1 Wyckham Land Ltd.

Marmalade Lane

Proposed Development & Amendments to Permitted Residential Development

ABP-312170-21

Construction and Environmental Management Plan

(LRD Submission)

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1 Introduction

Donnachadh O'Brien & Associates Consulting Engineers Ltd. (DOBA) have been instructed by the Applicant, 1 Wyckham Land Ltd., to prepare a Construction and Environmental Management Plan (CEMP) to supplement the previously approved Construction and Environmental Management Plan in relation to proposed development & amendments to permitted residential development ABP-312170-21 on lands at Marmalade Lane, Wyckham Place, Dundrum, Dublin 16.

This CEMP address **Construction & Demolition Resource & Waste Management** (Section 4), **Construction Environmental Management** (Section 5 which includes a **Surface Water Management Plan**) and finally **Construction Traffic Management** (Section 6). Following appointment, the Contractor shall be responsible for detailing and maintaining this CEMP and updating it as appropriate as the project progresses.

2 Proposed Development Description

The subject application, a Large-Scale Residential Development (LRD), comprises an amendment to the permitted Strategic Housing Development Reg Ref ABP-312170-21, and proposes to replace Block E in the south-west corner of the site (comprising a total of 68 no. units) with 8 no. semi-detached 2 storey houses at this site at "Marmalade Lane", Wyckham Avenue, Dundrum, Dublin 16.

The subject c. 4.19 greenfield site as illustrated in **Figure 1** below is located to the south and east of Gort Muire, Carmelite Order, Dundrum, Dublin 16 and is accessed from Wyckham Place off the R826 which connects with the M50 at Junction 13 of the M50. St Tiernan's school is located to its immediate north while mature, low density, two storey residential developments, including Parkvale and Wesley Lawns, are located to the south and east of the site respectively. The lands fall from the southern boundary to the northeast corner with variations across the site of c.10m. The subject application relates to proposed development and amendments to the permitted development confined to a 0.486Ha portion the lands located on the south-western portion of the site as highlighted in red in **Figure 2** below. Since the initial development received a grant of permission, construction works have commenced with foundations being excavated and foundation cast.

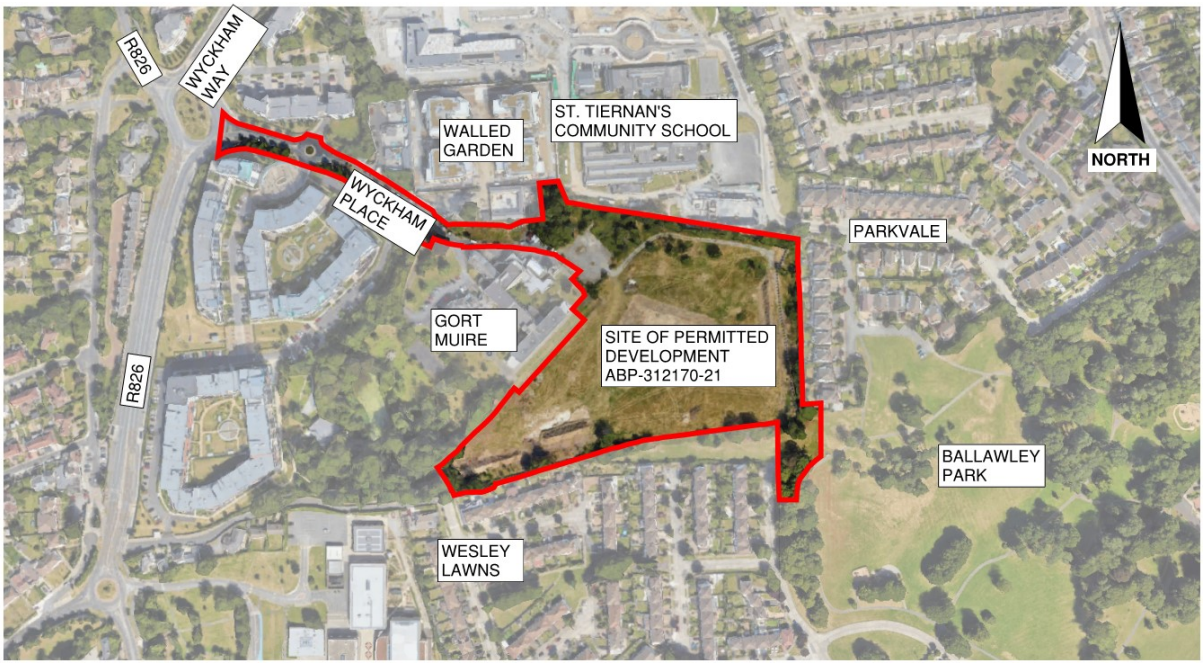

Figure 1 Location of overall permitted development ABP-312170-21 referred to as Marmalade Lane

Figure 2 Site Plan Displaying Area Statuses

3 Indicative Construction Program

It is estimated that the construction programme for the works associated with the proposed works will last c.6 months from the date of commencement. It is noted that the remainder of the granted application works will remain unchanged. This estimation is based on the typical construction programmes for other similar developments that are currently underway. It is envisaged that construction of the proposed building and external works will be carried out over a single phase. The Main Contractor will be required to prepare a detailed construction programme as part of their tender proposal.

4 Site Set Up and Security

The Main Contractor will be required to submit a site layout plan that will detail the proposed location of the site compound. The Contractor will ensure that the site compound will be serviced as required and will be secured with appropriate fencing/hoarding. The site compound will be used as the primary location for the storage of materials, plant and equipment, site offices, and worker welfare facilities. As Project Supervisor Construction Stage (PSCS), the Contractor will be responsible for site security, and they are to ensure that the site and site compound are adequately secured at all times.

The site layout plan will also include the site perimeter and the proposed detail with regard the hoarding and gate system.

5 Site Access

There is one existing access route onto the site from Wyckham Avenue to the north-west. This serves the existing Carmelite Order buildings on the site. The proposed scheme will integrate the site into the surrounding footpath networks providing construction and operational vehicle access and convenient pedestrians/cyclist routes linking the site with Ballawley Park and the surrounding area.

