Project

Residential Development at Newcastle South, Phase 1, Co. Dublin

Report Title

Construction & Environmental Management Plan

Client

Cairn Homes Properties Ltd

INFRASTRUCTURE

DBFL CONSULTING ENGINEERS

SEPTEMBER 2019

Job Title: **Residential Development at Newcastle South, Phase1, Co Dublin.**

Job Number: **170024**

Report Title: **Construction & Environmental Management Plan**

Report Reference: **170024-rep-003**

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Date: **September 2019**

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Revision	Issue Date	Description	Prepared	Reviewed	Approved
-	02/09/2019	Stage 3	NCG	DJR	DJR

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1. WORKS PROPOSAL

This Construction & Environmental Management Plan is for the works associated with the construction of 406 residential units and associated infrastructure at Newcastle South, Co. Dublin.

The subject site, of approximately 16 hectares (39.5 acres), is located to the south of the R120/Main Street at Newcastle Village. The site is bounded by residential developments of different densities to the east and north and bounded by greenfield and single dwellings to the south and west. The St Finian's National School and Church is located to the north of the site.

The development will be constructed in approximately 3 phases as per the indicative phasing plan provided in Appendix A.

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
- 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 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 (HGV vehicle movements not expected to exceed 4 vehicles per hour during the busiest period of construction works).

The proposed entrance from Main Street will be constructed as part of Phase 2 of development and enabling works. The main spine road and local roads will be constructed as part of the internal development works.

All construction traffic will enter the site via Burgage Cresent to the east and will be routed to the site via the primary road network in the area, (i.e. the M7 Motorway and the R120).

Construction traffic will continue to enter the site via Burgage Cresent for the remaining construction phases of the development with construction traffic diverted to internal, temporary haul roads to access construction areas.

Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site staff and management

- Construction vehicles e.g. excavation plant, dump trucks and material delivery vehicles, involved in site development works

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.

Where feasible, excavated material will be reused as part of the site development works (e.g. use as fill material beneath houses and roads) in order to minimise truck movements to and from the site, however, some unsuitable excavated subsoil is expected and will have to be removed to an approved landfill.

4. SOILS AND GEOLOGY

Site development works will include stripping of topsoil and excavation of subsoil layers. 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 South Dublin County Council's Environment Section prior to commencing works on site. The contractor shall also agree the rock breaking methodology with South Dublin City Council where required.

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

Stripping of Topsoil

- Stripping of topsoil shall be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development.
- At any given time, the extent of topsoil strip (and consequent exposure of subsoil) shall be limited to the immediate vicinity of active work areas.
- Topsoil stockpiles shall be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains.
- Topsoil stockpiles shall also be located so as not to necessitate double handling.

Excavation of Subsoil Layers

- 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.

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 South Dublin Count 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 South Dublin County 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 riprapped inlets and outlets to prevent scour and erosion.
- Surface water discharge points during the construction phase are to be agreed with South Dublin Count 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: WATER SUPPLY, DRAINAGE & UTILITIES

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.
- Foul drainage discharge from the construction compound will be tinkered 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.
- 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

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

- High value hedgerows/treelines should be retained where feasible.
- The removal of vegetation will not take place between March and July as per section 40 of the Wildlife Act. Where this cannot be avoided, vegetation must first be inspected by a suitably qualified ecologist for signs of nesting. Where no nesting is observed, vegetation can be

removed within 48 hours. Where nesting is underway, vegetation cannot be removed unless under licence from the NPWS.

- To avoid damage to trees the developer should follow the guidance from the National Road's Authority in establishing root protection areas (RPA) along hedgerows to be retained.

  The NRA gives the following equation for calculating the root protection area (RPA) (NRA, unknown year):

  $RPA(m^2) = \pi(\text{stem diameter mm } 12)/1{,}000) \times 2$

  The RPA gives the area around which there should be no disturbance or compaction of soil. This will be calculated for the largest tree within each hedgerow. Prior to construction this area will be clearly labelled 'sensitive ecological zone', fenced off with durable materials and instruction given to construction personnel not to disturb this buffer zone. As a rule of thumb this buffer zone should extend at least to the canopy of the trees concerned. Prior to construction this area will be clearly labelled 'sensitive ecological zone', fenced off with durable materials and instruction given to construction personnel not to disturb this buffer zone.

