



Construction Environmental Management Plan

Residential Led Mixed-Use Development,
Sandford Road, Dublin 6

December 25

TABLE OF CONTENTS

LIMITATIONS	V
1 INTRODUCTION	1
1.1 OBJECTIVES.....	3
2 PROJECT OVERVIEW	5
2.1 EXISTING SITE.....	5
2.2 PROPOSED DEVELOPMENT	7
2.3 PHASING PLAN	10
2.4 WORKING HOURS FOR CONSTRUCTION WORKS.....	11
2.5 SITE CONSTRUCTION COMPOUND.....	11
2.6 STOCKPILED SOIL MATERIAL	12
2.7 PLANT AND EQUIPMENT	13
3 PROJECT ROLES & RESPONSIBILITIES	15
3.1 HEALTH AND SAFETY	18
3.2 COMMUNICATION & LIAISON.....	19
3.3 INCIDENT & EMERGENCY MANAGEMENT	20
3.4 MONITORING, AUDITING AND REPORTING.....	21
3.5 NON-COMPLIANCE AND CORRECTIVE ACTIONS	22
3.6 SITE SECURITY	22
3.7 SITE STORAGE.....	22
3.8 SITE LIGHTING	23
4 CONTROL MEASURES.....	24
4.1 NOISE AND VIBRATION CONTROL.....	24
4.1.1 Construction Activity Control Measures	25
4.1.2 Additional General Control Measures	29
4.1.3 Noise and Vibration Control Audits.....	29
4.1.4 Vibration	30
4.2 DUST MANAGEMENT	32
4.2.1 Dust Management Provisions	32
4.2.2 Dust Monitoring Requirement	39
4.3 ECOLOGICAL IMPACT CONTROL, DRAINAGE MANAGEMENT, WATER SUPPLY AND FLOOD RISK ASSESSMENT	40
4.3.1 Ecological Impacts	40
4.3.2 Surface Water, Groundwater, Foul Water Management and Water Supply	47
4.3.3 Flood Risk Assessment.....	51
4.3.4 Surface Water Management Measures and SuDS.....	53
4.3.5 Emergency Preparation and Training	54
4.4 NUISANCE & PEST CONTROL.....	55
4.4.1 Pest Control.....	55
4.4.2 Invasive Species.....	55
4.5 LITTER.....	58
4.6 TRAFFIC MANAGEMENT & SAFETY	58
4.6.1 General Traffic Management Provisions.....	58
4.6.2 General Traffic Management Mitigation Measures	62
4.7 CO ₂ EMISSIONS	63

4.8	CONSTRUCTION TRAFFIC SAFETY.....	64
4.8.1	Keeping Pedestrians & Vehicles Apart.....	64
4.8.2	People On-site.....	65
4.8.3	Signs & Instructions.....	65
5	RESOURCE AND WASTE MANAGEMENT.....	66
5.1	OVERVIEW AND CONTEXT.....	66
5.1.1	Purpose of the RWMP.....	67
5.1.2	Objectives of the RWMP.....	68
5.1.3	Scope of the RWMP.....	70
5.2	RELEVANT WASTE MANAGEMENT LEGISLATION, POLICY & BEST PRACTICE.....	70
5.2.1	National Legislation.....	70
5.2.2	Relevant Definitions and Duty of Care.....	72
5.2.3	National Policy - Waste Action Plan for Circular Economy.....	73
5.2.4	Best Practice Guidance for Management of Waste from Construction Projects.....	74
5.3	ROLES AND RESPONSIBILITIES.....	79
5.3.1	Role of the Client.....	79
5.3.2	Role of Client Advisory Team.....	80
5.3.3	Future Role of the Contractor.....	80
5.4	KEY MATERIALS AND QUANTITIES ANTICIPATED DURING CONSTRUCTION PHASE.....	81
5.4.1	Soil and Stone.....	82
5.4.2	Soil for Removal Off-site.....	83
5.4.3	Temporary Storage of Soil Material.....	84
5.4.4	Other Construction Waste.....	84
5.4.5	General Breakdown of Construction Waste Types (non-soil).....	89
5.4.6	Demolition Waste Generation.....	89
5.4.7	Construction Waste Generation.....	90
5.5	METHODS PROPOSED FOR PREVENTION, RE-USE AND RECYCLING OF WASTE.....	91
5.5.1	Training/Raising Awareness.....	91
5.5.2	Waste Minimisation.....	92
5.6	WASTE HAULAGE AND DISPOSAL/RECOVERY.....	93
5.7	TRACKING AND DOCUMENTATION PROCEDURES FOR OFF-SITE WASTE.....	94
5.7.1	Record Keeping.....	95
5.8	WASTE AUDIT PROCEDURE.....	96
5.9	COMMUNICATIONS/TRAINING.....	96
5.10	ADDITIONAL CONTENT FOR CONTRACTORS RESOURCE AND WASTE MANAGEMENT PLAN.....	97
5.10.1	Review of Plan.....	98
6	ENVIRONMENTAL INCIDENCES AND OCCURRENCES.....	99
6.1	POLLUTION PREVENTION AND ENVIRONMENTAL RISK ASSESSMENT.....	99
6.2	NOTIFICATION, MANAGEMENT AND COMMUNICATION OF ENVIRONMENTAL INCIDENTS.....	99
7	EMERGENCY PREPAREDNESS AND RESPONSE.....	101
7.1	EMERGENCY RESPONSE PLAN.....	101
7.2	INITIAL STEPS.....	101
7.3	SITE EVACUATION.....	101
7.4	SPILL RESPONSE & CONTROL MEASURES.....	102
7.5	EMERGENCY ACCESS.....	103
7.6	EXTREME WEATHER EVENTS.....	103
7.7	ENVIRONMENTAL INCIDENTS.....	103

8 COMMUNICATIONS PLAN..... 105

8.1 COMMUNITY AND STAKEHOLDER ENGAGEMENT105

8.2 REGULAR CONSULTATION AND PUBLIC COMMUNICATIONS.....105

8.3 ADVANCE NOTICE OF WORKS105

8.4 COMPLAINTS.....106

9 CEMP – COMPLIANCE AND REVIEW 107

9.1 ENVIRONMENTAL RECORDS107

9.2 REVIEW OF PLAN.....108

10 REFERENCES..... 109

FIGURES

FIGURE 1 – SITE LOCATION MAP

FIGURE 2 – EXISTING SITE LAYOUT

FIGURE 3 – PROPOSED SITE LAYOUT

FIGURE 4 – SENSITIVE RECEPTORS, SPECIAL AREAS OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREAS (SPA)

FIGURE 5 – SITE COMPOUND LOCATION

FIGURE 6 - PROPOSED PHASING

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LIMITATIONS

This initial Construction and Environmental Management Plan (CEMP) has been prepared and presented as a standalone document to support a planning application for a proposed Large-Scale Residential Development (LRD) on c.4.26 hectare of lands at Milltown Park, Sandford Road, Dublin 6, D06 V9K7 (hereafter referred to as the Site).

The CEMP is intended to be regarded as a “live” document to be updated on an on-going basis throughout the project life cycle, and as such the document will be further revised to consider specific planning conditions and any new relevant legislation and guidance that may arise prior to the completion of the development.

Certain information contained within this report has been supplied by other parties including detail provided by the design team involved in the preparation of the planning application for this development. Where any conclusions and recommendations contained in this Report are based upon information provided by others, it has been assumed that all relevant information has been provided by those parties and that such information is accurate. Verde accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to Verde from others.

The initial CEMP was prepared in association with other documentation to support an application to the Planning Authority for the proposed residential-led mixed-use development. Provisions within this Plan may be relied upon by the Planning Authority in considering the application.

1 INTRODUCTION

This Construction and Environmental Management Plan (CEMP), incorporating the Resource & Waste Management Plan (RWMP - Section 5) developed by Awn Consulting Ltd., has been developed by Verdé Environmental Consultants Ltd. (Verde) on behalf of Sandford Living Limited (the Client) in support of a planning application for a proposed large-scale residential development on lands at Milltown Park, Sandford Road, Dublin 6. Site location is indicated on Figure 1 attached.

The overall development will comprise the construction of 562 dwellings (comprising 6 no. three-bed courtyard houses and 556 no. apartment units of 70 no. studios, 176 no. one-bed units, 267 No. two-bed units and 43 No. three-bed units). The development also includes the provision of cultural/community space with associated outdoor space, a café/restaurant, a creche within Block F with associated outdoor creche play area, an ancillary residents' amenities and facilities within Blocks B & C as well as a single storey bin store and substation adjacent to Block F. The development will be constructed over 4 phases. A detailed project description is included in Section 2 of this report.

The objective of this Construction and Environmental Management Plan (CEMP) is to communicate key environmental obligations and waste management procedures that will apply to all contractor organisations involved in the project, their subcontractors and employees involved in conducting any form of construction activity at the site. This Plan defines project-specific environmental measures that must be put in place during construction works. This initial CEMP is an outline document that includes information on construction traffic routes, hours of operation, control of noise, soil extraction and re-use and environmental impacts and associated mitigation measure that will be implemented by the appointed Contractor in the completion of construction works.

Any Contractor retained by the Client to construct the development will be expected to retain provisions that are contained in this document when developing their own Contract-specific CEMP.

The CEMP has been prepared in consideration of several other reports that will form part of the supporting planning application documentation. These include the following:

- AA Screening Report, DNV.
- Hydrological and Hydrogeological Qualitative Risk Assessment, Awn Consulting Ltd.

- IAPS Site Assessment Report & Management Plan, Invasive Plant Solutions.
- Environmental Impact Assessment Report, Thornton O'Connor.
- Landscape Report, Cameo.
- Preliminary Construction Management Plan, DBFL Consulting Engineers.
- Resource & Waste Management Plan, AWN Consulting Ltd.
- Infrastructure Design Report, DBFL Consulting Engineers.
- Site Specific Flood Risk Assessment, DBFL Consulting Engineers.
- Traffic Impact Assessment, DBFL Consulting Engineers.
- Architectural Design Statement, O'Mahony Pike Architects.
- Lighting Report, Pritchard Themis.
- Bicycle Design Statement, DBFL Consulting Engineers.
- Parking Strategy, DBFL Consulting Engineers.

The CEMP is considered a “dynamic” document that will be updated and revised as development progresses. This initial document will be updated in line with all conditions and obligations which apply to any grant of permission. The CEMP will also require updating by the appointed Contractor to identify, assess and satisfy the contract performance criteria as set out by the various stakeholders. It will be updated in sufficient detail to describe the framework of the Contractor’s proposed management, control and mitigation strategy for each environmental aspect. Following appointment, the Contractor will be required to develop a more detailed contract-specific CEMP that is cognisant of the specific assigned persons, equipment, plant and monitoring required to complete the development.

The CEMP will include, where required, specific method statements for specific works (e.g., site stripping of topsoil and subsoil from across the site and the requirement to ensure airborne dust is not generated).

Therefore, this CEMP is a working document that will remain a valid, relevant document throughout the duration of the development. The Plan will be subject to periodic review and revision in consideration of the following:

- Conditions that issue as a part of planning permission relating to the Proposed Development.
- Permits, licences, and other authorisations used over the course of the project.
- Details of any unplanned incidents and description of outcomes.

- Concerns or issues raised by residents or others impacted by the works.
- Details of materials brought to the site or material (including waste) brought off-site.
- Future legislative changes, including those relating to waste management that may be driven by the current waste management policy for Ireland - A Waste Action Plan for a Circular Economy Ireland's National Waste Policy, 2020-2025 and the National Waste Management Plan for a Circular Economy 2024 – 2030 (NWMPC) (2024).

The Plan outlines the environmental commitments associated with the development works at the site and describes how these commitments will be managed by assigning responsibility for ensuring the effective implementation of provisions contained therein. The CEMP will be developed and maintained by appointed Contractor as an integral part of the Health, Safety, Environmental and Quality Management system for the development and will be subject to the requirements of the site quality management system with respect to documentation control, records control, and other relevant measures. The primary distribution list for this document will include the following personnel:

- Developer (Sandford Living Limited)
- Main Contractor (to be confirmed)
- Site Manager and appointed Construction Environmental Manager (CEM)
- Specialists engaged by the Contractor and Sub-Contractor Organisations.

1.1 Objectives

This initial CEMP on behalf of Sandford Living Limited identifies key environmental considerations that must be adhered to and delivered during construction of the development. This report is intended as a single document that can be used over the course of works at the site, as a point of reference relating to construction and environmental activities for the Developer and appointed Contractor. The document provides the environmental management framework to be adhered to over the course of construction of the Proposed Development and incorporates mitigating principles so that works are completed in a manner that minimises the potential for environmental impacts to occur. In particular, the CEMP has the following objectives:

- To provide a continuous link and reference document regarding environmental information for all stages of the works.

- To demonstrate how the development will properly integrate the requirements of environmental legislation (including waste management legislation), planning consent conditions, policy, good practice and those of the regulatory authorities and third parties.
- To record environmental risks and identify how they will be managed during the construction period and to record the objectives, commitments, and mitigation measures to be implemented together with programme and date of achievement.
- To identify key staff structures and responsibilities associated with the delivery of the development and environmental control and communication and training requirements, as necessary.
- To facilitate the handover of key environmental information on completion of works. This shall include details of the asset, short and long-term management requirements, and any monitoring or other environmental commitments that have been initiated.
- To provide a review, monitoring and audit mechanism to determine effectiveness of, and compliance with, environmental control measures and how necessary corrective action shall take place.

2 PROJECT OVERVIEW

2.1 Existing Site

The Site is located within the designated settlement boundary of the Dublin Metropolitan Area and is located c. 3.5km South of Dublin City centre in Dublin 6. Ordnance Survey of Ireland (OSI) ITM coordinates for a point near the centre of the site are 716903, 731233. The site consists of a brownfield institutional site. It is currently comprised of a mix of buildings and green space with an overall developable area of 4.26Ha. The Site is accessed to the north via the R117 and is surrounded to the north, east and west by residential lands. The southern boundary of the Site backs on to lands owned by the Jesuit order and zoned as Z15. The closest European sites to the Proposed Development are South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA which are located approximately 2.2km to the east of the Site. The site location is indicated on Figure 1 attached.

Currently the landholding associated with the development comprises mostly of grassland and areas of hedgerow and tree cover. The general topography of the site falls gradually from south to north towards the main entrance on Sandford Road. Levels across the site range from approximately 48.0 m OD along the southern boundary to around 40.0 m OD at the northern end, with the lowest point located adjacent to the main entrance on Sandford Road. The principal hydrological feature in the wider study area is the River Dodder, located to the east of the site, which flows in a north easterly direction towards Donnybrook. Surface water within the site is expected to drain naturally in this direction, following the existing gradient. Existing site features are illustrated on the attached Figure 2. The surrounding environmental can be described as a mainly residential setting.

The subject lands at Milltown Park, Sandford Road, Dublin 6, form part of the former Jesuit estate historically used for religious, educational and community purposes, including the Milltown Institute of Theology and Philosophy. Both the 2021 Strategic Housing Development application (ABP-311302-21) and the subsequent 2023 Large-scale Residential Development application (LRD6026/23-S3) describe the site as *“the former Jesuit lands at Milltown Park”* and identify it as a brownfield institutional site.

The Dublin City Development Plan 2022–2028 zones these lands as Z12 – Institutional Land (Future Development Potential), reflecting their established institutional use while recognising their suitability for sensitive residential redevelopment within a master-planned framework. The objective set out by Z12 is *“to ensure existing environmental amenities are protected in the predominantly residential future use of these lands.”* The construction of 562 no. residential dwellings is proposed across the c. 4.26 hectare site, together with associated

open spaces, landscaping, and community facilities. The Z12 zoning recognises that such lands, formerly in institutional use, may be redeveloped in a manner where the predominant land use will be residential, and requires that a masterplan be prepared to guide the coordinated development of the entire landholding. In accordance with this objective, a minimum of 25% of the site area is to be retained as accessible public open space to safeguard the essential open character and landscape features of the lands. The proposed development is consistent with the intent of this zoning objective and aligns with the policies of the Dublin City Development Plan.

The site is located within an established suburban area of Dublin 6, surrounded predominantly by residential and educational land uses. To the north, the site is bounded by Norwood Park housing estate, with the R117 situated just beyond. On the far side of the R117 lies Muckcross Park College Secondary School, together with additional established residential neighbourhoods. To the west, the site adjoins Cherryfield Avenue Upper and Lower, which is lined with existing residential properties. The southern boundary of the site is defined by a cluster of educational and institutional facilities, including the Milltown Park/Loyola Jesuit Community, Messenger Publications, and Gonzaga College Secondary School further south. The eastern boundary is defined by Milltown Road, along which the main vehicular and pedestrian access to the proposed development will be provided. Beyond Milltown Road to the southeast lies Clonskeagh Hospital and the campus of University College Dublin (UCD).



Figure 2.1 – Existing Site and Boundary

There have been a number of planning applications submitted for the subject site in recent years. The lands at Milltown Park were the subject of a Strategic Housing Development (SHD) application in 2021 (ABP Ref. 311302-21) by Sandford Living Limited seeking permission for a large-scale residential scheme. Permission for this initial proposal was judicially reviewed and was remitted back to An Coimisiún Pleanála to make a fresh decision. A subsequent, revised application was lodged under the Large-scale Residential Development (LRD) process in 2023 (Ref. LRD6026/23-S3), also by Sandford Living Limited, for a residential development across the c. 4.26-hectare site. Permission for this revised scheme has also been judicially reviewed and awaits an adjudication from the High Court.

Currently, there are several planning applications within the vicinity (approximately 1 km radius) of the subject site. The closest of these is located to the south-east along the R117, under Planning Ref. No. WEB5540/25, which seeks permission for the demolition of existing single-storey extensions and the construction of new part two-storey and single-storey extensions to a private dwelling, together with the widening of the existing vehicular entrance and associated landscaping and drainage works. Additional domestic-scale developments and extensions are evident in the surrounding area.

2.2 Proposed Development

As described in Section 1 above, the proposed development will comprise a mix of 562 no. residential units together with associated car and bicycle parking, open spaces, and supporting infrastructure. The development provides for a new vehicular access from Milltown Road, which will act as the principal entrance to the site, in addition to the utilisation and upgrading of the existing access from Sandford Road as a secondary entrance primarily for deliveries, emergency vehicles, and taxis. The scheme also includes new pedestrian access points and pedestrian and bicycle connections through the site to enhance permeability and connectivity with the surrounding neighbourhood. In total, 319 no. car parking spaces are proposed (288 no. at basement level and 31 no. at surface level), along with a set-down area for deliveries, 22 no. motorcycle spaces, 1343 no. bicycle spaces, bin storage, and associated plant and substations.

Additional features include private balconies and terraces facing all directions, boundary treatments, lighting, lift cores and overruns, and comprehensive hard and soft landscaping, providing both public and communal open space. The development also incorporates green/blue roofs and PV panels, together with all other associated site works above and below ground necessary to facilitate the proposed scheme. The site's surface-water drainage network will discharge via a proposed 300 mm diameter outfall pipe along Milltown Road, through the

Milltown Road / Sandford Road junction, before connecting to the existing drainage network on Eglinton Road, approximately 200 metres from the Sandford Road / Eglinton Road junction. These works, together with the main site area, provide a total application area of c. 4.74 hectares.

As outlined above, Sandford Living Limited intend to apply for permission for a Large-Scale Residential Development at a c. 4.26-hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. The development will principally consist of:

- The demolition of c. 4,847.5 sq m of existing structures on site including Milltown Park House (880 sq m), Milltown Park House Rear Extension (2,031 sq m), the Finlay Wing (622 sq m), the Archive (1,240 sq m) and the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m).
- Works on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares.
- The refurbishment and reuse of Tabor House (1,575 sq m) and the Chapel (768 sq m) and the provision of a single storey glass entrance lobby to the front and side of the Chapel (52 sq m).

The Proposed Development consists of 562 dwellings and has a gross floor space of c.50,196 sq m above ground level over a partial basement (under part of Blocks A1 and A2 and under Blocks B and C) measuring c. 10,550 sq m, which includes parking spaces, bin storage, bike storage and plant as detailed below:

- a) Block E will be 6 no. three-bed courtyard type houses that will be 2 No. storeys in height.
- b) 5. no Apartment blocks consisting of 556 no. dwellings:
 - I. Apartment Block A1 will range in height from 5 no. storeys to 8 no. storeys and will comprise 81 No. apartment units
 - II. Apartment Block A2 will range in height from 6 no. storeys to 8 no. storeys and will comprise 139 no. apartment units.
 - III. Apartment Block B will range in height from 3 no. to 7 no. storeys and will comprise 74 no. apartment units
 - IV. Apartment Block C will range in height from 4 no. storeys to 7 no. storeys and will comprise 151 no. apartment units.
 - V. Apartment Block D will range in height from 3 no. storeys to 5 no. storeys and will comprise 30 no. apartment units.

VI. Apartment Block F will range in height from 5 no. storeys to 7 no. storeys and will comprise 81 no. apartment units.

- c)** The provision of cultural/community space within Tabor House (4 No. storeys including lower ground floor level) and the Chapel (2 No. storeys including lower ground floor level and mezzanine level) (1,698 sq. m) with associated outdoor space (248 sq. m).
- d)** A café/restaurant (179 sq. m) within Block F.
- e)** A creche (375 sq. m) within Block F with associated outdoor creche play area.
- f)** Ancillary residents' amenities and facilities (324 sq. m) within Blocks B and C.
- g)** A single storey bin store and substation adjacent to Block F (101 sq. m).
- h)** A total of 319 no. car parking spaces (288 no. at basement level and 31 no. at surface level) and 22 no. motorcycle spaces as well as a set down area for deliveries. Car parking provision is fully set out in DBFL's Parking Strategy document.
- i)** 1343 no. bicycle spaces on site comprising 384 no. short-term spaces on surface level and 959 no. Long term spaces within the basement as specified in DBFLs Bicycle Design Statement.
- j)** The provision of new pedestrian access points and pedestrian/bicycle connections through the site.
- k)** All hard and soft landscaping including the provision of public open space and communal open space.
- l)** Building and energy infrastructure, comprising green/blue roofs, photovoltaic (PV) panels, substations, and plant areas.
- m)** Access and servicing components, including external lighting, lift cores, and overruns; and
- n)** All associated site works, both above and below ground, necessary to facilitate the overall development.