Construction-related traffic will enter the site via the Wyckham Roundabout on the R826 Wyckham Way and proceed onward through Wyckham Avenue to the development location. Construction traffic associated with the development can proceed along the R826 Wyckham Way to the M50 or other route depending on destination.

Furthermore, in order to reduce the requirement for site parking for employees, public transport such as Dublin Bus and Luas (stop at Balally) should be utilised. The Main Contractor will be responsible for all site access and works activity and must ensure the continued operation of the roads within the established urbanised setting.

6 Material Storage and Delivery

The Contractor will ensure that the delivery of materials is coordinated to minimise impacts to adjacent properties. The Contractor will ensure that all materials are adequately stored and secured in their site compound.

For more details please refer to the Outline Construction and Demolition Waste Management Plan

prepared and included in the planning submission. The Contractor will ensure the roads adjacent to the site are kept clean and free of debris.

7 Traffic Management Plan

The Contractor will be required to prepare and submit a detailed traffic management plan as part of their tender submission. Once appointed, the Contractor will further develop the traffic management plan as required and submit to the local authority for approval in advance of works commencing onsite.

The Contractor will ensure that advanced warning signs are erected on approaches to the site as required by the PSCS. The Contractor will use a competent sign provider and all signage that meets the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual. Any proposed temporary road markings must also confirm to the requirements of Chapter 8 of the Traffic Signs Manual.

The Main Contractor will be responsible for all site access and works activity and must ensure the continued operation of surrounding local road network as a result of its construction traffic. Note: The

Contractor must ensure on-site car parking facilities for site workers. The use of parking on neighbouring residentials streets is strictly prohibited The Contractor must submit a Construction Traffic Management Plan to the Local Authority for approval.

Haulage vehicle movements should be fully coordinated to comply with the requirements of the agreed plan:

- Construction vehicles must not stop or park along the routes at any time;
- Haulage vehicles must not travel in convoys greater than two vehicles at any time;
- Site entrance to remain free of parked or stationary vehicles at all times;
- All loading of demolition material will occur within the site boundary;
- All off-loading of deliveries will take place within the site, remote from the public road and will access via the agreed construction access point.
- The Contractor will be required to provide wheel cleaning facilities, and regular cleaning of the main access road.
- Temporary car parking facilities for the construction workforce will be provided within the site. These car parking spaces will be located adjacent to the site compound. The surface of this car park will be prepared and finished to a standard sufficient to avoid mud spillage onto adjoining roads.
- Monitoring and control of construction traffic will be ongoing during construction works. Construction traffic will minimise movements during peak hours.
- Construction Traffic routes minimising traffic impact on surrounding residential development will be used by construction vehicles.

The site is located in a suburban area where the roads and junctions are shared with public road users. Therefore, the flow of construction traffic will need to be marshalled and controlled to ensure that potential conflicts are avoided as much as possible.

There are no proposals to introduce temporary road closures or temporary traffic light signals to facilitate construction of the proposed development. There are also no proposals to amend the existing local access arrangements to the surrounding areas.

8 General Construction Approach

8.1 Construction Working Space

Construction working space will be set out in the detailed construction management plan at compliance stage. Construction access routes, haul routes and delivery routes to the site are to be

agreed with the Engineer/Employer's Representative in advance of works commencing on-site. Any road closures required (none anticipated) will be submitted and approved in advance with the local authority. It is the responsibility of the Main Contractor to prepare and submit the road closure application to the local authority in advance of works commencing on-site.

8.2 Outline Strategy

It is currently envisaged that the proposed development will be completed in a single phase as outlined below. For further details relating to the works, please refer to the more detailed planning drawings (architectural, engineering, landscape, etc.). The strategy is outlined as follows:

1. Establish secure site perimeter (fencing/hoarding) and establish the construction compound(s).
2. Construction of access road and connections to Wyckham Avenue to the Marmalade Lane development entrance.
3. Construction of associated services along the access road and Wyckham Avenue to enable connection to relevant service tie-in locations (to be progressed in tandem with Item 1).
4. Topsoil removal and stockpiling as required throughout development lands.
5. Site regrading throughout development extents to establish construction levels and introduce berms.
6. Construction of the Block B undercroft car park and associated bulk excavation. Stockpiling of excavated material, testing and re-use as required.
7. Completion of internal construction access routes (temporary surfacing) throughout the development interior and completion of associated service routes and ancillary works.
8. Establish proposed and future potential access routes to adjoining lands as required, e.g. adjacent school and park lands.
9. Installation of drainage/SuDS elements throughout the site.
10. Construction of residential units in defined sequence.
11. Completion of internal road network to permanent status, including associated private realm SuDS measures.
12. Delivery of landscaping and parks/recreation elements throughout the development extents.

8.3 Outline Works Description

The construction works will involve an indicative sequence of works, as described in short below. The Contractor will outline works which impact public spaces within the Construction Management Plan that shall be subject to submission and agreement with DLRCC.

8.3.1 Hoarding, Site Set-up and Formation of Site Access/Egress

The site area will be enclosed with hoarding details of which are to be agreed with DLRCC. Hoarding panels will be maintained and kept clean for the duration of the works. This will involve erecting hoarding around the proposed site perimeter in line with the finished development extents.

The available site footprint will enable the Contractor to set up the site compound within the site boundary. The Contractor will be responsible for the security of the site. The Contractor will be required to:

- Operate a Site Induction Process for all site staff;
- Ensure all site staff shall have current 'Safe Pass' cards and appropriate PPE;
- Install adequate site hoarding to the site boundary;
- Maintain site security at all times;
- Install access security in the form of turn-styles and gates for staff;
- Separate public pedestrian access from construction vehicular traffic.

8.3.2 Site Clearance and Demolition

The location is a greenfield site and will require minimal site clearance beyond topsoil removal and some tree removal. It is noted that the proposed development consists of the excavation and construction of a partially sunken undercroft parking level, the subsequent construction of multiple storeys of residential apartments and the associated site landscaping and ancillary development.

