

**PROPOSED RESIDENTIAL DEVELOPMENT AT  
CHURCH FIELDS EAST, MULHUDDART,  
DUBLIN 15**

**CONSTRUCTION ENVIRONMENTAL  
MANAGEMENT PLAN**

**BSM**

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1968

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Environmental  
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Client:

Fingal County Council

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## DOCUMENT CONTROL SHEET

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# CONTENTS

1	Introduction .....	7
2	Description of Proposed Development .....	7
2.1	Proposed Development Site .....	7
2.2	Proposed Development Overview .....	9
3	Methodology .....	12
4	Construction Programme .....	13
4.1	Construction Sequence .....	13
4.1.1	Site Enabling Works .....	13
4.1.2	Sub-structure and Superstructure Works.....	13
4.1.3	Infrastructure Works.....	14
4.1.4	Construction Phasing & Duration.....	14
4.1.5	Construction Materials .....	14
4.1.6	Earthworks.....	14
4.1.7	Hazardous Substances .....	15
5	Construction Management and Controls .....	15
5.1	Project Roles and Responsibilities .....	15
5.2	Construction Traffic.....	15
5.2.1	Road Cleaning.....	16
5.3	Site Compound.....	16
5.4	Working Hours.....	19
5.5	Public Health and Site Safety.....	19
5.6	Emergency Responses .....	19
6	Environmental Management and Controls .....	19
6.1	Population and Human Health .....	21
6.2	Biodiversity.....	22
6.3	Land, Soils, Geology and Hydrogeology .....	24
6.4	Hydrology .....	26
6.5	Air Quality.....	30
6.6	Climate .....	31
6.7	Noise and Vibration .....	31
6.8	Landscape and Visual .....	33
6.9	Cultural Heritage, Archaeology and Architectural Heritage.....	34
6.10	Traffic and Transportation.....	34
6.11	Waste .....	35
6.12	Services.....	37
6.13	Risk Management.....	38
7	Environmental Management Procedures .....	38
7.1	Construction / Environmental Manager .....	38
7.2	Training.....	39
7.3	Control of Records.....	40



8	Conclusion .....	41
9	References .....	41



## 1 Introduction

Fingal County Council (FCC) proposes to construct the residential development at Church Fields East in Mulhuddart, Dublin 15 ('the proposed development').

This document comprises a Construction Environmental Management Plan (CEMP) for the proposed Church Fields East residential development. It sets out the proposed development works and the environmental measures to be implemented during the construction works in order to prevent, manage, minimise or mitigate any environmental impacts that may arise as a result of the proposed development.

An Environmental Impact Assessment Report (EIAR) has been prepared for the assessment and analysis of potential impacts on the receiving environment caused by a proposed project. The mitigation measures arising from the EIAR are addressed in this CEMP. Therefore, the EIAR should be read in conjunction with this CEMP.

Furthermore, this CEMP is to be read in conjunction with the following documents:

- Engineering Assessment Report, Waterman Moylan, 2023;
- Traffic and Transport Assessment, Waterman Moylan, 2023;
- Site Specific Flood Risk Assessment, Waterman Moylan, 2023;
- Ground Investigation Report, Ground Investigations Ireland, 2023;
- Waste Classification Report, Ground Investigations Ireland, 2023;
- Landscape Design Statement, Brady Shipman Martin, 2023;
- Tree Survey Report, Independent Tree Surveys Ltd., 2023;
- Appropriate Assessment Screening Report, Brady Shipman Martin, 2023;
- Resource and Waste Management Plan, AWN Consulting Ltd., 2023.

The CEMP will be a working document and will be finalised by the Contractor following appointment and prior to commencing works on site. However, all of the content provided in the CEMP will be implemented in full by the Contractor and its finalisation by the Contractor will not affect the robustness and adequacy of the information presented and relied upon in the EIAR.

The CEMP is a live document, and the Contractor will ensure that it remains up to date for the duration of the construction period. The CEMP may need to be altered during the lifecycle of the construction period to take account of monitoring results, legislative changes, outcomes of third party consultations etc. Additional appendices may be added to the CEMP to accommodate monitoring results, permits etc. The document will also be updated as required following the grant of permission, to reflect any and all of the planning conditions set by the planning authority.

## 2 Description of Proposed Development

### 2.1 Proposed Development Site

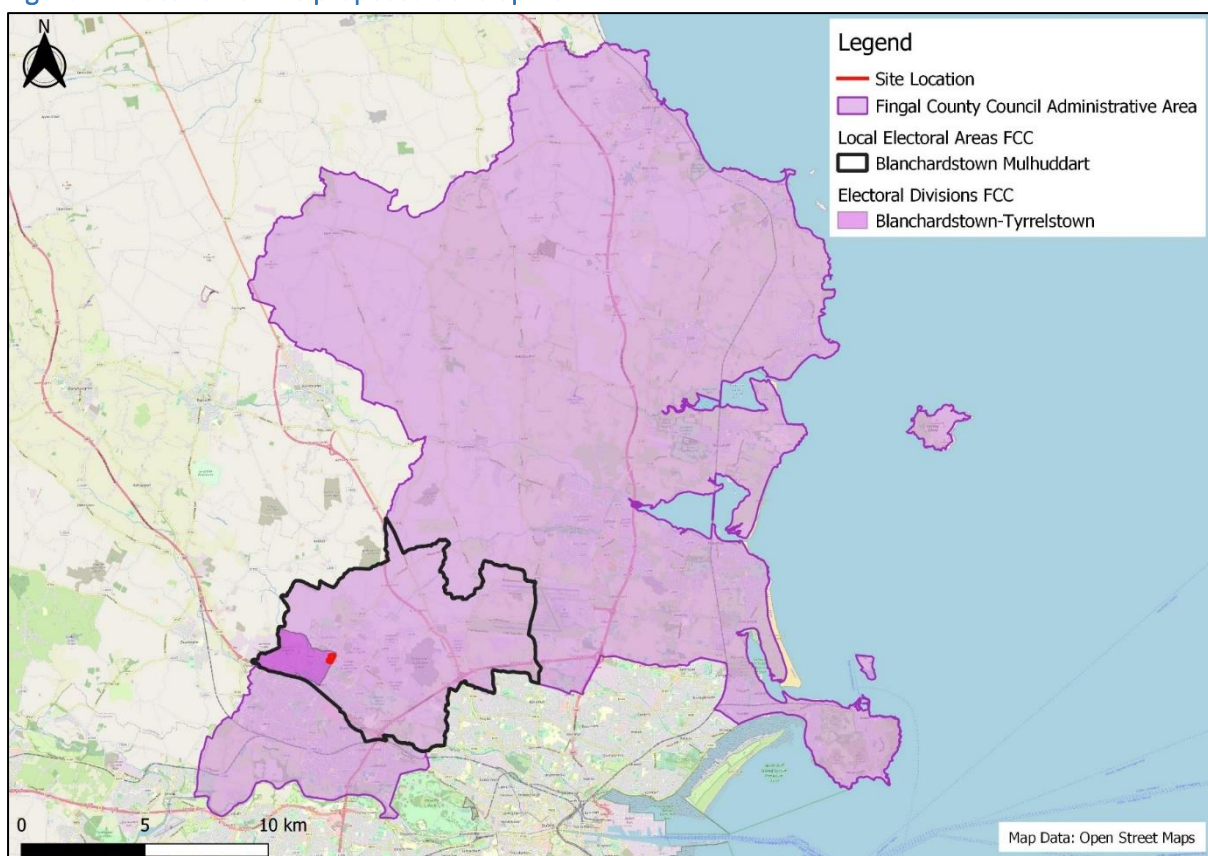
The proposed development site is located in the peri-urban area of Dublin 15, c. 11.5km to the north-west of Dublin city centre and c. 1.5km north of Blanchardstown town centre. The site is situated in the administrative area of Fingal County Council, in the townland of Tyrrelstown, the local electoral area of 'Blanchardstown Mulhuddart' and the electoral division of 'Blanchardstown-Tyrrelstown'.

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15 Construction Environmental Management Plan

The development site is located between a stand of mature trees along Church Road to the east, the permitted Church Fields Housing and Eastern Linear Park Development (PARTXI/012/21) to the west (proposed commencement later in 2023), Damastown Avenue to the north, and a new linear park to the south. The site is located west of protected structure RPS No. 670 Mulhuddart Church (in ruins) and Graveyard, which is located east of Church Road. Further to the south-west of the proposed development site are the existing residential areas of Avondale and Wellview where recent housing extension works have been completed. The surrounding area is a relatively new suburban area comprising a mix of uses from residential to commercial. A 110KV overhead powerline runs across the north-eastern section of the site.

Further to the north of the Damastown Avenue the lands are in community use comprising of a church and educational facilities (Powerstown Educate Together National School Tyrrelstown and Gaelscoil an Chuilinn). Tyrrelstown local centre is c. 750m to the north-east of the proposed development. Lady's Well Park is c. 100m to the south-east of proposed development site. The TU Dublin Blanchardstown Campus is a further c. 720m to the south-east. Further to the north-east are the Amazon Data Centre Technology Park, Pharmaceutical facilities, Blanchardstown Corporate Park, Northwest Logistics and Business Park and, Ballycoolin Business Park, while to the south-west is the Damastown Industrial Park and Plato Business Park comprising light industrial and pharmaceutical activities. **Figure 2.1** and **Figure 2.2**, below, illustrate the location of the proposed development site.