The layout of the Proposed Development is included in Figure 3 attached.

2.3 Phasing Plan

The proposed Deployment will be completed over 4 phases (as per the Phasing Plan included on Figure 6 attached and the below figure).

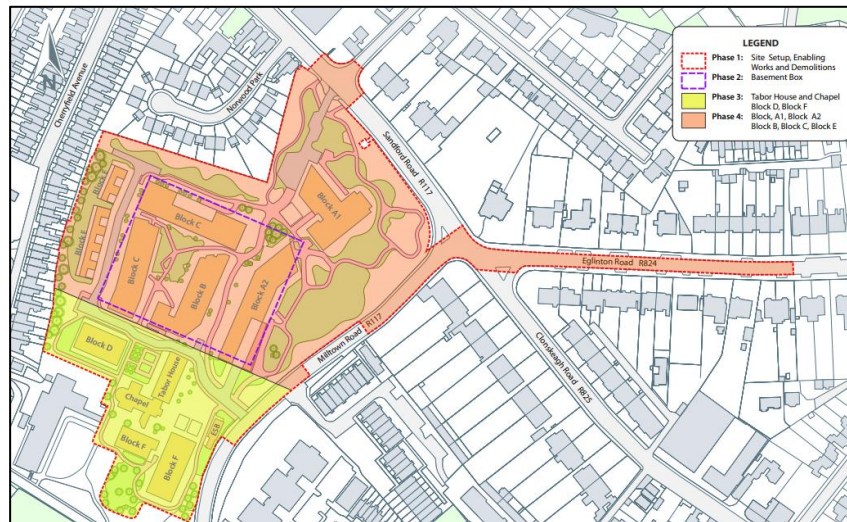


Figure 2.2 – Phasing Plan

The site will be developed over the following phases:

- Phase 1: Site Set Up, Enabling Works and Demolitions.
- Phase 2: Basement Box.
- Phase 3 - Block D, Block F, and works at Tabor House and The Chapel.
- Phase 4 - Block A1, Block A2, Block B, Block C, and Block E (Courtyard Houses).

Phasing arrangements need to ensure that each phase can manage its own surface water catchment area until the final connection is granted. Connection to the public surface water sewer is generally not permitted until development of phase is near completion and all SuDS elements are in place. The site compound will be located internally within the site and may include several mobilisations/de-mobilisations to facilitate the construction of different elements of the project.

A Contractor will be retained to undertake the construction of the Proposed Development and will be required to appoint a suitably qualified and experienced Construction Environmental Manager (CEM) to oversee all environmental aspects of the works, in-line with the contents of this CEMP. The designated CEM will have ultimate responsibility for the day-to-day management of environmental aspects relating to the project. Other management positions will be filled to support the CEM including the appointment of a designated Construction Resource Manager as described further in Section 5. Roles and responsibilities are further described in Section 3.

2.4 Working Hours for Construction Works

Section 5 of the Preliminary Construction Management Plan states that for the duration of the proposed infrastructure works the maximum working hours shall be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 15:00 Saturdays, subject to the restrictions imposed by the local authority. No working will be allowed on Sundays and Public Holidays.

Subject to the agreement of the local authority, out of hours working may be required for water main connections, foul drainage connections, surface water outfall route in the public road or when large loads are limited to road usage outside peak times. These will be kept to a minimum.

All deliveries will be notified to the Contractor's Project Manager/Traffic Management Co-ordinator in advance with specific times identified. These will be collated and held in a diary by the Co-ordinator who will manage the deliveries daily. The co-ordinator will highlight any clashes and anticipated busy periods to streamline the processing of deliveries. On arrival at the agreed locations, drivers must wait and ring for attention in accordance with the relevant site signage. They will then be escorted to the appropriate location for unloading by the contractor's Banksmen. Unloading will be carried out at one of the material storage areas. All deliveries, where possible, must be able to be unloaded by forklift or mechanical means. All access roads used by contractors will be monitored for mud and any construction materials and cleared using a shovel and broom and if required a mechanical road sweeper as set out in the Preliminary Construction Plan prepared by DBFL Consulting Engineers.

2.5 Site Construction Compound

The exact location of the construction compound is to be confirmed in advance of commencement of the works (and agreed with Dublin County Council). The site compound will be located internally within the site and may include several mobilisations/de-mobilisations to facilitate the construction of different elements of the project.

It is anticipated that vehicular access to the Proposed Development will be via the main access point for the site off Milltown Road which runs along the east boundary of the Site. The compound will be just inside this access point.

The construction compound will include adequate welfare facilities such as washrooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established. The construction compound's potable water supply shall be protected from contamination by any construction activities or materials. The compound will be enclosed by a security fence and access will be security controlled, with all site visitors being required to sign in on arrival and sign out on departure.

A permeable hardstand area will be provided for staff car parking as outlined in Section 18 (Site Compound Facilities and Parking) of the Preliminary Construction Plan. A separate permeable hardstand area will be provided for construction machinery and plant. The construction compound will include a designated construction material recycling area. All construction materials, debris, temporary hardstands outlined above etc. in the vicinity of the site compound will be removed off-site on completion of the works. A series of way finding signage will be provided to direct staff, visitors and deliveries as required. Further detail is provided in the Preliminary Construction Management Plan that accompanies the application (DBFL Consulting Engineers).

2.6 Stockpiled Soil Material

The site consists of a brownfield institutional land. It is currently comprised of a mix of buildings and green space. As outlined in Section 4.2 of the Resource and Waste Management Plan (Appendix 14.1 of the EIAR) that supports the application (AWN Consulting Ltd.), the project engineers (DBFL Consulting Engineers) have estimated that between 74,000m³ and 80,000m³ of soil, stones, clay and made ground will be excavated to facilitate construction of new foundations, underground services, and the installation of the proposed basement. Any suitable excavated material will be temporarily stockpiled for reuse as fill or landscaping, where possible, but reuse on site is expected to be limited and all of the excavated material except for c. 10,000m³ is expected to be removed offsite for appropriate reuse, recovery and/or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed

works as the exact materials and quantities may be subject to some degree of change and variation during the construction process. Soil that cannot be re-used as part of the development will be transferred from the site by a suitably permitted waste contractor and removed to an authorised soil waste facility. Consideration will also be given to exporting this soil material as a by-product material under Article 5 of the Waste Framework Directive as transposed into Irish legislation by Article 27 of the European Communities (Waste Directive) Regulations 2011.

As set out in Chapter 10 (Land, Soils and Geology) Section 10.5.1.3 of the EIAR on Imported Fill as well as Section 8.5 of the PCMP, materials imported to site for use as fill will be natural stones. This fill will be sourced from locally available quarries or materials that have been approved as by-products by the EPA in accordance with the EPA's criteria for determining a material is a by-product, per the provisions of Regulation 27(1) of the European Communities (Waste Directive) Regulations, 2011.

Imported fill materials will be granular in nature and used in the construction of ground slab formations, basement backfill, road pavement foundations, drainage and utility bedding and surrounds. Materials will be brought to site and placed in their final position in the shortest possible time. Any imported material will be kept separate from the indigenous arisings from the site. All excavation to accommodate imported material will be precisely coordinated to ensure no surplus material is brought to site beyond the engineering requirement.

No large or long-term stockpiles of imported fill material will be held on the site. At any time, the extent of fill material held on site will be limited to that needed in the immediate vicinity of the active work area. Smaller stockpiles of fill where required, will be suitably protected to ensure no sediment laden runoff enters existing surface water drains. Such stockpiles are to be located in order to avoid double handling.

2.7 Plant and Equipment

The amount of plant, equipment and labour at the site will be proportional to the extent of the activity underway at any one time. Typical plant and equipment for use includes the following:

- Excavator(s)
- Dumper truck(s)
- Tower and mobile crane(s)
- Breaker(s)

- Piling rig(s)
- Compactors and roller(s)
- Drill/cutter(s)
- Forklift truck(s)

A full inventory of specific plant and equipment will be supplied by the Contractor upon appointment, and the CEMP will be updated accordingly.

3 PROJECT ROLES & RESPONSIBILITIES

Proposed environmental and waste management roles and responsibilities for relevant project personnel over the course of the construction period are described below. Further detail will be provided post-grant of planning permission with the appointment of a Contractor to undertake the development. As referred to in Section 1, at that stage the Plan shall be further refined with specifics to be supplied by the appointed Contractor.

Client/Developer (Sandford Living Limited)

The Developer will be responsible for the following:

- Ensuring that competent parties are appointed to undertake construction and that sufficient resources are made available to facilitate the appropriate management of identified risks to the environment.

Developer's Representative (to be appointed)

- Undertake Audits – These will be completed either directly or through independent competent environmental consultants. The Developer will not be required to notify the Contractor of these audits in advance.
- Ensure compliance with the CEMP.
- Appoint temporary or permanent specialists where required, to implement on-site procedures and monitor construction works with respect to potential impacts on the receiving environment.

Contractor (to be appointed)

The Contractor will be required to complete the development in accordance with all relevant environmental requirements including the consent documentation and other regulatory and contractual requirements. In particular, the appointed Contractor will be responsible for the following:

- Maintenance and further development of the Construction Environmental Management Plan (CEMP).
- Appointment of a Construction Environmental Manager (CEM).
- Promptly reacting with appropriate mitigating action to any adverse findings arising from environmental audits and provision of written reports to the Client or their representative detailing such mitigation.
- Accompanying third party environmental audits.

- Notification to the Client in relation to any complaints or environmental incidents within 24 hours of such occurrences. Where significant incidents occur, the Contractor is required to involve statutory authorities or emergency services, as well as notifying the Client or their representative within 1 hour.
- Provision of all updated CEMP documentation to the Client on completion of the site works. Reports arising during the site works, such as verification reports, shall be provided to the Client/Developer within one month of completion of the activity and may be subject to review.

Construction Environmental Manager (CEM)

The appointed contractor will be required to engage a qualified person with experience in construction to fulfil the role of Construction Environmental Manager (CEM). It will be a function of the CEM to monitor all site works to ensure that methodologies and mitigation measures are followed throughout the construction phase, and to ensure that negative impacts on the receiving environment are avoided. The CEM (as appointed by the appointed Contractor) will have overall responsibility for the CEMP and execution of all related environmental and waste management activities as appropriate, in accordance with regulatory and project environmental requirements. The CEM shall be present onsite throughout duration of the development. Principal duties and responsibilities of this position will include:

- Overall responsibility for the maintenance, development and implementation of the CEMP.
- Provision of support and augment the management team through the provision of adequate training, resources and facilities in the implementation of the CEMP.
- Participating in the management review of the CEMP for suitability, adequacy, and effectiveness.
- Setting the focus of environmental policy, objectives and targets for the Contractor.
- Management of all public liaison associated with environment impact associated with the construction phase of the project.
- Ensuring that the requirements of the CEMP in relation to environmental system (including procedures, method statements and work instructions) are implemented and adhered to.
- Reviewing the environmental responsibilities of other managed subcontractors in scoping their work and during contract execution.
- To ensure that advice, guidance, and instruction on all environmental matters are provided to personnel on site including managers, employees, construction contractors, and visitors to the site.
- Report to the Client on the environmental performance and advise site management on environmental matters.

- Implement a programme of environmental monitoring if required (subject to conditions that may be contained in any forthcoming planning consent).
- Maintenance of all construction related environmental documentation.

All Site Personnel

Contractor employees, subcontractors, and other site personnel will adhere to the following principal duties:

- Co-operate fully with the Construction Environmental Manager in the implementation and development of the CEMP and incorporated RWMP.
- Conduct all their activities in a manner consistent with regulatory and best environmental practice.
- Participate fully in environmental and waste management training programmes and provide management with any necessary feedback to ensure effective environmental management at the site and
- Adhere fully to the provisions of the CEMP.

Resource & Waste Manager

The appointed Contractor shall designate a suitably experienced and qualified person as Resource & Waste Manager (this may be the CEM, or other nominated, experienced individual put forward by the Contractor) who shall arrange for full details of all generation, movements and treatment of waste to be recorded during development. Other duties of the Resource & Waste Manager shall include:

- Ensuring that the requirements of the Resource Waste Management Plan (Outline RWMP – included as Section 5 of this CEMP) in relation to waste management (including procedures, method statements and work instructions) are implemented and adhered to.
- Reviewing waste management procedures of other managed sub-contractors in scoping their work during contract execution.
- Ensuring that advice, guidance, and instruction on all waste matters are provided to all site personnel including sub-contractors and visitors on site.
- Report on performance and provision of advice to site management on waste management related matters.

Environmental/Other Specialists

To fulfil its obligations under the CEMP and to support the provisions contained therein, prior to commencement of development the Contractor may be required to engage qualified and experienced environmental specialists or other specialist to monitor construction works and their potential impacts on the receiving environment. It is anticipated that the project construction phase may require input from time to time from the following consultancy services:

- Noise specialist
- Soils/environmental consultant
- Ecologist

3.1 Health and Safety

The appointed Contractor will ensure all relevant health and safety, fire safety and security requirements are in place prior to the commencement of construction and in accordance with relevant legislative requirements in addition to the specifications of Dublin City Council. The Contractor will comply with the Safety, Health and Welfare at Work Act 2005, the Safety, Health and Welfare at Work (Construction) Regulations 2013 and any subsequent safety, health and welfare legislation or regulations.

The Contractor will also be appointed as Project Supervisor for the Construction Stage (PSCS) on the project in accordance with the Safety, Health and Welfare at Work (Construction) Regulations. The PSCS shall develop a suitable safety and health plan for the Proposed Development, prior to the commencement of construction work. The plan shall explain how the key safety and health issues will be managed and shall be revised and updated by the appointed Contractor as development progresses. The contents of the Health and Safety Plan will comply with the requirements of the Regulations. The Contractor will ensure that relevant Irish and EU health and safety legislation is complied with at all times by all site personnel during construction works. Furthermore, the Contractor will ensure that all aspects of their works comply with best industry practice and all necessary consents, licences and authorisations that have been put in place for the development.

Prior to working on site, each individual will receive a full safety briefing and will be provided with all of the safety equipment relevant to the tasks the individual will be required to perform during employment on site. Safety briefings will be held regularly and prior to any onerous or special task. 'Toolbox talks' will be held to ensure all workers are fully aware of the tasks to be undertaken and the parameters required to ensure that the task will

be successfully and safely completed. All visitors will be required to wear appropriate personal protective equipment prior to going on to the site and will undergo a safety briefing by a member of the site safety team.

3.2 Communication & Liaison

The appointed Contractor will prepare a Community Liaison Plan, which will include details of how community, road users and affected neighbours will be notified in advance of the scheduling of major works, associated traffic management and on the progress of the construction works.

This Plan should include details in relation to the following:

- Contractor's community relations policy
- Personnel nominated to manage communications
- A procedure for dealing with observations, queries and complaints from the public, neighbours, relevant authorities, the media and emergency services etc.
- A procedure for project-wide liaison with all relevant parties.

The Contractor will set up and maintain a dedicated telephone hotline to deal with queries and/or complaints from the public during the construction phase of the project. This telephone number will be posted on all construction site notice boards and on any other information or correspondence which will be distributed.

All site staff (including sub-contractors) will be briefed on the Community Liaison Plan including on the complaint procedure and their own responsibilities to register and address any complaints received. Relevant Departments of Dublin City Council will be consulted with prior to the commencement of the development and throughout the duration of the construction phase as necessary.

Construction of the development will have a direct impact on the local community and environment. The following stakeholders are likely to be impacted to some degree:

- Neighbouring residential areas to the east, west, north and south.
- Users of adjoining main roads and local estate road users.
- Dublin City Council.
- Other Statutory Authorities (e.g., Irish Water).
- Building Control

- Utilities Providers (e.g., ESB)

Communication arrangements will be organised to keep stakeholders up to date on construction progress and its impact on all third parties.

3.3 Incident & Emergency Management

The appointed CEM will be responsible for managing any environmental incidents or emergency situations that arise during the construction of the development. All such environmental incidents will be notified to the Client/Developer within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services, the Contractor will notify the Client within 1 hour. General environmental communication in respect of the project to regulatory or statutory bodies shall be undertaken by the Construction Environmental Manager, except in the case of incident notification.

An Emergency Management Plan (EMP) will be drafted by the appointed Contractor and implemented to ensure that emergencies such as accidents, spills, leaks/ loss of containment, sabotage are dealt with in an appropriate manner. If such incidents or emergencies occur, strict adherence to the EMP will ensure that effective counter measures proceed in a controlled manner so that possible adverse effects upon persons and the environment are avoided or minimised. Training in implementation of the EMP will be provided to all employees and sub-contractors on the site.

Where practicable, construction-based activity will be located as far away as possible from nearby residents. In the event of spillages or other incidents, steps will be taken to prevent environmental pollution, for example – covering of vehicles transporting soil to and from site, protection of drains using drain covers or booms and the use of absorbent granules in the case of an oil/chemical spill. Contractor employees will be trained in the correct use of spill kits.

The procedure to be developed by the appointed Contractor will include the following elements:

- The person who has observed the situation arising will immediately report to the CEM or another Site Manager.
- The CEM/Site Manager will assess the gravity of the emergency and if they feel that the area needs to be vacated immediately, the alarm will be raised.

- On raising the alarm, all employees, workers, staff, management will assemble at a pre-designated point (to be identified as “Assembly Point” on site notice board).
- In other situations where evacuation is not required, site management will investigate the nature and the seriousness of the emergency.

In the event of an emergency, it is expected that the EMP will provide for the following general course of action:

- Inform Dublin City Council and other appropriate government/non-government authorities as per legal requirement.
- If required, contact nearest hospital (St. Vincent’s University Hospital)/medical facility/emergency service providers and arrange for treatment of persons injured.
- Internal team must come into action without any formal announcement or order and start evacuation and other response activities as instructed per the EMP.

3.4 Monitoring, Auditing and Reporting

Daily inspections by the CEM will identify and address environmental issues relating to dust, litter, noise, traffic, surface water, waste management and general housekeeping. These inspections and remedial actions will be recorded on inspection sheets that will be retained on-site. For the duration of the development works, the appointed Contractor will be required to adapt a “Clean as you Go Policy” that applies to the overall site and surrounds with emphasis on site compound, general site, site access and boundary, and the Milltown Road, Sandford Road, Norwood Park housing estate and Cherryfield Ave Upper and Lower Housing Estate.

Client Representative will arrange for independent environmental audits to be carried out by a third-party during construction for which the Contractor will not expect advance notification. External audits provide the opportunity for an independent auditor to advise on compliance with applicable environmental regulatory requirements, the efficacy of the environmental management approaches used and recommendations for reducing identified environmental risks (if considered appropriate). Further, regulatory and statutory bodies may undertake site visits to monitor compliance with legislative and regulatory requirements. The Contractor will be expected to make the necessary staff available during each audit including the CEM and provide access to all documentation and site areas (and provide necessary induction and training to allow access where required).

3.5 Non-Compliance and Corrective Actions

The appointed Contractor shall be required to take prompt mitigation actions to address any adverse findings arising from environmental audits and provide written reports to the Client detailing any such mitigations. As required and highlighted in Section 3.4 above, the appointed Contractor will accommodate third party environmental auditing. Non-conformances relating to environmental practices, activities and processes identified during monitoring, verification and testing shall be reported and documented. A copy of all environmental audit reports and responses by the Contractor shall be maintained on site for inspection.

3.6 Site Security

In line with Section 18 of the Preliminary Construction Management Plan, the construction compound will be enclosed by a security fence. Access to the compound will be security controlled, and all site visitors will be required to sign in on arrival and sign out on departure.

3.7 Site Storage

As outlined throughout the Preliminary Construction Management Plan, material storage zones will be established in the compound area and will include material recycling areas and facilities. Construction activities involving hazardous materials (e.g., fuel, concrete washout, chemicals) shall be kept at a safe distance from potable water infrastructure. Spill kits and containment systems shall be available on-site to respond to any accidental releases.

Bunds and impermeable membranes shall be used around storage areas to prevent infiltration into the ground near water mains. All oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area. Refuelling and servicing of construction machinery shall take place in a designated hardstand area which is also remote from any surface water inlets (when not possible to carry out such activities off site).

All waste material will be stored in skips or other suitable receptacles in a designated area of the site. There will be on-site segregation of non-hazardous waste materials into appropriate categories. All waste material will be stored in skips or other suitable receptacles in a designated area of the site. Similarly, there will be on-site segregation of hazardous waste materials into appropriate categories. Hazardous waste will be separately stored in appropriate lockable containers prior to removal from site by an appropriate waste collection licence holder.

During the construction phases, materials will be ordered on a 'just in time' basis to prevent over supply and site congestion (i.e. to minimise materials stored on site). Materials will be correctly stored and handled to minimise the generation of damaged materials.

3.8 Site Lighting

As outlined in Section 19 of the Preliminary Construction Management Plan, lights will be switched off during non-working hours where possible and directional lighting will be used during the construction phase. This will minimise spill to any other area forming part of the bats commute.

