Central Dublin Substation Project

Planning and Environmental Considerations Report

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1 Introduction

1.1 Nature of Application

RPS has been appointed by EirGrid plc (hereafter EirGrid) to prepare a Strategic Infrastructure Development (SID) planning application under Section 182A of the *Planning and Development Act 2000,* as amended (the Act) for the Central Dublin Substation Project which comprises of the construction of a new transmission substation in East Wall, Dublin 3 (hereafter referred to as the "Proposed Development").

The SID planning application is made following receipt of the formal notice from An Coimisiún Pleanála (ACP), dated 12th June 2025 (Ref: ABP-322217-25) which confirms that the Proposed Development constitutes strategic infrastructure under Section 182 of the Act, and formally concludes pre-application consultation with An Coimisiún Pleanála.

This Planning and Environmental Considerations Report (PECR) comprises part of the SID planning application documentation submitted to An Coimisiún Pleanála (see **Section 1.4** of this PECR). This PECR has been prepared to ensure that the planning application is sufficiently detailed and that all potential environmental effects of the Proposed Development are appropriately assessed and mitigated.

1.2 Applicant Details

EirGrid is the State-owned electric power transmission system operator (TSO). It is a public limited company, registered under the Companies Acts. EirGrid was established to act as the independent TSO, in line with the requirements of the EU Electricity Directive. EirGrid became operational as the TSO on 1 July 2006.

Pursuant to provisions of S.I. No. 445/2000 - European Communities (Internal Market in Electricity) Regulations, 2000, EirGrid has the exclusive function to operate and ensure the maintenance of and if necessary, develop a safe, secure, reliable, economical, and efficient transmission system.

As TSO in Ireland, EirGrid's statutory role is as follows:

- Develop, ensure maintenance and operate a safe, secure, reliable, economical and efficient national electricity grid with due regard for the environment.
- Plan and develop the grid infrastructure needed to support Ireland's economy.
- Supervise the security of the national grid.
- Schedule electricity generation with power generators and stations.
- Facilitate the market for renewable electricity in Ireland.

As TSO, EirGrid is regulated by the Commission for the Regulation of Utilities (CRU).

1.3 Proposed Development Overview

The 1.124ha subject site at the ESB Gateway Car Park and adjoining lands, East Wall Road, East Wall, Dublin 3 is within the ownership of ESB and comprises of a temporary surface car park for ESB Networks staff, and an adjacent vacant brownfield site on the north side of East Wall Road (R131 regional road). A strip of land along the East Wall Road footpath, and within the control of Dublin City Council, also forms part of the SID planning application boundary. Letters of consent to include these lands as part of the SID planning application are enclosed as part of the application documentation. Full details relating to the site location and its context are set out in **Chapter 3: Site Location and Context**.

The Proposed Development comprises of :

- Change of use from car park to electricity infrastructure;
- Demolition of existing buildings, structures and general site clearance;
- 1 no. 2-storey 220kV Gas Insulated Switchgear (GIS) substation building occupying an area of c. 51.8m x 22.2m and 20m in height to include the GIS switchgear comprising of insulated circuit breakers, disconnectors and other high voltage equipment, an emergency diesel generator, all necessary welfare facilities, office spaces, and monitoring and control equipment required for the operation and maintenance of the substation;
- 1 no. 2-storey 110kV GIS substation building occupying an area of c. 51m x 15.9m and 16.5m in height to include the GIS switchgear comprising of insulated circuit breakers, disconnectors and other high voltage equipment, an emergency diesel generator, all necessary welfare facilities, office spaces, and monitoring and control equipment required for the operation and maintenance of the substations;
- 3 no. transformers to transform electrical power from 220kV to 110kV and associated acoustic enclosures (c. 5.3m in height) and c 1m high lightning protection rods extending to a height of c. 11m above ground level;
- Electrical cables located within the site boundary;
- Site lighting within the substation compound;
- Closure of all existing entrances to the site and the provision of new vehicular and pedestrian access from East Wall Road;
- Closure of all existing entrances to the site and the provision of new vehicular and pedestrian access from East Wall Road;
- Ancillary car parking spaces including internal access roads;
- 2.6 m high palisade security fence and associated gates;
- A public-facing fence and associated gates along East Wall Road varying in height from c. 2.4m to c. 3m;
- Public realm improvements including the provision of seating areas and landscaping;
- Associated utility connections including water supply, foul drainage and surface water drainage, including the provision of an underground storm water attenuation tank; and
- All other associated ancillary above and below ground development, including works comprising or relating to construction works, roadworks and excavation.

The proposed substation will tie into the existing Belcamp – Shellybanks 220 kV circuit which runs along the northern side of the M50 motorway. This connection does not form part of the proposed SID planning application.

A full description of the Proposed Development is set out in **Chapter 4: Description of the Proposed Development**.

1.4 Documents Submitted as Part of this Application

This PECR forms part of a SID planning application to An Coimisiún Pleanála. **Table 1.1** provides an overview of documents and drawings that accompany the application. A detailed schedule of documents and drawings is set out in the enclosed *Statutory Particulars Document* prepared by RPS.

Table 1.1: SID Application Documents Submitted

Item No.	Document
1	Statutory Particulars Document including: • SID Application Form • Application Fee • Letters of Consent • Letter form ACP on Pre-Application Consultation • Site Notice • Newspaper Notice • Prescribed Bodies Schedule and Notice Letters • Schedule of Application Documents and Drawings
2	Drawings including: • Site Location Map • Existing and Proposed Site Layout Plans • Architectural Plans, Elevations and Sections • Landscape Master Plan • Civil Engineering Drawings • Electrical Engineering Drawings (A detailed list of drawings is set out in the Schedule of Application Documents and Drawings)
3	Architectural Design Statement prepared by BDA
4	Planning and Environmental Considerations Report prepared by RPS
5	Appropriate Assessment (AA) Screening Report prepared by RPS
6	Environmental Impact Assessment (EIA) Screening prepared by RPS
7	Engineering Services Report prepared by RPS
8	Outline Construction Environmental Management Plan prepared by RPS
9	Photomontages prepared by RPS

Each of the reports should be read in conjunction with the enclosed planning drawings.

Prior to making this application, the plans and particulars enclosed herewith have been prepared with reference to the *Planning and Development Regulations 2001*, as amended, (hereafter referred to as the Planning Regulations) and the following is noted.

1.5 Pre-Application Consultation

1.5.1 An Coimisiún Pleanála

In accordance with Section 182E of the Act, EirGrid engaged in pre-application consultation with ACP, seeking confirmation as to whether the Proposed Development comprises SID. ACP confirmed by their determination on the 12th of June 2025 (ACP ref. 322217-25), that the Proposed Development does constitute strategic infrastructure within the meaning of section 182A of the Act and that any application for approval shall therefore be made directly to ACP.

ACP's determination further noted that the pre-application consultation process in respect of the Proposed Development was now considered to be closed.

A copy of ACP's determination is enclosed within the Planning Particulars Document that accompanies the SID planning application.

1.5.2 Dublin City Council

Pre-planning application meetings were held with Dublin City Council (DCC) on the 15th of May, 12th June and 25th June 2025. The purpose of these meetings was to discuss the key information of the Proposed Development including setting out the need for the proposed works and outlining the main elements of the Proposed Development.

A summary of the key issues raised by DCC representatives and how they have been addressed are provided in **Table 1.2**.

Table 1.2: Summary of DCC Feedback

Key Issues Raised	EirGrid Response
Concern over scale and visual impact, need to address visual impact of the proposed substation buildings in terms of scale and massing, exploring different materials and textures	The substation buildings have been designed to incorporate architectural cladding and materials and finishes to reduce the perceived scale and massing of the proposed buildings. The choice of materials and finishes has had regard to the previous historical uses of the surrounding area which included ironworks and steel foundries. While the selected materials and finishes have been carefully considered to address feedback from DCC and the local community while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the Proposed Development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC. The evolution of the design is outlined in Section 5.3 of this PECR and within the Architects Design Statement prepared by BDA and provided under separate cover.
Consideration of the boundary treatment to break up the linearity of the road frontage	The boundary treatment has been designed and developed to respond to the feedback from members of the public and DCC while also ensuring it meets the safety and technical requirements of ESB. The external boundary treatment incorporates an architecturally designed public boundary with setback areas along East Wall Road to create public spaces and break up the linearity of the road frontage. Public seating and spaces for community

Key Issues Raised	EirGrid Response
	art are also provided to enhance the public realm and improve the pedestrian experience. While the proposed interface with the public realm has been carefully considered to address feedback from DCC while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the Proposed Development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) EirGridto further discuss and agree these details with DCC. The evolution of the design is outlined in Section 5.3 of this PECR and within the Architects Design Statement prepared by BDA and provided under separate cover.
Verified views and photomontages will be key element in the planning application	The Landscape and Visual Impact Assessment (LVIA) is provided in Chapter 13 of this PECR. The LVIA is supported by the photomontages from 2 no. representative viewpoint locations. The photomontages are provided under separate cover.
Surface water drainage design and the potential role of green walls and blue/green roof guidelines	The Surface Water Drainage Design is described in Chapter 4 of this PECR and the proposed stormwater drainage design incorporates appropriate sustainable drainage measures that can be delivered, taking account of the site particular specific constraints. The use of green / blue roofs as a nature based drainage solution is not considered to be a feasible SuDS measure due to significant electrical safety concerns, and other technical and engineering constraints. The reductions in outflow to that of greenfield rate of runoff can be delivered for the Proposed Development site, without the need for green or blue roof infrastructure. Further details have been provided in the Engineering Services Report prepared by RPS and provided under separate cover.
Hedges in front of security fence to visually tie in with the residential character across the road	Details on the boundary treatment and the technical, engineering and safety considerations which have influenced the Landscape Design are outlined in **Section 4.1.10** of this PECR.

1.5.3 Other Stakeholder Engagement

Stakeholder Consultation is an essential element of any EirGrid Development. EirGrid has developed a six-step consultation process (**Figure 1.1**) aimed at improving communication with the public and other stakeholders. This six-step process is laid out in its consultation document entitled "Have Your Say". This project is currently at Step 5 – The Planning Process.

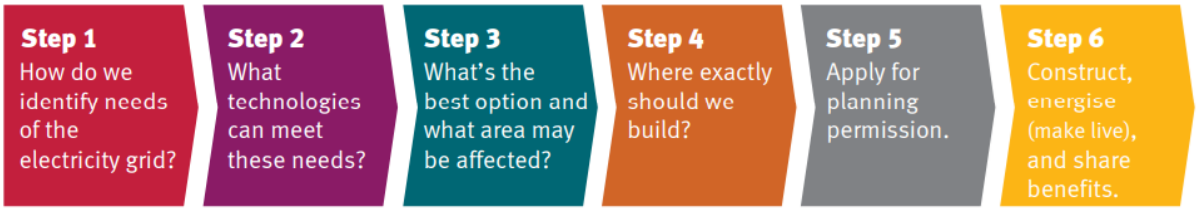


Figure 1.1: Framework for Grid Development Steps[1]

EirGrid held three information events in the East Wall area in June 2024 to provide members of the public with information on the Central Dublin Substation Project. These drop in events offered interested people and groups an opportunity to speak with a member of the technical team and the EirGrid Community Liaison Officer. During the public consultation process, feedback was collected and evaluated. The main themes from the feedback and how they have been addressed are outlined in **Table 1.3** below.

Table 1.3: Summary of Consultation Feedback From Step 3

Key Issues Raised	EirGrid Response and key changes resulting from the Consultation process	Where Feedback has been considered and addressed in the PECR
Uncertainty with respect for the need of the Proposed Development	The need for this project arises from a lack of capacity at existing transmission substations and transmission circuits to supply the increased demand that the DSO (ESB Networks) has forecast.	Further details in relation to the Background and Need are provided in **Chapter 2** of this PECR.
The proposed development should be situated elsewhere	EirGrid has examined alternative sites as part of the development of the Project. Eight potential feasible transmission substation locations were identified following high level considerations under a range of headings and four of these were brought forward for further assessment using EirGrid's five multi-criteria assessment categories to identify the Emerging Best Option (EBO)	Further details on the alternative transmission substation locations, the MCA process, the identification of the Emerging Best Option and design evolution is provided in **Chapter 5** of this PECR.

[1] Source: EirGrid (2021)

Key Issues Raised	EirGrid Response and key changes resulting from the Consultation process	Where Feedback has been considered and addressed in the PECR
	and this has been further developed through iterative technical analysis and integration of stakeholder and public feedback where possible.	
The proximity to residential areas and schools on East Wall Road	As part of the MCA process on the identification of the Emerging Best Option, the socio-economic performance of each potential location was assessed as part of the MCA process. Socio-economic factors considered the impact of each option on settlements, communities, cultural heritage, amenity, and landscape.	Further details on the MCA Process and MCA categories and sub-categories considered is provided in **Chapter 5** of this PECR. The relevant environmental assessments in this PECR have had consideration to the proximity of sensitive receptors such as residential properties, schools, community facilities and amenities and mitigation measures where relevant have been proposed.
Concern over Electromagnetic field (EMF) levels from the Proposed Development	EirGrid has considered this feedback and understand that some people have genuine concerns about Electromagnetic Fields (EMFs) and health. EirGrid has prepared a document outlining the impact from EMF's titled *Your guide to understanding electric and magnetic fields (EMFs) in the electricity transmission system (*EirGrid, 2024*)*. In summary, extensive scientific research has found no hazardous effects from long-term exposure to low levels of EMFs. This includes the small amounts of extremely low frequency EMFs produced by electricity infrastructure.	EirGrid designs, develops and operates the transmission grid in accordance with stringent safety standards which are set by national and international agencies. Further details are provided in **Chapter 4** of this PECR.
Potential for visual impact from the Proposed Development and the necessity for appropriate site screening	EirGrid considered this feedback and an architect was subsequently appointed and included on the Design Team to consider aspects such as visual impact, façade composition,	Further details on the evolution of the design is provided in **Chapter 5** of this PECR.

Key Issues Raised	EirGrid Response and key changes resulting from the Consultation process	Where Feedback has been considered and addressed in the PECR
	overall aesthetic and aspects for screening. While the selected materials and finishes have been carefully considered to address feedback from DCC and the local community while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the Proposed Development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.	A Landscape & Visual Impact Assessment is included in **Chapter 13** of this PECR.
Potential for Noise impact from the Proposed Development	EirGrid has considered the feedback and have made design updates to minimise noise impacts. This has included updates to the orientation of the substation buildings, setback of buildings within the Proposed Development Boundary, locating transformers which have the highest potential for noise generation to be located behind the substation buildings and incorporation of transformer acoustic enclosures.	Further details on the evolution of the design is provided in **Chapter 5** of this PECR. A noise impact assessment is provided in **Chapter 12** of this PECR.
The lack of green spaces in the area	EirGrid has considered this feedback and the appointment of an Architect to the Design Team has led to the evolution of the design with incorporation of an architecturally designed public boundary and high-quality landscaping. In addition, the design includes set back areas for public realm space on East Wall Road. While the proposed interface with the public realm has been	Further details on the boundary treatment and landscape design is provided in **Chapter 4** of this PECR, while **Chapter 5** provides further details on the design evolution and the key changes to the design.

Key Issues Raised	EirGrid Response and key changes resulting from the Consultation process	Where Feedback has been considered and addressed in the PECR
	carefully considered to address feedback from DCC while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.	

Further information events were held with members of the public in the East Wall area on the 26th and 30th of June and 4th of July 2025. EirGrid has taken into account the feedback received during the previous engagements and adjusted the final design where possible in response. The purpose of these information events was to present the various design options under consideration and seek observations on the final proposed design features. The feedback received from this consultation was considered by the design team and the preliminary design including architectural finishes and choice of materials in the application for which planning approval is sought has been informed by the consultation process with key stakeholders (including ESB and DCC) and members of the public.

1.6 Structure of this PECR

This PECR is set out as follows:

Chapter 1 Introduction

Chapter 2 Background and Need

Chapter 3 Site Location and Context

Chapter 4 Description of the Proposed Development

Chapter 5 Alternative Options Considered

Chapter 6 Planning Context

Chapter 7 Scope of Environmental Evaluation

Chapter 8 Traffic & Transport

Chapter 9 Population and Human Health

Chapter 10 Air Quality

Chapter 11 Climate

Chapter 12 Noise and Vibration

Chapter 13 Landscape and Visual

Chapter 14 Archaeology, Architecture and Cultural Heritage

Chapter 15 Biodiversity

Chapter 16 Soils, Geology and Hydrogeology

Chapter 17 Summary of Mitigation Measures

Chapter 18 Conclusion

1.7 Statement of Authority

The environmental assessments presented in Chapters 8 to 16 of this PECR have been completed by competent environmental specialists in RPS, with the exception of the Archaeological, Architecture and Cultural Heritage Specialist which was completed by Courtney Deery Heritage Consultancy. In all cases, specialists are members of relevant professional bodies and supervised by Chartered Scientist / Environmentalist.

1.8 Guidance

The PECR has been prepared with reference to:

- Develop, ensure maintenance and operate a safe, secure, reliable, economical and efficient national electricity grid with due regard for the environment.
- Guidelines on the Information to Be Contained in Environmental Impact Assessment Reports, (EPA, 2022).
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (DHLGH, 2018).
- Environmental Impact Assessment of Projects - Guidance on Scoping (European Commission, 2017).
- Environmental Impact Assessment of Projects - Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017a).
- Ecology Guidelines for Electricity Transmission Projects - A Standard Approach to Ecological Impact Assessment of High Voltage Transmission Projects (EirGrid, 2020).
- Cultural Heritage Guidelines for Electricity Transmission Projects - A Standard Approach to Archaeological, Architectural and Cultural Heritage Impact Assessment of High Voltage Transmission Projects (EirGrid, 2015).
- XDS-GFS-00-001-R4 Functional Specification 110/220/400 kV Substation General Requirements (EirGrid, 2019).

The PECR considers and assesses the prevailing environmental conditions and sensitivities of the receiving environment, for the Proposed Development.

2 Background and Need

2.1 Introduction

EirGrid, as the TSO of Ireland, and ESB Networks, as the Distribution System Operator (DSO) and Transmission Asset Owner (TAO) of Ireland, work collaboratively to ensure that the needs of transmission and distribution connected customers are met. This includes planning the development of transmission interface stations. A transmission interface station or transmission substation is a point of connection between the transmission and distribution system. A primary function of these stations is to facilitate power flows between the transmission and distribution systems to enable power to be distributed to where it is needed.

As part of feedback collected during the Shaping our Electricity Future consultation, the DSO has highlighted to EirGrid emerging needs for additional capacity at transmission interface stations in the Dublin area. This capacity is needed to accommodate forecast growth of electricity demand in the distribution network. This projected demand growth is driven by several factors including residential, electrification of heat and transport and growth in commercial sectors.

The significant electricity demand growth in the distribution system also leads to a significant pressure on the transmission system, particularly at existing transmission substations and the associated transmission circuits. The existing transmission substations and the associated transmission circuits are at risk of reaching their capacity limits and as a result the existing infrastructure will not be capable to supply sufficient power to where it is needed. To address this need, new infrastructure is required.

Since publication of the Shaping Our Electricity Future v1.0 Roadmap in 2021, the emerging needs have translated into connection requests made by the DSO to the TSO. Currently there are three projects underway to deliver new transmission substations, one each in North County Dublin, West County Dublin, and Dublin Central.

The focus of this report is the Central Dublin Substation Project. Further details on the project are provided in **Chapter 4** of this report.

2.2 Central Dublin Substation Project

Due to the ageing of Dublin's electricity infrastructure, the Powering Up Dublin Programme has been introduced as a means to strengthen key electricity infrastructure in Dublin and the surrounding area, making the city 'renewable ready'. Powering Up Dublin requires the installation of five routes for high voltage underground cables to replace older cables, as well as substation upgrades and the construction of a new electricity transmission substation in Central Dublin.

Dublin City Centre currently gets its power from existing transmission substations in Finglas, Ringsend and Inchicore. It is projected that these existing transmission stations will reach their capacity limits in the coming years. Because of this, there is a need for a centrally located substation to support Dublin's growing electricity needs.

As part of the Powering Up Dublin programme, a new 220kV/110kV Gas Insulated Substation (GIS) has been identified as the best solution to address the city's growing electricity demand. This GIS will be looped into one of the existing 220 kV circuits in the North Inner City. The new station will support:

- Residential housing and commercial developments in the City Centre area;
- Demand growth due to electrification of heat and transport;
- Improve security of supply in the City Centre; and
- Bringing renewable energy on to the grid.

The benefits of the Project include:

Security and reliability of supply - Building a more resilient and reliable electricity grid helps ensure that everyone has power when and where they need it. This upgrade will also enable greater energy independence by using greener sources of electricity close to the city.

Sustainability - Powering Up Dublin will enable the city's grid to use the electricity generated from offshore wind energy to the heart of the city. This is a vital step towards transitioning Ireland to a low carbon electricity future.

Meet future needs - These improvements will help to meet the growing and changing electricity needs of Dublin. This includes the electrification of transport systems, vehicles and heating, the requirements of large energy users and the development of housing and offices.

Economic - These critical upgrades will help strengthen Dublin’s economy, encouraging and supporting future investment.

Community – EirGrid’s community benefit policy will directly support local communities in the areas that host the project infrastructure.

3 Site Location and Context

The subject 1.124ha site is located at East Wall Road (R131 regional road), East Wall, Dublin 3, as illustrated in **Figure 3.1** and on the Site Location Map Drawing CP1273-RPS-03-PL-SL-D-C-2160 prepared by BDA Architects and enclosed as part of the SID application pack.

The majority of the site is owned by ESB, with a strip of land along the East Wall Road footpath being within the control of Dublin City Council. Letters of consent to include these lands are enclosed as part of the SID application pack.

The site is currently in use as a temporary surface car park for ESB Networks staff with an adjacent vacant brownfield site. Access to the site is via the East Wall Road with two gated entrances – only one of which is in operation. The security-controlled surface car park has been in operation at the location since 2016, as permitted by DCC (under Planning Reference 3052/16 and 2766/21) and will cease operating in August 2026.

As illustrated in **Figure 3.2**, the residential area of East Wall is located immediately to the southwest of the site and generally comprises two storey residential dwellings. The site is bounded to the west by the Portside Business Centre, to the east by a Dublin Port Company (DPC) Storage Site, to the north by the M50 and Port Tunnel Control building and Tolling facility.

The Eastpoint Business Park lies immediately to the north of the M50 and Port Tunnel which consists of numerous office buildings with access to the Business Park from two security-controlled access points from Alfie Byrne Road and Bond Road. Further afield to the northwest of the application site, the River Tolka flows out into the Dublin Bay Estuary. The M50 crosses the river near the estuary before entering the port tunnel.

The location is approximately 50m south from the Belcamp – Shellybanks 220 kV circuit which currently runs on the northern side of the M50. The proposed substation will connect into this 220 kV circuit via a trenchless crossing of the M50. This Grid Connection does not form part of the proposed SID planning application however it has been considered and assessed within this PECR.

For the purposes of this PECR:

- The “Proposed Development” relates to the development as detailed in **Section 4**, and is the subject of this SID planning application.
- The “Grid Connection (not part of the subject planning application)” relates to the trenchless crossing of the M50 from the site. The Grid Connection will facilitate the connection of the Proposed Development to the national electricity grid.

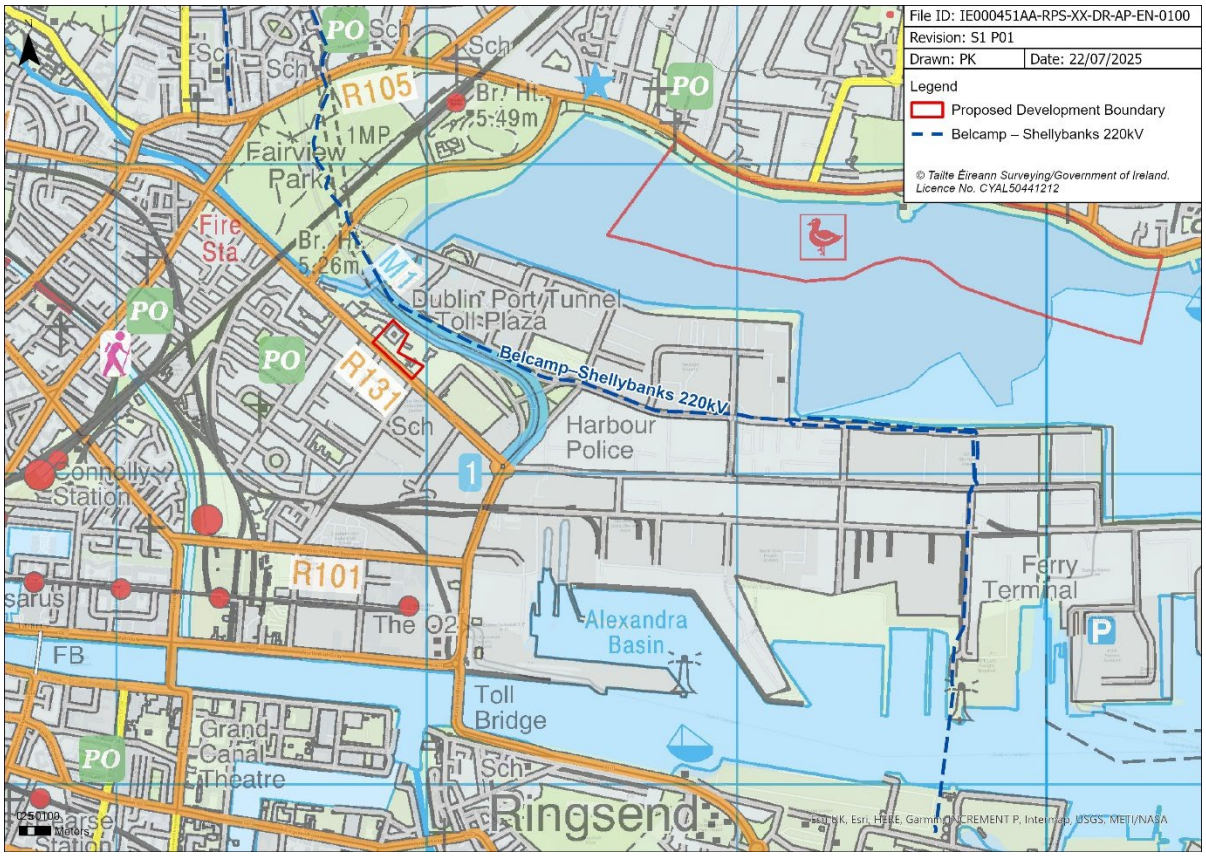


Figure 3.1: Site Location

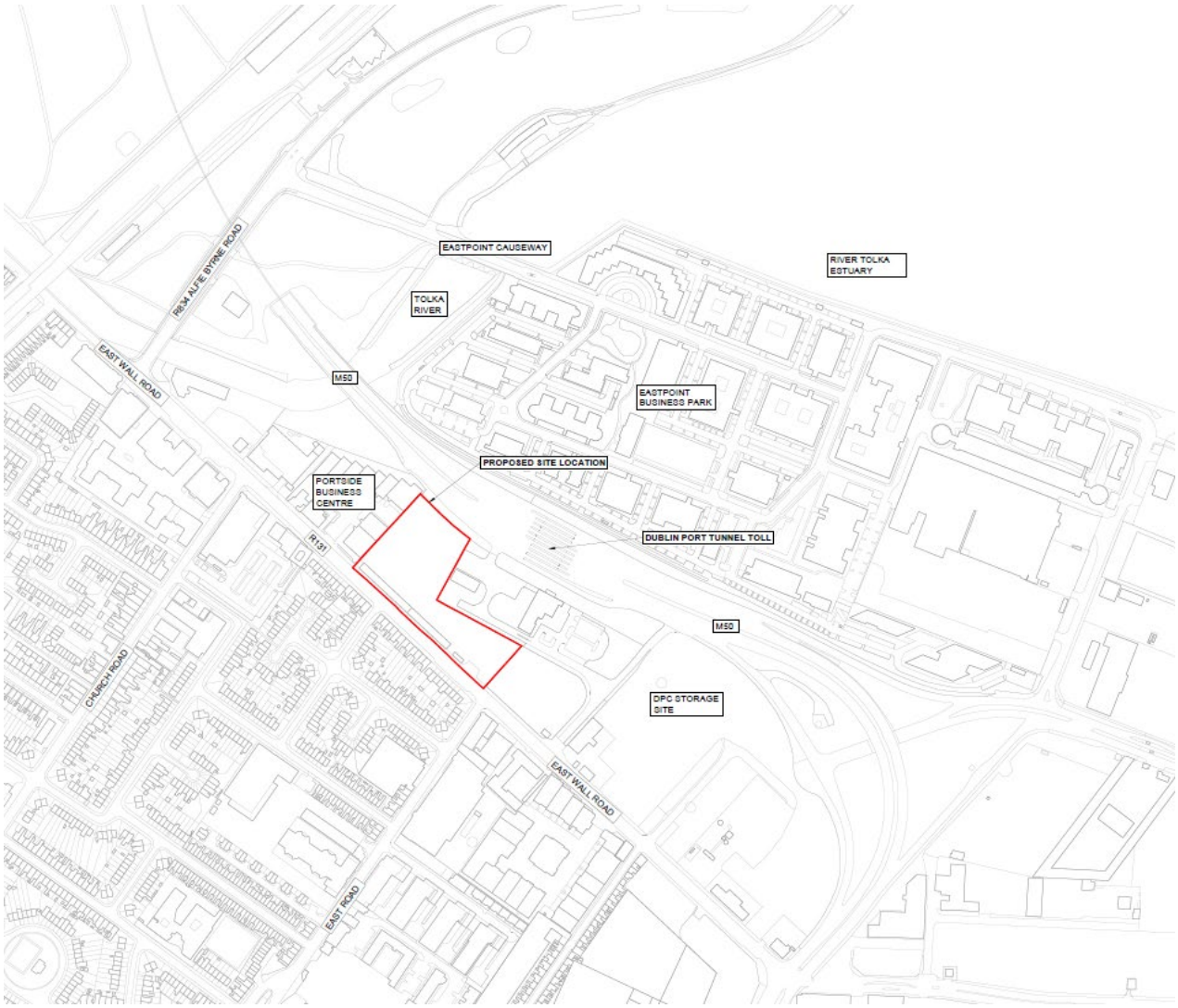


Figure 3.2: Site Context

4 Description of the Proposed Development

4.1 Proposed Development

A summary of the Proposed Development is outlined below and described in more detail throughout this Chapter.

The Proposed Development comprises of:

- Change of use from car park to electricity infrastructure;
- Demolition of existing buildings, structures and general site clearance;
- 1 no. 2-storey 220kV Gas Insulated Switchgear (GIS) substation building occupying an area of c. 51.8m x 22.2m and 20m in height to include the GIS switchgear comprising of insulated circuit breakers, disconnectors and other high voltage equipment, an emergency diesel generator, all necessary welfare facilities, office spaces, and monitoring and control equipment required for the operation and maintenance of the substation;
- 1 no. 2-storey 110kV GIS substation building occupying an area of c. 51m x 15.9m and 16.5m in height to include the GIS switchgear comprising of insulated circuit breakers, disconnectors and other high voltage equipment, an emergency diesel generator, all necessary welfare facilities, office spaces, and monitoring and control equipment required for the operation and maintenance of the substations;
- 3 no. transformers to transform electrical power from 220kV to 110kV and associated acoustic enclosures (c. 5.3m in height) and c 1m high lightning protection rods extending to a height of c. 11m above ground level;
- Electrical cables located within the site boundary;
- Site lighting within the substation compound;
- Closure of all existing entrances to the site and the provision of new vehicular and pedestrian access from East Wall Road;
- Ancillary car parking spaces including internal access roads;
- 2.6 m high palisade security fence and associated gates;
- A public-facing fence and associated gates along East Wall Road varying in height from c. 2.4m to c. 3m;
- Public realm improvements including the provision of seating areas and landscaping;
- Associated utility connections including water supply, foul drainage and surface water drainage, including the provision of an underground storm water attenuation tank; and
- All other associated ancillary above and below ground development, including works comprising or relating to construction works, roadworks and excavation.

The proposed substation will tie into the existing Belcamp – Shellybanks 220 kV circuit which runs along the northern side of the M50 motorway. This connection does not form part of the proposed SID planning application, however although not part of the application it has been considered within this report.

4.1.1 Gas Insulated Switchgear (GIS) Substation Buildings

A 220kV and 110kV GIS 2 storey buildings are proposed for the development designed to meet EirGrid's standard specifications. The general arrangement and scale of the 220kV and 110KV GIS

Substation buildings has been largely determined on the basis of technical requirements, including the dimensions of the plant and equipment (including necessary separation and distances).

Each building will comprise a two-storey structure. The buildings will house the SF6 free (non SF6 gases) gas insulated switchgear comprising of insulated circuit breakers, disconnectors and other high voltage equipment.

The buildings will provide all necessary welfare facilities, office spaces, monitoring and control equipment required for the operation and maintenance of the substations. It is envisaged that both buildings will be steel framed, incorporating precast concrete floors and an insulated cladding system.

While the selected materials and finishes have been carefully considered to address feedback from DCC and the local community while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC. The proposed 220kV substation is approximately 51.8m x 22.2m and 20m in height, while the proposed 110kV substation is approximately 51m x 15.9m and 16.5m in height. The proposed layout is shown in Figure 4.1 and on **Drawing CP1273-RPS-03-PL-SL-D-C-2103** prepared by RPS enclosed as part of the SID application pack.

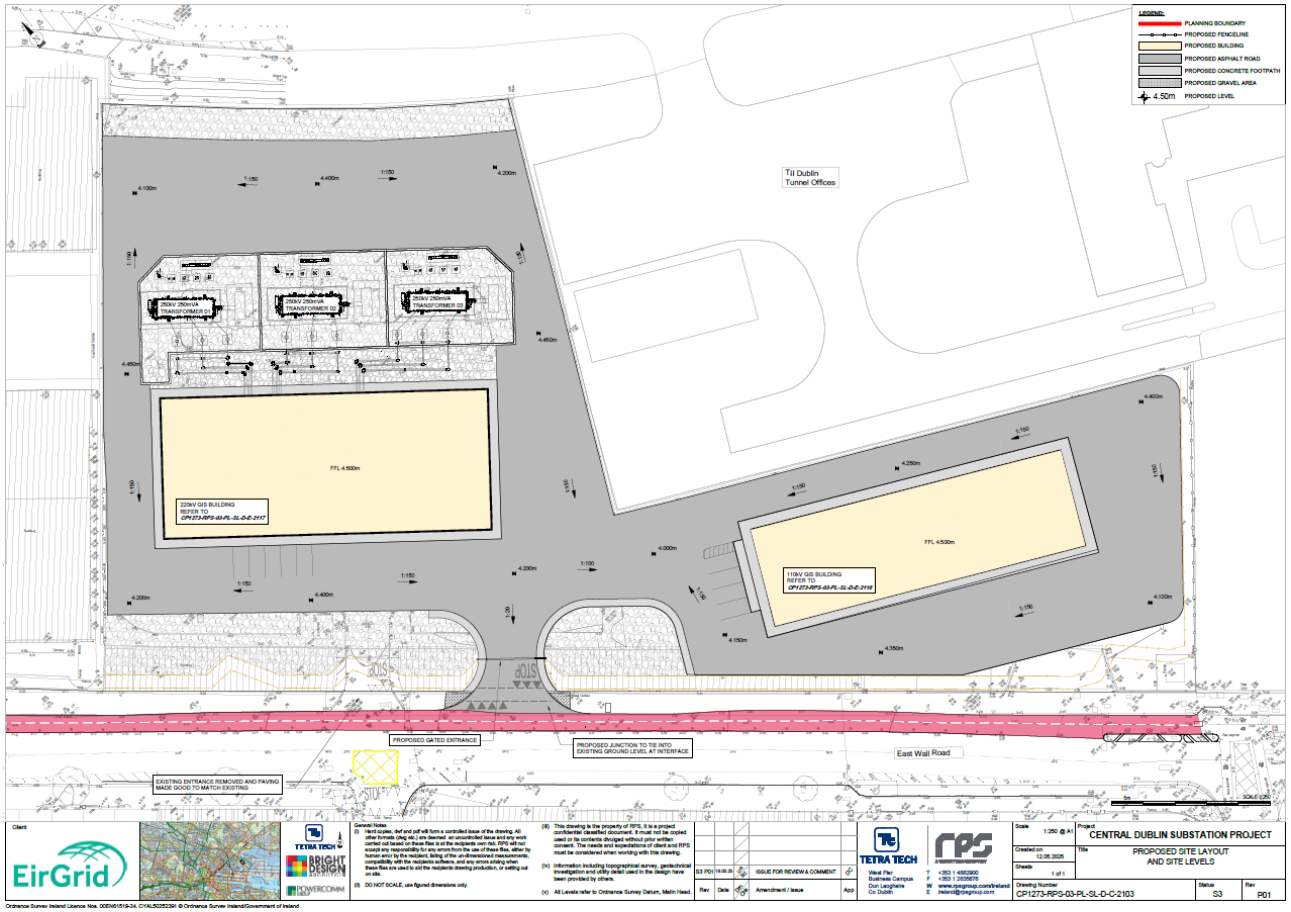


Figure 4.1: Proposed Site Layout and Site Levels

4.1.2 Back Up Power

An emergency diesel generator (provisionally sized at 250 – 300 kVA) will be installed within each Gas Insulated Switchgear (GIS) substation building. These generators will operate only during power outages to support essential services such as lighting, control systems and ventilation.

Each generator will be housed in a dedicated room with appropriate fire protection, ventilation and spill containment measures.

A diesel storage tank with an estimated capacity of 3000 litres will be located nearby to provide approximately 48 hours of back-up power. The tank will be securely positioned, bunded to prevent environmental contamination and safely accessible for refuelling.

4.1.3 Connection to Electricity Grid (not part of the subject planning application)

The Proposed Development is approximately 50m from the existing Belcamp – Shellybanks 220 kV circuit which currently runs on the northern side of the M50. The existing Belcamp – Shellybanks 220kV circuit will tie in to the Proposed Development. This Grid Connection does not form part of the proposed SID planning application and will be subject to separate consent however although not part of the application it has been considered and assessed within this PECR.

To tie into the substation building within the Proposed Development, the circuit must cross the M50. This crossing will be through trenchless means. The proposed crossing methodology is horizontal directional drilling (HDD) which will minimise any traffic disruption to the M50. During trenchless crossings (HDD), bentonite is anticipated to be used as drilling mud to lubricate and cool cutting tools, to remove cuttings and help prevent blowouts. Bentonite is widely used in the construction industry as a drilling fluid, as a lining for the base of landfills and for the construction of curtain walls to waterproof below-grade excavations. It is a naturally occurring clay, it inorganic and considered non-toxic. Further details on the HDD construction methodology is provided in **Section 4.2.10**.

The HDD crossing is approximately 100m in length and reaches a depth of up to 10m below the M50 roadway. It is estimated that the HDD crossing would take one week to complete.

4.1.4 Access Arrangements

The existing gated entrance onto East Wall has two-way vehicular access and pedestrian access either side.

It crosses the footpath via a raised ramp and a two-way cycle lane on East Wall Road. There is tactile paving on the footpath either side of the entrance. This existing entrance is to be closed, all of the surfacing and gates will be removed and recycled where appropriate. The existing pathway will be reinstated to match the existing pathway. The remaining entrance area will be incorporated into the boundary landscape proposals.

A new entrance will be constructed 23.0m to the East. The proposed entrance will be 8.0m wide and will allow for two-way traffic. Pedestrian access will be provided either side via a 1.2m footpath. The general arrangement will be similar to that of the existing entrance with a ramp and tactile paving provided. The landscaping and fencing along the southern boundary will be placed to achieve the appropriate sight lines when entering East Wall Road.

Internal roads and maintenance areas have been designed using Autotrack software to ensure adequate turning space for maintenance and emergency vehicles.

Car parking has been provided based on the staffing levels anticipated during the operational phase. While the substation will operate unmanned, personnel will periodically attend the site for routine inspections and maintenance. Accordingly, 9 car parking spaces are provided within the compound for use during these visits.

Due to the low occupancy and infrequent use, disabled parking spaces and electric vehicle charging points are not proposed.

4.1.5 Surface Water Drainage

The existing surface water network on the site currently discharges to the existing 300mm public surface water gravity sewer located to the East Wall Road, parallel to the southern boundary of the site.

As part of the Proposed Development, a new storm water drainage system is be provided to effectively manage runoff from hardstanding areas, building roofs, internal access roads, and car parking within the substation compound. The proposed drainage network will consist of a series of strategically placed gullies and channel drains that collect surface water from all impermeable and semi-permeable areas and discharge to an existing gravity network. Collected surface water runoff will pass through an oil/petrol interceptor to remove hydrocarbons and other potential contaminants before entering an underground attention system, which has been designed to regulate the outflow from the Proposed Development to match the greenfield runoff from the site (without any development). The attenuation discharge rate has been designed on the basis of a 1 in 100-year return period critical storm with 20% climate change allowance.

The discharge rate will be limited to the maximum of Qbar or 2l/sec/ha, in accordance with DCC requirements. The outflow from the site will be restricted to 5l/s during a 1 in 100 Year storm, in accordance with local authority requirements to prevent downstream flooding and protect the receiving network. The attenuated discharge will exit the site via a controlled outfall and connect to the public surface water drainage system.

All surface water drainage design and construction will be carried out in compliance with The Greater Dublin Strategic Drainage Study (GDSDS), CIRIA The SuDS Manual and Building Regulations 2010 Part H.

Details of the proposed surface water drainage system, including layout and specifications are provided on **Drawing CP1273-RPS-03-PL-SL-D-C-2111** prepared by RPS enclosed as part of the SID application pack.

Sustainable Urban Drainage System (SuDS) measures are proposed to be provided within the Proposed Development, to mitigate the adverse effects of urban stormwater drainage by replicating the natural predevelopment catchment characteristics of the site. Based on the requirements of the Proposed development and particular constraints of the site, a number of potential SuDS measures are not feasible as part of the development. Further details on the SuDS requirements and demonstration of compliance with DCC's Sustainable Drainage Design and Evaluation Guide (2021) is provided in the Engineering Services Report prepared by RPS and which is provided under separate cover.