**Figure 2.1** Location of the proposed development





## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

Figure 2.2 Site of the proposed development



## 2.2 Proposed Development Overview

The proposed development seeks the construction of 217 no. residential units, consisting of 121 no. houses and 96 no. apartments, ranging from 2 – 4 storeys in height, in a mixed tenure development. The development is set out as follows:

- The construction of:
  - 121 no. two and three storey houses (34 no. 2 beds, 76 no. 3 beds, & 11 no. 4 beds);
  - 3 no. four-storey apartment blocks with balconies on all elevations, green roofs, and external amenity courtyards, providing a total of 96 no. units (36 no. 1 beds, 56 no. 2 beds, & 4 no. 3 beds)
- Landscape works including:
  - provision of Class 2 open space of 7,600 sqm, private communal open space of 725 sqm, playgrounds and kick about areas;
  - new pedestrian and cycle connections to Damastown Avenue to the north; to the new Church Fields footpath cycleway to the east; and to the linear park to the south; and
  - a new pedestrian connection to Church Road and to Mulhuddart Cemetery on Church Road
- 306 no. car parking spaces (263 no. residential and 43 no. visitor spaces), including 15 accessible spaces; and 897 no. bicycle parking long term and short term spaces, including 6 no. external bike stores providing 300 bicycle spaces for the apartments, and 16 no. free-standing bike bunkers accommodating 96 no. bicycle spaces for mid-terrace houses;
- A temporary construction access to the site from Damastown Avenue;

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Associated site and infrastructural works include provision for water services, foul and surface water drainage and associated connections to the permitted Church Fields Housing and Eastern Linear Park scheme (as permitted under Plan Reg. Ref.: PARTXI/012/21); and Sustainable Drainage Systems, including permeable paving, green roofs and swales. The proposed development includes for proposed surface water drainage which is amended from that permitted under Church Fields Housing and Eastern Linear Park development.
- The proposed application includes all site enabling and development works, landscaping works, PV panels, bins stores, plant, storage, boundary treatments, ESB substations, lighting, servicing, signage, and all site development works above and below ground.

Refer to **Figure 2.3** below for proposed site layout.

Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15  
Construction Environmental Management Plan

Figure 2.3 Proposed development – site layout (Source: Walsh Associates 2023, for full details refer to the accompanying documentation)





### 3 Methodology

This CEMP sets out the procedures, standards, work practices and management responsibilities to address potential environmental effects that may arise from construction of the proposed residential development. The CEMP will comply with the requirements of the relevant authorities/environmental bodies.

Throughout the lifecycle of any construction project, environmental management procedures are required to ensure that all appropriate legislation, policy and construction best practice are complied with, and the environmental effects of a development are minimised within best practicable means. The environmental legislation, policy and best practice guidance contained within this CEMP are applicable at the time of writing. However, it is acknowledged that these can be subject to change. As such, the Contractor will be responsible for complying with current legal, policy and best practice guidance requirements applicable to their scope of works through the design and during construction of the proposed development.

Such legislation, includes, but is not restricted, to:

- Planning and Development Act, 2000 (as amended);
- Planning and Development Regulations 2001, S.I. No. 600 of 2001 (as amended);
- The Birds Directive: Council Directive of 2 April 1979 on the conservation of wild birds (79/409/EEC) (as amended);
- The Habitats Directive: Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora;
- The European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477 of 2011) (as amended);
- Water Framework Directive (WFD): Directive 2000/60/EC of the European Parliament and Council establishing a framework for Community Action in the field of water policy (as amended);
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009, S.I. No. 272 of 2009 (as amended);

This document has been prepared in accordance with relevant best practice guidance and includes, but not limited to:

- C741- Environmental Good Practice on Site Guide (4th Edition) (CIRIA, 2015);
- C532- Control of Water Pollution from Construction Sites (CIRIA, 2001);
- C733- Asbestos in Soil and Made Ground: a Guide to Understanding and Managing Risks (CIRIA,2014);
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Noise;
- BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Vibration;
- BS 7385: 1993 Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration;
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings;
- Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3 (EPA 2019);

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- By-Product Guidance Note, 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) (EPA, 2020);
- Waste Classification, List of Waste and Determining if Waste is Hazardous or Non-hazardous, (EPA 2018); and
- Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).
- Requirements for the Protection of Fisheries Habitat during Construction Works in and Adjacent to Waters (Inland Fisheries Ireland, 2016); and
- Framework and Principles for the Protection of the Archaeological Heritage (Department of Arts, Heritage, Gaeltacht and the Islands, 1999).

## 4 Construction Programme

### 4.1 Construction Sequence

The construction phase of the proposed development will include the following elements:

- Site enabling works;
- Sub-structure and superstructure works;
- Infrastructure works.

Standard best practice site management protocols, including good housekeeping and efficient materials management, will be implemented.

#### 4.1.1 Site Enabling Works

It is envisaged that the site enabling works will include (but not necessarily be limited to) the following:

- Securing of site boundary and erecting of fencing or hoarding as required;
- Service terminations and positive identification of any services on the site by the utility providers;
- Provision of temporary power, lighting and water services;
- Set up of site accommodation and welfare facilities;
- Archaeological monitoring in accordance with the recommendations of the Archaeological Assessment;
- Identification of the trees that are required to be removed and the removal of these along with scrub and vegetation, in consultation with the appointed Arborist and the recommendations of the tree survey report;
- Identification of the trees that are required to be protected and the protection of these in consultation with the appointed Arborist and the recommendations of the tree survey report;
- Identification of watercourses in the vicinity of the site and measures to be put in place to minimise contamination of same;
- Measures for working in close proximity to existing overhead powerlines in the north-eastern portion of the subject site; and
- Excavation and reuse of soil / subsoil on site.

#### 4.1.2 Sub-structure and Superstructure Works

It is envisaged that the sub-structure and superstructure works will include (but not necessarily be limited to) the following:

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Excavation of foundations;
- Excavate, lay and test underground drainage;
- Coordinate and install all incoming services;
- Construction of floor slabs;
- Construction of superstructures and roofs;
- Fit out of the residential units will use traditional fit out techniques and finishing trades;
- Gardens and public open space areas will be landscaped and planted in accordance with the landscaping proposals for the scheme.

#### 4.1.3 Infrastructure Works

The site infrastructure works include the provision of the permanent entrance to the site and the permanent connection of all the utilities and services required for the site, including the foul outfall sewer and haul roads for the site.

All works are to be carried out in accordance with Irish Waters Code of Practice for Water and Wastewater and the contractor is to liaise with Uisce Éireann for the duration of the construction phase.

Engagement with the service and utility providers will be entered into early in the design stage to allow for adequate planning of utility infrastructure. Provision of the permanent infrastructure to the site will be carried out as early as possible in the programmed works to incorporate the temporary site requirements with the permanent requirements.

It is the aspiration of the Fingal County Council to minimise disruption of existing services and public roads and pathways in the providing of services to the site, this will be done in consultation with the service providers.

#### 4.1.4 Construction Phasing & Duration

The envisaged duration of the construction phase is 26-28 months.

#### 4.1.5 Construction Materials

The overall materiality for the proposed development will include standard construction material for any residential scheme (concrete, timber, stone etc).

#### 4.1.6 Earthworks

The site of the proposed development is predominantly greenfield in nature. In order to facilitate the construction of the proposed development, soil stripping, earthworks and the storage and handling of excavated material will be required.

In order to minimise the volume of material being exported off-site, excavated material will be reused on-site (e.g. as fill material) where feasible. However, it is envisaged that a certain volume of excavated subsoil will be unsuitable for on-site re-use and will need to be disposed of at an appropriately licenced landfill facility. Indicative earthworks figures are as follows:

- Volume of earthworks – excavated soil / subsoil: 9,550m<sup>3</sup>;
- Volume of earthworks – infill: 6,000m<sup>3</sup>;
- Volume of earthworks – reuse: 7,640m<sup>3</sup>;
- Excess for off-site disposal: 2,050m<sup>3</sup>;
- Maximum depth of excavation: 3m.

#### 4.1.7 Hazardous Substances

During the construction phase, hazardous substances typical of construction sites of this nature and scale will be present on-site, including concrete / cementitious materials, oils, fuels, paints and other chemicals. Hydrocarbons, solvents and other such hazardous substances will be stored in secure, bunded hardstanding areas. Re-fuelling and servicing of construction plant and machinery will only be permitted at suitably located, designated hardstanding areas. Spill kits will be present on-site at all times.

## 5 Construction Management and Controls

### 5.1 Project Roles and Responsibilities

Fingal County Council is the **Employer** and will appoint project managers to oversee construction of the project.

The Employer, or their appointed representative will be responsible for maintaining and updating the CEMP throughout the life of the project. The **Project Manager** will be responsible for the overall implementation of the CEMP. They will ensure that all reporting and monitoring requirements are met, and will also ensure that adequate resources are made available to ensure the Plan is successfully implemented. The Project Manager will ensure that all site personnel comply with the CEMP.

The Project Manager will act on behalf of the Employer/Client, with responsibility for managing construction of the proposed development within the agreed environmental constraints in conjunction with all other necessary management processes.

The Foreman employed by the Main Contractor, as well as appropriate personnel from each sub-contractor will be assigned responsibility for ensuring that all relevant elements of the CEMP are undertaken as required.

### 5.2 Construction Traffic

All traffic for required works will enter the site via a temporary construction access off Damastown Avenue. Refer to **Figure 5.1** below.

