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CONSTRUCTION & DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN

**MARROWBONE LANE,
THE LIBERTIES,
DUBLIN CITY,
Co. DUBLIN**

2024

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1.0 INTRODUCTION

Panther Environmental Solutions, was commissioned by Malone O'Regan Consulting Engineers, on behalf of Dublin City Council, has prepared a Construction & Demolition Environmental Management Plan (CDEMP) for a proposed development seeking permission for the construction of 108 apartments units at a site c. 0.58 ha at the Road Maintenance Depot, Marrowbone Lane and Forbes Lane, Dublin 8 (ITM E714056, N733457).

1.1 COMPETENCY & EXPERIENCE

PES is a leading environmental consulting firm based in Carlow, Ireland. PES was formed in 2005 by environmental consultant Mr. Mike Fraher who has over two decades of experience working in the environmental consultancy industry, both in Ireland and in the United Kingdom.

The PES team are competent and experienced in preparing environmental planning documents. PES has completed environmental works in a wide range of industries including construction, waste management, industrial and intensive agriculture.

This CDEMP has been prepared by experienced environmental consultants within PES Ltd and ecologists within the sister company Panther Ecology Ltd.

Mr Mike Fraher has over 25 years of consultancy experience and has a B.Sc. Degree in Environmental Sciences from the University of Glamorgan, Cardiff in Wales and a Diploma in Food Sciences from Cork Institute of Technology.

Mr. Martin O'Looney has over ten years' consultancy experience and has a B.Sc. Degree in Environmental Science and Technology from Sligo Institute of Technology.

Mr. Nial Ryan has over six years' consultancy experience and has a BSc. in Applied Physics from Dublin City University, an MSc. in Medical Device Regulatory Affairs, a Certificate in Introduction to AutoCAD, and a Certificate in Environmental, Health & Safety Management all from Institute of Technology Carlow.

Mr. Luis Soares has a BSc. in Aquatic Sciences and an MSc in Environmental Sciences and Technology from University of Porto.

Ms Paula Farrell who has a BSc in Wildlife Biology from Munster Technological University (formerly IT Tralee) and has experience in elasmobranch, amphibian, bird, invertebrate, mammal and floral surveys.

Ms Soraia Branco who has a BSc in Biology from Coimbra University and an MSc in Management and Conservation of Nature from Azores University and has experience in ecological and floral surveys.

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1.2 PURPOSE OF THE CDEMP

The purpose of this CDEMP is to communicate key environmental obligations that apply to all site personnel, sub-contractors, and visitors to the site, while carrying out construction activities as part of the proposed development.

The CDEMP defines the approach to environmental management at the proposed development site, outlining the work practices, construction procedures and responsibilities to be undertaken during the construction phase. Compliance with the CDEMP, the procedures, work practices and controls will be mandatory and must be adhered to by all personnel and sub-contractors employed during the construction phase.

The CDEMP outlines, where necessary, the control measures that are required to avoid, minimise, or mitigate potential effects on the environment and surrounding area.

This document has been prepared based upon the information provided during the planning stage, supplied by the client, Malone O'Regan Consulting Engineers, with respect to the proposed development.

The CDEMP will be reviewed and updated as appropriate upon planning approval and as necessary throughout the construction phase.

1.3 LIVE DOCUMENT

The CDEMP is a "live" document and will be reviewed and updated as necessary throughout the construction phase.

1.4 COMMUNICATION

This CDEMP will be communicated to all site personnel during site inductions and briefings. All site personnel will be responsible for undertaking their work in an environmentally sustainable manner and will be encouraged to provide feedback and comments on environmental performance at the site and suggestions for improvement. A Project Manager will be appointed to the proposed development. Any environmental issues, accidents or incidents will be reported to the Project Manager as soon as possible.

The main project communications will comprise of structured reporting arrangements and meetings. Site meetings will be undertaken on a weekly basis, with environmental performance included within the meeting agenda. The CDEMP will also be discussed at these meetings, including the effectiveness of the CDEMP and potential environmental improvements.

2.0 DESCRIPTION OF THE EXISTING SITE

2.1 SITE LOCATION

The proposed development site is located in the south of Dublin City in The Liberties, Dublin 8, as shown in Figure 2.1 below. Access to the new proposed site will be via the Marrowbone Lane (R804 road) to the east and Forbes Lane to the north, which have good connectivity to the wider local and regional road network within Dublin City. The land use of the surrounding area is characteristic of Dublin City urban fabric, with residential buildings, retail stores, restaurants, schools, sport and leisure facilities.

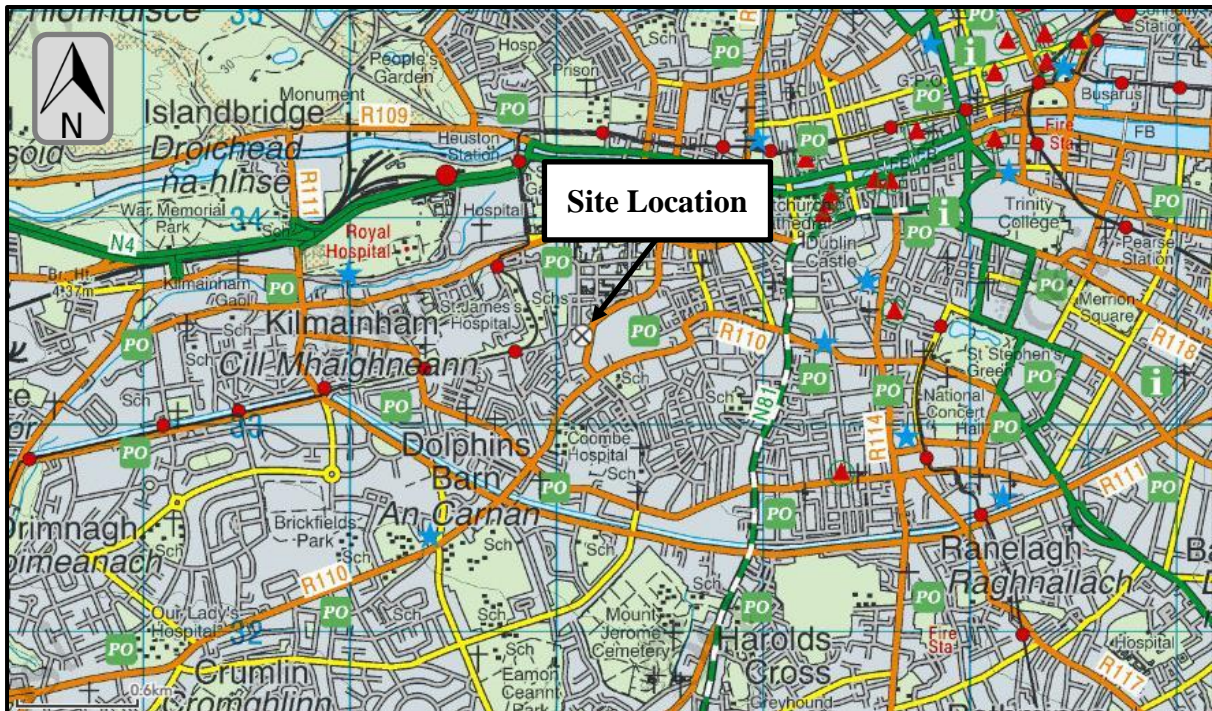


Figure 2.1: Location of Proposed Development at Marrowbone Lane, Dublin City

2.2 PLANNING CONTEXT

The proposed development will provide modern residential dwellings to Dublin City and its environs. This is essentially a residential development, which will also include dedicated community, arts and cultural facilities. As good environmental practice, this CDEMP has been prepared, to ensure construction works would be undertaken in an environmentally sensitive manner.

The following sections outline the planning policies relevant to the proposed development and the protection of the environment.

National Policies

A number of documents have been published in relation to the Government's commitment to sustainable development, including the *National Planning Framework 2040* and the *National Development Plan 2021-2030*.

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Regional Policies

The *Regional Spatial and Economic Strategy 2019-2031*, which includes the counties of the Eastern and Midland Regions outlines the long-term spatial and economic planning strategy for the area. As part of the guidelines, a number of policies relating to the protection of the environment were outlined, as per Table 2.1 below.

Table 2.1: Regional Policies Relevant to the Protection of the Environment and the Proposed Development

| POLICY REFERENCE | POLICY |
|------------------|---|
| RPO 3.7: | Local authorities shall have regard to environmental and sustainability considerations for meeting sustainable development targets and climate action commitments, in accordance with the National Adaptation Framework. In order to recognise the potential for impacts on the environment, Local authorities shall address the proper site/route selection of any new development and examine environmental constraints including but not limited to biodiversity, flooding, landscape, cultural heritage, material assets, including the capacity of services to serve any new development. |
| RPO 7.7: | To reduce harmful emissions and achieve and maintain good air quality for all urban and rural areas in the Region and to work with local authorities and the relevant agencies to support local data collection in the development of air quality monitoring and to inform a regional air quality and greenhouse gas emissions inventory. |
| RPO 7.8: | Local authorities shall incorporate the objectives of the EU Environmental Noise Directive in the preparation of strategic noise maps and action plans that support proactive measures to avoid, mitigate, and minimise noise, in cases where it is likely to have harmful effects |
| RPO 7.9: | Local authorities shall consider measures to minimise the harmful effects of light pollution in the future provision of outdoor lighting, including improving their approach to street lighting and ensuring that new developments are lit appropriately and to ensure that environmentally sensitive areas are protected. |
| RPO 7.10: | Support the implementation of the Water Framework Directive in achieving and maintaining at least good environmental status for all water bodies in the Region and to ensure alignment between the core objectives of the Water Framework Directive and other relevant Directives, River Basin Management plans and local authority land use plans. |
| RPO: 7.11: | For water bodies with ‘high ecological status’ objectives in the Region, local authorities shall incorporate measures for both their continued protection and to restore those water bodies that have fallen below high ecological status and areas ‘At Risk’ into the development of local planning policy and decision making any measures for the continued protection of areas with high ecological status in the Region and for mitigation of threats to waterbodies identified as ‘At Risk’ as part of a catchment based approach in consultation with the relevant agencies. This shall include recognition of the need to deliver efficient wastewater facilities with sufficient capacity and thus contribute to improved water quality in the Region. |
| RPO 7.14 | Local authorities shall take account of and incorporate into the development of local planning policy and decision making the recommendations of the Flood Risk Management Plans (FRMPs), including planned investment measures for managing and reducing flood risk. |
| RPO 7.15: | Local authorities shall take opportunities to enhance biodiversity and amenities and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned. |
| RPO 7.16: | Support the implementation of the Habitats Directives in achieving an improvement in the conservation status of protected species and habitats in the Region and to ensure |

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| POLICY REFERENCE | POLICY |
|------------------|--|
| | alignment between the core objectives of the EU Birds and Habitats Directives and local authority development plans |
| RPO 7.27: | Following the adoption of a national landscape character assessment, the Assembly will prepare a Regional Landscape Character Assessment to promote better landscape management and planning in the Region |
| RPO 10.1: | Local authorities shall include proposals in development plans to ensure the efficient and sustainable use and development of water resources and water services infrastructure in order to manage and conserve water resources in a manner that supports a healthy society, economic development requirements and a cleaner environment. |
| RPO 10.10: | Support Irish Water and the relevant local authorities in the Region to eliminate untreated discharges from settlements in the short term, while planning strategically for long term growth in tandem with Project Ireland 2040 and in increasing compliance with the requirements of the Urban Waste Water Treatment Directive from 39% today to 90% by the end of 2021, to 99% by 2027 and to 100% by 2040. |
| RPO 10.15: | Support the relevant local authorities (and Irish Water where relevant) in the Region to improve storm water infrastructure to improve sustainable drainage and reduce the risk of flooding in the urban environment and in the development and provision at a local level of Sustainable Urban Drainage solutions. |
| RPO 10.16: | Implement policies contained in the Greater Dublin Strategic Drainage Study (GSDSDS), including SuDS. |

Local Policies

Local planning policies are detailed in the Dublin City Development Plan 2022-2028. A number of policies relate to the protection of the environment and are relevant to the proposed development, summarised as follows:

Table 2.2: Summary of Local Policies Relevant to the Protection of the Environment and the Proposed Development

| POLICY REFERENCE | AREA |
|------------------|--|
| CA8 | To require low carbon development in the city which will seek to reduce carbon dioxide emissions and which will meet the highest feasible environmental standards during construction and occupation, when dealing with development proposals. New development should generally demonstrate/ provide for: a. building layout and design which maximises daylight, natural ventilation, active transport and public transport use; b. sustainable building/services/site design to maximise energy efficiency; c. sensitive energy efficiency improvements to existing buildings; d. energy efficiency, energy conservation, and the increased use of renewable energy in existing and new developments; e. on-site renewable energy infrastructure and renewable energy; f. minimising the generation of site and construction waste and maximising reuse or recycling; g. the use of construction materials that have low to zero embodied energy and CO2 emissions; and h. connection to (existing and planned) decentralised energy networks including the Dublin District Heating System where feasible. |
| CA9 | Development proposals must demonstrate sustainable, climate adaptation, circular design principles for new buildings / services / site. The council will promote and support development which is resilient to climate change. This would include: a. measures such as green roofs and green walls to reduce internal overheating and the urban heat island effect; |

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| POLICY REFERENCE | AREA |
|-------------------------|--|
| | <p>b. ensuring the efficient use of natural resources (including water) and making the most of natural systems both within and around buildings;</p> <p>c. minimising pollution by reducing surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems (SuDS);</p> <p>d. reducing flood risk, damage to property from extreme events– residential, public and commercial;</p> <p>e. reducing risks from temperature extremes and extreme weather events to critical infrastructure such as roads, communication networks, the water/drainage network, and energy supply;</p> <p>f. promoting, developing and protecting biodiversity, novel urban ecosystems and green infrastructure.</p> |
| CA10 | All new developments involving 30 residential units and/or more than 1,000sq.m. of commercial floor space, or as otherwise required by the Planning Authority, will be required to submit a Climate Action Energy Statement as part of the overall Design Statement to demonstrate how low carbon energy and heating solutions, have been considered as part of the overall design and planning of the proposed development. |
| CA15 | To actively encourage the development of low carbon and highly efficient district heating and decentralised energy systems across the city utilising low carbon heat sources such as renewable energy and waste heat recovery and to promote the connection of new developments to district heating networks where such systems exist/can be developed in a given area. |
| GI9 | To conserve, manage, protect and restore the favourable conservation condition of all qualifying interest/special conservation interests of all European sites designated, or proposed to be designated, under the EU Birds and Habitats Directives, as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (European / Natura 2000 sites). |
| GI10 | To adequately protect flora and fauna (under the EU Habitats and Birds Directives), the Wildlife Acts 1976 (as amended), the Fisheries Acts 1959 (as amended) and the Flora (Protection) Order 2022 S.I No. 235 of 2022, wherever they occur within Dublin City, or have been identified as supporting the favourable conservation condition of any European sites. |
| GI11 | To protect and enhance the ecological functions and connectivity of habitats and species of proposed Natural Heritage Areas (pNHAs) to be designated by the National Parks and Wildlife Service (NPWS). |
| GI12 | To protect sites for nature conservation as designated under the Ramsar Treaty for wetland sites, National Special Amenity Areas, National Nature Reserves, Important Bird Areas and Flora Protection Order Sites. |
| GI13 | To ensure the protection, conservation and enhancement of all areas of ecological importance for protected species, and especially those listed in the EU Birds and Habitats Directives, including those identified as supporting the favourable conservation condition of any European sites, in accordance with development standards set out in this plan. |
| GI14 | To maintain and strengthen the integrity of the city’s ecological corridors and stepping stones which enable species to move through the city, by increasing their connectivity [to be shown in the proposed Green Infrastructure Strategy] under Article 10 of the EU Habitats Directive. Development proposals should not compromise their ecological functions and should realise opportunities to contribute to enhancing the nature conservation value of them by landscaping that provides complementary habitats. An Ecological Impact Assessment will be required for any proposed development likely to have a significant impact on habitats and species of interest on or adjacent an ecological corridor. |

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| POLICY REFERENCE | AREA |
|------------------|--|
| GI16 | That new developments (as appropriate) will be required to support local biodiversity and incorporate biodiversity improvements through urban greening and the use of nature-based infrastructural solutions that are of particular relevance and benefit in an urban context. Opportunities should be taken as part of new development to provide a net gain in biodiversity and provide links to the wider Green Infrastructure network. All suitable new buildings will be required to incorporate swift nesting blocks into the building fabric. |
| GI17 | To increase the percentage of restored and naturalised areas on public land in the city. That new development on private and public lands should provide opportunities for restoration of degraded habitats and soils where feasible and provide for their long-term maintenance to limit degradation. |
| GI18 | To minimise the environmental impact of external lighting and noise at sensitive locations to achieve a sustainable balance between the needs of an area, the safety of walking and cycling routes and the protection of sensitive species such as bats. |
| GI28 | To ensure that in new residential developments, public open space is provided which is sufficient in amenity, quantity and distribution to meet the requirements of the projected population, including play facilities for children and that it is accessible by safe secure walking and cycling routes. |
| GI40 | To require appropriate and long-term tree and native hedgerow planting in the planning of new development, urban spaces, streets, roads and infrastructure projects. New development should seek to provide for additional tree planting using a diversity of species including native species as appropriate to the location of the development in the interests of natural heritage, amenity, environmental quality and climate resilience. |
| GI41 | To protect existing trees as part of new development, particularly those that are of visual, biodiversity or amenity quality and significance. There will be a presumption in favour of retaining and safeguarding trees that make a valuable contribution to the environment. |
| GI52 | To seek the provision of children’s playing facilities in new residential developments and mixed developments with a residential element. To provide playgrounds to an appropriate standard of amenity, safety, and accessibility and to create safe and accessible places for socialising and informal play. |

According to Dublin City Development Plan 2022 – 2028 Land Use Zoning Objectives, the proposed development falls under Zoning Objective Z1 - To protect, provide and improve residential amenities. The proposed development is permitted in principle by the defined Zoning Objective.

| OTHER POLICIES ABBREVIATED | | | | | |
|--|---|--|---|---|--|
| SI4: Drainage Infrastructure Design Standards | SI7: Water Quality Status | SI22: Sustainable Drainage Systems | SI27 & SI28: Sustainable Waste Management | SI34: Management of Air Quality | SI37 & SI38: Noise Sensitive Development |

Biodiversity Plans

Ireland’s fourth National Biodiversity Plan 2023–2030, by building on from the successes of previous NBAP’s, “*aims to deliver the transformative changes required to the ways in which we value and protect nature*”. It is Government policy for the Local Authorities to take the lead role in the production of Local Biodiversity Action Plans. A number of Local Biodiversity Action Plans have been prepared, including the Dublin City Biodiversity Action Plan 2021-2025. Five themes govern the objectives and actions of the plan:

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- Maintaining Nature in the City;
- Restoring Nature in the City;
- Building for Biodiversity;
- Understanding Biodiversity in the City;
- Partnering for Biodiversity;

All-Ireland Pollinator Plan

In 2015, Ireland joined a number of other European countries in developing a strategy to address pollinator decline and protect pollination services. 68 governmental and non-governmental organisations agreed a shared plan, the “*All-Ireland Pollinator Plan*”. The new version “*All-Ireland Pollinator Plan 2021-2025*” seeks to build on from the success of the previous plan and identifies 186 actions to make Ireland pollinator friendly. The plan provides a total of 37 targets for six different objectives which include, farmland, public land, private land, All-Ireland Honeybee Strategy, conserving rare pollinators and strategic coordination of the plan.

2.3 EXISTING ENVIRONMENT

The majority of the site is comprised of buildings and hardcore surfaces with wired fences, concrete, stone and brick walls along the boundaries. There are no nearby watercourses to the proposed development site. In the vicinity of the site, there are residential buildings to the west, south and east and commercial buildings to the north. An ecological survey has been carried out by Panther Ecology Ltd in order to identify the habitats and species at the site.

The development site is located within the Liffey and Dublin Bay catchment (ID: 9) and the Dodder_SC_010 subcatchment. The nearest mapped watercourse is the Poddle stream (EPA Code: 09P03 – Order 1), which is located approximately 675m to the east. The Poddle stream confluences with the River Liffey (EPA Code: 09L01 – 6) in the Liffey Estuary Upper which flows for a further 8.9km until it discharges to the Dublin Bay coast.

The Appropriate Assessment carried out by NM Ecology found no feasible pathways between the site and any designated Natura 2000 site and, therefore, there will be no risk of impacts on European sites.

Corine land cover within the site has been mapped as Artificial Surfaces (Continuous urban fabric). According to Teagasc Soils Map, soil type within the site is built land. The bedrock beneath the site is dark limestone and shale.

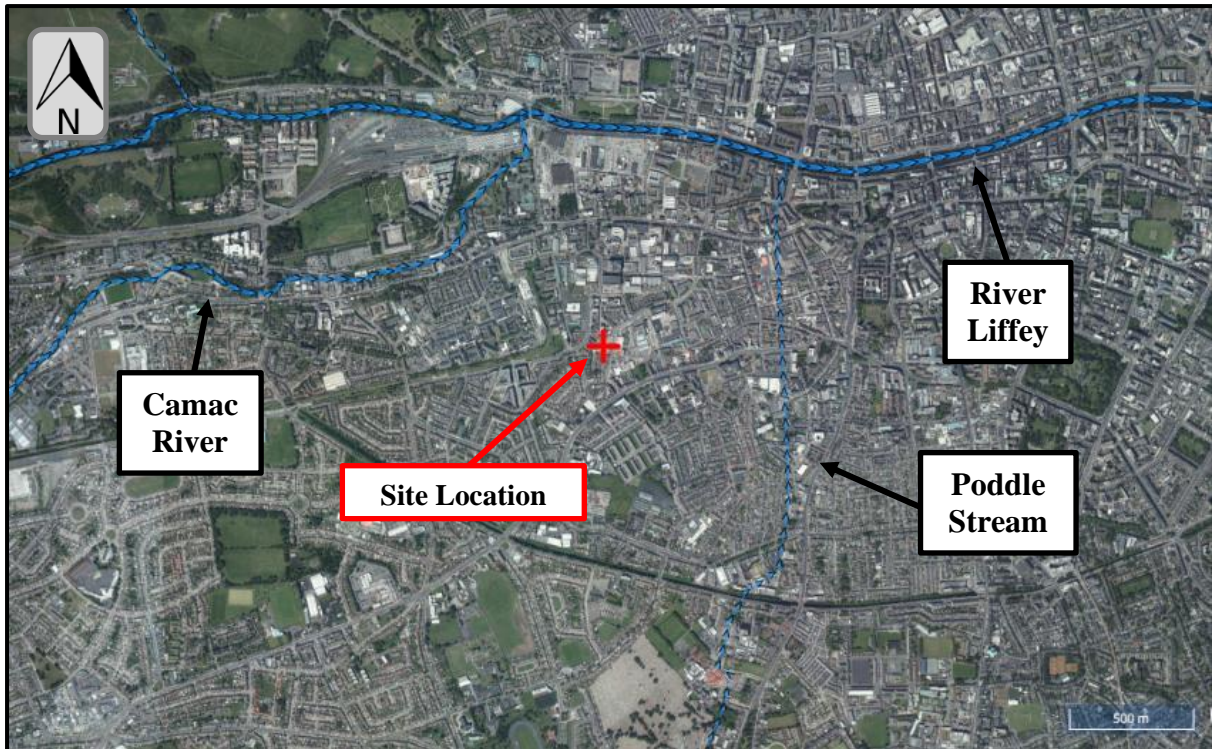


Figure 2.2: Watercourses in the vicinity of the proposed site.

No archaeological monuments have been identified by the National Monuments Service at the site. The nearest National Monument outside the site's boundaries is a Watercourse (SMR No. DU018-043001) which is located approximately 105m to the west of the proposed development site. The nearest architectural features, a set of houses dating to the early 19th century, are located 55m to the north of the development in Pim Street at their closest. No excavations have been recorded within the proposed development site, however, excavations have been recorded in close proximity to the site. Sites of no archaeological significance were recorded to the south in The Malt House, to the east on the opposite side of the Marrowbone Lane and to the north in Pim Street. Urban post-medieval and modern findings were recorded in excavations to the north in Pim Street.

2.4 SITE SENSITIVITIES

The proposed development site is located in the south of Dublin City in The Liberties, Dublin 8, surrounded by residential dwellings and commercial buildings. In the vicinity of the site are housing estates, residential, commercial, and recreational amenities/buildings with retail and other services located in the wider surroundings of the site.

The majority of the site is comprised of buildings and hardcore surfaces. It is considered that the site is not of significant conservation value.

