

Project

**Proposed Residential Development,
Parkside 4, Parkside, Dublin 13**

Report Title

Construction & Environmental Management Plan

Client

Cairn Homes Properties Ltd

INFRASTRUCTURE



DBFL CONSULTING ENGINEERS

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1. WORKS PROPOSAL

This Construction & Environmental Management Plan is for the works associated the proposed development.

The proposed development will comprise a residential scheme of 282 residential units in 4 apartment blocks ranging in height from 3 to 7 storeys in height. Apartments will have north/south/ east/ west facing balconies/terraces. The proposed development also includes residential amenity facilities (concierge, media centre, and gymnasium), 286 no. car parking, and 423 no. cycle parking throughout the development (in the basement and at surface level). The proposed development provides for the continuation and completion of the Mayne River Linear Park as well as public open space and communal open spaces between the buildings. The proposed development and all other development and associated works are as set out in full in the statutory planning notices.

The subject site, of approximately 3.17 hectares (7.83 acres), is located to the north of Parkside Boulevard road and is bounded to the north by the Mayne River. The Balgriffin Park road is located to the east and an existing park is located to the west of the site. The site was a former temporary school site.

The construction management issues addressed within this plan include the following:

- Working Hours
- Traffic Management
- Stripping of Topsoil and Excavation of Subsoil
- Erosion and Sediment Control
- Accidental Spills and Leaks
- Biodiversity
- Waste Management
- Noise and Vibration
- Air, Dust & Climatic Factors
- Landscape and Visual Impact
- Archeology and Culture Heritage
- Material Assets – Site Services
- Site Compound Facilities and Parking

This Construction & Environmental Management Plan shall be referenced in all tender and contract documentation for the proposed works and is to be read in conjunction with all relevant Engineering and Architectural documentation.

All works must be carried out in accordance with the mitigation measures outlined in this document.

2. WORKING HOURS

For the duration of the proposed infrastructure works the maximum working hours shall be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 15:00 Saturdays, subject to the restrictions imposed by the local authority.

No working will be allowed on Sundays and Public Holidays.

Subject to the agreement of the local authority, out of hours working may be required for water main connections, foul drainage connections etc.

3. TRAFFIC AND TRANSPORTATION

A Traffic Management Plan (TMP) will be prepared by the contractor for the works in accordance with the principles outlined below and shall comply at all times with the requirements of:

- Department of Transport Traffic Signs Manual 2010 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010)
- Any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS)

In general, the impact of the construction period will be temporary in nature and less significant than the operational stage of the proposed development. It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and such will not impact significantly during the peak traffic period.

The proposed entrance from Parkside Boulevard will be constructed at the start of the construction phase to provide access to all construction traffic.

Construction traffic will continue to enter the site via Parkside Boulevard for the construction phase of the development with construction traffic diverted to internal, temporary haul routes to access construction areas.

All construction related parking will be provided on site. Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff.
- Excavation plant and dumper trucks involved in site development works and material delivery vehicles for the following: granular fill materials, concrete pipes, manholes, reinforcement steel, ready mix concrete and mortar, concrete blocks, miscellaneous building materials, etc.

It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods.

On-site employees will generally arrive before 08:00, thus avoiding morning peak hour traffic. These employees will generally depart after 16:00.

It should be noted that a large proportion of construction workers would arrive in shared transport and all construction related parking will be provide on site.

A Mobility Management Plan (MMP) has been prepared for residents within the development in order to guide to delivery and management of coordinated initiatives post construction.

4. SOILS AND GEOLOGY

Site development works will include stripping of topsoil and excavation of subsoil layers for the construction of the proposed basement, floodplain modification and general site development works. These activities have potential to expose the soils and geological environment to pollution.

The contractor shall obtain approval of their proposed erosion and sediment control measures from Dublin City Council's Environment Section prior to commencing works on site. The contractor shall also agree the rock breaking methodology with Dublin City Council where required.

The following measures are to be implemented in order to mitigate against such risks.

Earthworks plant and vehicles delivering construction materials to site shall be confined to predetermined haul routes around the site. Vehicles wheel wash facilities shall be installed.

Stripping of Topsoil

- The stripping of topsoil shall be carried out in a controlled way and will be limited to the immediate vicinity of the active work areas.
- Topsoil stockpiles will be protected during the construction works and not located in areas where sediment laden runoff may enter existing watercourse and surface water drains.
- Topsoil stockpiles will also be located so as not to necessitate double handling.

Excavation of Subsoil Layers

- The design of the apartment blocks have been set as high as possible to reduce the excavation depth required for the basement. Drainage levels have also been set as high as possible to reduce the excavation depths for drainage and services.
- The duration that subsoil layers are exposed to the effects of weather shall be minimised. Disturbed subsoil layers will be stabilised as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping).
- Similar to comments regarding stripped topsoil, stockpiles of excavated subsoil material shall be protected for the duration of the works. Stockpiles of subsoil material shall be located separately from topsoil stockpiles.
- Where bedrock is encountered, it will be crushed, screened and tested for the use within the designed works to reduce the volume of material leaving the site and imported to the site.