A Construction Traffic Management Plan (CTMP) will be prepared for the works. The principal objective of the CTMP will be to ensure that the impacts of all building activities generated during the construction phase upon the public (offsite), visitors to the subject site (on-site) and internal (on-site) workers environments, are fully considered and proactively managed/programmed thereby ensuring that safety is maintained at all times, disruption is minimised and undertaken within a controlled hazard free/minimised environment. During the general excavation of the foundations there will be additional HGV movements from the site. Monitoring measures will be adopted during the entire programme of construction activities on-site.

The CTMP will reflect the requirements of:

- Chapter 8 of the Department of the Environment Traffic Signs Manual, current edition;
- Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board (Department of Transport);
- Any additional requirements detailed in the Design Manual for Roads and Bridges & Design Manual for Urban Roads & Streets (DMURS).

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

Traffic volumes are not anticipated to be significant and turning movements into the site shall be accommodated without delay. Warning signage will be provided for pedestrians and other road users on all approaches in accordance with Chapter 8 of the Traffic Signs Manual and the Contractor's Traffic Management Plan.

#### 5.2.1 Road Cleaning

Provision will be made for the cleaning by road sweeper etc. of all access routes to and from the site during the course of the works. Road cleaning shall be undertaken as required during the completion of the works. All road sweeping vacuum vehicles will be emptied off site at a suitably licensed facility. The gate man will be responsible for managing the cleanliness of the road.

### 5.3 Site Compound

It is envisaged that one construction site compound will be required for the purposes of the proposed development.

The construction compound will be engineered with appropriate services and will be hoarded or fenced off for security purposes. The compound will be used as the primary location for the storage of materials, plant, and equipment, site offices (which may be two to three storeys in height), and worker welfare facilities. The construction compound will contain facilities for construction personnel and waste segregation area. Temporary toilets and wash facilities will be provided for construction workers. These facilities may require periodic waste pumping and waste offsite haulage, which will be carried out by an authorised sanitary waste contractor. Car parking will be provided for construction workers.

An access control facility will be provided to restrict compound access to site personnel and authorised visitors only.

Materials to be stored on site will be stored in a safe manner and will minimise the risk of any negative environmental effects and will be managed on a 'just-in-time' basis. All fuel storage areas will be bunded in the compound and will be clearly marked. A dedicated fuel filling point will be set up on site with all plant brought to this point for filling.

Appropriate lighting will be provided as necessary at the construction compound. All lighting will be installed to minimise light spillage from the site and will be temporary, i.e. confined to use during construction only.

The construction strategy for existing permitted developments adjoining proposed development, development phases for proposed development, location of construction compound and construction access is shown in **Figures 5.1 to 5.4**.



Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15  
Construction Environmental Management Plan

Figure 5.1 Construction Strategy for Existing Permitted Developments adjoining Church Fields East

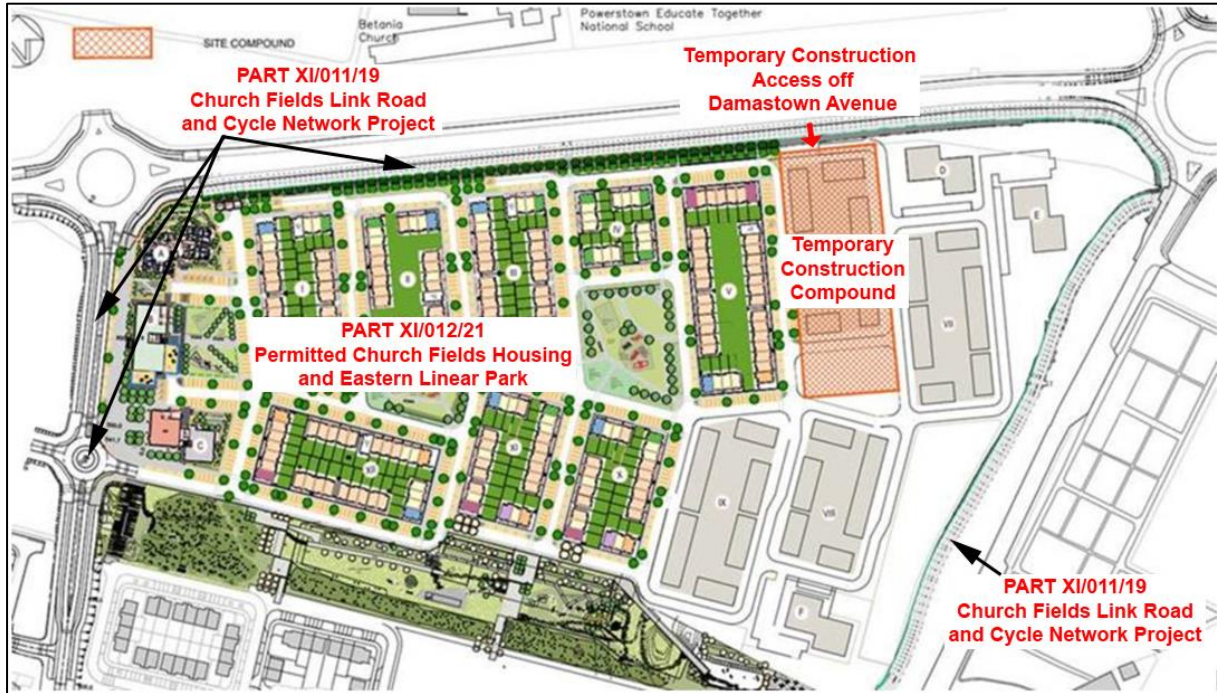
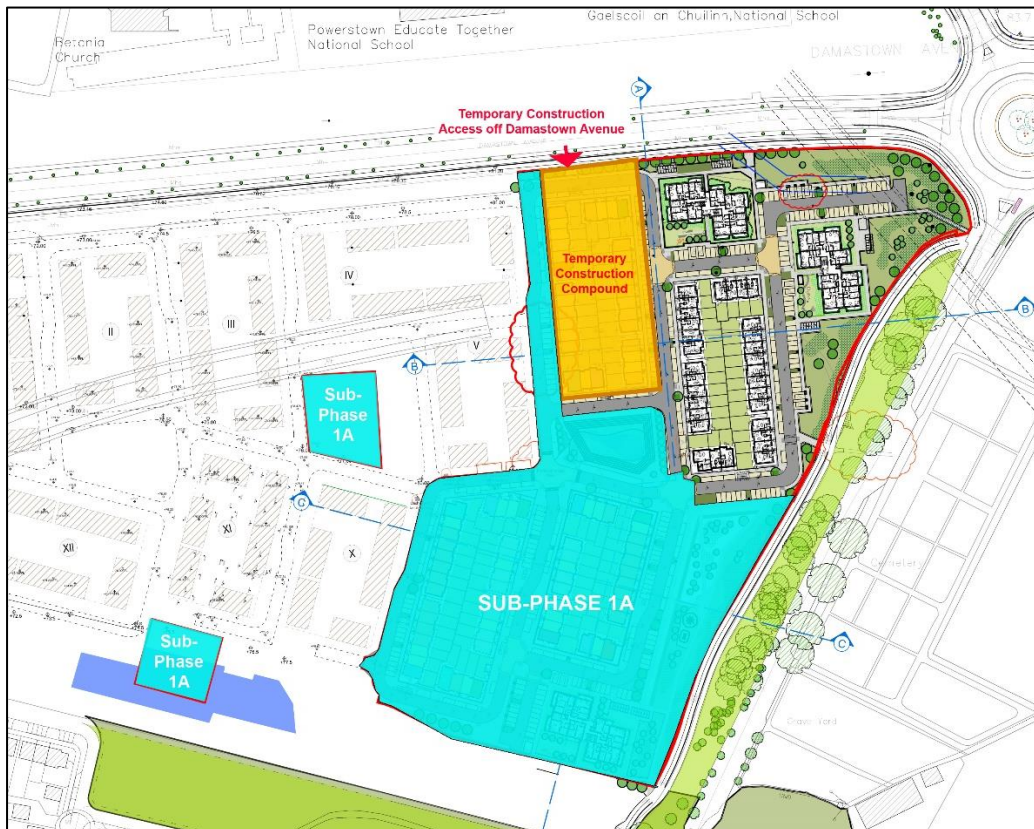


Figure 5.2 Sub-Phase 1A Church Fields East (utilising existing Temporary Site Compound and Access off Damastown Avenue)





Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15  
Construction Environmental Management Plan

Figure 5.3 Sub-Phase 1B Church Fields East (utilising existing Temporary Site Compound and Access off Damastown Avenue)