4.1.6 Potable Water Supply

The Proposed Development will require a water supply for potable water for domestic use within the GIS substation buildings. The potable water demand will be relatively low as the proposed substation compound will be normally "unmanned" and operated remotely.

The proposed watermain size is 110mm. To prevent issues such as stagnation in the water supply line and its associated problems, there will be a continuous water demand of 24 litres per week from automatically flushing WC's within the station. A water meter will be installed on the public side east of the substation entrance.

The watermain layout, including the locations of valves, hydrants, and other components, is detailed in Drawing **CP1273-RPS-03-PL-SL-D-C-2120** prepared by RPS enclosed as part of the SID application pack.

The potable water supply for the site is planned to be sourced from the Dublin City Council watermain, as shown on **Drawing CP1273-RPS-03-PL-SL-D-C-2120** prepared by RPS enclosed as part of the SID application pack.

A combined watermain will be used to serve both domestic and firefighting needs. The distribution main will consist of 110 mm diameter pipes and is designed in compliance with Uisce Éireann Code of Practice for Domestic Supply.

4.1.7 Foul Water Drainage

The Proposed Development is an unmanned substation with occasional access for operation, inspection and maintenance. The foul drainage design will accommodate the wastewater produced by the welfare facilities within the Proposed Development. These facilities include a small canteen, toilet, and wash hand basin in each of the two buildings.

Sanitary wastewater, including effluent from toilets, washing facilities, and the canteen, will be collected within each building and conveyed to the existing public foul sewer through a foul water collection network. The estimated sanitary wastewater discharge to the sewer is up to 0.32 m³ per day, based on five employees at the substation and a maximum of two visitors daily.

If the facilities become unmanned, resulting in significantly reduced foul loading, a common issue is odour buildup in the toilets. To address this, self-flushing toilets are proposed for the station, which will automatically flush twice weekly.

The proposed foul water network is illustrated on Drawing **CP1273-RPS-03-PL-SL-D-C-2111** prepared by RPS enclosed as part of the SID application pack. The foul water collection system will operate by gravity, as the site's slope is sufficient to allow gravity discharge.

4.1.8 Firefighting Systems and Controls

The individual GIS substation buildings will be designed to fully comply with the relevant Building Regulations, including those relating to fire safety. A Fire Safety Certificate application will be submitted to Dublin City Council prior to the commencement of construction, in line with the standard process for substation developments. During the detailed design stage, a fire detection and alarm system will be specified in compliance with EirGrid's functional and operational requirements.

Firefighting provisions will include the installation of external fire hydrants positioned to serve both GIS buildings, ensuring adequate coverage in the event of an emergency. Hydrant locations will be determined based on access for emergency services and in consultation with Dublin Fire Brigade.

Transformer bays will be provided with reinforced concrete blast walls between units to prevent the escalation of any fire or explosion event. These walls are designed to meet EirGrid's specification and relevant safety standards.

In the event of a fire, firewater runoff will be managed through the site's surface water drainage system. This system will be designed to capture and isolate firewater, allowing for containment and subsequent testing prior to discharge. If fire water is found to be contaminated, it will be retained on-site and removed by an appropriately licensed contractor. The need for a dedicated firewater retention tank will be assessed during the detailed design phase, in consultation with relevant environmental and fire safety authorities.

4.1.9 Lighting and Security

Security of the substation compound from both a health and safety perspective and against trespassing is a design requirement of the project. The site is bounded by party walls to the North and the West.

It is essential to prevent unauthorised access to the site, especially to the compound and buildings, as such access could lead to property damage, loss of life, and/or disruption of supply from this strategic asset.

The site security measures designed to prevent unauthorised entry to the substation consist of:

- one vehicle security gate and two side pedestrian gates to the compound located at the main entrance. The vehicular gates are 2.6 metres high and will be secured meshed panels and anti-ram barriers.
- existing walls on the northern, eastern and western boundaries. The walls are generally constructed using modular concrete blocks and are between 3.0m and 5.0m in height.
- a palisade fence along the southern boundary, except at the site entrance, consisting of a 2.6m high palisade panels as shown on Drawing CP1273-RPS-03-PL-SL-D-C-2103;
- an additional decorative 2.6m and 3.0m high fence between the palisade fence and East Wall Road.
- a CCTV system to monitor the substation entrance;
- anti-intruder alarms will be installed in all lockable buildings.

The lighting design for the substation compound prioritises minimising light pollution, particularly given its location within a residential area. All external lighting will be mounted and directed inwards, facing the buildings and internal operational areas, to avoid light spill beyond the site boundary and reduce visual impacts on nearby residential receptors.

The buildings will have external lighting installed for operational and safety purposes. However, this will be limited to façade-mounted, downcast fixtures to ensure lighting is contained within the compound perimeter and security lighting will also be provided, designed to operate on motion sensors or timers where appropriate to limit unnecessary continuous illumination.

Emergency escape lighting will be installed on the building in compliance with relevant health and safety standards to ensure safe evacuation during low-visibility conditions or power outages.

To support site security, Closed Circuit Television (CCTV) cameras will be installed strategically throughout the compound. These will monitor key access points, the perimeter and critical infrastructure to deter theft, vandalism and unauthorised access. All security measures will comply with GDPR and relevant data protection regulations.

Overall, the lighting and security strategy has been carefully designed to balance operational requirements with the need to minimise environmental and visual impacts on surrounding residential properties.

4.1.10 Boundary Treatment and Landscaping

A Landscape Planting Design has been developed for the Proposed Development. Ensuring electrical substation safety is crucial to prevent accidents, protect personnel and ensure uninterrupted power supply and maintaining the reliability of supply. There are various technical, engineering and safety requirements which have influenced the Landscape Design. These included the following:

- Maintaining the required safety clearances around electrical infrastructure;
- Maintaining the required safety clearances to the earth grid;
- Damage to electrical infrastructure;
- Introduction of shock and fire hazards;
- Interference of root structures with critical electrical infrastructure including future cable routes.
- Required maintenance associated with planting.

The proposed planting proposals have had regard to the above requirements.

Pre-planning application meetings were held with DCC to discuss the key information of the Proposed Development and discuss the approach to the Boundary Treatment and Landscape Design.

The landscape design comprises a mix of shrub and ornamental planting along with street tree planting. The landscape design is illustrated in Drawing CP1273-RPS-03-PL-SL-D-A-2150 prepared by RPS enclosed as part of the SID application pack. These elements have been designed to soften and complement the Proposed Development, in particular the facades of the 220kV and 110kV substation buildings as these present to the streetscape of East Wall Road. The available space for the soft landscape scheme is limited. With this in mind, street tree species have been chosen with an upright or fastigiate growth habit, these being Sorbus 'Sheerwater Seedling' (refer photo below). This tree species is suitable for this particular urban setting, next to a busy street and are positioned not to overhang the external boundary fence so that they cannot be used as a climbing aid to gain unauthorised entry to the compound. The choice of tree species and ornamental shrub mixes have been informed by the All-Ireland Pollinator Plan 2015-2020 endorsed by both ESB and EirGrid.

The site features an internal security palisade fence and an outer decorative railing which extends along the street parallel to the 2.6m high palisade fence. A pyracantha hedge is proposed to be located in front of the palisade fence but behind the decorative railing. This evergreen hedge will screen the palisade fence as growth advances to maturity (within 7-10 years). The pyracantha hedge also features thorns which will be a deterrent to unauthorized entry to the compound. Low growing ornamental planting extends along the streetscape, many of the species' choice have also been informed by the All-Ireland Pollinator Plan.

While the proposed interface with the public realm has been carefully considered to address feedback from DCC while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.

4.2 Construction Phase Activities

General construction phase activities associated with the substation are set out below

- Site entrance preparation
- Site establishment
- Temporary site drainage works
- Earthworks
- GIS building works
- Transformer compound construction
- Underground cable ducting and services installation
- Permanent drainage works
- Paving and surfacing
- Fencing and security infrastructure
- Landscaping and finishing works
- Testing and commissioning

4.2.1 Confirmatory Ground Investigations

Historical geotechnical reports which are publicly available on the sites adjacent to the Proposed Development site have been reviewed to interpolate the ground conditions for the Proposed Development site. These reports indicate the ground conditions consist of made ground extending in depths to some 4m to 5.0m below ground level. Based on this available data, a conservative approach has been adopted for the preliminary design of the Proposed Development which has assumed that the soil bearing capacity is poor and as such the proposed substation structures have been designed to be supported on piled foundations which will provide adequate support to the proposed structures.

Confirmatory ground investigations (GI) will be required confirm the existing ground conditions. Given the footprint of the subject site (1.124ha), the GI works will be very limited in nature. This will include the following:

- Hand dug inspection pits
- 6 no. Boreholes;
- 2 no. Trial pits;
- 4 no. Slit Trenches; and
- Materials sampling and testing.

The boreholes will consist of a mix of percussion drilling and rotary coring. Given that the subject site is located on an area which was subject to land reclamation in the 20th century and the historical industrial nature of the surrounding area, a conservation approach has been adopted which assumes contamination is likely present and as such laboratory testing of samples from boreholes and trial pits will be carried out. Should areas of unknown contamination be encountered during the construction phase the procedures outlined in **Section 4.2.12** will be followed.

4.2.2 Site Preparation

The site preparation works will include:

- Demarcation of construction areas
- Clearance of plant material, vegetation clearance, rubbish and other detritus
- Site levelling and grading
- Demolition and removal of obstructions including the demolition of the existing lean-to-shed structures
- Utility and service disconnections
- Site drainage works
- Soil stabilisation and ground improvement
- Preparation of equipment foundation areas
- Establishing temporary site facilities
- Environmental and safety control measures

4.2.3 Civil Works

The main civil works for construction the new GIS substation buildings will include:

- Foundation works;

- Structural steelwork erection;
- Cladding and building finishing works;
- Permanent water supply and drainage works;
- Miscellaneous civil works such as paving, landscaping, permanent fencing etc.

4.2.3.1 Foundation Works

There are minimal fall across the site. 4.0 mOD (Mailin Head) at the northern to 3.8 mOD at the southern boundary. At the eastern boundary 3.9 mOD and 3.6mOD in the west.

A flood risk assessment was completed, and the building floor levels are set at 4.5m. Due to the relatively constrained nature of the site and the large building footprints the building ground floor levels will dictate the earthworks strategy for the site.

The existing car park surfacing, and subgrades will be removed. It is intended to make the maximum use of the material on site to reduce the import and export from site. Suitable material will be imported to achieve the levels required. A cut fill balance was completed and the import of approximately 6000m3 will be required to achieve design levels and provide surfacing. This is illustrated **Drawing CP1273-RPS-03-PL-D-C-2129** prepared by RPS enclosed as part of the SID application pack.

The foundation installation will involve excavation, formwork, steel reinforcement and concrete placement foundations will be designed in accordance with the appropriate EirGrid technical specifications. Excavated materials will either be reused on-site or disposed of off-site in accordance with the Waste Management Act 1996, as amended and associated regulations.

Once the foundations are set, a below ground earth grid will be installed around the foundation in a grid arrangement. This earth mat ensures personnel and public safety during electrical faults on the transmission grid. The earth grid installation will comply with the necessary safety standards.

4.2.3.2 Structural Steelworks

Following the completion of the foundation and earth mat installation, construction activities will proceed with the erection of the structural steel works. The GIS Building will be a steel portal, two-storey structure designed and constructed in line with EirGrid technical specifications.

The buildings are designed as steel framed structures, with a proprietary cladding, constructed on reinforced concrete floor slabs. It is envisaged that the floor slabs will be piled. The ground floor will house service rooms, a loading bay, generator room, control room, battery room and access to the cable basement area. The first floor will be constructed to accommodate the switchgear assembly into a storage area.

4.2.3.3 Cladding and Building Finishes

Cladding and building finishing work and the installation of building services, e.g. drainage, internal circulation road, will be undertaken once the structural frame and steel support structures are completed.

4.2.3.4 Miscellaneous Civil Works

Transformer bunds will be constructed using cast in-situ reinforced concrete, featuring a piled slab base. These bunds will provide secondary oil containment in case of a transformer oil leak. Once the bunds are cured, transformers will be delivered to the site and offloaded near their respective bunds before being skidded into their final position.

4.2.4 Electrical Works

The GIS plant will be delivered to the substation and unloaded at the relevant GIS building loading bay. Using the gantry crane in the hosting area, the plant will be lifted to the first storey and positioned within the GIS equipment room, where it will be bolted in place. Following installation, wiring and cabling of the GIS plant and associated protection and control cabinets will be carried out in accordance with the manufacturer's specifications and standards.

The transformer units will be delivered to site and unloaded at the designated transformer bay using suitable heavy-lifting equipment. Once positioned on the plinths, the transformer will be carefully aligned and secured in place. Following mechanical installation, connection works will commence, including the installation of high-voltage and low voltage cabling, earthing and associated auxiliary systems. All wiring and terminations will be carried out in accordance with the manufacturer's guidelines and relevant industry standards, ensuring full compliance with safety and performance requirements.

4.2.5 Temporary Compound

For the construction phase of the project, the temporary construction compound will be located within the Proposed Development site. No additional areas outside of the site have been identified for use as a temporary compound.

4.2.6 Construction Traffic

It is anticipated that the worst case peak traffic movements associated with the Proposed Development would occur during the "civil works" phase and this is therefore the peak construction period. It is estimated that there would be a peak of 75 construction vehicle movements per day as identified in **Table** 4.1.

Table 4.1: Peak Construction Traffic

Period	Arrivals		Departures		Total	
	Car+LGV	HGV	Car+LGV	HGV	Arrivals	Departures
Daily	50	25	50	25	75	75

The peak number of cars/light good vehicles (LGV) entering/exiting the site per day is assumed to be 50 two-way trips. Peak HGV's entering/exiting the site per day is estimated to be 25 two-way trips. This is expected to reduce during the electrical installation and commissioning phase of the substation which would have fewer traffic movements as the number of construction workers required for these phases reduces.

4.2.7 Hours of Work

Having regard to the location of the site, adjacent to residential properties, it is envisaged that construction activities will be undertaken during normal working hours i.e., 07.00 to 19.00 hours Monday to Friday and 08.00 to 16.30 hours on Saturdays, with no working on Sundays and Public Holidays.

For some activities, there may be a need to schedule works outside the above e.g. to avoid additional traffic impacts. In these circumstances, works outside the above hours will only be undertaken with prior agreement with DCC's Traffic Department in accordance with relevant procedures.

This can be provided for in the Construction Environmental Management Plan (CEMP), which is a key contract document that the appointed contractor will be required to implement in full. The CEMP will inform the construction management on the site and proposed working arrangements will include a protocol for when the contractor would notify the local authorities regarding hours of construction. The CEMP will also provide for working hours relating to other activities later on in the construction time frame (e.g, relating to internal fit out, landscaping and the pre-commissioning phase) when there will be no or limited impact on the receiving environment baseline noise levels.

4.2.8 Construction Personnel

The total number of construction staff on-site will vary during the construction phase of the works but are expected to peak at approximately 16 persons.

4.2.9 Construction Timeline

The construction programme is dependent on a number of factors which may be subject to change, including the determination for development consent, availability and lead-in times associated with procurement and appointment of a contractor and project components.

The construction phase (site preparation and civil works) is expected to be 2 years in duration and this will be followed by a commissioning phase (electrical works and energisation) expected to be 1 year in duration.. The intensity of the works will vary over the course of the construction programme, with the main works occurring during the civil works phase. The intensity of the works during the commissioning and energisation phases are expected to be minimal.

An indicative programme for the project and the estimated duration of works is outlined below. Some of the activities noted in **Table 4.2** below will be carried out in parallel.

Table 4.2: Indicative Construction Programme

Construction Phase	Activity	Estimated Duration
Site Preparation	• Site preparation • Preliminary site drainage works • Earthworks • Drainage • Anything else to be considered	6 months
Substation Civil Works	• Civil Construction of substation buildings • Miscellaneous Civil works such as paving, landscaping and permanent fencing • Compound finishing surface	18 months
Substation Electrical Works	• Electrical installation • Pre-commissioning	6 months
Substation Energisation	• Final commissioning and energisation	6 months

4.2.10 Grid Connection (not part of subject planning application)

As outlined in **Section 4.1.3** the existing Belcamp – Shellybanks 220kV circuit will tie in to the proposed Substation although this is not part of the subject application. The proposed crossing methodology is horizontal directional drilling (HDD). Horizontal Directional Drilling (HDD) is a trenchless method of installing underground ducting, cables and service conduits. The HDD technique is used widely in the installation of utilities and HDD's can be completed of varying

lengths and diameters. HDD length, diameter, geometry and ground conditions have a bearing on the selection of the most appropriate plant.

It involves the use of a directional drilling rig, drill pipe and associated attachments, to accurately drill a small pilot hole along a predetermined path from one side of the obstacle / crossing to the other. Once the pilot hole has been completed the hole is expanded by the use of incrementally larger reaming bits until the required size bore has been completed.

4.2.10.1 HDD Site Set Up

The temporary site area required for the completion of a HDD crossing will depend on a number of factors including the crossing length, diameter and expected ground conditions, these factors will determine the size of equipment required and this in turn will determine the space required. The space required for a typical midi rig will typically be 200m2 – 400m2 in order to fit the drill rig, fluids recycling equipment, launch pit and various attendant plant. On the reception side the site will likely be smaller.

A midi rig (refer to **Figure** 4.2) will be set up on the proposed substation development site as outlined in **Figure** 4.3. The workspace shown is approximately 900m2 (30mx30m). The reception side is on the northern side of the M50 in the Eastpoint Business Park car park. The reception side workspace shown is approximately 460m^2 (20mx23m). The reception side is where the pipe will be laid out and welded/jointed together to make one long pipe that will be pulled back though the HDD bore. The exact location of the pipe will be agreed with the Business Park to minimise disruption to the businesses.

Figure 4.2: Horizontal Directional Drilling Midi Rig

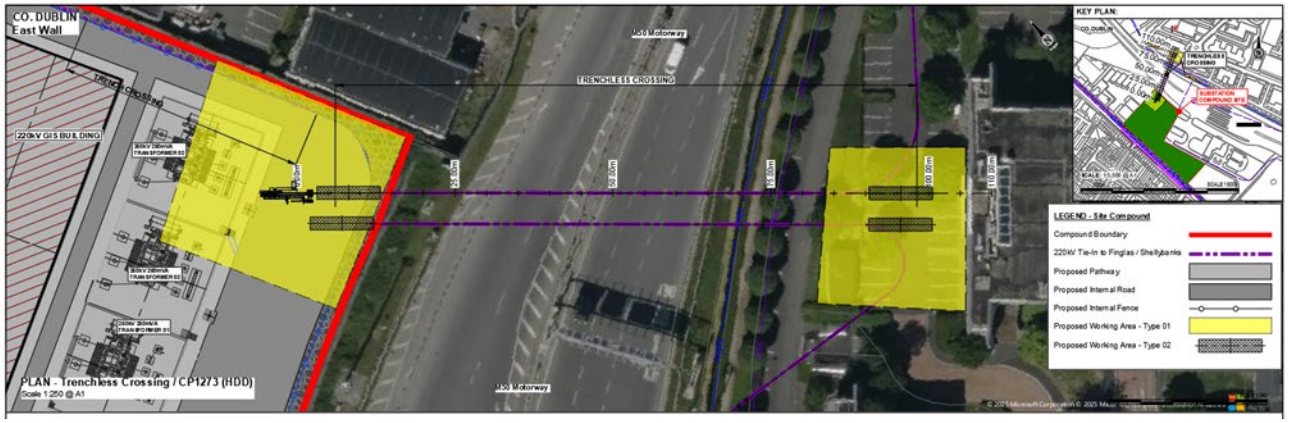


Figure 4.3: Trenchless Crossing

4.2.10.2 Work Description

Once the equipment is established on site a pilot hole will be completed, following the bore profile, this pilot hole is approx. 150mm diameter. Hole reaming will follow using appropriate reaming sizes based on soil conditions. Throughout the drilling process an inert bentonite mix (drilling fluid) is pumped through the drill pipe. This bentonite provides stability to the drill hole and assists in the removal of cuttings which are picked up in the drilling fluid and returned along the length of the bore to the launch pit.

A closed loop drill fluid recycling system involving the use of screens for large / small solids separation and removal along with a centrifuge for the removal of the fine fractions of slit is used to separate the cuttings from the drilling fluid. This processed drilling fluid is then recirculated through the drill pipe whilst the cuttings/spoil separated from the drill fluid (which are now semi-dry) are held in a bunded area and regularly removed from site for appropriate disposal.

Regular monitoring of drilling fluid volumes, pressure, pH, weight and viscosity is undertaken to ensure that any loss of drill fluids can be identified and measures put in place to prevent further loss, this might include changing the viscosity of the fluid to provide higher gel strength or the introduction of other additives such as shredded paper or shredded coconut husks to thicken the fluid and seal any gaps.

When the bore hole has been reamed out to the correct diameter a further series of passes are made back through the bore to ensure that the hole is clear of any large objects and that the drilling fluid in the hole is well mixed. This prepares the hole for the pipe to be pulled in. Once the driller is satisfied that the hole is clear and ready for the pipe, the pulling head and pipe string is connected to the drill string via a swivel. The swivel prevents the pipe from rotation during the pullback.

4.2.11 Traffic Management

Prior to commencement of the development, a construction Traffic Management Plan (CTMP) will be prepared by the appointed contractor in consultation with and with the agreement of Dublin City Council, Transport Infrastructure Ireland (TII) and An Garda Síochána. The CTMP will outline measures to manage construction traffic, minimise disruption to local residents and ensure the safety of all road users during the construction phase.

The CTMP will include details on construction traffic routes, delivery schedules, access and egress points, and measures to manage peak hour traffic and avoid school or commuter congestion. A designated site access point will be used for all deliveries and construction-related vehicles and appropriate signage will be installed to guide traffic safely to and from the site.

Vehicle movements will be carefully considered to avoid queuing on public roads, and where possible deliveries will be scheduled outside of peak traffic periods. The plan will also include

provisions for the safe movement of pedestrians and cyclists around the site perimeter during construction, including temporary footpaths or crossings if necessary.

The CTMP will also identify parking arrangements for construction workers, which may include off-site parking and shuttle arrangement to prevent overspill into surrounding residential streets. Regular communication with local residents and businesses will be maintained to keep them informed of construction activities and traffic impacts.

4.2.11.1 220kV Transformer Delivery

The delivery of the 220 kV transformers represents a critical milestone during the electrical installation phase of the project. Each of the 3 transformers is a substantial piece of electrical infrastructure, typically requiring specialist handling and transport due to their size and weight (exact dimensions and weights to be confirmed by the supplier). These units will be delivered directly from Dublin Port to the substation site. At Dublin Port, the transformers will be offloaded by crane onto a specially designed transport vehicle capable of accommodating abnormal loads. From there, the convoy will travel via a pre-agreed route to the substation, where the transformers will be installed using a skid system into their respective bunds upon arrival. It is envisaged that the transformers will be transported to the site via Alexandra Road and East Wall Road using a Self-Propelled Modular Transporter (SPMT) which will transport the transformers through the site entrance and across the site All lifting and positioning activities will be carried out in accordance with best practise guidelines and safety procedures. Vehicle tracking software has demonstrated that a SPMT can navigate the proposed entrance and deliver/remove the transformers to their respective locations within the site.

As these deliveries constitute abnormal loads, they will be subject to the requirements set out in the Road Traffic (Construction and Use of Vehicles) regulations 2003 (S. I No. 5 of 2003), as well as the maximum height restrictions outlined in S. I. No. 366 of 2008. During the civil construction phase, no abnormal load movements are anticipated, however, such movements will be necessary during the electrical installation phase.

Prior to any abnormal load movement, the appointed contractor will liaise with An Garda Síochána and Dublin City Council to arrange the required permits, discuss the need for a Garda escort and confirm an appropriate delivery window. Deliveries will be scheduled during off-peak hours to minimise traffic disruptions, avoiding sensitive times such as school drop-offs, church services and peak commuting periods.

Each abnormal load convoy will be accompanied by escort vehicles to ensure traffic is managed safely along the route and to respond to any unforeseen circumstances that may arise. Additionally, local residents located along key sections of the delivery route will be notified in advance of scheduled deliveries to reduce potential inconvenience and ensure clear communication throughout the process.

4.2.12 Waste Management

All waste products (general waste, plastic, timber, etc.) arising during the construction phase will be managed and disposed of in accordance with the provisions of the Waste Management Act 1996 and associated amendments and regulations, and a Waste Management Plan (WMP) will be prepared by the appointed Contractor prior to the commencement of construction. The Plan will be prepared in accordance with Best Practice Guidelines for the Preparation of Resources & Waste Management Plans for Construction and Demolition Projects (EPA, 2021). The Plan will, as a minimum address the following aspects:

- Identify how the waste will be dealt with (i.e. disposal, re-use on/off site etc);
- On-site segregation of non-hazardous waste materials into appropriate categories, where possible, including any excavated soils, concrete, bricks, metals, timber etc.

- On-site segregation of all hazardous waste materials into appropriate categories including contaminated soils, waste oil and fuels and paints, glues, adhesives and other known hazardous substances etc.
- Segregation of waste at source where practical.
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site. The waste storage area(s) will be assigned and all construction staff provided with training regarding the waste management procedures on commencement of the project.
- Implement a 'just in time' materials delivery systems to avoid materials being stockpiled, which increases the risk of the damage and disposal as waste
- Measures to ensure appropriate staff training and levels of awareness in relation to waste management.
- To ensure appropriate disposal, Waste Acceptance Criteria (WAC) testing will be conducted on any waste suspected of containing hazardous substances.
- Waste streams will be collected by an appropriately licensed and permitted private waste contractor, appointed by the contractor for recycling, recovery or disposal at suitably licensed facilities.

4.3 Operation and Maintenance

Following the construction phase, the operation and maintenance of the Proposed Development will be managed by ESBN. Once commissioned, the substation will operate 24-hours per day, seven days a week, 365 days a year.

During operation, the substation will operate unmanned, however there will be personnel on-site periodically to carry out routine engineering inspections and maintenance.

4.4 Decommissioning Phase

Subject to the granting of statutory approval, the EirGrid/ESBN substation and grid connections will form part of the national electrical grid infrastructure. The design life of the substation is approximately 40 years. It is expected that the substation site will remain a permanent part of the national electricity transmission network and will be refurbished and / or redeveloped as required rather than be decommissioned.

4.5 Community Benefit Fund

The Proposed Development has the potential to provide significant additional investment in community initiatives which will benefit local residents and businesses through an annual community benefit fund. The community benefit fund will become live once the Project has received its planning approval and the fund will be released on a phased basis as the project progresses.

4.6 Health and Safety Considerations

4.6.1 Project Supervisor Construction Stage

A Project Supervisor Construction Stage (PSCS) will be appointed for the Proposed Development when contractors are appointed to carry out the works. The PSCS will be responsible for developing the Construction Stage Health and Safety Plan, co-ordinating the works of appointed contractors and providing the PSDP with information required in the Safety File.

The requirements of the Safety, Health and Welfare at Work (Construction) Regulations, 2006, as amended will be implemented and complied with in full during the construction phase of the development.

4.6.2 Project Supervisor Design Phase Process

The Project Supervisor Design Phase (PSDS) ensures coordination of the work of designers throughout the Proposed Development. This is to ensure effectiveness in addressing and coordinating safety and health matters from the very early stages of the project.

4.6.3 Electromagnetic Fields

Electric and magnetic fields, often referred to as EMFs, are produced both naturally and as a result of human activity. Natural EMFs include the static geomagnetic fields of the earth and static electric fields from storm clouds. Man-made EMFs include alternating current (AC) EMFs from wiring in homes and buildings and from appliances, as well as from distribution and transmission lines from our power system.

Newer technology such as most digital devices (e.g., computers, television sets, etc.) produce direct current (DC) EMFs, as do similar new technology involved in DC transmission lines. When electric current flows on these sources, both electric and magnetic fields are produced and are present wherever electricity is used, such as in the home, office or farm, and in the vicinity of equipment that makes up the electricity supply system.

EMFs can take the form of self-propagating waves in air, consisting of electric and magnetic field components which oscillate in phase perpendicular to each other and perpendicular to the direction of energy propagation. In this context the fields are often referred to as electromagnetic radiation and are classified into different types according to the frequency of its wave, forming the electromagnetic spectrum shown in **Figure** 4.4 and included in this spectrum is sunlight.

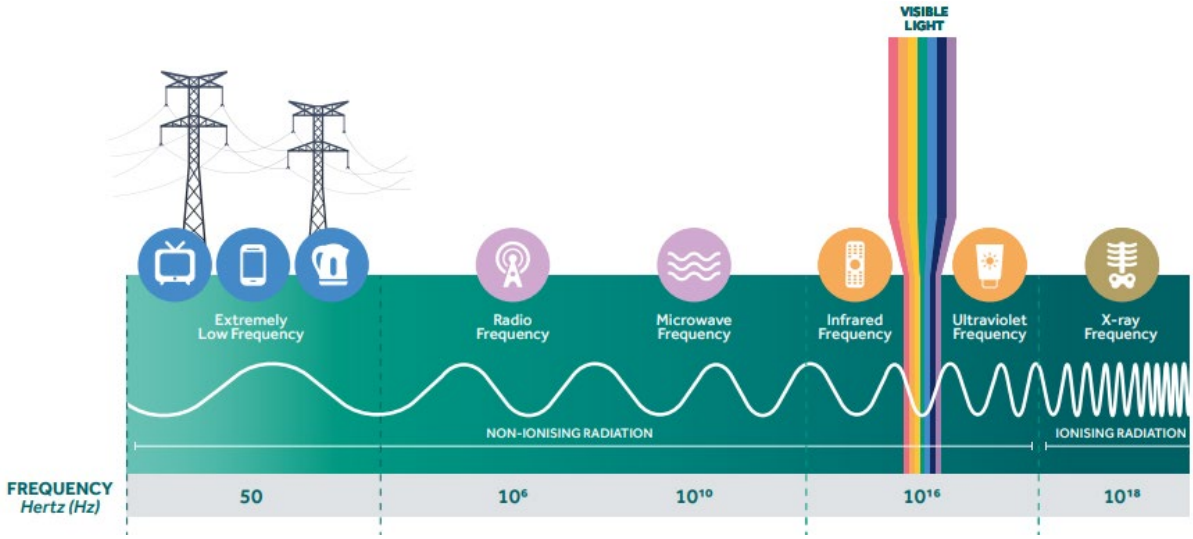


Figure 4.4: The Electromagnetic Spectrum

At the beginning of the electromagnetic spectrum are static fields. The most common static field is the earth's magnetic field in which we are all immersed at all times. The electric current transmitted through Ireland's power lines (as well as most domestic appliances) is alternating current (AC) and has a frequency of 50 Hz and is classed as "Extremely Low Frequency" (ELF). At higher frequencies we enter the radiofrequency range. These are so called as they radiate and pass freely through the air. We rely on radiofrequency waves to receive TV and radio. There are also many communications systems using these frequencies for mobile phones, air traffic control, Garda radio etc.

All of the fields on the electromagnetic spectrum fall into one of two categories: ionising or non-ionising. Fields with frequencies below ultraviolet are called non-ionising. Non-ionising radiation includes all radiations and fields of the electromagnetic spectrum that do not normally have sufficient energy to produce ionisation in matter. As such it does not break bonds that hold molecules in cells together. Electromagnetic fields that are produced by Ireland's electricity grid, radio waves emitted from mobile networks, infrared radiation and visible light are types of non-ionising radiation.

The strength of magnetic fields is typically expressed in units of magnetic flux density – micro-Tesla (μT) – and AC electric fields expressed in kilovolts per metre (kV/m).

4.6.3.1 Project Design & Safety Standards

EirGrid regards the protection of the health, safety, and welfare of its staff and the general public as a core company value in all of its activities. EirGrid designs, develops and operates the transmission grid in accordance with stringent safety recommendations which are made by national and international agencies. Several of these recommendations come from the International Commission for Non-Ionizing Radiation Protection (ICNIRP). This is an independent body, funded by public health authorities around the world. ICNIRP has reviewed the safety of EMFs and recommended limits on exposure that are far below levels where adverse effects might occur.

The European Union recommendation (1999/519/EC) outlines a set of basic restrictions and reference levels for limiting overall exposure of the general public to electromagnetic fields and ensuring an increased level of protection. The European Commission have adopted limits for exposure of the public and occupational exposure within EU Recommendation 1999/519/EC. This EC Recommendation is based ICNIRP guidelines (International Committee on Non-Ionising Radiation Protection) for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz) as the scientific basis. These guidelines have been endorsed by the World Health Organization (WHO) and the European Commission.

In 2010, ICNIRP issued updated guidelines, which reviewed the research since the original 1998 levels and which are less strict that the original 1998 levels. As noted above, the EU EMF recommendation (1999/519/EC) for public exposure adopts the 1998 guidelines and EirGrid continues to comply with these more stringent 1998 levels.

The reference and restriction levels in accordance with the EU / ICNIRP are **Table 4.3** below.

Table 4.3: Reference and Restriction Levels in accordance with the EU / ICNIRP

Type of Field	EU / ICNIRP Restriction Level	EU / ICNIRP Reference Level
Electric field Strength (kV/m)	9	5
Magnetic flux density (μT)	360	100

The Proposed Development has been designed to ensure that the strength of the electric and magnetic fields during operation of the Proposed Development will comply with the EirGrid EMF policy and by extension comply with the ICNIRP and EU guidelines on exposure of the general public to EMF.

Based on a 2007 in-depth review of the scientific literature, the World Health Organization (WHO) concluded that current evidence does not confirm the existence of any health consequences, including cancer, from exposure to low level electromagnetic fields.

For further information EirGrid has produced a guide on electric and magnetic fields (EMFs)[2] based on the most up-to-date information from Irish and world-leading health and scientific agencies.

4.6.4 Seveso Directive / COMAH Regulations

Seveso sites are industrial sites regulated under what is commonly referred to as the "Seveso Directive." In Ireland, the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"), implement the Seveso III Directive (2012/18/EU). Seveso sites are categorised as Lower, or Upper, by the type and quantity of hazardous substances stored at the site. Upper-tier establishments have greater quantities of dangerous substances present and therefore are obliged to comply with additional requirements specified in the Regulations. The Health and Safety Authority (HSA) maintain a list of active Seveso sites within Ireland.

The Proposed Development is not a COMAH establishment. The only substance that will be stored on site that is controlled under the COMAH Regulations will be diesel for the back-up generators as outlined in **Section 4.1.2**, however the amounts proposed for storage do not exceed the relevant thresholds set out in Schedule 1 of the regulations.

[2] *Your guide to understanding electric and magnetic fields (EMFs) in the electricity transmission system* (EirGrid, 2024) available at: https://cms.eirgrid.ie/sites/default/files/publications/EMF-Information-Brochure-2024.pdf

5 Alternative Options Considered

5.1 Introduction

This chapter of the PECR presents the alternatives that were considered during the design process of the Proposed Development and details the evolution of the design. Further details on the design approach and evolution are included in the Architects Design Statement (which is provided under separate cover).

5.2 Do-Nothing

The “Do-Nothing” alternative is inaction. From an environmental effects perspective, this means no change. This cannot be considered a feasible alternative given EirGrid’s statutory remit.

EirGrid, as the TSO and ESB Networks, as the DSO work collaboratively to ensure that needs of transmission and distribution connected customers are met. This includes planning development of transmission interface stations. A transmission interface station is a point of connection between the transmission and distribution system, also called bulk supply points. A primary function of these stations is to facilitate power flows between the transmission and distribution systems to enable power to be distributed to where it is needed.

As part of feedback to the Shaping our Electricity Future consultation the DSO has highlighted to EirGrid emerging needs for additional transformer capacity at transmission interface stations in the Dublin area. This capacity is needed to accommodate forecasted growth of electricity demand in the distribution network. This projected demand growth is driven by a number of factors including residential demand growth, electrification of heat and transport and growth in commercial sectors.

The significant electricity demand growth in the distribution system also leads to a significant pressure on the transmission system, particularly at existing transmission substations and the associated transmission circuits.

Under a Do-Nothing scenario, the existing transmission substations feeding the Dublin City Centre area are at risk of reaching their capacity limits and as a result the existing infrastructure will not be capable to supply sufficient power to where it is needed.

The Proposed Development will therefore respond to the DSO’s concern and will support Dublin’s growing electricity needs. This is captured in EirGrid’s Roadmap Strategy – Shaping Our Electricity Future.

5.3 Alternatives Considered

5.3.1 Substation Technology

There are two types of substations on the transmission system: Air Insulated Switchgear (AIS) substations and Gas Insulated Switchgear substations (GIS). AIS substations are insulated by air and GIS substations have been typically insulated using sulphur hexafluoride (SF^6).

An AIS substation uses atmospheric air as the phase to ground insulation for the switchgear within the electrical substation. An advantage of AIS substations is that they allow for future expansion. The equipment for an AIS substation is easily sourced and has a short lead-time. The main disadvantage of an AIS substation is however the footprint required. They require a larger footprint; the electrical equipment is located outdoors in all-weather environments and as such have a greater visual impact as all equipment is visible to the public when compared to alternative GIS substations.

A GIS substation has historically used SF^6 to provide the phase to ground insulation for the switchgear. The main advantage of a GIS substation is the smaller footprint and landtake required.

The electrical equipment is housed indoors within building structures and as such offers more protection to the electrical equipment than an AIS station, increasing operational life and reducing maintenance costs.

Due to the restrictions of the urban city environment of the Dublin Central area GIS technology was the solution deemed suitable for this development.

5.3.2 Substation Location

This section outlines the main aspects which were taken into consideration for the alternative sites for the Proposed Development identified during the Step 3[3] process.

The process comprises of a two-stage approach, as appropriate:

- Stage 1 – Long list of options
- Stage 2 - Multi-Criteria Analysis (MCA) of a shorter list of feasible options

5.3.2.1 Stage 1 Long List

To determine the high level feasible transmission substation locations within the Dublin Central Transmission substation study area, a high-level substation layout was designed to determine the area required by the transmission substation. This minimum footprint was determined to be approximately 1.04 hectares. This was used in conjunction with high-level considerations such as Technical, Environmental, Social, Economic and Deliverability to identify potentially feasible substation locations.

Eight potential feasible transmission substation locations were identified as outlined in **Figure 5.1**. From the initial eight sites, during the constraints study four were screened out initially due to existing planning permissions for projects on those sites.

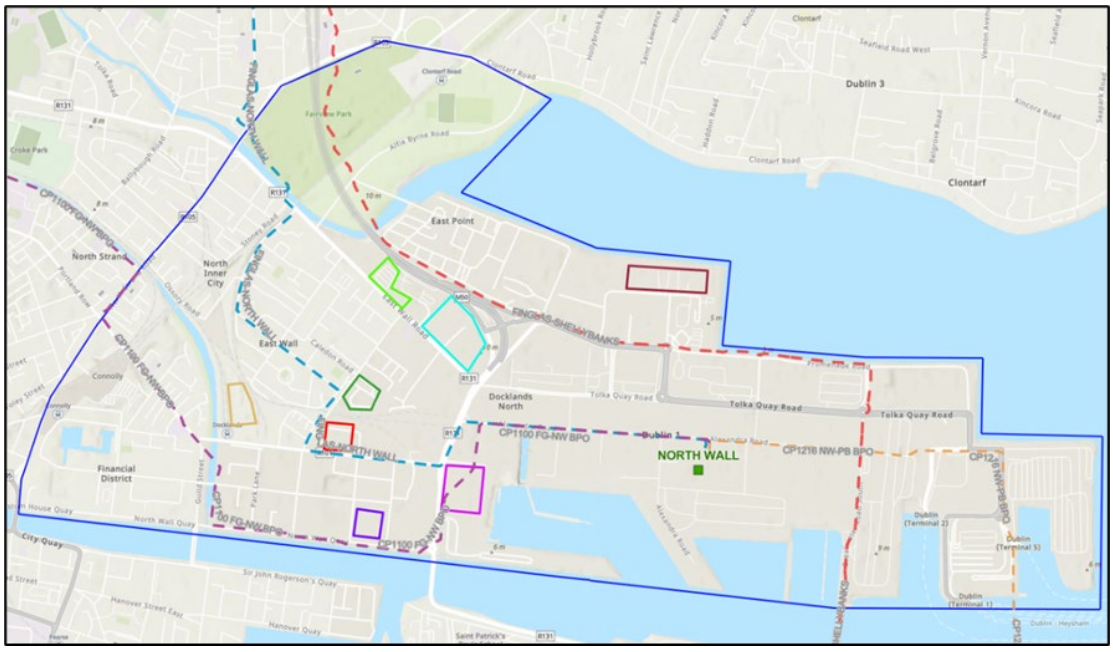


Figure 5.1: Identified potential transmission substation locations

[3] Presented during the Step 3 Consultation, available at: https://cms.EirGrid.ie/sites/default/files/publications/CP1273-RPS-01-RN-XX-R-C-0002_Step_3_Report_Dublin_Central_BSP_S4_P01.pdf

5.3.2.2 Stage 2 MCA

Four locations were bought forward for further assessment using EirGrid's five multi-criteria assessment categories as shown in **Figure** 5.2.

Figure 5.2: EirGrid's Five Multi-Criteria Assessment Categories

The assessment categories were further divided into sub-criteria as shown in **Table** 5.1. For each sub-criterion, the location was ranked according to the colour scale shown in **Table 5.2**.

Table 5.1: Categories and Sub-criteria for MCA

Category	Sub-criteria	Description
Technical	Technical Operating Risk	Will the route lead to areas which are difficult to access to complete maintenance activities, examples include access to railways, motorways, fast lanes of major roads, etc.
	Expansion / Extendibility	This considers the ease with which the solution option can be expanded, for example it may be possible to uprate an overhead line to a higher capacity or a new voltage in the future.
Deliverability	Dependence on other projects	Considers the likely interface, both positive and negative on the cable routes (Metro North and others)
	Design complexity	Assessment of crossings, obstacles or constraints that may complicate or impact the design. The project should also comply with the specified ratings as provided by EirGrid.