Flora and fauna records of the most recent thirty years were reviewed on the National Biodiversity Data Centre (NBDC) website for the proposed development site and vicinity. No protected plant species under the Flora (Protection) Order, 2022 (S.I. No. 235 of 2022) were recorded within the 10km square (Tetrad – O13) in which the proposed development site is located. Eighteen invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) were

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recorded within the 10km square (Tetrad – O13): Water Fern (*Azolla filiculoides*), American Skunk-cabbage (*Lysichiton americanus*), Brazilian Giant-rhubarb (*Gunnera manicata*), Canadian Waterweed (*Elodea canadensis*), Curly Waterweed (*Lagarosiphon major*), *Fallopia japonica* x *sachalinensis* = *F. x bohémica*, Giant Hogweed (*Heracleum mantegazzianum*), Giant Knotweed (*Fallopia sachalinensis*), Giant-rhubarb (*Gunnera tinctoria*), Indian Balsam (*Impatiens glandulifera*), Japanese Knotweed (*Fallopia japonica*), New Zealand Pigmyweed (*Crassula helmsii*), Nuttall's Waterweed (*Elodea nuttallii*), Parrot's-feather (*Myriophyllum aquaticum*), Rhododendron (*Rhododendron ponticum*), Sea-buckthorn (*Hippophae rhamnoides*), Spanish Bluebell (*Hyacinthoides hispanica*) and Three-cornered Garlic (*Allium triquetrum*).

On the 5th July 2023, a site assessment was conducted by NM Ecology. Habitats within the site were identified and evidence of high impact invasive plant species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), such as Japanese Knotweed (*Fallopia japonica*), was searched for. The survey indicated to be no high impact invasive plant species within the site.

According to the Preliminary Ecological Appraisal Report prepared by NM Ecology Ltd., the bird fauna for the site comprises of the following species: feral pigeon (*Columba livia f. domestica*), herring gull (*Larus argentatus*) and black-headed gull (*Larus ridibundus*). No bird nests were recorded on site, which was deemed unsuitable for any nesting birds. No evidence of mammal species was identified within the proposed development site. Additionally, the buildings and artificial surfaces habitat which mostly constitutes the site is deemed unsuitable for any mammal species.

On the 8th May 2024, a subsequent site assessment carried out by Panther Ecology Ltd. indicated that no thirds scheduled invasive species are present at the development site. The medium impact invasive species butterfly bush (*Buddleja davidii*) is abundant within the site and young Sycamore (*Acer pseudoplatanus*) are also present. However, these species are not subject to restrictions as they are not included in the Third Schedule. The plan is to avoid importing soil by stockpiling topsoil on-site for future use, as far as feasible. This approach minimises the risk of introducing invasive species to the site.

During the site assessment, the following common countryside species were identified: wood pigeon (*Columba palumbus*), magpie (*Pica pica*), hooded crow (*Corvus cornix*), feral pigeon (*Columba livia domestica*), starling (*Sturnus vulgaris*) and herring gull (*Larus argentatus*). None of the species recorded is BoCCI red listed. Herring gull and starling are BoCCI amber-listed species. No Badger (*Meles meles*) setts were identified within the proposed development site. The development site is almost entirely comprised of artificial surfaces and there is no food availability for foraging protected mammals such as badger or otter. There were a few small burrows on a soil stockpile close to the north boundary, most likely dug by domestic animals or rodent given the size. No droppings or any other signs of recent use were found. Due to the land use and to the surrounding urban context it is unlikely that protected wild mammals use the development site.

The NBDC has recent records of the following Bat species within the 2km tetrad (Tetrad – O13L) in which the proposed development is located: Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*), Daubenton's Bat (*Myotis daubentonii*), Lesser Noctule (*Nyctalus leisleri*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*). There are no trees at the site, and it is considered unlikely that bats currently use the existing buildings within the site to roost. NM

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Ecology carried out an appraisal of potential features for roosting bats. The site was considered to be unsuitable for roosting or foraging bats due to the lighting environment of the area where the site is located and that of the site itself.

As noted in Section 2.3 above, the proposed development is not located within any designated area of conservation.

The proposed site is located within an urban area with residences located in close proximity to the site's southern and northern boundaries. Therefore, the client will ensure the construction of the development will be undertaken in a manner that is sensitive toward the local residents.

3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development will comprise of:

- The demolition of the existing sheds and garages and site clearance works
- Partial retention and modification of the existing rubble stone wall fronting Forbes Lane.
- Retention and modification of the former Gate House structure's east elevation along Marrowbone Lane. The removal of the remaining existing boundary wall fronting Marrowbone Lane and subsequent widening to facilitate an active travel route which will be subject to separate consent.
- Construction of 108 no. apartment units in two blocks (Block A and Block B) with frontage onto Marrowbone Lane and Forbes Lane comprising 108 residential units (64 no. 1-bed, 31 no. 2-bed, 13 no. 3-bed)
 - Block A ranges from 6-7 storeys and consists of 81 residential units (50 no. 1-bed, 19 no. 2-bed, 12 no. 3-bed)
 - Block B is 5-storeys and consists of 27 residential units (14 no. 1-bed, 12 no. 2 bed, 1 no. 3-bed)
- 165 long-stay and 54 short-stay bicycle parking spaces and 2 car parking spaces.
- 190 sq.m of community, cultural and arts space.
- 800 sq.m of public realm space and 700 sq.m of communal open space.
- One vehicular access is proposed from Marrowbone Lane. A pedestrian and cycle access route is proposed at Forbes Lane which also provides emergency vehicle access.
- Traffic calming measure in the form of raised tables are proposed on the public road at the intersection of Pim Street and Forbes Lane and between the proposed vehicular access and Marrowbone Lane. A new signalised crossing point is also proposed on Marrowbone Lane.
- Boundary treatments, landscaping and public realm works, public lighting, site drainage works, internal road surfacing and footpath, ESB substation and meter rooms, stores, bin and cycle storage, plant rooms; and
- All ancillary site services and development works above and below ground.

The site of approximately 0.58 ha is located in Marrowbone Lane and Forbes Lane, within The Liberties, Dublin 8 (ITM E714057, N733457). The proposed site layout is included in Appendix A.

New storm water and domestic wastewater drainage systems will be constructed. The proposed development will generate effluent that will be discharged into the existing sewer system off Marrowbone Lane, south-east of the site. This effluent will then be transported to the Ringsend

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Wastewater Treatment Plant (Licence Number: D0034-01) for treatment before being released into Liffey Estuary Lower. The new wastewater drainage system will include manholes. Surface water from the proposed development will be discharged to the existing surface drainage line located in Forbes Lane, north-west of the site. The stormwater system has been designed according to Sustainable Drainage Systems and will include manholes, road gullies, green/blue roofs on the top of the proposed apartment blocks, attenuation zone and permeable paving. Water will be provided to the proposed dwellings via a new connection to the existing watermains north-west and south-east of the site. Existing services will be either removed or diverted.

Access to the new proposed site for construction traffic will be via the Marrowbone Lane (R804 road) to the east. During the construction phase, site clearance works will be undertaken, which will involve the demolition of existing buildings, removal of vegetation from the site and earth-moving activities. Following site clearance works, construction of the residential buildings will commence. The construction of the proposed development is expected to have a duration of approximately 18 months, with hours of operation from 7am to 6pm, Monday to Friday and 8am to 2pm on Saturday.

A temporary site compound will be established at the proposed development site to the south and will serve as material storage area and dedicated refuelling area. A waste compound area will also be established at the site in the south-western area of the site, serving as a waste compound, material storage, temporary soil stockpile storage and laydown, and quarantine area. Construction staff welfare facilities such as a canteen, toilets and first aid will be provided. It is important to note that during the construction phase, the occurrence of trade effluent is possible. If necessary, an application for a Trade Discharge Licence will be submitted to the City Council.

An ecological survey has been completed by Panther Ecology Ltd. The assessment confirmed that the majority of the site is not of significant conservation value. More information provided by the assessment is discussed further in later sections of this CDEMP.

The proposed development includes landscaping elements, which will result in a net gain in biodiversity. New semi-mature trees and hedgerows will provide nesting habitat for birds; meadows will provide nectar for pollinators and new trees and shrubs will provide berries for over-wintering birds.

4.0 PROJECT ROLES, RESPONSIBILITIES AND COMMUNICATIONS

Quality & Environmental Management System Policy Statement

Dublin City Council is committed to delivering high-quality housing estate developments while ensuring the protection and enhancement of the environment. Dublin City Council recognises that construction activities have direct and indirect environmental impacts, and strives to manage these in a responsible and sustainable manner. This Quality and Environmental Management System (QEMS) Policy Statement is designed to comply with all relevant environmental legislation, regulations, and industry best practices. Dublin City Council is dedicated to continuous improvement in our environmental performance, prevention of pollution, and minimisation of waste and resource consumption.

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Key commitments of our QEMS include:

- **Compliance:** We will comply with all applicable legal requirements and other requirements to which we subscribe that relate to our environmental aspects.
- **Prevention:** We will strive to prevent environmental pollution at all stages of our construction activities.
- **Continuous Improvement:** We will continually improve our environmental performance by setting and reviewing environmental objectives and targets.
- **Training:** We will ensure that all our employees are aware of their individual obligations under this policy.
- **Communication:** We will communicate this policy to all persons working for or on behalf of the organization and make it available to the public.
- **Review:** This policy will be reviewed at least annually or whenever there is a significant change in our business practices or legislation.

Dublin City Council believes that a strong commitment to environmental management is in the best interest of the businesses, residents and the communities within its jurisdiction.

4.1 PROJECT ROLES AND RESPONSIBILITIES

The indicative roles and responsibilities for the relevant site personnel are detailed below.

Project Manager

The Project Manager responsibilities are as follows:

- Management of the project;
- Implementing the Construction & Demolition Environmental Management Plan;
- Monitoring the performance of the CDEMP and maintaining records to demonstrate compliance with the CDEMP and Construction Method Statement;
- Ensuring no deterioration of the environment occurs as a result of the project;
- Co-ordinating the construction teams;
- Implementing the Health and Safety Plan and associated responsibilities;
- Production of construction programmes;
- Maintaining of relevant records and registers;
- Ensuring site personnel receive induction and are provided with the relevant information relating to the protection of the environment during works;
- Dealing with any queries or complaints from the public.
- Maintaining a project diary.

Quality Manager

The Quality Manager will report to the Project Manager. His responsibilities are as follows:

- Implementing the Construction & Demolition Environmental Management Plan;

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- Management of quality issues relating to the project;
- Co-ordinating the construction teams;
- Ensuring that method statements are in place;
- Implementing the Health and Safety Plan.

Site Engineer

The Site Engineer will report to the Project Manager. His responsibilities are as follows:

- Ensuring that all aspects of the project comply with the Construction and Environmental Management Plan;
- Materials procurement;
- Design of Temporary Works;
- Administration;
- Programming and planning;
- Implementing the Health and Safety Plan;
- Maintaining a project diary.

EHS Officer

The EHS Officer will report to the Project Manager. His responsibilities are as follows:

- Ensuring the Health and Safety Plan is implemented;
- Ensuring the Construction & Demolition Environmental Management Plan is being implemented and followed at all times;
- Updating the Construction & Demolition Environmental Management Plan as required;
- Ensuring all personnel have received safety inductions;
- Investigating any accidents, incidents or near misses;
- Ensuring relevant personnel have received training in environmental issues;
- Undertaking site audits on a regular basis.

All Staff and Sub-contractors

All site personnel and sub-contractors have the following responsibilities:

- Ensuring the requirements of the Construction & Demolition Environmental Management Plan are followed;
- Co-operate with the Project Manager and EHS Officer in the implementation and development of the CDEMP;
- Co-operate as required with site inspections and audits;

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- Report all incidents, accidents and near misses to the Project Manager and/or EHS Officer.

4.2 TRAINING AND AWARENESS

Prior to works commencing onsite, this CDEMP and its contents will be communicated to all site personnel, including sub-contractors, as part of induction training. Site induction will be mandatory for all employees, sub-contractors, and visitors to the development site.

Specific training will be provided, where necessary, to nominated personnel to address any incidents or emergencies that could have a potential to cause environmental pollution. This training will be provided to staff via toolbox talks, and may address issues such as the following:

- Waste Management;
- Spill Control;
- Noise Pollution;
- Dust Pollution;
- Water Pollution;
- Tree protection;
- Invasive Species.

4.3 MONITORING, CONTINUAL IMPROVEMENT AND REVIEW

Safety Monitoring

The EHS Officer will be present at the development site during working hours, to ensure activities are undertaken in a safe manner.