8.3.3 Construction Sequence

The construction methodology and programme of these activities will be dictated by the Contractor. It is noted that the current granted planning scheme is under construction and that the proposed amended planning application will depend on the sequencing of the same.

The Contractor must prepare a Construction and Demolition Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed landfill site. The Contractor must

also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

The proposed 8 units and access road will consist of the following estimated sequencing:

- Site clearance,
- Construction of services trenches, installing utilities and road/pavement layerworks,
- Construction of house foundations and erecting houses,
- M&E fitout and installation of equipment and associated connections to services,
- Commissioning

The above represents a high-level indicative construction sequence only. The actual sequence will be dictated by the Contractor. The Contractor will issue a detailed construction programme outlining the various stages prior to commencement of works.

9 Waste Management Plan

The Main Contractor will be required to prepare a detailed waste management plan for the project. This will be included in the overall construction management plan that will be submitted to the local authority. For further details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

10 Communications and Local Stakeholder Management

The Contractor will, as required, liaise with owners of the local properties in advance of works commencing onsite. The Contractor will use a competent sign provider and all signage used will meet the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual.

11 Construction noise, Dust and Vibration

The Main Contractor will be required to monitor noise, dust and vibration as will be outlined in the planning conditions. The Contractor will establish baselines for noise, dust and vibration in advance of works commencing onsite. As part of their detailed construction management plan, the Contractor will be required to clearly indicate how they plan on monitoring noise, dust and vibration throughout the course of the project. The Contractor will also be required to clearly outline the mitigation measures they plan on putting in place to ensure any breaches in the baselines are mitigated.

The contractor shall arrange for maintaining site tidiness/cleanliness, including measures to minimise

the movement of wind-blown material building materials and dust. Noise and vibration monitoring to be in accordance with the following standards:

- BS 5228
- ISO 4866
- BS 7385
- BRE DIGEST 403

For more details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

12 Working Hours

The proposed hours of work on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:30 hrs Saturday unless otherwise specified by planning conditions. It is anticipated that construction working hours will be stipulated in the planning conditions attached to the planning grant. Any working hours outside the normal construction working hours will be agreed with DLRCC. The planning of such works will take consideration of sensitive receptors, in particular any nearby businesses. For further details, please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

13 Lighting

There are no proposals to alter the existing lighting arrangements in the area. It is not envisaged that any existing public lighting will need to be disconnected as a result of the proposed works. Appropriate lighting will be provided as necessary at construction compounds. All lighting will be installed so as to minimise light spillage from the site and to adhere to the mitigation measures outlined in Section 15.1 below.

14 Construction Employment

Construction employment numbers will vary depending on the construction stage of the project and the actual approach adopted by the Contractor. However, it is anticipated that at the peak of construction there may be a workforce of approximately 300 people employed (maximum).

15 Environmental Impact Mitigation Measures

A Natura Impact Statement (NIS) has been prepared by Moore Group – Environmental Services as part of the original granted planning application in order to assist the competent authority in carrying out an Appropriate Assessment (AA) on the effects of a proposed Strategic Housing Development at

Marmalade Lane, Wyckham Avenue, Dundrum, Dublin 16 on European sites, to ascertain whether or not the Project would adversely affect European site integrity.

An assessment of the likely significance of the identified impacts on valued ecological receptors (VERs), both within and close to the application site is also made. Where a significant negative impact has been identified, then suitable remedial mitigation measures are provided in order to prevent, reduce or offset the impact.

The primary method of mitigation for any development should be avoidance of that impact. Consideration was therefore given to avoiding any direct or indirect impacts on the sensitive ecological receptors within the site.

In order to protect the existing ecological features on site and surrounding area, the following mitigation measures must be adhered to as part of the Construction Environmental Management Plan for the proposed development. These measures have also been included as part of the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) which was prepared for this development in accordance with Article 6 (3) of the Habitat's Directive and the accompanying ecological reports (Bat, Badger and Bird Survey Reports).

The following section summarises the mitigation and findings applicable to the subject site as identified in the granted planning application.

15.1 Habitats and Biodiversity

a) Vegetation cutting will be carried out only outside the bird-nesting season March 1st-August 31 st in order to avoid impacts on nesting birds.

b) Tree removal must only occur under guidance of a consultant arborist. Refer to Section 15.2 below.

c) A suitably qualified ecologist will be employed to review the Construction Environmental Management Plan and will visit the site during site preparation and during the construction works to meet the contractor and review how the plan measures are being implemented.

d) A bird box scheme should be implemented within the landscape plan to offset any potential lost nesting habitat within the subject site. Bird boxes should include swift boxes attached at height to buildings. Guidance on positioning of boxes should be taken from Swift Conservation Ireland. No lighting should be directed at any bird box or on the flight path of swifts approaching nest boxes, A lighting specialist should be employed to ensure on site lighting complies with this measure.

e) It is likely that gull species will utilise the tops of the buildings as a breeding habitat. Should this occur these species should not be interfered with.

f) Site preparation and construction must be confined to the development site only and it must adhere to all the mitigation measures outlined in the granted planning application NIS and the accompanying

Bird Survey Report, Badger Survey Report and Bat Survey Report. Work areas should be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works. On foot of the ecological reports and the iterative process involved in the preparation of these reports, the applicant is aware of the ecological sensitivity of the location. Upon appointment of the construction contractor, this team will also be made aware of the sensitivity of the site and the mitigation measures required to protect groundwater and surface water quality. All measures will be undertaken from initial site works until the completion of all construction works on site.

g) Prior to the commencement of developments on site, the site engineer and the contractors must be made aware of the ecological sensitivity of the site and its connection to any relevant European Sites. They must be made familiar with the mitigation measures outlined in this CEMP report, the NIS and other ecological reports. The applicant will be responsible for alerting the engineers and contractors to the sensitivity of the habitats and water receptors surrounding the site. This will be done prior to the commencement of any site works.