Category	Sub-criteria	Description
	Implementation Timelines	Relative length of time until energisation. This assesses significant differences, such as current landownership.
Economic	Settlements and Communities	The expected impact of a grid development option on towns, villages and rural housing, as well as on commercial activity
	Amenity	Impact on recreational activities (e.g., fishing, sports) and tourism during and after construction, that are not included in the other sub-criteria.
	Cultural heritage	Considers the potential impact / proximity to areas (and specific points) of Cultural Heritage.
	Landscape & Visual	An assessment of landscape constraints and designations and the impact on visual amenity.
Environmental	Biodiversity, Flora and Fauna	Considers the possible impact of the selected route on biodiversity – based on the significance from constraints mapping
	Water Impact	Considers the risk arising from proximity to water bodies – based on the significance from constraints mapping. Number of crossings, proximity of location of site and circuits etc.

Table 5.2: Colour Coding of Risk / Significance / Sensitivity Levels

Colour Key	Level of Risk / Significance / Sensitivity
Yellow	Low
Green	Low-Moderate
Dark Green	Mid-Level / Moderate
Blue	Moderate-High
Dark Blue	High

The potential transmission substation locations that were analysed in the Multi-Criteria Analysis are shown in **Figure 5.3** and are described in **Table 5.3** below.

Table 5.3: Potential Substation Locations

Location Id	Location Description
Location 1	Location 1 - is the ESB owned parking lot and vacant brownfield site on East Wall Road. The location is approximately 50m from the Belcamp – Shellybanks 220 kV circuit which currently runs on the northern side of the M50. The size of this location is approximately 1 ha.
Location 2	Location 2 is the Dublin Port Company (DPC) owned parking lot on East Wall Road. The location is approximately 60m from the Belcamp – Shellybanks 220 kV circuit which currently runs on the northern side of the M50. The size of this location is approximately 3.5 ha.
Location 3	Location 3 - is the Dublin Port Company (DPC) owned container storage adjacent to East Wall Road. The location is approximately 40m from the existing Finglas – North Wall 220 kV circuit which travels on Sheriff Street Upper and East Wall Road. The proposed Finglas – North Wall replacement circuit (CP1100) also runs directly through the zone. The size of this location is approximately 2.6 ha.
Location 4	Location 4 is the T11 Customs Parking lot owned by Dublin Port Company (DPC). The location is approximately 200m from the Belcamp – Shellybanks 220 kV circuit which travels on Promenade Road. The size of this location is approximately 2.7 ha.

Source: Step 3 Report, June 2024

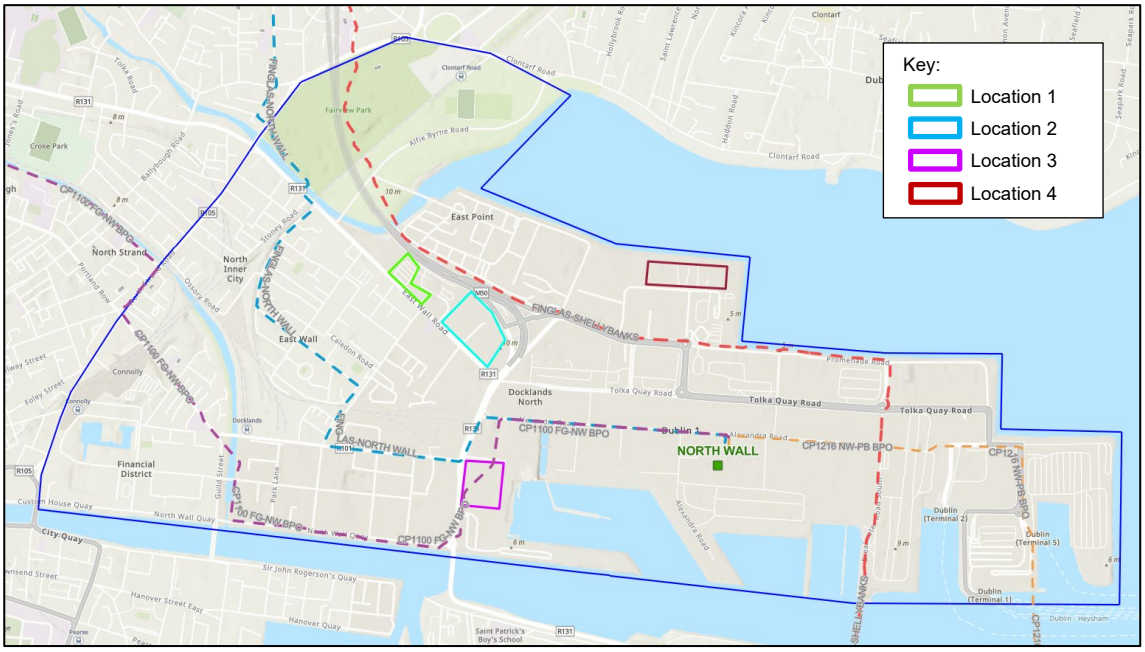


Figure 5.3: Potential transmission substation locations progressed to the Multi-Criteria Analysis (Source: Step 3 Report, June 2024)

The summary assessment of the performance of each location across the five criteria and their overall performance in presented in **Table 5.4** below. The overall rating for each option is calculated by aggregating the rankings across all criteria, providing a comprehensive assessment of each option's overall suitability and performance. This information allows the comparison of locations based on their respective strengths and weaknesses across different categories, ultimately aiding decision-making processes in the project planning and development stages.

Table 5.4: Criteria Level Summary of MCA

Criteria	Location 1	Location 2	Location 3	Location 4
Technical Performance				
Deliverability Performance				
Economic Performance				
Socio-Economic Performance				
Environmental Performance				
Overall Performance				

Source: Step 3 Report, June 2024

In terms of technical feasibility this evaluates the practicality and viability of implementing each option from an engineering perspective, considering factors like site access, infrastructure requirements, and technical constraints. All locations were rated moderate-high.

Deliverability assesses the ease with which each option can be successfully executed, taking into account factors such as project dependencies, design complexity, and implementation timelines. Location 1 performed the best for this criterion with a rating of low-moderate. Location 3 is the highest rated with a ranking of moderate-high. All other locations were rated as mid-level/moderate in terms of deliverability.

In terms of Economic considerations this involves evaluating the financial implications of each option, including project implementation costs and potential benefits. Location 1 performed the best for this criterion with a rating of low-moderate. All other locations were rated as mid-level/moderate.

Socio-economic factors consider the impact of each option on settlements, communities, cultural heritage, amenity, and landscape. In terms of settlements and communities, Location 1 is situated in the residential and industrial area of East Wall, potentially affecting local residents and businesses. Locations 2, 3 and 4 were rated as high due to the current land use of the location being long term parking for imported cars, parking adjacent to Port Terminal 4 and parking for T11 Customs respectively. All three locations are within Dublin Port Company land. Amenity considerations focused on the impact on recreational activities and tourism during and after construction. All the locations were rated low in this sub-criterion as they will have minimal to no impact on amenity areas. Cultural heritage evaluation involved assessing the impact of each option on recorded cultural heritage resources. At this stage, from a high-level desktop review, all options were rated as mid-level/moderate as they do not contain any SMR's, ACA's or areas of known cultural heritage importance. The assessment of landscape and visual factors considers landscape constraints, designated landscapes, and visual amenity. Location 2 and 4 were rated as low impact, with no expected loss of valued landscape elements or impacts on designated landscapes. Location 1 and 3 were rated as mid-level/moderate as there may be limited impacts on the residents on East Wall Road (location 1) and limited visual impacts apart from residents of dwellings and recreational users of boat and yacht clubs on the south side of the River Liffey (location 3). Overall, all locations were rated as mid-level/moderate in terms of socio-economic impact.

Environmental considerations involved evaluating the potential effects of each option on biodiversity, flora and fauna, and water resources. At a sub-criteria level, two sub-criteria were assessed at this stage of the project were the potential impacts on biodiversity, flora and fauna and water impact of each location. Location 1, 2 and 3 received a rating of low, indicating no anticipated impact on biodiversity, flora, or fauna. Location 4 was rated mid-level/moderate as it is adjacent to the North Dublin Bay pNHA and South Dublin Bay and River Tolka Estuary SPA.

The water impact assesses the potential impact of each location on river crossings, lakes, and groundwater. Location 1 and 2 were rated low as there is no envisaged water impact in these locations. Location 3 was rated mid-level/moderate due to its proximity to Alexandra Basin, which forms part of Dublin Port. Location 4 was rated as moderate-high as it is adjacent to North Dublin Bay. Overall from an environmental perspective, locations 1 and 2 were rated as low in terms of environmental impact, while Location 3 was rated as low-moderate, and location 4 was rated as moderate-high.

Overall, the outcome from the MCA in **Table 5.4** identified Location 1 as the Emerging Best Option to progress.

5.3.3 Alternative Design and Layouts Assessed

EPA Guidance states '*Alternative layouts can often be devised to consider how different elements of a proposal can be arranged on a site, typically with different environmental, as well as design implications'*.

The proposed GIS substation is designed based on requirements stipulated by EirGrid. The design of the substation units is centred around the equipment requirements of EirGrid that are required to provide an efficient and safe service. The substation buildings were originally designed from an engineering perspective and had consideration to site constraints, technical feasibility and constructability, representing the optimum layout from a technical perspective only. However, an iterative design process was adopted to balance these technical constraints against the architectural goals for the subject site, given its urban context.

5.3.3.1 Master Layout EBO

During Step 3 of the Project, an indicative master high level substation layout for the Emerging Best Option was developed as outlined in **Figure** 5.4. The master layout was developed based on EirGrid's design standards.

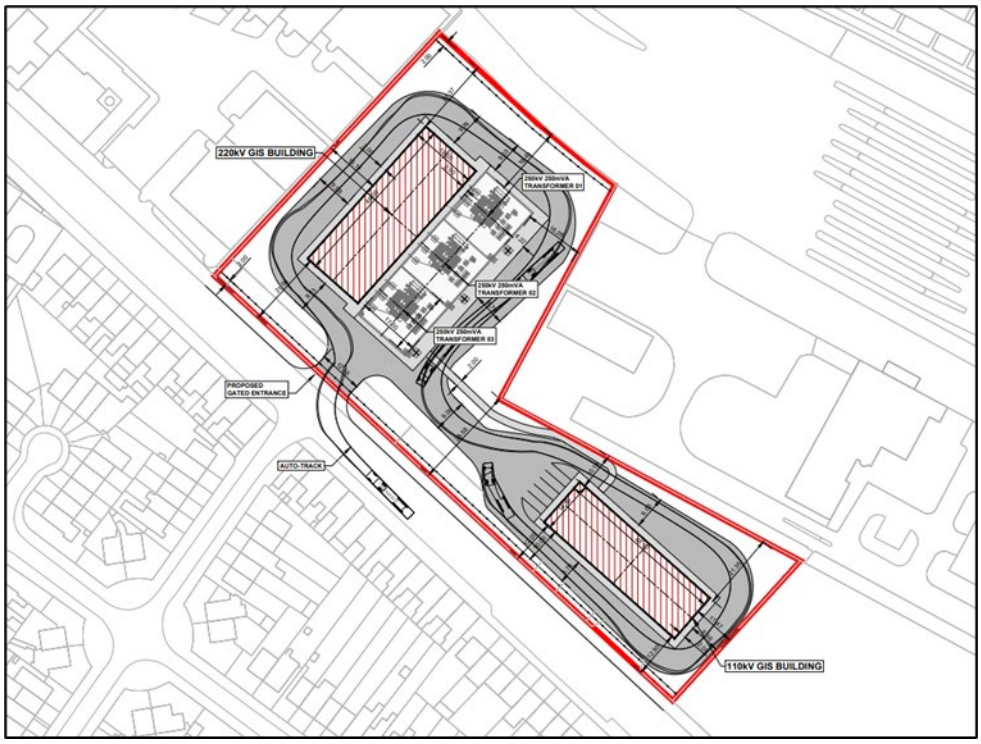


Figure 5.4: Master Layout of Emerging Best Option[4]

The existing site access from East Wall Road was retained. Due to the limited space available within the site and the site geometry, the generic high-level site layout was customised to fit the available space. and the master EBO was presented to the public as part of the Step 3 consultation.

However, from and an early stage in the design process, it was acknowledged that, given the urban setting and prominence of the Proposed Development site and the extensive frontage that it presents to East Wall Road, the development would require careful consideration and integration with the existing environment, with particular attention given to ensuring an appropriate interface is provided between the proposed substation compound and the public realm. In addition, consideration was also given to the proximity of the subject proposals to the sensitive residential uses located to the southwest of the subject site. As such, Bright Design Architects (BDA) were appointed to the design team to provide architectural input into the design and consider aspects such as visual impact, facade composition, overall aesthetic, opportunities for public realm and environmental enhancement.

Following the appointment of BDA Architects and the feedback from the Step 3 (**Section 1.5.3** of this PECR), a number of alternative layouts were evaluated by the Design Team to consider how different elements of the project could be arranged to achieve the project requirements and minimise impacts on the local community. These alternative layouts are presented and discussed in the sections below.

5.3.3.2 Option 1

An indicative high level substation layout was developed as outlined in **Figure** 5.5. The site access was relocated to provide improved sightlines along the East Wall Road. The 110kV substation building and the 220kV substation building have been consolidated within the compound to maximise use of space and to allow for provision of amenity space for the local community. The

[4] Presented during the Step 3 Consultation, available at https://cms.EirGrid.ie/sites/default/files/publications/CP1273-RPS-01-RN-XX-R-C-0002_Step_3_Report_Dublin_Central_BSP_S4_P01.pdf

transformers were located between the substation buildings to provide noise attenuation and block line of sight to the transformers.

This option was however ruled out as being unfeasible in achieving and meeting the required technical performance criteria.

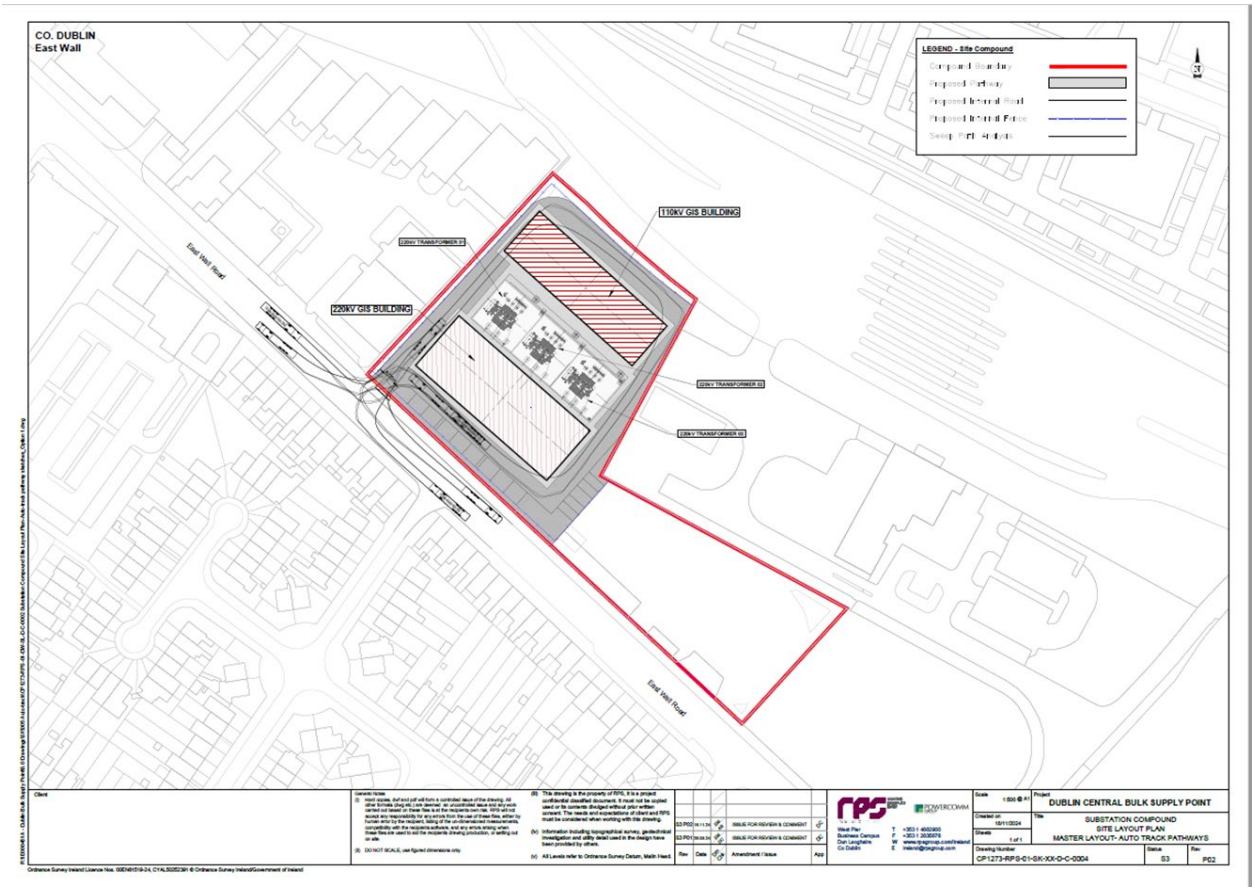


Figure 5.5: Option 1 Alternative Layout for the EBO

5.3.3.3 Option 2

An indicative high level substation layout was developed as outlined in **Figure 5.6**. The site access has been relocated to provide improved sightlines along the East Wall Road. The transformers have been located behind the 220kV substation building to provide noise attenuation and block line of sight to the transformers. The 220kV substation building is set back into the compound site to existing residential properties along East Wall Road.

The 110kV substation building and the 220kV substation buildings have been consolidated within the compound to maximise use of space and to allow for provision of amenity space for the local community.

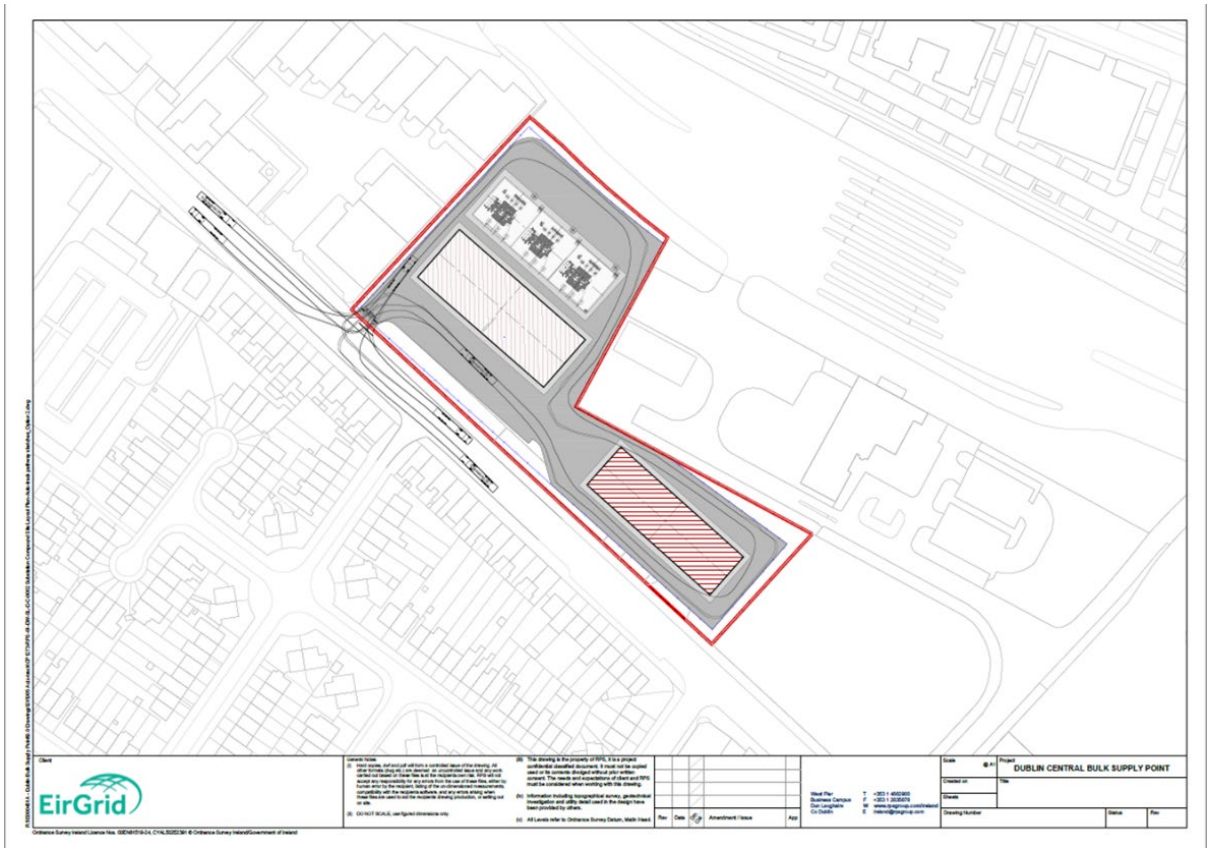


Figure 5.6: Option 2 Alternative Layout for the EBO

This option was feasible in terms of achieving the required technical performance criteria and had benefits in terms of screening of transformer noise based on the position of the 220kV substation building within the site compound. This option was brought forward for further consideration and design development.

5.3.4 Approach to Design

Further details relating to the proposed layout, design, scale, massing, boundary treatments and materials and finishes are set out in the Architectural Design Statement prepared by BDA and enclosed as part of the subject SID planning application package. A summary is presented in the following sections. Having regard to the nature of the Proposed Development (i.e. GIS transmission infrastructure), the overall requirements and sizing of the buildings are fixed from an operational and performance perspective. The design opportunities could therefore be distilled down to a number of key elements:

- Site Layout / Arrangement
- Façade / Cladding Materials
- Boundary Treatment

The starting point for the design was a simplistic layout option based solely on the technical and engineering requirements and having regard to the configuration of the site. As noted in **Section 5.3.3.3** above, one of the initial design alternatives was to reposition the 220 kV building to form a natural shield to noise from the transformers which was raised as a concern by residents, and to provide visual screening and a stronger building presence onto East Wall Road.

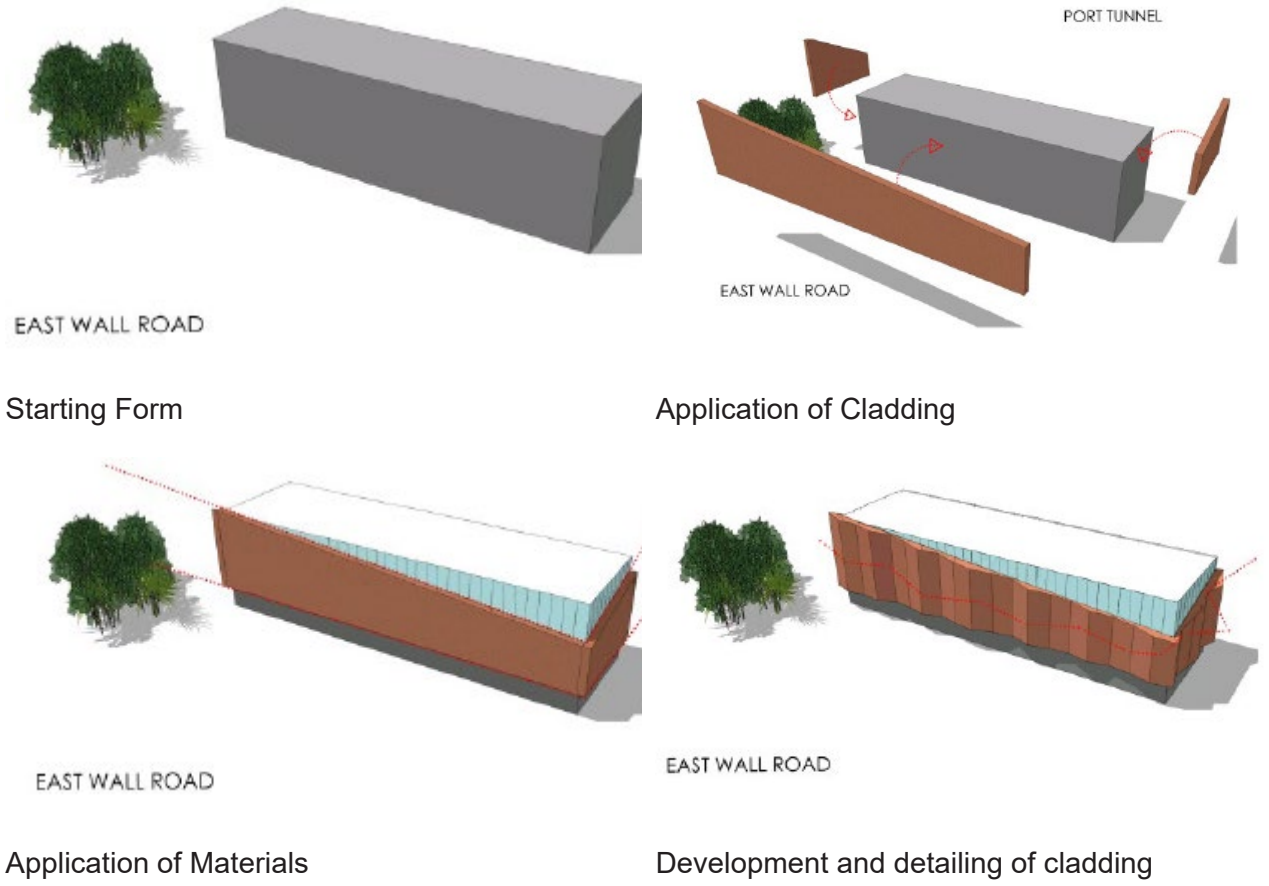
The design further evolved with emphasis on the cladding to break down the overall scale and perception of the scale and massing of the buildings. The design intent was to create a create a

rhythm and form to give visual interest for members of the public who might be passing by the site, but more importantly for those residing in the area and adjacent to the site.

The final design seeks to balance stringent technical, security and safety requirements with a bespoke site strategy, carefully considered building forms and façade treatments. The two substation buildings differ in size but are connected visually by complimentary yet differing forms and material treatments. The geometry of these forms take inspiration from local industrial heritage and seek to create visual interest and dynamism to engage passers-by. Layered fencing and planting provide the necessary security and screening while engaging with the public realm and residential housing opposite the site.

5.3.4.1 Façade Materials

The design evolved with emphasis on the cladding to break down the overall scale and perception of the scale and massing of the buildings as illustrated in **Figure 5.7**. The historic context and fabric of the surrounding area was researched during the design process to understand the context of the site and surrounding area. The design of the cladding came from a review of the historical industrial use as a metalwork's foundry. Industrial forms stand out with traditional pitched or 'saw tooth' roof forms scattered thorough out the area is indicative of the context and informed the design approach to the façade geometry and choice of materials.



Starting Form

Application of Cladding

Application of Materials

Development and detailing of cladding

Figure 5.7: Cladding and Wrapping

Source: Architects Design Statement, BDP

The concept proposes to break up the visual mass of the substation buildings by utilising three materials. Layering of the buildings (upper, mid and base) as illustrated in **Figure 5.8** and introduction of materials (metal, precast and concrete base) into the layers reduce the overall sense of scale as illustrated in **Figure 5.9**.

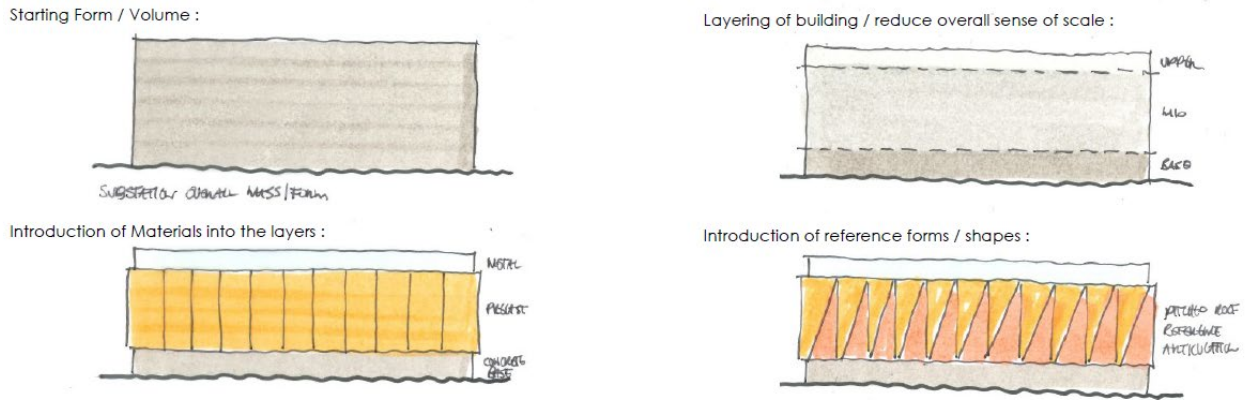


Figure 5.8 Evolution of Layering

Source: Architects Design Statement, BDP

Metal Cladding (semi-reflective finish)

Pre-cast concrete panels

Reinforced poured concrete

Figure 5.9: Introduction of Materials

Source: Architects Design Statement, BDP

The cladding design for the pre-cast panels has evolved with depth to the panels to create rhythm and movement to the façade as illustrated in **Figure 5.10**.

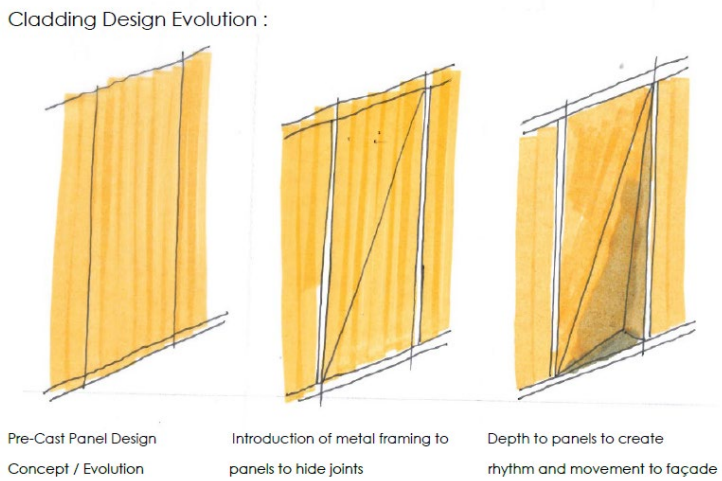


Figure 5.10: Cladding Design Evolution

Source: Architects Design Statement, BDP

The final design creates two distinct designs for each building which reflect the individual scale / dimensions and positions within the site and how they will be perceived. It is intended that both buildings read as distinct but complimentary buildings, the differences creating interest with their shared similarities ensuring that both sit comfortably beside one another on the site and within the wider area.

The 110kV building, narrower and slightly smaller in scale sits slightly skewed to the East Wall Road. The precast cladding panels slope to soften the scale of the building given that it sits closer to the street and houses across the road. The metal cladding to the upper levels is intended to partly reflect the sky but with a semi-reflective textured finish. The 220kV building sits parallel to the East Wall Road but further back within the site. The cladding maintains the horizontal banding for the design within reflects the sloped form of the 110kV building. (Refer to **Figure 5.11**).

Figure 5.11: Photomontage Image of the 110kV (in foreground) and 220kV Substation Buildings

While the selected materials and finishes have been carefully considered to address feedback from DCC and the local community while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.

5.3.4.2 Boundary Treatment

Security of the substation compound from both a health and safety perspective and against trespassing is a critical design requirement of the project. The main public frontage and boundary to East Wall Road presents a challenge due to its length. First and foremost this boundary must fulfil a fundamental security and public safety function to prevent unauthorised access to the site. A number of design studies were undertaken to explore and test appropriate solutions to meet the following criteria:

- Functional for security and access
- Visual Interest to extensive streetscape frontage
- Transparency balanced with screening
- Materiality, maintenance and durability

To the East Wall Road a boundary treatment has been proposed which looks to create a more considered treatment to the East Wall community. The design provides for a primary outer fencing that defines the full site frontage to East Wall Road. This structure varies in height and planarity to create kinetic visual interest whether passing by foot or by car. At key points the boundary is punctuated by pockets of greenery, visual interest and public seating where the footpath widens to accommodate.

There is a secondary security palisade fence (2.6m high) behind this outer fence. The boundary treatment and planting designs have evolved with key security considerations in mind such as avoiding the potential for people climbing trees or using hedging to gain access to the property etc. Details of the proposed Landscape Design have been provided in **Section 4.1.10** of this PECR.

Figure 5.12: Boundary Treatment

While the proposed interface with the public realm has been carefully considered to address feedback from DCC while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.

5.3.5 Alternative Process

Alternative processes are not considered relevant to this PECR having regard to the nature of the Proposed Development. The proposed GIS substation will employ the same electricity generation

and transmission processes that are used by EirGrid/ESB at their other facilities in Ireland and represents the most up-to-date and state of the art processes currently available.

5.3.6 Alternative Mitigation Measures

The mitigation measures outlined in the various chapters are considered appropriate to the location, nature and extent of the project and its potential impacts. As such, no alternative mitigation measures were considered.

5.4 Conclusions

The proposed overall development of the site was carefully designed taking into consideration the site context and existing neighbouring residential and commercial properties along East Wall Road and the local environmental conditions including air quality, noise and vibration, visual impact and traffic considerations.

6 Planning Context

6.1 Planning Policy Context and Analysis

This Chapter of the PECR sets out a summary of the relevant national, regional, and local planning policies, against which the Proposed Development will be assessed. It also demonstrates how the Proposed Development is consistent with these policy and guidance documents. It is set out under the following key headings:

- National Energy Policy Context;
- EirGrid's Strategic Planning Context;
- National Planning Policy Context;
- Regional Planning Policy Context; and
- Local Planning Policy Context.

6.1.1 National Energy Policy Context

6.1.1.1 Ireland's National Energy and Climate Plan 2021-2030

Ireland's *National Energy and Climate Plan 2021-2030*[5] (NECP) was prepared to incorporate all planned policies and measures that were identified up to the end of 2019, which collectively deliver a 30% reduction by 2030 (from 2005 levels) of non-emissions trading system (ETS) greenhouse gas emissions. With regard for electricity infrastructure, the NECP commits to achieving the following goals by 2030:

- *"Reduce CO_2 eq. emissions from the sector by 50–55% relative to 2030 Pre-NDP projections;*
- *Deliver an early and complete phase-out of coal- and peat-fired electricity generation;*
- *Increase electricity generated from renewable sources to 70%, indicatively comprised of:*
- *at least 3.5 GW of offshore renewable energy*
- *up to 1.5 GW of grid-scale solar energy*
- *up to 8.2 GW total of increased onshore wind capacity*
- *Meet 15% of electricity demand by renewable sources contracted under Corporate PPAs".*

It is noted that a draft updated NECP for the period 2021-2023 was submitted to the European Commission in December 2023, with consultations held in February 2024 and June 2024. The draft NECP was revised and developed to incorporate comments from the Commission, public consultation and updated policies and targets. The draft updated NECP seeks to reduce emissions from sectors outside the ETS by 30% (relative to 2005 levels) and achieve a 34% share of renewable energy in consumption by 2030. It also seeks to increase electricity generated from renewable sources to 80% with:

- *"At least 5 GW of offshore renewable energy;*
- *8 GW of grid-scale solar energy; and*

[5] https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/irelands-national-energy-and-climate-plan-2021-2030/

- *An onshore wind capacity of 9 GW".*

Having regard for the above, it is highlighted that the Proposed Development will contribute to strengthening key electricity infrastructure and help deliver a consistent and reliable supply of electricity for Dublin. In addition to securing electricity supply for the future, the project will play an important role in bringing greater amounts of renewable energy onto the transmission system and will be a key enabler for the growth in electricity-powered forms of transport, including electric vehicles and public transport options, along with the rollout of electric heat pumps. As such, the Proposed Development is considered to be fully aligned with both the NECP and the updated draft NECP.

6.1.1.2 Government Policy Statement on Security of Electricity Supply

The *Government Policy Statement on Security of Electricity Supply*[6] was published in 2021 and sets out a number of updates to national policy in the context of the Programme for Government commitments relevant to the electricity sector, planning authorities and developers. The policy statement notes that:

"*Ensuring security of electricity supply continues to be a national priority as the electricity system decarbonises towards net zero emissions;*

- *There is a need for very significant investment in additional flexible conventional electricity generation, electricity grid infrastructure, interconnection and storage in order to ensure security of electricity supply;*
- *In advance of the development of new conventional electricity generation capacity, there is a need to retain existing conventional electricity generation capacity in order to ensure security of electricity supply".*

In line with this policy statement, the Proposed Development will significantly improve electricity infrastructure and security of supply in Dublin, thereby supporting demand growth and facilitating greater amounts of renewable energy. In this regard, it is considered that the Proposed Development is fully supported by this policy statement.

6.1.1.3 Energy Security in Ireland to 2030

Energy Security in Ireland to 2030 was published in November 2023 and outlines a new strategy to ensure energy security in Ireland for this decade, while ensuring a sustainable transition to a carbon neutral energy system by 2050. The report provides an overarching and comprehensive response to Ireland's energy security needs in the context of the war in Ukraine with a key action being a reduction in our dependency on imported fossil fuels, in the context of the phasing out of Russian energy imports across the EU. The report includes a strategy which will deliver additional electricity generation in Ireland and, in so doing, it will increase Ireland's energy security levels and our energy independence.

In line with this strategy, the Proposed Development will strengthen key electricity infrastructure in Dublin and the surrounding areas, and contribute to the delivery of a consistent and reliable supply of electricity. In this regard, the Proposed Development is considered to be fully aligned and supported by the strategy.

[6] https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/policy-statement-on-security-of-electricity-supply/#:~:text=the%20development%20of%20new%20conventional,growth%20of%20renewable%20electricity%20generation

6.1.2 EirGrid's Strategic Planning Context

6.1.2.1 Transmission Development Plan 2024-2033

The *Transmission Development Plan 2024-2033*[7] (the TDP) sets out EirGrid's updated list of projects which are committed to and those that are in the development stages for the progression of the Irish transmission network and interconnection over the ten-year period from 2024. The TDP notes that:

> *"The Shaping Our Electricity Future roadmap highlighted the need to progress development of transmission interface stations with the Distribution System Operator (DSO) in the Dublin region. These interface stations are also called Bulk Supply Points (BSP) and are essential for accommodating forecasted growth of electricity demand in the distribution network. It is important to note that these BSP are not just stations – they will also require high voltage transmission circuits to connect them into the wider network".*

The Proposed Development is listed in the TDP as a key project (ref. no. CP1273) that is being pursued by EirGrid to accommodate anticipated growth in demand.

6.1.2.2 Shaping Our Electricity Future Roadmap

EirGrid published the *Shaping our Electricity Future Roadmap Version 1.1*[8] (the Roadmap) in 2023 as the result of the review on the original roadmap published in 2021. It outlines a pathway towards meeting enhanced 2030 government electricity ambitions on the Island and provides a foundation to support the broader transition to net zero by 2050. The Roadmap states that:

> *"EirGrid's Shaping Our Electricity Future Roadmap identifies network projects as a strategic enabler to achieving 2030 RES-E targets. The programme of network investment needed in advance of 2030 is significant and requires both EirGrid and ESB Networks to streamline how grid infrastructure is delivered. EirGrid and ESB Networks will develop and implement an end-to-end TSO/TAO joint approach to optimise delivery of grid infrastructure projects".*

The wider Powering Up Dublin project is illustrated in the Roadmap (see **Figure 6.1**), with a substation identified in the area around North Wall. This indicative location has since been further considered through a Multi-Criteria Assessment process resulting in the selection of the subject site (see **Section 5.3.2** of this PECR).

Having regard for the above, it is considered that the Proposed Development, which will significantly improve electricity infrastructure and security of supply in Dublin, is fully aligned and supported by EirGrid's Roadmap.

[7] https://cms.EirGrid.ie/sites/default/files/publications/Transmission-Development-Plan-2024.pdf

[8] https://cms.EirGrid.ie/sites/default/files/publications/Shaping-Our-Electricity-Future-Roadmap_Version-1.1_07.23.pdf

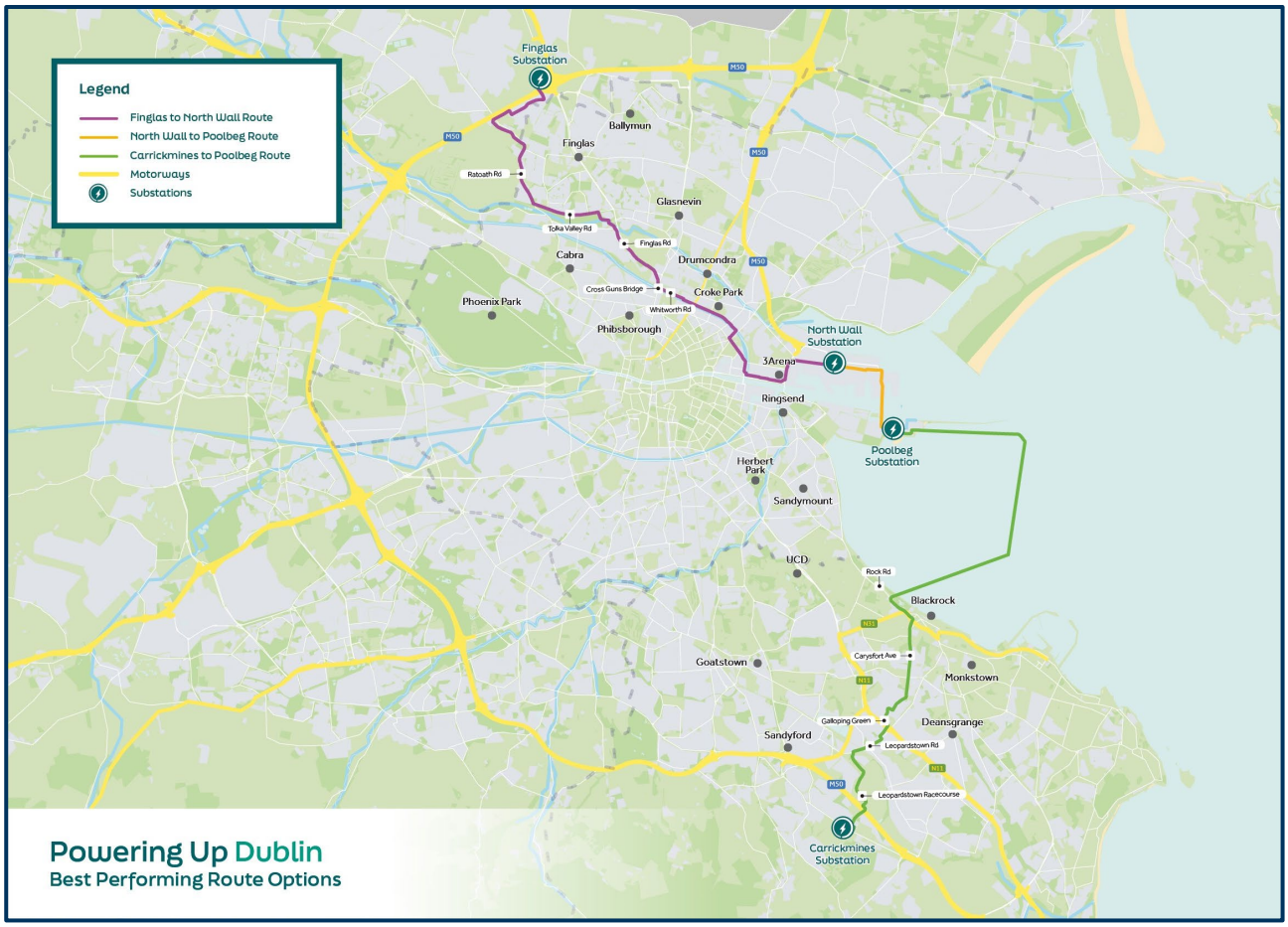


Figure 6.1: Powering Up Dublin - Best Performing Options

Source: Shaping Our Electricity Future Roadmap

6.1.2.3 Strategy 2020-25: Transform The Power System for Future Generations

EirGrid published the *Strategy 2020-25: Transform the Power System for Future Generations*[9] in 2019 for the period 2020-25. The primary goal of this strategy is to "*lead the island's electricity sector on sustainability and decarbonisation*". Supporting goals are as follows:

- "*Operate, develop and enhance the all- island grid and market",*
- *"Work with partners for positive change" and*
- *"Engage for better outcomes for all".*

In line with these goals, the Proposed Development, which forms part the Powering Up Dublin project, will enable the city's grid to use and transmit electricity generated from offshore wind energy. This represents a vital step in helping Ireland transition to a low-carbon future. The Proposed Development is therefore considered to be fully aligned with and supported by this strategy.