Environmental Monitoring

The EHS Officer will be present at the development site during working hours, to ensure activities are undertaken in an environmentally sensitive manner. The EHS Officer will undertake regular site inspections and audits, to monitor the environmental performance of the site and address any potential environmental issues such as dust, litter, and noise.

The EHS Officer will be responsible for maintaining a register of all environmental monitoring and will communicate the sites environmental performance during site meetings.

As part of environmental monitoring, the Project Manager and EHS Officer will review the performance and implementation of the CDEMP on a regular basis and will update the CDEMP as necessary.

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4.4 REPORTING AND RECORD KEEPING

The Project Manager, in conjunction with the EHS Officer, will ensure that appropriate, detailed records are maintained during the construction phase of the development.

Records of all works associated with the proposed development will be completed by the proposed contractor throughout the construction phase. Environmental records will include waste and site inspection records and where relevant, environmental incident and complaints records. Other records may include Safety Data Sheet records and a copy of the Safety File. Where relevant to the associated works, statutory inspection records will be maintained for such activities as excavations and lifting gear.

Where necessary and as requested by the local authority, copies of relevant construction activity records can be made available.

In the event of an environmental incident occurring at the site with the potential to cause environmental pollution, the Project Manager implement mitigation measures as detailed in this plan and will notify the relevant third parties, as outlined in Section 4.5 below, as soon as practicable. Such environmental incidents may include:

- Excessive noise;
- Excessive dust;
- Water pollution event;
- Hydrocarbon or chemical spill;
- Fire.

4.5 THIRD PARTY COMMUNICATIONS

The client will liaise with the relevant third parties as appropriate, which may include but are not limited to the following:

- Emergency Services;
- Dublin City Council;
- Environmental Protection Agency.

4.6 ENVIRONMENTAL COMPLAINTS AND INCIDENTS

In the event of an environmental complaint or incident at the site, the client will investigate the occurrence to determine the circumstances and conditions that resulted in that particular event and ensure prevention of similar episodes as follows:

- The complaint or incident should be described in detail, including the location and who was involved or affected;
- The complaint or incident should be classified according to its intensity and potential to cause negative impacts in the environment;

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- The root cause of the complaint or incident should be identified and documented;
- Response actions to the complaint or incident should be detailed;
- In order to prevent a recurrence of the complaint or incident, corrective actions should be defined and implemented;
- A description should be provided of how the complaint or incident was assessed, who it was reported to (both internally and externally), and any regulatory requirements for reporting;
- Follow-up actions should be discussed, as appropriate.

Any complaints and/or incidents will be reported to the Project Manager. The EHS Officer will be responsible for developing and maintaining a register of complaints and a register of incidents, with details on follow-up actions. A template environmental complaints form is included in Appendix B.

5.0 CONSTRUCTION WORKS METHODOLOGY AND ACTIVITIES

5.1 CONSTRUCTION SCHEDULE

The construction and demolition phase of the proposed development is expected to have a duration of approximately 18 months. Upon receipt of planning approval, the construction schedule will be finalised at a detailed design stage.

The proposed development will include the following construction activities:

- Site inductions and relevant training;
- Erection of site fencing and signage;
- Site clearance, including vegetation removal;
- Establishment of temporary site compound, including designated materials storage area;
- Demolition of existing buildings;
- Excavations and earth moving activity;
- Development of drainage network, water supply and services;
- Pouring of foundations;
- Construction of apartment units;
- Construction of internal access roads;
- Installation of external lighting;
- Removal of temporary site compound;
- Reinstatement and landscaping of site.

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5.2 CONSTRUCTION WORKING HOURS

It is anticipated that construction works will be undertaken during standard construction hours, as follows:

| Start | Finish | Days |
|--------------|---------------|-----------------|
| 7am | 6pm | Monday – Friday |
| 8am | 2pm | Saturday |

However, it should be noted that there may be times where it is necessary to undertake construction works outside of the times mentioned above, for example concrete pours. In such cases, notification will be given where necessary to the relevant bodies (i.e. local council) and any potentially effected local residents in good time and prior to specified works commencing.

5.3 CONSTRUCTION WORKFORCE

The number of site personnel during the construction phase of the proposed development will vary depending upon the stage of the project.

5.4 CONSTRUCTION PLANT AND EQUIPMENT

The construction plant and equipment likely to be used during the construction phase of the project are included in the table below. It should be noted that this list is not exhaustive.

| ACTIVITY | POSSIBLE PLANT / EQUIPMENT REQUIRED |
|---------------------------------------|---|
| Site Clearance and Excavations | Tracked Excavator Dumper trucks Bulldozer Graders Rollers |
| Construction of Apartment Blocks | Piling plant Tracked Excavator JCB Site Dumper Cement Mixer |
| Construction of Internal Access roads | Tracked Excavator Earth Mover Paving Machine Road Planer Roller |
| Site Reinstatement and Landscaping | Tracked Excavator Site Dumper Bulldozer |

5.5 POTENTIAL FOR HISTORIC CONTAMINATION

The majority of the site is comprised of buildings and hardcore surfaces with wired fences, concrete, stone and brick walls along the boundaries. Given the nature of the site, it is considered possible that the site would contain contaminated material. Therefore, in the event contaminated material is encountered during construction works, appropriate measures would be undertaken in compliance with relevant waste legislation, and in accordance with the Resource Waste Management Plan prepared for the proposed development. The relevant authorities would be notified where required.

The Waste Characterisation Assessment (Report No. 240011601) prepared by O'Callaghan Moran & Associates indicates the presence of hazardous waste for hydrocarbons in the samples tested, which did not detect asbestos. However, an asbestos survey carried out by OHSS Safety Consultants identified asbestos containing materials within the site. Construction and Demolition works would comply with requirements established in the Asbestos Demolition Survey Report.

The Waste Characterisation Assessment also identified elevated levels of Total Polycyclic Aromatic Hydrocarbons (Total 17 PAH) at eight of fifteen sample locations. The Groundwater Regulations 2010 (S.I. No. 9 of 2010), as amended, establishes an overall threshold value range of 0.075µg/L for Total PAH. The concentration levels of Total PAH in the soil were significantly higher than the legally defined threshold value for groundwater. Nonetheless, the risk to groundwater would depend on the extent of excavation works to be undertaken and level of soil compaction at the site. Further investigation would be required to determine the spatial extent of the Total PAH contamination and ensure appropriate measures are used to prevent the contamination from spreading through groundwater during removal works. A contaminated land specialist or specialist contractor should be employed to determine the extent of the soil contamination and establish the required removal methods for the protection of groundwaters.

As the extent of contamination is unknown, a testing programme should be put in place for excavation materials, including a stockpile and quarantine area within the site, to allow for appropriate testing to determine its suitability for reuse or disposal in accordance with waste regulations.

5.6 HEALTH AND SAFETY

All activities undertaken at the proposed development site during the construction phase shall be in accordance with the requirements of the Safety, Health and Welfare at Work Act 2005 and the Safety, Health, and Welfare at Work (Construction) Regulations, 2013. As required by the 2013 regulations, a Health and Safety Plan will be prepared by the client, which will address health and safety issues from the design stages through to the completion of construction works. This plan will be updated and reviewed as required as the proposed development progresses.

Prior to works commencing onsite, all site personnel, including sub-contractors, will receive induction training that will incorporate health and safety requirements and good practice. Site induction will be mandatory for all employees, sub-contractors, and visitors to the development site. Specific training will be provided, where necessary.

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All construction personnel, contractors and visitors to the site will wear the following appropriate Personnel Protective Equipment as a minimum at all times:

- Safety helmet;
- Hi-visibility clothing (coat or vest);
- Safety boots;
- Eye protection where identified for specific activities.

Regular site safety audits will be undertaken throughout the construction phase to ensure the rules and regulations established for the site are complied with at all times.

5.7 SECURITY ARRANGEMENTS

The client will ensure the proposed development site is secured, so as to provide the safety of all potentially affected parties, including staff, contractors, traffic, and pedestrians. Only authorised personnel will be allowed onto the site. The site will be secured by a fence, hoarding or another suitable site barrier system to protect against unauthorised entry. The client will implement the appropriate security arrangements, including signing in / out procedures, signage and out-of-hours security.

5.8 TEMPORARY SITE COMPOUND AND STAFF WELFARE FACILITIES

A temporary site compound will be established at the proposed development site, and will house the site offices, equipment storage and construction staff welfare facilities such as a canteen, toilets and first aid. The temporary site compound will also be used for the storage of fuels and oils required for the various construction plant, in addition to housing waste receptacles. The compound area will be covered in a suitable layer of hardstanding.

Portable cabin structures will be used to provide temporary site offices and the staff canteen. A storage container will be provided for the storage of construction equipment, tools and materials required for construction. All fuels and oils required will be stored within a designated bunded area, located within the storage container or at an alternative designated location with the temporary site compound.

Port-a-loo toilets will be installed at the temporary compound and will be emptied by a licenced contractor on a weekly basis or earlier, if required.

The site compound will also be the designated location for waste receptacles onsite. Waste will be segregated where possible and placed within recycling and general waste skips provided by a licenced waste contractor.

During the early stages of construction works, potable water will be provided via a mobile water tanker, until a connection to the mains water supply is obtained. Power will be provided using a diesel generator (suitably bunded), with a view of getting power supply from the mains at a later date. Telecommunications will be provided using mobile phones and broadband.

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Following the completion of construction works, the temporary compound will be removed, and the area landscaped or reinstated as required.

5.9 MAIN STAGES OF CONSTRUCTION

Demolition, Site Clearance and Excavations

The majority of the site is comprised of buildings and hardcore surfaces with wired fences, concrete, stone and brick walls along the boundaries. It is proposed to demolish all buildings within the site. The main vehicular access and egress would be provided via new entrances off the Marrowbone Lane to the south-east and a new entrance off the Forbes Lane to the north-west. During site clearance works, vegetation will be removed from the site and appropriately disposed of to a licenced waste contractor. There are no trees with potential for bird nesting which would be removed from the site.

The quantity of residual resources has been estimated to be approximately 7,500 tonnes, where c. 4,000 tonnes would be composed of concrete, c. 3,000 tonnes would be made of soil and stone and c. 500 tonnes would be made of mixed C&D wastes. Small amounts of other waste streams would comprise of masonry, wood, packaging, hazardous materials and other waste materials. Any excess of subsoil/topsoil will be sold, subject to Article 37 notification to the EPA, and transported off-site to other construction sites within the region by a licenced haulier. The storage of excavated material on site will be temporary, with excess material exported as soon as possible to other construction sites within the region. If any material is found to contain a Third Schedule invasive species, it will be treated as a hazardous waste and disposed of accordingly.

Provision of Services

Following site clearance and excavations, works will commence on the installation of underground utilities to the site required for water supply, domestic wastewater, electricity, and telecommunications.

Construction of New Buildings

Following site clearance, excavations and works for the provision of services, works will commence on the construction of the residential building blocks with car parking spaces. Dwellings will be a mix of one-to-three-bedroom apartments of varying size (m²). The pouring of concrete foundations will be supervised at all times. The new buildings will be constructed from either in-situ or pre-cast concrete.

Site Reinstatement and Landscaping

The reinstatement and landscaping process shall commence upon completion of construction activities at the proposed development site. Reinstatement and landscaping activities will include the levelling of the site with stockpiled soil from excavations where possible, the removal of the temporary site compound and associated plant, equipment and materials, the reseeded of exposed soil and the planting of trees and shrubs.

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6.0 RISK ASSESSMENT

6.1 RISK ASSESSMENT APPROACH

In order to assist in early planning of construction works, this reported has included the Risk Assessment Approach set by Dún Laoghaire-Rathdown County Council in the “Good Practice for Construction and Demolition Environmental Management”. Risk Assessment A (Locality/Site Information) assesses the site in relation to the duration of the work, distance to sensitive receptors, ambient noise levels and working hours, while Risk Assessment B (Work Information) represents the fields that are most likely to represent the works in each category. The total number of ticks of each column of Risk Assessment A and B have been added up and these numbers have been included in the Total Risk Assessment table to indicate the risk category that should be employed for the site. See the tables below.