The specification and colour temperature of light treatments is chosen based on their tolerability by bats. LED luminaires are ideal due to their sharp cut-off, lower intensity, and dimming capability. A warm white spectrum (2700 K – 3000 K) will be used to reduce the blue light component.

The Lighting Report prepared by Pritchard Themis shows that current street lighting surrounding the site is warm and suburban in scale. It is mostly still a sodium solution but also a scattering of some metal halide, all set at a height of 6-8 metres. The Council intent is to replace all of these sources over time with LED lights, likely to be 3000 kelvin warm white. It is most likely that over the next five years all the surrounding streets will be LED, mostly 3000 kelvin warm white.

In gentle contrast the Milltown Park site will use high efficiency, high colour rendering LED sources but in a warmer, 2700 kelvin tone. This will ensure that the light quality will be warmer and more welcoming to residents, be more sympathetic ecologically while also helping to set a specific unifying lit identity to the site.

4 CONTROL MEASURES

The CEMP includes reference to anticipated construction activities and mitigation for the development including site enabling works and main construction works. As highlighted in Section 1, the CEMP is a dynamic or living document in that it will be updated and revised as construction of the development progresses. In particular, the Plan will be updated in line with all conditions and obligations which apply to any grant of permission and upon appointment, the Contractor will be required to further develop the Plan, providing contract-specific detail that is cognisant of the specific persons, equipment, plant, monitoring and control measures required to complete the development. Minimum requirements outlined in this section take cognisance of best practice control measures that will be implemented by the appointed Contractor(s).

4.1 Noise and Vibration Control

The construction phase will involve demolition of existing structures, site clearance, excavation across the site, formation of basement levels, construction of new buildings, and landscaping. Chapter 13 of the Environmental Impact Assessment Report (EIAR) evaluates the potential noise and vibration impacts associated with these works in the context of relevant standards and guidance.

Noise arising from on-site activity shall be controlled in accordance with BS 5228-1:2009+A1:2014, “Code of practice for noise and vibration control on construction and open sites.” This standard also forms the basis of typical Local Authority construction noise conditions in Dublin and has therefore informed the EIAR assessment approach (EIAR Section 13.4 – Assessment Methodology).

For nearby residential properties, the EIAR identifies a daytime construction noise threshold of 70 dB(A), derived directly from the fixed limits in BS 5228-1 (Paragraph E.2), noting that exceedances may give rise to potentially significant impacts. No construction activities are anticipated during night-time periods. The most significant noise and vibration impacts during construction will arise from demolition activities, excavation, operation of construction plant, piling where required, and movements of HGVs and site vehicles. The EIAR requires the contractor to ensure that noise from the site is not so loud, continuous, repeated, or of such duration or timing as to cause unreasonable disturbance to occupants of neighbouring properties or other users of public spaces.

4.1.1 Construction Activity Control Measures

With regard to construction activities, best practice control measures for noise and vibration from construction sites are found within BS 5228 (2009 +A1 2014) *Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2*. Whilst construction noise and vibration impacts are expected to vary during the construction phase depending on the distance between the activities and noise sensitive buildings, the contractor will ensure that all best practice noise and vibration control methods will be used, as necessary in order to ensure impacts at off-site NSLs are minimised.

The best practice measures set out in BS 5228-1 and BS 5228-2 includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- Selection of quiet plant
- Noise control at source
- Screening
- Liaison with the public.

Construction activities will vary depending on the phase of construction. The following matrix identifies which mitigation measures are applicable to the various phases.

Table 4.1: Mitigation Measures

Construction Phase		Mitigation Measure			
		Selection of quiet plant	Noise control at source	Piling	Screening
Site Preparation		X	X		X
Demolition		X	X		X
Foundations	Option A	X	X		X
	Option B	X	X	X	X
	Option C	X	X		X
General Construction		X	X		X
Landscaping		X	X		X
		Liaison with Public	Project Programme	Monitoring	General Measures
Site Preparation		X	X	X	X
Demolition		X	X	X	X

Foundations	Option A	X	X	X	X
	Option B	X	X	X	X
	Option C	X	X	X	X
General Construction		X	X	X	X
Landscaping		X	X		X

Selection of Quiet Plant

The potential for any item of plant to generate noise should be assessed prior to the item being brought onto the site. The least noisy item will be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action should be to identify whether or not said item can be replaced with a quieter alternative.

Noise Control at Source

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control “at source”. This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates will be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.

Referring to the potential noise generating sources for the works under consideration, the following best practice migration measures will be considered:

- The lifting of bulky items, dropping and loading of materials will be restricted to normal working hours.
- Mobile plant should be switched off when not in use and not left idling.
- For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud.
- For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.
- For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.
- Demountable enclosures can also be used to screen operatives using hand tools and will be moved around site as necessary.
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

Piling

Piling is the construction activity which is most likely to cause disturbance. General guidance in relation to piling is outlined in the following paragraphs.

Piling programmes will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. If piling works are in progress on a site at the same time as other works of construction or demolition that themselves may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time.

Prior to construction the planner, developer, architect and engineer, as well as the local authority, will be made aware of the proposed method of working of the piling contractor. The piling contractor will in turn have evaluated any practicable and more acceptable alternatives that would economically achieve, in the given ground conditions, equivalent structural results.

On typical piling sites the major sources of noise are essentially mobile and the noise received at any control points will therefore vary from day to day as work proceeds. The duration of piling works is typically relatively short in relation to the length of construction work as a whole, and the amount of time spent working near to noise sensitive areas can represent only a part of the piling period.

Noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover. Impact noise when piling is being driven can be reduced by introducing a non-metallic dolly between the hammer and the driving helmet.

Screening by barriers and hoardings is less effective than total enclosure but can be a useful adjunct to other noise control measures. For maximum benefit, screens should be close either to the source of noise (as with stationary plant) or to the listener. Removal of a direct line of sight between source and listener can be advantageous both physically and psychologically. In certain types of piling works there will be ancillary mechanical plant and equipment that may be stationary, in which case, care should be taken in location, having due regard also for access routes. When appropriate, screens or enclosures should be provided for such equipment.

Screening

Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. It is understood that the existing concrete perimeter wall will remain during the construction process and provide a degree of screening.

In addition, careful planning of the site layout will also be considered. The placement of site buildings such as offices and stores will be used, where feasible, to provide noise screening when placed between the source and the receiver.

Liaison with the Public

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

Project Programme

The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. During excavation/ piling or other high noise generating works are in progress on a site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time.

Monitoring

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

Vibration monitoring stations should continually log vibration levels using the Peak Particle Velocity parameter (PPV, mm/s) in the X, Y and Z directions, in accordance with BS ISO 4866: 2010: *Mechanical vibration and shock*

– *Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures.*

4.1.2 Additional General Control Measures

General good practice measures include:

- The contractor will appoint a site representative responsible for matters relating to noise.
- A noise and vibration monitoring specialist will be appointed to periodically carry out independent monitoring of noise and vibration during random intervals and at sensitive locations for comparison with limits and background levels.
- All ancillary pneumatic percussive tools shall be fitted with mufflers or silences of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used.

4.1.3 Noise and Vibration Control Audits

As set out in Section 13.8 of Chapter 13 in the EIAR, the contractor will be required to ensure construction activities operate within the noise and vibration limits set out within this assessment. The contractor will be required to undertake regular noise and vibration monitoring at locations representative of the closest sensitive locations to ensure the relevant criteria are not exceeded.

Noise monitoring should be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise. Vibration monitoring should be conducted in accordance with BS 6472:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting (human disturbance) and BS ISO 4866:2010 Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures (building damage).

The EIAR requires that regular monitoring be carried out at sensitive locations with construction noise monitoring being undertaken at periodic sample periods at the nearest noise sensitive locations to check compliance with the construction noise criterion. Vibration monitoring will also be supported by continuous measurement, as the EIAR notes that vibration monitoring stations should continually log vibration levels using the Peak Particle Velocity parameter (PPV) in the X, Y and Z directions, in accordance with BS ISO 4866:2010.

Any audit activities should include routine reviews of monitoring data against the construction noise threshold of 70 dB(A) for residential receptors (in line with BS 5228-1:2009+A1:2014) and the EIAR's PPV criteria for cosmetic damage, as presented in table 4.2 below in section 4.1.4.

Where measured levels approach or exceed these criteria, corrective actions including programme adjustments will be initiated in to ensure that the working programme will be phased so as to prevent unacceptable disturbance at any time.

Monitoring will also verify that all best-practice noise and vibration measures are being implemented, including the use of quiet plant, effective noise control at source, appropriate screening, and liaison with the public. It will further confirm that construction plant is properly maintained and does not generate unnecessary noise, in line with provisions of Section 13.6.1 of the EIAR.

It is also a requirement that any noise complaints will be logged and followed up in a prompt fashion, and these records, along with monitoring and audit findings, will be retained for inspection.

4.1.4 Vibration

Vibration impacts during the construction phase will primarily arise from piling and certain heavy excavation activities. The EIAR notes that vibration standards address two aspects: the protection of buildings from cosmetic or structural damage, and human comfort, with both expressed in terms of Peak Particle Velocity (PPV, mm/s)

The recommended vibration limits in order to avoid cosmetic damage to buildings, as set out in BS7385 and BS5228-2, are set out in Table 4.2 below.

Table 4.2: Transient Vibration Guide Values for Cosmetic Damage

Building Category	Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of		
	4 to 15 Hz	15 to 40Hz	40Hz and above
Structurally sound and non-protected buildings	15 mm/s	20 mm/s	50 mm/s

Protected and /or potentially vulnerable buildings	6 mm/s	10 mm/s	25 mm/s
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The documents note that minor structural damage can occur at vibration magnitudes which are greater than twice those presented below. Major damage to a building structure is possible at vibration magnitudes greater than four times the values set out in the table. It should be noted that these values refer to the base of the building.

Human sensitivity to vibration occurs at levels far below those associated with any form of building damage. As a result, even relatively small vibration levels may give rise to concern in sensitive environments. Guidance on human perception from BS 5228-2 identifies typical PPV thresholds at which vibration becomes perceptible, may be noticed in residential settings, or is likely to lead to complaint. These values are summarised in Table 4.3 below. The guidance notes that these perception thresholds do not necessarily correspond to the same level of effect in every situation, particularly where vibration occurs only occasionally. Where vibration is repetitive or long-lasting, a more detailed assessment of exposure may be required to understand the potential for adverse comment.

Table 4.3: Guidance on effects of human response to PPV magnitudes

Vibration Level, PPV	Effect
0.14 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies. At lower frequencies people are less sensitive to vibration.
0.3 mm/s	Vibration might be just perceptible in residential environments.
1 mm/s	It is likely that a vibration level of this magnitude in residential environments will cause complaint.

The Contractor will be required to carry out the works such that the effect of vibration on the surroundings of the site is minimised and does not cause any damage. Mitigation measures to control vibration during construction, consistent with the EIAR and recognised good practice, will include the following (as set out in detail in Section 4.1.1):

- The piling method, plant, and construction activities selected will be those capable of completing the works while generating the lowest practicable levels of vibration.

- All plant and equipment used on site will be maintained in good working order to avoid unnecessary increases in vibration during operation.
- Activities with greater potential to generate vibration will be managed so that they are located away from sensitive boundaries where feasible or carried out in a controlled manner to limit transmission.
- Removal of obstructions, hard ground, or existing structures will be undertaken in a gradual and controlled manner to prevent sudden spikes in vibration levels.
- Where augered piling methods (such as bored piling or continuous flight auger piling) are used, these will be operated in accordance with manufacturer guidance to ensure vibration remains as low as reasonably practicable, consistent with the predictions in the EIAR.

4.2 Dust Management

4.2.1 Dust Management Provisions

Chapter 12 of the EIAR (Air Quality and Climate) assesses the likely air quality and climate impacts associated with the proposed development which includes dust management. The Institute of Air Quality Management in the UK (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014) outlines an assessment method for predicting the impact of dust emissions from demolition, earthworks, construction and haulage activities based on the scale and nature of the works and the sensitivity of the area to dust impacts.

The IAQM methodology has been applied to the construction phase of this development in order to predict the likely risk of dust impacts in the absence of mitigation measures and to determine the level of site-specific mitigation required. The major dust generating activities are divided into four types within the IAQM guidance (2014) to reflect their different potential impacts. These are:

- Demolition
- Earthworks
- Construction
- Trackout (movement of heavy vehicles).

The magnitude of each of the four categories is divided into Large, Medium or Small scale depending on the nature of the activities involved. The magnitude of each activity is combined with the overall sensitivity of the

area to determine the risk of dust impacts from site activities. This allows the level of site-specific mitigation to be determined.

The pro-active control of fugitive dust will ensure the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the Dust Management Plan. The key aspects of controlling dust are listed below. Full details of the Dust Management Plan can be found in Appendix 12.1 of the EIA.

The Dust Management Plan notes the following measures in summary:

- Prior to demolition, blocks will be soft stripped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- During the demolition process, water suppression will be used, preferably with a hand-held spray. Only the use of cutting, grinding or sawing equipment fitted or used in conjunction with a suitable dust suppression technique such as water sprays/local extraction will be used.
- Drop heights from conveyors, loading shovels, hoppers and other loading equipment will be minimised, if necessary fine water sprays should be employed.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

A full list of dust avoidance, remedial and mitigation measures is described in Section 12.1 6 of the EIA, recognising that the development has been assessed as having a high risk of dust soiling impacts and a low risk of dust related human health impacts during the construction phase as a result of earthworks, construction and track-out activities. The appointed Contractor will be required to implement site specific mitigation measures are described in Table 12.1 17 of the EIA (AWN Consulting Limited, reproduced below).

Table 4.3: Specific Mitigation Measures for Air Quality and Dust during Construction Period

Mitigation Measure	Action
Communications	
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Highly Recommended
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information	Highly Recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in the IAQM Guidance. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	Highly Recommended
Site Management	
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.	Highly Recommended
Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the	Highly Recommended

Mitigation Measure	Action
off-site transport/deliveries which might be using the same strategic road network routes.	
Monitoring	
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	Highly Recommended
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked	Highly Recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Highly Recommended
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	Highly Recommended
Preparing and Maintaining the Site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended

Mitigation Measure	Action
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period	Highly Recommended
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Highly Recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	Highly Recommended
Cover, seed or fence stockpiles to prevent wind whipping.	Highly Recommended
Operating vehicle/machinery and sustainable travel	
Ensure all vehicles switch off engines when stationary – no idling vehicles.	Highly Recommended
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 24 kmph on surfaced and 16 kmph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)	Highly Recommended
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	Highly Recommended
Operations	
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as	Highly Recommended

Mitigation Measure	Action
water sprays or local extraction, e.g. suitable local exhaust ventilation systems	
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended
Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	Highly Recommended
Waste management	
Avoid bonfires and burning of waste materials.	Highly Recommended
Measures Specific to Demolition	
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible to provide a screen against dust)	Highly Recommended
Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Highly Recommended
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	Highly Recommended
Bag and remove any biological debris or damp down such material before demolition.	Highly Recommended
Measures Specific to Earthworks	

Mitigation Measure	Action
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable	Desirable
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable.	Desirable
Only remove the cover in small areas during work and not all at once.	Desirable
Measures Specific to Construction	
Avoid scabbling (roughening of concrete surfaces) if possible.	Desirable
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	Highly Recommended
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Desirable
For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.	Desirable
Measures Specific to Trackout	
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Highly Recommended
Avoid dry sweeping of large areas.	Highly Recommended
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Highly Recommended
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Highly Recommended
Record all inspections of haul routes and any subsequent action in a site logbook.	Highly Recommended

Mitigation Measure	Action
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	Highly Recommended
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Highly Recommended
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, whatever site size and layout permits.	Highly Recommended
Access gates to be located at least 10 m from receptors where possible.	Highly Recommended

4.2.2 Dust Monitoring Requirement

The following monitoring measures are proposed to ensure the dust mitigation measures are working satisfactorily, the following monitoring measures as outlined in the EIAR (section 12.1.7.1) must be undertaken by the appointed Contractor:

- Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m²/day)

during the monitoring period between 28 - 32 days Monitoring shall ensure that the dust mitigation measures are working satisfactorily as construction works progress.

4.3 Ecological Impact Control, Drainage Management, Water Supply and Flood Risk Assessment

4.3.1 Ecological Impacts

As outlined in both the EIAR (Ch. 8 Biodiversity) and the AA Screening Report produced by DNV, there will be no works within European sites required as part of the Proposed Development. The nearest protected European Sites are the South Dublin Bay SAC (site code: 000210), which is located approximately 2.2km to the east of the site, and the South Dublin Bay and River Tolka Estuary SPA (site code: 004024), which is located approximately 2.2km to the east of the site also.

The nearest Proposed Natural Heritage Area (pNHA) is at Grand Canal pNHA (site code: 002104), with the next closest being South Dublin Bay pNHA (site code: 000210). It is unlikely that development works will cause significant direct or indirect impacts on Natura 2000 sites. On the basis of the screening exercise carried out by DNV, it can be concluded, based on the best scientific knowledge available, that the likelihood of any significant effects on any European sites, whether arising from the project itself or in combination with other plans and projects, can be excluded. Thus, there was no requirement to proceed to Stage 2 of the AA process, and the preparation of a NIS is not required.

Chapter 8 (Biodiversity) of the EIAR and specifically Section 8.14.2 sets out a number of construction mitigation measures in relation to biodiversity during the construction phase, works will be carried out in a manner that avoids or minimises impacts on ecological receptors within and adjacent to the site. All ecological mitigation measures will be implemented under the direction of a suitably qualified Ecologist or Ecological Clerk of Works (ECOW), where required. Mitigation measures will be implemented by the Contractor in any case to reduce potential impact on environmental receptors. These include the following:

Best Practice Measures during the Construction Phase

The following measures, designed to protect surface water quality, will serve to prevent any adverse effects occurring as a result of construction phase groundwater discharges from the Site. These mitigation measures will treat the source (e.g., refuelling of plant to be carried out at designated refuelling station locations on Site) or remove the pathway (e.g., no release of wastewater generated on-Site to ground during the construction phase).

All works carried out as part of the proposed development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990. Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. Procedures and relevant documents produced will be formulated in consideration of standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction sites, Guidance for Consultants and Contractors;
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005;
- BPGCS005, Oil Storage Guidelines;
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004;
- Construction Industry Research and Information Association CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006);
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

Tree Protection

Prior to any construction activity, protective fencing will be installed around retained trees in accordance with *BS 5837:2012 – Trees in relation to design, demolition and construction*. This fencing will safeguard both the canopy and the Root Protection Areas (RPAs) from accidental damage during site works. The installation must be inspected and formally signed off by a qualified arborist before construction begins to ensure compliance with the standard. The fencing will remain in place throughout the duration of the works to ensure the retained trees are protected from accidental damage.

Construction Phase Lighting

To minimise ecological disturbance during the construction phase, lighting will be managed with a strong emphasis on environmental sensitivity. Where possible, the appointed contractor will be required to switch off all construction lighting during non-working hours to reduce unnecessary illumination of the surrounding environment.

When lighting is required, directional lighting will be the preferred method. This approach significantly reduces light spill beyond the immediate work area, thereby limiting potential disruption to nearby habitats. This is particularly important for nocturnal mammal and bat species that may be using the site or adjacent areas for commuting, foraging, or other essential behaviours. These species are often highly sensitive to artificial lighting, which can interfere with their natural activity patterns and ecological functions.

To further mitigate impacts, LED luminaires with a warm white spectrum (2700K–3000K) will be utilised. This spectrum reduces the blue light component, which is known to be more disruptive to wildlife. LED lighting is also advantageous due to its sharp cut-off angles, lower intensity, and dimming capabilities, all of which contribute to minimising light pollution and ecological disturbance.

Air Quality Control (Dust Reduction)

In order to protect the surrounding environment from dust deposition during earthworks, the following mitigation measures are proposed and included in the accompanying CEMP (DBFL, 2025):

- Dust generation will be controlled through proper placement of stockpiles away from sensitive receptors and taking note of the prevailing wind direction.
- In situations where the source of dust is within 25m of sensitive receptors screens (permeable or semi-permeable) will be erected.
- Stockpiles will be located in sheltered parts of the Site and watered where required.
- Staff will monitor dust levels during working hours.
- Bowers will be available during dry periods for surface watering to keep unpaved areas moist.
- Any dust emitting works will be postponed during high winds (gales) until winds have subsided.
- Vehicles delivering material will be covered to prevent the escape of dust.
- A wheel washing facility will be installed near the Site compound for use by vehicles exiting the Site.

Noise-Related Ecological Protection

To minimise disturbance to fauna (particularly nesting birds and mammals), the following noise controls shall be implemented:

- Use plant with low inherent noise generation.
- Locate noisy plant as far from sensitive ecological areas as practicable.
- Switch off engines when not in use; avoid unnecessary revving.

- Maintain all plant to manufacturer standards; ensure proper balancing of rotating machinery.
- Maintain haul roads to minimise rattling or banging.
- Reduce drop heights when handling materials.
- Apply dampening or padding to vibrating panels or body parts where feasible.
- Restrict noisy activities to permitted construction hours only.
- Appoint a site representative responsible for noise management.
- Implement noise monitoring where required by planning conditions.

Timing of Vegetation Clearance and Building Works

To comply with the Wildlife Acts, vegetation clearance will be scheduled outside the bird nesting season (1 March to 31 August). Where works during this period cannot be avoided, a pre-clearance survey will be undertaken by a qualified ecologist no more than 48 hours prior to removal. If active nests are identified, works in that area will not proceed until the ecologist confirms that fledging has occurred.

Vegetation will be removed progressively and in a consistent direction to allow species such as hedgehogs to disperse naturally. Seasonal constraints for amphibians and hibernating mammals will also be observed, and checks for roosting bats, nesting birds, or signs of protected fauna will be undertaken immediately prior to vegetation clearance if works fall within restricted periods.