[9] https://cms.EirGrid.ie/sites/default/files/publications/EirGrid-Group-Strategy-2025-DOWNLOAD.pdf

6.1.3 National Planning Policy Context

6.1.3.1 Project Ireland 2040: National Planning Framework, 2018 and National Development Plan 2021-2030

Project Ireland 2040 is the government's long-term overarching development strategy for the state. The *National Development Plan 2021-2030*[10] (NDP), which was updated on the 22nd of July 2025[11] and the *National Planning Framework*[12] (NPF) combine to form Project Ireland 2040. The NPF sets the vision and strategy for the development of Ireland until 2040 and the NDP provides the enabling investment to implement that strategy.

The NPF includes several National Strategic Outcomes (NSOs) to guide development, with NSO 8 noting that *"new energy systems and transmission grids will be necessary for a more distributed, more renewables focused energy generation system".*

The NDP aims to deliver up to 80% of Ireland's electricity from a mix of onshore and offshore renewable sources by 2030. Achieving this ambitious target will necessitate a coordinated investment program in several key areas, including *"an expanded and strengthened electricity transmission and distribution network."*

As a part of the Powering Up Dublin project, the Proposed Development will contribute to strengthening key electricity infrastructure and enabling the city's grid to use and transmit the electricity generated from offshore wind energy to the heart of the city. This is a critical step to help Ireland transition to a low-carbon electricity future. In this regard, the Proposed Development is considered to be fully aligned and supported by the policies set out in the NPF and the NDP.

6.1.3.2 Climate Action Plan 2025

The *Climate Action Plan 2025* (CAP25)[13] is the third statutory annual update to Ireland's Climate Action Plan under the Climate *Action and Low Carbon Development (Amendment) Act 2021*. CAP25 implements the carbon budgets and sectoral emissions ceilings, and sets out a roadmap for taking decisive action to reduce our emissions by 51% by 2030 and reach net zero no later than 2050. An objective of CAP25 is to increase the proportion of renewable electricity to up to 80% by 2030.

In accordance with CAP25, the Proposed Development will contribute towards the acceleration and increase of deployment of renewable energy by strengthening key electricity infrastructure and enabling the city's grid to use and transmit the sustainably generated electricity.

6.1.4 Regional Planning Policy Context

6.1.4.1 Regional Spatial and Economic Strategy for the Eastern and Midlands Region 2019-2031

The *Eastern and Midland Regional Assembly's Regional Spatial and Economic Strategy, 2019-2031*[14] (the RSES) outlines the spatial and economic policies and targets for the region. The RSES, prepared in accordance with the NPF, sets the context for each local authority within the Eastern and Midland Region to develop county and city development plans in a manner that will

[10] https://www.gov.ie/en/department-of-public-expenditure-infrastructure-public-service-reform-and-digitalisation/publications/national-development-plan-2021-2030/
[11] https://assets.gov.ie/static/documents/NDP_Review_document_-_22_July_2025_1025.pdf
[12] https://cdn.npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf
[13] https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/climate-action-plan-2025/
[14] https://www.emra.ie/rses/

ensure that national, regional and local plans align. Regional Policy Objectives (RPOs) provide a framework for city and county development plans and align with international, EU and national policy.

Section 7.9 of the RSES relates to climate change and stresses the need to ensure that future development in the region will be transitioned to a low carbon usage. The following RPOs are of particular relevance to the Proposed Development:

> **RPO 10.20 - Energy Infrastructure**: *"Support and facilitate the development of enhanced electricity and gas supplies, and associated networks, to serve the existing and future needs of the Region and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this Strategy. This Includes the delivery of the necessary integration of transmission network requirements to facilitate linkages of renewable energy proposals to the electricity and gas transmission grid in a sustainable and timely manner subject to appropriate environmental assessment and the planning process."*
>
> **RPO 10.22 - Energy Infrastructure**: *"Support the reinforcement and strengthening of the electricity transmission and distribution network to facilitate planned growth and transmission/ distribution of a renewable energy focused generation across the major demand centres to support an island population of 8 million people."*
>
> **RPO 10.23 - Energy Infrastructure:** *"Support EirGrid's Implementation Plan 2017 – 2022 and Transmission Development Plan (TDP) 2016 and any subsequent plans prepared during the lifetime of the RSES that facilitate the timely delivery of major investment projects subject to appropriate environmental assessment and the outcome of the planning process, in particular:*
>
> • *Support reinforcement of the Greater Dublin Area between Dunstown and Woodland 400 kV substations to increase the capacity of the often congested and highly loaded Dublin transmission network to enable the transmission system to safely accommodate more diverse power flows and also facilitate future load growth in the area*
>
> • *Support the installation of additional transformer capacity and increased circuit capacity to meet Dublin demand growth to strengthen the network for all electricity users and improve the security and quality of supply…"*
>
> **RPO 10.24 - Energy Infrastructure***: "Support the sustainable development of Ireland's offshore renewable energy resources in accordance with the Department of Communications, Energy and Natural Resources 'Offshore Renewable Energy Development Plan' and any successor thereof including any associated domestic and international grid connection enhancements."*

Having regard for the above, it is highlighted that the Proposed Development forms part of the wider Powering Up Dublin Project, which is fully in accordance with, and supported by, the RSES's climate change and energy infrastructure RPOs. The Proposed Development will significantly improve electricity infrastructure and security of supply in Dublin, thereby supporting demand growth and facilitating greater amounts of renewable energy onto the network.

6.1.4.1.1 Dublin Metropolitan Area Strategic Plan

The Dublin Metropolitan Area Strategic Plan (the MASP) has been prepared as part of the RSES and sets out a 10 to 12 year strategic planning and investment framework for the Dublin metropolitan area. The MASP outlines a number of guiding principles, including the alignment of growth with enabling infrastructure and seeking to:

> *"Promote quality infrastructure provision and capacity improvement, in tandem with new development and aligned with national projects and improvements in water and waste water, sustainable energy, waste management and resource efficiency".*

The MASP highlights the importance of the development of the energy distribution and transmission network in the Region, with RPO 5.1 seeking to:

> "*Support continued collaboration between infrastructure providers, state agencies and local authorities in the metropolitan area to inform cross sectoral investment plans and capital spending plans to accelerate the development of strategic development areas and secure the best use of public lands in the Dublin Metropolitan Area".*

Having regard for the above, it is considered that the Proposed Development, which will support increased sustainable energy production through the strengthening of electricity transmission infrastructure, is fully supported by the MASP's vision and objectives.

6.1.5 Local Planning Policy Context

6.1.5.1 Dublin City Development Plan 2022-2028

The *Dublin City Development Plan 2022-2028*[15] (the CDP) serves as the key planning policy document for the Dublin City Council (DCC) administrative area and includes policy objectives and development standards for all development types. The aim of the CDP is to improve the quality of life for its citizens and ensure that Dublin City is an attractive place to live, work and visit. The following sections considers relevant polices and guidelines from the CDP as relevant to the Proposed Development.

6.1.5.1.1 Energy Infrastructure and Climate Action

Chapter 9 of the CDP relates to 'Sustainable Environmental Infrastructure and Flood Risk' and notes the following as a strategic issue: "*facilitating the provision of critical energy utilities and the transition to alternative, renewable, decarbonised and decentralised energy sources*". Relevant objectives regarding energy infrastructure are noted below:

> **SI49 - Support for Energy Utilities**: "*To support the development of enhanced electricity gas supplies, and associated transmission and distribution networks, to serve the existing and future needs of the City, and to facilitate new transmission infrastructure projects and technologies including those to facilitate linkages of renewable energy proposals to the electricity and gas transmission grid that might be brought forward in the lifetime of this Plan. In this respect, the City Council will have regard to the 'Guiding Principles' for facilitating the provision of energy networks set out by the Eastern and Midland Regional Assembly Regional Spatial and Economic Strategy (2019-2031)."*
>
> **SI51 - Renewable Energy Use and Generation: "***To promote renewable energy generation, use and storage at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050."*
>
> **SIO28 - EirGrid Development Strategy**: *"To support EirGrid's Grid Development Strategy - Your Grid, Your Tomorrow (2017), Implementation Plan 2017 - 2022 and Transmission Development Plan (TDP) 2016 and any subsequent plans prepared during the lifetime of this Plan, in order to provide for the safe, secure and reliable supply of electricity."*
>
> **SIO30 - Facilitating Offshore Renewable Energy:** "*To support the sustainable development of Ireland's offshore renewable energy resources in accordance with the National Marine Planning Framework (2021) and Offshore Renewable Energy*

[15] https://www.dublincity.ie/sites/default/files/2023-02/Final%20Vol%201%20Written%20Statement.pdf

Development Plan (2019) and its successor, including any associated domestic and international grid connection enhancements."

Having regard for the above, it is highlighted that the Proposed Development, as part of the Powering Up Dublin Project, will enable the city's grid to use the electricity generated from offshore wind energy in Dublin City and will contribute to Ireland's transition to a low carbon electricity future. In this regard, it is considered that the Proposed Development is fully supported by the above objectives. Further consideration of impacts on climate are set out in **Chapter 11** of this PECR.

6.1.5.1.2 Land Use Zoning Objectives

As illustrated in **Figure 6.2**, the Proposed Development is located on lands zoned 'Zone 6 - Employment / Enterprise' as identified in the CDP. The vision for this objective is:

"*To provide for the creation and protection of enterprise and facilitate opportunities for employment creation*."

Under this zoning objective, a 'public service installation' is a permissible use. This use is defined in *Appendix 15 – Land Use Definitions* of the CDP as follows:

"*A building, or part thereof, a roadway or land used for the provision of public services including those provided by statutory undertakers. Public services include all service installations necessary for electricity, gas, telephone, radio, telecommunications, television, data transmission, drainage, including wastewater treatment plants*."

In this regard, it is considered that the Proposed Development is fully compliant with the land use zoning objective for the subject site.

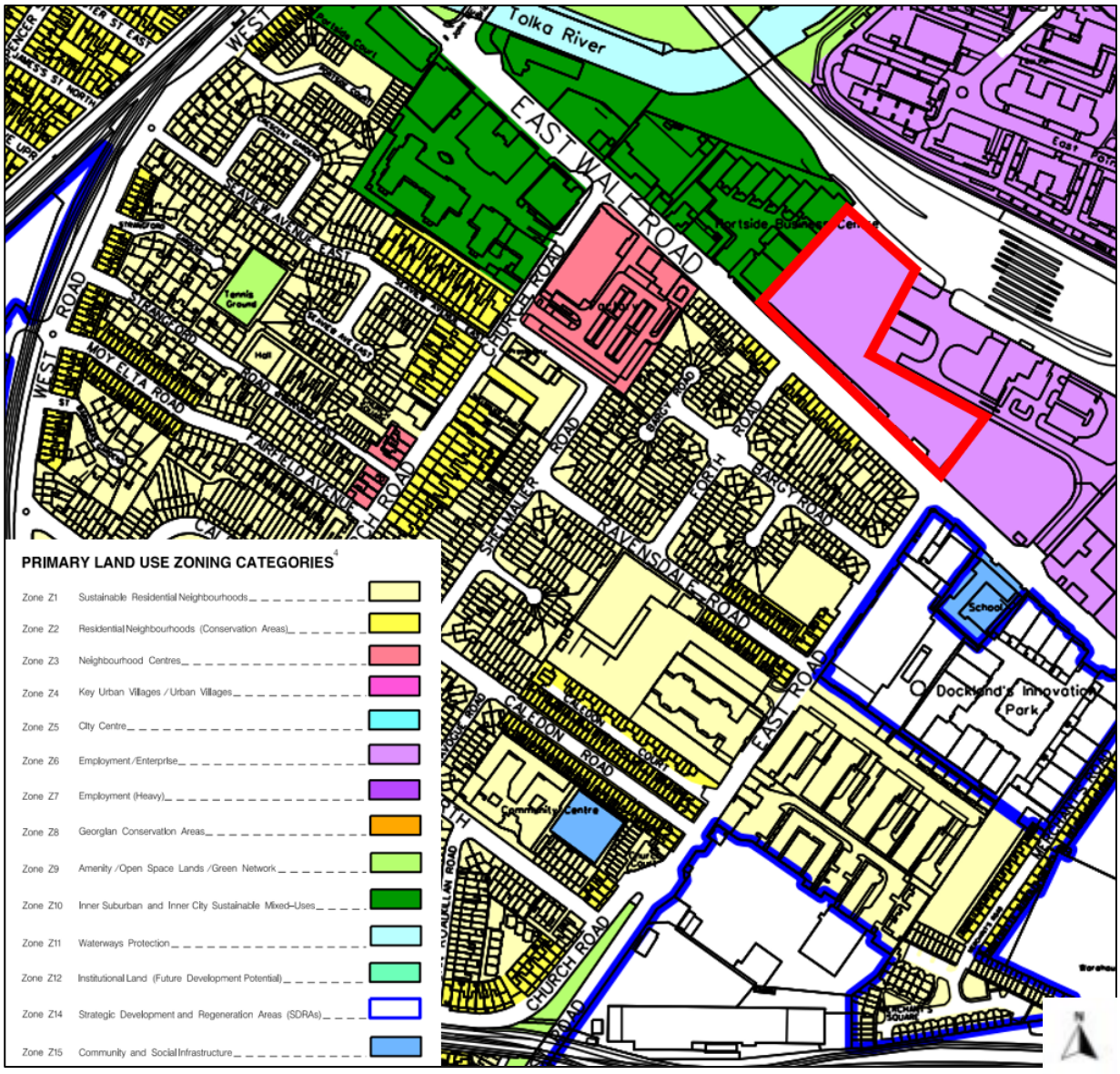


Figure 6.2: Land Use Zoning Map (site annotated in red)

Source: Map E of Dublin City Development Plan 2022 – 2028 with RPS annotation

It is noted that lands surrounding the subject site are varied in terms of zoning, with lands to the northwest zoned for mixed uses, lands to the southwest zoned for residential uses and adjoining lands to the east zoned for enterprise and employment. In this regard, it is considered that the subject site represents a transitional location and regard should therefore be had for potential impacts on potentially sensitive neighbouring land uses.

Of particular note are two rows of terraced houses directly opposite the subject site, on the south side of East Wall Road, which are zoned 'Zone 2 - Residential Neighbourhoods (Conservation Areas)'. In this regard, it is highlighted that the Proposed Development has been designed with careful consideration for impacts on these and other residential properties in the area. Further details in relation to how the subject proposals have been designed to respond to the local context are set out in the Architectural Design Statement prepared by BDA and enclosed as part of the SID application package.

6.1.5.1.3 Strategic Development Regeneration Area

Chapter 13 of the CDP identifies 17 no. Strategic Development Regeneration Areas (SDRAs) and sets out the overarching framework and guiding principles for the future development of each these areas. The CDP notes that these SDRAs are capable of delivering significant quantities of homes and employment for the city and key supporting infrastructure.

The Proposed Development is located within the northern portion of 'SDRA 6 Docklands'. The CDP notes that all future land uses within this SDRA shall accord with the focused requirements of the relevant development plan zonings. In this regard, the Proposed Development is considered to be fully compliant with the permissible uses relating to 'Zone 6 - Employment / Enterprise' (see **Section 6.1.5.1.2**).

Objective SDRAO1 sets out a number of overarching principles for the SDRAs which generally align with the CDP's design standards and criteria as set out in Chapter 15 and addressed in **Section 6.1.5.1.4** of this PECR.

For each SDRA, a series of additional, area-specific guiding principles are set out and indicated on an accompanying plan (see **Figure 6.3**). Of particular relevance to the Proposed Development are the following objectives that relate specifically to SDRA 6:

> *"To enhance public realm to accommodate increased pedestrian movement.*
>
> *To support public realm improvements in East Wall to enhance permeability and connectivity to the wider area".*

While there are no SDRA objectives relating specifically to the subject site, as illustrated in **Figure 6.3,** East Wall Road is identified as a 'Core Pedestrian Spine', and roads linking to East Wall Road have been also identified for 'Access and Permeability'.

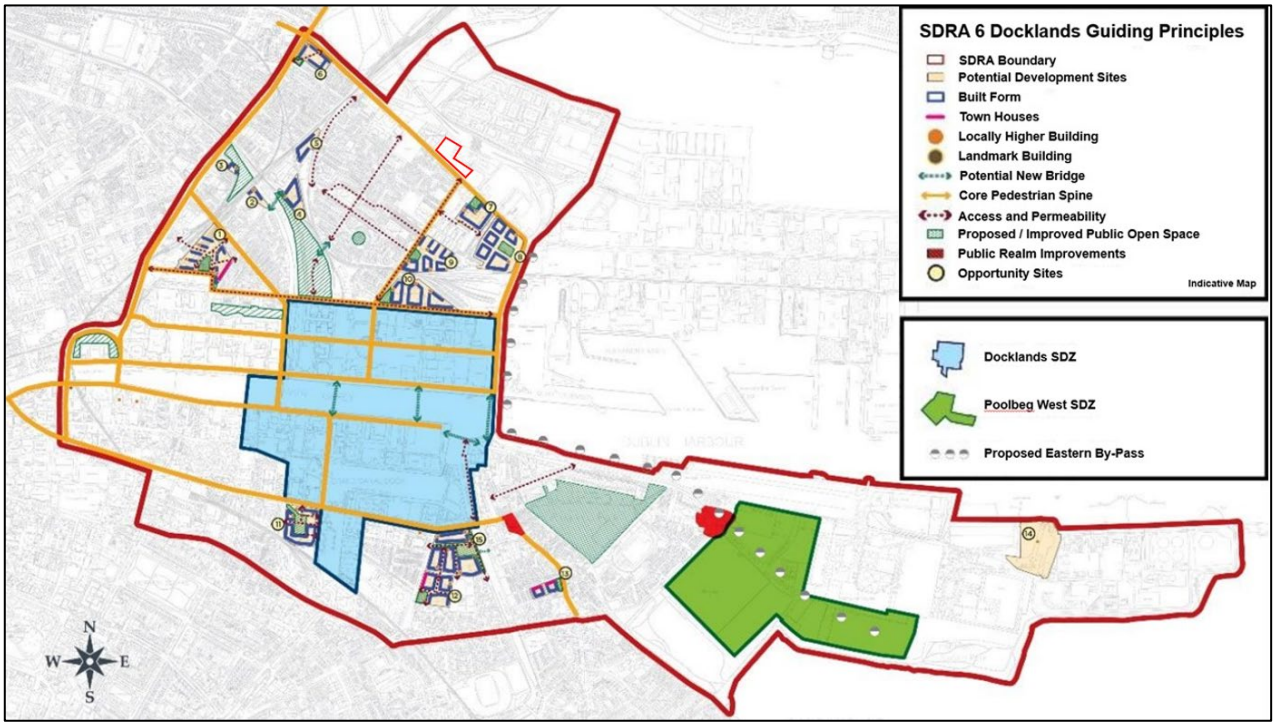


Figure 6.3: SDRA 6 Docklands (site annotated in red)

Source: Dublin City Development Plan 2022 – 2028, RPS Annotation.

Having regard for the above SDRA objectives, and as further detailed in **Section 6.1.5.1.4** of this PECR, the Proposed Development includes significant upgrades to the public realm to include an architecturally designed boundary fence and landscaping along the public footpath to assist in screening the substation buildings, soften the edge of the site and enhance visual interest along

East Wall Road. The site boundary at East Wall Road currently consists of a concrete wall and gated entrance. There is no street furniture or landscaping (planting or trees) adjacent to the site. While there are some scattered trees located to the south side of East Wall Road, overall, the public realm in immediate vicinity of the site is considered to be of poor quality and does not contribute to the amenity value of the area.

The subject proposals include stepped back public spaces with seating to improve the pedestrian experience and allow pedestrians, especially the elderly, children, and those with mobility challenges, a place to sit and rest along their journeys. The existing bicycle lane on East Wall Road has also been carefully considered in the design with appropriate sightlines and swept paths provided at the proposed entrances to the site to ensure the safety of all road users. The proposed public realm improvements and the high quality landscaping will reinforce East Wall Road as a 'Core Pedestrian Spine' in accordance with the SDRA.

Having regard for the above, the Proposed Development is considered to be fully compliant with the CDP's objectives for SDRA 6. Further details relating to the proposed layout, design, scale, massing, boundary treatments and materials and finishes are set out in the Architectural Design Statement prepared by BDA and enclosed as part of the subject SID planning application package.

6.1.5.1.4 Architectural and Urban Design Parameters

Chapter 15 of the CDP sets out development standards and criteria to be considered in the development management process so that development proposals can be assessed both in terms of how they contribute to the achievement of the core strategy and related policies and objectives. Section 15.4.2 of the CDP has regard for architectural and urban design and notes that:

> *"Imaginative, innovative and contemporary architecture is encouraged in all development proposals, provided that it respects Dublin's heritage and local distinctiveness and enriches the city environment. Through its design, use of materials and finishes, development will make a positive contribution to the townscape and urban realm, and to its environmental performance.*
>
> *Through the use of high quality materials and finishes and the appropriate building form, the architectural quality of development should positively contribute to the urban design and streetscape, enhancing the overall quality of the urban environment. In particular, development should respond creatively to and respect and enhance its context".*

The CDP notes that underutilised lands and brownfield sites should be developed with consideration for the following *inter alia*:

- *"To encourage innovative, high quality urban design and architectural detail in all new development proposals.*
- *To analyse and review the surrounding built environment to ensure the new development is consistent with the character of the area.*
- *To contribute to the streetscape creating active and vibrant public realm.*
- *To provide for appropriate materials and finishes in the context of the surrounding buildings.*
- *To carefully integrate appropriate landscape planting and trees and retain and ecological features on the site".*

Section 15.5.7 of the CDP relates to materials and finishes and notes that developments the following are required of all new developments:

- *"To ensure materials and finishes complement the existing pallet of materials in the surrounding area.*
- *Promote durability to ensure a good visual appearance over time.*

- *The design and layout of buildings, together with the robustness of materials used in their construction, should be such as to discourage graffiti, vandalism and other forms of anti-social activity.*
- *To support the use of structural materials that have low to zero embodied energy and CO2 emissions as well as the use of sustainably sourced building materials and the reuse of demolition and excavated materials."*

Section 15.6.13 of the CDP relates to boundary treatment and notes that:

- *"Walls, fences, metal railings and gates used to define spaces and their usage all impact on the visual character and the quality of a development. These should be selected so as to be an integrated part of overall design".*

Having regard for the above, it is noted that the subject site is located in a transitional area between port-related uses, established residential areas and commercial properties. The settlement pattern and urban fabric in this area is continuously evolving and as such there is a need for new development to be designed with consideration for surrounding land uses. It was acknowledged at an early stage in the design process that the Proposed Development would need to be carefully integrated into the existing environment, with particular attention given to ensuring an appropriate interface is provided between the proposed substations and the public realm. Particular regard was also given for the proximity of the subject proposals to the more sensitive residential uses located to the southwest of the subject site.

In this context, the proposed substation buildings have been located towards the public facing front boundary to assist in screening the associated transformers, car parking and other services to the rear of the site. The buildings themselves have been designed to incorporate architectural cladding and materials and finishes that break up the scale and massing of these forms and provide visual interest to the streetscape (see **Figure 6.4**).

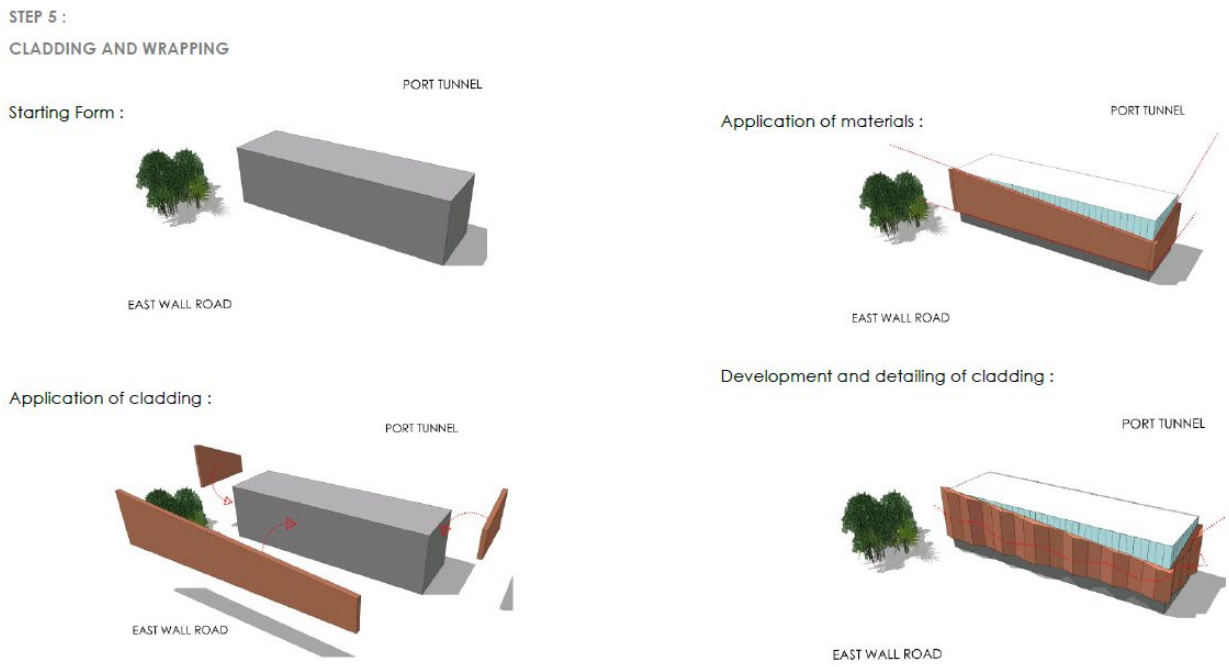


Figure 6.4: Proposed Substation Buildings

Source: Architects Design Statement, BDP

To the front of the site, the required security fencing is set back and screened by an architecturally designed public boundary and high-quality landscaping which softens the overall appearance of the site. Set-backs are provided along the public boundary to create spaces in which to sit and rest, thereby enhancing the overall pedestrian experience, with tree planting carefully located for

additional visual interest, urban greening and biodiversity (see **Figure 6.5**). Further consideration of green infrastructure and landscaping in the context of the CDP is set out in **Section 6.1.5.1.5** of this PECR. An assessment of impacts on the landscape is set out in **Chapter 13** of this PECR, and an assessment of impacts on biodiversity is set out in **Chapter 15**.

Figure 6.5: Proposed Public Realm Interface

Source: Architects Design Statement, BDP

The proposed materials and finishes for both the substation buildings and the public realm area have been carefully selected to complement the existing pallet of materials in the area and have particular regard for the site's historic industrial context and its proximity to Dublin Port. The selected materials and finishes have been chosen for their durability and appearance over time while delivering a distinctive contemporary character that sits comfortably in this transitional urban context. While the selected materials and finishes have been carefully considered to address feedback from DCC and the local community while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC. Having regard for the above, it is considered that the Proposed Development is fully compliant with the above development standards and criteria and positively responds to its setting and the character of the area. Further details relating to the proposed layout, design, scale, massing, boundary treatments, and materials and finishes are set out in the Architectural Design Statement prepared by BDA and enclosed as part of the subject SID planning application package. An assessment of the visual impact is also set out in **Chapter 13** of this PECR with accompanying photomontages enclosed as part of the SID planning application documentation.

6.1.5.1.5 Green Infrastructure and Landscaping

Section 15.6 of the CDP refers to green infrastructure and landscaping and notes that these elements are critically important to contributing to making Dublin a climate resilient, healthy and green city. The CDP notes that:

> *"Planning applications will be required to address climate action as part of the overall design of the development and incorporate green infrastructure techniques. All new*

developments in the city are encouraged to incorporate an ecosystem services approach as a key instrument in achieving sustainable climate change action".

Section 15.6.5 further notes that:

"All applications for large scale development will be encouraged to facilitate urban greening through the provision of tree planting, pocket parks, green roofs, green walls etc. The provision of urban greening methods improves the overall quality of the environment and enhances the well-being".

Having regard for the above, it is noted that the proposed interface with the public realm has been a critical consideration in the design of the Proposed Development. Early engagement with the local community and DCC was undertaken (see **Section 1.5** of this PECR) to elicit feedback and ensure the subject proposals would include a high-quality public facing boundary that also addressed various technical constraints as summarised in **Section 1.5** of this PECR.

As highlighted in Drawing CP1273-RPS-03-PL-SL-D-A-2150 (see **Figure 6.6**), prepared by RPS and submitted as part of the SID application documentation, the Proposed Development includes landscaped public space to the front (south) of the proposed substation buildings with a variety of plants and trees that have been specifically selected to soften the overall appearance of the site, significantly improve visual interest, introduce a greater diversity of native species, and support local biodiversity.

While the proposed interface with the public realm has been carefully considered to address feedback from DCC while meeting ESB's technical requirements, it is accepted that there is scope for further discussion and agreement with DCC regarding specific details of finishes, without affecting the principle, nature and extent of the proposed development. EirGrid would therefore be happy to accept a condition of permission (should ACP be disposed to grant permission) to further discuss and agree these details with DCC.

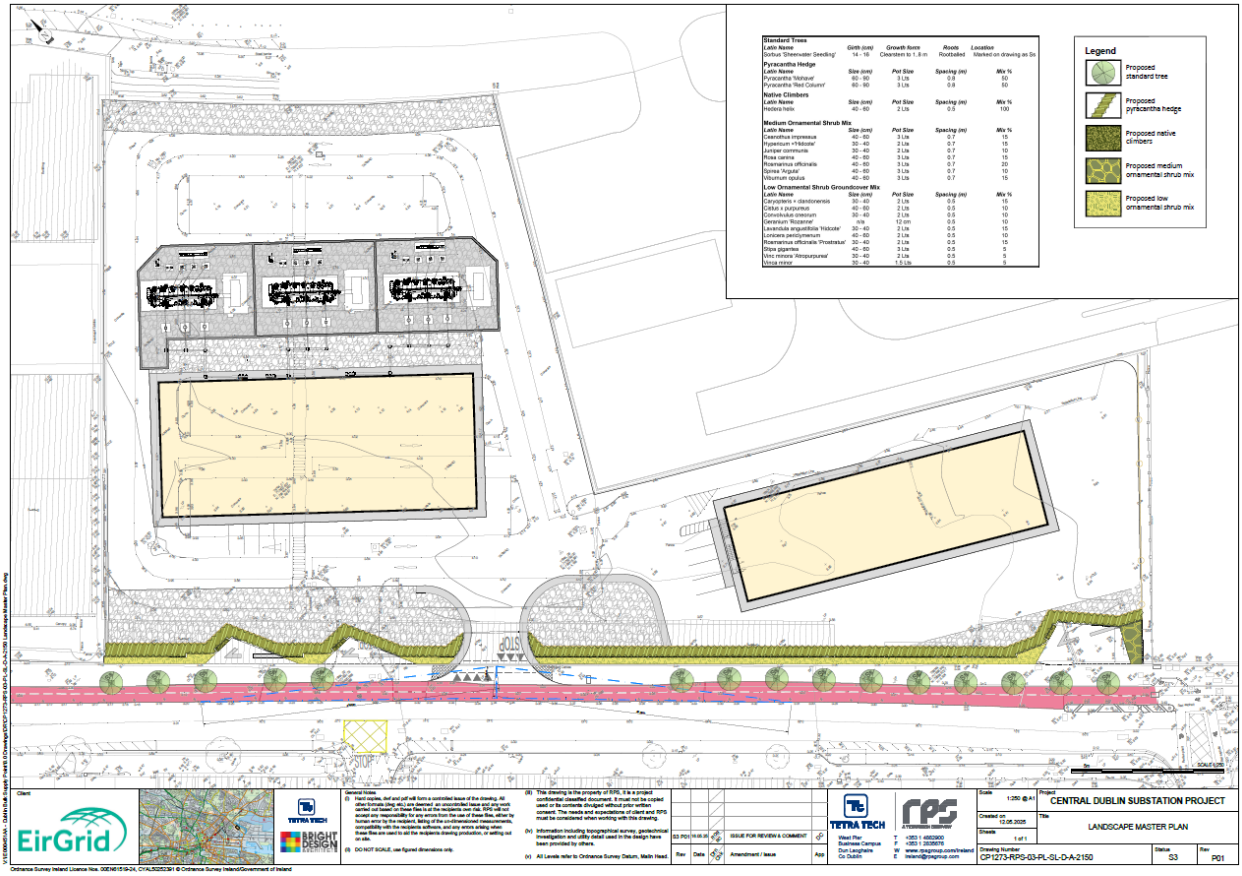


Figure 6.6: Proposed Landscape Plan (extract)

Source: Drawing CP1273-RPS-03-PL-SL-D-A-2150, RPS

In this regard, it is considered that the Proposed Development is fully in accordance with the CDP's green infrastructure and landscaping policies and objectives. Further details in relation to the proposed landscaping are set out in **Section 4.1.10** and assessed **Chapter 13** of this PECR and in Drawing CP1273-RPS-03-PL-SL-D-A-2150, prepared by RPS and submitted as part of the SID application documentation.

6.1.5.1.6 Surface Water Management and Flood Risk

Chapter 9 of the CDP refers to Sustainable Environmental Infrastructure and Flood Risk and requires Sustainable Urban Drainage Systems (SuDS) in all new developments, where appropriate, in order to reduce the quantity of surface water run-off, improve water quality, and contribute to climate change adaptation. In this regard the following policies are of particular relevance to the subject proposals:

> **SI21 - Managing Surface Water Flood Risk:** "*To minimise flood risk arising from pluvial (surface water) flooding in the City by promoting the use of natural or nature-based flood risk management measures as a priority, by requiring the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving, and requiring the use of sustainable drainage techniques, where appropriate, for new development or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risk and to deliver wider environmental and biodiversity benefits, and climate adaption."*
>
> **SI22 - Sustainable Drainage Systems:** *"To require the use of Sustainable Drainage Systems (SuDS) in all new developments, where appropriate, as set out in the Greater Dublin Strategic Drainage Study (Vol 2: New Development)/ Greater Dublin Regional Code of Practice for Drainage Works and having regard to the guidance set out in Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas, Water Sensitive Urban Design Best Practice Interim Guidance Document (DHLGH, 2021). Sustainable Drainage Systems (SuDS) should incorporate nature-based solutions and be designed in accordance with the Dublin City Council Sustainable Drainage Design & Evaluation Guide (2021) which is summarised in Appendix 12. SuDS should protect and enhance water quality through treatment at source while enhancing biodiversity and amenity*".
>
> **SI23 - Green Blue Roofs:** "*To require all new developments with roof areas in excess of 100 sq. metres to provide for a green blue roof.*"

Having regard for the above, it is highlighted that the proposed electrical infrastructure is subject to several technical and safety requirements which limit the potential for including SuDS or nature-based flood risk management measures. Notwithstanding this, the Proposed Development incorporates appropriate sustainable drainage measures that can be delivered on site, taking account of the site particular specific constraints. Further details in relation to proposed surface water management are set out in the Engineering Services Report prepared by RPS and enclosed as part of the SID planning application documentation.

With regard for the assessment of flood risk, the CDP seeks the following:

> **SI14 – Strategic Flood Risk Assessment:** "*To implement and comply fully with the recommendations of the Strategic Flood Risk Assessment prepared as part of the Dublin City Development Plan 2022-2028, including all measures to mitigate identified climate change and flood risks, including those recommended under Part 3 (Specific Flood Risk Assessment) of the Justification Tests, and to have regard to the Flood Risk Management Guidelines (2009), as revised by Circular PL 2/2014, when assessing planning applications and in the preparation of statutory and non-statutory plans*."
>
> **SI15 – Site Specific Flood Risk Assessment:** "*All development proposals shall carry out, to an appropriate level of detail, a Site-Specific Flood Risk Assessment (SSFRA*)."

Having regard for the above, it is noted that the Proposed Development site is located within Flood Zone C as identified within the CDP's Strategic Flood Risk Assessment and is categorised as

'highly vulnerable development (including essential infrastructure)'. Table 3.2 of Flood Risk Management Guidelines notes that 'highly vulnerable development' is appropriate for development in areas located in Flood Zone C, and a justification test is not required. Notwithstanding this, a Site-Specific Flood Risk Assessment (SSFRA) has been prepared by RPS and is submitted as part of the SID planning application.

6.1.5.1.7 Sustainable Movement and Transport

Chapter 8 of the CDP relates to Sustainable Movement and Transport and promotes the integration of land use and transportation, improved public transport and active travel infrastructure, an increased shift towards sustainable modes of travel, and an increased focus on public realm. In this regard, the following policies are of particular relevance to the Proposed Development:

> **SMT11 - Pedestrian Network:** "*To protect, improve and expand on the pedestrian network, linking key public buildings, shopping streets, public transport points and tourist and recreational attractions whilst ensuring accessibility for all, including people with mobility impairment and/or disabilities, older persons and people with children."*
>
> **SMT12 - Pedestrians and Public Realm:** "*To enhance the attractiveness and liveability of the city through the continued reallocation of space to pedestrians and public realm to provide a safe and comfortable street environment for pedestrians of all ages and abilities."*
>
> **SMT16 - Walking, Cycling and Active Travel:** "*To prioritise the development of safe and connected walking and cycling facilities and prioritise a shift to active travel for people of all ages and abilities, in line with the city's mode share target".*

Having regard for the above, it is highlighted that the Proposed Development includes enhancements to the public realm which will improve the pedestrian experience and deliver a more attractive and safer environment in which to walk and cycle. The site boundary at East Wall Road currently consists of a concrete wall and gated entrance. There is no street furniture or landscaping (planting or trees) adjacent to the site. While there are some scattered trees located to the south side of East Wall Road, overall, the public realm in immediate vicinity of the site is considered to be of poor quality and does not contribute to the amenity value of the area. The provision of public seating will provide rest spots for pedestrians, especially the elderly, children, and those with mobility challenges. The existing bicycle lane on East Wall Road will not be impacted by the subject proposals which have been carefully designed to ensure appropriate sightlines and vehicle swept paths are accommodated at all entrances to the site.

The Proposed Development will not significantly impact traffic in the vicinity as there will be minimal vehicular traffic during the operational phase. The proposed substations will be generally unmanned and only visited for routine inspection and maintenance. Further details relating to the potential impacts on traffic are addressed in **Chapter 8** of this PECR.

Having regard for the above, it is considered that the Proposed Development is fully aligned with the CDP's policies and objectives as they relate to access, traffic and transport.

6.1.5.1.8 Built Heritage and Archaeology

Chapter 11 of the CDP relates to Built Heritage and Archaeology and notes that *"city's heritage contributes significantly to the collective memory of its communities and to the richness and diversity of its urban fabric. It is key to the city's character, identity and authenticity and is a vital social, cultural, and economic asset for the development of the city".*

The CDP notes that Dublin's industrial heritage is closely associated with the development of the city, "*encompassing sites and structures of engineering heritage related to the evolution of the city's transport networks and public utilities, as well as its manufacturing heritage*". Policy BHA17 relates to the industrial heritage of waterways, canals and rivers and seeks:

"To support and promote a strategy for the protection and restoration of the industrial heritage of the city's waterways, canals and rivers, including retaining features such as walls, weirs, millraces, and the graving dock structures at Ringsend".

In this regard, it is noted that archaeological monitoring in the vicinity of the subject site found remains of the 18th century sea wall (East Wall) that was built to facilitate the land reclamation under East Wall Road. In the interests of protecting this historic wall, it is proposed that all excavation work will be monitored by a suitably qualified archaeologist. Further details in relation to cultural heritage are set out in **Chapter 14** of this PECR. Should any remains of the sea wall be uncovered, it is proposed to protect this material in situ in accordance with policy BHA26(3) which seeks *"the preservation in situ (or where this is not possible or appropriate, as a minimum, preservation by record) of […] features and objects of archaeological interest that become revealed through development activity".*

6.1.5.1.9 Light and Noise

The CDP seeks to minimise the impact of external lighting and noise with the following policies being of particular relevance to the subject proposals:

GI18 – Minimise Impact – Light and Noise: *"To minimise the environmental impact of external lighting and noise at sensitive locations to achieve a sustainable balance between the needs of an area, the safety of walking and cycling routes and the protection of sensitive species such as bats (see also Section 9.5.9 Public & External Lighting)."*

SI41 – Lighting Standards: "*To provide and maintain high quality and appropriate street/ outdoor lighting on public roads, footways, cycleways, public realm throughout the City in accordance with the Council's Vision Statement for Public Lighting in Dublin City and related public lighting projects. In general, the lighting of roads and public amenity areas shall be provided in accordance with the requirements of the latest Public Lighting Standards IS EN13201 and further updates*."