Table 6.1.1 Risk Assessment A – Locality/Site Information

| | Low | Medium | High |
|---|----------|----------|----------|
| Expected duration of work | | | |
| Less than 6 months | | | |
| 6 months to 12 months | | | |
| Over 12 months | | | X |
| Proximity of nearest sensitive receptors | | | |
| Greater than 50 metres from site | | | |
| Between 25m and 50m | | | |
| Less than 25 metres | | | X |
| Hospital or school within 100 metres | | | X |
| Day time ambient noise levels | | | |
| High ambient noise levels (>65dB(A)) | | | |
| Medium ambient noise levels (55-65dB(A)) | | X | |
| Low ambient noise levels (<55dB(A)) | | | |
| Working Hours | | | |
| 7am – 6pm Mon-Fri; 8am-2pm Sat | X | | |
| Some extended evening or weekend work | | | |
| Some night time working, including likelihood of concrete power floating at night | | | |
| SUBTOTAL A | 1 | 1 | 3 |

Table 6.1.2 Risk Assessment B - Work Information

| | Low | Medium | High |
|-----------------------------------|-----|--------|------|
| Location of works | | | |
| Majority within existing building | | | |
| Majority External | | | X |
| External Demolition | | | |
| Limited to two weeks | | | |
| Between 2 weeks and 3 months | | X | |
| Over three months | | | |
| Ground Works | | | |
| Basement level planned | | | X |
| Non-percussive methods only | | | |

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| | | | |
|---|----------|----------|----------|
| Percussive methods for less than 3 months | | | |
| Percussive methods for more than 3 months | | | X |
| Piling | | | |
| Limited to one week | | | |
| Bored Piling Only | | X | |
| Impact or vibratory piling | | | |
| Vibration generating activities | | | |
| Limited to less than 1 week | | | |
| Between 1 week and 1 month | | X | |
| Greater than 1 month | | | |
| SUBTOTAL B | 0 | 3 | 3 |

Table 6.1.3 Total Risk Assessment

| | Low | Medium | High |
|-------------------|----------|----------|----------|
| Risk Assessment A | 1 | 1 | 3 |
| Risk Assessment B | 0 | 3 | 3 |
| Total | 1 | 4 | 6 |

6.2 RISK MANAGEMENT

Following the Risk Assessment carried out in the previous sub-section of this report that categorised the proposed site as a “high-risk” site, the appropriate actions described in the “Good Practice for Construction and Demolition Environmental Management” document would be employed. See the following tables.

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Table 6.2.1 General Considerations

| | |
|--|----------------------------|
| All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise | All sites |
| Good Quality site hoarding should be erected, designed to maximise the reduction in noise levels | Medium and high risk sites |
| The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work | Medium and high risk sites |
| The site entrance shall be located to minimise disturbance to noise sensitive receptors, subject to traffic restrictions | Medium and high risk sites |
| Internal haul routes shall be maintained and steep gradients shall be avoided, where possible | Medium and high risk sites |
| Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management (i.e. road closure) or health and reasons (application must be made to DCC a minimum of 4 days prior to proposed works) | All sites |
| Use rubber linings in chutes, dumpers and hoppers to reduce impact noise | Medium and high risk sites |
| Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements | Medium and high risk sites |
| No materials shall be burned on site | All sites |
| Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times. | Medium and high risk sites |
| All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site. | All sites |
| The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather. Where dust is likely to be a persistent problem a water spray system e.g. (IBC tanks fitted with hoses) must be put in place from the commencement of the works where required. | All sites |
| Dust suppression equipment must be used when point source emissions are likely. | All sites |
| The entry and exit points to the site should be constructed of hard standing which is regularly dampened to minimise dust emissions. | Medium and high risk sites |
| Use of road sweeper and/or hand held dust vacuums as required to wash external site perimeter to include pavements. | All sites |
| Implementation of a detailed complaints recording and handling procedure | All sites |

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Table 6.2.2 Plant

| | |
|---|----------------------------|
| Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC | All sites |
| Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer | All sites |
| Use all plant and equipment only for the tasks for which it has been designed | All sites |
| Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum | All sites |
| Power all plant by mains electricity where possible rather than generators | Medium and high risk sites |
| Maximise screening from existing features or structures and employ the use of partial or full enclosures for plant | Medium and high risk sites |
| Locate movable plant away from noise sensitive receptors | All sites |

Table 6.2.3 Vehicle Activity

| | |
|--|----------------------------|
| Ensure all vehicle movements (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons) | All sites |
| Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off. | Medium and high risk sites |
| Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements | Medium and high risk sites |
| Plan the site layout to ensure that reversing is kept to a minimum | Medium and high risk sites |
| Where reversing is required use broadband reverse sirens or where it is safe to do so, disengage all sirens and use trained banks-men | Medium and high risk sites |
| Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also be carried out by the developer, as required by mechanical road sweepers | Medium and high risk sites |

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Table 6.2.4 Demolition Phase

| | |
|---|----------------------------|
| Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished | Medium and high risk sites |
| If working out of hours for Health and Safety reasons (following approval by DCC) limit demolition activities to low level noise activity unless absolutely unavoidable) | All sites |
| Use low impact demolition methods such as non-percussive plant where practicable | Medium and high risk sites |
| Use rotary drills and ‘bursting’ activated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material. | Medium and high risk sites |
| Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings where possible through cutting any vibration transmission path, or by structural separation of buildings | Medium and high risk sites |
| Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site. | High risk sites |

Table 6.2.5 Ground Works and Piling Phase

| | |
|--|----------------------------|
| The following hierarchy of groundwork/piling methods should be used if ground conditions, design and safety allows: <ul style="list-style-type: none"> • Pressed in methods, e.g., hydraulic jacking • Auger/bored piling • Diaphragm walling • Vibratory piling or vibro-replacement • Driven Piling or dynamic consolidation | Medium and high risk sites |
| The location and layout of the piling plant should be designed to minimise potential noise impact of generators and motors | Medium and high risk sites |
| Where impact piling is the only option utilise a non-metallic dolly between the hammer and driving helmet or enclose the hammer and helmet with an acoustic shroud | Medium and high risk sites |
| Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible, subject to DCC approval, to avoid time overruns | Medium and high risk sites |
| Where obstructions are encountered, work should be stopped and a review undertaken to ensure that work methods that minimise noise are used. | Medium and high risk sites |
| When using an auger piling rig do not dislodge material from the auger by rotating it back and forth. Use alternate methods where safe to do so. | Medium and high risk sites |

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| Prepare pile caps using methods which minimise the use of breakers, e.g., use hydraulic splitters to crack the top of the pile. | Medium and high risk sites |
|---|----------------------------|

Table 6.2.6 Monitoring

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| Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps. | Medium and high risk sites |
| <p>Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include;</p> <ul style="list-style-type: none"> • Hours of work • Presence of mitigation measures • Number and type of plant • Construction methods <p>Site reviews must be recorded and made available for inspection</p> | Medium and high risk sites |
| <p>Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DCC at agreed intervals and in an agreed format. To comply with this the following must take place.</p> <ul style="list-style-type: none"> • The initial monitoring locations must be agreed with officers of DCC and must remain in situ, unless agreed otherwise. If additional monitoring is required the new locations must be agreed with DCC. • The results of the monitoring must be forwarded to officers of DCC Environmental Enforcement Section every two weeks in the following format: <ol style="list-style-type: none"> 1. Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours. 2. Provide a report detailing and discussing the noise and vibration levels over the reporting period. 3. If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report. 4. This information must be provided in electronic format If results are required owing to complaints the results will be provided as soon as possible by the contractor to DCC. | Medium and high risk sites |
| Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM | Medium and high risk sites |

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| The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work. | Medium and high risk sites |
| Vibration levels are recommended to be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned and an explanation given. | Medium and high risk sites |
| Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways, in so far as possible Street and footpath cleaning must be undertaken during the demolition and ground works phase | All sites |
| The following air quality monitoring procedures must be applied: 1. Continuous real time particulate (i.e. PM10 and PM2.5) monitoring along the site boundary must be undertaken during any demolition, ground works or during a construction phase which DCC deems necessary. The location of particulate monitors to be agreed with DCC prior to installation. The results of the monitoring shall be made available to DCC on request in an agreed format. 1. Dust deposition monitoring must be undertaken using a methodology agreed in advance with DCC | Medium and high risk sites |

Table 6.2.7 Liaison with Local Community and Businesses

| | |
|--|----------------------------|
| Appointment of a Liaison Officer as a single point of contact to engage with the local community and respond to concerns | Medium and high risk sites |
| Keeping local residents and businesses informed of progress and timing of particular construction activities that may impact on them, including any special permissions given for out of hours work. | Medium and high risk sites |
| A copy of this plan must be sent to DCC as a matter of urgency in the case of sites 14 days in advance of commencement of works for any site | High risk sites |
| Send regular updates at appropriate intervals to all identified affected neighbours/ businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports | High risk sites |

Table 6.2.8 Complaints Handling

| | |
|---|-----------|
| Maintenance of a site complaints log detailing 1. Name and address of complainant 2. Time and date complaint was made | All sites |
|---|-----------|

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| | |
|---|-----------|
| 3. Date, time and duration of noise, or other issues complained of 4. Characteristics of nuisance, such as noise rumble, clatters, intermittent, etc. 5. Likely cause or source of nuisance 6. Weather conditions, such as wind speed and direction 7. Investigative and follow -up actions, including response sent to complainant | |
| Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding | All sites |

7.0 ENVIRONMENTAL CONTROL MEASURES

7.1 INTRODUCTION

Construction works for the proposed development have the potential to cause adverse environmental impacts, discussed under the following headings:

- Noise control;
- Water quality;
- Dust control;
- Materials handling and storage;
- Waste management;
- Biodiversity.

This section outlines the potential environmental consequences of construction works and outlines the proposed control measures that will minimise the potential environmental impacts.

7.2 NOISE CONTROL

Construction noise, while inherently noisy and disruptive, is temporary in duration. The construction and demolition activities of the proposed development is expected to have a duration of approximately 18 months. The works involving heavy machinery for the purposes of excavation, the preparation of building foundations and passing construction traffic usually cause the most disturbances to nearby residents.

There is currently no statutory guidance relating to the maximum permissible noise level for a project's construction phase. Current guidance on permissible noise levels is therefore considered somewhat limited. In the absence of any statutory guidance or other specific limits prescribed by local authorities, an appropriate best practice measure has been adopted as the standard for this project.

Best practice guidelines are taken from the British Standard BS 5228 – 1: 2009 (+A1 2014): '*Code of Practice For Noise And Vibration Control On Construction And Open Sites – Noise*'. BS 5228 sets out an approach for setting appropriate construction noise limits for residential dwellings, but it does not provide guidance for commercial or office buildings.

The BS 5228 '*ABC Method*' calls for the designation of a noise sensitive location into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value that, if exceeded, indicates a significant noise impact is associated with the construction activities as summarised in **Table 7.1** below.

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Table 7.1: Threshold of Potential Significant Effect at Dwellings (BS 5228)

| Assessment category and threshold value period | Threshold value, in decibels (LAeq, T) | | |
|---|--|---------------------------|---------------------------|
| | Category A ^(a) | Category B ^(b) | Category C ^(c) |
| Night-time (23.00–07.00) | 45 | 50 | 55 |
| Evenings and weekends ^(d) | 55 | 60 | 65 |
| Daytime (07.00–19.00) and Saturdays (07.00–13.00) | 65 | 70 | 75 |
| <p>NOTE 1: A potential significant effect is indicated if the LAeq, T noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.</p> <p>NOTE 2: If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total LAeq, T noise level for the period increases by more than 3 dB due to site noise.</p> <p>NOTE 3: Applied to residential receptors only.</p> | | | |
| <p>a) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.</p> <p>b) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.</p> <p>c) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.</p> <p>d) 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.</p> | | | |

The development is located in The Liberties, Dublin 8, south of Dublin City urban landscape and would be considered urban in nature, with dense residential housing, diverse services, schools, retail stores, healthcare and amenities in the surrounding area.

The road network, particularly the R804 regional road (Marrowbone Lane) situated to the east of the proposed site and Forbes Lane to the north, is anticipated to be the primary source of noise during both daytime and nighttime hours. See strategic noise mapping of the agglomeration roads in Figures 6.1 and 6.2 below. The strategic noise maps should not be relied upon in the context of planning applications for noise sensitive developments in the vicinity of the mapped sources. However, it is indicative that the site would be under the influence of the noise generated by the agglomeration roads.

The noise impact assessment has determined that exceedance of the 65 dB daytime noise guidance standard is likely during construction. Furthermore, a number of noise sensitive receptors are located in close proximity to the site and noise control measures should be implemented to limit any potential impact caused by construction activities. Proposed noise control measures are detailed below.

Considering the results from the assessment, the site is expected to be designated as *Category B* as defined in Table 6.1 and a daytime threshold value of 70 dB would apply to the site during the construction phase of the development. Should these thresholds be exceeded, an investigation will be carried out and remedial action taken to rectify the situation.