Tabor House and Chapel Renovation Works: Any works to roofs, loft spaces, chimneys or other structures with potential for bat roosts will require assessment by a bat specialist. Where potential roost features are identified, further bat-specific surveys will be undertaken and mitigation agreed with NPWS prior to works. Building renovation or demolition will similarly be timed outside the bird nesting season unless cleared by an ecologist.

Bat Boxes

The Proposed Development will result in the loss of some trees with bat roost suitability. Twenty trees were considered to be of low roosting suitability i.e., containing 'PRF-I' features capable of supporting individual bats, during the PBRA surveys of the trees to be felled on Site. Two trees on Site were identified as having 'PRF-M' features, capable of supporting multiple roosting bats.

To compensate for the loss of the above potential roosting habitat at the Site, 10 No. bat boxes will be erected on suitably sized trees at the Site under the guidance of a suitably qualified Ecologist. These bat boxes will be of the durable woodcrete variety and capable of supporting multiple crevice-dwelling bat species e.g., the Shwegler 2F bat box. Suitably locations will be established within the mature woodland habitats in the north and east of the Site, within the dark buffer zone area. These boxes will provide an important roost habitat for bat species which may be using the Site and will work in tandem with the following, to ensure that the proposed development will not result in a significant adverse effect on bat species:

- The reinstatement of grassland habitat and wildflower meadows along edge habitat (e.g., woodland/scrub/hedgerow edges);
- The reinstatement of scrub and hedgerow habitat, with low intervention hedgerow management;
- The planting of multiple tree species within the Site;
- The bat friendly lighting plan (including dark corridor along Site margins with high value habitat for bats); and
- The planting of green roofs on select buildings to provide additional foraging and commuting habitat.

Protection of Small Mammals and Fauna

- Working hours should align with daylight hours where possible to minimise disturbance to nocturnal wildlife.
- All waste materials (plastic, netting, packaging) shall be secured in designated bins to prevent wildlife entanglement.
- Open excavations shall be:
 - Covered outside working hours, or
 - Fitted with escape ramps for trapped fauna.
- Pipes and ducts shall be capped when not in use to prevent access by mammals (e.g. badgers).
- Any fauna encountered shall be allowed to disperse naturally under the supervision of the ECoW.

Invasive Alien Plant Species Management

A series of measures are outlined in Chapter 8 of the EIAR, to avoid the introduction or dissemination of medium/low-risk invasive species to and from the Site of the proposed development. For the Construction Phase, the contractor will prepare a project-specific IAPS standard operating procedure document, in advance of

work commencement. The document should be prepared by an IAPS specialist and should cover the bio-security measures to be taken, including the maintenance of records, to screen for the introduction of IAPS onsite, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite.

Biosecurity measures are described in Section 8.14.2.6 of the EIAR (Mitigation 6: Invasive Alien Plant Species Management) and measure are further outlined in further detail below, in Section 4.4.2 of this CEMP.

Ecological Clerk of Works (ECoW)

A precautionary approach will be adopted during the demolition of Milltown Park House, the renovation of Tabor House and the Chapel, and the removal of trees with bat roosting potential. A suitably qualified Ecologist will act as an Ecological Clerk of Works (ECoW) for the duration of these works.

Pre-commencement roost surveys/inspections will be conducted by the ECoW of the buildings set for demolition and renovation prior to these works taking place. This will ensure that the baseline bat roosting / breeding bird status of buildings in question is reconfirmed ahead of the works, thus ensuring no impacts to roosting bats / nesting birds should they take up residence in the meantime and no offences being committed under the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) or the Wildlife Acts 1976 (as amended).

The demolition & renovation methodologies will be developed in consultation with the ECoW, and detailed Method Statements, including any bird and bat-specific mitigation measures, will be agreed with the Local Authority. This will ensure that no bats are present or impacted by the works.

It is also possible that trees can become damaged in the time between the original roost assessment survey and the tree felling taking place, and this can sometimes increase the bat roost suitability of a tree, providing new roost features e.g., cracks, holes etc. Similarly, these features can provide nesting opportunities for small local passerines. As such, a pre-felling check will be conducted by a suitably qualified Ecologist of all trees to be felled at the Site prior to felling taking place. This may entail an endoscope check from ground level/ or mobile elevated work platform (MEWP).

Trees will be felled during the start or end of the hibernation period (so either in September/October or February/March) following a thorough check for bats and nesting birds. The felling of trees during this period will

ensure that bats are likely to have entered hibernation or will soon be coming out of it and will reduce the likelihood of them either not having enough energy or a food source if they happen to be disturbed and take flight. It is also outside of the breeding bird season and so unlikely to come across active nests. Felling in this period will further reduce the likelihood of bats having transitioned between roosts overnight, should felling not be carried out immediately following the bat survey.

Felling must be carried out no later than 24 hours after the bat survey is complete and once the ECoW can confirm no roosting bats are present. Should a roosting bat be found within trees or the buildings at the Site, no felling of the tree in question or works on the building in question will take place and a derogation licence will be obtained from the NPWS to proceed. The area around the roost will be protected with an appropriate buffer to prevent disturbance of the bat(s).

Where demolition / felling works cannot take place outside of the bird nesting season, pre-commencement checks by a suitably qualified ecologist will be required to confirm no breeding birds are present. Should a nesting bird be found at the Site, no felling of the tree or demolition of the building in question or works on the building in question will take place and the nest will be protected until the young birds have fledged, as confirmed by a suitable qualified ecologist. The area around the nest will be protected with an appropriate buffer to prevent disturbance of the bird(s).

It is important to note that permission for the Proposed Development can be granted without any reliance on the potential grant of a derogation licence, and that any references to the potential need to obtain a licence for bats are purely precautionary, as detailed above, and therefore not integral to the decision on whether to grant permission. Similarly, vegetation clearance will follow a precautionary protocol to avoid impacts on breeding or hibernating Hedgehogs within woodland habitats. Prior to machinery use, the ECoW will visually inspect the Site. Clearance will proceed on a rotational basis, retaining scrub patches to maintain cover and foraging opportunities for Hedgehogs.

In addition, during the Construction Phase, piles of dead wood and brash will be created in undisturbed areas to provide refuges and enhance habitat complexity for invertebrates and small mammals.

4.3.2 Surface Water, Groundwater, Foul Water Management and Water Supply

Surface Water and Groundwater

As set out in the Hydrological and Hydrogeological Qualitative Risk Assessment prepared by AWN consulting, the Proposed Development is located within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and the Dodder Sub-Catchment (WFD Code: Dodder_SC_010), which is managed by Dublin City Council (DCC). The nearest surface water feature is the River Dodder (WFD Code: IE_EA_09D010900), located approximately 0.5 km east of the site. The Dodder system originates in the Dublin Mountains, flows northwards past the site, and ultimately discharges to the Liffey Estuary Lower before entering Dublin Bay.

The nearest designated ecological receptors are South Dublin Bay SPA, South Dublin Bay SAC, and South Dublin Bay pNHA, located approximately 2.2 km east. While the Dodder does form part of the wider estuarine system connected to Dublin Bay, there is no direct hydrological linkage between the development lands and any Natura 2000 site. Any indirect pathway via the stormwater drainage network or the River Dodder involves a long flow distance, with significant dilution and assimilation occurring before waters reach designated ecological sites.

Groundwater beneath the site is characterised as having Low vulnerability, providing a natural level of protection against contaminant migration. Although the overall hydrogeological risk is low, inappropriate handling of fuels, chemicals, silt-laden water or concrete washings during construction could create temporary pathways if not properly controlled. Similarly, uncontrolled sediment runoff or hydrocarbon releases could enter the local stormwater system and, if unmanaged, reach the River Dodder.

During the construction phase, the potential risk pathways therefore relate to:

- Sediment-laden runoff from exposed soils entering drains or watercourses.
- Hydrocarbon leaks or spills from plant, machinery or storage areas.
- Accidental discharge of contaminated water from excavations.
- Improper handling of concrete, cementitious materials or chemicals; and
- Uncontrolled foul drainage from site welfare facilities.

Although any such release would undergo substantial dilution along the drainage pathway before reaching downstream designated sites, robust control measures are required to ensure protection of surface water, groundwater, and ecological receptors, in line with the Water Framework Directive and relevant national legislation.

Construction works will therefore be undertaken in strict accordance with this Construction Environmental Management Plan (CEMP) and the Preliminary Construction Management Plan. All site operatives will receive environmental induction training, including procedures for pollution prevention, drainage protection, spill response, and safe working near existing infrastructure. The following sections set out the construction-phase mitigation measures required to break all identified Source–Pathway–Receptor linkages and to ensure no deterioration in water quality or impact on downstream sensitive sites.

Protection of Existing Underground and Overground Infrastructure

Before commencing excavation or ground-breaking activities, the Contractor will locate and record all existing services on site. This will include a review of available utility provider records, use of utility detection equipment, and verification by slit trenching where required. A Ground Penetrating Radar survey has already been undertaken along Sandford Road, Milltown Road and Eglinton Road and will be supplemented as needed. A detailed Method Statement for working in proximity to live utilities will be prepared and agreed with the PSDP. All works will comply with the HSA Code of Practice for Avoiding Danger from Underground Services.

Prevention of Contamination of Surface Water Runoff

Surface water runoff from areas stripped of topsoil and any water accumulating in excavations will be captured and directed to temporary on-site settlement facilities. These facilities will allow suspended solids to settle out before controlled discharge.

Concrete batching will not take place on site. All concrete will be sourced from authorised batching plants, and wash-down of concrete trucks will occur off site, eliminating any risk of cementitious contamination. To prevent accidental spills entering surface or groundwater, all oils, fuels, paints and chemicals will be stored in a secure, bunded hardstanding area. Refuelling and plant servicing will occur within this designated area, or off site where possible. Spill kits will be available, and staff trained in their use.

Proper Management of Foul Drainage from the Contractor's Compound

The site compound will include welfare facilities with foul drainage provision. Until the permanent foul sewer connection is installed, foul effluent from the compound will be removed from site by a licensed waste contractor and transported to an authorised wastewater facility. This ensures that no untreated effluent enters foul systems or the environment.

Protection of Potable Water Supply to Construction Compound

The temporary potable water supply to the compound will be installed in accordance with Uisce Éireann requirements. The supply will be protected from contamination by ensuring it is physically separated from construction activities, protected from damage, and not located in areas where runoff, fuels or chemicals could enter the system. No materials or activities that pose a contamination risk will be permitted in its vicinity.

Mitigation of Weather-Related Impacts

Seasonal weather patterns will be taken into account when scheduling excavation, topsoil stripping and earthworks. Works involving exposed soils will be planned to reduce the risk of erosion and sediment mobilisation. During periods of heavy rainfall, works may be scaled back, and additional protective measures will be deployed where necessary.

Avoidance of Damage to Existing Utilities During Works

The Contractor will prepare a detailed Method Statement describing safe working procedures near utilities. This will include identification of exclusion zones, hand-digging where required, supervision protocols and communication with service providers. The Contractor will obtain all relevant utility plans and arrange site observation by utility company representatives if required.

Prevention of Loss of Connection to Existing Utility Infrastructure

Connections to the public surface water, foul sewer and water supply networks will be carried out only by approved contractors and in coordination with the relevant utility providers. Works will be planned to minimise interruption to existing systems. All connections will be undertaken in accordance with utility provider standards and safety requirements.

Ensuring Safe Working Conditions Through Proper Plant and Personnel Training

All personnel operating plant or machinery will be fully trained and competent. Site supervisors will monitor compliance to ensure plant is used correctly and safely. Proper training reduces risks of spills, accidental damage, or unsafe operation near drainage or water protection zones.

Traffic Management and Protection of Public Safety

A Construction Traffic Management Plan (CTMP) will be prepared and agreed with the Design Team and Dublin City Council. The CTMP will ensure safe vehicle movements, prevent unauthorised access, and minimise risks to pedestrians, road users, and water/drainage infrastructure during construction. Safe traffic management also reduces risks of fuel spills or accidental damage to underground services.

Foul Water Management

As outlined in Section 11.4.4 of the EIAR (Ch. 11 Water Hydrology) and DBFL **Consulting Engineers** Infrastructure Design Report, an existing 600mm diameter combined sewer is located adjacent to the site's northern-eastern boundary (Sandford Road). An existing 375mm diameter combined sewer is also located adjacent to the site's south-eastern boundary (Milltown Road) which outfalls to the 600mm diameter combined sewer in Sandford Road. The existing combined sewer network described above ultimately discharges to Ringsend Wastewater Treatment Plant (also refer to AWN Consulting Hydrological Qualitative Risk Assessment).

The site topography falls generally from south to north at approximately 1:45, flattening to around 1:100 near the Sandford Road access point. This gradient supports the development of a gravity drainage solution using the existing connection locations. In line with this, two foul discharge points are proposed: one near the proposed access on Milltown Road, and one at the existing access on Sandford Road

The internal foul drainage network will consist primarily of 225 mm diameter pipes, with 100 mm diameter individual connections provided to the courtyard houses along the western boundary. The foul system has been designed in accordance with Irish Water's Code of Practice for Wastewater Infrastructure, the TGD Part H (2016) requirements, and BS EN 752:2008. Design criteria applied include a daily demand of 446L per dwelling, 14 discharge units per dwelling, a pipe friction value (Ks) of 1.5 mm, self-cleansing velocities being maintained above 0.75 m/s, and a maximum allowable velocity of 3.0 m/s. Hydraulic modelling has been completed using MicroDrainage WinDes software.

Irish Water confirmed the feasibility of providing a wastewater connection in September 2025 following a pre-connection enquiry submitted in June 2025 (ref. CDS25004037) and advised that the connection is feasible without the need for Irish Water infrastructure upgrades. A Statement of Design Acceptance for the proposed foul layout was subsequently issued by Irish Water in November 2025. The total predicted foul discharge from the development is approximately 289 m³/day, calculated in accordance with the Irish Water Code of Practice.

During construction, as set out in Section 11.6.1 of the EIAR and Section 11 of the Preliminary Construction Management Plan, the construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

Section 12 of the Preliminary Construction Management Plan further outlines how the Contractor will manage the impact of foul/combined drainage infrastructure on the development as follows:

- Pre-construction surveys and CCTV inspections will be conducted to locate and assess the foul/combined sewer condition. Physical barriers and controlled excavation methods will be used to prevent damage during construction works.
- No foul water will be permitted to enter surface water systems or excavations. If required, foul discharge from the site will be taken by tankers to a licensed facility in compliance with Uisce Éireann standards.
- Dublin City Council and Uisce Éireann will be consulted to approve temporary drainage arrangements and ensure compliance with local standards and environmental regulations, if required.

Water Supply

In Section 11.4.6 of the EIAR It is proposed to take 2 no. 200mm diameter connections off the existing 9" water mains located along Sandford Road and Milltown Road. These connections will link within the site. All connections, valves, hydrants, meters etc. have been designed and are to be installed in accordance with Irish Water's Code of Practice for Water Infrastructure (and associated standard details) and the Department of the Environment's Building Regulations Technical Guidance Document Part B Fire Safety.

4.3.3 Flood Risk Assessment

A Site-Specific Flood Risk Assessment for the proposed development was undertaken by DBFL Consulting Engineers in accordance with The Planning System and Flood Risk Management, Guidelines for Planning

Authorities and its Technical Appendices. The assessment determined that the site is located within Flood Zone C as defined by the Guidelines. On this basis, it concluded that:

- The proposed development is appropriate for the site's flood zone category.
- The sequential approach set out in the Guidelines has been followed and the 'Avoid' principle has been achieved.

The development is considered to have an adequate level of flood protection up to and including the 1% AEP flood event. In addition, overland flow paths have been identified to accommodate pluvial flooding that may exceed the capacity of the surface water drainage network.

A flood hazard assessment was also carried out using information from the Office of Public Works (OPW) National Flood Hazard Mapping (www.floods.ie) and the Eastern CFRAM Study. This assessment followed the OPW procedures for a Flood Risk Assessment as set out in the 2009 Guidelines for Planning Authorities.

OPW Flood Hazard Mapping

The OPW's Summary Local Area Report, included in Appendix 11.2 of the EIAR (Flood Hazard Information), summarises all recorded flood events within 2.5 km of the site. No flood events are noted in the immediate vicinity, and no benefitting lands (defined as lands that might benefit from a major drainage scheme or that experience flooding or poor drainage) are identified near the site.

Eastern CFRAM Study

Appendix 11.2 also includes extracts from the Dodder Catchment Flood Risk Assessment and Management Study, which illustrates the extent of fluvial flooding in the wider area. The nearest modelled node is located on the Dodder River, approximately 500m southeast of the site. No fluvial flooding is indicated in the vicinity of the proposed development.

The following mitigation measures, as outlined in DBFL Consulting Engineers Site-Specific Flood Risk Assessment, are proposed to address residual flood risks:

- Regular maintenance of the proposed drainage system to reduce the risk of blockages.

- Preservation of overland flow routes during storm events exceeding the 1% AEP design capacity. Boundaries at the northern and eastern edges of the site should remain permeable to allow floodwaters to route safely toward Sandford Road and Milltown Road.

Overall, the proposed mitigation measures are considered sufficient to provide an appropriate level of flood protection. Maintaining the drainage system will ensure effective performance during significant pluvial events, while the identified overland flow routes will facilitate safe routing of extreme floodwaters—those exceeding the site’s attenuation capacity—toward adjacent public roads and away from the development.

4.3.4 Surface Water Management Measures and SuDS

The public surface water network on Eglinton Road will provide the discharge point for the proposed development. To achieve the required drainage invert levels on site, approximately 160 m of the existing drainage network along Eglinton Road will be replaced with a 300 mm pipe laid at a flatter gradient. From the point where the outfall crosses the site boundary at Milltown Road to the discharge point at Eglinton Road, the total surface water outfall length is approximately 300 m.

A detailed GPR and topographical survey was undertaken along the outfall route from Milltown Road to the junction at Sandford Road and Eglinton Road to identify existing services. The outfall has been designed to achieve a self-cleansing velocity of 1.0 m/s and has been coordinated with the existing infrastructure along the route.

During construction, all works associated with the replacement of the existing Eglinton Road pipe section and installation of the outfall will be managed to prevent sediment, debris, or contaminants from entering the public surface water system. Appropriate controls will be maintained so that existing surface water flows are not obstructed during the works.

Surface water discharge from the proposed drainage network will ultimately be controlled by a vortex flow control device (Hydrobrake or equivalent) and associated attenuation systems, including Stormtech chambers, attenuation basins, and blue/green roof systems at roof and podium level. These permanent SuDS components will be protected during construction to ensure they are not damaged or compromised prior to commissioning. A full-retention fuel/oil separator will form part of the system and will be safeguarded until operational.

The overall surface water strategy incorporates SuDS features to reduce runoff and improve water quality. Apartment roofs and podium areas will provide significant SuDS capacity through blue and green roof systems, forming the first stage of the treatment train. Green roofs will capture runoff from apartment roofs before discharge to the piped network and will provide biodiversity benefits. Blue roof systems will capture runoff from podium decks, rooftop terraces, and areas accommodating plant and PV panels.

Surface water from courtyard house roofs along the western boundary will drain to soakaway pits in back gardens, with overflow to the main network. Runoff from on-street parking areas will be captured by permeable paving. The majority of internal streets will drain via tree pits, bioretention areas, and permeable paving, with limited use of conventional road gullies where necessary. Any incidental surface water from the basement car park will be collected through a separate system beneath the basement slab, discharging (via a petrol interceptor) to the proposed foul drainage network. Construction-phase surface water management will therefore focus on:

- Preventing silt, sediment, and pollutants from entering the existing or newly installed drainage networks.
- Maintaining unobstructed temporary overland flow routes during works.
- Protecting all permanent SuDS elements—including green/blue roofs, attenuation infrastructure, permeable paving, tree pits, bioretention areas, and soakaways—until the development is completed.
- Managing runoff so that it does not exceed the capacity of temporary or existing drainage infrastructure.

Full permanent SuDS and surface water design details are contained in DBFL Consulting Engineers Infrastructure Design Report (Section 3.0 Surface Water Drainage) and the Site-Specific Flood Risk Assessment (Section 5.2 Surface Water Management Measures and SuDS).

4.3.5 Emergency Preparation and Training

- The appointed Contractor will be required to prepare an Emergency Response Plan which will detail procedures to be undertaken in the event of flooding, a spill of chemicals, fuel or other hazardous wastes, a fire or other non-compliance/incident. This plan will include the following details:
 - Containment measures.
 - List of appropriate equipment and clean-up materials.
 - Maintenance schedule for equipment.
 - Details of trained staff, location, and provision for 24-hour cover.

- Details of staff responsibilities.
- Notification procedures to inform the relevant environmental authorities that may include Dublin City Council and the Environmental Protection Agency.
- Audit and review schedule.
- Telephone numbers of Dublin City Council Water and Drainage Division.
- List of specialist pollution clean-up companies and their telephone numbers.
- Ensure site staff are trained in the implementation of the Emergency Response Plan and the use of any spill control equipment.
- Prepare method statements for the control, treatment and disposal of potentially contaminated surface water.
- Prepare a site plan showing the location of all surface water drainage lines and proposed infiltration areas/discharge to sewer.