SI42 – Light Pollution: "*To not allow unnecessary, inappropriate or excessive artificial lighting and to ensure that the design of public and external lighting proposals minimises light spillage or pollution and has due regard to the character, environmental sensitivity and residential amenity of the surrounding area*."

SI35 – Ambient Noise Quality: "*To seek to preserve and maintain noise quality in the City in accordance with good practice and relevant legislation*."

Having regard for the above, it is noted that the Proposed Development is located close to residential properties and, as such, careful consideration has been given to minimise impacts in terms of external lighting and noise emissions.

All external lighting will be mounted and directed inwards, facing the buildings and operational areas, to avoid light spill beyond the site boundary. Public lighting will be as per the existing arrangement with removal of one public lighting pole along the front boundary of the site. Any replacement street lighting will be fully compliant with the latest Public Lighting Standards guidance document.

With regard for noise impacts, the Proposed Development includes noise attenuation measures to protect public amenity and ensure minimal disruption to nearby residents. The impact of noise on the local population is assessed in **Chapter 12** of this PECR.

Having regard for the above, it is considered that the Proposed Development is fully compliant with the CDP's policies regarding light and noise.

6.1.5.2 Climate Neutral Dublin 2030 - Local Authority Climate Action Plan 2024-2029

Dublin City Council's Climate Action Plan 2024 - 2029[16] (the Action Plan), titled *Climate Neutral Dublin 2030*, sets out the actions how Dublin City Council will mitigate greenhouse gas emissions and contribute the global effort to limit warming to below 1.5°C, and includes a series of actions to be taken. The following objective is relevant to the Proposed Development:

> **R3 - Climate Resilient Critical Infrastructure:** "*The city's infrastructure that enables us to live, work and play needs to be resilient. Ensuring that our drainage system, utilities, roads, public lighting and communications networks are maintained and upgraded is essential. This requires working in partnership with Uisce Éireann, the OPW, ESB, EirGrid, NTA, and DECC. Together we will insure that these critical systems are prepared for the future.*"

In accordance with the objectives of the Action Plan, the Proposed Development will provide essential upgrades to the electricity grid to prepare for future growth and demand.

6.1.6 Planning Policy Context Conclusions

Having regard to the above, it is considered that the principle of the Proposed Development is supported by national, regional, and local planning policies. There is a pressing need to provide infrastructure to support and strengthen the security of energy supply in Dublin. The Proposed Development will help to meet the growing and changing electricity needs of Dublin, which is vital to allow for the planned and continued growth of the city. The Proposed Development has been carefully designed to align with urban design polices as set out in the CDP.

6.2 Planning History

RPS has carried out a planning history search using DCC's online database in July 2025. Valid planning applications within the subject site over the last 10 years are included in **Table 6.1** and relevant and valid applications within 250m of the site over the last 10 years are included in **Table 6.2**.

Table 6.1: Subject Site Planning History

Reg Ref	Planning Application Details
2766/21	The planning application related to the continued use of a temporary surface car park to provide ancillary parking for ESB staff temporally located at the gateway building, East Wall Road. The proposed works also included minor alterations to the existing internal car park layout, reducing overall car parking capacity from 250 to 150 spaces. Permission was also sought to retain all entrances, security gates, security hut, lighting, boundary treatments and all ancillary site works.
3052/16	The planning application related to the provision of a temporary surface car park for a period up to a maximum of five years comprising part of the ESB landholding to provide parking for staff temporally located at the Gateway Building, East Wall Road. The proposed works also included: the provision of 250 temporary car parking spaces; the temporary relocation of the vehicular and pedestrian entrance onto East Wall Road; works to the footpath at the entrance and new road markings on the East Wall Road; removal of a section of boundary wall and adjoining lean-to sheds; erection of security gates; security hut; lighting and all ancillary site; and development works.

[16] https://www.dublincity.ie/sites/default/files/2024-06/final-cap-2024-2029.pdf

Table 6.2: Adjacent Lands Planning History

Reg. Ref.	Applicant	Planning Application Details	Decision	Decision Date	Distance to Site
5175/22	EWD3 Developments Limited	The planning application sought permission for amendments to Reg. Ref. 3091/20 for a change of use of land and provision of an ESB substation, ESB Meter/Switch Room and all associated development.	Granted	05/01/2023	c. 156m
4202/22	Lidl Head Office	The planning application sought permission to erect c. 482 sq.m or 99.90 kWp of photovoltaic panels on the roof of the existing retail unit at East Wall with all associated site works at Lidl Ireland GMBH.	Granted	28/10/2022	c. 85m
2552/15	Fingleton White	The planning application sought permission for the development of an c. 14.4 km aviation fuel pipeline from Dublin Port to Dublin Airport.	Granted	15/10/2015	c. 4m

In addition to the planning applications listed in **Table 6.2**, it is noted that there has been significant port-related development at Dublin Port, located c. 600 m to the southeast of the site.

In summary, planning applications within 250m of the site over the last 10 years have generally been for minor works or modifications to existing residential and commercial buildings, changes of use of existing commercial buildings, signage, and subdivision of units for commercial / residential use. It is evident that the subject site is located in a transitional area between port-related uses, commercial and business uses and established commercial properties. The land use pattern is evolving and as such there is a need for new development to be designed with careful consideration for surrounding land uses.

7 Scope of Environmental Evaluation

7.1 Introduction

In order to inform the PECR, a scoping exercise was undertaken to establish the potentially significant issues to be addressed and to subsequently provide sufficient information to ACP determine the planning application for the Proposed Development.

7.2 Scope and Approach

7.2.1 EIA Screening

A report to inform considerations relating to the potential need for Environmental Impact Assessment (EIA) based on the requirements of the Environmental Impact Assessment Directive (2011/92/EU)[17], titled *Central Dublin Substation Project – EIA Screening Report* was prepared by RPS and is provided under separate cover. The purpose of the report is to set out the necessary information to enable the competent authority to undertake an EIA screening assessment and determine whether an Environmental Impact Assessment Report (EIAR) is required.

The requirement for EIA of certain projects was established in the *EU Directive (85/337/EEC)* as amended by Directive 97/11/EC, 2003/35/EC and 2009/31/EC on the assessment of the effects of certain public and private projects on the environment (known as the 'EIA Directive'). The Directive and amendments were codified and replaced by 2011/92/EU of the European Parliament and the Council on the assessment of the effects of certain public and private projects on the environment (and as amended in turn by Directive 2014/52/EU).

The EIA Directive was transposed into Irish legislation through a number of statutory provisions including the PDA and the *Planning and Development Regulations 2001*, as amended (the PDR).

The applicant has considered the provisions of Schedule 5 of the Planning and Development Regulations 2001 (as amended) to ascertain whether or not the Proposed Development is a type of development that requires a mandatory Environmental Impact Assessment (EIA).

The EIA Screening Report concluded that the proposed development is not of a class of development specified within Part 1 or Part 2 of Schedule 5 of the PDR requiring mandatory EIA. The proposed development is not of a Class of development specified in Part 2 of Schedule 5 of the PDR requiring sub-threshold assessment for EIA. Therefore, it was concluded that screening for EIA is not required and an EIA is not required.

Whilst an EIA is not required as detailed within the EIA Screening Report (provided under separate cover), to ensure that the appropriate planning requirements and environmental effects are considered, this PECR has been prepared in support of the planning application.

The environmental scope initially considered the following: Population and Human Health; Biodiversity; Water; Soils, Geology and Hydrogeology, Landscape and Visual Amenity, Air Quality, Noise, Archaeology, Architecture and Cultural Heritage, Traffic and Transport, Material Assets and Major Accidents and Disasters.

The aim of the scoping evaluation is to ensure that the PECR is proportionate. Each of the topics was considered in terms of potential pathways for significant effects in the context of the description of the Proposed Development provided in **Chapter 4** and identifies the topics that have been scoped in for further detailed assessment as well as those that have been scoped out (and the reasons why). The following sections outline the main areas for consideration under each topic.

[17] "Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by 2014/52/EU (EIA Directive)"

7.3 Traffic and Transport

All roads within the DCC area have been given a traffic impact number based on the road's importance. The proposed development site is located along East Wall Road, a regional road (R131) and has a Traffic Impact Number of 4 which is a heavily trafficked route.

The main issue related to the Proposed Development will be construction related impacts such as an increase in traffic flows which has the potential to cause disruption to the surrounding road network. The proposed construction works involve the use of machinery on-site, as well as construction-related vehicles travelling to and from site. This machinery and additional traffic may give rise to temporary impacts such as increase in traffic flows on the local road network. The significance of impacts due to the increase in traffic flows is dependent on the number of additional vehicular movements anticipated.

As the proposed development has the potential to generate additional traffic movements during the construction phase it is considered that Traffic and Transport requires further consideration. See **Chapter 8** of this report.

During the operational phase, as the substation will operate unmanned there will be negligible volume of road traffic associated with the operation of the proposed development and no significant effects are anticipated and a full Traffic and Transport Assessment (TTA) is not warranted in respect of the operational phase.

7.4 Population and Human Health

The Proposed Development is situated within the functional area of Dublin City Council and is located within the Strategic Development Regeneration Area (SDRA) 6 Docklands as identified in the Dublin City Development Plan 2022 – 2028. This comprises approximately 520ha and covers a visually and culturally significant area of the city.

The Proposed Development in the East Wall area is located within the Electoral Division (ED) of North Dock B. The East Wall area has an established residential population and is experiencing regeneration in the form of modern commercial and residential developments due to its strategic location close to Dublin Port, East Point Business Park and the North Docklands. Map E and Map F of the Dublin City Development Plan 2022 – 2028 indicate the land use zoning objectives pertaining to lands on which the proposed development will be accommodated and comprise of land zoned as Z6 – Employment / Enterprise.

Given that the Proposed Development is located within an urban area with residential receptors in close proximity to the Proposed Development, there is potential for construction related impacts such as nuisance relating to noise, dust and construction traffic. Dust dispersion has the potential to cause local impacts through dust nuisance to the nearest sensitive receptors, including residential properties and sensitive ecosystems. The main impact is dis-amenity and nuisance due to dust deposition.

Once constructed, the Proposed Development is not expected to have a permanent impact on the population of area and its wider environs in terms of social changes, population trends or density. Long-term positive benefits are anticipated because of the proposed development in terms of maintaining and enhancing the reliability of the national energy grid and power supply. However, there is potential for community concern about their proximity to the proposed substation and associated infrastructure and the perceived potential health effects due to electro-magnetic fields (EMF) exposure, even where relevant public EMF exposure guideline limits are met.

It is considered that Population and Human Health will require further consideration. See **Chapter 9** of this report.

7.5 Air Quality

The Proposed Development is situated within Zone A: Dublin Conurbation air quality zone as defined in Ireland for air quality management and assessment purposes as part of the implementation of the Air Quality Standards Regulations 2011. The typical existing sources of air pollution in the area include road traffic, space heating, commercial and industrial operations.

Given the nature of the Proposed Development and the proximity of residential receptors to the site, the primary sources of impact expected to occur during the construction phase are associated with the main civil engineering works such as excavation works. This includes potential for dusts leading to potential for nuisance and health impacts on receptors in proximity to the works. There is also potential for air pollution from construction traffic.

It is therefore considered that Air Quality will require further consideration (during Construction only). See **Chapter 10** of this report.

No significant sources of emissions to air are expected during the operational phase of the Proposed Development, with emissions limited to those associated with periodic maintenance vehicles. Therefore, operational air quality impacts have been scoped out of the assessment.

7.6 Climate

The Proposed Development is essential critical infrastructure which is required to maintain a reliable and secure electricity supply. As such it is important that the infrastructure is resilient to climate change and a climate change risk assessment is an important consideration to identify the Proposed Development's vulnerability to climate change. This is **scoped in** for further consideration. It is therefore considered that Climate will require further consideration. See **Chapter 11** of this report.

Operational phase impacts are associated with the operation and maintenance of the substation infrastructure. GIS substations have been typically insulated using sulphur hexafluoride (SF_6). Sulphur Hexafluoride (SF_6), is a greenhouse gas (GHG) which is present within switchgear found on electricity networks globally. Table 4.2 page 120 of the EPA Ireland's National Inventory Document 2025 shows that Ireland's total SF_6 emissions from emission source category 2.G.1 Electrical Equipment in 2023, the latest year for which the information is provided, was 2.12 kt CO2 eq respectively. This represented 0.004% of Ireland's total calculated emissions in 2023.

On page 147, the report explains this emission source category as follows:

SF_6 is used for electrical insulation, arc quenching, and for current interruption in equipment used in the transmission and distribution of electricity. The Electricity Supply Board (ESB) is the owner of both the high and low voltage distribution systems and the owner and operator of the medium and lower voltage distribution systems in Ireland. SF_6 is used in equipment across all voltage ranges on both the Distribution and Transmission systems owned by ESB Networks.

Electrical equipment containing SF_6 is imported into Ireland and at time of purchase, is added to the SF6 installed inventory database. Quantities of SF_6 are needed for servicing and repair of existing equipment. There are no manufacturing emissions. As of 2019 ESB Networks requested equipment manufacturers of non-hermetically sealed switchgear to only supply a low level of SF_6 for safe transport to Ireland. Once installed on site the remaining amount of SF_6 required is used from ESB Networks internal stock.

Significant reduction in emissions in the years 2008 to 2010 are attributed to the network operator's investment in staff training, leak detection equipment and closed cycle SF_6 handling equipment. The increase in 2011 is due the highest installed inventory stock levels occurring in the period 2009 to 2011, but losses remain low around 0.5 per cent.

In response to F-Gas Regulations (EU) 2024/ 573, the Proposed Development will be SF_6 free. As such emissions of SF_6 and their effect on Climate have been scoped out and are not considered further.

7.7 Noise and Vibration

The Proposed Development site is located within an urban area along East Wall Road with corresponding high noise levels due to road traffic noise. There are a large number of residential receptors located to the west and south-west in residential estates along and off East Wall Road.

Given that the Proposed Development is located within an urban area with residential receptors in close proximity, there is potential for construction related impacts such as nuisance relating to noise and construction traffic. There is potential for increase nose emissions due to the construction works and from additional traffic flow associated with the construction works which will contribute to road traffic on the local network.

During the operational phase the sources of noise will be from fixed plant associated with the operation of the substation. The main noise source from a substation during the operational phase is from the transformers. Transformers are tonal in nature and typically generate a low frequency humming noise, the extent of which depends on the transformer type and the level of noise attenuation at the substation. Given the proximity of residential receptors to the proposed development site the operational noise emissions of the electrical transformers and the need for acoustic enclosures requires further consideration.

It is therefore considered that Noise and Vibration will require further consideration. See **Chapter 12** of this report.

7.8 Landscape and Visual Amenity

The landscape surrounding the site comprises a mix of urban residential and industrial land uses. The residential area of East Wall is located immediately to the southwest of the site and comprises two storey residential dwellings arranged along a grid street pattern and featuring front and back gardens and associated tree and garden planting.

The Proposed Development comprises of the introduction of electricity generation infrastructure to the site on East Wall Road. There is potential for landscape and visual effects during both the construction and operational phase of the Proposed Development.

It is therefore considered that the assessment of effects on landscape and visual amenity will require further consideration. See **Chapter 13** of this report.

7.9 Archaeology, Architecture and Culture Heritage

The Proposed Development site is located outside of the Zone of Archaeological Potential (ZAP) for Dublin City (DU018-020). The subject site is located on an area which was subject to land reclamation in the 20th century. Historic mapping shows that this was originally an estuarine area, and there is inherent archaeological potential associated with such areas owing to the exploitation for natural resources and hunting / fishing in the past. Similar environments have revealed significant prehistoric archaeology which have included the preservation of organic remains. However, the depths of the reclamation deposits may exceed the excavation and ground reduction required for the construction phase of the proposed development.

An assessment of the archaeological landscape of East Wall area, the historical development of the lands and a summary of the archaeological work carried out to date in the vicinity of the site is provided in **Chapter 14** of this report.

7.10 Biodiversity

The Proposed Development will result in redevelopment of the existing car park and adjacent brownfield site as a substation compound. The main issue related to the proposed development will be construction related impacts. Scoping of the Proposed Development in relation to Biodiversity has identified the key issues for consideration:

- Potential for habitat loss, destruction, fragmentation or deterioration;
- Potential for noise, vibration, lighting, and human presence related disturbance;
- Potential for surface water run-off carrying suspended silt or contaminants into watercourses;
- Potential for air pollution from releasing dust and vehicle emissions; and
- Potential for disturbance of invasive species during the construction of the Proposed Development.

It is therefore considered that Biodiversity will require further consideration. See **Chapter 15** of this report.

A Report to Inform Screening for Appropriate Assessment been prepared to assess the potential for likely significant effects on European sites arising from the Proposed Development. It has been concluded that there is no potential for likely significant effects, alone or in-combination with other plans and projects. As such, a Natura Impact Statement (NIS) has not been prepared. The Report to Inform screening for Appropriate Assessment is provided under separate cover.

7.11 Surface Water and Flooding

With regard to Surface Water, the potential effects on the water environment are associated with the construction phase of the Proposed Development. Excavation works and works associated with storage of excavated material and vegetation clearance can pose a risk to surface water quality through surface water run-off and the release of sediment to watercourses. A minimum amount of excavation is required as part of the Proposed Development as outlined in As outlined in **Section 4.2.3.1.** This topic is therefore **scoped out** from further consideration in this PECR.

As outlined in **Section 4.1.5**, a new storm water drainage system is proposed to effectively manage runoff from hardstanding areas, building roofs, internal access roads, and car parking within the substation compound. Further details on the SuDS requirements and demonstration of compliance with DCC's Sustainable Drainage Design and Evaluation Guide (2021) is provided in the Engineering Services Report prepared by RPS and which is provided under separate cover. This topic is therefore **scoped out** from further consideration in this PECR.

With regard to Flooding, the site is located within Hydrometric Area 09 – Liffey and Dublin Bay and is within the Tolka_SC_020 sub catchment. The proposed site does not intersect any watercourses. It is located within c. 150m south of the high-water mark of the River Tolka waterbody. There are no historic flood events recorded on floodinfo.ie at within the site. There are a number of flood events recorded within 2.5km of the site boundary.

The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009 provide three vulnerability categories based on the type of development. Given the nature of the development, the development would be classed as Highly vulnerable development (including essential infrastructure). Table 3.2 of the FRM Guidelines identifies the types of development that would be appropriate for each Flood Zone and those that would be required to meet the Justification Test.

The proposed development site is located within Flood Zone C[18] as identified within the Dublin City Development Plan 2022 – 2028 Strategic Flood Risk Assessment and is categorised as 'highly vulnerable development'.

A Stage 1 Site-Specific Flood Risk Assessment has been completed. The Stage 1 assessment identified a historical flood event in the vicinity along with predicted pluvial and coastal flood risks, warranting a detailed Stage 2 Initial Flood Risk Assessment. The Site-Specific Flood Risk Assessment is provided under separate cover. Flooding is therefore **scoped out** from further consideration in this PECR.

7.12 Soils, Geology and Hydrogeology

The majority of the site is currently in use as a car park, while the remainder is a brownfield site. Information from the Planning Application for the temporary car park to DCC (Planning Reference 3052/16) states that to facilitate construction of the Dublin Port Tunnel, the lands were subject to CPO by DCC, however the site was retained for future infrastructure development. The site was leased by DCC from 2001 – 2009 and used as the site office and staff parking for the duration of the Port Tunnel works. Prior to this the site was used as a Transport Depot and so has historically been used for vehicle parking and for transport of heavy transport vehicles. Anecdotal evidence also suggest that the site was used for painting ESB Poles so there is potential for contaminated land to be encountered at the brownfield site (paints / creosote).

It is considered that Soils, Geology and Hydrogeology will require further consideration. See **Chapter 16** of this report.

7.13 Material Assets - Resource & Waste Management

The key phase for the potential production of waste is the construction phase. As outlined in **Section 4.2.12,** the management of waste will be dealt with by the requirement by the appointed contractor to prepare a Construction Environmental Management Plan which will take into account resource and waste management to ensure that waste arising on-site during the construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Act 1996 (as amended) and associated Regulations are complied with.

All waste products (general waste, plastic, timber, etc.) arising during the construction phase will be managed and disposed of in accordance with the provisions of the Waste Management Act 1996 and associated amendments and regulations. The main waste generated will be soils from excavation activities and C&D waste from demolition of existing lean-to-structures at the site.

All soils generated from the Proposed Development will be reused onsite as far as possible. Where excess soils are generated, they will be transferred to a licensed soil recovery facility. Should unknown contamination be encountered during construction or suspect material encountered, it will be considered potentially hazardous and laboratory testing will be required to confirm waste classification of suitability for reused / retention on-site or disposal off site. Where material is confirmed as hazardous it will be disposed of accordingly in an appropriately licensed facility.

Once operational, it is anticipated that there will be minimal waste volumes generated. Any waste arisings generated during the operation of the substation will be segregated and managed in accordance with the relevant provisions of the Waste management Act 1996 (as amended) and associated regulations.

This topic is therefore **scoped out** from further consideration in this PECR.

[18] Where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B.

7.14 Major Accidents & Disasters

As outlined in **Section 4.6.4**, Seveso sites are industrial sites regulated under what is commonly referred to as the "Seveso Directive." There are no COMAH establishments in the immediate vicinity of the Proposed Development. The closest COMAH establishments are located within Dublin Port. There are a total of six establishments on the north side of Dublin Port, 5 upper tier and 1 lower tier establishment. The Proposed Development does not fall within the relevant consultation distance for any of these establishments.

The Proposed Development is not a COMAH establishment under the Seveso III Directive (2012/18/EU) and implemented in Ireland through the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"). The only substance that will be stored on site that is controlled under the COMAH Regulations will be diesel for the back-up generators as outlined in **Section 4.1.2**, however the amounts proposed for storage do not exceed the relevant thresholds set out in Schedule 1 of the regulations.

In addition, the Proposed Development is being designed in accordance with the appropriate and relevant EirGrid Technical Specifications. Ensuring electrical substation safety is crucial to prevent accidents, protect personnel and ensure uninterrupted power supply and maintaining the reliability of supply. The Proposed Development is being designed and will operate in accordance with stringent safety standards. Site security measures designed to prevent unauthorised entry to the substation have been outlined in **Section 4.1.9** and access to the site will be limited to authorised ESB personnel. This topic is therefore **scoped out** and no further consideration is therefore presented.

7.15 Conclusion of the Environmental Evaluation

Key environmental topics have been considered as part of scoping and further consideration is considered necessary for some aspects. Environmental chapters have therefore been prepared for:

Chapter 8: Traffic & Transport

Chapter 9: Population & Human Health

Chapter 10: Air Quality

Chapter 11: Climate

Chapter 12: Noise & Vibration

Chapter 13: Landscape & Visual Amenity

Chapter 14: Archaeology and Cultural Heritage

Chapter 15: Biodiversity

Chapter 16: Soils, Geology and Hydrogeology

Although this is not an EIAR, the chapters are in line with the EPA guidance on *Guidelines on Information to be contained in an Environmental Impact Assessment Report* (2022).

7.16 Requirement for an Appropriate Assessment

Articles 6(3) and 6(4) of the Directive 92/43/EEC, as amended, of 21st May 1992, on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites. In the context of the proposed development, the requirement (to screen) for AA under the Habitats Directive is transposed by the European Communities (Birds and Natural Habitats) Regulations 2011, as amended.

In accordance with its statutory obligations, EirGrid carries out a Stage 1 Screening for AA for all development projects. Having undertaken a screening process on the Proposed Development, EirGrid concluded that, the proposed project is not predicted to result in any Likely Significant Effects on any European site(s) within the ZoI of the proposed works. Based on this determination, a Stage 2 AA was not required. Please refer to the submitted Report to Inform Screening for Appropriate Assessment prepared by RPS for full details.

7.17 Cumulative Impact

As outlined in **Section 4.1.3** of this PECR, the Proposed Development is approximately 50m from the existing Belcamp – Shellybanks 220 kV circuit which currently runs on the northern side of the M50. The existing Belcamp – Shellybanks 220kV circuit will tie in to the Proposed Development. This Grid Connection does not form part of the proposed SID planning application.

Although the Grid Connection is not part of the application, an assessment of the potential cumulative impact of the Grid Connection with the Proposed Development has been provided within **Chapters 8** to **16** of this PECR. The main potential cumulative impacts for the Grid Connection with the Proposed Development are for the construction phase only. There will be no cumulative impacts of the Grid Connection with the Proposed Development during the operational phase.

8 Traffic & Transport

8.1 Introduction

This chapter of the PECR provides an assessment of the potential impact of the Proposed Development on the traffic and transportation network.

The purpose of the chapter is to set out the predicted changes in traffic movements associated with the construction of the Proposed Development and their impact on the receiving environment. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.

As noted in **Section 7.3** of this PECR, during the operational phase the substation will operate unmanned. As such there will be a negligible volume of road traffic associated with the operation of the Proposed Development and no significant effects are anticipated and a full Traffic and Transport Assessment (TTA) is not warranted in respect of the operational phase.

8.2 Assessment Methodology

The traffic and transportation assessment has been undertaken having regard to the following guidance:

- Traffic and Transport Impact Assessment Guidelines (Transport Infrastructure Ireland, May 2014);
- Guidelines for Traffic Impact Assessment (Institution of Highways and Transportation, September 1994).

The assessment considers the potential traffic and transport effects arising from the construction and operation of the proposed development. The assessment includes an account of the baseline environment, the potential effects of the proposed development during construction and operation and any specific mitigation and/ or management measures that may be required to reduce any potential effects.

The Guidelines on the Information to be Contained in Environmental Assessment Reports (EPA, 2022) do not provide specific guidance in relation to the threshold criteria for assessing vehicle impacts. However, IEMA Guidelines (IEMA, 1993) outline two rules which can be used to determine the scale and extent of the assessment of road traffic:

- Rule 1: Highway links where traffic flows (or the number of HGVs) are expected to increase by more than 30%
- Rule 2: Any other specifically sensitive areas where traffic flows would increase by 10% or more.

In addition, the TII Traffic and Transport Assessment Guidelines provide thresholds for assessment as follows:

- Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway; and
- Traffic to and from the development exceeds 5% of the existing two-way traffic flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations.

In the context of both sets of guidance and given that the impacts of any construction vehicles will be temporary in nature, it is considered that any changes in traffic volumes below 10% means no discernible environmental impact.

8.2.1 Study Area

The study area for the Traffic and Transport Assessment is the public road network proposed to accommodate the development generated traffic.

The proposed development site will be accessed from the East Wall Road (R131) through the existing access to the site.

8.2.2 Sources of Information to Inform the Assessment

The traffic assessment has been informed by commissioned traffic surveys undertaken by IDASO Ltd in May 2025 which are described below:

Junction Turning Counts (JTCs):

Classified video turning counts at key junctions were undertaken Wednesday 14th May 2025 at 3 junctions as follows and illustrated in **Figure** 8.1:

- Site 1: R131/R834
- Site 2: East Wall Road (R131) / Forth Road/ Proposed Development Site Access
- Site 3: Eastern end of East Wall Road (R131)

High-mast telescopic video camera systems were used to record the operation of each junction between 07:00 and 19:00. 15-minute survey intervals were used, and vehicles were classified as:

- Pedal Cycles (P/C)
- Motorcycles (M/C)
- Car
- Light Goods Vehicles (LGV)
- Medium Goods Vehicles (OGV1)
- Heavy Goods Vehicles (OGV2)
- Buses and Coaches (PSV)

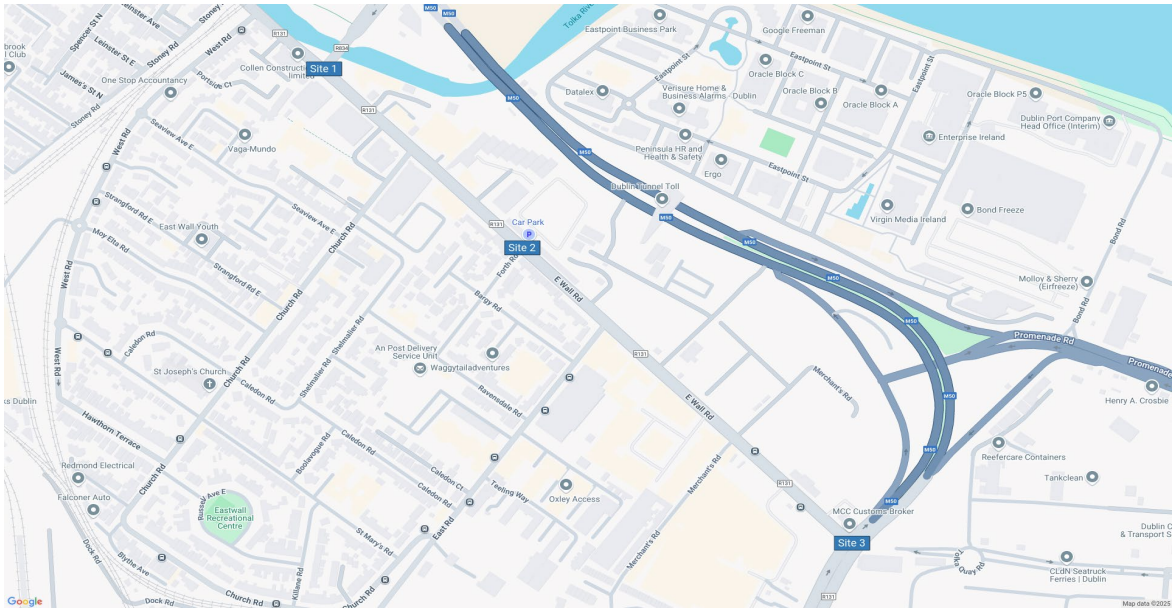


Figure 8.1: Location of Junction Turning Counts

Automatic Traffic Counts (ATCs)

Automatic traffic counts were undertaken at a location on East Wall Road as illustrated in **Figure** 8.2. The surveys were carried out for the period between Wednesday 14th May to Tuesday 20th May 2025. The results were recorded at 15-minute intervals for 24 hours.

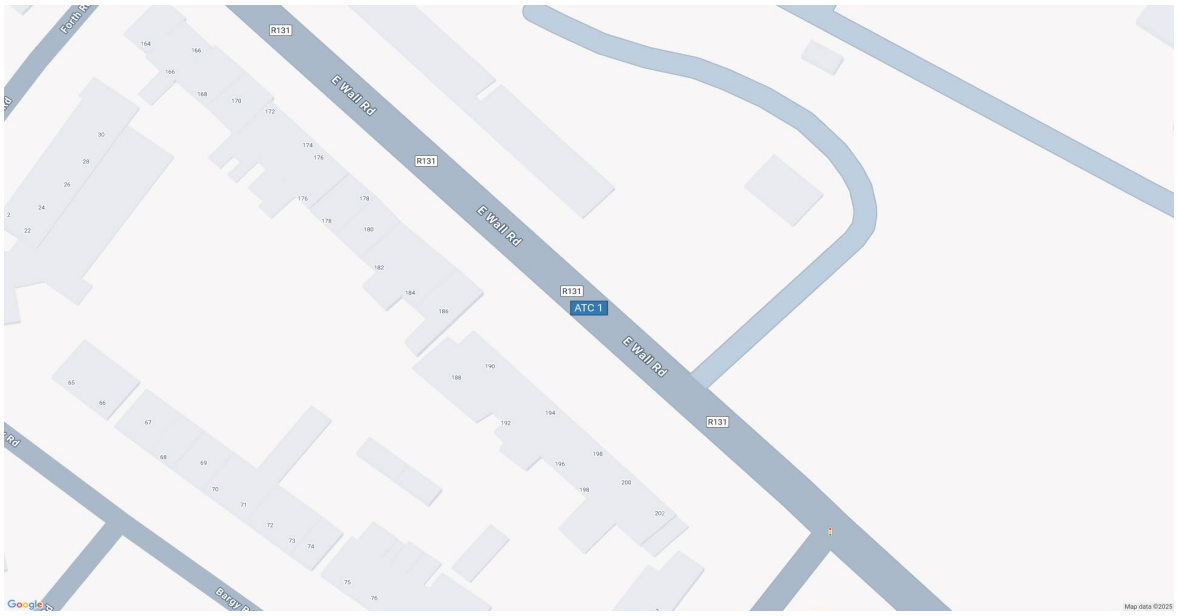


Figure 8.2: Location of Automatic Traffic Count

Road Safety Data

The Road Safety Authority (RSA) are in the process of reviewing its road traffic collision (RTC) data sharing policies and procedures. Record-level RTC data can't be shared until this review is complete. As such, road collision accident data including historical data was unavailable at the time of the assessment.

8.2.3 Assessment Criteria

A traffic impact less than 5% of the pre-existing traffic volume on a road link is considered to be a negligible impact.

8.3 Description of Receiving Environment

The site is currently accessible from the East Wall Road (R131). The residential area of East Wall is located immediately to the southwest of the site and comprises of two storey residential dwellings. The surrounding environment is predominantly composed of a mix of commercial and residential properties.

The Proposed Development has public transportation links with the nearest bus stop being located in East Road approximately 200m away and the nearest DART and intercity train station located 1.2km away at Clontarf Road.

The site is bounded to the west by the Portside Business Centre, to the east by a Dublin Port Company (DPC) Storage Site, to the north by the M50 and Port Tunnel Control building and Tolling facility. The Eastpoint Business Park lies immediately to the north of the M50 and Port Tunnel which consists of numerous office buildings.

The proposed development is connected to M50 motorway via the regional road R131 in the East and to the regional road R834 in the West.

8.3.1 Baseline Traffic Conditions

Traffic surveys were commissioned to gain an understanding of baseline traffic conditions along East Wall Road. These were completed by IDASCO on behalf of RPS and covered three Junction Turning Counts (JTCs) and one Automated Traffic Count (ATC). The JTCs were collected on Wednesday 14th May 2025, while the ATC was taken for a 7 day period from Wednesday 14th May to Tuesday 20th May 2025. The traffic on these days is representative of normal traffic conditions since there were no public holidays, school holidays or special events in the area during this period.

The survey data is provided in **Appendix A**. It has been reviewed and is considered appropriate for the current analysis.

Traffic counts conducted in May 2025 on East Wall Road (R131) indicate an average two-way daily traffic volume of 14,977 passenger car units (PCUs) for weekdays – a reasonably high volume consistent with its function as an urban regional road.

Pedestrian movements were reviewed at two intersections: Forth Road/East Wall Road and R131/R834. The former sees 1,544 pedestrian movements across a 12-hour day, with 1,420 at the latter, demonstrating that both are relatively busy.

Considering peak hour (0800-0900 and 1700-1800) movements specifically, the totals are:

- Intersection of R131 and R834
  - AM Peak: 110 pedestrians
  - PM Peak: 210 pedestrians
- Intersection of Forth Road and E Wall Road
  - AM Peak: 179 pedestrians
  - PM Peak: 185 pedestrians

The peaks can therefore be seen to be relatively sharp in proportion to the daily totals.

8.4 Potential for Significant Effects

8.4.1 Construction Phase

As outlined in **Chapter 4**, the Proposed Development involves a temporary construction phase with an estimated duration of approximately three years. The commencement date for construction will be subject to development consent and appointment of a contractor. The construction programme includes 18 months allocated for civil works and six months for site preparation. The full details of the construction programme is outlined in **Chapter 4**.

Most of the additional traffic movements will occur during the construction phase, primarily involving the transportation of personnel, equipment, and materials. The intensity of traffic will vary over the course of the construction programme, with peak traffic volumes during the civil works phase. The traffic volumes during the commissioning and energisation phases are expected to be minimal.

Traffic counts conducted in May 2025 on East Wall Road (R131) indicate an average two-way daily traffic volume of 14,977 passenger car units (PCUs) for weekdays. It is anticipated that during the peak of construction around 150 weekday vehicle movements would be required, as summarised in **Table 8.1**.

Table 8.1: Peak Daily Construction Traffic (Vehicles)

Daily Construction Traffic (vehicles)						
Period	Arrivals		Departures		Total	
	Car+LGV	HGV	Car+LGV	HGV	Arrivals	Departures
Daily	50	25	50	25	75	75

When compared to the existing traffic volumes on East Wall Road, these movements (150 in the context of a 15,000 AADT) represent an increase of approximately 1%; such an increase is considered negligible in terms of its impact on the local road network, especially when further measures are taken to limit the impact as discussed in **Section 8.5**. In addition, no modifications to the public road network are anticipated.

8.4.1.1 Grid Connection (not part of Subject Planning Application)

The cumulative impact of the Proposed Development and the Grid Connection (not part of the subject planning application) has been considered and is considered to be not significant as there will be no perceptible traffic impacts associated with the construction of the Grid Connection. The works will take place within the proposed development site and the trenchless crossing methodology will minimise any traffic disruption to the M50.

8.4.2 Operational and Maintenance Phase

The Proposed Development will be unmanned during the operational phase. There will be periodic engineering inspections and maintenance. As such there will be very low volume of traffic generated associated with the operation of the Proposed Development and the impact is considered to be negligible on the local road network.

8.5 Proposed Mitigation Measures

8.5.1 Construction Phase

The appointed contractor will be required to prepare and implement a Construction Traffic Management Plan (CTMP) prior to the commencement of the development, which will outline local safety measures and be subject to agreement with Dublin City Council. The CTMP will be prepared in accordance with the following guidance documents:

- Chapter 8 of the Traffic Signs Manual (Department of Transport, 2021);
- Temporary Traffic Management Design Guidance (DoT, 2019); and
- Temporary Traffic Management Operations Guidance (DoT, 2019).

These three documents must be read and understood as a comprehensive set. The CTMP will be a “live” document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities.

The following mitigation measures will also be implemented:

- Roads with existing weight restrictions will be identified in advance and avoided for transporting oversized loads
- During the construction phase, signage will be installed to warn road and recreational route users to the presence of the proposed construction compound access and the associated likely presence of large or slow-moving construction traffic;
- To minimise inconvenience to the local community in terms of obstructive parking, car parking will not be permitted on any public road network adjacent to the site, to

maintain sight lines and minimise the potential for obstruction and delay for other road users;

- The appointed contractor will nominate a person to be responsible for the coordination of all elements of traffic and transport during the construction process (liaison officer). This person will liaise with the local community, and be a direct point of contact within the contractor organisation for the community to contact for information or to discuss the traffic management;
- To minimise disruption, deliveries will be scheduled during off-peak hours, avoiding sensitive periods such as school drop-off and collection times, church services, and peak commuting hours;
- To mitigate impacts on St. Joseph's Co-educational Primary School on East Wall Road, heavy goods vehicle (HGV) movements will be timed to avoid early morning and afternoon school traffic and pedestrians;
- Construction traffic management measures will be monitored throughout the construction phase by the appointed contractor to respond to dynamic conditions and measures will be adjusted to match construction sequencing where appropriate and necessary.

Abnormal loads

During the electrical installation phase three 220 kV transformers, each a large and heavy component requiring specialist handling, will be delivered to the site. As abnormal loads, these deliveries will comply with the Road Traffic (Construction and Use of Vehicles) Regulations 2003 (S.I. No. 5 of 2003) and the maximum height restrictions outlined in S.I. No. 366 of 2008. Further details on the transformer delivery have been provided in Chapter 4.

8.5.2 Operational and Maintenance Phase

As previously outlined, there will be negligible impact on traffic on the local road network associated with the operational phase of the proposed development. Consequently, no mitigation measures are necessary.

8.6 Conclusion

Traffic surveys were completed in May 2025 and have been used to inform the assessment. During the construction phase the resulting additional traffic generation represents an increase of approximately 1% and is considered negligible in terms of its impact on the local road network. The appointed contractor will be required to prepare and implement a CTMP which will minimise the potential for traffic and transport impacts during construction activities. There will be a very low volume of traffic generated associated with the operation of the Proposed Development and the impact is considered to be negligible on the local road network. A full Traffic and Transport Assessment (TTA) is not warranted in respect of the operational phase.

9 Population and Human Health

9.1 Introduction

This chapter of the PECR describes the potential impacts from the Proposed Development on population and human health. It identifies the relevant legislation and guidelines, sets out the methodology used for the assessment of potential impacts, describes the receiving environment, and provides an assessment of the potential impacts on population.

Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter. For the purposes of the assessment, the Grid Connection is considered within the assessment of effects of the Proposed Development and is not considered to be a separate project.

The Proposed Development has the potential to impact several aspects relating to the receiving population. Specifically, this chapter provides an assessment of impacts on the following:

- Land Use, Settlement Pattern & Accessibility;
- Demographics & Local Population;
- Economic Activity & Employment;
- Local Services & Amenity; and
- Human Health.

9.2 Assessment Methodology

9.2.1 Relevant Legislation and Guidelines

This chapter has been prepared with reference to the following:

- Planning and Development Act 2000, as amended
- Planning and Development Regulations 2001, as amended
- Other legislation and guidelines as noted in **Section 1.8** of this PECR.

9.2.2 Data Collection and Collation

Baseline data supporting the assessment of potential effects on the population was collected by carrying out a desk study, availing of the most up-to-date data available, at the time of writing. The data is comprised of the following sources:

- 2016 and 2022 Census Data from the Central Statistics Office (CSO) – demographic, employment, etc. statistics (CSO, 2016: 2023);
- Pobal HP Deprivation Index (Pobal, 2022);
- Aerial and mapping images; and
- Other local sources relevant to the assessment.

9.2.3 Study Area

The study area for the population assessment considers the area of land which encompasses the likely impacts of the Proposed Development. Specifically, this is considered to consist of a c. 500m radius which extends from the centre point of the site as this represents a walkable neighbourhood and catchment area for local services and facilities.

The study area includes the construction footprint / project boundary (including compounds); the adjacent residential area of East Wall to the west and south; the commercial and amenity land uses located along the R131 East Wall Road; and the M50 and Eastpoint Business Park to the north. It is highlighted that the 500m radius for the study area was used as a general guide, and consideration was also given for any significant elements of relevance beyond this distance.