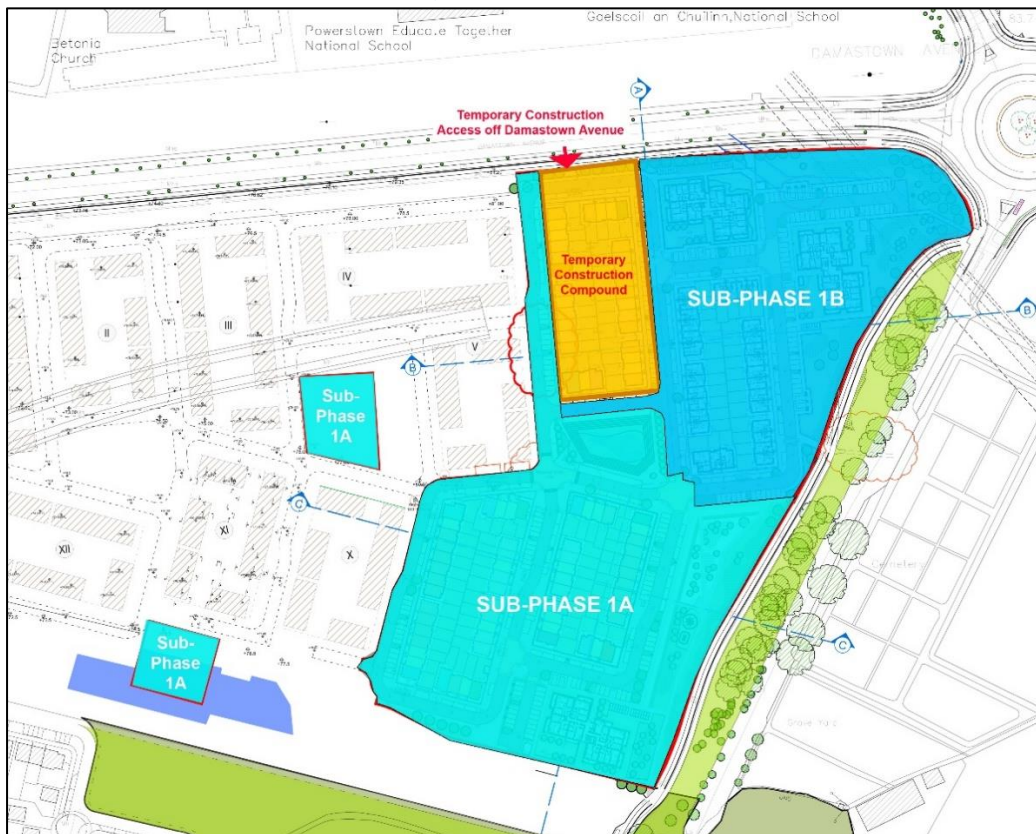
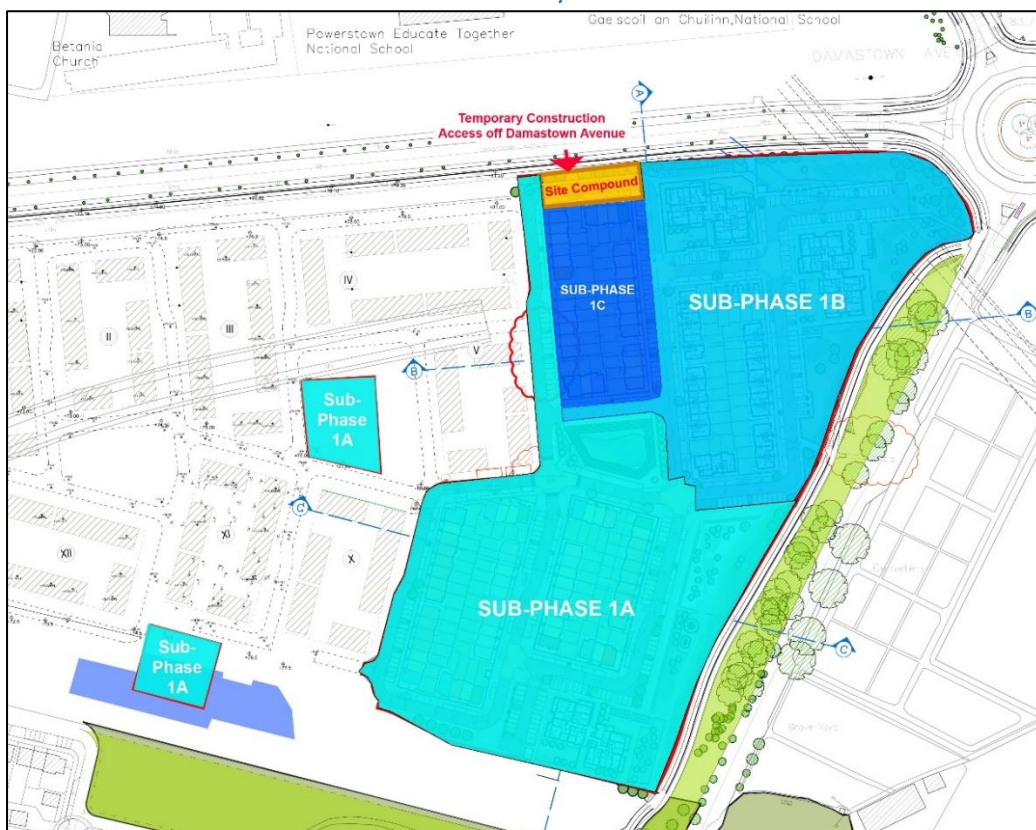


Figure 5.4 Sub-Phase 1C Church Fields East (utilising part of existing Temporary Site Compound and Access off Damastown Avenue)



## 5.4 Working Hours

Envisaged working hours are as follows:

- Monday – Friday: 08:00 – 19:00;
- Saturday: 08:00 – 14:00;
- Weekends / Bank Holidays: No works.

Works outside of these hours will be subject to prior agreement with Fingal County Council.

## 5.5 Public Health and Site Safety

The appointed Contractor will be required to ensure all Health & Safety requirements are met and that the site is operated in a safe manner at all times.

All construction staff and operatives will be inducted into the security, health and safety and logistic requirements on site prior to commencing work.

All contractors will be required to progress their works with reasonable skill, care and diligence and to proactively manage the works in a manner most likely to ensure the safety, health and welfare of those carrying out construction works, all other persons accessing the subject site and interacting stakeholders.

Contractors will also have to ensure that, as a minimum, all aspects of their works and project facilities comply with legislation, good industry practice and all necessary consents.

The requirements of the *Safety, Health and Welfare at Work Act 2005 (as amended)*, the *Safety, Health and Welfare at Work (Construction) Regulations, 2006 (as amended)* and other relevant Irish and EU safety legislation will be complied with at all times.

As required by the Regulations, a Health and Safety Plan will be formulated which will address health and safety issues from the design stages through to completion of the construction and maintenance phases. This plan will be reviewed and updated as required, as the development progresses.

In accordance with the Regulations, a “Project Supervisor for the Construction Stage” will be appointed as appropriate. The Project Supervisor Construction Stage will assemble the Safety File as the project progresses.

## 5.6 Emergency Responses

The Contractor will maintain an emergency response action plan which will cover all foreseeable risks, i.e. fire, spill, flood, etc. The response plan will be developed in accordance with the site emergency plan. Appropriate site personnel will be trained as first aiders and fire marshals. In addition, appropriate staff will be trained in environmental issues and spill response procedures.

Equipment and vehicles will be locked, have keys removed and be stored securely in the works area.

## 6 Environmental Management and Controls

This section details on the general construction management measures to be undertaken during the construction phase of the proposed development. These include:

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- In order to minimise the volume of material being exported off-site, excavated material will be reused on-site (e.g. as fill material) where feasible.
- Hydrocarbons, solvents and other such hazardous substances will be stored in secure, bunded hardstanding areas.
- Re-fuelling and servicing of construction plant and machinery will only be permitted at suitably located, designated hardstanding areas.
- Spill kits will be present on-site at all times.
- The proposed construction phase working hours are as follows, subject to conditions of the planning authority:
  - Monday – Friday: 08:00 – 19:00
  - Saturday: 08:00 – 14:00
  - Sundays / Bank Holidays: No works
- Any works proposed outside of these hours, e.g. for water mains / foul drainage connections, will be subject to prior approval by Fingal County Council.
- The appointed contractor will be responsible for the implementation of this CEMP. The contractor will appoint a suitably qualified Site Environmental Manager (SEM) with responsibility for overseeing the implementation of the CEMP (and all construction phase environmental commitments).
- To ensure the CEMP remains fit for purpose, it will be maintained as a live document. The appointed contractor will be responsible for updating the CEMP, as required; e.g. to reflect the publication of relevant new or revised guidelines and / or new statutory requirements. The full schedule of environmental commitments (i.e. all mitigation measures set out in the CEMP and Environmental Impact Assessment Report submitted as part of the planning application, as well as any applicable conditions of development consent) will be included in the CEMP by the appointed contractor.
- **Dust Management Plan-** A Dust Management Plan has been prepared by AWN Consulting (and submitted as Appendix 11.1 to the EIAR) for the construction phase of the proposed development, the implementation of which will provide for the proactive control of fugitive dust. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the Dust Management Plan.
- **Construction Traffic Management Plan-** Prior to works commencing on-site, a Construction Traffic Management Plan will be prepared by the appointed contractor in accordance with the following guidance documents:
  - Department of Transport’s Traffic Signs Manual (2010), Chapter 8: Temporary Traffic Measures and Signs for Roadworks;
  - Department of Transport’s Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition (2010); and
  - Any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS).
- **Resource & Waste Management Plan-** A project-specific Resource & Waste Management Plan (RWMP) has been prepared by AWN Consulting in line with the requirements of the EPA ‘Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects’ (2021), and is included as part of the planning documentation. The implementation of the mitigation measures presented in the RWMP will ensure effective waste

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development.

- Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP in agreement with FCC, or submit an addendum to the RWMP to FCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream. The Contractor will be required to fully implement the RWMP throughout the duration of the proposed construction phase.
- **Arboricultural Method Statement-** A Tree Survey Report has been prepared in respect of the proposed development by Independent Tree Surveys, and submitted under separate cover as part of the planning application. It contains an Arboricultural Method Statement and general recommendations in relation to tree protection on construction sites. The method statement and recommendations contained in the Tree Survey Report shall be integrated into the final CEMP, and implemented in full during the proposed construction works.

