An emergency operation plan will be established to deal with incidents and accidents during construction that may give rise to pollution. This will include means of containment in the event of accidental spillage of hydrocarbons or other pollutants.
- Hydrocarbon interceptors will be installed up stream of the new storm outfall and these shall be in operation during the course of construction.
- Any fuel or oil storage area should be provided on site and this is typical good practice on well managed construction sites. The contractor will be required to install an impermeable paved and bunded area that is capable of handling and intercepting a fuel spillage. All tanks should be fully bunded and placed on a firm and secure foundation in accordance with CIRIA's Good Environmental Practice on Site Guidelines

- Post development the surface water will be collected by the storm sewer network and flows will be controlled by a series of attenuation tanks which will limit the surface water run-off to the greenfield run-off rate, with storage being provided for the 1 in 100 year storm. The surface water shall run through a series of silt traps and hydrocarbon interceptors prior to discharge to the stream.
- Surface water run-off from the public roadway shall be controlled and collected by the proposed new storm sewer and gully traps and these shall connect to the existing public storm sewer in Bellview estate, to the approval of Cork County Council.

5.5.4 Management of Foul Water

During the construction stage, waste water will be managed and controlled at the temporary site compound using of portaloos and welfare units with storage tanks. The sanitary waste will be removed from site via a licenced waste disposal operator.

During the construction stage, waste water/ foul effluent from the proposed development will be collected via new foul sewer network designed in accordance with Irish Water Code of Practice for Wastewater Infrastructure: December 2017 (Revision 1). A new 225mm diam foul sewer will be constructed from the development site to the existing public foul sewer in Bellview.