The study area comprises a significant portion of the Electoral Division (ED) of 'North Dock B', the census data for which has been used to inform this chapter's assessment of the baseline environment for factors such as "Demographics & Local Population" and "Economic Activity & Employment".

9.2.4 Potential Population Impacts

The activities that have potential to result in likely effects on Population are outlined below.

9.2.4.1 Construction Phase

The key activities which have potential to result in likely effects on population during construction include:

- Enabling works and construction works resulting in increased traffic volumes in the locality;
- Earthworks and construction activities which may result in noise and dust disturbance; and
- Surface water run-off, with potential to carry suspended silt or contaminants into local watercourses.

9.2.4.2 Operational Phase

The key activities which have potential to result in likely effects on population during operational and maintenance phases include:

- Visual impact of substation buildings;
- Alterations to the public realm;
- Movement of maintenance vehicles; and
- Perceived potential health effects due to electro-magnetic fields (EMF) exposure.

9.3 Description of Receiving Environment

A description of the relevant aspects of the current state of the environment in relation to population is provided in this section. Specific environmental chapters in this PECR provide a baseline scenario relevant to the environmental topic being discussed. The existing environment is considered in this section under the following headings:

- Land Use, Settlement Pattern & Accessibility;
- Demographics & Local Population;
- Economic Activity & Employment;
- Local Services & Amenity; and
- Human Health.

Land Use, Settlement Pattern & Accessibility

The Proposed Development is situated within the functional area of Dublin City Council and located in the East Wall area (see **Figure** 3.1 of this PECR). This area has an established residential population and is experiencing regeneration in the form of modern commercial and residential developments due to its strategic location close to Dublin Port, East Point Business Park and the North Docklands.

The Proposed Development is zoned 'Zone 6 - Employment / Enterprise' as identified in the *Dublin City Development Plan 2022 – 2028* (Dublin CDP). Map E of the Dublin CDP indicates the land use zoning for the Proposed Development subject site: 'Z6 – Employment / Enterprise'. Details relating to this zoning and permissible uses are included in **Section 6.1.5.1.2** of this PECR. The surrounding area has a variety of zoning objectives, as noted below:

- Z1 - Sustainable Residential Neighbourhoods
- Z2 - Residential Neighbourhoods (Conservation Areas)
- Z3 - Neighbourhood Centre
- Z6 - Employment / Enterprise
- Z10 - Inner Suburban and Inner City Sustainable Mixed-Uses

There have been several planning applications both on the subject site and immediately adjoining sites over recent years. A review of the relevant applications is provided in **Section 6.2** of this PECR.

The subject site is bound by the R131 East Wall Road which runs along the site's southwestern boundary. It is bounded to the north and east by the M50 and the Port Tunnel Control building; to the northwest by the Portside Business Centre; and to the southeast by a brownfield site (see **Figure** 3.2). The subject site is owned by the ESB and is currently a vacant brownfield site, with a portion used as a car park.

The site is located in a transitional area between port-related uses, established residential areas and commercial properties. The settlement pattern is evolving and as such there is a need for new development to be designed with careful consideration for surrounding land uses.

Demographics & Local Population

The most recent CSO Census took place in 2022. In 2022, the population within Dublin City Council's administrative area was approximately 592,713, which is an increase of approximately 38,159 people since the previous Census in 2016 (554,554 people lived within Dublin City Council's administrative area [CSO 2016]). This represents a 6.9% increase on the census 2016 population.

The ED in which the Proposed Development is situated, 'North Dock B', had a population of 10,173 in 2022, (CSO, 2022). There was an increase of 2,478 people in the ED since the Census in 2016 (7,695 people lived in North Dock B in 2016 [CSO 2016]). This represents an 31% increase on the population recorded in the 2016 Census. The dramatic increase in population can be attributed to the extensive redevelopment of areas within East Wall which has been ongoing since the 2016 Census.

Economic Activity & Employment

The 2022 Census was examined to determine trends in employment, including the number of persons at work and unemployment. The unemployment rate in the ED North Dock B was 8.3% in 2022, equal to the state unemployment rate.

Local Services & Amenity

Local Services & Amenity (social infrastructure) includes a wide range of services and facilities, including health, education, community, culture, play, faith, recreation and sports facilities that

contribute to the quality of life. A survey of services and amenities in the study area was carried via a desktop study in July 2025 and are shown on **Figure** 9.1.

Services and amenities in the local area include, but are not limited to:

- St. Joseph's Co-Educational National School
- Gateway 2 Education Centre
- St. Joseph's Church
- Fairview Park
- Sean O'Casey Community Centre
- East Wall Recreational Centre
- East Wall Health Centre
- East Wall Youth Club
- East Wall Water Sports Centre

In this regard, the local area boasts a diverse range of local services and amenities that cater to the needs of the community.

Public realm has also been considered under Local Services & Amenity as it contributes to the quality of urban life and community well-being and amenity. It refers to all the spaces that are publicly accessible and shared by people, such as streets, footpaths, parks, squares, and other open areas.

The site boundary at East Wall Road currently consists of a concrete wall and gated entrance. There is no street furniture or landscaping (planting or trees) adjacent to the site. While there are some scattered trees located to the south side of East Wall Road, overall, the public realm in immediate vicinity of the site is considered to be of poor quality and does not contribute to the amenity value of the area.

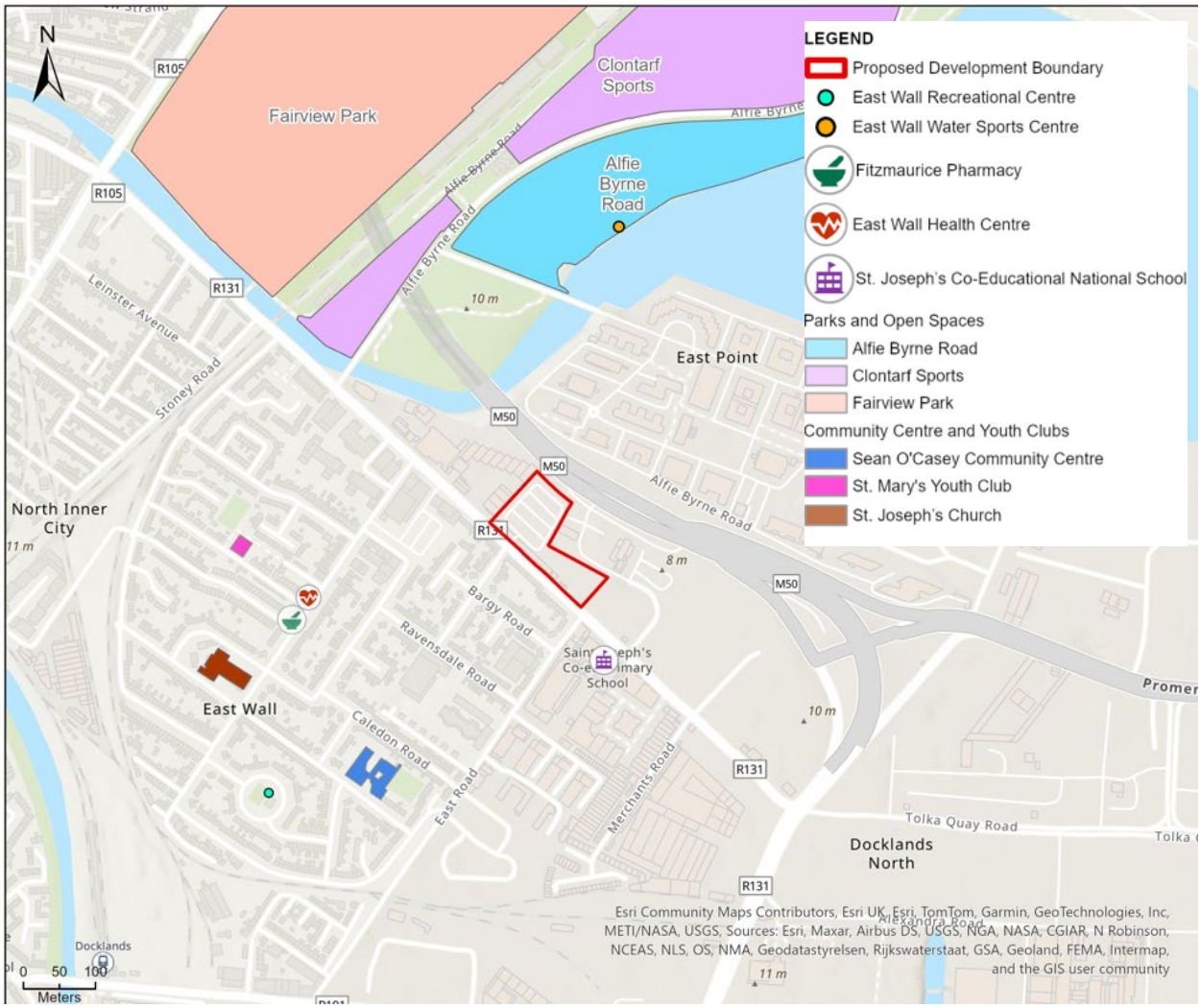


Figure 9.1: Local Services and Amenities

Human Health

Different communities have varying susceptibilities to health impacts and benefits as a result of social and demographic structure, behaviour and relative economic circumstances. The self-perceived health of the population within the ED in which the site of the Proposed Development is situated (i.e. North Dock B) is outlined in **Table** 9.1.

Table 9.1: Self-Perceived General Health of Population within Electoral Division of Proposed Development (CSO, 2022)[19]

Area	Very Good	Good	Fair	Bad	Very Bad	Not Stated
North Dock B	48.5%	25.9%	6.6%	1.3%	0.3%	17.4%
Dublin City Council	48.1%	27.7%	8.6%	1.6%	0.4%	13.6%
County Dublin	52.8%	28.3%	8.0%	1.4%	0.3%	9.1%
Ireland (State)	53.2%	29.7%	8.6%	1.4%	0/3%	6.7%

[19] Interactive Data Visualisations | CSO Ireland accessed 10/06/2025

In 2022, 74.3% of the population in the ED of North Dock B considered themselves to be in very good or good health, which is slightly lower than the rate for Dublin City Council (75.8%), County Dublin (81.2%) and the overall rate for Ireland (82.9%). At the time of Census 2022, 1.6% of residents in the study area considered themselves to be in bad or very bad health, which is broadly in line with the rate for Dublin City (2.0%) and County Dublin and Ireland (both 1.7%).

Table 9.2 shows the proportion of the population with a disability in the ED of North Dock B and its comparator areas. In the Census 2022, a disability has been defined as a long-lasting condition or difficulty and may be physical or mental. In 2022, 17.7% of residents in North Dock B stated that they had a disability. This is lower than the rate recorded in both Dublin City (22.0%), Dublin County (20.9%) and Ireland (21.7%) as a whole.

Table 9.2: Proportion of the Population with a Disability

Area	Proportion of Population with a Disability
North Dock B	17.7%
Dublin City Council	22.0%
County Dublin	20.9%
Ireland (State)	21.7%

Deprivation statistics are derived using the Pobal All-Island HP Deprivation Index (2022). The index of deprivation is a measured analysis of areas within Ireland that are considered to have different levels of affluence or disadvantages. According to 'my Pobal' (myPobal, 2022), the ED in which the Proposed Development is situated is considered to be '*marginally above average'* in terms of deprivation with a 3.08 index. The ED is comprised of small areas and the deprivation indices for these small areas are illustrated in **Figure 9.2** below and show that the surrounding residential amenity of the East Wall area consists of small areas which are considered to be "*marginally below average*".

Figure 9.2: Pobal HP Deprivation Indices (Source: Pobal)

9.4 Potential for Significant Effects

9.4.1 Construction Phase

The proposed construction works are detailed in the *Outline Construction Environmental Management Plan* prepared by RPS and enclosed as part of the SID application package. There is very low potential for any significant, negative impacts on population during the construction phase of the Proposed Development. The basis for this conclusion is outlined under relevant headings below:

Land Use, Settlement Pattern & Accessibility

The construction phase of the Proposed Development will primarily consist of site clearing, excavation and construction works. Secondary land use impacts include off-site activity in relation to building materials and appropriate disposal sites for removed spoil. Construction works are likely to take place on a phased basis, which will moderate the potential impacts on adjoining land uses. Mitigation measures proposed to lessen the impact of the above-described effects are outlined in **Section 9.5.1**of this chapter.

There will be no severance of land, loss of rights of way or amenities as a result of the construction works associated with the Proposed Development. However, there are expected to be moderate effects on local accessibility during the construction phase owing to additional traffic generated by the development's construction. This effect will be temporary in nature and will be mitigated through mitigation measures outlined in **Section 9.5.1** of this chapter.

Demographics & Local Population

The Proposed Development's construction phase is unlikely to impact demographic patterns within the surrounding area significantly. A slight, temporary rise in the local population may arise out of

construction activity. However, this positive impact will be slight and temporary in nature and is not considered to be significant.

Economic Activity & Employment

A significant portion of the capital inputs required for construction will require the purchase of Irish-sourced goods and services. The construction phase will provide a boost for the local construction sector in terms of employment generation and capital spending on materials and construction labour costs, resulting in a temporary and positive impact.

In addition to direct employment, there will be positive impacts through off-site employment and economic activity associated with the supply of construction materials and provision of services such as professional firms supplying financial, architectural, engineering, legal and a range of other professional services to the project. Such employment shall be geographically dispersed and have no discernible impact within the study area.

Revenue generated during the construction phase will have an associated benefit for the local area with respect to expenditure on local goods and services. The impact of the construction phase will likely extend to the wider North Dock B area in terms of the requirement for labour, goods and services. The temporary impact will be slight and positive.

Local Services & Amenity

There are a number of local services and amenities in the area, all of which will remain in place during the construction phase of the project. There is potential for a positive, not significant and temporary impact on local convenience shopping in the immediate area. There is also potential for moderate, negative impacts on access to services and amenities due to additional traffic generated by the Proposed Development's construction works, however, this impact will be temporary in nature and mitigated by the measures outlined in **Section 9.5.1** of this chapter.

The construction phase of the Proposed Development is also likely to have moderate and negative impacts on amenity as a result of increased noise and the potential dust. However, these impacts will be temporary in nature and will be mitigated using measures described in **Section 9.5.1** of this chapter. The noise and dust impacts precipitated by the Proposed Development are assessed in greater detail in **Chapter 10** (Air Quality) and **Section 12** (Noise and Vibration) of this PECR.

The construction phase of the Proposed Development has the potential to adversely impact visual amenity. However, these effects will be temporary in nature and will be mitigated by measures described in **Section 9.5.1** of this chapter. The visual impacts precipitated by the Proposed Development are assessed in greater detail in **Chapter 13** (Landscape and Visual Amenity) of this PECR.

9.4.2 Operational and Maintenance Phase

There is very low potential for any significant, negative impacts on population during the operational and maintenance phase of the Proposed Development. The basis for this conclusion is outlined below under the relevant topics:

Land Use, Settlement Pattern & Accessibility

There will be a moderate, neutral impact on land use in the study area following the completion of construction of the Proposed Development, owing to the replacement of existing land uses within the application site (car park / brownfield site) with a different use (electricity infrastructure). The subject site is located in a transitional zone between several land uses and the proposals have been designed to integrate with the surrounding land uses. During the design of the project, careful consideration was given to the residential properties on the south side of the East Wall Road. In this regard, the Proposed Development includes the provision of public realm improvements. This is further assessed under 'Local Services & Amenity' below.

The development of the subject site is aligned with national, regional and local objectives to provide for the provision of electricity infrastructure uses at appropriate sites, as detailed in

Section 6.1 - Planning Policy Context and Analysis of this PECR. As noted above, the Proposed Development is zoned 'Zone 6 - Employment / Enterprise' as identified in the Dublin CDP. The proposed use is permissible on site. Overall, the Proposed Development will have a permanent positive effect by contributing towards local and wider County, regional and national objectives.

There will be a slight positive and long term impact on accessibility in the area due to upgrades to the pedestrian experience along the southern boundary of the site. The traffic impacts precipitated by the Proposed Development are assessed in greater detail in **Chapter 8** (Traffic & Transport) of this PECR.

The Proposed Development will not result in any severance of land, loss of rights of way or amenities. The low level of workers and periodical nature of the maintenance works required for the operational phase of the Proposed Development will not generate any significant effects which impact on accessibility in the study area.

Demographics & Local Population

The Proposed Development does not provide any residential capacity and given the low number of workers required for the operational phase, there is predicted to be a neutral, long-term effect on the population of the study area.

Long-term positive effects are predicted due to the significant enhancement of the national energy grid and power supply that the Proposed Development enables, which will cater for anticipated population growth and electricity demands. In addition to securing electricity supply for the future, the project will play an important role in bringing greater amounts of renewable energy onto the transmission system and be a key enabler for the growth in electricity-powered forms of transport, including electric vehicles and public transport options, along with the rollout of electric heat pumps. This will result in a positive impact on the sustainable development of the population both locally and nationally.

Economic Activity & Employment

Once the development has been constructed and is operational, it is projected that c. 5 no. people will work within the site on an intermittent basis. This increase in employment is considered to be positive, long-term and slight. This slight increase in employment within the study area is also predicted to have a positive, long-term and moderate effect on economic activity within the area.

Long-term positive effects are also predicted due to the enhancement of the national energy grid and power supply, which will cater for increased electricity demands, thereby supporting increased economic activity in Dublin. This will have a positive impact on the population both locally and nationally.

Local Services & Amenity

The Proposed Development includes the provision of upgrades to the public realm along the site boundary at East Wall Road, with proposed planting and seating areas. This landscaped area will provide a new, passive amenity space for the local community and will create a safer and more inviting space. The upgraded public realm will also have the potential to bring about improvements in health and wellbeing by providing an opportunity for social interaction, and providing a high-quality, landscaped outdoor space to improve mental health. These impacts will be long-term, positive and moderate.

The upgraded public realm will also improve the walkability of the East Wall Road, which, in turn, will have a positive impact on the walkability to other local services and amenities as the proposed seating will provide rest spots for pedestrians, especially the elderly, children, and those with mobility challenges. Improved walkability will also improve safety in the area and support local businesses by increasing foot traffic. These improvements contribute to overall quality of life by creating more vibrant, liveable communities.

The Proposed Development will also have a positive, long-term visual impact. Design elements such as varied building materials, and harmonious colour schemes are proposed, as well as

landscaping features. The inclusion of planting public seating will enhance the streetscape and making the area more welcoming and aesthetically pleasing. We refer to the Architectural Design Statement prepared by BDA Architects and **Chapter 13** (Landscape and Visual Amenity) of this PECR for full details.

The Proposed Development will also have a positive, long-term and moderate impact on local services and amenities through the enhancement of Dublin's electricity grid and infrastructure which will support these facilities.

Having regard for the above, it is considered that the Proposed Development will have a positive, long term and moderate impact on local services and amenity.

Human Health

Electromagnetic Fields (EMF's) surround any object that is generating, transmitting or using electricity, including appliances, wiring, office equipment, batteries and any other electrical devices. Therefore, electric and magnetic fields are common in modern life. EMF's are invisible and cannot be felt or heard. In many cases, domestic electrical appliances and tools can generate much higher magnetic and electric fields, if in close proximity to a sensitive receptor, than transmission infrastructure at standard separation distances.

EMF are an important consideration in any electrical project. As noted in **Chapter 4**, EirGrid's design standards require all electrical equipment operate within existing public exposure guidelines from the EU / International Commission on Non-Ionising Radiation Protection (ICNIRP). The design of the substation transmission infrastructure has ensured that the strength of the electric and magnetic fields during operation of the Proposed Development will comply with the ICNIRP and EU guidelines on exposure of the general public to EMF. As such, there will be no effect from EMFs in terms of human health and interference to other electrical devices and systems.

9.5 Proposed Mitigation Measures

9.5.1 Construction Phase

During the construction phase, the legal duties under the Construction Regulations (*Safety, Health and Welfare at Work (Construction) Regulations 2013*) will be adhered to. In accordance with these duties, a Project Supervisor Design Process (PSDP) will be appointed by the relevant contractor to coordinate the design effort and minimise the construction risks during the design period. In addition, a Project Supervisor - Construction Stage (PSCS) will be appointed to coordinate and supervise all safety aspects of the project.

The Outline Construction Environmental Management Plan (OCEMP) for the project, prepared by RPS and submitted with the planning application, sets out the basic measures and provides a mechanism for implementation of the various mitigation measures which are described in this PECR to be employed in order to mitigate potential negative effects during construction. The OCEMP will be a key contract document that the appointed contractor will be required to implement in full. It will be updated by the appointed contractor in consultation with the local authority as required. The appointed contractor will be responsible for ensuring that all sub-contractors adhere to and implement the procedures and measures included in the CEMP.

All personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.

Mitigation measures will be implemented during the detailed design and construction phase and are detailed in full in the following chapters of this PECR: **Chapter 10** (Air Quality), **Chapter 11** (Climate), **Chapter 12** (Noise and Vibration), and **Chapter 16** (Soils, Geology and Hydrogeology).

Adherence to the construction phase mitigation measures presented in this PECR will ensure that the construction of the Proposed Development will have an imperceptible and neutral impact in terms of health and safety.

9.5.2 Operational and Maintenance Phase

No significant risks to population and human health have been identified in relation to the operational phase of the development. Proposed mitigation measures include regular maintenance of the site and landscaping, and the installation of CCTV to monitor and appropriately respond to any anti-social behaviour or interference with the site boundaries.

It is recognised that there are genuine concerns among communities about their proximity to proposed substation and associated infrastructure and the perceived potential health effects due to electro-magnetic fields (EMF) exposure. EirGrid complies with ICNIRP guidelines, however, to reduce uncertainty and provide a better understanding about EMF regulatory standards and the negligible EMF risks it is recommended that non-technical information is shared with residents. This information sharing could be via website, posted leaflets or local drop-in information events.

9.6 Conclusions

The Proposed Development at the subject site will generate additional employment in the area (during both construction and operational phases) and provide a crucial upgrade to national and local electricity infrastructure. In addition to enhancing security of supply, the Proposed Development will enable the delivery of greater amounts of renewable energy onto the transmission system and in turn support the sustainable electricity growth needs of the local and national population.

The Proposed Development also includes the provision of upgrades to the public realm - providing a new, passive amenity space for the local community and improving the walkability of East Wall Road and access to other local services and amenities. The upgraded public realm will also improve the visual environment, making the area feel safer and more inviting. These factors will have positive, long-term and moderate effects on the study area, promoting economic well-being and population growth.

10 Air Quality

10.1 Introduction

This chapter of the PECR describes the potential impacts of the Proposed Development on Air Quality and has considered the potential air quality effects associated with the construction and operation of the Proposed Development. The chapter sets out the methodological approach followed for this assessment, an account of the baseline environment, the potential air quality effects of the Proposed Development during construction and operation as well as any specific mitigation and / or management measures that may be required to reduce any potential effects.

Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter. For the purposes of the assessment, the Grid Connection is considered within the assessment of effects of the Proposed Development and is not considered to be a separate project.

As noted in **Section 7.5** of this PECR, no significant sources of emissions to air are expected during the operational phase of the Proposed Development as the substation will operate unmanned and emissions will be limited to those associated with periodic maintenance vehicles. Therefore, operational air quality impacts have been scoped out of the assessment.

10.2 Assessment Methodology

10.2.1 Relevant Legislation and Guidelines

This desk-based air quality assessment has been undertaken with reference to the following applicable legislation and guidance:

- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (known as the CAFÉ Directive);
- Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) as amended;
- Ambient Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022);
- Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction (IAQM, 2016);
- Environmental Protection United Kingdom (UK) & IAQM Land-Use Planning & Development Control: Planning for Air Quality (EPUK & IAQM, 2017); and
- IAQM A guide to the assessment of air quality impacts on designated nature conservation sites (IAQM, 2020).

The CAFE Directive was transposed into Irish legislation by the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011). The Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) was revoked on 31 December 2022 and has been replaced by the Ambient Air Quality Standards Regulations 2022 (S.I. No. 739/2022).

10.2.2 Assessment of Impacts

The following aspects were considered in the assessment of potential effects of the Proposed Development on air quality:

Construction Phase

- Construction Phase Dust impacts; and
- Construction Phase Traffic emissions.

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024) has been considered in the dust impact assessment. The guidance document outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. The use of UK guidance is considered best practice in the absence of applicable Irish guidance.

Transport Infrastructure Ireland (TII) has published guidance relating to the assessment of local air quality impacts for National Road Schemes. Whilst not wholly relevant to the Proposed Development, it provides an approach to the assessment of construction phase traffic emissions. The TII guidance provides screening criteria for roads that can be defined as being "affected" by a proposed development and should be included in a local air quality assessment. The guidance includes the screening criteria where construction traffic generates a 10% change in AADT flow. Where this is not met, a detailed assessment is not required. There is potential for traffic emissions to impact air quality in the short-term over the construction phase particularly due to increase in traffic flows and HGV movements accessing the proposed development site. The construction stage traffic provided in **Chapter 8** of this PECR.

The peak construction movements represent an increase of approximately 1% to the existing traffic volumes; such an increase is considered negligible in terms of its impact on the local road network. As such a detailed air quality assessment has been scoped out and the construction stage traffic will have a short-term impact on air quality.

The increased levels of traffic as a result of the Proposed Development are not of the magnitude to require a detailed air assessment. Operational stage impacts to air quality are predicted to be imperceptible.

10.2.3 Study Area

The study area for the construction dust assessment impacts is defined within the IAQM Construction dust guidance and includes all dust sensitive receptors (such as residential properties, commercial properties, areas of amenity and designated ecological sites) within 350m of the site boundary and those within 50m of a public road used by construction traffic that is within 500m of a site access point.

The number of residential dwellings and all property types in the vicinity of the Proposed Development are recorded in **Table 10.1** below.

Table 10.1 : Property Types within the Vicinity of the Proposed Development

Buffer Band	Count of all Property Types	Count of Residential Only
0 - 50m	62	42
50 – 100m	90	64
100 – 200m	365	273
200 – 300m	810	602
300 – 350m	473	443

Source: An Post GeoDirectory data, 2025

10.2.4 Sources of Information to Inform the Assessment

To establish baseline air quality conditions, relevant data was reviewed and assessed. The baseline ambient air quality environment has been characterised through a desk study of publicly available data sources which includes the EPA's air quality monitoring data. Additionally, the most recent EPA report on the air quality in Ireland has been referenced, Air Quality in Ireland Report 2023 (EPA, 2024).

10.2.5 Assessment Criteria

10.2.5.1 Construction Dust Assessment Criteria

Sensitivity to dust depends on the duration of the dust deposition, the dust generating activity, and the nature of the deposit. Therefore, a higher tolerance of dust deposition is likely to be shown if only short periods of dust deposition are expected and the dust generating activity is either expected to stop or move on. Due to the scale of the Proposed Scheme, construction sites are likely to be in operation for extended periods and therefore detailed consideration of potential dust impacts and how to mitigate impacts is required.

The Construction Dust Assessment Methodology including the assessment criteria is provided in **Appendix B**. This includes the criteria for appraisal of the magnitude of dust emissions under the headings of demolition, earthworks, construction and track-out.

10.3 Description of Receiving Environment

10.3.1 Baseline Environment

Under the Clean Air for Europe Directive, EU member states must designate "Zones" for the purpose of managing air quality.

The EPA is responsible for monitoring the nation's levels of air pollutants within four zones as follows:

- Zone A: Dublin;
- Zone B: Cork;
- Zone C: Other cities and large towns in Ireland; and
- Zone D: Rural Ireland (i.e. the remainder of the State excluding Zones A, B and C).

The Proposed Development site is located within the EPA air quality Zone A which represents Dublin City and environs. The East Wall area is serviced by various shops (including Lidl and ALDI), the Sean O'Casey community centre, the East Wall creational centre, a large church, a national school, and other recreational facilities such as football pitches and a water sports centre. The national school, St. Joseph's Co-educational Primary School is situated 150m from the Proposed Development site entrance. In addition, there a number of air quality sensitive receptors (i.e. residential properties) in the vicinity of the Proposed Development.

As previously noted in the site is bounded to the north by the M50 and the Port Tunnel Control building and tolling facility, to the west by the Portside Business Centre and to the east by Dublin Port Company Storage Site.

The baseline ambient air quality environment has been characterised through a desk study of publicly available data sources which includes the EPA's air quality monitoring data.

10.3.2 Baseline Dust Sensitivity Assessment

An appraisal has been carried out to assess the risk to sensitive receptors because of dust soiling, health impacts and ecological impacts due to the construction phase in accordance with the IAQM Guidance. This appraisal reviews the sensitivity of the Proposed Development site's location with respect to dust nuisance, human health and ecological impacts and then calculates a risk of impact using the magnitude of site activities.

The Construction Dust Assessment Methodology which includes the assessment criteria is provided in **Appendix B**. Prior to assessing the impact from dust emissions, the sensitivity of the area must be established using the headings:

- Dust Soiling Effects on People and Property;
- Human Health Impacts; and
- Ecological Impacts.

The sensitivity of the area is considered as per the criteria outlined in the IAQM Guidance and referenced in **Appendix B** (refer to **Tables 1, 2 and 3**). In terms of the sensitivity of the area to dust soiling effects on people and property, the receptor sensitivity, number of receptors and their distance from the source are considered. Using these criteria, the sensitivity of the area to dust soiling can be established. For the purpose of this assessment, the temporary compound location is within the Proposed Development site and is referred to in the assessment as the East Wall area.

An assessment of the Proposed Development was completed with respect to the sensitivity criteria presented in **Appendix B** (refer to **Tables 1, 2 and 3**). Using these criteria as outlined in **Table 1 of Appendix B,** the sensitivity of the area to dust soiling can be established. As there are 62 receptors within 50m of the proposed development boundary (refer to **Table 10.1**), the sensitivity of the area to dust soiling effects on people and property is considered '**Medium**'. In addition, when calculating the sensitivity with respect to human health, the background concentrations of particulates were reviewed.

Dust deposition impacts on ecology can occur due to chemical or physical effects. This includes reduction in photosynthesis due to smothering from dust on the plants and chemical changes such as acidity to soils. Often impacts will be reversible once the works are completed and dust deposition ceases.

An overall summary of the baseline area for construction to dust nuisance, human health and ecological impacts is shown in **Table 10.2** below.

Table 10.2: Summary of Sensitivity of the Area to Dust

Location	Description of Works	Nuisance Sensitivity	Human Health Sensitivity	Ecology Sensitivity
East Wall area	Proposed Development Site	Medium	Low	Medium

For Nuisance Sensitivity, the area is classed as 'Medium' as there are 62 receptors within 50m of the Proposed Development boundary.

For Human Health Sensitivity, the area is classed as 'Low', as there are between 10-100 high sensitivity receptors <100m from source.

For Ecological Sensitivity, the area is classed as 'Medium' sensitivity, as receptors are >50m away from the source.

10.4 Construction Phase

10.4.1 Construction Dust

The greatest potential impact on air quality during the construction phase is from construction dust, PM_{10} and $PM_{2.5}$ emissions and the potential for nuisance dust. Dust is characterised as encompassing particulate matter with a particle size of between 1 and 75 microns (1- 75 µm), therefore includes both PM_{10} and $PM_{2.5}$. Deposition typically occurs in close proximity to each site and potential impacts generally occur within 250m of the route used by construction vehicles on the public road, up to 250 m from the site entrance.

Large particle sizes (greater than 75 microns) fall rapidly out of atmospheric suspension and are subsequently deposited in close proximity to the source. Particle sizes of less than 75 microns are of interest as these can remain airborne for greater distances and give rise to the potential dust nuisance at the sensitive receptors.

This section provides an overview of the typical activities that have potential for dust impacts during the construction phase of the Proposed Development and the Grid Connection (not part of the subject planning application). The potential for dust emissions due to construction can vary substantially day to day and are strongly influenced by the level of activity, the specific operations, and the prevailing meteorological conditions.

The following operations are considered to be the main dust generating sources or activities:

- Site Preparation including vegetation clearance – removal of trees, hedgerows, grass and other soil covering;
- Demolition – detailed demolition plans will be required to minimise dust generation;
- Movement of trucks along paved public roads – potential of track-out of dust on vehicle tyres from the development site or resuspension of dust;
- Earthworks – the movement of potentially dusty material which has the potential to generate dust; and
- Material Handling and storage – stockpiles have the potential to generate dust due to dry material movement and wind erosion.

The risk of potential air quality impacts from earthworks, construction and track out (the transport of dust and dirt from the Proposed Development site onto the public road network) was assessed according to guidance developed by the IAQM to identify the appropriate level of mitigation. In order to determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for dust generation from the development site compound needs to be taken into account in conjunction with the previously established sensitivity of the area.

The resultant requirement levels (i.e. high, medium or low levels of mitigation) for mitigation with respect to nuisance dust, health impacts and ecological impacts are shown in **Section 10.5**.

Regarding earthworks, the exact quantities are not yet known, but for site levelling the total cut will be 17.23m^3 and the total fill volume will be 6,000m^3.

Table 10.3: Summary of Emission Magnitude

Location	Description of Works	Demolition	Earthworks	Construction	Track-out
East Wall area	Proposed Development Site – Main Compound Location for the construction works	Small	Small	Small	Small

Table 10.4: Summary of Demolition Risk to Define Site-Specific Mitigation

Location	Dust Nuisance Risk	Human Health Risk	Sensitive Ecology Risk
East Wall area	Low	Low	Low

Table 10.5: Summary of Earthworks Risk to Define Site-Specific Mitigation

Location	Dust Nuisance Risk	Human Health Risk	Sensitive Ecology Risk
East Wall area	Low	Low	Low

Table 10.6: Summary of Construction Risk to Define Site-Specific Mitigation

Location	Dust Nuisance Risk	Human Health Risk	Sensitive Ecology Risk
East Wall area	Low	Low	Low

10.5 Proposed Mitigation Measures

10.5.1 Construction Phase

The IAQM Guidance relevant to the construction dust assessment lists measures that will be applied, if practical, relative to the risk identified. In this instance, a Medium risk of dust impacts was identified due to the potential dust emission magnitude and sensitivity of the area. Therefore the list of IAQM recommended mitigation measures is proportionate to the risk identified.

The appointed contractor will prepare and implement a Construction Environmental Management Plan prior to the commencement of the development. The CEMP will be a “live” document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities.

IAQM recommended dust mitigation measures for Medium risk sites are as follows:

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken.
- Record any exceptional incidents that cause dust and / or air emissions, either on-site or off-site and the action taken to resolve the situation in the logbook.
- Plan site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.

- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Keep the site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from the site as soon as possible, unless being re-used on-site. If they are being re-used on-site, cover as described below.
- Ensure all vehicles switch off engines when stationary- no idling vehicles.
- Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum speed limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the agreement of the nominated undertaker and with the agreement of the Local Authority, where appropriate).
- The Contractor is required to produce a Construction Traffic Management Plan and a Construction Logistics Plan to manage the sustainable delivery of goods and materials as appropriate.
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Avoid scabbing (roughening of concrete surfaces) where possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.

Measures Specific to Track-out

- Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate any necessary repairs to the surface as soon as reasonably practicable.

- Record all inspections of haul routes and any subsequent action in a site logbook.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

A pre-construction dilapidation survey of all buildings/structures to be demolished will be carried out prior to commencement of any demolition works. If asbestos potential is indicated in the pre-construction dilapidation survey, a fully intrusive asbestos-containing materials survey will be completed. Prior to commencement of the demolition works, all asbestos containing materials identified by the survey will be removed by a suitably trained and competent person. Asbestos-containing materials will only be removed from site by a suitably permitted/licensed waste contractor and will be brought to a suitably licensed facility.

The Health and Safety Authority will be contacted where needed in relation to the handling of asbestos and material will be dealt with in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, as amended and associated approved Codes of Practice.

10.6 Conclusions

There are no significant effects on air quality anticipated as a result of the Proposed Development. Notwithstanding this, all construction activities will be carried out in accordance with best practices and guidelines for the management of dust generation and control of pollutants. It should be noted that the measures taken forward from this assessment will be reviewed on a regular basis during construction to ensure that they are appropriate for the works taking place and any complaints will be considered.

11 Climate

11.1 Introduction

This chapter of the PECR describes the potential impacts from the Proposed Development on Climate. The assessment includes the consideration of:

- The vulnerability of the Proposed Development to climate change; and
- The likely potential impact of the Proposed Development on climate.

A Climate Change Risk (CCR) Assessment has been undertaken to identify the vulnerability of the Proposed Development. An assessment of the Proposed Development in relation to its vulnerability to climate change during the construction and operational Phase has been undertaken.

The full technical specification of key construction materials is not anticipated to be known until detailed design stage. The need for informed choices of sustainable and circular materials at the detailed design stage based on engineering constraints is the optimum approach to mitigate impacts from embodied carbon. As such, an embodied carbon assessment will be completed at detailed design stage when the exact materials and specifications are known. EirGrid/ESB will, where possible and appropriate, promote the use of sustainable materials, adopt circular economy principles and promote supplier innovation in the delivery of works and services. A Project Carbon Management Plan (PCMP) will be prepared in accordance with PAS 2080 (Carbon Management in Infrastructure) and low-carbon materials will be maximised where they meet EirGrid / ESB's technical requirements.

The Proposed Development will contribute to the sustainable development of the wider Dublin region through strengthening key electricity infrastructure and ensuring Dublin and the surrounding areas are renewable-ready. These works are necessary to provide capacity to meet new demand for electricity, to support economic growth for Ireland, and facilitate future connections to new renewable generation, helping Ireland to transition to a low carbon electricity future and to meet national Climate Action Plan targets.

11.2 Assessment Methodology

This assessment has been prepared in accordance with the following legislation and guidance documents:

- The Climate Action and Low Carbon Development Act 2015;
- The Climate Action and Low Carbon Development (Amendment) Act 2021;
- The Government of Ireland’s Climate Action Plan 2024;

Specifically in relation to the climate impact assessment, the methodology adopted is based on the following guidance:

- British Standards Institution (BSI, 2023): PAS 2080 Carbon Management Infrastructure;
- Institute of Environmental Management & Assessment (IEMA, 2022): Assessing GHG Emissions and Evaluating their Significance;
- Institute of Environmental Management and Assessment (IEMA, 2020): Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation (2nd Edition); and

- European Commission (2021): Technical guidance on the climate proofing of Infrastructure in the Period 2021-2027.

Transport Infrastructure Ireland (TII) have devised national climate impact assessment guidelines for national roads, light rail and greenways entitled: Climate Guidance for National Roads, Light Rail, and Rural Cycleways (Offline and Greenways) – Overarching Technical Document PE-ENV-01104. In the absence of any specific related guidance, the framework of the TII guidance will be applied for this assessment.

The TII approach requires that the climate impact assessment must report the project impact on greenhouse gas emissions (GHGs) and the project risk and resilience to climate change through a climate assessment through the following separate assessments:

- Climate Change Risk (CCR) Assessment: The CCR assessment identifies the vulnerability of a project to climate change and considers adaptation measures to increase the resilience of the project.

The CCR Assessment identifies the impact of a changing climate on the project and receiving environment. The assessment considers the project's vulnerability to climate change and identifies adaptation measures to minimise climate change impacts. The purpose of the CCR assessment is to reduce or manage the adverse impacts and risks of climate change on the proposed development and develop the project resilient to climate change.

11.2.1 Relevant Legislation and Guidelines

It is recognised at a national and regional level that, International, European, and national climate change commitments mean that power generation, transport and heat all increasingly have to derive power from sustainably produced electricity. Therefore, national and regional policy places a strong emphasis on the need for new energy systems and transmission grids.

Under Ireland's National Energy and Climate Plan, 2021-2030, Ireland has established a target to increase electricity generated from renewable sources to 70%, underpinned by the Renewable Electricity Support Scheme (RESS).

Ireland has excellent renewable energy (RE) resources, which will be a critical and growing component of Irish energy supply to 2020 and beyond. Indigenous renewable energy already plays a vital role in our domestic fuel mix. It also increases sustainability through the use of clean power sources and enhances energy security by reducing Ireland's dependence on imported fuels.

To prepare for and facilitate this change, EirGrid must make the electricity grid more resilient and increase flexibility. The grid will need to carry more power, and most of this power will come from renewable generation – including both onshore and offshore sources. To make this possible, EirGrid will need to upgrade and add to existing grid infrastructure – primarily comprising underground cables and overhead lines and substations.

The Proposed Development is part of EirGrid's Powering Up Dublin Project and will strengthen key electricity infrastructure. Powering Up Dublin will enable the city's grid to use and transmit the electricity generated from offshore wind energy to the heart of the city, which is a vital step to help Ireland transition to a low-carbon future.

11.2.2 Relevant Climate Policy

In 2015, the Climate Action and Low Carbon Development Act (the 2015 Act) was enacted by the Oireachtas. The function of the 2015 Act was to facilitate Ireland's just-transition to a low carbon, climate resilient and environmentally sustainable economy, and this was cited as the 'national transition objective'.

In June 2020, the Government published the current Programme for Government – Our Shared Future (Government of Ireland 2020). Regarding climate, there is a pledge to an average 7% per

annum decrease in total GHG emissions from 2021 to 2030. This would result in 51% reduction by the end of the decade and ultimately obtaining net zero emissions by 2050.

In 2021 the Climate Action and Low Carbon (Amendment) Act (the 2021 Act) was enacted in Ireland, giving statutory effect to the core objectives stated within the Climate Action Plan (CAP). The 2021 Act established carbon budgets and sectoral emissions limits and outlines the carbon budget as the total greenhouse gas emissions that are allowed during the budget period. Consequently, the 2021 Act has eradicated any mention of a national mitigation plan and replaced it with references to the Climate Action Plan as well as a sequence of National Long Term Climate Action Strategies. It has also updated the national transition objective to a national climate objective which commits the State '*to pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy*.'

Section 6B(12) of the 2021 Act requires the Minister for the Environment, Climate and Communications to publish the approved carbon budget programme. In May 2022 the budgets were published and the total emissions allowed under each budget is set out below, as well as the average annual reduction for each five-year period:

- 2021-2025: 295 Mt CO2e - this represents an average reduction in emissions of 4.8% per annum for the first budget period;
- 2026-2030: 200 Mt CO2e - this represents an average reduction in emissions of 8.3% per annum for the second budget period; and
- 2031-2035: 151 Mt CO2e - this represents an average reduction in emissions of 3.5% per annum for the third provisional budget.

To deliver these budgets, in July 2022 the government established Sectoral Emissions Ceilings which set maximum limits on greenhouse gas emissions for each sector of the Irish economy to 2030.