Weather Conditions

- Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion

Surface Water Runoff

- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.

- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion.
- Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed on site
- Surface water discharge points during the construction phase are to be agreed with Dublin City Council's Environment Section prior to commencing works on site

Water Pumped from Excavations

- Rain water pumped from excavations is to be directed to on-site settlement ponds.
- Groundwater pumped from excavations is to be directed to on-site settlement ponds.
- On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion.
- Surface water discharge points during the construction phase are to be agreed with Dublin City Council's Environment Section prior to commencing works on site

Accidental Spills and Leaks

- All oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstand area.
- Refuelling and servicing of construction machinery shall take place in a designated hardstand area which is also remote from any surface water inlets (when not possible to carry out such activities off site).
- A response procedure shall be put in place to deal with any accidental pollution events and spillage kits shall be available and construction staff will be familiar with the emergency procedures and use of the equipment.

5. WATER – HYDROGEOLOGY & HYDROGEOLOGY

The following measures are to be implemented during the construction phase in order to mitigate risks to the water and hydrogeological environment.

Erosion and Sediment Control

- Measures shall be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches).
- Surface water runoff from areas stripped of topsoil and rain water collected in excavations shall be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Groundwater pumped from excavations is to be directed to on-site settlement ponds.
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- On-site settlement ponds are to include geotextile liners and ripped inlets and outlets to prevent scour and erosion.
- Surface water discharge points during the construction phase are to be agreed with Dublin City Council's Environment Section prior to commencing works on site.
- Weather conditions and seasonal weather variations shall also be taken account of when planning stripping of topsoil and excavations, with an objective of minimizing soil erosion.

Accidental Spills and Leaks

- All oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area.
- Refuelling and servicing of construction machinery shall take place in a designated hardstand area which is also remote from any surface water inlets (when not possible to carry out such activities off site).
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- A response procedure shall be put in place to deal with any accidental pollution events and spillage kits shall be available and construction staff will be familiar with the emergency procedures and use of the equipment.

Concrete

- Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed on site.
- Pumped concrete will be monitored to ensure there is no accidental discharge.
- Mixer washings are not to be discharged into surface water drains.

6. WATER SERVICES AND MATERIAL ASSETS

The following measures are to be implemented during the construction phase in order to mitigate risks to the water supply, drainage and utilities.

- Surface water runoff from areas stripped of topsoil and surface water collected in excavations shall be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Weather conditions shall be taken into account when stripping topsoil and excavations, in order to minimise soil erosion.
- All oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstand area to mitigate against spillages.
- Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.
- Concrete batching will take place off site and wash out of concrete trucks will take place off site.
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds
- Groundwater pumped from excavations is to be directed to on-site settlement ponds.
- Relocation of any overhead ESB lines shall be fully coordinated with ESB Networks to ensure interruption to the existing power network is minimized.
- Connections to the existing gas and telecommunications networks shall be coordinated with the relevant utility provider and carried out by approved contractors.

7. BIODIVERSITY

Disturbance of birds' nests

- Where possible, site clearance works should proceed outside the nesting season, i.e. from September to February inclusive. If this is not possible, vegetation must first be inspected by a suitably qualified ecologist. If a nest is encountered then works must stop, until such time as nesting has ceased. Otherwise, a derogation licence must be sought from the NPWS to allow the destruction of the nest.

Construction Pollution:

- A detailed Construction Management Plan (CMP) shall be prepared by the Contractor in accordance with guidelines from Inland Fisheries Ireland (2016).
- The CMP shall include a suitable silt fence or similar barrier which will ensure that the riparian zone of the River Mayne is protected from diffuse surface run-off which may be laden with sediment. Any run-off must pass through a suitably-designed settlement pond or similar so that only silt-free water enters the river. Dangerous substances such as oils, fuels etc. should be stored in a bunded area only.
- The site manager will be responsible for ensuring that pollution prevention measures are fully implemented and monitored. A written record of at least daily checks should be maintained. Pollution incidents should be recorded and reported to the IFI in a timely manner.
- The CMP should detail how these measures are to be implemented on the site as well as the construction methods for construction activities and works to the floodplain. Were the site to flood during construction this could result in pollutants being lost to the river. This should be addressed by ensuring that dangerous substances are never stored in the flood zone and that reprofiling works are carried out during spring/summer months when the risk of flooding and soil saturation are lower.

Japanese Knotweed:

- A management plan has been prepared to ensure that Japanese Knotweed is eradicated and is not allowed to spread. This plan is provided with the planning application.