h) It is recommended that the measures outlined in this report and in the granted NIS, along with any other reports containing environmental mitigation measures, are incorporated into a Construction and Environmental Management Plan to be developed further and adopted by the eventual Contractor.

i) The design and management recommendations as set out in "BS5837:2012" are considered as "best practice" regarding the selection, retention, protection, and management of tree within the scope of the new development.

j) In respect of tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 6, BS5837: 2012, must be fit for purpose and commensurate with the nature of development and the expected day-to-day activities of the site works.

k) The Arboricultural Report prepared in the granted planning application by The Tree File Consulting Arborists provides a 'Preliminary Arboricultural Method Statement' as an appendix to the report, as well as the associated 'Tree Protection Plan' drawing "Marmalade Lane Tree Protection Plan".

l) In the granted planning application's arborist drawing, the "Construction Exclusion Zone" is defined by an orange hatching with bold "Orange" lines representing the proposed location of the primary protective "Construction Exclusion Fencing". This drawing provides only a representation of the protection locations and extents that must be located, positioned and erected under the guidance of the project Arborist. This drawing may require referral to a figured and dimensioned, "construction stage" version of the "Tree Protection Plan" drawing. All recommended protection measures will be installed before the commencement of any site works and must remain in situ (unless under the guidance of the site Arborist) until the completion of all site works.

m) It is noted that the granted planning application's Preliminary Management Recommendations outlined in the Arboricultural Report relate to the trees as they existed a the time of the tree review. Therefore and in line with the changing context of the site, such recommendation may no longer apply.

n) Any development related loss of trees can result in exposure and shelter loss issues. Therefore, all retained trees must be reviewed immediately after the primary site clearance works. This will allow for the updating and amending the "preliminary management recommendations" of the primary survey. Such amendments would address such issues as may arise and may include additional structural pruning works. Regular reviews of all retained trees must be maintained, so that early and prompt intervention and action can be applied as required.

o) All the mature trees within the site that must be removed for safety issues should be examined for the presence of bats prior to felling by a bat specialist in the 48 hours prior to felling. Should bats be noted in any tree, it is a protected structure and a derogation license must be sought from National Parks and Wildlife Service.

p) In order to preserve the commuting and foraging potential of the treelines remaining and new trees planted, and to minimise disturbance to bats utilising the site in general, the lighting and layout of the proposed development should be designed to minimise light-spill onto habitats used by the local bat population foraging or commuting. Therefore, where possible, the lighting scheme should include the following:

- The avoidance of direct lighting of existing trees to be retained or proposed areas of habitat creation / landscape planting.
- Unnecessary light spill controlled through a combination of directional lighting and hooded / shielded luminaires or strategic planting to provide screening vegetation.
- Lights should be of low intensity. It is better to use several low intensity lights than one strong light spilling light across the entire area.
- Narrow spectrum lighting should be used with a low UV component. Glass also helps reduce the UV component emitted by lights.
- The colour rendering of the selected light fitting should be 3000k making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife.

q) Regarding potential bat roosts in trees, for the affected Trees of 'Moderate' or 'High' bat potential, the following should take place:

- A pre-felling bat survey the night before felling, along with the felling methodology outlined below.

- If bats are found to be using the trees with 'Moderate' or 'High' bat potential as a roost, a derogation licence from the National Parks and Wildlife and Services (NPWS) will be required and any felling postponed until a licence is acquired.

For all felling of other trees and mature hedgerows (with 'Low/No' bat Potential, or used for commuting and foraging bats), the following methodology should be undertaken:

- Tree-felling should be undertaken in the period late August to late October/early November. During this period bats are capable of flight and this may avoid risks associated with tree-felling.
- Felling during the winter months should be avoided as this creates the additional risk that bats may be in hibernation and thus unable to escape from a tree that is being felled. Additionally, disturbance during winter may reduce the likelihood of survival as the bats' body temperature is too low and they may have to consume too much body fat to survive.
- Tree-felling should be undertaken using heavy plant and chainsaw. There is a wide range of machinery available with the weight and stability to safely fell a tree. Normally trees are pushed over, with a need to excavate and sever roots in some cases. In order to ensure the optimum warning for any roosting bats that may still be present, an affected tree should be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. Any affected trees should then be pushed to the ground slowly and should remain in place for a period of at least 48 hours to allow bats if present to escape.
- Trees felled should NEVER be sawn up or mulched immediately in case protected wildlife is present.
- Trees used for future landscaping should comprise of a high percentage of semi-mature native Irish species.
- Tree Group 2 along boundary should be retained if possible as a commuting corridor for bats.

r) A series of 10+ no. bat boxes should be provided to provide future roosting opportunities. The type recommended is the 2F Schwegler bat boxes s. All boxes should be away from illumination. All bat boxes must be unlit and should be at least 2.5m above ground height, preferably 3m or higher. If any trees require a derogation licence (as per results from the pre-felling survey) then additional roosting mitigation may be required.

s) Due to the documented presence of badger foraging across the Site of the Proposed Development and adjacent lands, it is recommended that, in order to offset the potential loss of badger range associated with the Proposed Development, badger access to the Site from adjacent lands to the north-east and Gort Muire lands to the west should be maintained for the duration of the

Development's operational lifetime. This can be facilitated by the incorporation of a badger entrance/opening to any boundary fencing/wall proposed to separate these areas. A gap of height 15cm x width 20cm will provide ample access for badger.

t) The measures as described in Brian Keeley's 2020 report with regard the planting of vegetation that is difficult to penetrate by people (e.g., hawthorn, blackthorn, dog rose and bramble) along the boundary with the Gort Muire lands in the southwest of the Site is recommended. This measure will allow sheltered access routes to the Site from the wilder land to the west, allowing continued usage of the Site. Dogs should be kept on a leash within the development grounds during its operational lifetime, to further ensure badger access is not impeded and no related disturbance occurs.

u) During the construction phase it is recommended that all trenches, pits and settling ponds etc., be covered at the end of each working day, or include a means of escape for any animal should they fall in (Badgers will continue to use their traditional foraging routes even when construction has commenced). Chemicals should also be stored as far away from the badger foraging area in the north as possible, and suitably sealed to prevent spills etc.

v) All construction waste must be removed from site by a registered contractor to a registered site. Evidence of the movement and safe disposal of the construction waste must be retained and presented to Local Authority upon request. The applicants and construction contractors will be responsible for the safe removal of any construction waste generated on site. Removal of the construction waste should occur as soon as possible after demolition / construction works.

w) All topsoil generated from site works should be stored within the application site until it is required for landscaping. It must not be stored outside the site boundary, and it must not be used for the infilling of any area outside of the site. It must be stored at appropriate locations within the site, away from the stream. If there is more topsoil than is needed for landscaping, it must be removed from site by a registered contractor for appropriate use elsewhere. The end location of the topsoil must be identified, and records presented to the local authority if requested.