Section 15 of the 2015 Act defines the duties of certain bodies under the Act. This section was amended by Section 17 of the 2021 Act which has replaced Section 15(1) to read as follows:

15. (1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—

(a) the most recent approved climate action plan,

(b) the most recent approved national long term climate action strategy,

(c) the most recent approved national adaptation framework and approved sectoral adaptation plans,

(d) the furtherance of the national climate objective, and

(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

11.2.3 Study Area

The study area for vulnerability of the Proposed Development to changes in climate comprises the assets associated with the Proposed Development within the Planning Application Boundary.

11.3 Description of Receiving Environment

11.3.1 Baseline Macroclimate

Ireland declared a climate and biodiversity emergency in May 2019 and in November 2019 there was European Parliament approval of a resolution declaring a climate and environment emergency

in Europe. This, in addition to Ireland's current failure to meet its EU binding targets under Regulation 2018/842 (European Union, 2018) results in changes in GHG emissions either beneficial or adverse being of more significance than previously considered prior to these declarations.

Ireland has seen an increase in major weather events over time. Truly extreme heat events that are rare in the present climate are projected to become more common under all scenarios. Changes will be larger for the very infrequent, 1-in-50-year events (based upon present climate) than for 1-in-10-year events. The change would be considerably greater under Late action than in Early action scenarios. Extreme cold events are conversely projected to become rarer, with greater reductions in the occurrence of what today would constitute 1-in-50-year events than in 1-in-10-year events. Extreme precipitation events are projected to become more frequent, with changes in rarer 50-year events being more marked than 10- and 20-year return periods. Under the Late action scenario, the annual maximum daily rainfall that used to occur once every 50 years, on average, will become approximately twice as frequent. The shortening of recurrence times that is projected out to mid-century or so can be stabilised or even reversed under the early action scenarios by the end of the century.[20.]

Climate system tipping points represent thresholds beyond which components of the Earth system permanently switch to new states. Tipping points would have considerable impacts, including sea level rise from collapsing ice sheets, dieback of the Amazon rainforest and carbon release from thawing permafrost. Several such tipping points would have implications for Ireland either through further shifting global climate or altering the regional climate in the North Atlantic and north-western Europe. For Ireland, the Atlantic Meridional Overturning Circulation (AMOC) is the most immediately important potential tipping point for the Irish climate, given the importance of the North Atlantic in determining our climate and agricultural productivity. The AMOC will almost certainly weaken over the 21st century, and a full collapse cannot be ruled out. If there were to be a collapse in the AMOC, as has occurred repeatedly in the past during rapid climate transitions of past glacial phases, winters would become considerably colder and summers warmer, and there would likely be an increase in storminess and potential implications for sea levels. These would have very profound implications for the Irish climate and society.

Future global sea level rise projections over the coming centuries have large uncertainties. Particular concern relates to retrograde ice sheets where much of the ice sheet is grounded below present-day sea level, which could reach tipping points whereby they become committed to collapsing over a multi-centennial period. The largest such ice sheet is the West Antarctic Ice Sheet (WAIS), which alone could contribute several metres of sea level rise. Historical global emissions may have already committed it to its long-term collapse. Both the Greenland and Antarctic ice sheets have been considerably smaller in past warm periods, but proxies cannot determine the pace of past ice sheet collapse. Under late action scenarios, highly uncertain ice sheet instabilities mean that 2m of sea level rise this century cannot be ruled out.

In Ireland, and in line with global patterns, annual average temperatures are now approximately 0.9°C higher than they were in the 1900s. In Ireland the last 30 years show an almost 7% increase in annual precipitation. Global sea level increased by approximately 0.20 m between 1901 and 2018, and recent studies have highlighted greater than expected sea level rise in Cork and Dublin. Climate change under early, middle, and late action climate model scenarios show very different futures for Ireland. All model projections show higher temperatures and an increase in annual precipitation, extreme events will become more common and more extreme.

Figure 11.1 shows the annual minimum and maximum temperate change for Ireland in response to global temperature changes. It is projected that as global temperatures increase as a result of

[20] Clare Noone, Deirdre McClean, Danielle Gallagher, Jennifer McElwain and Peter Thorne, 2023, IRELAND'S CLIMATE CHANGE ASSESSMENT Summary for Policymakers in Volume 1: Climate Science – Ireland in a Changing World, Environmental Protection Agency, Ireland, 22 pp, https://www.epa.ie/publications/monitoring--assessment/climate-change/ICCA_Volume-1-SPM.pdf

global warming, there will be an increase in average maximum summer temperatures and average minimum winter temperatures. Furthermore, it is projected that there will be a decrease in average summer precipitation and increase in average winter precipitation.

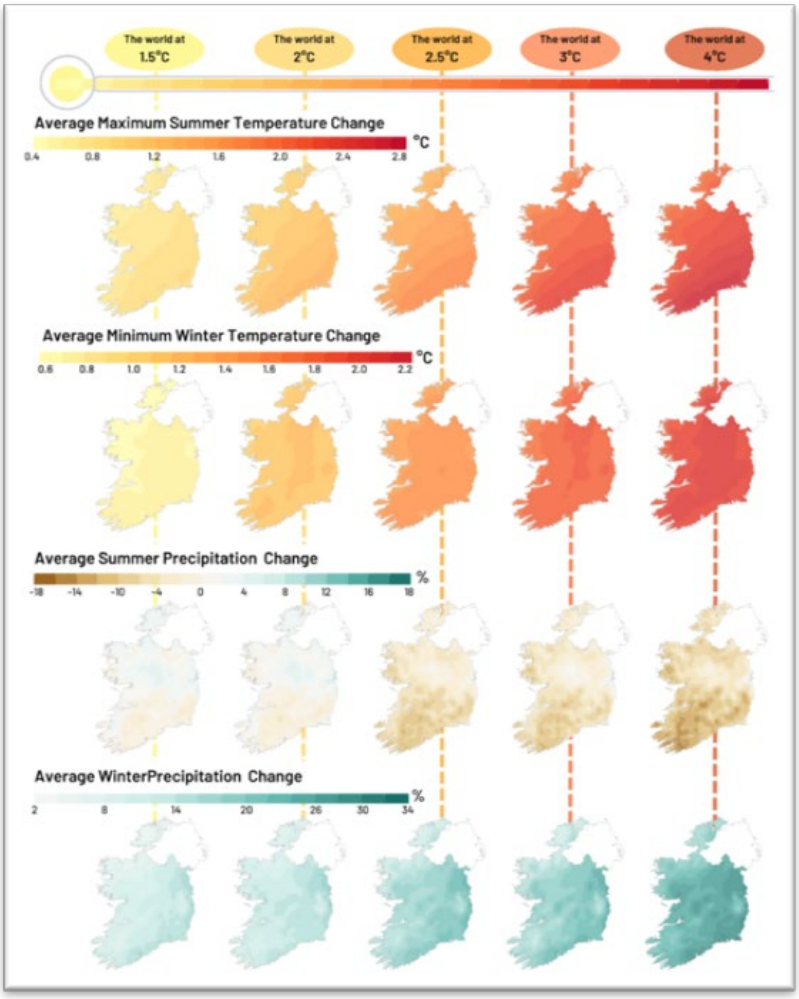


Figure 11.1: Average Projected Temperature and Precipitation Change for Ireland (Met Éireann TRANSLATE)[21]

11.3.2 Climate Extremes

Future projections of changes for variables such as temperature and precipitation for a selection of time periods, scenarios and global warming levels are taken from Met Éireann's TRANSLATE project - O'Brien and Nolan (2023)). Climate extreme projections from CMIP5 for Ireland are shown below for Annual R30mm (Very Wet Days, **Figure 11.2**) and Annual Number of Heatwaves for RCP8.5/Late Action scenario's, for middle (2021-2050) and late century (2041-2070) **Figure 11.3**.

[21] Source: Met Éireann, TRANSLATE: One Climate Resource for Ireland. Available at: https://www.met.ie/science/translate

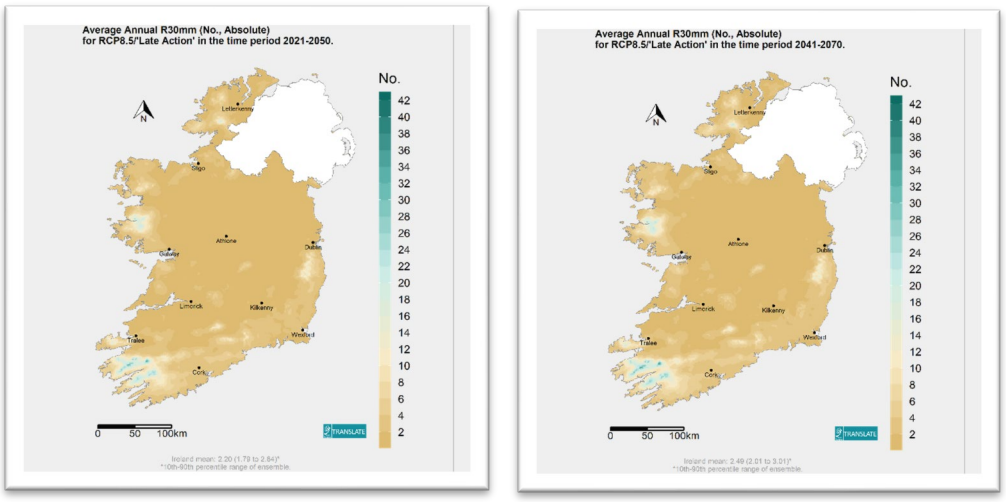


Figure 11.2: Annual R30mm (Very Wet Days)-Climate Ireland, Met Eireann Translate

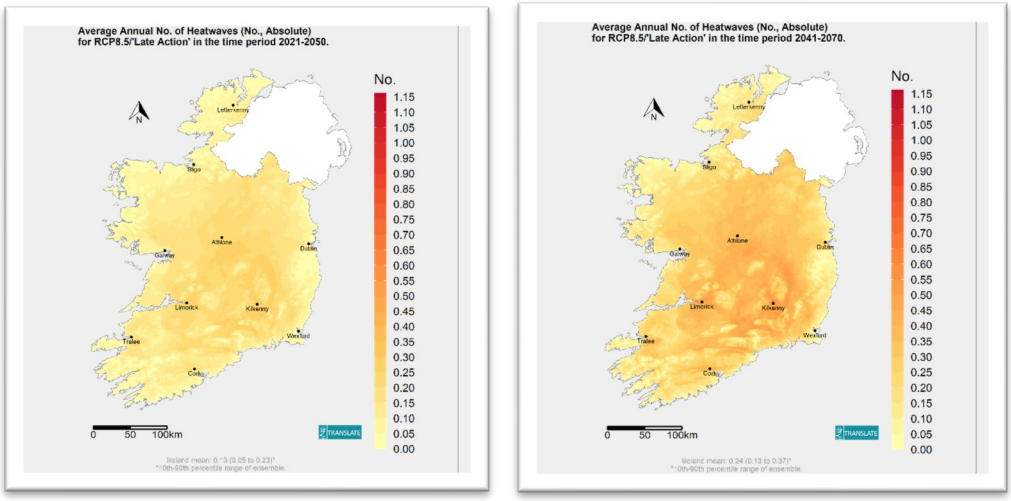


Figure 11.3: Annual Number of Heatwaves - CMIP5 – Climate Ireland, Met Eireann Translate

11.3.2.1 Microclimate

The World Meteorological Organisation (WMO) defines climate as the average weather over an extended period of 30 years. This period is used as it is considered long enough to account for year-to-year variations. Therefore, the existing climate around Dublin Port is estimated using the 30-year (1981-2010) average meteorological data from Met Éireann.

The nearest Met Éireann meteorological station to the project in terms of 30-year averages for climate and weather data which would be representative of climate in the vicinity of the project is the station situated at Dublin Airport.

The 30-year average meteorological data[22] from the station at Dublin Airport is presented in **Table 11.1** for each of the past three 30-year average periods. The data shows limited variation for temperature, humidity, and sunshine but there is a trend of increasing rainfall (circa 3% increase) and average wind speed (circa 4% increase) in the period 1981-2010 relative to 1961-1990.

[22] Met Éireann is due to release updated 30-year average meteorological data in 2022 (yet to be published at time of writing) - https://www.met.ie/climate/30-year-averages

Table 11.1: 30 Year Average Meteorological Data

Parameter	30-Year Average		
	1961-1990	1971-2000	1981-2010
Mean Temperature (°C)	9.6	9.8	9.8
Mean Relative Humidity at 09:00 UTC* (%)	82.0	82.4	83.0
Mean Daily Sunshine Duration (Hours)	3.9	3.9	3.9
Mean Annual Total Rainfall (mm)	732.7	734.7	758.0
Mean Wind Speed (knots)	9.9	10.0	10.3

The climate projections for Ireland for the next century indicate that observed climate trends will continue and intensify over the coming decades with impacts ranging from extreme flooding events (both coastal and fluvial) to periods of extended droughts and increased winter precipitation.

11.3.3 Climate Change Risk (CCR) Assessment

The CCR assessment identifies the impact of a changing climate on the project and receiving environment. The assessment considers the project's vulnerability to climate change and identifies adaptation measures to minimise climate change impacts. The purpose of the CCR assessment is to reduce or manage the adverse impacts and risks of climate change on the proposed development and develop the project resilient to climate change.

11.3.3.1 Climate Vulnerability

Details of current climate hazards impacting the area have been derived from the Global Facility for Disaster Reduction and Recovery 'Think Hazard!' tool[23] with data specific to County Dublin extracted from the tool. This data is supplemented as required with information from the Office of Public Works (OPW) FloodInfo.ie resource. This data is summarised in **Table 11.2** to illustrate the current climate hazard threat to the area of the Proposed Development.

Table 11.2: Observed Hazard Level in Dublin County

Hazard Type	Hazard Level
Coastal Flood	High
Pluvial Flood	Very Low
Fluvial Flood	Very Low
Extreme Heat	Very Low
Wildfire	Low

In the Dublin area, coastal flood hazard is classified as **high** according to the information that is currently available. This means that potentially-damaging waves are expected to flood the coast at least once in the next 10 years.

In addition to the hazard types listed in **Table 11.2**, this analysis also has due regard for past major weather events which are used to inform future potential hazards and adaption. **Table 11.3** presents a list of historically recorded extreme weather events recorded nationally which have been derived from the Met Éireann Major Weather Events database.

[23] Global Facility for Disaster Reduction and Recovery 'Think Hazard!' tool. Available at: https://thinkhazard.org/en/

Table 11.3: National Major Weather Events

Year	Event	Climate Hazard
2025	Storm Eowyn	Storm Éowyn was a powerful and record-breaking extratropical cyclone which hit Ireland, the Isle of Man and the United Kingdom on 24 January 2025
2023	Storm Babet	Extreme Flooding
2023	Winter Storms	Strong Wind/Extreme Rainfall
2022	Highest Temperature Recorded in Ireland since 1887 (July 2022)	High Temperature
2022	Storm Eunice	Strong Wind
2021	Storm Barra	Strong Wind
2020	Storm Ellen	Strong Wind
2018	Heatwaves and Drought	High Temperature
2018	Snowstorm Emma & Beast from the East	Snowfall
2018	Storm Doris	Strong Wind
2018	Storm Eleanor	Strong Wind
2017	Storm Dylan	Strong Wind
2017	Storm Ophelia	Strong Wind
2017	Heavy Rain	Extreme Rainfall
2016	Storm Jake	Strong Winds
2015	Storm Frank	Strong Winds
2015	Storm Eva	Strong Winds
2015	Storm Desmond	Flooding
2015	Storm Darwin	High Temperature
2013/14	Winter Storms	Cold snaps
2011	Tropical Storm Katia	Strong winds
2010	Winter Cold Spell	Cold snaps
2009/10	Winter Cold Spell	Cold snaps/ Frost
2009	Severe Flooding	Flooding
2008	Heavy Rain and Flooding	Extreme Rainfall
2006	High Temperature/ Heatwave	High Temperature
2003	Heavy Rainfall/ Cloud Burst	Extreme Rainfall
2002	Severe Flooding in Eastern Areas	Flooding
2002	Coastal flooding along the eastern and southern coasts	Flooding
2000	Severe flooding in east and southern coasts	Flooding
1998	Hurricane-force winds over north and northeast	Strong Wind
1997	Windstorm	Strong Wind
1986	Hurricane Charley	Strong Wind

Source: Met Éireann, Major Weather events. Available at: https://www.met.ie/climate/major-weather-events

The approach to assessing the climate risk associated with the project is shown in **Table 11.4.**

Table 11.4: Sensitivity Analysis of Climate Hazards of the Proposed Development

Climate Hazard	Sensitivity	Sensitivity Score
Flooding (Coastal)	high	3
Flooding (Pluvial)	Low sensitivity to pluvial flooding	1
Flooding (Fluvial)	Low	1
Extreme heat	Low sensitivity to extreme heat. Potential to cause some deterioration in road surfaces but only if occurring over long periods.	2
Extreme cold	Moderate sensitivity to extreme cold whereby the asset suffers limited impact but icy, or snow may result in road closures or other economic or social impacts.	2
Wildfire	All assets are considered to have a moderate sensitivity to wildfires. Can cause some surface damage to the asset band may lead to road closures impacting with economic or social impacts. Sensitivity for fires in the public realm as a result of higher population exposure in this area.	2
Drought	Low sensitivity to drought on all assets,	1
Extreme wind	Low sensitivity to extreme wind on most assets with the exceptions of lighting or signposts which have a moderate sensitivity to extreme winds.	2
Lightning and hail	Low sensitivity to lightning and hail for all assets.	1
Fog	Low sensitivity to fog for all assets. Potential to affect road safety.	1

Based on the estimated sensitivity and exposure, the vulnerability of the operation phase is summarised in **Table 11.5.** The analysis indicates that coastal and fluvial flooding represent the highest vulnerabilities for the operation phase followed by extreme wind. These elements are considered in more detail under the climate risk assessment.

Table 11.5: Vulnerability Analysis

		Exposure		
		Low	**Medium**	**High**
Sensitivity	**Low**	Flooding, Drought		
	Medium		Extreme Heat, Extreme Cold, Wildfire, Extreme Wind	
	High			Flooding (Coastal and Fluvial)

A separate Flood Risk Assessment Report (FRA) has been prepared for the Proposed Development and is provided under separate cover. The FRA has recommended that the high risk of tidal flood and medium risk of pluvial flooding is mitigated by establishing a minimum floor level of 4.5 mOD. With the committed design measures in place, the vulnerability of the operational phase to climate change has been suitably mitigated and the potential impact is considered to be **minor adverse** in the long-term.

Conclusions

These works are necessary to provide capacity to meet new demand for electricity, to support economic growth for Ireland, and facilitate future connections to new renewable generation, helping to meet national Climate Action Plan targets. The Proposed Development complies with national and regional planning policies and the policies and objectives of the Dublin City Development Plan 2022 – 2028 and the DCC Climate Neutral Dublin 2030: Local Authority Climate Action Plan 2024-2029. The DCC development plan identifies the clear need for improved energy

grid infrastructure, and the need to ensure infrastructure investment is aligned with the proper planning and sustainable development.

As a result, it is considered that the Proposed Development will contribute to the proper planning and sustainable development of the wider Dublin region through strengthening key electricity infrastructure and ensuring Dublin and the surrounding areas are renewable-ready.

12 Noise and Vibration

12.1 Introduction

This chapter of the PECR identifies, describes and presents an assessment of the likely significant noise and vibration effects of the Central Dublin Substation Project (hereafter referred to as the "Proposed Development") on the receiving environment during its construction and operational phases. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.

The assessment presented should be read in conjunction with the following chapters within this PECR:

- Chapter 4: Description of the Proposed Development;
- Chapter 8: Traffic and Transport; and
- Chapter 15: Biodiversity.

12.2 Assessment Methodology

12.2.1 Relevant Legislation, Policy and Guidelines

The following national legislation applies to noise:

- Environmental Noise Regulations (Minister for the Environment, Heritage and Local Government, 2006)
- Environmental Protection Agency Act (Government of Ireland, 1992)

Local policy has been referred to as necessary, including:

- Dublin City Development Plan 2022 – 2028 (Dublin City Council, 2022)
- Dublin Agglomeration Noise Action Plan 2024 – 2028 (Dublin City Council et al., 2025)

The assessment of impacts has been undertaken, as appropriate, in accordance with, or with reference to, the following guidance documents:

- BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound (BSI, 2014)
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise (BSI, 2009)
- BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration (BSI, 2009)
- BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration (BSI, 1993)
- Construction Vibrations: State of the Art, Journal of Geotechnical and Geoenvironmental Engineering (Wiss, 1981)
- Design Manual for Roads and Bridges (DMRB) LA 111 Noise and Vibration (Highways England, 2020)
- DIN 4150-3 Vibrations in buildings – Part 3: Effects on structures (DIN, 2016)
- EirGrid Document Reference: XDS-GFS-00-001-R4 Functional Specification 110/220/400 kV Substation General Requirements (EirGrid, 2019)

- Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration Report No. 0123 (Federal Transport Authority, 2018)
- Ground Vibration Caused by Civil Engineering Works (Transport Research Laboratory, 1986)
- IEC 61672-1:2013 Electroacoustics – Sound level meters – Part 1: Specifications (IEC, 2013)
- ISO 17534-1:2015 Acoustics – Software for the calculation of sound outdoors – Part 1: Quality requirements and quality assurance (ISO, 2015)
- ISO 1996-1:2016 Acoustics – Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures (ISO, 2016)
- ISO 1996-2:2017 Acoustics – Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels (ISO, 2017)
- ISO 2631-1:1997 Mechanical vibration and shock – Evaluation of human exposure to whole-body vibration – Part 1: General requirements (ISO, 1997)
- ISO 2631-2:2003 Mechanical vibration and shock – Evaluation of human exposure to whole-body vibration – Part 2: Vibration in buildings (1 Hz to 80 Hz) (ISO, 2003)
- ISO 9613-1:1993 Acoustics – Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere (ISO, 1993)
- ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors (ISO, 2024)

12.2.2 Study Area and Zone of Influence

There is no guidance or legislation in Ireland regarding the extent/size of the noise and vibration study area to adopt for the assessment of noise and vibration effects. The noise and vibration study areas for construction and operational activities in this chapter have been set with consideration of the guidance contained in BS 5228-1 and BS 5228-2. Professional judgment has been used to determine the distances over which noise impacts may occur during construction and operation and maintenance along with consideration of the likely magnitude and duration of impact and the sensitivity of receptors.

During the construction and operational phase, the noise and vibration study area considers noise sensitive locations (NSLs) up to 300 m from elements of the Proposed Development.

12.2.3 Sources of Information to Inform the Assessment

Data sources utilised during this assessment include those listed in **Table 12.1** below.

Table 12.1: Summary of Key Datasets

Title	Source	Year	Author(s)
PRIME2 OSi data	Ordnance Survey Ireland	Nov 2022	Ordnance Survey Ireland
Google Earth Imagery	Google Earth	1984 – 2025	Google LLC
GeoDirectory	An Post	Q2 2025	An Post and Ordnance Survey Ireland
Noise Modelling	RPS	Q3 2025	RPS
Baseline Noise Survey	RPS	Q1 2025	RPS

12.2.4 Key Parameters for Assessment

The following key parameters were identified as having the potential to result in significant effects on NSLs:

- Noise impacts due to construction activities.
- Noise impacts due to increased traffic during the construction phase.
- Vibration impacts due to construction activities.
- Noise impacts due to operational activities.

12.2.5 Assessment Criteria and Significance

The significance of the effect of noise and vibration is determined by considering the magnitude of the impact and the sensitivity of the receptor in accordance with EPA's Guidelines (EPA, 2022). In referring to noise sensitive receptors, the term Noise Sensitive Location or NSL is most commonly used in Ireland, as it is the terminology used in EPA guidance for noise. Hereafter in this chapter, NSL will be used to refer to noise and vibration sensitive receptors. NSLs are typically residential premises but can also include schools, places of worship and other NSLs. Site and project specific considerations play a part in determining the sensitivity of a receptor and noise assessment standards in general include implicit considerations of sensitivity, e.g., through consideration of background noise levels.

Table 12.2 presents general categorisations of NSL sensitivities for use in Ireland. The table has been developed based on professional judgement and experience in completing noise assessments.

Table 12.2: General Categorisation of Receiver Sensitivity

Sensitivity	Description	Examples of Receptors	Modifiers
High	*Receptors where people or operations are particularly susceptible to noise*	• *Residential, including private gardens where appropriate* • *Hospitals/residential care homes* • *Schools during the daytime* • *Quiet outdoor areas used for recreation.* *Places of worship*	Modifiers are factors that can change the sensitivity of receivers. These include: • Magnitude and character of baseline noise • Period of occupancy • *Noise* insulation of buildings
Medium	*Receptors moderately sensitive to noise, where it may cause some distraction or disturbance*	• *Offices* • *Bars/Cafes/Restaurants where external noise may be intrusive* • *Community facilities and amenity areas.* • *Sports grounds when spectator noise is not a normal part of the event and where quiet conditions are necessary (e.g., tennis, fishing and golf)* • *Wildlife refuges* • *Recording studios and concert halls are also included in this category*	
Low	*Receptors where distraction or*	• *Buildings not occupied during the daytime.*	

Sensitivity	Description	Examples of Receptors	Modifiers
	disturbance from noise is low	*Sports grounds when spectator noise is a normal part of the event* • *Night clubs*	
Negligible	*Receptors where distraction or disturbance from noise is negligible.*	• *All other areas such as those used primarily for industrial or agricultural purposes* • *All other*	

While the above table is useful, the specific categorisations of magnitudes and sensitivities are determined using professional judgement and applicable standards, which are detailed in the following sections. For noise and vibration, consideration of magnitudes and sensitivities are inherent to the assessment process for most categories of emissions.

12.2.5.1 Construction Noise

The ABC method outlined in section E3.2 of BS 5228 has been used for the purposes of controlling noise (BSI, 2009). The approach adopted calls for the designation of an NSL into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value that, if exceeded at this location, indicates a potential significant noise impact is associated with the construction activities.

Table 12.3 outlines the applicable noise threshold of potential significant effect at NSLs. The determination of which category to apply is dependent on the existing ambient (L_{Aeq}) noise level (rounded to the nearest 5 dB) at the NSL. For weekday daytime, if the ambient noise level is less than the Category A threshold limit, the Category A threshold limit (i.e., 65 dB) applies. If the ambient noise level is the same as the Category A threshold limit, the Category B threshold limit (i.e., 70 dB) applies. If the ambient noise level is more than the Category A threshold limit, the Category C threshold limit (i.e., 75 dB) applies.

Table 12.3: Threshold of Potential Significant Effect at NSLs (BSI, 2009)

Assessment Category and Threshold Value Period (L_{Aeq})	Noise Threshold Value (dB)		
	Category A[A]	Category B[B]	Category C[C]
Night-time (23:00 – 07:00)	45	50	55
Evenings and Weekends[D]	55	60	65
Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)	65	70	75

NOTE 1: A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

NOTE 2: If the ambient noise level exceeds the Category C threshold values given in the table (i.e., the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

NOTE 3: Applied to residential locations only.

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

D) 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

12.2.5.1.1 Sensitivity

Sensitivity of NSLs is assessed in line with **Table 12.2**.

12.2.5.1.2 Magnitude

As a consequence of the 65 dB lower cut-off for Category A, where existing noise levels are low, construction criteria are independent of the precise noise levels, i.e., unless daytime average ambient noise levels at NSLs are in excess of 62.5 dB, the lower daytime noise threshold will default to 65 dB. In general, only NSLs close to existing sources of high levels of noise, such as busy roads, have existing noise levels of sufficient magnitude to justify a threshold value higher than 65 dB.

Predictions of noise levels are limited to the nearest NSLs on the basis that more distant NSLs will have lower noise levels due to increased distance attenuation. This approach aligns with best practice.

12.2.5.1.3 Significance of Effects

Table 12.4 presents the construction noise initial significance rating of effects. The table provides an initial indication of the significance of effect which is then modified based upon the duration and frequency of the construction activity and other relevant modifiers.

Table 12.4: Construction Noise – Initial Significance Rating of Effects

Noise Level	EPA Initial Magnitude of Impact	Initial Significance Rating	Modifiers
≤ Baseline noise level or ≤ BS 5228 threshold - 10 dB	Negligible	Imperceptible / Not Significant	Modifiers are factors that can change the magnitude of impact or significance rating. These include: - Baseline noise levels - Duration - Frequency and likelihood of occurrence - Public attitudes to, and acceptability of, the project itself.
> Baseline noise level and ≤ BS 5228 threshold	Low	Slight / Moderate	
> BS 5228 threshold to ≤ BS 5228 threshold + 5 dB	Medium	Moderate / Significant	
> BS 5228 threshold +5 to + 10 dB	High	Significant / Very Significant	
> BS 5228 threshold + 10 dB		Very Significant / Profound	

In many circumstances, the most important modifier of significance of effects for construction noise is the duration of the activities. BS 5228 states the following:

> *"c) Duration of site operations. In general, the longer the duration of activities on a site, the more likely it is that noise from the site will prove to be an issue, assuming NSPs* [noise sensitive premises] *are likely to be significantly affected. In this context, good public relations and communication are important. Local residents might be willing to accept higher levels of noise if they know that such levels will only last for a short time. It is then important that construction activities are carried out in accordance with the stated schedule and that the community is informed of their likely durations"* (BSI, 2009).

In general, significant effects are not expected where the BS 5228 thresholds will be exceeded for a period of only two or three days, with the likelihood of significant effects increasing proportionally to the duration of any exceedances of the noise thresholds.

For assessing the significance of effect, reference is made to the EPA 2022 Guidelines and specifically the DMRB which states:

> *"Construction noise shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:*
>
> *1) 10 or more days or nights in any 15 consecutive days or nights;*
>
> *2) A total number of days exceeding 40 in any 6 consecutive months"* (Highways England, 2020).

In summary, exceedance of the BS 5228 threshold is not a firm indication that significant effects will occur. Other factors, particularly duration of the noisiest activities and community attitude to the project, must be considered in determining the likelihood of significant effects due to noise and vibration.

12.2.5.2 Construction Traffic Noise

There is currently no Irish legislation that limits noise levels from construction traffic to a limit value. Hence, the impact of off-site traffic associated with the construction phase of the Proposed Development has been assessed with respect to the UK Highways Agency publication, Design Manual for Roads and Bridges LA111 – Noise and Vibration Revision 2, (Highways England, 2020). This document presents a classification of magnitude of noise impacts for corresponding noise level changes, details of which are presented in **Table** 12.5.

Table 12.5: Construction Traffic – Magnitude of Impact

Magnitude of Impact	Increase in Baseline Noise Level of Closest Public Road Used for Construction Traffic (dB)
Negligible	Less than 1.0
Minor	1.0 to 2.9
Moderate	3.0 to 4.9
Major	Greater than or equal to 5.0

12.2.5.2.1 Sensitivity

Sensitivity of NSLs is assessed in line with **Table 12.2**.

12.2.5.2.2 Magnitude

Magnitudes of impacts are assessed in line with the change in noise levels stated in **Table** 12.5. Predictions of construction traffic noise levels are limited to the change in noise level at nearest NSLs on the basis that more distant NSLs will have lower noise levels due to increased distance attenuation. This approach aligns with best practice.

12.2.5.2.3 Significance of Effects

Table 12.6 presents the construction traffic noise initial significance rating of effects. The table provides an initial indication of the significance of effect which is then modified based upon the duration and frequency of the construction activity and other relevant modifiers.

Table 12.6: Construction Traffic – Initial Significance Rating of Effects

Noise Level Increase (dB)	DMRB Magnitude	EPA Magnitude of Impact	Significance Rating	Modifier
Less than 1.0	Negligible	Negligible	Imperceptible / Not Significant	Depends on baseline noise levels, duration, and frequency.
1.0 to 2.9	Minor	Low	Slight / Moderate	
3.0 to 4.9	Moderate	Medium	Moderate / Significant	
Greater than or equal to 5.0	Major	High	Significant / Very Significant	
			Very Significant / Profound	

In general, significant effects are not expected where the changes in traffic noise levels are greater than 5 dB for a period of only two or three days, with the likelihood of significant effects increasing proportionally to the duration of any exceedances of the noise thresholds.

For assessing the significance of effect, reference is made to the EPA 2022 Guidelines (EPA, 2022) and specifically the DMRB which states:

> *"Construction noise shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:*
>
> *1) 10 or more days or nights in any 15 consecutive days or nights;*
>
> *2) A total number of days exceeding 40 in any 6 consecutive months"* (Highways England, 2020).

In summary, exceedance of the certain level changes is not a firm indication that significant effects will occur. Other factors, particularly duration of the increased traffic noise levels and community attitude to the project, must be considered in determining the likelihood of significant effects due to noise and vibration.

12.2.5.3 Construction Vibration

There is no statutory Irish guidance relating to the maximum permissible vibration level that may be generated during the construction phase of a project. In the absence of specific vibration limits, appropriate vibration emission criteria relating to permissible construction vibration levels for a development of this scale may be found in BS 5228 (BSI, 2009).

Human beings are known to be sensitive to vibration, the threshold of perception being typically in the Peak Particle Velocity (PPV) range of 0.14 mm/s to 0.3 mm/s. Vibrations above these values can disturb, startle, cause annoyance or interfere with work activities. At higher PPV levels (>15 mm/s), vibrations can lead to concerns about possible (not probable) structural damage. Guidance regarding effects of vibration levels on humans is set out in **Table 12.7**.

Table 12.7: Guidance on Human Perception of Vibration Levels (BSI, 2009)

Vibration Level	Effect
0.14 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3 m/s	Vibration might be just perceptible in residential environments.

Vibration Level	Effect
1.0 mm/s	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.
10 mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

Limits of transient vibration, above which cosmetic damage to property could occur, are presented numerically in **Table 12.8** (BSI, 2009). Where the dynamic loading caused by continuous vibration is such as to give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values in **Table 12.8** may need to be reduced by up to 50%. On a cautious basis, therefore, continuous vibration limits are set as 50% of those for transient vibration except for structurally unsound buildings where a PPV of 2.5 mm/s for all frequencies is used in line with guidance in (DIN, 2016). Minor damage is possible at vibration magnitudes which are greater than twice those given in **Table 12.8** and major damage to a building structure can occur at values greater than four times the tabulated values.

Table 12.8: Transient Vibration Guide Values for Cosmetic Damage (BSI, 2009), (DIN, 2016)

Type of Building	Peak Particle Velocity (PPV) (mm/s) in Frequency Range of Predominant Pulse	
	4 Hz to 15 Hz	15 Hz and Above
Reinforced or framed structures. Industrial and heavy commercial buildings.	50 mm/s at 4 Hz and above	50 mm/s at 4 Hz and above
Unreinforced or light framed structures. Residential or light commercial buildings.	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above
Guideline limit values for premises with machinery that is highly sensitive to vibration or historic buildings that may be in poor repair.	7 mm/s at 4 Hz increasing to 10 mm/s at 15 Hz	10 mm/s at 15 Hz increasing to 25 mm/s at 40 Hz and above
Limit values for historic buildings that have been assessed on a case-by-case basis to be structurally unsound.	3 mm/s*	8 mm/s at 50 Hz Increasing to 10 mm/s at 100 Hz and above*

* Transient vibration. For buildings known to be structurally unsound there is also a limit of 2.5 mm/s for continuous vibration at all frequencies.

12.2.5.3.1 Sensitivity

Sensitivity of NSLs is assessed in line with **Table 12.2**.

12.2.5.3.2 Magnitude

Magnitudes of impacts are assessed in line with the guidance stated in **Table 12.7** and **Table 12.8**. The impact magnitude levels are stated in **Table 12.9**. Predictions of vibration levels are limited to the nearest NSLs on the basis that more distant NSLs will have lower vibration levels due to increased distance attenuation. This approach aligns with best practice.

12.2.5.3.3 Significance of Effects

Guidance has been listed in **Table 12.7** and **Table 12.8** on effects of vibration levels on humans and limits of transient vibration above which cosmetic damage could occur. For assessing the significance of effect, reference is made to the EPA 2022 Guidelines and specifically the DMRB which states:

> *"Construction vibration shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:*
>
> *1) 10 or more days or nights in any 15 consecutive days or nights;*
>
> *2) A total number of days exceeding 40 in any 6 consecutive months"* (Highways England, 2020).

Table 12.9 presents the construction vibration significance rating.

Table 12.9: Construction Vibration – Initial Significance Rating of Effects

Vibration Level	EPA Initial Magnitude of Impact	Initial Significance Rating	Modifiers
Less than 0.3 mm/s	Negligible	Imperceptible / Not Significant	Modifiers are factors that can change the magnitude of impact or significance rating. These include: • Duration • Frequency and likelihood of occurrence • Public attitudes to, and acceptability of, the project itself.
Greater than or equal to 0.3 mm/s and less than 1.0 mm/s	Low	Slight / Moderate	
Greater than or equal to 1.0 mm/s and less than 10 mm/s	Medium	Moderate / Significant	
Greater than or equal to 10 mm/s	High	Very Significant / Profound	

12.2.6 Operational Noise

A development of this nature will include a range of electrical plant. BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound provides a method of assessing the impact of a source of industrial or commercial sound (BSI, 2014). BS 4142 uses a 'rating level', which is based on a comparison between the sound which is being assessed and the background sound which would exist without it. The rating level is then modified by any corrections for the character of the sound, be that tonal, impulsive, or intermittent.

BS 4142 states that "The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound levels and the context in which the sound occurs." BS 4142 goes on to state:

- Typically, the greater the difference between the specific sound and background sound level, the greater the magnitude of the impact;
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5 dB is likely to be an indication of an adverse impact depending on the context; and
- The lower the rating level is, relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background

sound level, this is an indication of the specific sound having a low impact, depending on the context.

In addition to the BS 4142 requirements, the Proposed Development must also fulfil the operational noise requirements for high voltage substations specified in EirGrid Document Reference: XDS-GFS-00-001-R4 Functional Specification 110/220/400 kV Substation General Requirements, section 5.1.1.2 Neighbourhood Noise of which is reproduced below:

"Notwithstanding any local planning limits, the following ESB neighbourhood noise level limits shall apply at the property boundary or nearest inhabited dwelling:*

- Day time (08:00 - 22:00 all days) 55 dB(A) L_{ArT}
- Night time (22:00 - 08:00 all days) 45 dB(A) L_{Aeq}

No high-frequency pure tone components shall be produced from the plant operating in any mode during night-time hours. If a tonal noise is produced during day-time or evening hours then a 5 dB penalty shall apply to the noise contribution from the plant.

All neighbourhood sound measurements shall be carried out in accordance with ISO 1996: Acoustics – Description, Measurement and Assessment of Environmental noise."

12.2.6.1.1 Sensitivity

Sensitivity of NSLs is assessed in line with **Table 12.2**.

12.2.6.1.2 Magnitude

The greater the difference between the specific sound and background sound level, the greater the magnitude of the impact.

12.2.6.1.3 Significance of Effects

BS 4142 criteria has been used for the assessment of likely significant effects. **Table 12.10** presents the operational noise initial significance rating of effects. The table provides an initial indication of the significance of effect which is then modified based upon the duration and frequency of the activity and other relevant modifiers.

Table 12.10: Operational Noise – Initial Significance Rating of Effects

Noise Level	BS 4142 Rating	EPA Magnitude of Impact	Initial Significance Rating	Modifiers
Less than background	Low Impact	Negligible	Not Significant	Depends on the absolute level, acoustic context, difference in noise level and likely perception of change by residents, duration, and frequency.
Less than 1.0	–			
1.0 to 2.9		Low	Slight / Moderate	
3.0 to 4.9		Low/Medium	Moderate / Significant	
5.0 to 9.9	Adverse Impact	Medium	Significant / Very Significant	
Greater than or equal to 10.0	Significant Adverse Impact	High	Very Significant / Profound	

12.2.7 Operational Vibration

Operational vibration emissions will be limited to transformers and other plant items on site as well maintenance vehicles travelling to and from the site. As such, operational vibration effects and magnitudes would be negligible. Therefore, detailed assessment of operational vibration effects is scoped out of this assessment.

12.2.8 Data Limitations

There were no difficulties or limitations encountered when carrying out this assessment.

12.3 Description of the Receiving Environment

12.3.1 Baseline Environment

The Proposed Development is located on East Wall Road (R131) which runs along its south-western boundary. The site is bounded to the north by the M50 and to the east by a car park. Dublin Port is located further to east, while Eastpoint Business Park is situated north-west of the site, across the Dublin Tunnel Toll. The East Wall Road is a busy road which qualifies for END Road Traffic Noise Mapping.

There are a large number of residential receptors located to the west and south-west in residential estates along and off East Wall Road. St. Joseph's Co-educational Primary School is located to the south, along with commercial receptors. To the north and east, the environment is primarily commercial in nature.

12.3.2 Baseline Noise Survey

In order to characterise the existing soundscape in the vicinity of the Proposed Development, a baseline noise survey was undertaken. An attended noise survey at two noise monitoring locations (labelled S1 and S2) adjacent to the site were chosen as being representative of prevailing baseline noise levels at the nearest NSLs. Measurements were undertaken on the 12th (daytime and night-time) and 13th (night-time) of March 2025.

An unattended noise monitoring station was also installed within the site boundary at a height of 4 m[24] above ground level in close proximity to the East Wall Road (labelled NML1). This recorded noise levels (15-minute periods) continuously for a total of eight days from 12th to 20th March 2025.

All measurements were undertaken in accordance with ISO 1996-2:2017 (ISO, 2017).

12.3.2.1 Measurement Locations

The Irish Traverse Mercator (ITM) coordinates of each monitoring location and a brief description are presented below in **Table 12.11**. Photographs taken at each location are provided in **Appendix D**. A map of the baseline noise survey measurement locations is presented in **Figure 12.1**.

[24] A height of 4 m was selected to represent the upper floors occupied at night and to minimise attenuation effects from boundary walls and ensure direct line of sight to road traffic noise sources.