8. WASTE MANAGEMENT

A project specific C&DWMP has been prepared in line with the requirements of the guidance document issued by the DoEHLG and will be adhered to and will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the construction phase of the proposed development. The contractor(s) will endeavour to ensure that excavated material to be taken offsite is reused or recovered off-site or disposed of at authorized facility. In addition the following mitigation measures will be implemented:

- Building materials should be chosen with an aim to 'design out waste'.
- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that, Concrete rubble; Plasterboard; Metals; Glass; and Timber, at a minimum, will be segregated:
- Left over materials (e.g. timber off-cuts, broken concrete blocks/bricks) and any suitable construction materials shall be re-used on-site, where possible;
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal;
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

9. NOISE AND VIBRATION

Noise-related mitigation methods are described below and will be implemented for the project in accordance with best practice. With regard to construction activities, reference will be made to BS5228: Noise control on construction and open sites, which offers detailed guidance on the control of noise and vibration from demolition and construction activities. Various mitigation measures will be considered and applied during the construction of the proposed development including, but not limited to:

- Selection of Quiet Plant: The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible
- Noise Control at Source: If replacing a noisy item of plant is not practical, a modification or application of improved sound reduction method will be employed.
- Screening: Construction: Site hoarding will be constructed around the site boundaries as standard. In addition, careful planning of the site layout will also be considered.
- Liaison with the Public: A designated environmental liaison officer will be appointed to site during construction works. Any noise complaints will be logged by the liaison officer and in addition, where particularly noisy activity is planned, the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.
- Monitoring: Where required, construction noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the development.
- Project Programme: When high noise generating works are in progress on a site at the same time as other works of construction that may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time.
- Vibration: The vibration from construction activities will be limited to the values set out in Section 8.2 (methodology) of chapter 8.
- The Contractor shall appoint a Site Environmental Manager (SEM) responsible for matters relating to noise and vibration.

10. AIR QUALITY & CLIMATE

The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed construction phase mitigation measures are implemented and that construction impacts and nuisance are minimised.

The following mitigation measures are to be implemented during the construction phase:

- Procedures within the Dust Management Plan will be strictly monitored and assessed.
- Avoid unnecessary vehicle movements and manoeuvring, and limit speeds on site so as to minimise the generation of airborne dust.
- Use of rubble chutes and receptor skips during construction activities.
- During dry periods, dust emissions from heavily trafficked locations (on and off site) will be controlled by spraying surfaces with water and wetting agents.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads will be restricted to essential site traffic only.
- Re-suspension in the air of spillages material from trucks entering or leaving the site will be prevented by limiting the speed of vehicles within the site to 10kmh and by use of a mechanical road sweeper.
- The overloading of tipper trucks exiting the site shall not be permitted.
- Aggregates will be transported to and from the site in covered trucks.
- Where the likelihood of windblown fugitive dust emissions is high and during dry weather conditions, dusty site surfaces will be sprayed by a mobile tanker bowser.
- Wetting agents shall be utilised to provide a more effective surface wetting procedure.
- Exhaust emissions from vehicles operating within the construction site, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the contractor by ensuring that emissions from vehicles are minimised by routine servicing of vehicles and plant, rather than just following breakdowns; the positioning of exhausts at a height to ensure adequate local dispersal of emissions, the avoidance of engines running unnecessarily and the use of low emission fuels.
- All plant not in operation shall be turned off and idling engines shall not be permitted for excessive periods.

- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- Material stockpiles containing fine or dusty elements including top soils shall be covered with tarpaulins.
- Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. All concrete cutting equipment shall be fitted with a water dampening system.
- A programme of air quality monitoring shall be implemented at the site boundaries for the duration of construction phase activities to ensure that the air quality standards relating to dust deposition and PM10 are not exceeded. Where levels exceed specified air quality limit values, dust generating activities shall immediately cease and alternative working methods shall be implemented.
- A complaints log shall be maintained by the construction site manager and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

11. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

- Standard best practice construction site management shall be implemented.
- Site fencing/hoarding shall be erected to restrict views of the construction activity e.g. standard 2.4m high

12. ARCHAEOLOGY & CULTURAL HERITAGE

Groundworks associated with the proposed development outside of those areas previously subject to archaeological testing shall be monitored by a suitably qualified archaeologist. If features of archaeological potential are discovered, further mitigation may be required such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the DoCHG.

13. POPULATION & HUMAN HELATH

Adherence to the Construction and Environmental Management Plan (CEMP) during the construction phase will reduce the detrimental effects of the construction phase on the environment and local population. The detailed CEMP will be agreed in writing with the planning authority in writing prior to the commencement of the development.

14. SITE COMPOUND FACILITIES AND PARKING

The exact location of the construction compound is to be confirmed in advance of commencement of the works (and agreed with Dublin City Council).

The location of the construction compound is likely to be relocated during the course of the works, in line with the progress of the development.

The construction compound will include adequate welfare facilities such as wash rooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply.

- Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.
- The construction compound will be enclosed by a security fence.
- Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure.
- A permeable hardstand area will be provided for staff car parking.
- A separate permeable hardstand area will be provided for construction machinery and plant.
- The construction compound will include a designated construction material recycling area.
- A series of way finding signage will be provided to direct staff, visitors and deliveries as required.
- All construction materials, debris, temporary hardstands etc. in the vicinity of the site compound will be removed off-site on completion of the works.