No vibration impacts are anticipated, due to the nature of the development (residential housing estate).

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Where high noise construction activities are planned to take place, which would exceed the recommended threshold level of 70 dB, the site should consider mitigation measures as outlined within BS 5228:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise* (i.e. temporary noise barriers), as appropriate.

Additional temporary acoustic screening at the source should be employed by the contractor where excessive noise is foreseen over extended durations.

All noise mitigation measures should be included in the site induction for all workers and contractors.



Figure 6.1: Strategic Noise (LDEN) mapping of the agglomeration roads

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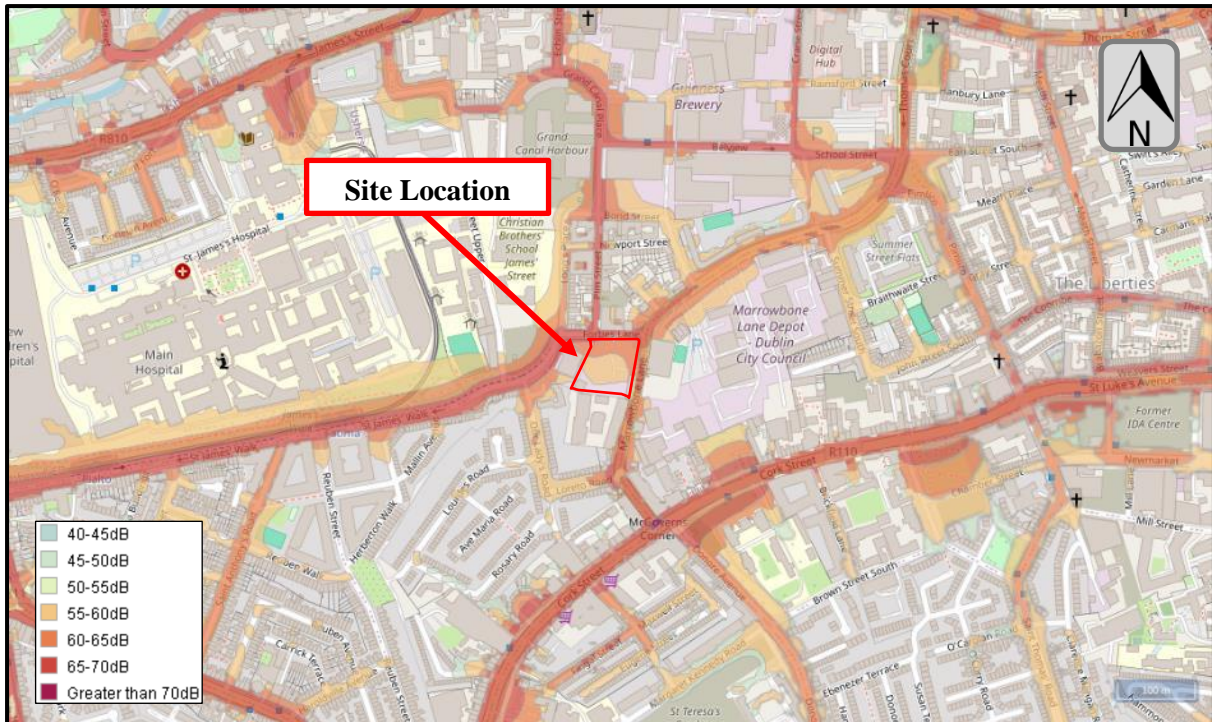


Figure 6.2: Strategic Noise (L_N) mapping of the agglomeration roads

Proposed Noise Control Measures

The following noise control measures shall be implemented by the client for the duration of the construction of the proposed development:

- Cognisance will be taken of the National Roads Authority's "Guidelines for the Treatment of Noise and Vibration in National Road Schemes", the British Standard 5228: Part 1 "Code of practice for Noise Control on Construction and Open Sites" and the CIRIA 2015 "Environmental Good Practice on Site";
- Plant and machinery used on-site will comply with the EC (Construction Plant and Equipment) Permissible Noise Levels Regulations, 1988 (S.I. No. 320 of 1988). All noise producing equipment will comply with S.I. No 632 of 2001 European Communities (Noise Emission by Equipment for Use Outdoors) Regulations 2001;
- All construction activities will take place between 7:00am and 6:00pm Mondays to Fridays, between 8:00am to 2pm on Saturday and not at all on Sundays and public holidays. Any works which, by necessity, are required to be carried out outside of these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority;
- Deliveries will be organised to arrive during daytime hours;
- Care will be taken when unloading vehicles to minimise noise disturbance. Materials should be lowered, not dropped, insofar as practicable and safe;
- Regular maintenance will be carried out on all construction equipment, machinery, and vehicles;
- Construction plant will be operated in accordance with the suppliers instructions;

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- Engine and machinery covers will be maintained in good working order and will remain closed whenever machinery is in use;
- Where required, screens or barriers will be installed to shield particularly noisy activities;
- Where practicable, all mechanical plant will be fitted with effective exhaust silences and pneumatic tools fitted with mufflers or silencers;
- Any compressors required will be silenced or of sound reduced models fitted with acoustic enclosures;
- Noisy equipment will be orientated in one direction so that noise will be directed away from noise-sensitive areas;
- Construction plant will be selected, where possible, with low inherent potential for the generation of noise;
- Construction plant will be switched off or throttled back to a minimum when not in use;
- A 15kph speed limit will be implemented for all traffic onsite;
- Staff personnel will be instructed to avoid unnecessary revving of machinery;
- Site personnel will notify the Project Manager in the event equipment or plant becomes defective, resulting in high noise emissions. Any defective plant will be kept out of service until the necessary repairs are undertaken.

7.3 WATER QUALITY

During the construction phase, risks to water quality could arise with potential releases of suspended solids, uncured concrete, and hydrocarbons (fuels and oils). No in-stream works will be required as per the proposed development. The following control measures shall be implemented by the construction works contractor for the protection of groundwater quality:

Proposed Measures for the Protection of Water Quality

The implementation of control measures for dust and materials storage and handling will reduce the potential for a deterioration in water quality. These measures are outlined in Sections 7.5 and 7.6 below.

The following mitigation measures would be employed to ensure that there would be no significant impacts to the environment as listed above, due to a potential deterioration in water quality during construction works:

- The construction works contractor would adhere to standard construction best practice, taking cognisance of the Construction Industry Research and Information Association (CIRIA) guidelines “*Control of Water Pollution from Construction Sites; guidance for consultants and contractors*” 2001 and “*Control of Water Pollution from Construction Sites – Guide to Good Practice*”, 2002;
- Where construction works would take place within the immediate vicinity of any watercourses, cognisance would be taken of the 2016 guidelines published Inland

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Fisheries Ireland, “*Guidelines on Protection of Fisheries During Construction Works in and adjacent to Waters*”;

- Where spoil is generated, this would only be stored temporarily. Where possible, spoil would be covered or alternatively, graded;
- Excavations and earth-moving activities would be planned outside periods of heavy rainfall, to limit the potential for suspended solids to become entrained within surface water run-off;
- To avoid water contamination from hydrocarbons and concrete, the construction works contractor will refer to control measures included in Section 7.6;
- Surplus uncured concrete would be returned to the batching plant where possible;
- Vehicle and wheel washing facilities will be provided at site exit, at an area isolated from any drainage network.
- Re-seeding of final areas of bare soil would be undertaken as soon as possible, where required, to promote the rapid stabilisation of soils;
- Appropriate weed management plan should be put in place to help establish grassland sward to prevent runoff;
- If weed control is required then herbicide application should only be carried out by suitably qualified contractors or operators with strict reference to the product label, local land use, health and safety considerations and any pertinent regulations. All herbicide treatment must comply with the pesticide regulations S.I. No. 155/2012 - European Communities (Sustainable Use of Pesticides) Regulations 2012 or any amended or current regulations at the time of use.

In addition to the above measures, the construction works contractor would take cognisance of the following guidelines:

- CIRIA, 2001: *Control of Water Pollution from Construction Sites; guidance for consultants and contractors*;
- CIRIA, 2002: *Control of Water Pollution from Construction Sites – Guide to Good Practice*;
- IFI, 2016: *Guidelines on Protection of Fisheries During Construction Works in and adjacent to Waters*.

It is important to note that during the construction phase, the occurrence of trade effluent is possible. If necessary, an application for a Trade Discharge Licence will be submitted to the City Council.

It is therefore considered that, due to the proposed design and proposed mitigation measures, there would be no significant risk to water quality during the construction phase of the proposed development.

7.4 DRAINAGE AND FLOOD CONTROL

The only recorded history of flooding in this area was in the Marrowbone Lane in the 1940’s due to dumping in the Poddle river. There is no other recorded history of flooding in the nearby

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area to the site and the area has not been identified as being at risk of flooding in the CFRAM Study. Control measures detailed in sections 7.3 and 7.6 would be implemented to ensure no issues would arise due to excess surface water accumulation at the site.

7.5 DUST CONTROL

Generally, the primary potential nuisance associated with construction activities is dust. Excavations and earth moving operations may generate quantities of construction dust, particularly in drier weather conditions. The extent of any construction dust generation depends on the nature of the construction dust (soils, sands, gravels, silts etc.) and the construction activity. The potential for construction dust dispersion depends on the local meteorological conditions such as rainfall, wind speed and wind direction.

Excavated material, or spoil, has the potential to cause a deterioration in water quality and a nuisance to nearby dwellings due to high dust levels if not appropriately managed. If the excavated materials are deemed hazardous, the Contractor is responsible for pretreating the waste soils using a method approved by the landfill operator and in compliance with Environmental Protection Agency guidelines. The Main Contractor is urged to reuse and recycle waste materials to the greatest extent possible. This section should be read in conjunction with the dust control measures relating to the storage and handling of spoil outlined in Section 7.6.

The issue of construction dust dispersion may be exaggerated with vehicles transporting sand/gravels/concrete/etc. to and from the site, having the potential to cause an environmental nuisance to use of the local road.

Proposed Dust Control Measures

The following dust control measures shall be implemented by the client for the duration of the construction of the proposed development:

- Cognisance will be taken of the guidelines published by the Institute of Air Quality Management (IAQM), “*Assessment of dust from demolition and construction 2014*”;
- Before any excavation begins, a thorough survey of the site should be conducted to identify any potential areas of contamination or other risks. If unidentified contaminated soil is discovered on-site, the appointed Contractor will promptly inform the Client, Dublin City Council, the EPA, and other relevant authorities. A hazardous waste/soil management plan will then be developed and executed. This plan will detail the estimated volumes, mitigation measures, authorized disposal/treatment destinations, and the designated contractors for material transportation;
- As a means to promote community engagement, comprehensive condition surveys will be conducted on specific neighbouring third-party buildings before any construction begins on the site. Additionally, a point of contact for community members to voice concerns will be established, as mentioned in Section 4.6;
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind;

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- Methods and equipment should be in place for immediate clean up of spillages of dusty material.
- Prolonged storage of materials onsite will be avoided;
- Where possible, the storage of materials, such as stockpiled excavated soils, will be located as far as possible from adjacent residential properties;
- A 15kph speed limit will be implemented for all traffic onsite to reduce the potential for dust generation;
- When transporting materials to and from the site, vehicles will be fitted with covers where possible to prevent material loss;
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. A road sweeper will be used where required;
- Noise and Dust Monitoring will be carried out by an independent specialist company, whose monitoring program will be submitted to the appropriate authority for approval. Monitoring results will be reported monthly in relation to proposed works.

Should additional dust control measures be required, for instance during particularly dry weather, dust suppression measures will be undertaken, including the following:

- Water misting plant, such as bowsers and sprays will be used as required and where necessary;
- Wheel-wash facilities will be provided for vehicles exiting the site to reduce the level of dust travelling offsite;
- Where practicable, stockpiles of excavated soils and exposed surfaces will be dampened down via misting plant.

7.6 MATERIALS STORAGE AND HANDLING

Concrete

As noted in Section 7.3, a deterioration in water quality could arise during construction works due to the release of uncured concrete. In the event of uncured concrete entering a waterbody, the pH would be altered locally, potentially causing an adverse impact upon aquatic flora and fauna and causing an alteration to the waterbody substrate. Therefore, the handling, storage and pouring of concrete will be strictly supervised and controlled.