- A derogation licence from the National Parks and Wildlife Service will be required prior to disturbance of the agricultural shed which is acting as a bat roost. This will require the installation of new/alternative roosting locations and this is provided for within the bat report.

- Nocturnal mammals are impacted by lighting. Therefore it is important that temporary lighting installed within the proposed development site is completed with sensitivity for local wildlife while still providing the necessary lighting for human usage. The following principals should be followed:

  1. Temporary lighting design should be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting should be used within a proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas.
  2. Dark buffer zones can be used as a good way to separate habitats or features from lighting by forming a dark perimeter around them. This could be used for habitat features noted as foraging areas for bats.
  3. *Buffer zones can be used to protect Dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided in to zones of increasing illuminance limit radiating away from the feature or habitat that requires to be protected.*

4. Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).

(1) All luminaires used should lack UV/IR elements to reduce impact.

(2) LED luminaires should be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.

(3) A warm white spectrum (<2700 Kelvins is recommended to reduce the blue light component of the LED spectrum).

(4) Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

(5) The use of specialist bollard or low-level downward directional luminaires should be considered in bat sensitive areas to retain darkness above.

(6) Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.

(7) Only luminaires with an upward light ratio of 0% and with good optical control should be used.

(8) Luminaires should always be mounted on the horizontal, i.e. no upward tilt.

(9) Any external security lighting should be set on motion-sensors and short (1min) timers.

(10) As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

- The following recommendations from Inland Fisheries Ireland '*Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*' (2016) should be considered:

5. When cast-in-place concrete is required, all works must be done in the dry and effectively isolated from any flowing water (or water that may enter streams and rivers) for a period sufficient to ensure no leachate from concrete.

6. No direct discharges be made to waters where there is potential for cement or residues in discharge.

7. The pH of any and all discharged made from and during construction works shall be in the range of 6.0 – 9.0 units and not

alter the pH of any receiving fisheries waters by more than +/- 0.5 pH units.

8. The level of suspended solids in any discharges to fisheries waters as a consequence of construction works shall not exceed 25 mg/l, nor result in the deposition of silts on gravels or any element of the aquatic flora or fauna.
9. All oils and fuels shall be stored in secure bunded areas and care and attention taken during refuelling and maintenance operations.
10. There shall be no visible oil film in any discharges from construction works to waters.
11. Water abstraction for dust suppression shall not take place from any water body containing or suspected to contain aquatic invasive species.
12. Abstraction for dust suppression is confined to only those larger waters identified and agreed as being of sufficient size and volume so as to allow abstraction without adverse impact.
13. Abstraction points shall be screened so as to ensure that fish and aquatic plants are not removed from waters in the abstraction process.

- A Japanese Knotweed Treatment Plan is proposed for the development lands as two small stands were identified by a specialised consultant. One stand (JKW Stand 01) is in a peripheral location to a considerable distance from any proposed excavation works, while the second stand is located in the centre of the lands (JKW Stand 02). Refer to Figure 7.1 below for indicative location of Japanese Knotweed Stands. The proposed treatment plan consists of the following methods:

14. It is proposed to complete the treatment of JKW Stand 02 in-situ by means of stem injection. The Japanese Knotweed stand will be protected with fencing and appropriate signage will be erected to inform the construction workers and later the public of the presence of Japanese Knotweed.
15. The environs of the JKW Stand 02 will require monitoring for further 2 years before the areas can be certified as Knotweed free.
16. It will not be possible to complete the treatment of JKW Stand 01 in-situ as it is in the centre of the works area and will require removal and treatment using the Bund Method.
17. The Bund Method consists on the set up of a quarantine area around the Knotweed Stand and any working space required for machinery and operatives. The Japanese Knotweed infestation; stems and roots are excavated whilst supervised by an appointed Invasive Species specialist. The infested material will then be

stockpiled in a signed and fenced off quarantine area on site as indicated in Figure 7.1.