### 6.1 Population and Human Health

This section includes the measures that are required to protect population and human health during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Population and Human Health; and how the following mitigation measures will be implemented. These measures include:

- A Community Liaison Officer (CLO) will be appointed by the contractor for the duration of the construction phase. They will be responsible for keeping the local community and businesses informed of the timing and duration of potentially disruptive works, and for receiving and addressing concerns of local residents and businesses in relation to the proposed works.
- Dust Management Plan included in Appendix 11.1, shall be finalised by the appointed contractor in agreement with Fingal County Council, and implemented during the proposed works. Mitigation measures are included in relation to dust suppression, good housekeeping, and proper storage and handling of materials.
- Mitigation measures in relation to selection of quiet plant, noise control at source, screening, hours of work, adherence to noise limits, community liaison, monitoring and vibration control should be undertaken.
- Mitigation of landscape and visual impacts during the construction phase should be focused on ensuring protection of elements to be retained and providing for a degree of visual screening of particular aspects of the works (e.g. the construction compounds).
- Measures in relation to dust and dirt control measures, noise assessment and control measures, routes to be used by vehicles, working hours of the site, details of construction traffic forecasts, times when vehicle movements and deliveries will be made to the site, facilities for loading and unloading, facilities for parking cars and other vehicles shall be implemented. It requires the implementation of a Construction Traffic Management Plan, to be prepared by the appointed contractor during pre-construction phase in agreement with Fingal County Council.
- A Resource and Waste Management Plan prepared as part of the application shall be implemented throughout the construction phase of the proposed development.
- Measures in relation to management of water supply, wastewater, surface water, gas, ESB supply and telecommunications shall be implemented during the construction phase.



## 6.2 Biodiversity

This section includes the measures that are required to protect Biodiversity during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Biodiversity; and how the following mitigation measures will be implemented. These measures include:

- No designated conservation areas will be impacted in any way by the proposed development and no mitigation measures are required in this regard. Refer to the AA Screening Report that accompanies the planning application for full details in relation to European designated sites.
- The tree felling works will be carried out by a qualified and experienced tree surgeon in accordance with BS3998 (2010) Tree Work – Recommendations. The Tree Survey Report recommends erecting sturdy tree protection fencing or suitable site hoarding to prevent construction work encroaching the root protection areas of the beech trees outside the eastern site boundary and the hedgerow to the south (outside the red line) of the proposed development. Where machinery encroaches the RPAs of trees around the site under unforeseen and unavoidable circumstances; suitable ground protection will be put in place to prevent any significant soil compaction or root damage near the trees. This includes suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight.
- The Tree Survey Report recommends transplanting the young oak saplings from the scrub clearance area in the northern part of the site. The Brady Shipman Martin Landscape Design Statement similarly recommends incorporating these oak saplings within the landscaped areas along the eastern site boundary. These young trees will be protected with tree protection fencing prior to works commencing. The fencing will be retained in place until such time as the trees can be transplanted.
- As set out in the Landscape Design Statement and Landscape Masterplan drawings, a significant amount of new planting has been incorporated into the landscape design, and the planting has been designed with a view to maximising the new biodiversity resource at the proposed development site. The proposed planting / landscaping strategy includes a mix of appropriate species, incorporating species that will attract feeding invertebrates, including moths, butterflies and bees. It takes account of and implements the policies and objectives of the All-Ireland Pollinator Plan (2021 - 2025) . Low-maintenance tree groups and wildflower meadows are being provided, as are nest boxes and insect hotels and areas of bare ground (for solitary bees).
- To the south of the proposed development, 2.2 hectares of Class 1 Open Space has been provided as Eastern Linear Park (previously permitted under FCC Ref. PARTXI/012/21). Class 2 open space will be provided within the site boundary in central pocket park (2,000sqm) and eastern open space (5,600sqm). Additional open space (3,200sqm) will be provided under the overhead powerlines in the north-east corner of the site. Finally, communal open space is proposed for each of the apartment blocks along with a landscape buffer area along Damastown Avenue to the north of the site.
- The proposed planting schedule contains no invasive species and none will be introduced, either deliberately or inadvertently, to the proposed development site. Appropriate biosecurity measures will be implemented during the construction phase of the proposed development under the scope of a Biosecurity Plan (refer to Outline Biosecurity Plan submitted as Appendix 8.2 to the EIAR).
- The clearance of scrub and other vegetation that may be suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). Should the

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

construction programme require vegetation clearance between March and August, and this is unavoidable, bird nesting surveys will be undertaken by suitably qualified ecologists. If no active nests are recorded, vegetation clearance will take place within 24 hours. In the event that active nests are observed, an appropriately sized buffer zone (up to 5 m radius around the nest) will be maintained around the nest until such time as all the eggs have hatched and the birds have fledged – a period that may be three weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.

- There will be no impacts on badgers or other large mammals. Regardless, a pre-construction check for badgers will be undertaken prior to the commencement of construction, to ensure this remains the case.
- As bats are highly mobile creatures, a bat specialist shall examine the trees (i.e. the poplar trees and others in the northern part of the site) for bat roost potential and for the presence of bats before felling commences. The trees shall be assessed by a bat specialist from height if due for felling in winter or by a bat detector assessment (or a combination of both) if felling occurs at any other time. The discovery of any bat roosts, albeit unlikely, shall require a derogation from the National Parks and Wildlife service.
- If a bat survey has been undertaken by a bat specialist and bats have been determined to be absent, felling may proceed under the supervision of a bat specialist. If there is any doubt regarding the presence of bats, access from height shall be provided to allow the examination of any trees with roost potential prior to felling.
- It is proposed to install a significant number of bat and bird boxes both throughout the proposed development site. The reason for the installation of bat boxes is not to provide replacement roosts; rather, it is to augment the overall ecological value of the site. This will contribute to maximising the ecological value of the proposed development.
- To that end a number of bat and bird boxes will be erected, with advice from the project Ecologist, in appropriate areas (within unlit areas away from traffic and likely disturbance within the site, no less than 3m above the ground in uncluttered areas, facing in a southerly direction). The locations of the bat boxes shall be agreed with a bat specialist. A total of four combined bat/swift bricks, or equivalent, will be installed.
- Bats are sensitive to light at night, and the lighting design will ensure that the proposed development will not result in impacts on bats that do commute / forage in or near the proposed development site. The lighting design for the proposed development includes the following measures:
  - Where human safety permits it, dark corridors and dark areas will be incorporated into the open space and landscape design for the proposed development;
  - All luminaires shall lack UV elements when manufactured and shall be LED;
  - A warm white spectrum shall be adopted to reduce blue light component;
  - Luminaires shall feature peak wavelengths higher than 550 nm;
  - Tree crown shall remain unilluminated. Specifically, no light spill will impact on the beech trees to the east of the proposed development site.
- The surface water mitigation measures proposed as part of the design measures and also under Section 6.4 Hydrology, to be finalised by the appointed contractor in agreement with Fingal County Council, will ensure that no sediment contamination, contaminated run-off or untreated

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

wastewater will enter any on-site surface water ditches and drains and, in particular, the Pinkeen River and River Tolka (downstream of the site) as a result of the construction of the proposed development.

The monitoring measures for Biodiversity during the construction phase of the proposed development include:

- A suitably experienced Project Ecologist will be appointed for the duration of the construction phase and regular monitoring of all related works will take place to ensure the correct and full implementation of all mitigation measures. The Project Ecologist will ensure that all construction works take place in accordance with planning conditions, the project CEMP and the mitigation measures set out in this EIAR.
- Vegetation clearance will only be permitted outside the bird-nesting season. Should vegetation clearance be required during the bird nesting season, and should this work be unavoidable, such clearance will take place only after the Project Ecologist has undertaken a survey to ensure that no active bird nests or recently fledged birds are present. Pre-construction surveys will be required to ensure that any necessary tree felling or works to buildings continue to have no impact on roosting bats, other than as permitted in relation to the removal of the Leisler's bat mating roost.

### 6.3 Land, Soils, Geology and Hydrogeology

This section includes the measures that are required to protect land, soils, geology and hydrogeology during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on land, soils, geology and hydrogeology; and how the following mitigation measures will be implemented. These measures include:

- A quantity of topsoil and subsoil will need to be excavated to facilitate the proposed development. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.
- During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.
- Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).
- Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- A power washing facility or wheel cleaning facility will be installed near to the site compound for use by vehicles exiting the site when appropriate.
- A stabilised entranceway consisting of an aggregate on a filter cloth base that is located at any entry or exit point of the construction site.
- Aggregate will be established at the site entrance points from the construction site boundary extending for at least 10 m.
- The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection.



## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Construction materials, including aggregates etc. will be stored a minimum of 20-meter buffer distance from any surface water bodies and surface water drainage points.
- Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination.
- Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.
- Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations.
- Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.
- All fill and aggregate for the proposed development will be sourced from reputable suppliers per the project Contract and Procurement Procedures. All suppliers will be vetted for:
  - Aggregate compliance certificates/declarations of conformity for the classes of material specified for the proposed development;
  - Environmental Management status; and
  - Regulatory and Legal Compliance status of the Company.
- Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.
- No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within 10 meters of an existing surface water drainage point. Washouts will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer submit to agreement with Uisce Éireann / Fingal County Council.
- The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.
- The following mitigation measures will be implemented during the construction phase to prevent any spillages to ground of fuels and other construction chemicals and prevent any spillages resulting to surface water and groundwater systems:
  - Designation of bunded refuelling areas on the Site;
  - Provision of spill kit facilities across the Site;
- Where mobile fuel bowsers are used, the following measures will be taken:
  - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
  - The pump or valve will be fitted with a lock and will be secured when not in use;
  - All bowsers to carry a spill kit and operatives must have spill response training;
  - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.
- In the case of drummed fuel or other potentially polluting substances which may be used during the construction phase, the following measures will be adopted:
  - Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, double skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.
  - Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
  - All drums to be quality approved and manufactured to a recognised standard;
  - If drums are to be moved around the Site, they will be secured and on spill pallets; and
  - Drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area or within the construction compound (or where possible off the site). In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as *“Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors”* (CIRIA 532, 2001) will be complied with.
  - The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.

The monitoring measures for land, soils, geology and hydrogeology during the construction phase of the proposed development include:

- The management of land, soils and ground water during the construction phase will be monitored by the Contractor to ensure compliance with above-listed mitigation measures, and relevant waste management legislation and local authority requirements.
- During construction phase the following monitoring measures will be implemented:
  - Regular inspection of surface water run-off and sediments controls (e.g., silt traps);
  - Soil sampling to confirm disposal options for excavated soils in order to avoid contaminated run-off; and
  - Regular inspection of construction / mitigation measures (e.g., concrete pouring, refuelling, etc).

## 6.4 Hydrology

This section includes the measures that are required to protect surface water features during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on hydrology; and how the following mitigation measures will be implemented. These measures include:

- Construction works and the proposed mitigation measures are informed by best practice guidance from Inland Fisheries Ireland on the prevention of pollution during development projects including but not limited to:

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532);
  - Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016);
  - Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (4th edition), (C741); and
  - Enterprise Ireland Best Practice Guide, Oil Storage Guidelines (BPGCS005).
- The measures will be implemented and adhered to by the construction Contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the Site will be trained in the implementation of the procedures.
  - During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.
  - Run-off water containing silt will be contained on site via settlement tanks and treated to ensure adequate silt removal.
  - Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).
  - Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
  - A power washing facility or wheel cleaning facility will be installed near to the site compound for use by vehicles exiting the site when appropriate.
  - The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection.
  - Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination.
  - Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.
  - Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations.
  - Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.
  - Any surface water run-off collecting in excavations will likely contain a high sediment load. This will not be allowed to directly discharge directly to the stormwater sewer, Pinkeen River.
  - All manholes will be watertight to prevent groundwater ingress into the foul drainage system. Construction details for the proposed drainage systems are included in the accompanying planning submission drawings.
  - All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary drainage system shall be established prior to the commencement of the initial infrastructure construction works to collect and discharge any treated construction water during construction.
- Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.
- No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within 10 meters of an existing surface water drainage point. Washouts will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer submit to agreement with Uisce Éireann / Fingal County Council.
- The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.
- The following mitigation measures will be implemented during the construction phase in order to prevent any spillages to ground of fuels and other construction chemicals and prevent any resulting to surface water and groundwater systems:
  - Designation of bunded refuelling areas on the Site;
  - Provision of spill kit facilities across the Site;
- Where mobile fuel bowsers are used, the following measures will be taken:
  - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
  - The pump or valve will be fitted with a lock and will be secured when not in use;
  - All bowsers to carry a spill kit and operatives must have spill response training;
  - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.
- In the case of drummed fuel or other potentially polluting substances which may be used during the construction phase, the following measures will be adopted:
  - Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;
  - Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, doubled skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.
  - Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
  - All drums to be quality approved and manufactured to a recognised standard;
  - If drums are to be moved around the Site, they will be secured and on spill pallets; and Drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area or within the construction compound (or where possible off the site). In the event of a machine requiring refuelling outside of this area, fuel will be transported in

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as “*Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors*” (CIRIA 532, 2001) will be complied with.

- The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.
- Rainfall at the construction site will be managed and controlled for the duration of the construction works until the permanently intercepted and attenuated surface water drainage system of the proposed site is complete. In the meantime, rainwater will continue to discharge to ground as current.
- Spill containment measures will be in place to manage any accidental releases to ground. Silt Remediation Treatment System including a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds) to manage silty run-off.
- Foul wastewater discharge from the site will be managed and controlled for the duration of the construction works. Prior to connection to sewer, site welfare facilities will be established to provide sanitary facilities for construction workers on site. The main contractor will ensure that sufficient facilities are available at all times to accommodate the number of employees on site and are disposed of by a licenced contractor.
- During construction a site drainage and protection system will be built to reduce the flow of run-off from the site, prevent soil erosion, and protect water quality in the Pinkeen River. Temporary excavated channels, bunds, or ridges or a combination of the three, may be constructed to divert sediment-laden water to an appropriate sediment retention structure. These will be installed to provide permanent diversion of clean stormwater away from erosion exposed soil areas, or to provide a barrier between exposed areas and unexposed areas of the construction site. Runoff diversion channels/bunds need regular maintenance to keep functioning throughout their life.
- Silt fences will be installed on the site where construction is proposed to detain flows from runoff so that deposition of transported sediment can occur through settlement. Inspection and maintenance of the silt fences during construction phase is crucial to ensuring that they work as intended. They will remain in place throughout the entire construction phase.
- It is envisaged that a number of geotextile lined settling tank / basins (e.g. Silt buster) and/or silt fences will be installed to ensure silts do not flow off site during the construction stage. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed. All inlets to the settling basins will be ‘riprapped’ to prevent scour and erosion in the vicinity of the inlet.
- Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary drainage system shall be established prior to the commencement of the initial infrastructure construction works to collect and discharge any treated construction water during construction.

The monitoring measures for hydrology during the construction phase of the proposed development include:

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Contractors will carry out regular inspections to confirm compliance with the CEMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping.
- Regular inspection of surface water run-off and sediments controls (e.g., silt traps). Inspection and maintenance of the silt fences during construction phase is crucial to ensuring that they work as intended. They will remain in place throughout the entire.
- Soil sampling to confirm disposal options for excavated soils in order to avoid contaminated run-off.
- Regular inspection of construction / mitigation measures (e.g., concrete pouring, refuelling, etc).
- Silt remediation treatment system.

## 6.5 Air Quality

This section includes the measures that are required to protect Air Quality during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Air Quality; and how the following mitigation measures will be implemented. These measures include:

- The proactive control of fugitive dust will ensure the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released.
- Dust Management Plan (Appendix 11.1 of the EIAR) shall be implemented for the duration of the Construction Phase. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the Dust Management Plan.
- The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed mitigation measures are implemented and that dust impacts and nuisance are minimised.
- During dry and windy periods, and when there is a likelihood of dust nuisance, watering shall be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust.
- Drop heights from conveyors, loading shovels, hoppers and other loading equipment will be minimised, if necessary fine water sprays should be employed.
- 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.

The monitoring measure for air quality during the construction phase of the proposed development include:

- 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/m<sup>2</sup>/day during the monitoring period of 30 days (+/- 2 days).

## 6.6 Climate

This section includes the measures that are required to protect Climate during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Climate; and how the following mitigation measures will be implemented. These measures include:

- Creating a construction program which allows for sufficient time to determine reuse and recycling opportunities for wastes.
- Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled.
- Materials will be reused on site within the new build areas where possible.
- 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.

## 6.7 Noise and Vibration

This section includes the measures that are required for the management of Noise and Vibration during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts due to Noise and Vibration; and how the following mitigation measures will be implemented. These measures include:

- The appointed contractor will be required to take specific noise abatement measures to the extent required and comply with the recommendations of BS 5228–1 (BSI 2014a) and S.I. No. 241/2006 - European Communities (Noise Emissions by Equipment for Use Outdoors) (Amendment) Regulations 2006. These measures will ensure that:
  - During the Construction Phase, the appointed contractor will be required to manage the works to comply with the limits detailed in Section 13.2.3 using methods outlined in BS 5228–1 (BSI 2014a); and
  - The best means practicable, including proper maintenance of plant and equipment, will be employed to minimise the noise produced by on-site operations.
- BS 5228–1 includes guidance on several aspects of construction site practices, which include, but are not limited to:
  - Selection of quiet plant;
  - Control of noise sources;
  - Screening;
  - Hours of work;
  - Liaison with the public; and
  - Monitoring.
- The contractor will put in place the most appropriate noise control measures depending on the level of noise reduction required during specific phases of work.



## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- The potential for any item of plant to result in exceedance of construction noise thresholds will be assessed prior to the item being brought onto the site. The least noisy item of plant will be selected wherever practicable (e.g. plant items with sound attenuation incorporated). Should a particular item of plant already on the site be found to exceed the construction noise thresholds, the first action will be to identify whether the item can be replaced with a quieter alternative.
- The appointed contractor will evaluate the choice of excavation, breaking or other working method taking into account various ground conditions and site constraints. Where alternative lower noise generating equipment are available that will provide equivalent results, these will be selected to control noise within the relevant thresholds, where it is practicable to do so.
- For mobile plant items such as dump trucks, cranes, excavators and loaders, the installation of an acoustic exhaust, utilising an acoustic canopy to replace the normal engine cover and / or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB.
- For percussive tools such as pneumatic concrete breakers and tools a number of noise control measures include fitting a muffler or sound reducing equipment to the breaker 'tool' and ensuring any leaks in the air lines are sealed.
- Where compressors, generators and pumps are located in proximity to NSLs and have the potential to exceed the construction noise thresholds, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.
- Resonance effects in panel work or cover plates can be reduced through stiffening or the application of damping compounds, while other noise nuisance can be controlled by fixing resilient materials in between the surfaces in contact.
- Screening is an effective method of reducing CNLs at a receiver location and can be used successfully as an additional measure to other forms of noise control. The effectiveness of a noise screen will depend on the height and length of the screen, its mass, and its position relative to both the source and receiver. BS 5228–1 (BSI 2014a) states that on level sites the screen should be placed as close as possible to either the source or the receiver. The construction of the barrier will be such that there are no gaps or openings at joints in the screen material.
- Erection of localised demountable enclosures or screens will be used around piling rigs, breakers or drill bits, as required, when in operation in proximity to NSLs with the potential to exceed the construction noise thresholds. Annex B of BS 5228–1 (Figures B1, B2 and B3) provide typical details for temporary and mobile acoustic screens, sheds and enclosures that can be constructed on-site from standard materials. A well placed and designed mobile temporary screen around a piece of equipment or construction activity can effectively reduce noise emissions by 10 dB(A).
- In addition, careful planning of the construction site layout will also be considered. The placement of site buildings such as offices and stores between the site and sensitive locations can provide a good level of noise screening.
- Working hours will be restricted to 08:00 to 19:00 Monday to Friday & 08:00 to 14:00 on Saturdays. No Sunday or Bank Holiday work will be permitted. Out of hours working will be only permitted by arrangement with site management. Work outside of normal hours will be subject to approval by Fingal County Council
- The contractor will establish clear forms of communication that will involve the appointed contractor to NSLs in proximity to the works, so that residents or building occupants are aware of the likely duration of activities likely to generate noise or vibration that are potentially significant.
- A clear communication programme will be established by contractor to inform adjacent building occupants in advance of any potential intrusive works which may give rise to vibration levels likely



## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

to result in significant effects. The nature and duration of the works will be clearly set out in all communication circulars as necessary

- Appropriate vibration isolation shall be applied to plant (such as resilient mounts to pumps and generators), where required and where feasible.

The monitoring measure for noise & vibration during the construction phase of the proposed development include:

- During the construction phase the contractor will carry out noise monitoring at representative NSLs to evaluate and inform the requirement and / or implementation of noise management measures. Noise monitoring will be conducted in accordance with ISO 1996–1 (ISO 2016) and ISO 1996–2 (ISO 2017).

## 6.8 Landscape and Visual

This section includes the measures that are required to protect Landscape & Visual during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Landscape & Visual; and how the following mitigation measures will be implemented. These measures include:

- Construction compounds will not be located within the root protection area of trees or hedgerows to be retained and will be enclosed by solid hoarding. The compound areas will be fully decommissioned and reinstated at the end of the construction phase.
- Trees, hedgerows and vegetation to be retained within and adjoining the works area will be protected in accordance with 'BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations'. Works required within the root protection area (RPA) of trees, hedgerows to be retained will follow a project specific arboricultural methodology for such works, prepared / approved by a professional qualified arborist.
- Trees and vegetation identified for removal will be removed in accordance with 'BS 3998:2010 Tree Work – Recommendations' and best arboricultural practices as detailed and monitored by a professional qualified arborist.
- The construction site will be fully enclosed and secured. Construction traffic accessing the site will follow agreed routes and public roads will be maintained in a clean and safe manner.
- Mitigation of landscape and visual impacts during the construction phase is focused on ensuring protection of elements to be retained and providing for a degree of visual screening of particular aspects of the works (e.g. the construction compounds).

The monitoring measure for Landscape & Visual during the construction phase of the proposed development include:

- Landscape and visual mitigation measures will be monitored during the construction stage. This will include siting of the construction compound; protection of the permitted Eastern Linear Park grounds, protection of trees / hedgerows to be retained; stripping and storage of topsoil; reinstatement of landscape / soil areas; and completion of landscape works.

## 6.9 Cultural Heritage, Archaeology and Architectural Heritage

This section includes the measures that are required to protect Cultural Heritage, Archaeology and Architectural Heritage during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Cultural Heritage, Archaeology and Architectural Heritage; and how the following mitigation measures will be implemented. These measures include:

- Given its proximity to the church and graveyard, there is potential for associated features to be present in this area. Archaeological testing will take place to establish the degree of disturbance in this part of the site and to assess the survival of any archaeology within the site.
- Fingal County Council will make provision to allow for and fund the archaeological work that may be required at the site and the post excavation requirements in accordance with the National Monuments Legislation (1930–2004). Should any archaeological items be discovered during construction works, they will be reported to the National Museum of Ireland (Irish Antiquities Division) and the National Monuments Service of the DHLGH who will determine the nature and extent of any archaeological work to be carried out on site.

The monitoring measure for Cultural Heritage, Archaeology and Architectural Heritage during the construction phase of the proposed development include:

- Given the difficulties of examining the below-ground archaeological potential of the lands in the northern and south-western portions of the site due to the extensive disturbance, it is considered that archaeological monitoring is an appropriate mitigation measure here. Archaeological monitoring of ground disturbance works will be carried out under licence to the National Monuments Service of the Department of Housing, Local Government and Heritage (DHLGH). This will ensure the full recognition of, and – if required – the proper excavating and recording of all archaeological features, finds or deposits which may lie undisturbed beneath the ground surface.

## 6.10 Traffic and Transportation

This section includes the measures that are required for the management of Traffic & Transportation during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts on Traffic & Transportation; and how the following mitigation measures will be implemented. These measures include:

- Dust and dirt control measures;
- Noise assessment and control measures;
- Routes to be used by vehicles;
- Working hours of the site;
- Details of construction traffic forecasts;
- Times when vehicle movements and deliveries will be made to the site;
- Facilities for loading and unloading;
- Facilities for parking cars and other vehicles;
- Issue of instructions and maps on getting to site to each supplied sub-contractor to avoid 'lost' construction traffic travelling on unapproved routes;
- Ongoing assessment of the most appropriate routes for construction traffic to and from the site;
- Interface with the operation of local traffic;

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Use of a banksman and/or traffic lights to control the exit of construction vehicles;
- Not allowing construction traffic to wait on public roads;
- Schedule the delivery of materials daily;
- Provision of vehicle and wheel washing facilities on site;
- A detailed Construction Management Plan (CMP) and a Construction Traffic Management Plan (CTMP) will also be prepared by the main contractor prior to the construction stage. These documents, which will be prepared in coordination and agreement with the Local Authority, will outline site logistics and indicate the following:
  - Site access location;
  - Site boundary lines;
  - Tower crane locations;
  - Vehicle entry and exit routes to/from the site;
  - Diversion of pedestrian and cycling routes;
  - Location of loading and unloading areas;
  - Location of site offices and welfare facilities;
  - Location of material storage areas;
  - Banksman locations.

During the construction phase the following monitoring is advised:

- Construction vehicle routes and parking;
- Internal and external road conditions;
- Construction activities hours of work.

The specific compliance exercises to be undertaken in relation to the range of measures detailed in the final Construction Management Plan (CMP) and Construction Traffic Management Plan (CTMP) will be agreed with the Planning Authority.

### 6.11 Waste

This section includes the measures that are required for waste management during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts; and how the following mitigation measures will be implemented. These measures include:

- A project specific OWMP has been prepared and is included as Appendix 18.2 of the EIAR. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the *EMR Waste Management Plan 2015 – 2021, A Waste Action Plan for a Circular Economy – Ireland’s National Waste Policy* and the FCC waste bye-laws.
- The Operator / Facilities Management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of this OWMP, ensuring a high level of recycling, reuse and recovery at the site of the proposed development.

In addition, the following mitigation measures will be implemented:

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- The Operator / Facilities Management will ensure on-site segregation of all waste materials into appropriate categories, including (but not limited to):
  - Organic waste;
  - Dry Mixed Recyclables;
  - Mixed Non-Recyclable Waste;
  - Glass;
  - Waste electrical and electronic equipment (WEEE);
  - Batteries (non-hazardous and hazardous);
  - Cooking oil;
  - Light bulbs;
  - Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);
  - Furniture (and from time to time other bulky waste); and
  - Abandoned bicycles.
- The Operator / Facilities Management will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials;
- The Operator / Facilities Management will ensure that all waste collected from the site of the proposed development will be reused, recycled or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available; and
- The Operator / Facilities Management will ensure that all waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities.

These mitigation measures will ensure the waste arising from the proposed development during the operational phase is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations, the Litter Pollution Act 1997, the *EMR Waste Management Plan (2015 - 2021)* and the FCC waste bye-laws. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

The management of waste during the construction phase will be monitored by the Contactor's appointed Resource Manager to ensure compliance with the above-listed mitigation measures, and relevant waste management legislation and local authority requirements, including maintenance of waste documentation.