The following controls will be implemented throughout the construction phase:

- The use of pre-cast concrete where possible;
- The delivery and pouring of concrete will be supervised;
- Concrete will be poured directly into the shuttered formwork from the Ready-Mix Truck, reducing the risk of spillage;
- The wash-out of Ready-Mix Truck drums will not be permitted onsite, in the environs of the site, or at a location which could result in a discharge to surface water;

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- The disposal of excess uncured concrete will be removed from site by an authorised waste contractor;
- The pouring of concrete will be avoided during periods of expected heavy rainfall;
- Covers will be available for freshly poured concrete to avoid surface washing during heavy rain.

Hydrocarbons

A potential source of water quality contamination would be from the release of hydrocarbons (oils, fuels) from construction plant and equipment. Pollution could occur in a number of ways, such as neglected spillages, the storage handling and transfer of oil and chemicals and refuelling of vehicles. Site personnel will be informed of the importance of good housekeeping practices, including the immediate cleaning of spillages.

The following controls for the handling and storage of hydrocarbons will be implemented throughout the construction phase:

- All construction plant machinery and equipment will be maintained in good working order and regularly inspected;
- Any fuels, oils or chemicals will be stored in accordance with the EPA guidance on the storage of materials, in designated bunded areas at the site compound, with adequate bund provision to contain 110% of the largest drum volume or 25% of the total volume of containers;
- Material storage areas will be appropriately labelled and marked;
- Deliveries of fuels and oils to the site will be supervised and records maintained;
- All loading and unloading of hydrocarbons will take place within the bunded area where possible;
- Fuels / oils will be handled and stored with care to avoid spillage or leakage;
- Where appropriate, small construction plant equipment will be placed on drip trays;
- The diesel generator will be suitably bunded;
- Any waste fuel / oils will be collected in bunded containers at a designated area within the temporary site compound and properly disposed of to an authorised waste contractor;
- Spill kits, adequately stocked with spill clean-up materials such as booms and absorbent pads, will be available onsite;
- In the unlikely event of a hydrocarbon spillage, contaminated spill clean-up material will be properly disposed of to an authorised waste contractor;
- The designated area for the storage of hydrocarbons will be inspected on a regular basis;
- The client will ensure the relevant site personnel are trained in spillage control;
- Where re-fuelling of construction plant is required to take place onsite, re-fuelling will be undertaken within a designated, bunded area;
- Re-fuelling onsite will only be undertaken by experienced and trained personnel;

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- Where construction plant shows signs of hydrocarbon leakage, site personnel will cease the operation of the item in plant in question and notify the Project Manager. Any defective plant will be kept out of service until the necessary repairs are undertaken.

Excavated Materials

The Contractor is required to conduct excavation works in line with best practices, ensuring careful segregation of materials to prevent cross-contamination. Environmental chemistry testing must be performed to classify the waste soils from potentially contaminated areas, including Waste Acceptance Criteria testing. The testing protocol, agreed upon with the landfill operator, must be executed by an accredited laboratory.

The following controls for the handling and storage of excavated materials will be implemented throughout the construction phase:

- Further investigation would be required to determine the spatial extent of the Total PAH contamination and ensure appropriate measures are used to prevent the contamination from spreading through groundwater during removal works. A contaminated land specialist or specialist contractor should be employed to determine the extent of the soil contamination and establish the required removal methods for the protection of groundwaters. A testing programme should be put in place for excavation materials, including a stockpile and quarantine area within the site. If unidentified contaminated soil is discovered on-site, the appointed Contractor will promptly inform the Client, Dublin City Council, the EPA, and other relevant authorities. A hazardous waste/soil management plan will then be developed and executed. This plan will detail the estimated volumes, mitigation measures, authorized disposal/treatment destinations, and the designated contractors for material transportation.
- The Contractor will ensure that all necessary health and safety measures are in place to protect workers during the excavation and testing process, as described in Section 5.6 of this document.
- As a means to promote community engagement, comprehensive condition surveys will be conducted on specific neighbouring third-party buildings before any construction begins on the site. Additionally, a point of contact for community members to voice concerns will be established, as mentioned in Section 4.6.
- Earthworks excavations should be kept damp where necessary and where reasonably practicable.
- Spoil will only be stored on an adjoining site temporarily and kept away from sensitive receptors such as residential areas;
- Topsoil will be kept completely separate from all other construction waste as any cross-contamination of the topsoil can render it useless for reuse. Additionally, it will be protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.
- Where possible, spoil will be covered or alternatively, graded, to avoid ponding and water saturation, in addition to minimising exposure to wind.
- Methods and equipment should be in place for immediate clean up of spillages of dusty material.

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- After excavation and earth-moving works, topsoil will be used where feasible and as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.
- Excess subsoil not reused on-site will be sold, after being evaluated for potential reuse as engineering fill or non-engineering fills, such as landscaping, at nearby or other construction sites within the region, subject to Article 37 notification to the EPA.
- The transport of dusty materials and aggregates should be carried out using covered / sheeted lorries.
- The Main Contractor is responsible for the offsite disposal of all waste materials, once in-situ reuse and recycling options have been thoroughly explored. This disposal must comply with the Duty of Care and receive approval from the relevant statutory bodies. The Main Contractor must also ensure that any waste transferred is done so legally, and that the receiving facility is licensed to handle that specific type of waste, as per the Waste Management Acts 1996-2005. The Waste Collection Permit Register will be consulted in accordance with the Waste Management (Collection Permit) Regulations 2001 to verify that waste carriers hold the necessary permit.
- Under the Waste Auditing regime, records will be maintained for all aspects of construction waste, including its generation, movement, and treatment. The Construction Waste Manager is responsible for ensuring that all necessary licenses are obtained as required. Documentation will be maintained for each consignment of construction waste removed from the site.

Soil Chain of Custody

All excavated materials intended for off-site disposal must be recorded in a chain of custody, which should include the following details: the transfer date and time; the carrier's name; the National Waste Collection Permit Number; the vehicle registration number and driver's name; the LOW Code; waste classification and origin; quantity/volume of waste; proposed reuse/recycling/disposal details and corresponding code; destination facility and its Waste Licence/Permit Number; and confirmation of receipt at the final waste facility.

7.7 WASTE MANAGEMENT

A Resource Waste Management Plan (RWMP) has been prepared by Conviro Ltd. and will be incorporated into the requirements for the Contractor and the Plan will be developed by the Contractor as the construction progresses. The guidelines have been prepared in accordance with the principles and objectives to deliver sustainable waste management for this project and all relevant national and local waste management policies.

Waste management at the site is briefly discussed below, with more detailed management measures outlined in the RWMP. Therefore, this CDEMP should be read in conjunction with the RWMP document.

Throughout the construction phase, wastes generated will be managed by the client in order of priority in accordance with Section 21A of the Waste Management Act 1996, as amended, as per the waste hierarchy below.

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1. Reduction of the amount of waste generated by the construction process.
2. Segregation of waste is a key concept that will be implemented during the course of the construction phase of the development to enable ease in re-use and recycling, wherever appropriate.
3. Recycle waste material where feasible, including the use of excess excavations as fill material, recycling of various waste fractions such as metals, packaging etc.

Wastes will be segregated as much as possible in order to avoid cross contamination. Where practical, the client will reduce the generation of wastes at source through measures such as the efficient ordering and purchasing of materials to reduce surplus materials, the return of uncured concrete to the batching plant where possible and the re-using of shutters for concrete works.

Where it is not possible to avoid the generation of wastes, wastes will be sent for recycling or recovery as a priority. The generation of waste for disposal will be minimised as much as is practical. Any excess of subsoil/topsoil will be sold, subject to Article 37 notification to the EPA, and transported off-site to other construction sites within the region by a licenced haulier.

It is anticipated that the following categories of waste will be generated during the construction of the project:

- Mixed waste from site offices and canteen;
- Construction and demolition waste;
- Waste hydrocarbons;
- Surface water runoff;
- Dry recyclables;
- Timber;
- Metal;
- Sanitary waste from staff welfare facilities.

The site compound will be the designated location for waste receptacles onsite. Waste will be segregated where possible and placed within recycling and general waste skips provided by a licenced waste contractor.

As discussed in Section 7.6, any waste fuel or oils will be storage in bunded containers at a designated area awaiting collection by a suitably authorised waste contractor.

All records of waste transported (quantities) off-site will be retained and copies of waste contractor's waste licences and waste collection permits will be retained on file.

7.8 BIODIVERSITY AND LANDSCAPING

The Preliminary Ecological Appraisal completed by NM Ecology has concluded that the site has no baseline ecological value, that no ecological impacts are anticipated and that the

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proposed development will provide a net gain in biodiversity. The Appropriate Assessment carried out by NM Ecology has concluded that no significant effect on any European sites are anticipated from the proposed development. An ecological survey has also been completed by Panther Ecology Ltd., which confirmed that the majority of the site is not of significant conservation value. The following control measures are recommended to ensure the proposed construction works will not have any significant impact upon the biodiversity of the area:

- As standard practice, construction plant will be thoroughly washed and inspected prior to arriving to, and leaving from, the development site;
- Should a protected fauna species such as Bats, Badger (*Meles meles*) or Otter (*Lutra lutra*) be found during the construction phase of the project, an officer of the National Parks and Wildlife Services (NPWS) would be notified prior to the resumption of construction works;
- Machinery must be used sensitively and appropriately by a skilled operator;

A landscaping plan has been completed by Mitchel + Associates. The plan includes the following for the protection of biodiversity:

- Areas of the site will be planted with grass, wildflowers, shrubs, hedges and trees. Any alterations potentially made to the plan during construction would ensure that the design criteria are met regarding appropriate species, location, ecological and amenity value, etc.;
- Planting will be carried out with native and non-invasive naturalised flora species, which will result in a net biodiversity gain.

7.9 INVASIVE SPECIES

Although no high impact invasive species were identified on-site, butterfly bush (*Buddleja davidii*) and young Sycamore (*Acer pseudoplatanus*) were identified and considered medium invasive plant species, which are not subject to restrictions. No significant impacts to the environment due to the spread of invasive species are anticipated. Therefore, it is not considered that further actions would be required. It is considered that the implementation of the controls and measures outlined in Sections 7.2 – 7.8 will further reduce any potential adverse impact upon biodiversity in the area.

7.10 TRAFFIC MANAGEMENT

Access to the new proposed site is via new entrances off the Marrowbone Lane to the south-east and a new entrance off the Forbes Lane to the north-west. Vehicles will approach Marrowbone Lane from the R110 Cork Street to the south and from the R810 Thomas Street to the north-east via Thomas Court. HGV construction traffic is anticipated to arrive via Marrowbone Lane. The client will undertake site entrance works to facilitate the access of traffic associated with the proposed development. The client will ensure the following:

- Contact details of the site will be provided to all anticipated arrivals and made publicly available to allow the local community to directly communicate with the site;

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- Access to the site will be restricted to authorised vehicles only;
- A 15kph speed limit will be implemented for all traffic onsite;
- All vehicles will be parked and or managed within the proposed site carpark located to the south-western corner near the proposed waste compound area. Signage will be erected advising where parking is available;
- Short-term temporary traffic signals and localised parking restrictions will be considered and implemented, if required;
- Local roads will be inspected and cleaned as necessary;
- The site entrance will be kept unobstructed to allow both access and egress from the site;
- Any HGV traffic requiring additional road space to manoeuvre will be carefully managed to ensure the safety of residents and other road users;
- Deliveries to the site will occur during normal working hours (7:00 a.m to 6:00 p.m Monday to Friday and 8:00 a.m to 2:00 p.m on Saturdays);
- Larger HGVs could be required to communicate with the site ahead of their arrival to ensure their movement will not result in any conflict with others;
- Where possible, large-scale vehicle movements will be timed outside peak hours on the local road network to avoid traffic;
- Allocated delivery time slots may be required to be adhered to by large construction vehicles, during periods when larger vehicle movements may be more frequent;
- Delivery trucks will not be allowed to leave the development site during peak traffic hours;
- Materials will be delivered to the site in such manner to keep vehicle movements to a minimum;
- Materials will not be delivered to the site until required and should be retained onsite for the duration of its requirement in order to avoid unnecessary repeated deliveries;
- Deliveries to the site will be via suitably contained vehicles, with sheeting and covers where required;
- Delivery trucks will queue at the storage area to avoid obstructions to the general traffic in the area;
- The deployment of banksmen to assist HGVs at junctions and prevent conflicts with other road users will be considered and carried out, if deemed necessary;

There is adequate space to accommodate parking on site during the initial construction phase. In the event that, at a later stage during the construction programme, adequate parking is not available on site, off-site parking and shared car arrangements will be organised by site management.

7.11 ARCHAEOLOGY

An Archaeological Impact Assessment has been carried out by John Purcell Archaeological Consultancy, which determined that the site does not include any historic structures or archaeological remains and that the potential for historic remains to exist at the site is low.