18. Stockpiling of contaminated material may be undertaken in winter and subsequently spayed with herbicide during spring/summer.
19. The infested material will be spread within the quarantine area to shallow depths of 50-100mm over a Knotweed resistant membrane.
20. All plant, machinery, hand tools and footwear of operatives used in excavating and spreading the infested material will be thoroughly cleaned before leaving the quarantine area on completion of all operations.
21. When the infested materials is transported on site in 'dumpers', the dumpers will not be filled higher than 450mm below the top rim and the dumper will be lined with Knotweed Proof Membrane.

Figure 7.1. Locations of Knotweed Stands recorded by Consulting Ecologists.

8. WASTE MANAGEMENT

The following measures are to be implemented during the construction phase in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle waste in such a manner as to minimise the effect on the environment:

- Building materials should be chosen with an aim to 'design out waste'.
- On-site segregation of non-hazardous waste materials into appropriate categories.
- On-site segregation of hazardous waste materials into appropriate categories.
- All wastes segregated at source where possible.
- All waste material will be stored in skips or other suitable receptacles in a designated area of the site.
- Left over materials (e.g. timber off-cuts) shall be re-used on site where possible.
- All waste leaving the site will be recycled, recovered or reused where possible.
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities.
- 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. These methods 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 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;
- Noise and vibration during the construction phase will be controlled with reference to the best practice control measures within BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2. The contractor will ensure that all best practice noise and vibration control methods will be used as necessary in order to ensure impacts to nearby residential noise sensitive locations are not significant. This will be particularly important during site preparation works and piling works.
- Limiting the hours during which site activities which are likely to create high levels of noise or vibration are permitted;
- Monitoring levels of noise and vibration during critical periods and at sensitive locations;
- Establishing channels of communication between the contractor/developer, South Dublin County Council and residents so that receptors are aware of the likely duration of activities likely to generate higher noise or vibration, and;
- The Contractor appointing a Site Environmental Manager (SEM) responsible for matters relating to noise and vibration.

Noise Limits

Whilst no specific construction noise limits are set by SDCC with respect to noise, a common approach across the Dublin Agglomeration refers to the use of BS 5228 2009 +A1 2014 *Code of practice for noise and vibration control on construction and open sites* Parts 1 and 2 with respect to the controlling noise and vibration impacts. In this instance, appropriate criteria relating to permissible construction noise levels are taken from Part one of the standard *Noise.*

This document suggests an absolute construction noise limits depending on the receiving environment. The documents states:

- *"Noise from construction and demolition sites should not exceed the level at which conversations in the nearest building would be difficult with windows shut…. Noise levels between 07:00 and 19:00hrs, outside the nearest window of the occupied room closest to the site boundary should not exceed:*
- *70dB in rural, suburban and urban areas away from main road traffic and industrial noise;*
- *75dB in urban areas near main roads in heavy industrial areas.*

Given the suburban location of the facility, a limit value of 70dB $L_{Aeq,T}$ during daytime periods for construction is considered to be reasonable.

This limit value is also in agreement with those set by Transport Infrastructure Ireland (TII) for construction projects. Their 2014 document *Good Practice Guidance for the Treatment of Noise during the planning of National Road Schemes* recommends the following construction noise limit values.

Days & Times	L_{Aeq}	L_{AFmax}
Monday to Friday (07:00 to 19:00hrs)	70	80
Monday to Friday 19:00 to 22:00hrs	60	65
Saturday 08:00 to 16:30hrs	65	75
Sundays and Bank Holidays 08:00 to 16:30hrs	60	65

Table 9.1. TII Maximum Recommended Noise Levels at the Façade of Nearby Dwellings during Construction

Vibration Limits

Guidance relevant to acceptable vibration within buildings during construction works is contained in the following documents:

- *British Standard BS 7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration, and;*

- *British Standard BS 5228: 2009: Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.*

BS 7385 states that there should typically be no cosmetic damage if transient vibration does not exceed 15mm/s at low frequencies rising to 20mm/s at 15Hz and 50mm/s at 40Hz and above. These guidelines relate to relatively modern buildings and should be reduced to 50% or less for more critical buildings.

BS 5228 recommends that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. The standard also notes that below 12.5 mm/s PPV the risk of damage tends to zero. It is therefore common, on a cautious basis to use this lower value. Where continuous vibration is such as to give rise to dynamic magnification due to resonance, the guide values may need to be reduced by up to 50%.