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction works, where there is a potential for waste management objectives to become secondary to other objectives, i.e. progress and meeting construction schedule targets. The mitigation measures in the RWMP specify the need for a Resource Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Resource Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the construction phase of the proposed development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

## 6.12 Services

This section includes the measures that are required for protection and management of services during the design and the execution of the project. The CEMP will be updated prior to the construction phase to further elaborate all measures (including method statements) to be employed in relation to all potential impacts; and how the following mitigation measures will be implemented. These measures include:

- Water Supply
  - All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.
  - All water mains will be cleaned, sterilised, and tested to the satisfaction of the Uisce Éireann / Fingal County Council prior to connection to the public water main.
  - All connections to the public water main will be carried out under the supervision of the Uisce Éireann / Fingal County Council.
- Wastewater
  - All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
  - Foul water pipes to be laid with sufficient falls to ensure self-cleansing velocity.
  - Foul pipes will be carefully laid so as to minimise the potential for cross connections.
- Surface Water
  - The contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
  - Regular testing of surface water discharges will be undertaken at the outfall from the subject site.
  - Where silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The cleaned system will start working again.
  - Careful removal of contaminated material from site during the works in accordance with an approved plan.
  - All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks / containers with the capacity to hold 110% of the volume of chemicals and fuels contents. Bunds will be located on flat ground a minimum distance of 50 m from any watercourse or other water conducting features, including the cut off trenches.
  - All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.
  - Temporary traffic management will be implemented as appropriate during the construction of the connections at tie-in to existing surface water networks.
  - Surface Water pipes will be carefully laid so as to minimise the potential for cross connections.
- Gas
  - All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
  - The contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

- Any works required on existing gas mains will be completed directly by the Gas Networks Ireland or by the specialist sub-contractors appointed on their behalf and any loss of supply will be managed by Gas Networks Ireland.
- ESB Supply
  - All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
  - The contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
  - All connections to the existing ESB Network will be completed directly by ESB Networks and any loss of supply will be managed by ESB Networks to minimise impact on neighbouring properties.
- Telecommunications
  - All connections to the existing telecoms infrastructure will be completed directly by the telecoms providers or by the specialist sub-contractors appointed on their behalf and any loss of supply will be managed by the respective telecoms providers to minimise impact on neighbouring properties.

### 6.13 Risk Management

The measures listed in the sections below will be implemented and the site will be managed, however. There remains a low risk of unexpected instances such as accidental/emergency spills of hazardous substances (oils, hydraulic fluids, concrete/cement etc.), any malfunction of environmental protection system, etc. that may result in environmental pollution and health and safety concerns.

The Construction Environmental Management Plan (CEMP) and the Operational Stage Environmental Management Plan (OSEMP) will be developed, which will outline the site safety procedures that will be implemented during the lifecycle of the proposed project, as well as the site Emergency Response Plan (ERP). The Emergency Response Plan is to be continually developed over the lifetime of the proposed project. A Traffic Management Plan (construction and operational) will also be developed.

Any occurrence of the environmental incidence will be reported to the Project / Site Manager and Site Environmental Manager. Each incident will be recorded with detailed specifics such as location of the incident, date and time, scale, nature, remediation actions, name of personnel noting the incident and any other relevant information.

Works in the vicinity of the incident must be stopped until the incident is resolved and remediated. The Project Manager or the Site Environmental Manager will ensure, where required that the incident details are communicated to the relevant regulatory authorities.

## 7 Environmental Management Procedures

### 7.1 Construction / Environmental Manager

The Construction / Environmental Manager appointed by the Contractor will oversee the development of the CEMP and the implementation of recommended mitigation measures, planning conditions and other environmental protection measures as required. The Construction / Environmental Manager will act as the regulatory interface on environmental matters by reporting to and liaising with local authority for the relevant jurisdiction and other statutory bodies as required.

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

The Environmental Manager will act as the point of contact for all environmental matters for the Contractor and will be responsible for review and authorisation of all method statements and environmental plans for the proposed development. The Environmental Manager will be responsible for updating the CEMP and maintaining all environmental records relating to the works. The CEMP will detail the general tasks and communication lines for reporting procedures for all potential environmental risks, hazards or incidents which may relate to, but not be limited to, biodiversity, water quality, soil quality, dust, noise and vibration or archaeology.

The duties and responsibilities of Environmental Manager will include:

- Updating the CEMP and supporting environmental documentation and review/approval of Contractor method statements;
- Undertake inspections and reviews to ensure the works are carried out in compliance with the CEMP and monitor the implementation of the CEMP, particularly all proposed/required Environmental Monitoring;
- Ensure construction works and activities are completed in accordance with all planning conditions for the development;
- Ensure construction works and activities have minimal impact/disturbance to local landowners and the local community;
- Ensure construction works and activities have minimal impact on the Natural Environment;
- Be aware of the relevant legislation, codes of practice, guidance notes and good environmental working practice relevant to their work;
- Ensure compliance through audits and management site visits;
- Ensure timely notification of any environmental incidents to the relevant regulatory authorities;
- Adopt a sustainable approach to construction such as sustainable sources for materials supply where possible;
- Provide adequate environmental training and awareness for all project personnel;
- Using recycled materials if possible, e.g. excavated stone, clay and peat material;
- Avoidance of any pollution incident or near miss as a result of working around or close to existing watercourses and having emergency measures in place;
- Avoidance of vandalism;
- Keeping all watercourses free from obstruction and debris;
- Keep impact of construction to a minimum on the local environment, watercourses and wildlife;
- Correct fuel storage and refuelling procedures to be followed;
- Good waste management and house-keeping to be implemented;
- Air and noise pollution prevention to be implemented;
- Monitoring of the works and any adverse effects that it may have on the environment;
- Construction methods and designs will be altered where it is found there is an adverse effect on the environment;
- Comply with all relevant water quality legislation; and
- Ensure a properly designed, constructed and maintained drainage system appropriate to the requirements of the site is kept in place at all times.

## 7.2 Training

The Contractor will ensure that an Environmental Training and Awareness Programme is established and that all personnel and subcontractors receive adequate training prior to the commencement of the

## Proposed Residential Development at Church Fields East, Mulhuddart, Dublin 15

### Construction Environmental Management Plan

construction phase. It will be ensured that all personnel are aware of their individual environmental responsibilities and environmental constraints to specific jobs. No person will work on site without first receiving environmental induction.

The environmental performance at the construction site will be on the agenda of all project management meetings. Elements of the CEMP, such as objectives, targets and the effectiveness of environmental procedures will be discussed at these meetings. All site monitoring results will be evaluated by the Environmental Manager. Key findings along with any mitigation measures as required will be clearly communicated to the project team.

All site personnel will receive Environmental Induction that will be integrated into the general site induction on a case-by-case basis for each member of staff employed on-site depending on their assigned roles and responsibilities on site. This will ensure that personnel are familiar with the environmental aspects and impacts associated with their activities, that appropriate procedures are in place to control these impacts and that they fully understand the consequences of departure from agreed procedures. Formal records of such training along with records verifying the competency of the trainer will be maintained onsite for the duration of the project.

Toolbox talks would be held by the Construction / Environmental Manager at the commencement of new activities. The aims of the toolbox talks are to identify the specific proposed work activities that are scheduled work activities and associated environmental issues. In addition, the necessary work method statements and sub plans would be identified and discussed. Toolbox talks will reflect the type of works being undertaken and the environmental impacts that may result from these activities e.g. training on water pollution prevention before works near watercourses. Training to be given will include the contents of this CEMP incorporating the following as appropriate:

- Protected species / habitats;
- Environmental incidents;
- Water pollution prevention;
- Spill control and spill kits;
- Dust and air quality;
- Erosion and sediment control; and
- Storage and use of petrol, diesel, and oils.

Site meetings would be held on a regular basis involving all site personnel. The objectives of the site meetings is to discuss the coming weeks proposed activities and identify the relevant work method statements and sub-plans that will be relevant. Additionally, any non-compliance identified would also be discussed with the aim to reduce the potential of the same non-compliance reoccurring.

### 7.3 Control of Records

Environmental records, including waste management records, will be maintained in accordance with respective company procedures and legal requirements. This will in turn ensure effective monitoring and implementation of the CEMP.

Any complaint related to the site will be dealt with by the Project Manager. The source of the complaint will be investigated and remediated. All complaints must be recorded including details of the complaint and corrective action.



Routine inspections of construction activities will be carried out on a daily basis by the Contractors Construction/Environmental Manager to ensure all necessary measures to avoid or mitigate environmental impact, relevant to the construction activities are being implemented.

## 8 Conclusion

This CEMP outlines the management procedures for the proposed development to prevent any environmental impacts and to respond to any potential environmental risks from construction activities on-site.

The CEMP will be a working document and will be finalised by the Contractor following appointment and prior to commencing works on site. However, all of the content provided in the CEMP will be implemented in full by the Contractor and finalised by the Contractor.

## 9 References

BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Noise;

BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Vibration;

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

BS 8233:2014 Guidance on sound insulation and noise reduction for buildings;

By-Product Guidance Note, 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) (EPA, 2020);

C741- Environmental Good Practice on Site Guide (4th Edition) (CIRIA, 2015);

C532- Control of Water Pollution from Construction Sites (CIRIA, 2001);

C733- Asbestos in Soil and Made Ground: a Guide to Understanding and Managing Risks (CIRIA, 2014);

Framework and Principles for the Protection of the Archaeological Heritage (Department of Arts, Heritage, Gaeltacht and the Islands, 1999).

Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3 (EPA 2019);

Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).

National Roads Authority (2010). Guidelines on the Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads.

Requirements for the Protection of Fisheries Habitat during Construction Works in and Adjacent to Waters (Inland Fisheries Ireland, 2016); and

Waste Classification, List of Waste and Determining if Waste is Hazardous or Non-hazardous, (EPA 2018).





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