Access and egress to the site is provided via proposed entrances off Milltown Road and Sandford Road which are both located in Flood Zone C as defined by the OPW guidelines. As such, the site can be safely accessed during storms up to the 1% AEP event

4.4 Nuisance & Pest Control

4.4.1 Pest Control

A pest control operator will be appointed as required to manage pest onsite during the demolition and construction phases of the project. Organic and food wastes generated by staff will not be stored in open skips, but in closed waste receptacles. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

4.4.2 Invasive Species

Several invasive alien plant species were recorded during ecological surveys carried out on Site. The IAPS Site Assessment and Management Plan Report (Invasive Plant Solutions, 2025) has been updated following the most recent survey in October 2025. Listed below are the measures proposed in this report prepared by Invasive Plant Solutions to mitigate and treat IAPS on Site.

Biosecurity Measures for management and treatment of IAPS on Site:

The following measures will be adhered to, to avoid the introduction or dissemination of medium/low-risk invasive species to and from the Site of the proposed development. For the Construction Phase, the contractor

will prepare a project-specific IAPS standard operating procedure document, in advance of work commencement. The document should be prepared by an IAPS specialist and should cover the bio-security measures to be taken, including the maintenance of records, to screen for the introduction of IAPS onsite, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite. These measures to include:

Based on the outcome of the previous IAPS Site surveys carried out in December 2020, April and September 2021, April 2022, March 2023 and April 2023, there was the continuing and expanding presence of IAPS on Site was confirmed, namely Three-cornered Leek and Spanish Bluebell. The most recent site survey, carried out in October 2025, could not establish the current presence or extent of the previously identified IAPS, as the timing of the survey was outside the 2025 growing window. Therefore, any plants present would have already flowered and died back for the season, but it must be assumed that there are still viable plants present. The following should be adhered to as a result:

- In applying the “precautionary principle”, continued site monitoring should be maintained. Further site inspections should be scheduled during the 2026 growing period for Three Cornered Garlic and Spanish Bluebell. This report and management plan should be updated to take account of the results of these 2026 inspections and surveys
- The IAPS Report and Management Plan (including subsequent updates) are to be circulated to any adjoining landowners that may be affected by the IAPS presence and to the relevant authorities, where appropriate.
- The IAPS Site Management Plan should be updated following any further IAPS inspections.
- All areas of infestation should remain securely fenced off, including a 5-7m buffer zone, where appropriate. Fencing should be strong and incorporate advisory signage. Where stands are small or have been successfully treated, then advisory signage on a timber post will be sufficient.
- No ground maintenance, opening up or any other ground disturbance is to take place within fenced (infested) areas without prior approval, or consultation and under explicit direction and supervision of an IAPS Specialist, with strict bio-security conditions.
- Where works in the fenced (infested) areas must take place, the activity must first be approved by an IAPS specialist, with the development of a suitable ‘Task Specific’ method statement, that ensures no viable plant material of rhizome should be disturbed or removed from zones of infestation.

- Where future development proposals could encroach onto the IAPS-infected areas, a Site-specific ground remediation programme (including vertical and horizontal protection) should be developed and deployed to provide for the removal and bio-secure disposal of all infested soils and include any other relevant measures required to ensure strict biosecurity compliance across the Site and works.
- All relevant staff and Site visitors are to be briefed on the identification, risks and dangers of IAPS on Site, as well as the Site-specific protocols in place for the management of same. Specialist advice should be sought where there is uncertainty as to the identity of any plant species encountered.
- The accompanying Management Plan and treatment methodology should be screened for potential impacts on ecological receptors and sensitivities, where they exist per S.I. 155/2012; the European Communities (sustainable use of pesticides) Regulations.
- When using herbicides as part of the Management Plan/remediation programme, consideration must be given to the proximity of ecological receptors and designated sites. Non-residual, aquatic-approved herbicides should be specified for treatment, where herbicide use is deemed suitable.

In addition to the above, the following best practice procedures should be adhered to (As per Section 18 of the IAPS Site Assessment and Management Plan Report (2025)):

- Validation that all machinery/vehicles are free of IAPS, prior to their first introduction to the Site.
- Certification should be obtained from suppliers that all imported soils and other fill/landscaping materials are free of IAPS.
- A regular schedule of Site inspections across the IAPS growing seasons, for the duration of the construction works programme.
- Appropriate and effective Site biosecurity hygiene to ensure that no IAPS are transmitted off-site for the duration of the proposed works.
- The IAPS management plan should be updated as required.

This management and treatment programme will be continued multi-annually, until either eradication has been fully achieved, or future development proposals have been approved and scheduled, whichever is sooner.

In the event of development being approved in the short term, this management plan recommends the deployment of an IAPS-infested soil remediation programme, comprising the bio-secure off-site disposal of all IAPS-infested soils, under NPWS licence, to an approved and licenced waste acceptance facility. This process will

be based on up-to-date survey information, to validate the full extent of IAPS present, carried out over the intervening period and immediately in advance of the remediation process commencing. The management plan also recommends that the remediation process should be carried out independently of, and in advance of, the primary development works commencing. It should be executed by, or carried out under the direct management of, an IAPS specialist.

In its ongoing implementation, this management plan will ensure that initial bio-security measures are deployed at all IAPS locations, that a structured, multi-annual, Site monitoring and herbicide control programme will be employed across the duration planning consent process, and that, if then necessary, a full IAPS infested soil remediation process will be carried out and completed in advance of the commencement of any proposed development project. Further information on IAPS on Site can be found in the following document produced by Invasive Plan Solutions: “Invasive Alien Plant Species: Site Assessment Report and Management Plan” (Invasive Plan Solutions, 2025).

4.5 Litter

The site compound will be kept clean and tidy at all times. Waste will be segregated at source (into suitable receptacles/skips for various recyclables and general waste), covered and removed from site regularly by permitted waste hauliers. Regular inspections of the wider construction site will take place, at a minimum on a daily basis to ensure it is free of litter and waste. Records will be retained on site for inspection.

4.6 Traffic Management & Safety

4.6.1 General Traffic Management Provisions

As set out in Section 15.5.1.2 of the EIAR, construction traffic will generally be confined to weekdays (07:00 – 19:00, subject to conditions of planning permission) and will consist of the following two principal categories:

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

It is anticipated that the proposed development would be constructed over a period of approximately 34-35 No. months in accordance with the preliminary construction programme. Following the completion of the initial site clearance works, the generation of HGV movements during the build period will be evenly spread throughout

the day and as such will not impact significantly during the peak traffic periods. For this scale of development, we do not expect HGV two-way vehicle movements to exceed 16 No. vehicles per hour during the busiest period of construction ‘build’ works as seen in Table 4.4 below.

Table 4.4 Projected Construction Traffic Flows

	HGV	LGV	Total (vehs)	Total (pcus)
Daily	64	60	124	207
AM Peak Hour	16	3	19	40
Afternoon Peak	16	0	16	37
PM Peak Hour	16	3	19	40

Removal of stockpiled soil/topsoil

Based on a preliminary review of the existing survey data and proposed site levels it is estimated in Section 15.5.1.2 that approximately 80,000 m³ of material may require excavation. Whilst an element of the material will be reused on-site (c. 10,000 m³) it is still predicted that approx. 70,000 m³ of material will require removal during the construction phase earthworks. This equates to 4,375 No. truckloads based on a tipper truck capacity of 16m³. At 8 No. loads removed per hour, 16 No. two-way HGV movements per hour and 64 loads removed per day this equates to 68 No. days of earthmoving works as part of the adopted worst-case assessment to clear the entire site in one single construction activity.

Table 4.5 Construction Phase Earthworks for Worst-Case Scenario

Material to be excavated and removed off site	70,000 m ³
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Total no. truckloads to be removed	4,375
Loads removed per day	64
Loads removed per hour	8
Two-way HGV movements per hour	16
Days of earthmoving works	68
Weeks of earthmoving activity	14

**Assumptions: 1 HGV vehicle = 2.3 PCUs, Tipper truck capacity = 16m³, 2 tipper trucks excavating at any one time, trucks departing every 20 minutes.*

For the proposed Sandford Road development, 3 No. foundation options have been considered. This transportation assessment has assumed the worst-case option for the above listed volume of material requiring removal and therefore HGV truckloads generating a traffic impact. Furthermore, the level of development assumed in the opening year would result in a greater traffic impact than that generated as a result of the most onerous of the 3 No. foundation options thereby providing a conservative and comprehensive assessment of the traffic impacts resulting from the subject site.

Table 4.6 below compares the quantum of soil requiring removal per foundation option considered and the resulting number of HGV loads, and inbound and outbound trips required to remove this quantum of soil. As shown below, Option No. 3 results in the highest number of inbound and outbound trips and this has been the construction traffic scenario adopted within this assessment.

Table 4.6 Foundation Options Traffic Generation Comparison

Foundation Option No.	Foundation Option Description	Quantum of Soil Removal (Inc. road and civil works)	Quantum of Trip Generation to Remove Soil
1	Standard Pad & Strip Foundations to All Blocks incl. Basement	70,000m ³	4,375 loads 8,750 trips inbound & outbound
2	Pads & Strips to All Blocks except Bored Piles to Block D & F	64,000m ³	4,000 loads 8,000 trips inbound & outbound
3	Pads & Strips to All Blocks except Ground Improvement to Block E	70,000m ³	4,375 loads 8,800 trips inbound & outbound

An appropriate control and routing strategy for HGVs will also be implemented for the duration of site works as part of the CTMP. It is not proposed to utilise any roads with weight/height restrictions as part of the routing of

HGVs during the construction phase. A significant benefit of the subject development site's characteristics is that all construction traffic vehicle parking demands can be accommodated on-site thereby minimising the impact upon the operational performance and safety levels of the adjacent public road network.

Considering the site's proximity to the strategic road network, it is concluded that construction traffic will not give rise to any significant traffic concerns or impede the operational performance of the local road network and its surrounding junctions. During the construction stage it is anticipated that the proposed development would result in a temporary negative impact on the traffic environment in the immediate vicinity of the subject site. The vehicle trips would be generated from LGVs used by construction staff to travel to the site and by HGVs transporting materials to and from the site. Section 4.6.2 below provides the potential mitigation measures to be taken at construction stage to lower the number of vehicle trips to and from the site during construction stage and the measures to minimise the impact of the generated traffic on the surrounding road environment.

Delivery of Construction Materials

The main construction access will be off Milltown Road at the location of the proposed primary vehicle access for the development. A secondary construction access is proposed at the existing entrance from Sandford Road. The location of the primary and secondary access points noted above is identified on DBFL Consulting Engineers Roads Layout Drawing. As mentioned in the mitigation measures (Section 15.6 of the EIAR), delivery vehicles to and from the site will be spread across the course of the working day, therefore, the number of HGVs travelling during the peak hours will be relatively low

An appropriate control and routing strategy for HGVs and the phasing of construction vehicles throughout the day will be applied to ease congestion on the local road network as a result of HGVs during the Construction Stage.

Staff Trips

On-site employees will generally arrive before 08:00, thus avoiding the traditional morning peak hour traffic. The traffic surveys conducted by Tracsis Traffic Data Ltd. in October 2022 established the morning peak hour as occurring between 07:45 – 08:45. These employees will generally depart after 16:00. Appropriate on-site parking and compounding will be provided to prevent overflow onto the local network. Deliveries will be actively controlled and subsequently arrive at a dispersed rate during the course of the working day.

Based upon the experience of similar developments, a development of this type and scale would at a maximum necessitate approximately 40 No. staff on site at any one time, subsequently generating no more than 30 No. two-way vehicle trips during the peak AM and PM periods over the period of the phased construction works. Although the number of staff and light goods vehicles, transporting staff, will fluctuate over the period of construction works, the consideration of the worst-case scenario (40 staff members, 30 LGVs) provides a conservative assessment of the resultant traffic and transportation impacts of the subject development during the construction phase.

Site Visitors/Unscheduled Visits

Site visitor numbers/unscheduled visits will vary over the course of the construction. Times for these visits will vary, as will length of visit.

4.6.2 General Traffic Management Mitigation Measures

Chapter 15 (Transportation) of the Environmental Impact Assessment Report (“EIAR”) and Section 7 of the Preliminary Construction Management Plan (PCMP) assesses and evaluates the likely impact of the proposed development on the existing transportation system in the vicinity of the site, as well as identifying proposed mitigation measures to minimise any identified impacts arising from the proposed residential development at Sandford Road, Dublin 6. The PCMP includes an Outline Traffic Management Plan as well as incorporating a range of integrated control measures and associated management activities with the objective of minimising the potential impacts of construction activities associated with the development. The following initiatives will be implemented to avoid, minimise and/or mitigate against the anticipated construction period impacts as set out in Section 15.6.1 of the EIAR:

- During the pre-construction phase, the site will be securely fenced off/hoarded off from adjacent properties, public footpaths and roads.
- Appropriate on-site parking (temporary parking for the duration of construction works) and compound area will be provided to prevent overflow onto the local network.
- A large proportion of construction workers are anticipated to arrive in shared transport. It is likely that some numbers of the construction team will be brought to/from the site in vans/minibuses, which will serve to reduce the trip generation potential.
- Delivery vehicles to and from the site will be spread across the course of the working day, therefore, the number of HGVs travelling during the peak hours will be relatively low.

- Truck wheel washes will be installed at construction entrances.
- Any specific recommendations with regard to construction traffic management made by Dublin City Council will be adhered to.
- Potential localised traffic disruptions during the construction phase will be mitigated through the implementation of industry standard traffic management measures such as the use of traffic signage. These traffic management measures shall be designed and implemented in accordance with the Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks" and "Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition" (2010).
- Site entrance point/s from the public road will be constructed with a bound, durable surface capable of withstanding heavy loads and with a sealed joint between the access and public highway. This durable bound surface will be constructed for a distance of 10m from the public road.
- Material storage zones will be established in the compound area and will include material recycling areas and facilities.
- 'Way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.
- Dedicated construction haul routes will be identified and agreed with Dublin City Council prior to commencement of activities on-site; and
- On completion of the works, all construction materials, debris, temporary hardstands etc. from the site compound will be removed off-site and the site compound area reinstated in full on completion of the works.

During the construction stage, the following monitoring exercises are proposed:

- Compliance with construction vehicle routing practices.
- Compliance with construction vehicle parking practices.
- Internal and external road conditions; and
- Timing of construction activities.

4.7 CO₂ Emissions

As set out in Section 12.7.2 of the EIAR (Ch12 Air Quality & Climate), during the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- Prevention of on site or delivery vehicles from leaving engines idling, even over short periods.
- Ensure all plant and machinery are well maintained and inspected regularly.
- Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.
- Sourcing materials locally where possible to reduce transport related CO2 emissions.

4.8 Construction Traffic Safety

As set out in Section 15.5.1.1 of the EIAR, all construction activities on-site will be governed by a Construction Traffic Management Plan (CTMP), the details of which will be agreed in full with Dublin City Council prior to the commencement of construction activities on site. An outline CTMP is included with the Preliminary Construction Management Plan enclosed separately with this application.

The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) workers environments, are fully considered and proactively managed / programmed respecting key stakeholders thereby ensuring that both the public's and construction workers safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment. The impact of the construction period will be temporary in nature.

4.8.1 Keeping Pedestrians & Vehicles Apart

The subject site is highly accessible to pedestrians and cyclists from Sandford Road and Milltown Road. The scheme proposals for the subject site will ensure pedestrians are given priority within the internal site layout to ensure desire lines within the site are accommodated, providing a good level of service, ensuring the risk of pedestrian conflict with vehicles is minimised and providing attractive convenient connections to external key walking desire lines. The internal site layout will provide a safe short-cut through the site from Milltown Road to Sandford Road and vice versa.

The proposed new access arrangements to the site will include the provision of dedicated pedestrian crossing facilities along key desire lines.

4.8.2 People On-site

All workers will hold a valid Construction Skills Certification Scheme (CSCS) white card certification and will be suitably qualified and competent to operate their respective vehicles, machinery or plant. The following will be tightly controlled:

- All site staff (including subcontractors) and visitors to the site will be briefed on the CEMP and all relevant health and safety requirements including those relating to on-site traffic.
- Workers who direct vehicle movements and manage access to-site will be suitably trained and authorised to do so. Appropriate checks will be undertaken when recruiting drivers/operators (including subcontractors).
- Induction training is mandatory and additional training will be provided to workers throughout the course of the construction period.

4.8.3 Signs & Instructions

Potential localised traffic disruptions during the construction phase will be mitigated through the implementation of industry standard traffic management measures such as the use of traffic signage. These traffic management measures shall be designed and implemented in accordance with the Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks" and "Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition" (2010).

5 RESOURCE AND WASTE MANAGEMENT

5.1 Overview and Context

An initial Resource & Waste Management Plan (RWMP) has been prepared by AWN Consulting and is included as Appendix 14.1 of the EIAR.

The proposed development will comprise the construction of 562 dwellings (comprising 6 no. three-bed courtyard houses and 556 No. apartment units 70 No. studios, 176 No. one-bed units, 267 No. two-bed units and 43 No. three-bed units). The development also includes the provision of cultural/community space with associated outdoor space, a café/restaurant, a creche within Block F with associated outdoor creche play area, an ancillary residents amenities and facilities within Blocks B & C as well as a single storey bin store and substation adjacent to Block F. Demolition works are also part of the development and Section 6 of the Preliminary Construction Management Plan prepared by DBFL Consulting Engineers provides an outline of this aspect noting that the development includes the demolition of c. 4,847.5 m² of existing structures on site including Milltown Park House (880m²), Milltown Park House Rear Extension (2,031m²), the Finlay Wing (622m²), the Archive (1,240m²) and the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5m²). Two buildings are to be retained within the proposed development (The Chapel and Tabor House).

The careful management of the demolition process including design of temporary protection measures is required to ensure that retained buildings are protected from damage. Mitigation requirements for the building being retained are outlined in Chapter 7 of the EIAR (Architectural Heritage). Some of the key points for inclusion in the RWMP are as follows:

- Carry out site investigation on potentially hazardous materials contained within each structural element.
- “Soft strip” internal finishes segregating into individual materials, and recyclable and non-recyclable materials. This includes fixed building services for space heating, cooling pipework, electrical equipment and cabling, etc.
- Identify external wall build up with the intention to segregate materials that can be recycled and not recycled.
- All structural elements will be demolished with the purposes of reuse. Structural steel elements will be removed and recycled.

The RWMP includes information on the legal and policy framework for construction and demolition (C&D) waste management in Ireland, estimates of the type and quantity of C&D waste to be generated by the Proposed Development and the Plan makes recommendations for the management of different waste streams that are likely to be generated. In that respect, the Plan provides guidance on waste minimisation and re-use and the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil and/or water).

The management of waste during the development of the site will be carried out following best practice principles and complying with the appropriate environmental standards and waste regulations.

5.1.1 Purpose of the RWMP

The RWMP aims to promote compliance with national and regional waste policy, most notably A Waste Action Plan for a Circular Economy, as well as the objectives and policies set out in the current Dublin City Development Plan 2022–2028. The RWMP was prepared with regard to recent EPA guidance. The Agency issued the ‘Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects’ (November 2021), which now effectively replace the earlier guidelines published by the National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006.

The RWMP is considered a “dynamic” document in that it will be updated and revised as development progresses. The document will be updated in line with all conditions and obligations which apply to any grant of permission. The RWMP should be read in conjunction with other relevant documentation, most notably the Construction Environmental Management Plan (CEMP), and both will require updating by the appointed main Contractor to identify, assess and satisfy the contract performance criteria as set out by various stakeholders. The RWMP be updated in sufficient detail to describe the framework for the Contractor’s management of waste arising, identifying permitted hauliers and authorised waste management outlets that will be engaged during the construction period. Following appointment, the main Contractor will be required to develop a more detailed contract-specific RWMP that is cognisant of the specific responsible persons (Resource & Waste Manager), equipment and hauliers/outlets that will be used over the course of the development.

Following appointment, the main Contractor will be required to develop a more detailed contract specific

RWMP that is cognisant of the specific responsible persons (Resource & Waste Manager), the framework for the Contractor's management of waste arising, and the authorised waste management hauliers/outlets that will be used over the course of the construction phase of the Proposed Development.

Therefore, the RWMP is a working document that will remain a valid, relevant document throughout the duration of the construction phase of development and will be subject to periodic review and will include revisions for inclusion of the following:

- Conditions that issue as part of planning permission relating to the Proposed Development.
- Waste Permits, Licenses and other authorisations used over the course of the project.
- Details of any unplanned incidents and description of outcomes.
- Details of materials (including waste) brought off-site.
- Details of materials brought onto site.
- Future legislative changes, including those relating to waste management that may be driven by the existing waste management policy for Ireland - A Waste Action Plan for a Circular Economy Ireland's National Waste Policy, 2020-2025.

The Plan outlines commitments associated with the management of resources and waste from the development and describes how these commitments will be managed by assigning responsibility for ensuring the effective implementation of provisions contained therein. The RWMP will be maintained as an integral part of the Health, Safety, Environmental and Quality Management system for the development and will be subject to the requirements of the site quality management system with respect to documentation control, records control, and other relevant measures. The primary distribution list for this document includes the following personnel:

- Developer (Sandford Living Limited)
- Main Contractor (To be confirmed).
- Site Manager and appointed Construction Environmental Manager/Designated Resource & Waste Manager.
- Sub-Contractor Organisations.

5.1.2 Objectives of the RWMP

A key overall objective of the Resource & Waste Management Plan (RWMP) developed by AWN Consulting is to communicate key waste management obligations and procedures that will apply to all contractor organisations

involved in the project, their subcontractors and employees involved in carrying out any form of construction activity at the site. This Plan defines project-specific measures that are to be put in place during construction works.

This plan will provide information necessary to ensure that the management of construction waste at the site is undertaken in accordance with the current legal and industry standards including the Waste Management Acts 1996 (As amended) and associated Regulations, Protection of the Environment Act 2003 as amended, Litter Pollution Act 1997 as amended and relevant guidelines including those issued by EPA in November 2021.