Both standards note that important buildings that are difficult to repair might require special consideration on a case by case basis but building of historical importance should not (unless it is structurally unsound) be assumed to be more sensitive. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other groundborne disturbance. Taking the above into consideration the vibration criteria in Table 9.2 is recommended as the maximum allowable vibration.

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of:-		
Less than 15Hz	15 to 40Hz	40Hz and above
12 mm/s	20 mm/s	50 mm/s

Table 9.2. Maximum Allowable Vibration Criteria during Construction Phase

10. AIR, DUST & CLIMATE FACTORS

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:

- During working hours, dust control methods shall be monitored as appropriate, depending on the prevailing meteorological conditions.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details.
- Community engagement shall be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses.
- A complaints register shall be kept on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out.
- A speed restriction of 20 km/hr shall be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads.
- Access gates to the site shall be located at least 10m from sensitive receptors.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic;
- Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions;
- During periods of very high winds (gales), construction activities likely to generate significant dust emissions should be postponed until the gale has subsided.
- 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 such as rock blasting or earthworks are necessary during dry or windy periods; and
- Before entrance onto public roads, trucks will be adequately inspected to ensure there is no potential for dust emissions and will be cleaned as necessary.

- It is recommended that dust deposition monitoring be put in place to ensure dust mitigation measures are adequately controlling emissions. Dust monitoring should be conducted using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119.
- In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

11. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

A Landscape and Visual Impact Assessment has been prepared by Murray Associates Landscape Architects in order to consider the effect of the proposed development on the receiving landscape and visual environment.

Proposed construction phase mitigation measures are summarised below:

- Site fencing/hoarding shall be erected to restrict views of the construction activity e.g. standard 2.4m high
- Establishment of tree protection measures (no-dig construction zones, tree protection fencing and existing hedgerow retention).
- Appointment of an Arborist to oversee all works relevant to trees
- Monitoring of tree protection measures, e.g. maintenance of protective fencing to the satisfaction of the Arborist
- Hand dig excavation under supervision of an arborist is required should excavation be necessary in a tree protection area
- Tree protection fences are to be constructed in accordance with BS 5837:2012 “Trees in Relation to Design, Demolition and Construction - Recommendations”
- A ‘Construction Exclusion Zone’ notice shall be placed on tree protection fencing at regular intervals
- Tree Protection Zones are not to be used for car parking, storage of plant, equipment or materials
- A post construction re-assessment of retained trees shall be carried out

12. ARCHAEOLOGY & CULTURAL HERITAGE

- Three pits located within Field 2 (Refer to EIAR Chapter 14) will be subject to preservation by record prior to commencement of construction. This work will be carried out by a suitably qualified archaeologist under

license and in consultation with the National Monuments Service of the DoCHG and the National Museum of Ireland.

- All topsoil stripping of previously undisturbed areas that is associated with the proposed development will be monitored by a suitably qualified archaeologist.
- If any features of archaeological potential are discovered during the course of the works further archaeological 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.
- All recommendations are subject to approval by the National Monuments Service of the Heritage and Planning Division, Department of Culture, Heritage and the Gaeltacht.

13. 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 South Dublin County Council).