15.2 Land, Soil and Geology

a) Stripping Topsoil: Full topsoil removal will be required to implement the required works. Topsoil that can be reused for landscaping works will be stockpiled on site. The remaining topsoil will be removed from site.

b) Excavation of Subsoil Layers: Minor subsoil removal will be required where works require excavation to install foundations and services and other works. The impact of this is expected to be minimal.

c) Construction Traffic: Construction traffic will be in operation during the proposed works. This will comprise construction workers, temporary special construction vehicles, cranes, and excavation

machinery. Their impact on the land and soil is expected to be limited to their operations related to the construction works, and therefore is expected to be short term in nature.

d) Accidental Spills and Leaks: During construction of the development, there is a potential risk from accidental pollution incidences from the following sources: spillage or leakage of oils and fuels stored on site; spillage or leakage of oils and fuels from construction machinery or site vehicles; spillage of oil or fuel from refuelling machinery on site; and the use of concrete and cement during appropriate foundation construction. Accidental spillages may result in contamination of soils and groundwater underlying the site should contaminants migrate through the subsoils and impact underlying groundwater. Soil stripping and excavation for drainage lines will also reduce the thickness of subsoils in localised areas. Concrete (specifically, the cement component) is highly alkaline and any spillage which migrates though the subsoil would be detrimental to groundwater quality. In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full. Sand piles and emergency clean up spill kits will be readily available in the event of a fuel spill. A hazardous bin will also be available to contain any spent sand or soak pads. New metal gerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site. Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum, which will be stored within the bund. Metal gerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work.

e) Geological Environment: There are no likely significant impacts on the geological environment associated with the proposed development of the site.

15.3 Hydrology

a) Throughout the construction works, all surface water (water from excavations etc.) will be pumped to a holding and settlement tank on site for treatment. The discharge water from the final tank will be routed to the existing surface water system with approval from the local authority. Visual checks of the settlement system will be carried out on a routine basis. Please refer to the Outline Construction & Demolition Waste Management Plan for further information.

b) In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full. Sand piles and emergency clean up spill kits will be readily available in the event of a fuel spill. A hazardous bin will also be available to contain any spent sand or soak pads. New metal

gerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site. Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum, which will be stored within the bund. Metal gerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work.

c) Surveys will be undertaken to ascertain the exact location of all infrastructure. The material assets are to be constructed in accordance with all relevant Dun Laoghaire Rathdown County Council and Irish Water standards.

d) These measures will be addressed within the Contractors method statements for the works. The contractor is to conduct the works in accordance with all relevant local authority requirements, and health and safety legislation.

15.4 Noise and Vibration

a) Selection of Quiet Plant: This practice will be implemented in relation to static plant such as compressors and generators. These units will be supplied with manufacturers' proprietary acoustic enclosures. 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. Should a particular item of plant already on the site be found to generate high noise levels, the first action will be to identify whether or not said item can be replaced with a quieter alternative.

b) Noise Control at Source: If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source". This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact. Referring to the potential noise-generating sources for the works under consideration, the following best practice mitigation measures will be applied:

i. Site compounds will be located in excess of 30m from noise-sensitive receptors within the site constraints. The use lifting bulky items, dropping, and loading of materials within these areas will be restricted to normal working hours.

ii. For mobile plant items such as dump trucks, excavators and loaders, the installation of an acoustic exhaust and/or maintaining enclosure panels closed during operation can reduce noise levels by up to 10dB. Mobile plant will be switched off when not in use and not left idling.

iii. For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover. For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.

iv. For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.

v. For compressors, generators, and pumps, these can be surrounded by acoustic lagging or enclosed with in acoustic enclosures providing air ventilation.

vi. Demountable enclosures can also be used to screen operatives using hand tools and will be moved around site as necessary.

vii. All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

c) Screening: Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Construction site hoarding will be constructed around the site boundaries as standard. The hoarding will be constructed use standard plywood material to provide adequate sound insulation. In addition, careful planning of the site layout will also be implemented. The placement of site buildings such as offices and stores will be used, where feasible, to provide noise screening when placed between the source and the receiver.

d) Monitoring: Construction noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the development works to check compliance with the construction noise criterion. Noise monitoring will be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics - Description, measurement, and assessment of environmental noise.

e) Project Programme: The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. During excavation or when other high noise generating works are in progress on a site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time. A phasing strategy is set out in the CEMP.

f) The vibration from construction activities will be limited to the values set out in Tables 8.2 and 8.3. Magnitudes of vibration slightly greater than those in the table are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Limit values

have been provided for soundly constructed residential and commercial properties. The best practice mitigation measures set out below:

- Liaison with the public
- Monitoring
- Vibration Control at Source

g) Liaison with the Public: A designated environmental liaison officer will be appointed to site during construction works. Any vibration complaints will be logged and followed up in a prompt fashion by the liaison officer. In addition, where a particular vibration construction activity is planned or other works with the potential to generate high levels of vibration, or where vibration works are expected to operate outside of normal working hours etc., the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the vibration works.

h) Monitoring: Construction vibration monitoring will be undertaken at periodic sample periods at the nearest noise-sensitive locations to the development works to check compliance with the construction vibration criterion.

i) Vibration Control at Source: If replacing a vibration item of plant is not a viable or practical option, consideration will be given to control "at source". This refers to the modification of an item of plant or the application of improved vibration reduction methods in consultation with the supplier.