As outlined in Section 3 of the RWMP (Design Approach), the client and the design team have integrated the *'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post demolition and construction. As noted in the EPA guidelines, the approaches presented are based on international principles of optimising resources and reducing waste on demolition and construction projects through. In particular, this Plan is designed to ensure prevention, recycling, reuse, and recovery of waste. It also seeks to align with green procurement principles and off-site construction to minimise residual waste while also designing for materials optimisation during construction, as well as flexibility and deconstruction.

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the development and makes recommendations for management of different waste streams. This Plan is intended as a single document that can be used over the course of works at the site, as a point of reference relating to construction waste management for the Developer and appointed Contractor. The document provides the waste management framework to be adhered to over the course of construction of the Proposed Development.

In particular, the RWMP has the following objectives:

- To promote an integrated approach to waste management throughout the project construction stage and to set out appropriate responsibilities.
- To promote sustainable waste management in line with waste management hierarchy.
- To provide an outline for the management of wastes arising from construction works for the project in accordance with the relevant Irish and EU waste management legislation; and

- To provide a framework for the designers and the principal contractor to appropriately manage waste generated over the course of the development. The principal contractor, upon appointment, will be responsible for maintaining and revising the implementing the RWMP.

The RWMP outlines methods to achieve waste prevention, maximum recycling and recovery of waste and provides recommendations for the management of the various anticipated waste streams. The RWMP also provides guidance on the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g., contamination of soil or water resources). Section 5.2 below describes the applicable legal and policy framework for construction waste management in Ireland (both nationally and regionally).

5.1.3 Scope of the RWMP

The scope of the RWMP includes all solid wastes generated during the construction and demolition phases of the development. The scope does not include the management of wastewater where “wastewater” refers to any aqueous liquid wastes that are managed by either direct discharge to sewer or collection and transfer to a municipal wastewater treatment plant.

5.2 Relevant Waste Management Legislation, Policy & Best Practice

The scope of the RWMP includes all solid wastes generated during the construction and demolition of the proposed development consisting of the demolition of c. 4,847.5 m² of existing structures on site and the development of 562, cultural/community space, a café/restaurant as well as a creche at Milltown Park, Sandford Road, Dublin 6. The RWMP is considered a “live” document that will be updated prior to works commencing and at intervals during the progress of the development work. At all times, the management of waste must be compliant with legislation and must be considerate of up-to-date policy. This section provides an overview of current legislation and policy at a national and regional level.

5.2.1 National Legislation

The primary Irish waste management legislation is:

- Waste Management Act 1996 (as amended) and associated Regulations including those listed below.
- Circular Economy and Miscellaneous Provisions Act 2022.

Supporting Regulations, Legislation and Guidance include:

- European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) as amended 2011 (S.I. No. 323 of 2011) and 2016 (S.I. 315 of 2016).
- Waste Management (Collection Permit) Regulations (S.I. No. 820 of 2007) as amended 2008 (S.I. No 87 of 2008), 2015 (S.I. No. 197 of 2015) and 2016 (S.I. No. 24 and 346 of 2016).
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008) as amended 2014 (S.I. No. 320 and No. 546 of 2014) and as amended 2015 (S.I. No. 198 of 2015).
- Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010).
- Waste Management (Packaging) Regulations 2003 (S.I. 61 of 2003) as amended 2004 (S.I. No. 871 of 2004), 2006 (S.I. No. 308 of 2006) and 2007 (S.I. No. 798 of 2007).
- Waste Management (Landfill Levy) (Amendment) Regulations 2012 (S.I. 221 of 2012) as amended 2015 (S.I. No. 189 of 2015).
- European Communities (Shipment of Hazardous Waste exclusively within Ireland) Regulations 2011
- Waste Management (Shipment of Waste) Regulations (S.I. 419 of 2017).
- The Environmental Protection Act 1992 and amendments and subordinate regulations.
- Protection of the Environment Act 2003 (S.I. No. 413 of 2003).
- Construction Industry Research and Information Association (CIRIA) document 133 Waste Minimisation in Construction.
- Litter Pollution Act 1997 (S.I. No. 12 of 1997) and amendments and subordinate regulations.
- Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects, Environmental Protection Agency, 2021.
- Guidance on Soil and Stone By-products in the context of Article 27 of the European Communities (Waste Directive) Regulations, 2011, Version 3, EPA, June 2019.
- National Waste Management Plan for a Circular Economy 2024-2030
- Dublin City Development Plan 2022-2028.

5.2.2 Relevant Definitions and Duty of Care

A “Waste Holder” is defined at Section 5 of the Waste Management Act, which is the general definitions section, as amended by the EC (Waste Directive) Regulations 2011 (SI 126/2011).

“Waste holder” means the waste producer or the person who is in possession of the waste. Just because generated waste has been transferred to, for example, a waste transport company and they have control of the waste, does not mean that there is no liability attached to the original waste producer.

“Waste Producer” means anyone: (a) whose activities produce waste (in the Act referred to as the “original waste producer”); or (b) who carries out the pre-processing, mixing or other operations resulting in a change in the nature or composition of such waste.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 (as amended) and subsequent Irish legislation, is the principle of “Duty of Care”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery, or disposal (including its method of disposal). It is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, therefore waste contractors will be employed to physically transport waste to the final destination.

Following on from this is the concept of “Polluter Pays” whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged e.g., for transportation and disposal/recovery/recycling of waste. It is therefore imperative that the waste contractors engaged by the appointed Contractor are legally compliant with respect to waste transportation, recycling, recovery, and disposal. This includes the requirement that a contractor handle, transport, and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur arising from these activities.

It is the responsibility of the original waste producer or other waste holder in the chain to ensure that waste is appropriately managed. Liability in the case of inappropriate/unauthorised waste management can be attached to multiple bodies including the Developer. It is therefore critical that clear procedures for waste management are developed and followed by the Contractor over the course of the construction of the development.

5.2.3 National Policy - Waste Action Plan for Circular Economy

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025 and Ireland’s updated goals, actions and policies to be implemented during this period. This plan, ‘A Waste Action Plan for a Circular Economy’ replaces the previous national waste management plan, “A Resource Opportunity” (2012), and was prepared in response to the ‘European Green Deal’ which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities. The new policy is structured around the framework provided in the EU’s Second Circular Economy Action Plan launched in March 2020.

The Waste Action Plan for Circular Economy sets the direction for waste planning and management in Ireland up to 2025 and the document contains over 200 measures across various waste areas and includes a dedicated section (Section 11) in relation to Construction and Demolition Waste. A key objective now enshrined in national policy is to shift the focus back up the product life cycle, to remove or design out harmful waste, to extend the life of the products, materials and goods used and prevent waste arising in the first place – consistent with the concept of a zero-waste future. The policy is intended to move Ireland toward a circular economy shifting away from waste disposal, favouring circularity and sustainability by identifying and maximising the value of material through improved design, durability, repair and recycling. By extending the time resources are kept within the local economy, both environmental and economic benefits are foreseen. The policy looks to implement increased regulation and measures across every sector to attain its goal.

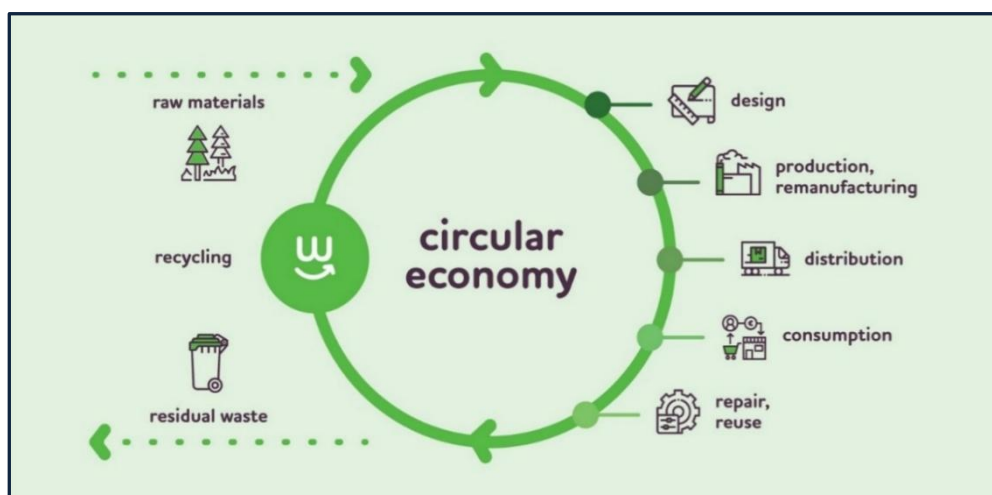


Figure 5-1 Circular Economy

Key elements for C&D Waste in the Waste Action Plan include:

- Project Ireland 2040 sets out the State's development goals over the next 20 years which allows for the opportunity to forecast large, specific C&D waste streams with a focus on preventing or efficiently managing the waste from these areas.
- Prevention of soil arisings which are a significant financial burden on the sector are to progress by placing value on the used material where possible. There is a strong focus on Article 27 by-product and Article 28 end-of-waste decision making process. These processes are to be streamlined and detailed guidance will be developed for specific problematic materials.
- The use of recycled construction materials will be incentivised (potentially by introducing a levy on virgin aggregates).
- The plan looks to make national end-of-waste decisions for specific construction and demolition waste streams at the earliest possible stage.
- The 2006 Best Practice Guidelines for construction and demolition waste will be revised to improve the Preparation of Waste Management Plans for Construction and Demolition Waste Projects (Note: this was completed with the issuance on new guidelines by the EPA in 2021).
- Utilisation of Green Public Procurement thresholds to encourage the use of recycled materials in construction projects.

5.2.4 Best Practice Guidance for Management of Waste from Construction Projects

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002, as one of the recommendations of the forum for the construction industry, in the Task Force B4 final report. The NCDWC subsequently produced 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' in July 2006 in conjunction with the then Department of the Environment, Heritage and Local Government (DoEHLG). The guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes.
- Waste disposal/recycling of C&D wastes at the site.
- Provision of training for Resource Manager and site crew.
- Details of proposed record keeping system.
- Details of waste audit procedures and plan and

- Details of consultation with relevant bodies.

The Environmental Protection Agency has recently new guidance in the form of Best Practice Guidelines for the Preparation of Resource Management Plans for Construction & Demolition Projects (April 2021). The appointed Contractor will be expected to have regard for new guidance which effectively replace the pre-existing (2006) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects. The guidelines have also been prepared to promote more circular design and construction principles in line with the EU Circular Economy Action Plan under the EU Green Deal. The circular economy model tries to avoid using unnecessary resources in the first place and to keep resources ‘in flow’ by means of effective and smart reuse and recycling strategies reducing the use of virgin materials. The design concept for the Development is cognisant of this in its proposed re-use of soil as a component of the development where possible.

5.2.5 Regional Waste Management Policy

Waste planning and policy in Ireland are currently implemented through the National Waste Management Plan for a Circular Economy 2024–2030. This National Plan replaces the former three Regional Waste Management Plans, including the Eastern-Midlands Region Waste Management Plan 2015–2021, which previously governed waste management activities within the Dublin City Council (DCC) area.

The NWMPCE provides the national framework for implementing EU and Irish policy on waste prevention, reuse, recycling and recovery, consistent with the Waste Action Plan for a Circular Economy 2020–2025 and the Whole of Government Circular Economy Strategy 2022–2023. While the National Plan does not set a specific recycling target for Construction & Demolition (C&D) waste, the EU Waste Framework Directive (2008/98/EC) requires Member States to achieve 70% preparing for reuse, recycling and other material recovery of non-hazardous C&D waste (excluding natural soils and stones). Updated targets may be introduced in future revisions of EU or national legislation.

Although superseded, the former Eastern-Midlands Region Waste Management Plan 2015–2021 continues to inform local authority actions through the Dublin City Development Plan and the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region. These policies collectively emphasise the transition from a traditional linear model of consumption to a circular economy, where materials are kept in use for as long as possible and waste generation is minimised.

Dublin City Council's Development Plan 2022–2028 sets out a range of policies and objectives aligned with national and regional waste policy, reflecting the shift towards circularity and resource efficiency. The Plan highlights climate action, waste prevention, and reduced embodied carbon, and includes the following relevant policies and objectives:

Policies

- CA8(f): Minimise construction waste and maximise reuse and recycling.
- CA8(g): Encourage use of low-embodied-carbon construction materials.
- CA23: Support the Waste Action Plan for a Circular Economy 2020–2025.
- CA24: Require compliance with EPA (2021) Best Practice Guidelines for RWMPs.
- SI27: Promote circular economy principles and sufficient regional waste infrastructure.
- SI28: Prioritise waste prevention, recycling, reuse and recovery.
- SI29 & SI30: Require adequate storage and segregation of waste in new development.

Objectives

- SIO14: Develop a citywide network of civic amenity, recycling, and reuse facilities.
- SIO16: Support implementation of the EMR Waste Management Plan 2015–2021 and subsequent national plans.

Consistent with the wider national and regional shift toward circularity, the Dublin City Development Plan places strong emphasis on the re-use and repurposing of existing buildings (15.7.1) as a means of reducing demolition waste, embodied carbon, and unnecessary consumption of resources. As outlined in Section 15.7.1 of the RWMP (Re-use of Existing Buildings), where demolition is proposed, the applicant must submit a demolition justification report to set out the rationale for the demolition having regard to the 'embodied carbon' of existing structures as well as the additional use of resources and energy arising from new construction relative to the reuse of existing structures. As demolition will occur on site, this report is already being prepared. Existing building materials will be incorporated and utilised in the new design proposals where feasible and a clear strategy for the reuse and disposal of the materials will be included where demolition is proposed.

In support of these principles, the National Waste Management Plan for a Circular Economy 2024–2030 establishes several strategic targets relevant to construction activity. Notably, the Plan seeks a 12% reduction in C&D waste generated nationally by 2030 (Target 1B) and requires the provision of reuse facilities at a minimum

of 10 Civic Amenity Sites (Target 3B). These measures aim to increase material recovery, extend product lifecycles, and reduce reliance on primary raw materials.

Waste disposal and recovery costs in the Dublin region also reflect national policy measures designed to incentivise prevention and recycling. These include the €85 per tonne landfill levy and the new €10 per tonne Waste Recovery Levy, which applies to materials accepted at authorised recovery facilities, including backfilling operations. These economic instruments encourage developers and contractors to maximise reuse and recycling during construction.

Aligned with national, regional, and local policy, this RWMP is designed to support efficient use of material resources, minimise waste generation at source, and promote the highest feasible level of reuse, recycling, and recovery. The Plan places particular emphasis on beneficial reuse of suitable site-won materials, where appropriate, thereby reducing the need for importation of new materials and lowering the overall environmental footprint of the development. As legislation and policy continue to evolve, particularly under the Waste Management Act 1996 (as amended), the Circular Economy and Miscellaneous Provisions Act 2022, and the EPA's 2021 RWMP Guidelines, this RWMP will be reviewed and updated as required to ensure continued alignment with national and EU best practice.

In recognition of national and regional waste management policy, it is a key objective of the RWMP to manage material resources more efficiently, where the value of products, materials and resources are maintained in the economy for as long as possible, to minimise the requirement of natural resources and to minimise the generation of waste. To achieve such resource efficiency, there is a need to divert materials from waste to beneficial re-use (for example through the re-use of site-won material where suitable and appropriate for road construction or landscaping purposes).

Specific objectives relating to this development are set out below. These will be kept under review as national and EU legislation evolves. At this stage, the principal objectives of the RWMP include:

- To ensure that waste management practices support proper planning and sustainable development, including protection of environmental resources such as water quality, biodiversity, Natura 2000 sites, archaeology and landscape character.

- To direct construction and demolition waste to appropriately authorised recycling, recovery, and reuse facilities within the Eastern–Midlands Region, in accordance with the National Waste Management Plan for a Circular Economy 2024–2030.
- To prepare Construction Environmental Management Plans (CEMPs) and Resource & Waste Management Plans (RWMPs) for larger-scale development, in accordance with:
 - EPA Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (2021), and
 - The relevant policies of the Dublin City Development Plan 2022–2028 (Policies CA8, CA24, SI27–SI30).
- To support the implementation of the National Hazardous Waste Management Plan 2021–2027, particularly in relation to appropriate handling, storage, transport and tracking of hazardous waste streams arising during the works.

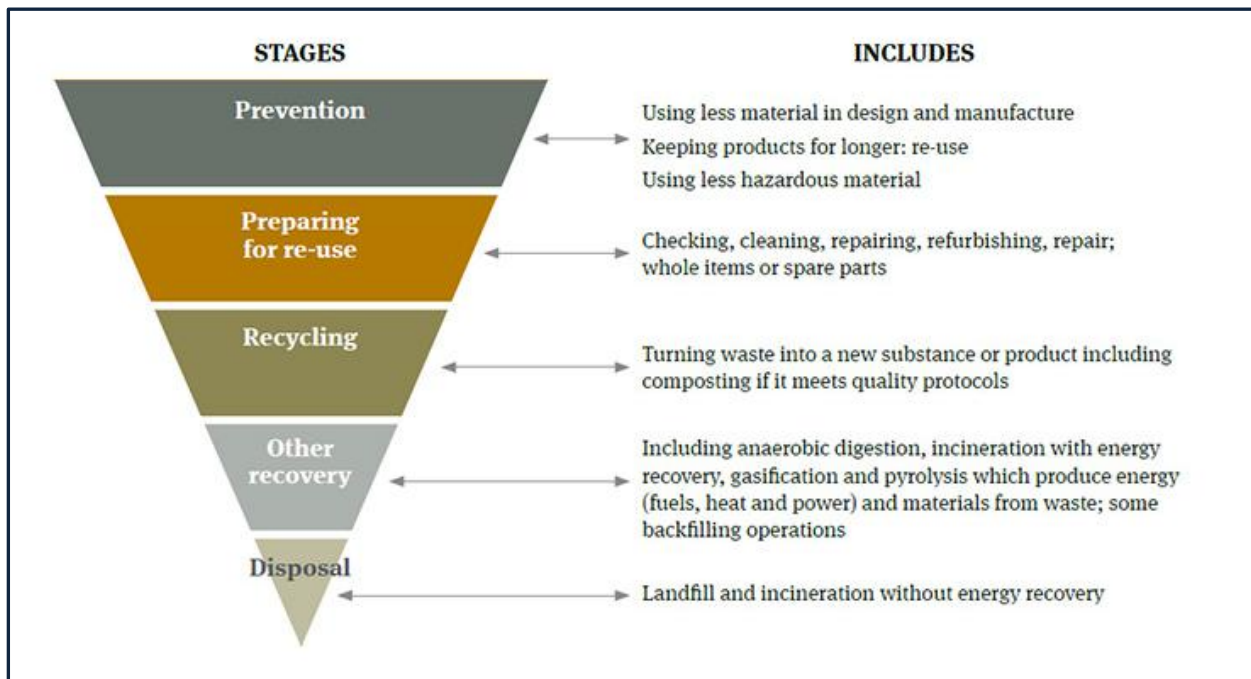


Figure 5.2 - Waste Hierarchy

- Transfer of Waste: To ensure that where waste is generated, this waste will be transported and disposed of in accordance with applicable legislation and without causing environmental pollution. The Plan will ensure that all waste leaving the site is transported by hauliers fully authorised (permitted by the

National Waste Collection Permit Office – NWCPO) to carry this waste to licensed facilities that are fully authorised to accept the waste.

- Waste Documentation: An inventory of such permits and licences will be maintained on-site and will be available for inspection.
- Awareness and Training: To ensure all site staff are aware of the relevant obligations under waste management legislation and to promote best practice (Section 6.1).
- Implementation: This RWMP provides a framework for the Principal Contractor to appropriately manage waste generated during the project. Upon appointment, the Principal Contractor will be responsible for implementing the findings and recommendations of the RWMP in their updated, detailed Plan¹.

5.3 Roles and Responsibilities

The Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects promotes that a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction and demolition methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.3.1 Role of the Client

The Client, Sandford Living Limited, is the body establishing the aims and the performance targets for the project.

- The Client has commissioned the preparation and submission of this RWMP as part of the design and planning submission
- The Client is to commission the preparation and submission of an updated RWMP as part of the demolition and construction tendering process.
- The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site.

¹ The Principal Contractor will provide a more detailed Plan incorporating the findings and recommendations of this RWMP and providing further waste management detail such as site-specific waste management procedures, responsibilities and documentation requirements. It is anticipated that the RWMP will provide a working document which can be amended and updated during the construction works as required.

- The Client will request the end-of-project RWMP from the Contractor.

5.3.2 Role of Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- Drafting and maintaining the RWMP through the design, planning and procurement phases of the project.
- Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team.
- Managing and valuing the demolition work with the support of quantity surveyors.
- Handing over of the RWMP to the selected Contractor upon commencement of demolition and/or construction of the development, in a similar fashion to how the safety file is handed over to the Contractor.
- Working with the Contractor as required to meet the performance targets for the project.

5.3.3 Future Role of the Contractor

The future demolition and construction contractors have not yet been decided upon for this RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the (including the Pre-Demolition) RWMP throughout the demolition and construction phases (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines.
- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP.
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site.
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable.

- Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during demolition/construction and reduce the amount of HGV loads required to remove material from site.
- Applying for the appropriate waste permit to crush concrete onsite.
- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility.
- End-of-waste and by-product notifications addressed with the EPA where required.
- Clarification of any other statutory waste management obligations, which could include on-site processing.
- Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- Preparing a RWMP Implementation Review Report at project handover.

5.4 Key Materials and Quantities anticipated during Construction Phase

Construction and Demolition (C&D) waste is defined as waste which arises from construction, renovation, and demolition activities together with all the waste categories mentioned in Chapter 17 of the List of Waste (LoW)². In the case of the proposed development at Milltown Park, this will involve the construction of a large-scale residential development consisting of 562 dwellings, cultural/community space, a café/restaurant as well as a creche.