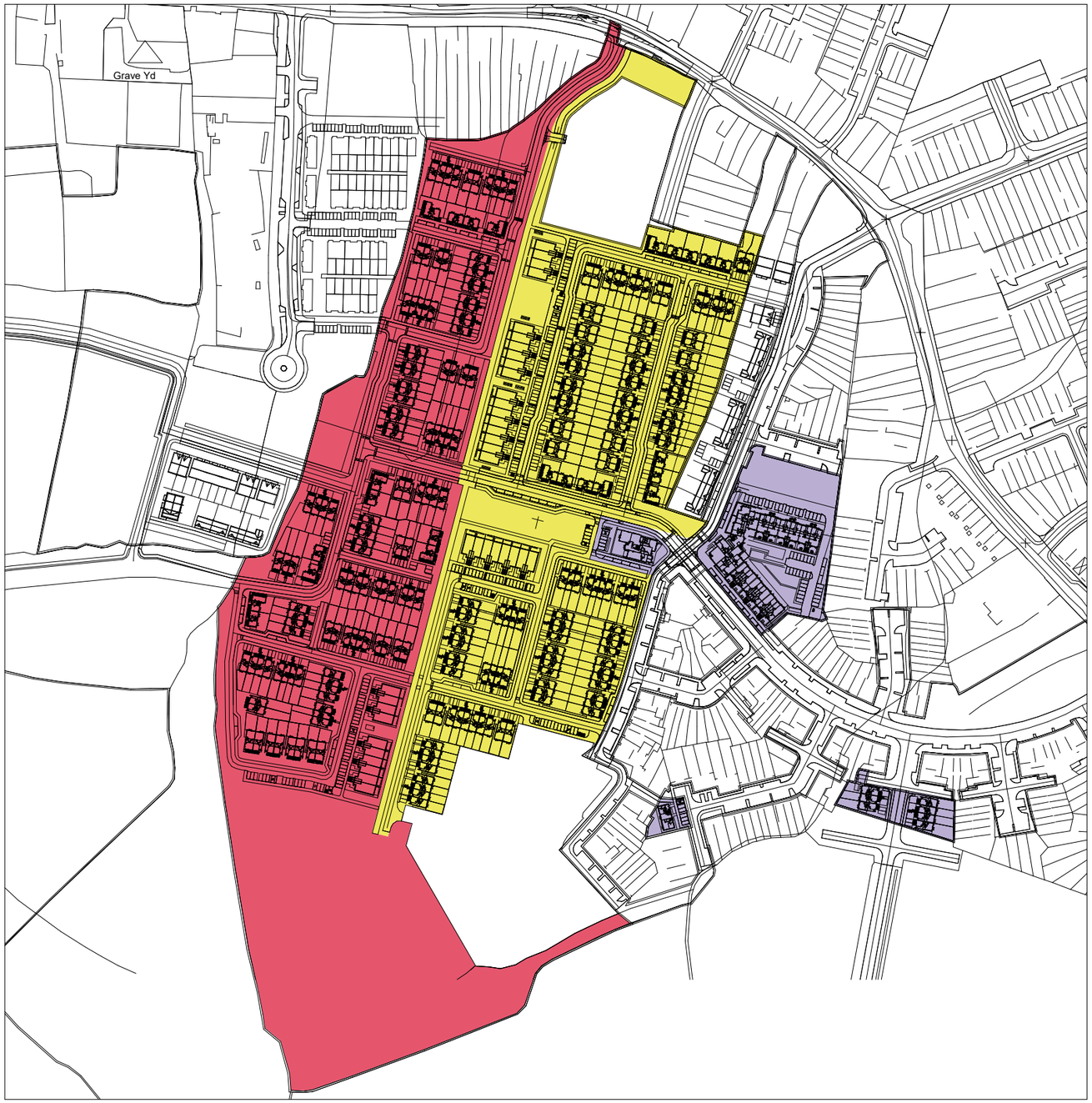
The location of the construction compound is likely to be relocated during the course of the works, in line with the phasing of the development

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 tinkered 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

Appendix A

INDICATIVE PHASING PLAN



Phase 1

Phase 2

Phase 3 - Creche & Infills

Construction Phasing Plan

Key Plan:

Rev:	Date:	Description:	By:

Drawing Status: Planning

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2 Donnybrook Road,
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Notes

Do not scale.
Use figured dimensions only.
This drawing is to be read in conjunction with all relevant specifications and drawings.
All dimensions to be checked on site.
In the event of any discrepancies between drawings the contractor is to inform the Architect immediately.

MOLA

■ ARCHITECTS ■ PLANNERS ■ URBAN DESIGNERS ■

Client: CAIRN PLC

Project: Newcastle South

Drawing: Construction Phasing Plan

Date:	Scale:	Drawn By:	Approved By:	Int. Job No:
21/08/19	Not To Scale	EC	NN	18001

Project No:	Originator:	Zone:	Level:	Type:	Discipl:	Class:	Sheet No.:	Status:	Rev.:
NCS18-	MOLA-	00-	ZZ-	DR-	A-	XX-	0901	P	01