15.5 Air and Climate

a) In order to minimise dust emissions during construction, a series of mitigation measures has been prepared in the granted planning application, which remains applicable to this subject amendment in the form of a Dust Management Plan (submitted in the granted EIAR). Provided the dust management measures outlined in the plan (submitted in the granted EIAR) are adhered to, the air quality impacts during the construction phase will not be significant. Regard has also been taken for the import of infill materials from off-site locations and potential dust impacts as a result of this will also be mitigated.

b) Climate: Construction traffic and embodied energy of construction materials are expected to be the dominant source of greenhouse gas emissions as a result of the construction phase of the development. Construction vehicles, generators etc., may give rise to some CO2 and N2O emissions. However, due to short-term and temporary nature of these works, the impact on climate will not be significant. However, due to short-term and temporary nature of these works, the impact causes noticeable changes in the character of the environment but without significant consequences. Nevertheless, some site-specific mitigation measures will be implemented during the construction phase of the proposed development to ensure emissions are reduced further. In particular the prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.

Minimising delivery vehicles due to poor timing or ordering on site will aid to minimise the embodied carbon footprint of the site.

c) Mitigation Measures (Construction):

i. Avoid unnecessary vehicle movements and manoeuvring, and limit speeds on site so as to minimise the generation of airborne dust.

ii. Buildings shall be demolished by approved methods and in a manner that reduces the impact on air quality.

iii. Manual Stripping of buildings of internal fixings, metals, glass and asbestos.

iv. A 3m high solid wooden hoarding with a 3m high dust net shall be erected around the entire construction site perimeter, giving a total dust barrier height of 6m.

v. Use of rubble chutes and receptor skips during construction activities.

vi. All buildings in which asbestos has been identified shall be sealed during the asbestos removal process. Asbestos shall only be removed by an appropriately permitted company. All asbestos waste shall be double bagged, stored in a dedicated sealed waste container/skip prior to removal off-site for disposal at an appropriately permitted/licenced facility. Records of all asbestos waste removed from site shall be maintained by the site manager and certificates of destruction shall be provided by the asbestos removal contractor. Asbestos surveys shall be conducted by an appropriately HSE approved contractor.

vii. During dry periods, dust emissions from heavily trafficked locations (on and off site) will be controlled by spraying surfaces with water and wetting agents.

viii. 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.

ix. A road sweeper vehicle shall be on-site at all times to clean soiled public roads in the vicinity of the site.

x. A mobile wheel wash unit shall be installed at the site exit to wash down the wheels of all trucks exiting the site.

xi. An independent environmental consultant shall be appointed by the contractor to prepare a dust control and monitoring method statement prior to the commencement of site activities.

xii. A weekly inspection of each dust gauge will ensure that the site manager identifies at the earliest instance if dust suppression techniques shall be implemented at the project site areas.

xiii. Re-suspension in the air of spillage 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.

xiv. The overloading of tipper trucks exiting the site shall not be permitted.

xv. Aggregates will be transported to and from the site in covered trucks.

xvi. 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.

xvii. Wetting agents shall be utilised to provide a more effective surface wetting procedure.

xviii. 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.

xix. All plant not in operation shall be turned off and idling engines shall not be permitted for excessive periods.

xx. 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.

xxi. Material stockpiles containing fine or dusty elements including top soils shall be covered with tarpaulins.

xxii. 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.

xxiii. 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.

xxiv. 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.

d) Refer to EIAR Table 9.20 for a summary of dust control techniques which will be implemented at the site during activities.

15.6 Landscape and Visual Impact

a) Consideration of the impact on landscape and visual aspects has been integral in the design and layout of the scheme. A number of mitigation measures have been addressed including:

i. Reference to DLRCC Green Infrastructure Policies and Objectives for development sites with the inclusion of Sustainable Urban Drainage proposals integrated into the landscape.

ii. Provision of open spaces for future interaction of the said and adjoining developments

iii. The use of high quality hard and soft landscape materials befitting of a new residential scheme and suitable to the existing landscape

iv. Integrating the landscape elements of this extensive development into the surrounding built environment and connecting pathways and cycleways.

v. Retention of existing trees on, and adjoining, the site and their landscape and screening value and integration into the landscape design with additional planting.

15.7 Traffic and Transportation

a) The appointed Contractor shall prepare a Construction Transport Management Plan prior to the commencement of development. The CTMP will remain unchanged from the documents and info submitted as part of the original granted planning scheme. The preparation of the CTMP will entail an assessment of existing nearby employment, educational, recreational and commercial facilities to establish the peak times for vehicles, cyclists and pedestrians. This information would be used to develop the optimum start/finish/delivery times to minimise impact on these existing facilities. It is assumed that most construction traffic approaching the site will travel via the M50 Junction 13. Again, the CTMP issued at construction stage will identify haulage routes and restrictions as appropriate in discussion with the Local Authority. There will also be a requirement for comprehensive measures as part of the construction management.

b) A Construction & Demolition Plan shall be prepared and implemented by the appointed Contractor prior to commencement of development to include:

i. Provision of temporary warning signs and Banksmen controlling access and egress from the site;

ii. All marshalling areas and site offices will be contained within the site boundary and will therefore have little impact on external roads;

iii. Wheel washers/judder bars to clean off vehicles exiting the site during spoil removal;

iv. All loads to be properly stowed and secured with a tarpaulin, where appropriate;

v. Routine sweeping/cleaning of the road and footpaths in front of the site;

vi. No uncontrolled runoff to the public road from dewatering/pumping carried out during construction activity.

vii. Hoarding will be provided along the site frontage to protect pedestrians using the footpaths.

viii. Existing public lighting will be maintained

c) Construction vehicle movements will be minimised through:

i. Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak traffic periods;

ii. 'Cut' material generated by the construction works will be re-used on site where possible, through various accommodation works;

iii. Adequate storage space on site will be provided;

iv. A strategy will be developed to minimize construction material quantities as much as

v. possible, such as the use of precast/prefabricated materials, where possible;

vi. Construction staff vehicle movements will also be minimized by promoting the use of public transport, shared use of vehicles, cycling and walking.