Also included within the definition of construction and demolition waste are surplus and damaged products and materials arising during construction works or used temporarily during on-site activities.

Typical construction waste types which are likely to arise during the construction works are described in the sub-sections below and are set out in Table 5.1.

It is expected that there will be between 74,000m³ and 80,000m³ of soil, stones, clay and made ground excavated to facilitate construction of new foundations, underground services, and the installation of the proposed basement. Any suitable excavated material will be temporarily stockpiled for reuse as fill or landscaping, where

² Environmental Protection Agency, Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, Valid from 1st June 2015

possible, but reuse on site is expected to be limited and all of the excavated material except for 10,000m³ is expected to be removed offsite for appropriate reuse, recovery and/or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

5.4.1 Soil and Stone

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for in the excavation phase. There will be soil, stones, clay and made ground excavated to facilitate construction of new foundations, underground services, and the installation of the proposed basement. The project engineers (DBFL Consulting Engineers) have estimated that between 74,000m³ and 80,000m³ of material will need to be excavated to do so. It is currently envisaged that 10,000m³ will be able to be retained and reused onsite for landscaping, the remaining material, will need to be removed offsite due to the limited opportunities for reuse on site. This will be taken for appropriate offsite reuse, recovery, recycling and/or disposal.

When material is removed off-site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus

excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Regulation 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

5.4.2 Soil for Removal Off-site

- Where soil must be removed off-site, it will be transported to appropriately permitted or licensed facilities.
- Soil will be classified in accordance with the EPA 2015 guidance “Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous”.
- Waste Acceptance Criteria (WAC) testing will be completed where required and acceptance letters will be obtained prior to transport.
- All soils will be managed in accordance with waste legislation and duty of care obligations (details in Sections 5.6 and 5.7).

In the unlikely event that suspected contaminated soil is encountered, the precautionary principle will be adopted. Where doubt exists, suspect material will be segregated and stored separately and appropriately sampled, analysed, and described in accordance with the EPA 2015 Report “Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous”. It will be a requirement in such instances that soil for off-site transfer is appropriately characterised through Waste Assessment Criteria (WAC) testing and subsequent waste classification. Results of testing will be provided to potential authorised waste outlets, and a waste acceptance letter will be required prior to material moving off-site. It will be the responsibility of the Contractor’s designated Resource & Waste Manager to ensure that sampling, analysis, and classification, if required, is completed and that material to be transferred from the site is fully categorised.

5.4.3 Temporary Storage of Soil Material

Temporary stockpiling of soils may be required during the works. Where this occurs:

- A designated temporary storage area will be identified by the Contractor.
- Stockpiles will be labelled and clearly segregated.
- Any suspected contaminated soils (if encountered) will be isolated and tested in accordance with EPA guidance.
- Stockpiles will be dampened down when necessary to minimise dust generation.
- Stockpiles will be located to prevent sediment-laden runoff entering existing drainage systems.

5.4.4 Other Construction Waste

There will be waste materials generated from the demolition and refurbishment of the existing buildings onsite, to accommodate the proposed development. The demolition will principally consist of: the demolition of c. 4,847.5 sq m of existing structures on site including Milltown Park House (880 sq m); Milltown Park House Rear Extension (2,031 sq m); the Finlay Wing (622 sq m); the Archive (1,240 sq m); and the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m); the refurbishment and reuse of Tabor House (1,575 sq m) and the and the provision of a single storey glass entrance lobby to the front and side of the Chapel (51.9 sq m);

The volume of waste generated from renovation will be more difficult to segregate than waste generated from the construction phase, as many of the building materials will be bonded together or integrated i.e. plasterboard on timber ceiling joists, steel embedded in concrete, etc. There will also be a surplus of building materials, such

as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated as well as municipal-type waste from the compound area. To reduce the generation of waste from the development, the construction contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from demolition and construction workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

Silt & Sludge

During the demolition and construction phase, silt and petrochemical interception will be carried out on run-off and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed off-site.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues, etc., will be disposed of in a separate skip and recycled off-site.

Scrap Metal

Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling.

Cardboard Packaging

Cardboard packaging can also be recycled. Cardboard will be flattened and placed in a covered skip to prevent it getting wet.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the demolition and construction phases will be stored in a separate skip, pending collection for recycling. The site Manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the demolition and construction works are expected to be clean, inert material and will be recycled, where possible. If concrete is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from DCC.

Other Recyclables

Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip / receptacle will be examined by a member of the waste team (see Section 9.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and / or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise

potential for environmental impacts. Hazardous waste will be recovered, wherever possible, and failing this, disposed of appropriately.

On-Site Crushing

It is currently not envisaged that the crushing of waste materials will occur on-site. However, if the crushing of material is to be undertaken, a mobile waste facility permit will first be obtained from DCC and the destination of the accepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the DCC waste unit.

It should be noted that until a demolition and construction contractors are appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any waste offsite, details of the proposed destination of each waste stream will be provided to DCC by the project team.

Table 5.1 below presents a list of wastes that are likely to be generated during construction works. Portable sanitation facilities will be leased so that foul waste will be managed by the hire company and safely removed off-site for appropriate disposal. The relevant List of Waste Codes (LoW) (formerly EWC codes) are included.

Table 5.1 – Waste Materials that may arise during the Construction Phase

Non-Hazardous	List of Waste Code	Comments
Soil and Stone	17 05 04	Soil waste will be minimised based on inherent design and material will be re-used on site where possible. Where off-site transfer is required, material may be considered a by-product if conditions are met. Alternatively, it will be waste under LoW 17 05 04.
Wood/Timber	17 02 01	Small amount of timber will be generated from off-cuts, damaged pieces, pallets/crate packaging. Dedicated skip will be provided.
Glass	17 02 02	Dedicated skip to be provided for broken glass etc.
Cardboard	20 01 01	Waste will be produced from shipping containers, packaging etc. Cardboard will be flattened and placed in covered container to prevent it getting wet.
Green waste	20 02 01	All bituminous mixtures, coal tar and tarred products generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for appropriate recycling/recovery/disposal.

Organic (food) waste	20 01 08	All organic (food) waste generated during the construction phase is to be segregated and stored in a secure, closed container and handled by a licensed contractor for appropriate recycling/recovery/disposal.
Metal	17 04 codes	Metal waste will be segregated at source and stored in dedicated skips (ferrous/aluminium)
Electrical and electronic components	20 02 35 & 36	All electrical and electronic components generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for appropriate recycling/recovery/disposal.
Insulation Materials	17 06 04	Insulating materials will be source segregated and place in designated covered skip in waste management area.
Plastic	17 02 03	Generated primarily from packaging and off-cuts. All recyclable plastic will be segregated at source and stored in a dedicated recycling skip.
Gypsum based construction material	17 08 01 & 02	Gypsum waste (off cut or damaged plaster boards) will be stored in designated covered skip in waste management area.
Concrete	17 01 01	Concrete waste
Bricks	17 01 02	Waste likely to be generated during the construction phase of the project. Likely to be broken/damaged construction materials.
Tiles and ceramics	17 01 03	Waste likely to be generated during the construction phase of the project. Likely to be broken/damaged construction materials.
Mixture of Concrete, bricks, tiles, ceramics	17 01 07	Waste will be generated from broken/damaged construction materials.
Mixed Construction & Demolition Wastes	17 09 04	Waste likely to be generated during the construction phase of the project
Mixed Municipal	20 03 01	Waste from on-site canteen.
Hazardous	List of Waste Code	Comments
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30	Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum.
Liquid fuels	13 07	As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in a dedicated, secure area of the site.
Batteries and accumulators	20 01 33 & 34	All batteries and accumulators generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for recycling/recovery/disposal.

Treated wood, glass, plastic, containing hazardous substances	17 02 04	All treated wood, glass, and plastic containing hazardous substances generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for appropriate recycling/recovery/disposal.
Bituminous mixtures, coal tar and tarred products	17 03 01,02,03	All bituminous mixtures, coal tar and tarred products generated during the construction phase are to be segregated and stored in a secure bunded area and handled by a licensed contractor for appropriate recycling/recovery/disposal.

5.4.5 General Breakdown of Construction Waste Types (non-soil)

As with all construction projects, whilst the appointed Contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised, it is inevitable that waste will be produced from surplus materials including broken or off-cuts of timber, plasterboard, concrete, tiles and bricks.

The table below shows the breakdown of C&D waste types produced on a typical site based on data from the *EPA National Waste Reports*, the *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned (2015)* and other research reports.

Table 5.2 - Typical breakdown of waste materials generated on a typical Irish construction site

Waste Type	Percentage
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	100

5.4.6 Demolition Waste Generation

The demolition stage will involve the partial demolition of the existing buildings onsite. The anticipated demolition waste and rates of reuse, recycling / recovery and disposal are shown in the Table below:

Table 5.4 – Preliminary estimate off-site reuse, recycle and disposal tonnages for demolition waste (As outlined in Section 6.3 of the RWMP prepared by AWN Consulting).

Waste Type	Tonnes	Reuse		Recycle		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Glass	261.8	0	0.0	85	222.5	15	39.3
Concrete, Bricks, Tiles, Ceramics	1483.3	30	445.0	65	964.2	5	74.2
Plasterboard	116.3	30	34.9	60	69.8	10	11.6
Asphalts	29.1	0	0.0	25	7.3	75	21.8
Metals	436.3	5	21.8	80	349.0	15	65.4
Slate	232.7	0	0.0	85	197.8	15	34.9
Timber	349.0	10	34.9	60	209.4	30	104.7
Asbestos	1.0	0	0.0	0	0.0	100	1.0
Total	2909.5		536.6		2020.0		352.9

5.4.7 Construction Waste Generation

The following table indicates predicted construction waste generation for the Proposed Development based on the information available to date along with the targets for management of the waste streams. The predicted waste amounts are based on an average large-scale development waste generation rate per m², using the waste breakdown rates shown above. The table is indicative and will be refined by the Contactor in development of a detailed Construction Resource & Waste Management Plan that will be maintained and refined over the course of the construction period.

Table 5.5 – Preliminary estimate off-site reuse, recycle and disposal tonnages for construction waste (As outlined in Section 6.4 of the RWMP prepared by AWN Consulting)

Waste Type	Tonnes	Reuse		Recycle		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	1037.7	10	103.8	80	830.1	10	103.8
Timber	880.4	40	352.2	55	484.2	5	44.0
Plasterboard	314.4	30	94.3	60	188.7	10	31.4
Metals	251.6	5	12.6	90	226.4	5	12.6
Concrete	188.7	30	56.6	5	122.6	5	9.4
Other	471.7	20	94.3	0	283.0	0	94.3
Total	3144.4		713.8		2135.1		295.6

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process. These quantities are provisional only and subject to further determination during construction works. The appointed Contractor for the development will be required to prepare a more detailed construction resource and waste management plan prior to work commencing which should refine the above estimated waste figures.

5.5 Methods Proposed for Prevention, Re-use and Recycling of Waste

5.5.1 Training/Raising Awareness

The RWMP will be integrated into site operations at the development as soon as the construction commences. The necessity to manage waste in accordance with the objectives of the Plan will form an integral part of site induction for all employees and sub-contractors. As referred to above, the RWMP is a “Living” document to be developed and maintained by the appointed Contractor over the course of the development.

The Contractor will designate a suitably experienced and qualified person as Construction Resource Manager (RM) for the Contract. The Resource Manager will have overall responsibility for the implementation of the Plan and will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan. At the operational level, the Resource Manager (RM) will be designated to ensure commitment, operational efficiency and accountability during the construction. The RM will be assigned the direct responsibility to ensure that the discrete operations stated in the Plan are performed on an on-going basis.

Training of site personnel in relation to on-site waste management practices is the responsibility of the Resource Manager and, as such, a waste awareness course will be held for all site crew to outline the provisions and objectives of the Construction Resource & Waste Management Plan and to detail the segregation of waste materials at source. This will be incorporated with other site training needs such as general site induction, dust minimisation health and safety and manual handling.

All site personnel and sub-contractors will be instructed in relation to the provisions of the Resource & Waste Management Plan (RWMP). Site staff will be informed of the responsibilities which fall upon them due to provisions contained within these documents.

The use of Informative Posters and Toolbox talks will be used to reinforce the key messages within the RWMP. The need for specialist training, as may be required, will be assessed or provided as required.

Basic waste management training will focus on objectives of the Plan and on legal requirements. Training will describe the materials to be segregated, the storage methods and the location of a dedicated Waste Storage Area (WSA) at the site. A sub-section on hazardous wastes will be incorporated into the training program highlighting risks posed by these wastes to human health and the environment.

5.5.2 Waste Minimisation

By reusing materials on site, there will be a reduction in the transport and recycle / recovery / disposal costs associated with the requirement for a waste contractor to take the material off-site. Clean and inert soils, gravel, stones, etc., which cannot be reused on-site may be used as access roads or capping material for landfill sites, etc. This material is often taken free of charge or at a reduced fee for such purposes, reducing final waste disposal costs.

The demolition stage will include an assessment of the potential reuse and recycling of deconstructed components, elements and materials and their potential to be in compliance with relevant requirements relating to by-product, end-of-waste and waste data reporting. A specific audit for potentially hazardous material (asbestos, polychlorinated biphenyls (PCBs), persistent organic pollutants (POPs), etc.) and document procedures for removal of same prior to main demolition works will be undertaken.

Salvageable metals will earn a rebate, which can be offset against the costs of collection and transportation of the skips. Clean, uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste. Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes, such as timber, from a site than mixed waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140 - €160 per tonne of waste which includes an €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations. The Circular Economy (Waste Recovery Levy) will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc., is also used as fill / capping material, wherever possible.

5.6 Waste Haulage and Disposal/Recovery

Waste materials generated will be segregated on-site, where it is practical. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source, where feasible. All waste receptacles leaving the site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Dublin region that provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or license, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) published by the EPA in September 2023, establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be waste. Material from this proposed development will be investigated to see if it can cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

During demolition and construction, some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (per Article 30 (1) (b) of the Waste Collection Permit Regulations 2007, as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste off-site in their work vehicles (which are not designed for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s), detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contractors who collect waste from

the site and COR / permit / licence for the receiving waste facility for all waste removed off-site for appropriate reuse, recycling, recovery and / or disposal.

Dedicated bunded storage containers will be provided for hazardous wastes which may arise, such as batteries, paints, oils, chemicals, if required.

The anticipated management of the main waste streams is outlined in Section 5.4 above. In the case of soil and stone (17 05 04) and mixed construction and demolition waste (17 09 04), there are several licensed waste management facilities located across County Dublin and the east of Ireland that are authorised to accept these waste codes. Outlets for hazardous waste material are less common, and this material would require management by a specialist company (e.g., Enva).

5.7 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by a weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project Resource & Waste Manager.

All movement of waste and the use of waste contractors will be undertaken in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR / permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager. If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all Local Authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences, etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on-site.

5.7.1 Record Keeping

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arisings on site.

As outline in Section 10 of the RWMP waste tracking log will be used to track each waste movement from the site. On exit from the site, the waste collection vehicle driver will stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or Waste Transfer Form (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel will complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor
- Company waste contractor appointed by, e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- LoW
- Weight/Quantity

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site. The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the DCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, will provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

5.8 Waste Audit Procedure

Section 11 of the RWMP outlines the waste audit procedure. The appointed Resource Manager will be responsible for conducting a waste audit at the site during the C&D phase of the proposed Project. Contact details for the nominated RM will be provided to the DCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

A review of all waste management costs and the records for the waste generated and transported off-site will be undertaken mid-way through the demolition and construction phase of the proposed Project. If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery / reuse / recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development.

5.9 Communications/Training

A member of the demolition and construction team will be appointed as the Resource Manager to ensure commitment, operational efficiency and accountability in relation to waste management during the C&D phases of development.

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site. The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the Waste Manager to delegate

responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

Training of the site crew in relation to waste is the responsibility of the RM and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program, and the particular dangers of each hazardous waste will be explained.

5.10 Additional Content for Contractors Resource and Waste Management Plan

The future demolition and construction contractors have not yet been decided upon for this RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the (including the Pre-Demolition) RWMP throughout the demolition and construction phases (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines.
- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP.
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site.
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable.
- Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during demolition/construction and reduce the amount of HGV loads required to remove material from site.
- Applying for the appropriate waste permit to crush concrete onsite.

- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility.
- End-of-waste and by-product notifications addressed with the EPA where required.
- Clarification of any other statutory waste management obligations, which could include on-site processing.
- Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- Preparing a RWMP Implementation Review Report at project handover.

5.10.1 Review of Plan

The effectiveness of the Resource Waste Management Plan will be monitored, assessed and audited over the course of the development. The Plan will be reviewed at regular intervals during the construction to ensure maximum effectiveness is maintained. Several revisions of this Plan are likely over the course of the construction of the Proposed Development.

6 ENVIRONMENTAL INCIDENTS AND OCCURRENCES

6.1 Pollution Prevention and Environmental Risk Assessment

The appointed Contractor shall assess the environmental risks associated with each activity prior to its commencement and shall identify the controls to be implemented. The Contractor's risk assessment and method statements (RAMS) shall include an environmental risk assessment and identification of suitable controls to prevent environmental impacts occurring during construction activities.

As part of this process, the Contractor shall establish a list of the substances to be used during the works and shall ensure that, as a minimum, the following information is available at the site and is provided to personnel using the substances:

- Copies of up-to-date Safety Data Sheets (SDSs).
- Details of the environmental controls to be implemented when storing, handling and transporting the substances.
- Details of the health and safety controls to be implemented when storage, handling and transporting the substances.
- The emergency response equipment and resources, including spill response equipment, suitable for deployment in the event of an incident or accident.
- The personal protective equipment (PPE) to be used when handling the substances.

The above information shall also be provided to Sandford Living Limited and/or their representative.

6.2 Notification, Management and Communication of Environmental Incidents

As referred to in Section 3.3, the Contractor (CEM) is responsible for managing any incidents or emergency situations that arise during construction of the development. All such environmental incidents will be notified to the Client or their representative within 24-hours of occurrence.

The Contractor shall establish within its management system, a system for notification, management and communication of environmental incidents that occur at the site during construction.

The updated CEMP will provide details on the criteria utilised to rank an incident and will typically include:

- The potential environmental impact.

- The broader impact on human health.
- The remedial action necessary.
- The likely timescale of short term and longer-term environmental consequences.
- The environmental consequences of likely response action.
- Any injury or loss of life caused by the incident.

As guidance, the Contractor will refer to the five-tier classification system as set out in the EPAs Guidance to Licence holders on the Notification, Management and Communication of Environmental Incidents.

7 EMERGENCY PREPAREDNESS AND RESPONSE

7.1 Emergency Response Plan

The Contractor will be required to develop and maintain an Emergency Response Plan. The Sections below provide an overview of procedures and measures to be adopted in the event of an emergency. This will be a working document that requires updating throughout the various stages of the Proposed Development. It will be the Contractor's responsibility to ensure site staff are trained in the implementation of the Emergency Response Plan as well as the Construction Health & Safety Plan referred to in Section 3.1.

7.2 Initial Steps

In the event of an emergency situation, the Contractor will carry out the following:

- Establish the scale of the emergency situation and identify the number of personnel, if any, have been injured or are at risk of injury.
- Make safe the area if possible and ensure that there is no identifiable risk exists with regard to dealing with the situation e.g., if a machine has turned over, ensure that it is in a safe position so as not to endanger others before assisting the injured.
- Contact the required emergency services.
- Take any further steps that are deemed necessary to make safe or contain the emergency incident e.g., cordon off an area where an incident associated with electrical issues has occurred.
- Contact any regulatory body or service provider as required.
- Contact the next of kin of any injured personnel where appropriate.

7.3 Site Evacuation

A site evacuation/fire drill procedure will be established to provide the basis for carrying out the immediate evacuation of all site personnel in the event of an emergency. The following steps will be taken:

- Notification of the emergency situation. Provision of a siren to notify all personnel of an emergency situation.
- An assembly point will be designated in the construction compound areas and will be marked with a sign. All site personnel will assemble at designated points.
- A roll call will be carried out to account for all personnel onsite.

- The Contractor will advise the Client or their representative when all personnel have been accounted for. At this time, the Contractor will decide the next course of action which be determined by the situation that exists at that time. The Contractor will advise all personnel accordingly.

All personnel will be made aware of the evacuation procedure during site induction. The Fire Services Acts of 1981 and 2003 require the holding of fire safety evacuation drills at specified intervals and the keeping of records of such drills.

7.4 Spill Response & Control Measures

The following steps provide the procedure to be followed in the event of any significant spill or leak:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If possible, cover or bund off any vulnerable areas where appropriate such as drains or watercourses.
- If possible, clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Contractor immediately giving information on the location, type and extent of the spill so that they can take appropriate action and further investigate the incident to ensure it has been contained adequately.
- A Representative for Sandford Living Limited will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The Contractor will notify the appropriate regulatory body such as Dublin City Council and the EPA, if deemed necessary.

In relation to the prevention of pollution to soils and waters, the Emergency Response Plan will include the following information:

- Containment measures.
- List of appropriate equipment and clean-up materials.

- Maintenance schedule for equipment.
- Details of trained staff, location, and provision for 24-hour cover.
- Details of staff responsibilities.
- Notification procedures to inform the relevant environmental authorities: Dublin City Council and the EPA.
- Audit and review schedule.
- Telephone numbers of Dublin City Council's Water Pollution Control Section (Protection of Water Bodies Office) and Drainage Division; and
- List of specialist pollution clean-up companies and their telephone numbers.