There are no archaeological monuments recorded by the Archaeological Survey of Ireland within the proposed development site. Excavations carried out to the north of the site have demonstrated the existence of archaeological features dating to the 18th, 19th and 20th centuries. The nearest site of archaeological significance revealed the remains of a stone and red-brick culvert along the Forbes Lane/Pim Street frontage, which formed part of a reservoir. However, a significant part of the reservoir is currently under new build. No previous excavations carried out in the vicinity of the site have revealed finds or features of archaeological significance in other directions.

It is not anticipated that the proposed clearance works, encompassing the demolition of structures, excavation activities, vegetation removal, and other disruptive actions, have the potential to impact archaeological features. Therefore, it is not anticipated that it would be necessary to employ measures to ensure that there would be no significant impacts to the archaeological environment due to the proposed construction works.

8.0 MONITORING AND AUDITING

8.1 REPORT AND RECORD KEEPING

The Project Manager, in conjunction with the EHS Officer, would ensure that appropriate, detailed records are maintained during the construction phase of the development. Records of all works associated with the proposed development would be completed by the construction works contractor throughout the construction phase. Environmental records would include waste and site inspection records and where relevant, environmental incident and complaints records. Other records may include Safety Data Sheet records and a copy of the Safety File. Where relevant to the associated works, statutory inspection records would be maintained for such activities as excavations and lifting gear.

Where necessary and as requested by the local authority, copies of relevant construction activity records can be made available.

In the event of an environmental incident occurring at the site with the potential to cause environmental pollution, the Project Manager would notify the clients and the relevant third parties, as outlined in Section 4.6, as soon as practicable. Such environmental incidents may include:

- Fire;
- Water pollution event;
- Hydrocarbon or chemical spill;
- Excessive noise;
- Excessive vibration;
- Excessive dust.

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Any complaints and/or incidents would be reported to the Project Manager. The Project Manager would be responsible for developing and maintaining a register of complaints and a register of incidents, with details on follow-up actions. The Project Manager would notify the clients as soon as practicable of any environmental complaint or incident.

8.2 ENVIRONMENTAL PERFORMANCE MONITORING

8.2.1 SAFETY MONITORING

The EHS Officer would be present at the development site during working hours, to ensure activities are undertaken in a safe manner.

8.2.2 ENVIRONMENTAL MONITORING

The EHS Officer would be present at the development site during working hours, to ensure activities are undertaken in an environmentally sensitive manner. The EHS Officer would undertake regular site inspections and audits, at least once per two week period, to monitor the environmental performance of the site and address any potential environmental issues such as dust, litter and noise. Site inspections and audits would include the following:

- Assessment of public access roads;
- Assessment of neighbouring properties;
- Chemical and hydrocarbon storage area;
- Waste storage area;
- Spoil area.

The EHS Officer would be responsible for maintaining a register of all environmental monitoring and would communicate the site's environmental performance during site meetings.

8.2.3 CONTINUOUS ENVIRONMENTAL MONITORING

A construction environmental monitoring programme shall be put in place, as required for the continuous monitoring of dust, noise and vibration during the construction phase of the development.

The proposed monitoring plan should be reviewed by the Project Manager and EHO Officer prior to commencement of works. Any required alterations to the monitoring plan should be agreed with Dublin City Council.

Prior to the commencement of the proposed site works monitoring stations shall be installed and maintained by a suitably qualified specialist firm to provide continuous monitoring to measure and record the impact of site activities on local receptors.

All monitoring data shall be compiled into a monthly technical report which will include a full assessment of the impacts arising from site construction activities. All construction monitoring reports should be kept on file at the site and made available to City Council upon request.

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The following candidate monitoring locations should be considered:

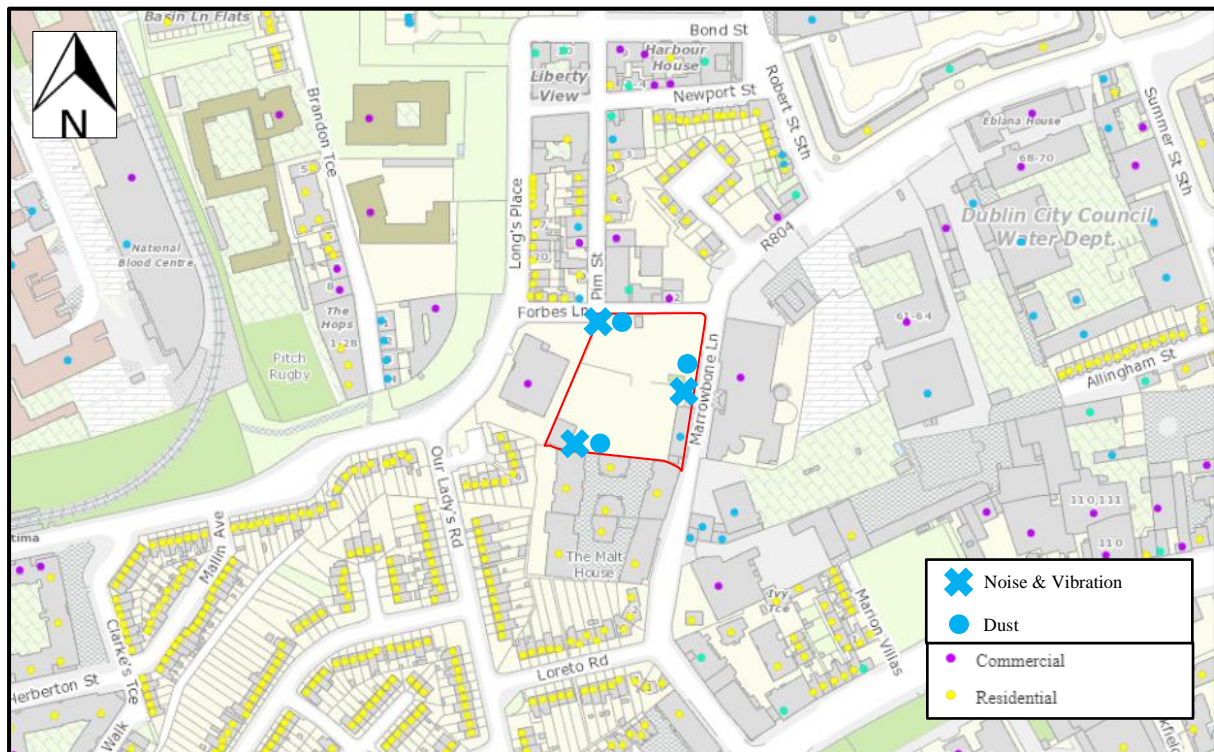


Figure 8.1: Candidate Monitoring Locations

8.3 MONITORING COMPLIANCE REPORTS

Site inspections and audits would be undertaken by the EHS Officer on a regular basis. These site inspections and audits would monitor the environmental performance of the site.

Where works are determined to be in breach of any specifications outlined within the CDEMP, the EHS Officer shall notify the Project Manager, who would raise a non-compliance report and notify the clients as soon as practicable. Non-compliance reports may also be raised as a result of an incident or potential incident, the receipt of a complaint or as a result of a regulatory inspection or audit.

The non-compliance report would include details on the nature of the non-compliance, the proposed corrective action required, action taken to prevent recurrence and verification that the corrective actions have been undertaken and the non-compliance has been closed out. Any non-compliances would be discussed at the fortnightly meetings between the construction works contractor and clients.

8.4 PROCEDURES TO REVIEW INSPECTIONS AND STEPS TO ADDRESS NON-COMPLIANCE

The Project Manager would be responsible for reviewing inspections, audits and any arising non-compliances. A review schedule would be decided upon between the construction contractors and the clients upon the approval of the CDEMP by Dublin City Council.

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The Project Manager would notify the clients as soon as practicable of any non-compliances arising during the construction of the proposed development. The Project Manager would be responsible for notifying the relevant third parties where required of non-compliances at the site and would liaise with third parties as necessary as to the outcome of the non-compliance. All non-compliances would be investigated immediately, and the construction works contractor would aim to close out non-compliances as soon as possible.

Where it has been determined that revisions to the CDEMP are required to ensure recurrence of a non-compliance does not take place, the Project Manager and EHS Officer would make the necessary changes to the CDEMP and would ensure that the revisions are effectively communicated as appropriate to onsite personnel and sub-contractors.

9.0 REFERENCES

CIRIA (2015) *C741 Environmental Good Practice on Site*. (Fourth Edition).

CIRIA, 2002: *Control of Water Pollution from Construction Sites – Guide to Good Practice*.

Department of Environment Community and Local Government (2006) *Best Practice Guidelines on the Preparation of Waste management Plans for Construction and Demolition Projects*. DoECLG, Dublin, Ireland.

EN BS 5228-1:2009 “*Code of practice for noise and vibration control on construction and open sites*”

European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

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IAQM (2024) *Assessment of dust from demolition and construction 2024*. Available at: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>

Inland Fisheries Ireland (2016). *Guidelines on Protection of Fisheries During Construction Works in and adjacent to Waters*.

Invasive Species Ireland (2021)

<http://invasivespeciesireland.com/species-accounts/established/terrestrial/himalayan-balsam>

Masters-Williams H., Heap, A., Kitts, H., Greenshaw, L., Davis, S., Fisher, P., Hendrie, M. and Owens, D. (2001) “*Control of Water Pollution from Construction Sites; guidance for consultants and contractors*”.

National Roads Authority (2010) *The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*. Available at: <http://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

National Roads Authority (2004) *Guidelines for the Treatment of Noise and Vibration in National Road Schemes*”.

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APPENDIX A

PROPOSED SITE LAYOUT

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GENERAL NOTES

DO NOT SCALE FROM DRAWINGS. WORK TO FIGURED DIMENSIONS ONLY. ARCHITECT TO BE NOTIFIED OF ANY DISCREPANCIES.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL ARCHITECT'S DRAWINGS, SPECIFICATIONS CONSULTANT'S DESIGN TEAM DRAWINGS AND SPECIFICATIONS.



LEGEND

| | |
|--|---------------|
| OVERALL SITE AREA: 0.56Ha | |
| NET SITE AREA: 0.52Ha <small>(excluding road crossing etc.)</small> | |
| TOTAL NO. OF UNITS : 108 No. | |
| NET DENSITY: 207.7 units per Ha | |
| UNIT MIX | |
| 1 BED | 64 no. |
| 2 BED | 31 no. |
| 3 BED | 13 no. |
| Total | 108 no |

— SITE BOUNDARY FOR THE PURPOSES OF THIS APPLICATION

M existing / proposed level

Note:
 This site plan is to be read in conjunction with the MORCE and Mitchell's drawings and documentation

| REV | DATE | DESCRIPTION | ISSUED BY |
|-----|----------|---|-----------|
| B | 11/04/24 | Building Entrances & levels added | |
| C | 16/04/24 | On street Planter boxes updated | |
| D | 18/04/24 | Junction at Forbes/Marrowbone updated to match as built | |
| E | 22/04/24 | Landscaping added, red line updated | |
| F | 25/04/24 | Updates to Address Roadplan Quality Audit | |
| G | 02/05/24 | Table top added to junction at Marrowbone Lane | |

FOR INFO

CLIENT:
 NDFA on behalf of Dublin City Council

PROJECT TITLE:
 SHB 4&5 - FLD - Forbes Lane Depot

DRAWING TITLE:
 Proposed Site Plan

| DRN BY: | CHK BY: | SCALE @ A1: | DATE: | REVISION: | JOB NO: |
|---|---------|-------------|----------|-----------|--------------------|
| PD | DL | 1:500 | 02/04/24 | E | 23004 |
| DRAWING NUMBER: SHB5-FLD-DR-MCO-AR-P1-PL03 | | | | | STATUS CODE: P1 |

M·CORM
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 AND URBAN DESIGN

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SITE PLAN - 1:500 @A1

APPENDIX B

COMPLAINTS RECORD FORM

(DRAFT) ENVIRONMENTAL COMPLAINT FORM

| | |
|---|-------------|
| Nature of Complaint: | Ref: |
| | |
| Time/Day/Date of complaint/incident: | |
| | |
| Name of complainant: | |
| | |
| Address of complainant: | |
| | |
| Phone No. of complainant: | |
| | |
| Details of complaint (description by complainant): | |
| | |
| Weather conditions at the time of the complaint / nuisance (Wind / Wind Direction / Precipitation / Temperature etc.): | |
| | |
| Investigation of site operations: | |
| | |
| Summary & Resolution: | |
| | |
| | |