15.8 Material Waste

a) Connections to the existing electricity, water services, gas and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors.

15.9 Waste

a) A project specific C&D WMP has been prepared in line with the requirements of the guidance document issued by the DoEHLG. Adherence to the high-level strategy presented in this C&D WMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the construction phase of the proposed development.

b) It is estimated that circa 15,000m3 of material will be generated from the excavations required to facilitate construction. Contractor(s) to endeavour to ensure material taken offsite is reused or recovered off-site or disposed of at authorised facility.

c) In addition, the following mitigation measures will be implemented:

i. Building materials will be chosen with an aim to 'design out waste'.

ii. On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated:

iii. Concrete rubble (including ceramics, tiles and bricks).

- Plasterboard
- Metals
- Glass
- Timber

iv. 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.

v. All waste materials will be stored in skips or other suitable receptacles in designated areas of the site.

vi. 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).

vii. A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works.

viii. All construction staff will be provided with training regarding the waste management procedures.

ix. All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal.

x. All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and

xi. All waste leaving the site will be recorded and copies of relevant documentation maintained.

d) The mitigation measures to ensure that the waste arising from the construction phase of the development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations, the Litter Pollution Act 1997 and the EMR Waste Management Plan (2015 - 2021). It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will encourage sustainable consumption of resources.

15.10 Cultural Heritage

a) A programme of archaeological testing was carried out at the subject site in July 2020 as part of the original granted planning application. Nothing of archaeological significance was noted. Much of the proposed development site was entirely scarped or stripped back at some time in the recent past and subsequently inundated with imported fill. The potential for previously unknown sub-surface remains is negligible. No further archaeological mitigation is recommended.

b) The most significance risk presented is to protected fabric along the construction route. In mitigation, it is proposed to construct a temporary enclosure to the vehicular route to the site, safeguarding flanking protected walled gardens and the tower structure.

15.11 Arboricultural Impact and Tree Protection Strategy

The overall objectives are to retain the maximum number of good quality trees whilst also achieving densities of housing compliant with current standards and planning recommendations. These plantings will provide a new generation of trees which have the potential to develop and add to the existing tree cover on the site.

A Tree Protection Strategy is provided as part of the arboricultural element of the submission with the aim of ensuring retained trees are maintained for the duration of the construction stage of the development free of negative construction related impacts.

A Site Arborist shall be appointed prior to the commencement of site construction works and will be responsible for the setting up and monitoring of tree protection, liaising with local authority tree / planning officers and providing feedback and advice to the design construction teams on issues relevant to trees. The Site Arborist shall be retained for the duration of construction works and should be appointed to carry out a post-construction tree survey/assessment.

15.12 Protection of Water Quality

Construction management measures including specific measures to prevent pollution of the Slang River will be incorporated into the CEMP, which will ensure that there are no likely effects on the receiving environment of the Dodder River, River Liffey or Dublin Bay from surface water runoff.

Fuel/Lubricant spillage from equipment

- Chemicals used will be stored in sealed containers.
- Chemicals shall be applied in such a way as to avoid any spillage or leakage.
- All refuelling, oiling and greasing will take place above drip trays or on an impermeable surface which provides protection to underground strata and watercourses and away from

drains and watercourses as far as reasonably practicable. Vehicles will not be left unattended during refuelling.

- It is proposed that the construction compound will be located within the site boundary.
- Storage areas, machinery depots and site offices will be located within the site boundary.
- Spill kits will be made available and all staff will be properly trained on correct use.
- All fuels, lubricants and hydraulic fluids required to be stored on site will be kept in secure bunded areas. The bunded area will accommodate 110% of the total capacity of the containers within it.
- Containers will be properly secured to prevent unauthorised access and misuse. An effective spillage procedure will be put in place with all staff properly briefed. Any waste oils or hydraulic fluids will be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.
- All plant shall be well maintained with any fuel or oil drips attended to on an ongoing basis.
- Any minor spillage during this process will be cleaned up immediately.
- Should any incident occur, the situation will be dealt with and coordinated by the nearest supervisor who will be responsible for instructions by the Local Authority.

Concrete

- Wet concrete and cement are very alkaline and corrosive and can cause serious pollution to watercourses. Disposal of raw or uncured waste concrete will be controlled during delivery or by removal by the contractor.
- Careful management of bulk-liquid concrete will be implemented during the construction phase, including careful and controlled pouring and handling, secure shuttering / form-work and adequate curing times.
- Wash water from cleaning ready mix concrete lorries and mixers may be contaminated with cement and is therefore highly alkaline, therefore, washing will not be permitted on site. Mitigation measures out in the CEMP in accordance with CIRIA Good Practice Guidelines (C532 – Control of Water Pollution from Construction Sites) will be implemented during the construction phase of the proposed development.

Guidelines in the following best practice documents should also be adhered to:

- Construction Industry Research and Information Association (CIRIA) (2005) Environmental Good Practice on Site (C692)
- Construction Industry Research and Information Association (2001) Control of Water

- Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)
- Construction Industry Research and Information Association (2000) Environmental
- Handbook for Building and Civil Engineering Projects (C512)
- Environmental Protection Agency (2015) List of Waste and Determining if Waste is
- Hazardous or Non-Hazardous
- Environment Agency et al. (2015) Guidance on the Classification and Assessment of Waste, Technical Guidance WM3
- Environmental Protection Agency (2013) Guidance (and Templates) on the Management of Contaminated Land and Groundwater at EPA Licensed Site
- Environment Agency (2004) Model Procedures for the Management of Land Contamination (CLR11)

The construction team must implement the following specific mitigation measures as part of the Construction Environmental Management Plan to prevent the release of hydrocarbons, aggregates, polluting chemicals, sediment and silt and contaminated waters into water course on site.

i. Surface waters from the construction site should be managed using a system of temporary on-site attenuation features, and these should be fitted with silt barrier devices such as silt fences or silt busters.

ii. Discharge water generated during laying on concrete should be removed off site for treatment and disposal.