7.5 Emergency Access

The Contractor will maintain emergency access routes throughout construction and identify site access points for each working area.

7.6 Extreme Weather Events

The Contractor will consider the impacts of extreme weather events and related conditions during construction. The Contractor will use a short to medium range weather forecasting service from Met Éireann, or other approved meteorological data and weather forecast provider to inform short to medium term programme management, environmental control and mitigation measures. The Contractor must consider all relevant measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements for staff. As appropriate, method statements should also consider extreme weather events where risks have been identified.

7.7 Environmental Incidents

All environmental incidents (including emergency situations and accidents that can have an impact on the environment) will be managed in accordance with the following procedure. In the event of an incident, the Contractor shall:

- Carry out an investigation to identify the nature, source and cause of the incident and any emission arising from the incident.
- Isolate the source of any such emission.
- Evaluate the environmental pollution, if any, caused by the incident.

- Identify and execute measures to minimise the emissions/malfunction and the effects thereof.
- Identify the date, time and place of the incident.
- Notify all relevant authorities including Dublin City Council.
- Notify Sandford Living Limited or their representative within 24 hours of the incident occurring.

The Contractor shall implement a process within 48 hours of the incident occurring, or as otherwise agreed:

- Identify and put in place measures to avoid reoccurrence of the incident.
- Identify and put in place any other appropriate remedial actions.
- Carry out environmental monitoring where required.

Details of close-out of all incidents shall be submitted to the Client or their representative in the monthly environmental report.

8 COMMUNICATIONS PLAN

8.1 Community and Stakeholder Engagement

The Contractor will take all reasonable steps to engage with stakeholders in the local community, focusing on those who may be affected by the construction works including nearby residents, businesses, community resources and specific vulnerable groups. A Project Liaison Officer (PLO) will be appointed before any construction works commence to manage all public relations issues relating to the construction works. The PLO will be responsible for community liaison matters, information issues, press related matters, liaison with relevant authorities, the public, and the media regarding the Contractor's operations. The PLO will also be responsible for informing the local community in advance of any activities being undertaken in their areas. The PLO will be required to liaise with the Gardaí, property owners, resident groups and other bodies with respect to traffic management, construction and all other public relations matters which may arise.

8.2 Regular Consultation and Public Communications

As referred to in section 3.2, the appointed Contractor will be required to prepare a Community Liaison Plan, which will include details of how community, road users and affected residents will be notified in advance of the scheduling of major works, associated traffic management and on the progress of the construction works. The Contractor will facilitate regular consultation in accordance with the specifications and cooperate with this plan. Where communications are related to environmental issues, the CEM will be informed and engaged with, as appropriate. Details of the available communication channels and designated points of contact for members of the public to contact during construction will be established in advance of the commencement of construction and displayed around the site.

8.3 Advance Notice of Works

Through the appointment of a PLO, the Contractor will ensure that local residents, businesses, occupiers, general users of the area and stakeholders are informed in advance of construction activities that may affect them. Relevant obligations and procedures in relation to advance notice of works will be identified in the Communications Management Plan. All notifications will detail the nature, estimate duration, and working hours. All notifications will include a project-specific contact number to which any enquires can be directed. The Contractor will be responsible for preparing and issuing the notifications subject to the relevant approval and consents.

8.4 Complaints

All complaints of an environmental nature will be recorded. A Complaints Register for internal communication and for receiving, documenting and responding to environmental complaints from external parties will be established and maintained by the Contractor. When a complaint is received, the following information must be taken:

- Date and time of the complaint are recorded.
- Name of complainant (if provided).
- Nature of complaint.
- All complaints received from external sources must be reported to the Construction Environmental Manager and senior site management.

After a complaint is received the following action will be taken:

- Complaints will be investigated on site as soon as possible after the complaint has been received.
- Works may be stopped in the particular area.
- Remedial action will be taken to ensure the complaint is closed out (plant or equipment removed from site, works in particular areas ceased, etc.).
- All environmental complaints will be recorded in the complaints register.
- The register will be maintained by the Construction Environmental Manager who will allocate responsibility for resolving any issues and follows up complaints to ensure they are resolved.
- Any issues to be resolved or followed up must be added to the site action register by the Construction Environmental Manager and all actions closed out and dated where applicable.
- Environmental complaints shall be forwarded to Sandford Living Limited and/or their representative within 24 hours and recorded in the main Contractor weekly progress report and monthly programme updates.
- Complaints should be reported to relevant authorities depending on contract documents and agreements, for example:
 - Dublin City Council
 - EPA
 - Other relevant authorities/third parties required per construction contract.
- Complaints will be reviewed during internal audits by the CEM and by Sandford Living Limited / their Representative during external audits.

9 CEMP – COMPLIANCE AND REVIEW

Routine inspections of construction activities will be carried out on a daily and weekly basis by the CEM and to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with this CEMP.

Environmental audits will be carried out during the construction of the project. In contrast to inspection activities, audits are designed to shed light on the underlying causes of non-compliance and not merely detect the non-compliance itself. In addition, audits are the main means by which system and performance improvement opportunities may be identified. Environmental audits will be carried out by contractor staff or alternatively by external personnel acting on their behalf. It is important that an impartial and objective approach is adopted. Environmental audits will be conducted at planned intervals to determine whether the CEMP is being properly implemented and maintained. The results of environmental audits will be provided to project management personnel.

9.1 Environmental Records

The Contractor shall maintain records of all environmental documentation including monitoring, test results, method statements and plans. All records will be kept up to date and be made available for audits, inspections and periodical reporting. The Contractor will maintain the following environmental records (as a minimum) that will be made available for inspection to Sandford Living Limited / their representative and the relevant authorities, if required:

- Management Plans.
- Relevant Licences.
- Register of Environmental Incidents.
- Register of Environmental Complaints.
- Corrective Actions Reports.
- Records of Environmental Inspections and Audits.
- Records of environmental training.
- Environmental Monitoring Data (where applicable).
- Soil monitoring reports (where applicable) and details of waste classification.
- Waste and chemical inventories.

- Details of retained environmental specialists.
- Health and Safety records.
- Correspondence with Regulatory Bodies.
- Waste transfer records and all relevant permits, licences and letters of acceptance.
- Details of revisions to the CEMP.

9.2 Review of Plan

As per the section above, the effectiveness of the Plan will be strictly monitored, assessed and audited. The CEMP should be read in conjunction with other supporting documentation that accompanies the planning application as detailed in Section 1 above.

The Plan will be reviewed at regular intervals, most notably by the appointed Contractor following the granting of planning permission to incorporate all conditions and obligations which are contained within the planning permission. The CEMP will also require updating by the selected Contractor to identify relevant personal to occupy the key positions identified in the Plan and to identify, assess and satisfy the contract performance criteria as set out by the various stakeholders. The CEMP due to its structure and nature is a “dynamic” document and will also require regular updating and revision throughout the construction period. Therefore, this is a working document and will be developed further prior to and during construction.

Triggers for amendments to the CEMP will include:

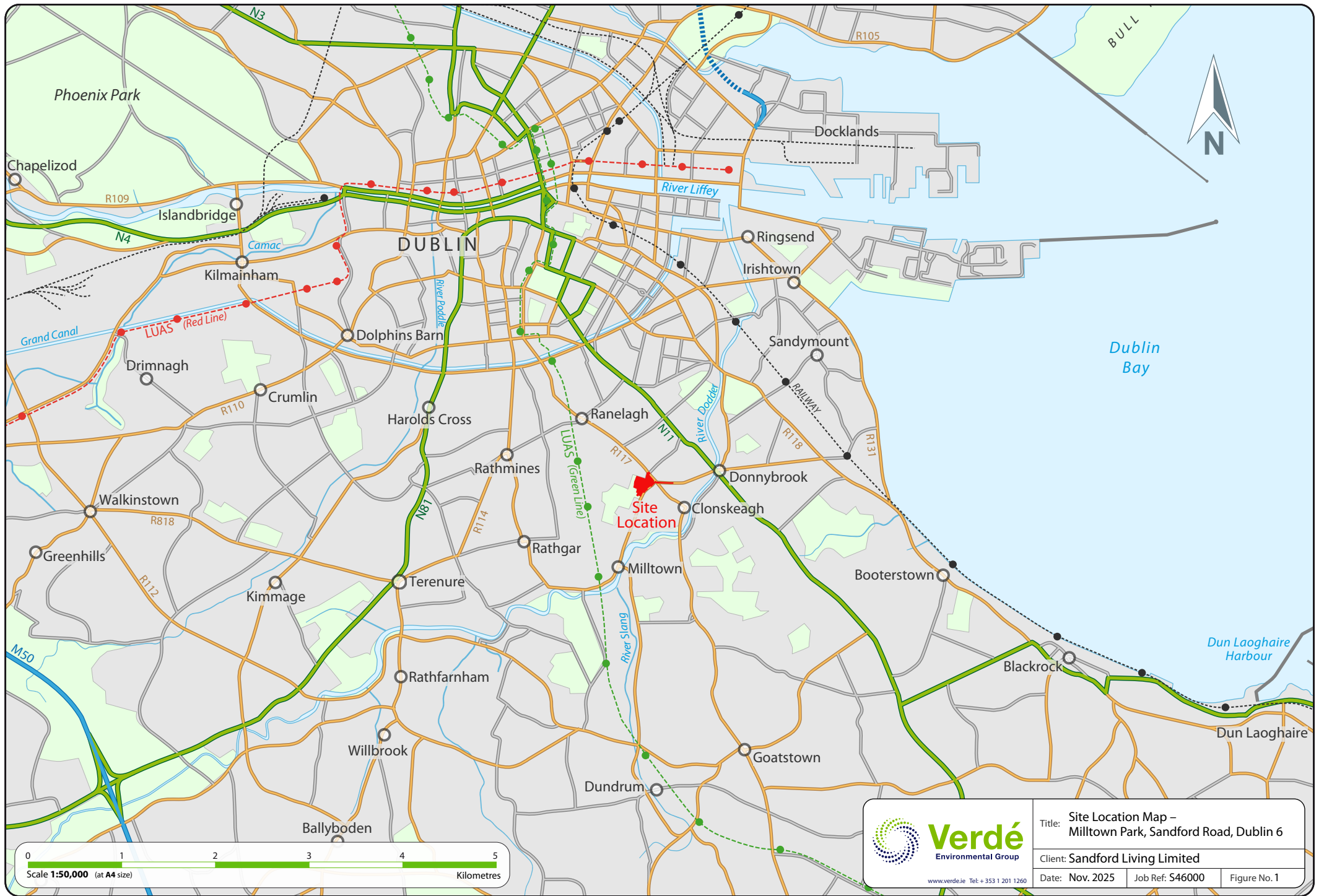
- When there is a perceived need to improve performance in an area of environmental impact.
- As a result of changes in environmental legislation applicable and relevant to the project.
- Where the outcomes from auditing establish a need for change.
- Where additional information becomes available as a result of site investigation.
- Where Work Method Statements identify changes to a construction methodology to address high environmental risk and
- As a result of an incident or complaint occurring that necessitates an amendment.

10 REFERENCES

- CIRIA Technical Note 138 'Planning to reduce noise exposure in construction' – a good source of guidance on design and assessment for noise control (ISBN 0 86017 317 8).
- British Standard BS 5228 'Noise and vibration control on construction and open sites', particularly Parts 1, 2 and 4 – a good design and management guide for control of noise and vibration.
- CIRIA (2001) Guideline Document C532 Control of Water Pollution from Construction Sites
- Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes, NRA, 2011
- Eastern-Midlands Region Waste Management Plan, 2015 – 2021, Eastern Midlands Regional Waste Office, 2015
- National Waste Management Plan for a Circular Economy 2024–2030, Regional Waste Management Planning Offices, 2024
- Dublin City Development Plan (2022 – 2028), June 2022.
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects, June 2006
- Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, Environmental Protection Agency, November 2021
- A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy, 2020 – 2025, Department of Communications, Climate Action and Environment
- Whole of Government Circular Economy Strategy 2022–2023, Department of the Environment, Climate and Communications (DECC), 2022
- Article 27, European Communities (Waste Directive) Regulations, 2011, S.I. No. 126 of 2011
- Guidance on Soil and Stone By-Products, in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3; June 2019, Environmental Protection Agency
- A Guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011)
- Guidance on waste acceptance criteria at authorised soil recovery facilities, Environmental Protection Agency, January 2020
- Appropriate Assessment Screening Report, DNV, 2025.
- Preliminary Construction Management Plan, DBFL Consulting Engineers, 2025
- Resource & Waste Management Plan, AWN Consulting Ltd., 2025.

- Site Specific Flood Risk Assessment, DBFL Consulting Engineers, 2025.
- IAPS Site Assessment Report & Management Plan, Invasive Plant Solutions, 2025.
- Environmental Impact Assessment Report, Thornton O'Connor, 2025.
- Infrastructure Design Report, DBFL Consulting Engineers, 2025.
- Traffic Impact Assessment Report, DBFL Consulting Engineers, 2025.
- Architectural Design Statement, O'Mahony Pike Architects, 2025.
- Lighting Report, Pritchard Themis, 2025.
- Bicycle Design Statement, DBFL Consulting Engineers, 2025.

FIGURES



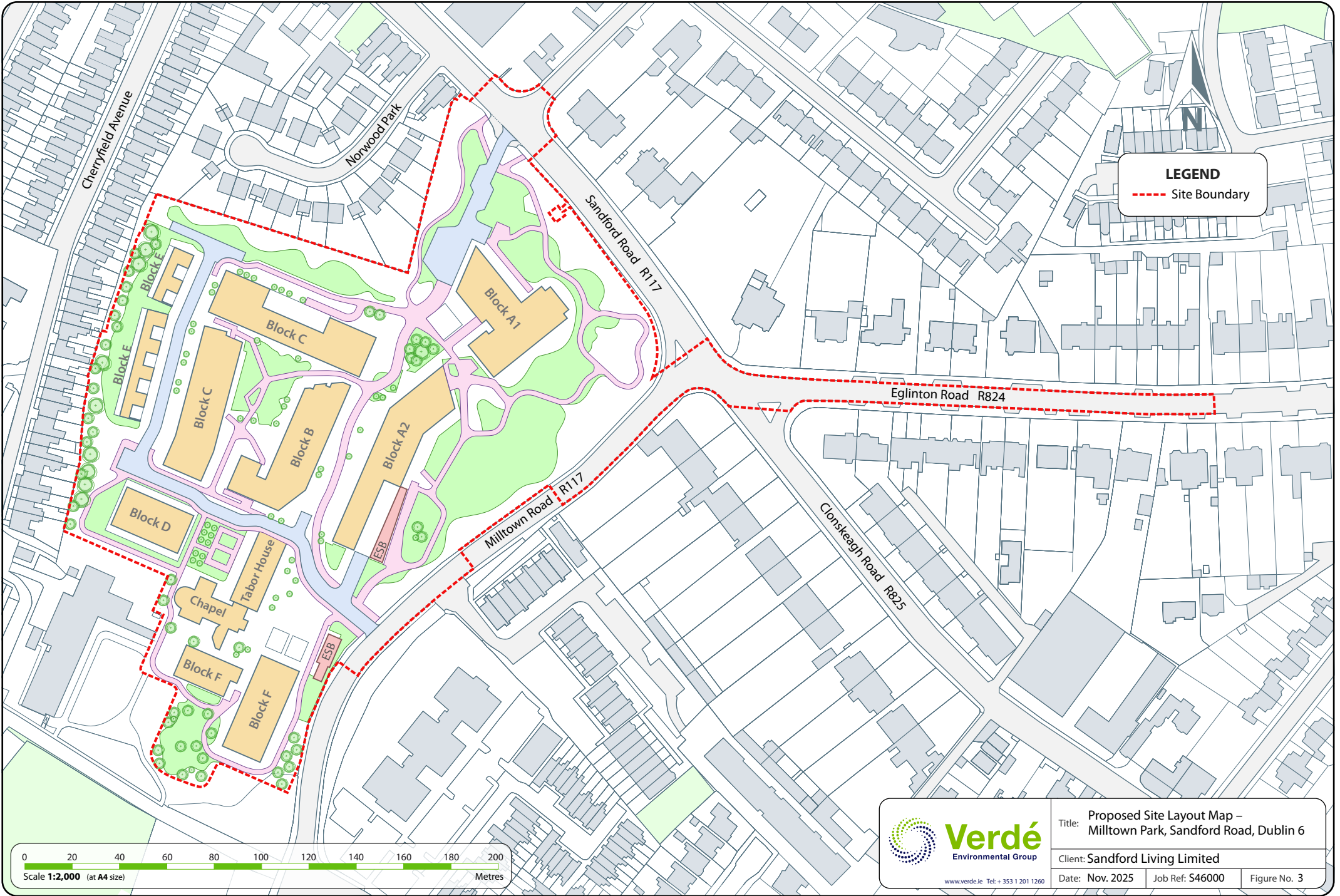
Title: Site Location Map – Milltown Park, Sandford Road, Dublin 6		
Client: Sandford Living Limited		
Date: Nov. 2025	Job Ref: S46000	Figure No. 1



LEGEND
--- Site Boundary



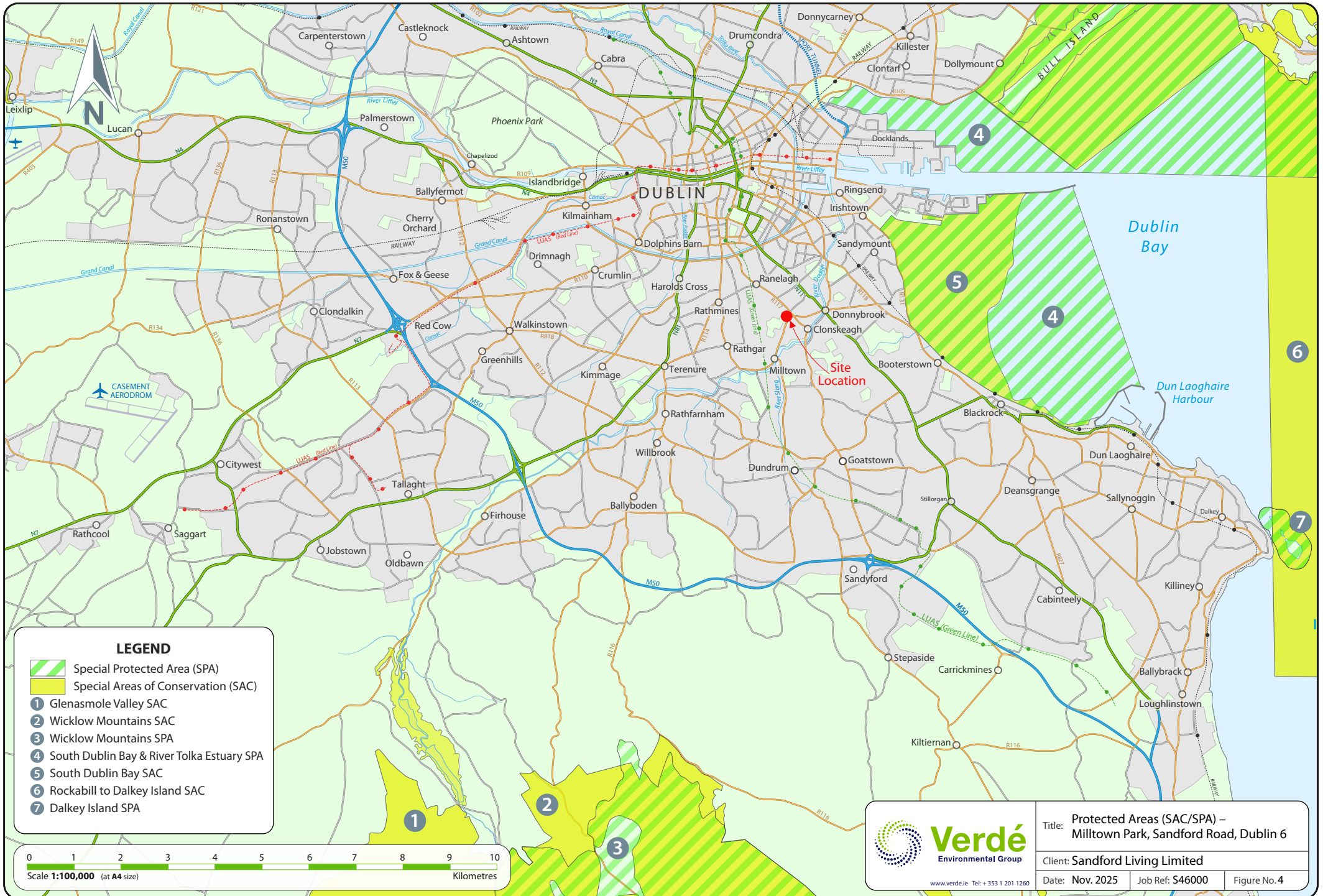
 www.verde.ie Tel: +353 1 201 1260	Title: Aerial Site Layout Map – Milltown Park, Sanford Road, Dublin 6		
	Client: Sandford Living Limited		
	Date: Nov. 2025	Job Ref: S46000	Figure No. 2



LEGEND
 - - - Site Boundary





 www.verde.ie Tel: + 353 1 201 1260	Title: Proposed Site Layout Map – Milltown Park, Sandford Road, Dublin 6
	Client: Sandford Living Limited
	Date: Nov. 2025 Job Ref: S46000 Figure No. 3





LEGEND

-  Site Boundary
-  Proposed Site Compound



www.verde.ie Tel: + 353 1 201 1260

Title: Site Compound Location – Milltown Park, Sandford Road, Dublin 6		
Client: Sandford Living Limited		
Date: Nov. 2025	Job Ref: S46000	Figure No. 5