The following pollution control measures must also be employed on site:

i. A dedicated re-fuelling location must be established on site, and this must be situated away from any watercourse on site.

ii. Spill kits stations must be provided at the fuelling location for the duration of the works.

iii. Staff must be provided with training on spill control and the use of spill kits.

iv. All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.

v. All chemicals must be stored as per manufacturer's instructions. A dedicated chemical bund will be provided on site.

vi. Storage of fuel, and servicing and refuelling of equipment or machinery must be at least 20m from ground clearance or rock-breaking activities.

vii. The dedicated refuelling area must be underlain by concrete hard standing. All fuel and oil tank should be inspected on a regular basis for signs of spillages, leaks and damage during use. A record of these inspections must be kept, and any improvements needed be carried out immediately.

viii. The risk of fuel spillages on a construction site is at its greatest when refuelling plant. Therefore, only designated trained and competent operatives should be authorised to refuel plant on site. Plant and equipment should be brought to a designated refuelling area rather than refuelling at numerous locations about the site.

ix. Chemicals used on site must be returned to the site compound and secured in a lockable and sealed container overnight in proximity to the fuel storage area.

x. Drip trays must be utilised on site for all pumps situated within 20m away from ground clearance areas.

xi. Procedures and contingency plans must be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms must be kept on site, on plant working near the river and at the refuelling area.

xii. Daily plant inspections must be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the plant must be removed from operations for repairs.

xiii. All personnel should observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.

Best practice concrete / aggregate management measures must be employed on site. These will include:

i. A designated concrete wash out area should be set up on site; typically, this will involve washing the chutes, pumps into a designated IBC before removing the wastewater off site for disposal. These procedures should be covered during a Site Safety & Environmental Induction session.

ii. Best practice in bulk-liquid concrete management should be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.

iii. Stockpile areas for sands and gravel must be kept to a minimum size, well away from the drains and watercourses (minimum 50m).

iv. Where concrete shuttering is used, measures must be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.

v. Activities which result in the creation of cement dust must be controlled by dampening down the areas.

vi. Raw and uncured waste concrete must be disposed of by removal from the site.

vii. Stockpile areas for sands and gravel will be kept to a minimum size, well away from the watercourse on site.

The proposed development will be fully serviced with [separate] foul and storm sewers which will have adequate capacity for the facility likely discharge, as required by Irish Water licencing. The design of the proposed development will incorporate Sustainable urban Drainage Systems (SuDS) features in order to improve water quality and reduce the quantity of surface water discharging into the receiving system. The water supply network will include low flow devices with the aim of minimising water usage.

It is noted that the design of the proposed development will also include a proposed oil/ petrol interceptor on the stormwater drainage infrastructure. All silt and oil interceptors must be serviced regularly to ensure continued performance.

The design of the proposed development will also incorporate a foul drainage system which, as per other urban developments in Dublin region, will outfall to the public sewer and will be treated at the Irish Water Ringsend WWTP prior to subsequent discharge following treatment to Dublin Bay. This WWTP is required to operate under an EPA licence and must meet environmental legislative requirements as set out in such licence.

15.13 Biodiversity Enhancement

The landscaping of the site offers the potential for biodiversity enhancements within the site. Future landscaping of the site will adhere to the following recommendations:

i. The natural verges along the treelines and hedgerows that are to be retained should be retained and managed appropriately for the benefit of wildlife. They should not be sprayed with herbicide and a low intensity mowing or strimming regime should be incorporated. This will benefit local pollinators.

ii. Native trees and shrubs will preferably be used in the landscaping, followed by ornamental species that are of benefit to pollinators.

iii. A proportion of the grassland / parkland habitats within the site should be managed through methods that mimic traditional grassland management (low level mowing regimes). This will benefit local pollinators. Locally sourced wildflower seed would also be beneficial.

iv. Where possible the importation of topsoil from outside the area should be avoided.

v. Allow some areas to go 'wild' where bramble and scrub, etc. can develop.

vi. Garden plants that have the potential to become invasive must be avoided.

vii. Wherever possible semi-natural grassland/meadow verge and native hedgerow habitats should be incorporated into the proposed landscaping plan. The margins of the Site are likely to be the most appropriate areas for this type of less-managed habitat and will provide connectivity and a means of getting around the Site for badger and other small mammals such as hedgehog, while also providing foraging opportunities for these species. No or minimal chemical plant/pest control products should be used within these areas to encourage beetles and other badger food species (this will also benefit biodiversity at the Site in general).

16 Environmental Impact Monitoring Measures

Monitoring is generally required where there may be significant residual impacts despite the implementation of the mitigation measures. The following monitoring measures are recommended:

- Any trees and bat boxes should be monitored once the development is operational.

17 Conclusion

This document has provided an outline construction management plan the proposed residential development of lands at Wyckham Avenue, Dundrum, Dublin 16 for planning application purposes.

This CEMP is to be read in conjunction with the previously approved scheme and it is noted that there are no significant changes to any of the construction processes, bar the proposed amendment planning application as outlined in the documentation.

The construction programme for the works will take an estimated 6 months.

The site will be accessed primarily via Wyckham Avenue, Dundrum, Dublin 16. Construction-related traffic will exit the site onto Wyckham Avenue, then to Wyckham Roundabout and Wyckham Way. Traffic will proceed from that point to the M50 via the Balinteer Roundabout, connecting to the M50 at Junction 13.

It is anticipated that construction working hours will be stipulated in the planning conditions attached to the planning grant. Any working hours outside the normal construction working hours will be agreed with DLRCC. It is anticipated that at the peak of construction, the workforce will remain unchanged from the arrangements for the granted scheme.

The Main Contractor will be required to prepare a detailed construction management plan for the project, taking into account the requirements of this Construction Environmental Management Plan and with due regard to the Ecological Impact Assessment.