Table 12.11: Baseline Noise Survey Measurement Locations

Location	ITM Coordinates		Description	Survey Type
	Easting	Northing		
NML1	717879	735347	Brownfield area within the Proposed Development boundary c. 8 m from East Wall Road.	Unattended
S1	717784	735406	At terraced houses along East Wall Road opposite the existing access point to the site.	Attended
S2	717925	735275	Outside St. Joseph's Co-Ed Primary School on East Wall Road.	Attended

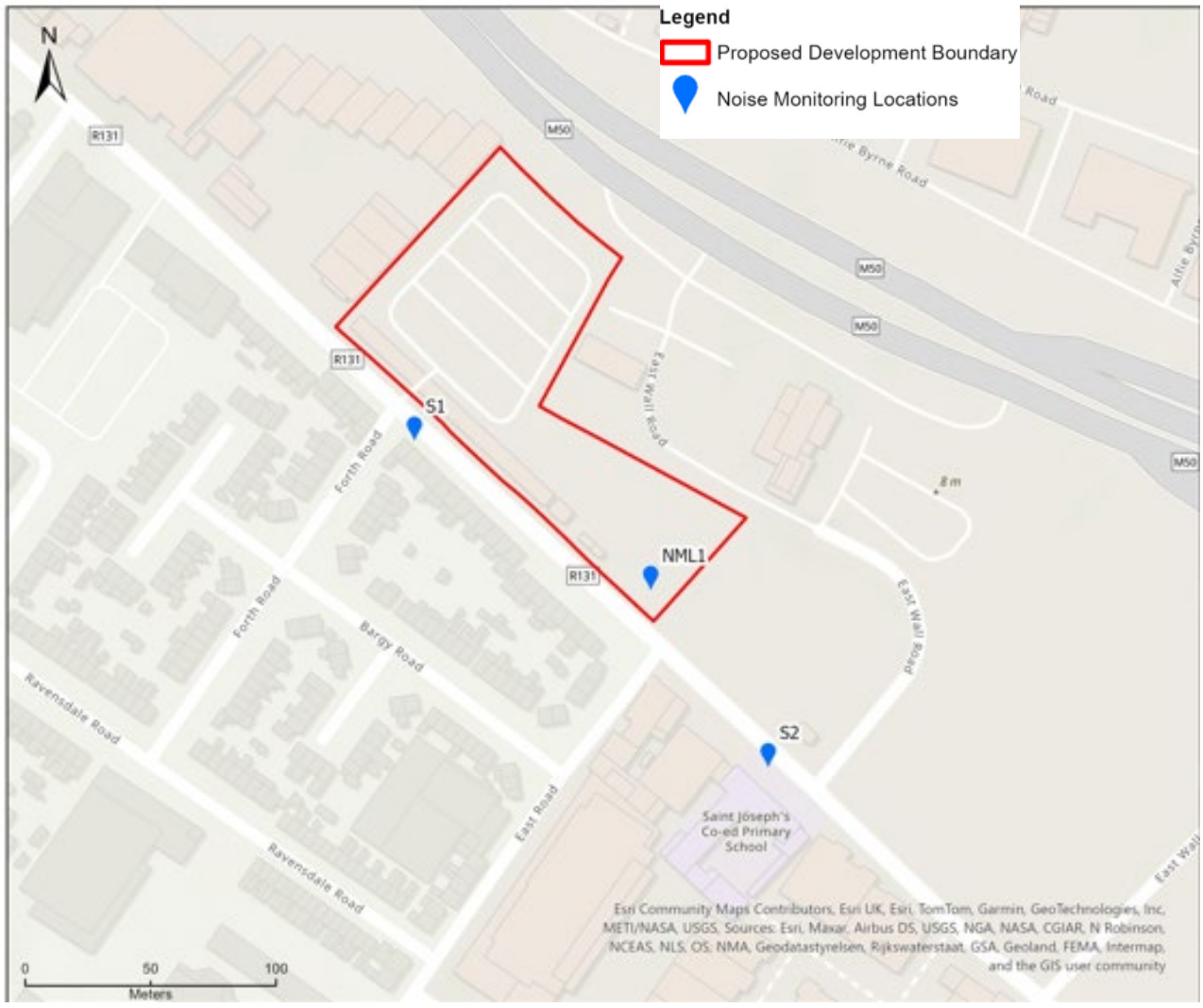


Figure 12.1: Map of the Baseline Noise Monitoring Locations

12.3.2.2 Instrumentation

Class 1 sound level meters in accordance with IEC 61672-1:2013 were used for all measurements. **Table 12.12** summarises the measurement equipment used.

Table 12.12: Measurement Equipment

Description	Manufacturer	Model	Serial Number
Noise Monitoring Station	Svantek	SV307A	119015
Sound Level Meter	Brüel & Kjær	2250	2690265
Acoustic Calibrator	Brüel & Kjær	4231	2389038

All equipment has calibration certificates traceable back to the relevant standard. A calibration check of the sound level meter was conducted prior to and following each survey period using an external acoustic calibrator. A calibration check of the noise monitoring station was conducted prior to and following the eight day monitoring period. A maximum calibration drift of 0.06 dB was observed which is below the 0.5 dB permitted drift for valid measurements as specified by ISO 1996-2:2017 (ISO, 2017). Equipment calibration certificates are provided in **Appendix C**.

12.3.2.3 Meteorological Conditions

During the daytime survey period, the weather was generally mild and dry with temperatures ranging from 7 to 9 °C. Average wind speeds (north westerlies) were less than 2 m/s at both survey locations, with moderately frequent gusts observed. Cloud cover ranged from approximately 30 to 50%. Temperatures reduced to 3 °C during the night-time survey period and average wind speeds (north westerlies) were less than 1.5 m/s. Cloud cover throughout the night-time survey period was approximately 100%.

12.3.2.4 Measurement Procedure

During the unattended baseline noise survey, a noise monitoring station was installed within the site boundary at a height of 4 m[24] above ground level approximately 8 m from East Wall Road. This recorded noise levels continuously for a total of eight days.

The attended baseline noise survey at the two attended noise monitoring locations consisted of:

- Three 30-minute measurements during the daytime, and
- Three 15-minute measurements during the night-time.

Due to spatial constraints, it was not possible to take free-field measurements at the two attended noise monitoring locations. All measurements at location S1 were taken 1 m from the façade of the adjacent terraced houses. Similarly, all measurements at location S2 were taken 1 m from the 1.3 m high boundary wall of St. Joseph's Co-Ed Primary School. The baseline noise survey results have been conservatively corrected by applying a -3 dB façade correction.

12.3.2.5 Baseline Noise Survey Results

Table 12.13 summarises the attended baseline noise survey results and observations.

Table 12.13: Attended Baseline Noise Survey Results

Period	NML ID	Start Date/Time	Duration	Noise Level (dB)*			Notes
				L_{Aeq}	L_{AFMax}	L_{AF90}	
Daytime	S1	12/03/2025 10:57	30:00	67	89	55	Local road traffic noise (RTN) dominant and continuous. Other noise sources: distant RTN, occasional distant aircraft noise, local activity and vehicles turning into/out of Forth Road.
		12/03/2025 12:08	30:00	66	84	56	
		12/03/2025 13:17	30:00	68	87	56	

Period	NML ID	Start Date/Time	Duration	Noise Level (dB)*			Notes
				L_{Aeq}	L_{AFMax}	L_{AF90}	
	S2	12/03/2025 11:34	30:00	65	81	56	Local RTN dominant and continuous. Other noise sources: distant RTN, occasional distant aircraft noise, local activity, light vegetation rustle and intermittent distant impulsive industrial noise.
		12/03/2025 12:42	30:00	66	83	56	
		12/03/2025 13:53	30:00	65	83	56	
Night-time	S1	12/03/2025 23:06	15:00	66	81	55	Same location as daytime survey. Local RTN dominant. As the survey progressed, traffic volumes reduced and average speeds of passing vehicles increased. Other noise sources: distant RTN, local activity and vehicles turning into/out of Forth Road.
		12/03/2025 23:44	15:00	66	80	56	
		13/03/2025 00:21	15:00	68	89	51	
	S2	12/03/2025 23:25	15:00	66	83	49	Same location as daytime survey. Local RTN dominant. As the survey progressed, traffic volumes reduced and average speeds of passing vehicles increased.
		13/03/2025 00:02	15:00	66	86	42	
		13/03/2025 00:40	15:00	63	84	40	

* Corrected for 1 m distance to reflecting structures.

12.3.2.5.1 Unattended Survey Results

A time history of the L_{Aeq} and L_{A90} noise levels at monitoring location NML1 is presented in **Appendix E**. **Table 12.14** presents a summary of the noise monitoring results (15 mins - duration of logged measurements).

Table 12.14: Unattended Baseline Noise Survey Results

Period	Noise Level (dB)				Notes
	L_{Aeq}	L_{Aeq} (Modal value)	L_{AFMax}	L_{AF90}	
Daytime	59 – 75	65	70 – 104	46 – 61	Local road traffic noise (RTN) dominant and continuous. Other noise sources: distant RTN, occasional distant aircraft noise, local activity and distant industrial noise.
Evening	57 – 73	62	70 – 103	47 – 58	
Night-time	52 – 88	59	68 – 106	39 – 61	

12.3.2.6 BS 5228 Noise Thresholds

There was good correlation between the attended and unattended measurements. Therefore, noise data from the unattended monitoring location (NML 1) was analysed. The modal value of the measured ambient (L_{Aeq}) noise levels for each period have been used determine the threshold of potential significant effect, in keeping with the requirement set out in BS 5228.

The daytime noise levels indicate that the appropriate category for determining the potential significant effects is Category B (i.e. 70 dB L_{Aeq} during daytime periods) for residential receptors, Category C (i.e. 65 dB L_{Aeq}) during evening periods and a total noise level of 62 dB L_{Aeq} at night (Refer to **Table 12.3**). Non-residential buildings in proximity to the proposed development are less sensitive to noise but for the purpose of this assessment, the same BS 5228 categories were used.

12.4 Description of the Likely Significant Effects

12.4.1 Construction Phase Noise

Short-term increases in noise levels will occur during the construction phase of the Proposed Development due to the requirement to use heavy plant and machinery. There is generally a higher tolerance for short-term construction-related noise than that which causes annoyance over the long-term. This is reflected in the construction noise guidelines outlined in **Section 12.2.5.1**.

A detailed description of the proposed construction works and proposed construction working hours is presented in **Chapter 4** of this PECR. **Table 12.15** summarises the key construction phases and associated activities that are relevant to the noise and vibration assessment.

Table 12.15: Construction Phases and Activities Relevant to the Noise and Vibration Assessment

Construction Phase	Activity	Estimated Duration
Site Preparation	• Ground investigations • Demolitions • Site clearance • Establishment of site compound • Drainage works • Earthworks	6 months
Substation Civil Works	• Construction of hardstanding areas • Concrete pours • General works (including construction of buildings) • Paving and surfacing works • Landscaping and fencing works	18 months
Substation Electrical Works	• Installation of transformers • HDD crossing for Grid Connection (not part of the subject planning application)	6 months

Construction noise predictions for each activity have been undertaken at all NSLs in the noise and vibration study area using a three-dimensional model. iNoise noise modelling software, which meets the ISO/TR 17534-3:2015 quality assurance standards, was used to create this model. The methodology for calculating outdoor noise attenuation used by iNoise is the international standard ISO 9613-2:2024. **Table 12.16** provides a summary of the construction noise model inputs.

Table 12.16: Summary of Construction Noise Model Inputs

Item	Input
Noise Sources	BS 5228-1:2009+A1:2014 Code of Practice of Noise and Vibration Control on Construction and Open Sites. Part 1: Noise. Data from manufacturers' datasheets. File measurements. Information provided by design team.
	Traffic flows (as outlined in Chapter 6: Traffic and Transportation).
Noise Receptors	GeoDirectory Data Q2 2025

Item	Input
	Receiver Heights of 1.5 and 4 m (except for multi-storey buildings, where an additional height of 6.5 m was assessed).
Model Parameters	Relative Humidity 70% (ISO 9613).
	Temperature 10°C (ISO 9613).
	Given the urban setting of the Proposed Development and surrounding area, a ground absorption of 0 (acoustically hard surface) was modelled.
	Site LIDAR data and open topographic LIDAR data
	ISO 9613-2 downwind propagation noise model.

Noise levels have been assessed over the daytime period (07:00 to 19:00 hrs), in accordance with the proposed construction working hours outlined in **Section 4.2.7** of **Chapter 4: Description of the Proposed Development**. For ease of reference, predicted noise levels for the NSLs described in the following sections are presented in **Figure 12.2** below.

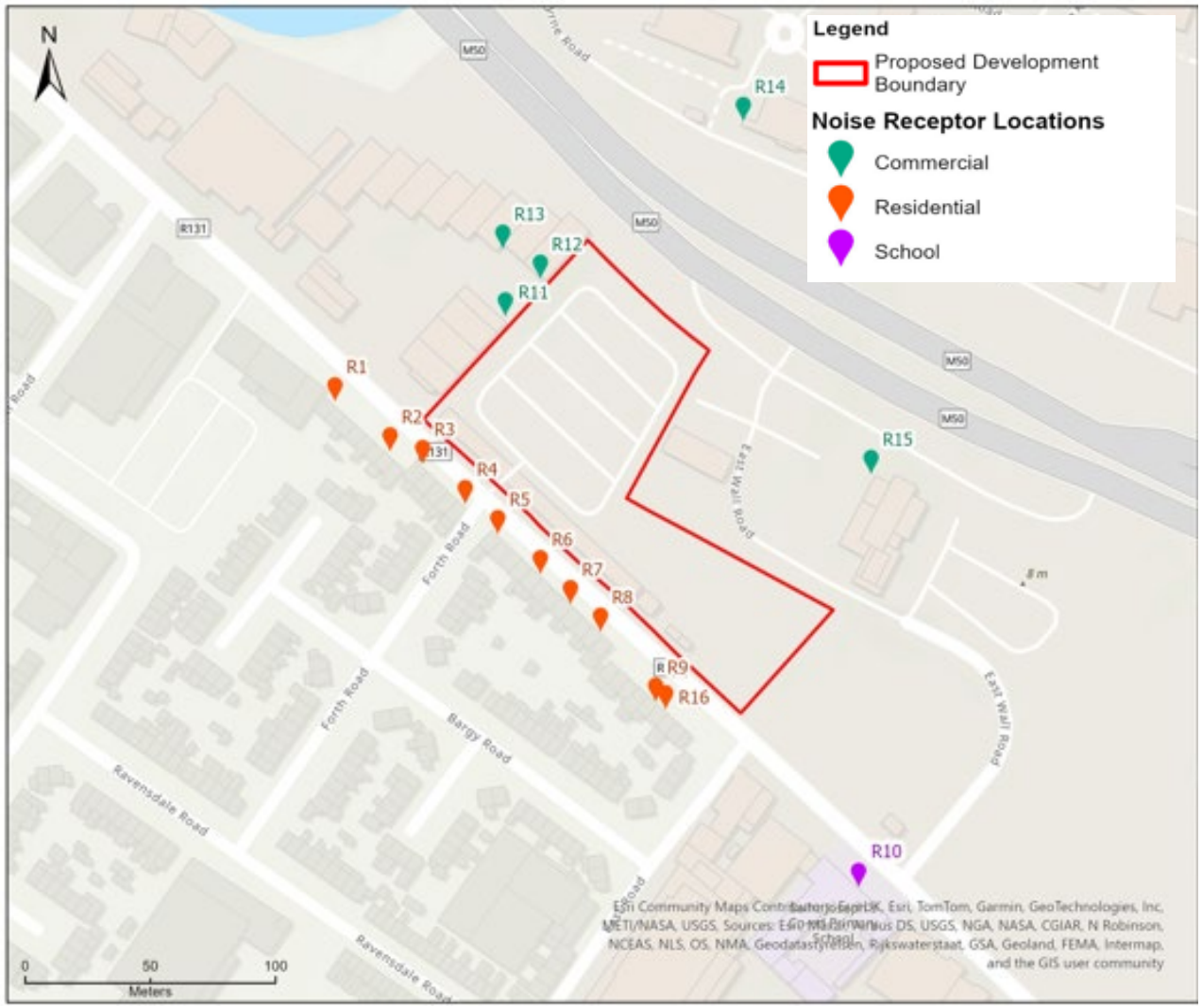


Figure 12.2: NSLs Referenced in the Construction and Operational Noise Assessments

12.4.1.1 Assumed Mitigation Measures

A 3.6 m site hoarding will be installed along the boundary of the site bordering the East Wall Road, which will screen construction activities from the majority of NSLs. This is applicable to all

construction activities with the exception of the ground investigations and demolitions activities, due to their likely timing within the construction programme. However, the existing wall and open-fronted shed structures will act as an effective barrier for the ground investigations activity.

As this hoarding will be present for all other works, it has been included throughout the modelling process for these activities as an assumed mitigation measure.

12.4.1.2 Site Preparation Phase

This phase of works is anticipated to last six months and will comprise the following activities:

- Ground Investigations
- Site Clearance
- Demolitions
- Establishment of Site Compound
- Drainage Works
- Earthworks

12.4.1.2.1 Ground Investigations

Intrusive ground investigations will be required to advance the design for construction and to provide confirmation of existing ground conditions. Works associated with the ground investigation activity include hand dug inspection pits, boreholes, trial pits, slit trenches and materials sampling and testing. **Table 12.17** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.17: Plant for Ground Investigations

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Cable Percussion Drilling Rig	C.2.43	Ground investigation drilling	1	20%	102
Mini Piling Rig	C.3.18	Rotary bored piling – cast In situ	1	20%	103
Dynamic Probing	Data from Field Measurement	Dynamic probing	1	20%	104

Predicted noise levels for the ground investigations activity at the nearest NSLs are presented in **Table 12.18**.

Table 12.18: Predicted Noise Levels for Ground Investigations at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R7	31	56	Negligible
R8	28	57	Negligible

At all modelled NSLs, predicted noise levels generated by the ground investigations activity are below the BS 5228 70 dB L_{Aeq} noise threshold and the measured daytime baseline noise levels. The magnitude of impact is negligible, and the significance of effect is deemed to be **not significant**.

12.4.1.2.2 Site Clearance

It is intended that the site preparation phase will include for a full site clearance of vegetation within the lands required for construction of the Proposed Development. **Table 12.19** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.19: Plant for Site Clearance

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Chainsaw	Manufacturer's Datasheet	Stihl MS461 Chainsaw	1	20%	117
Woodchipper	Manufacturer's Datasheet	QuadTrak 160	1	60%	116
Dozer *	C.2.1	Clearing Site	1	50%	103
Tracked excavator	C.2.3	Clearing Site	1	70%	106
Dumper*	C.4.6	Distribution of Materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for the site clearance activity at the nearest NSLs are presented in **Table 12.20**.

Table 12.20: Predicted Noise Levels for Site Clearance at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R4	17	73	Medium
R5	17	72	Medium
R16	30	72	Medium

Noise levels generated by the site clearance activity are predicted to exceed the BS 5228 70 dB L_{Aeq} noise threshold at several NSLs in close proximity to the works. The noisiest items of plant are related to the vegetation removal and processing. When the chainsaw and woodchipper are not operating, predicted noise levels are approximately 8 dB lower, which would result in no predicted exceedances of the BS 5228 noise threshold.

Due to the extent of the vegetation within the site boundary, it is likely the vegetation removal and processing plant will be used for short durations (anticipated to be less than a week), further reducing its impact.

Taking this into account, the magnitude of impact for the site clearance activity is medium, indicating a **moderate** significance of effect. Mitigation measures for the site clearance activity are outlined in **Section 12.5.1**.

12.4.1.2.3 Demolitions

As part of the Proposed Development, all obstructions within the site boundary will be demolished. The primary works involved in this activity will be the demolition of the existing lean-to-sheds along the south-western boundary of the site and the walls which run parallel to the East Wall Road. Other minor works will include the removal of existing palisade fencing within the site. **Table 12.21** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.21: Plant for Demolitions

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Wheeled Excavator	C.5.11	Removing broken road surface	1	50%	101
Pulverizer Mounted on Excavator	C.1.5	Breaking up concrete	1	80%	100
Backhoe Mounted Hydraulic Breaker	C.5.1	Breaking road surface	1	20%	116
Dumper*	C.4.6	Distribution of Materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for the demolition's activity at the nearest NSLs are presented in **Table 12.22**.

Table 12.22: Predicted Noise Levels for Demolitions at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R5	17	75	Medium
R11	12	74	Medium

Noise levels generated by the demolition's activity are predicted to exceed the BS 5228 70 dB L_{Aeq} noise threshold at several NSLs in close proximity to the works. The noisiest item of plant is the backhoe mounted hydraulic breaker. When the breaker is not operating, predicted noise levels are approximately 8 dB lower, which would result in no predicted exceedances of the BS 5228 noise threshold.

In reality, the breaker is likely to be used intermittently, which will lead to short periods of elevated levels at the nearest NSLs to the works. Furthermore, the extent of the structures to be demolished in order to facilitate the construction of the Proposed Development is relatively small. As stated previously, the primary works involved in this activity will be the demolition of the existing lean-to-sheds along the site boundary. While the site preparation phase in its entirety is anticipated to last six months, works associated with the demolitions activity are expected to have a much shorter duration.

Taking into account the expected short duration of the demolitions activity and the likely intermittent nature of the breaker usage, the magnitude of impact for the site clearance activity is medium, indicating a **moderate** significance of effect. Mitigation measures for the demolitions activity are outlined in **Section 12.5.1**.

12.4.1.2.4 Establishment of Site Compound Facilities

While the entirety of the Proposed Development is effectively enclosed in a compound area, there will be additional facilities installed adjacent to the site access point such as a wheel wash station and office and welfare facilities. The establishment of these facilities is captured in this section. **Table 12.23** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.23: Plant for Site Compound

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked excavator	C.2.5	Clearing Site	1	80%	104
Vibratory roller	C.5.28	Rolling and compaction	1	10%	105
Dump truck (tipping fill)	C.2.30	Distribution of material	1	20%	107
Lorry with lifting boom	C.4.53	Lifting	1	20%	105
Dumper*	C.4.6	Distribution of Materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for the establishment of the site compound facilities at the nearest NSLs are presented in **Table 12.24**.

Table 12.24: Predicted Noise Levels for Site Compound at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R5	17	64	Negligible
R6	17	63	Negligible

At all modelled NSLs, predicted noise levels generated by the establishment of the site compound facilities are below the BS 5228 70 dB L_{Aeq} noise threshold and the measured daytime baseline noise levels. The magnitude of impact is negligible and the significance of effect is deemed to be **not significant**.

12.4.1.2.5 Drainage Works

A new storm water drainage system is proposed to effectively manage runoff from hardstanding areas, building roofs, internal access roads and landscaped surfaces within the substation compound. Collected runoff will pass through an oil/petrol interceptor to remove hydrocarbons and other potential contaminants before entering an attenuation unit designed to regulate flow. The attenuated discharge will then leave the site via a controlled outfall and connect to the public surface water drainage system.

Table 12.25 presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.25: Plant for Drainage Works

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Mini tracked excavator	C.4.67	Trenching	1	70%	102
Vibratory plate (petrol)	C.2.41	Rolling and compaction	1	50%	108
Dumper*	C.4.6	Distribution of materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for the drainage works at the nearest NSLs are presented in **Table 12.26**.

Table 12.26: Predicted Noise Levels for Drainage Works at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Façade Noise Level	Initial Magnitude of Impact
R4	17	64	Negligible
R5	17	63	Negligible

At all modelled NSLs, predicted noise levels generated by the drainage works are below the BS 5228 70 dB L_{Aeq} noise threshold and the measured daytime baseline noise levels. The magnitude of impact is negligible, and the significance of effect is deemed to be **not significant**.

12.4.1.2.6 Earthworks

Earthworks will be required throughout the footprint of the Proposed Development in order to prepare the site for the construction of hardstanding areas, buildings and drainage components. **Table 12.27** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.27: Plant for Earthworks

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked excavator	C.4.65	Trenching	1	70%	99
Vibratory roller	C.5.25	Rolling and compaction	1	50%	103
Dumper*	C.4.6	Distribution of materials	2	50%	107
Water bowsers (discharging)	C.6.37	Water bowser	1	10%	109
Dozer *	C.2.1	Clearing site	1	50%	103
Road lorry (full)*	C.6.21	Haulage	1	Two loads per hour	108

* Drive-by maximum sound level.

Predicted noise levels for the earthwork's activity at the nearest NSLs are presented in **Table 12.28**.

Table 12.28: Predicted Noise Levels for Earthworks at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R4	17	67	Low
R5	17	65	Negligible

At all modelled NSLs, predicted noise levels generated by the earthwork's activity are below the BS 5228 70 dB L_{Aeq} noise threshold. At the majority of modelled NSLs, predicted noise levels are also below the measured daytime baseline noise levels. The magnitude of impact ranges from negligible to low and the significance of effect is deemed to be **not significant to slight** depending on location.

12.4.1.3 Substation Civil Works Phase

This phase of works is anticipated to last 18 months and will comprise the following activities:

- Construction of hardstanding areas
- Concrete pours

- General works
- Paving and surfacing
- Landscaping and fencing

12.4.1.3.1 Construction of Hardstanding Areas

Construction of hardstanding areas will be required to support the 220 kV and 110 kV substation buildings, transformers and crane platform. **Table 12.29** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.29: Plant for Construction of Hardstanding Areas

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked excavator	C.2.19	Ground excavation/earthworks	1	70%	105
Dump truck (tipping fill)	C.2.30	Distribution of material	1	10%	107
Crawler mounted rig (piling)	C.3.22	Continuous flight auger piling - cast in situ	1	70%	108
Dozer	C.5.12	Spreading chipping/fill	1	50%	105
Vibratory roller*	C.5.21	Rolling and compaction	1	50%	108

* Drive-by maximum sound level.

Predicted noise levels for the construction of hardstanding areas at the nearest NSLs are presented in **Table 12.30**.

Table 12.30: Predicted Noise Levels for Construction of Hardstanding Areas at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R6	23	68	Low
R11	12	69	Low
R12	11	70	Low

At all modelled NSLs, predicted noise levels generated by the construction of hardstanding areas are equal to or below the BS 5228 70 dB L_{Aeq} noise threshold. The magnitude of impact is low and the significance of effect is deemed to be **slight to moderate**, depending on location.

12.4.1.3.2 Concrete Pours

Concrete pours will be required for the foundations of the 220 kV and 110 kV GIS buildings and the transformers. **Table 12.31** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.31: Plant for Concrete Pours

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Concrete mixer truck	C.4.28	Pumping concrete	1	70%	103

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
(discharging) & concrete					
Telescopic handler	C.4.54	Lifting	1	50%	107
Poker vibrator	C.4.34	Concreting other	1	10%	97
Road lorry (full)*	C.6.21	Haulage	1	Two loads per hour	108

* Drive-by maximum sound level.

Predicted noise levels for concrete pours at the nearest NSLs are presented in **Table 12.32**.

Table 12.32: Predicted Noise Levels for Concrete Pours at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R11	12	64	Negligible
R12	11	65	Negligible
R15	27	60	Negligible

At all modelled NSLs, predicted noise levels generated by the concrete pours activity are below the BS 5228 70 dB L_{Aeq} noise threshold and equal to or below the measured daytime baseline noise levels. The magnitude of impact is negligible and the significance of effect is deemed to be **not significant**.

12.4.1.3.3 General Works

The general works activity encompasses the construction of the 220 kV and 110 kV GIS buildings and other miscellaneous construction activities required as part of constructing the Proposed Development. **Table 12.33** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.33: Plant for General Works

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Wheeled mobile crane	C.4.43	Lifting	1	60%	98
Telescopic handler	C.4.54	Lifting	1	50%	107
Angle grinder (grinding steel)	C.4.93	Miscellaneous	1	25%	108
Mini tracked excavator	C.4.67	Trenching	1	50%	102
Lifting platform	C.4.57	Lifting	2	70%	95
Diesel generator	C.4.78	Power for site cabins	1	80%	94
Dumper*	C.4.6	Distribution of materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for general works at the nearest NSLs are presented in **Table 12.34**.

Table 12.34: Predicted Noise Levels for General Works at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R11	12	66	Low
R12	11	66	Low
R15	27	61	Negligible

At all modelled NSLs, predicted noise levels generated by general works activities are below the BS 5228 70 dB L_{Aeq} noise threshold. The magnitude of impact is low and the significance of effect is deemed to be **slight**.

12.4.1.3.4 Paving and Surfacing

It is proposed that the majority of the areas surrounding the GIS buildings and transformers will be paved and surfaced **Table 12.35** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.35: Plant for Paving and Surfacing

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked excavator	C.5.35	Trenching	1	50%	102
Road roller*	C.5.19	Rolling and compaction	1	40%	108
Asphalt paver (+ tipper lorry)*	C.5.32	Paving	1	30%	112
Vibratory roller (not vibrating)*	C.5.23	Rolling and compaction	1	30%	111
Dumper*	C.4.6	Distribution of materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for paving and surfacing at the nearest NSLs are presented in **Table 12.36**.

Table 12.36: Predicted Noise Levels for Paving and Surfacing at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R5	13	68	Low
R6	14	67	Low

At all modelled NSLs, predicted noise levels generated by paving and surfacing activities are below the BS 5228 70 dB L_{Aeq} noise threshold. The magnitude of impact is low and the significance of effect is deemed to be **slight**.

12.4.1.3.5 Landscaping and Fencing

As part of the landscaping works, vegetation will be planted along the boundary of the Proposed Development adjacent to the East Wall Road and the site will be surrounded by palisade fencing. Furthermore, cladding of both GIS buildings will be undertaken. **Table 12.37** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.37: Plant for Landscaping and Fencing

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked excavator	C.5.35	Trenching	1	70%	102
Dump truck (tipping fill)	C.2.30	Distribution of material	1	20%	107
Lorry with lifting boom	C.4.53	Lifting	1	20%	105
Dumper*	C.4.6	Distribution of Materials	1	Two loads per hour	107

* Drive-by maximum sound level.

Predicted noise levels for landscaping and fencing at the nearest NSLs are presented in **Table 12.38**.

Table 12.38: Predicted Noise Levels for Landscaping at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R4	**17**	**63**	**Negligible**
R5	**17**	**62**	**Negligible**

At all modelled NSLs, predicted noise levels generated by the landscaping and fencing activity are below the BS 5228 70 dB L_{Aeq} noise threshold and the measured daytime baseline noise levels. The magnitude of impact is negligible and the significance of effect is deemed to be **not significant**.

12.4.1.4 Substation Electrical Works Phase

This phase of works is anticipated to last six months and will comprise the following activities:

- Installation of transformers
- HDD crossing for Grid Connection (not part of the subject planning application)

12.4.1.4.1 Installation of Transformers

The transformers will be delivered directly from Dublin Port to the site via a specially designed transport vehicle. Upon arrival, the transformers will likely be craned into position. **Table 12.39** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.39: Plant for Installation of Transformers

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Tracked mobile crane	C.4.50	Lifting	1	60%	99
Telescopic handler	C.4.54	Lifting	1	50%	107
Core drill (electric)	C.4.69	Core drilling concrete	1	30%	113
Angle grinder (grinding steel)	C.4.93	Miscellaneous	1	20%	108
Lifting platform	C.4.57	Lifting	2	50%	95
Diesel generator	C.4.78	Power for site cabins	1	80%	94

Predicted noise levels for the installation of transformers at the nearest NSLs are presented in **Table 12.40**.

Table 12.40: Predicted Noise Levels for the Installation of Transformers at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level	Initial Magnitude of Impact
R11	12	68	Low
R12	11	70	Low
R13	30	65	Low

At all modelled NSLs, predicted noise levels do not exceed the BS 5228 70 dB L_{Aeq} noise threshold. At the majority of modelled NSLs, predicted noise levels are also below noise threshold and the measured daytime baseline noise levels. There are three NSLs where predicted noise levels are not below the baseline noise levels, see NSLs presented in **Table 12.40**. However, all three of these NSLs are commercial receptors, whose operations are deemed not be particularly susceptible to noise. Therefore, the sensitivity of these NSLs is classified as medium. The closest NSL with a high sensitivity to noise is located approximately 71 m away from the installation of transformers activity and predicted noise levels are 53 dB, far below the measured daytime baseline noise levels.

Taking the above into account, the magnitude of impact for the installation of transformers activity is negligible and the significance of effect is deemed to be **not significant**.

12.4.1.5 Grid Connection (not part of the subject planning application)

Although not part of the current application, the trenchless crossing which will facilitate the grid connection has also been assessed in this chapter. The existing Belcamp – Shellybanks 220 kV circuit will tie-in to the Proposed Development. The proposed crossing methodology is horizontal directional drilling (HDD), which is a trenchless method of installing underground ducting, cables and service conduits. The methodology in relation to the HDD has been provided in **Section 4.2.10** of this PECR.

The HDD crossing is approximately 100 m in length and reaches a depth of 5.6 m below the M50 roadway. It is estimated that the HDD crossing would take one week to complete. **Table 12.41** presents the plant required, likely number of plant, duty cycle and the sound power levels modelled as part of this activity.

Table 12.41: Plant for HDD Crossing

Plant	BS 5228 Ref.	Description	No. of Plant Modelled	Duty Cycle / No. of Trips	L_{wA}
Loading sand to lorry	C.10.7	General wheeled loader operations	1	50%	105
Dump truck (tipping fill)	C.2.30	Distribution of material	1	10%	107
Vibratory plate (petrol)	C.2.41	Rolling and compaction	1	10%	108
Vibratory piling rig	C.3.8	Sheet steel piling - vibratory	1	40%	116
Directional drill (generator)	C.2.44	Directional drilling	1	80%	105

Predicted noise levels for the HDD crossing activity at the nearest NSLs are presented in **Table 12.42**.

Table 12.42: Predicted Noise Levels for the HDD Crossing at the Nearest NSLs

NSL ID	Distance to Activity (m)	Predicted Noise Level*	Initial Magnitude of Impact
R11	22	67	Low
R12	4	77	High
R13	23	68	Low

* - Noise levels when sheet piling (vibratory) is occurring

At all modelled NSLs except one, predicted noise levels are below the BS 5228 70 dB L_{Aeq} noise threshold. At the majority of modelled NSLs, predicted noise levels are also below the measured daytime baseline noise levels. At R12, predicted noise levels are 77 dB. The noisiest item of plant is the vibratory piling rig. When the rig is not operating, predicted noise levels are approximately 6 to 8 dB lower, depending on location. At the nearest NSL, R12, the reduction is 8 dB.

The vibratory piling rig is likely to be used for a short period (approximately 1 day) during the setup of the HDD rig, which will lead to short periods of elevated noise levels at the nearest NSL. Furthermore, NSL R12 is a commercial receptor, whose operations are deemed not to be particularly susceptible to noise. Therefore, the sensitivity of this NSL is classified as medium, as outlined in **Table 12.2**. The closest NSL with a high sensitivity to noise is located approximately 88 m away from the HDD crossing activity and predicted noise levels are 54 dB, far below the measured daytime baseline noise levels.

Taking the above into account, the magnitude of impact for the Grid Connection via HDD crossing activity is negligible to medium, indicating a **not significant to moderate** significance of effect, depending on location.

12.4.1.6 Construction Phase Traffic

Information on construction traffic is available in **Chapter 4: Description of the Proposed Development** and **Chapter 8: Traffic & Transport** of this PECR. To summarise, most of the additional traffic movements during the construction phase will primarily involve transportation of personnel, equipment, and materials. The intensity of traffic will vary over the course of the construction programme, with peak traffic volumes being during the substation civil works phase. The traffic volumes during the commissioning and energisation phases are expected to be minimal.

Traffic counts conducted in May 2025 on East Wall Road (R131) indicate an average two-way daily traffic volume of 14,977 passenger car units (PCUs) for weekdays with a percentage of HGVs of 6%. It is anticipated that during the peak of construction, around 150 weekday vehicle movements (100 Car + LGV and 50 HGV) would be required. This equates to a 1% increase in overall traffic volumes and a less 6% increase in HGV volumes. Given the low predicted impacts of construction traffic noise, the magnitude of impact for construction traffic is negligible, indicating a **not significant** significance of effect.

12.4.2 Construction Phase Vibration

Construction vibrations arise during rock-breaking and the use of heavy construction equipment close to sensitive properties. Construction vibrations propagate through the ground to a receiver by means of surface and, to a lesser extent, by shear and compressional waves. The amplitude of the waves decreases rapidly with distance from the source. This attenuation is due to geometrical spreading and energy losses within the ground (material damping).

Construction-related vibration is only significant close to the source as it attenuates rapidly. BS 5228-2 includes 174 datasets of ground borne vibration measurements (BSI, 2009). Of the extensive data collated in BS 5228-2, only one set was measured over 100 m from the source, with the vast majority of measurements taken within 50 m, thus indicating the limited scale of impact for

construction vibrations. Consideration of potential vibration impacts has therefore been limited to properties within 50 m of the site.

Wiss presents a methodology and typical values for vibrations due to construction activities (Wiss, 1981). Geometric spreading means that vibration levels decrease exponentially as the distance from the source increases. The exponent value lies between 1.0 and 2.0 and Wiss suggests a relatively common value of 1.5. Construction activities with the potential to result in vibration impacts as part of the Proposed Development include rock-breaking, compaction, vibratory piling, bored piling and continuous flight auger piling. **Table 12.43** shows typical vibration source levels relevant to the Proposed Development at 7.6 m.

Table 12.43: Vibration Source Levels for Construction Equipment

Equipment	PPV at 7.6 m (mm/s)
Bored Piling*	0.5
Vibratory Roller	5.3
Large Rock-Breaker	2.3
Jackhammer	0.9

* BS 5228 provides data indicating that the PPV level associated with a 600 mm diameter bored pile was 0.54 mm/s at 5 m.

Using a conservative approach, where losses due to material damping are ignored, vibration levels can be estimated at a distance using the following formula, where *D* = distance from the source to the NSL in metres:

$$PPV_{NSL} = PPV_{Source} \times \left[\frac{7.6}{D}\right]^{1.5}$$

As outlined in **Section 12.2.5.3**, construction vibrations need to be assessed for property damage and the impact on humans. The usual criteria applied for construction vibration effects on buildings from projects such as the Proposed Development are those published in BS 5228-2 and shown in **Section 12.2.5.3** (BSI, 2009).

Given the distance between plant items and NSLs, construction vibration levels from the majority of activities arising from the Proposed Development are below the BS 5228 criteria. However, construction works as part of activities such as paving and surfacing and earthworks will occur at short distances to NSLs for brief amounts of time. Plant such as the rock-breaker, vibratory roller and road roller have the greatest potential to generate vibration at NSLs. Predicted vibration levels at the nearest NSL are provided in **Table 12.44**.

Table 12.44: Predicted Vibration Levels at the Nearest NSL

Vibration Source	Predicted PPV (mm/s) at the Nearest NSL
Mini piling rig	0.3
Backhoe mounted hydraulic breaker	0.7
Vibratory roller	1.6
Crawler mounted rig (piling)	0.5
Road roller	2.4
Vibratory piling rig	0.3
Tracked drilling rig with hydraulic drifter (piling)	0.1

Vibration levels are predicted to be 1.6 mm/s for the vibratory roller, and 2.4 mm/s for the road roller. The magnitude of impact for these activities is predicted to be medium and, given the likely limited duration, the significance of effect is **moderate**. Vibration of this level in residential environments will require prior warning to residents within 50 m of the proposed works area. No

adverse structural impacts to any properties are anticipated as a result of these works. To put the vibration levels presented in **Table 12.44** in context, some examples of PPV levels in a modern masonry dwelling house are presented in **Table 12.45**.

Table 12.45: Typical Vibration Levels in a Modern Residence (Transport Research Laboratory, 1986)

Vibration Source	Resultant PPV (mm/s)
Normal footfalls	0.05 – 0.5
Foot stamping	0.3 – 3.0
Door slams	11 – 17
Percussive drilling	10 – 20

12.4.3 Operational Phase Noise

Following the construction phase, the operation and maintenance of the proposed development will be managed by ESBN. Once commissioned, the substation will operate 24-hours per day, seven days a week, 365 days a year.

Three no. transformers are required to step down electrical power from 220 kV to 110 kV and these are the main sources of noise during the operation of the proposed development.

The noise levels at the nearest NSLs were predicted using a three-dimensional model using iNoise noise modelling software. The method for calculating outdoor noise attenuation used by the iNoise software is based on the international standards ISO 9613-2:2024 – Attenuation of sound during propagation outdoors - Part 2: General method of calculation. **Table 12.46** provides a summary of the operational noise model inputs.

Table 12.46: Summary of Operational Noise Model Inputs

Item	Input
Noise Source	Data from manufacturers' datasheets. File measurements.
Noise Sensitive Locations	GeoDirectory Data Q2 2025
	Receiver Heights of 1.5 m and 4 m (except for multistorey buildings where an additional height of 6.5 m was assessed). Details on the NSLs presented in this chapter can be found in **Appendix D**.
Model Parameters	Relative Humidity 70% (ISO 9613).
	Temperature 10°C (ISO 9613).
	Given the urban setting of the Proposed Development and surrounding area, a ground absorption of 0 (acoustically hard surface) was modelled.
	Site LIDAR data and open topographic LIDAR data
	ISO 9613-2 downwind propagation noise model.

Noise measurements from a similar substation transformer were used for the purposes of modelling the noise impact from the Proposed Development. The A-weighted one-third octave band sound power levels at the frequencies of interest and overall sound power level for the 220 kV to 110 kV transformer are presented in **Table 12.47**.

Table 12.47: Substation Transformer, One-third Octave Band Sound Power Levels – LwA dB(A)

	A-Weighted One-third Band Centre Frequency											L_{wA}
Frequency (Hz)	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1k**	
Sound Power Level dB(A)	78.1	62.4	62.2	81.1	69.6	82.9	77.3	82.0	74.3	70.2	68.5	88.2

The substation transformers (without mitigation) were modelled as façade noise sources and the predicted noise levels at the nearest NSLs and other locations with the study area are presented in **Table 12.48**.

Table 12.48: Predicted Operational Noise Levels, dB(A)

Receptor ID	Description	Predicted Noise Level, L_{Aeq} (dB)
R1	Residential	29
R2	Residential	39
R3	Residential	35
R4	Residential	29
R5	Residential	29
R6	Residential	38
R7	Residential	40
R8	Residential	40
R9	Residential	33
R10	School	23
R11	Commercial	55
R12	Commercial	56
R13	Commercial	49
R14	Commercial	44
R15	Commercial	42
R16	Residential	30

Noise from the substation is tonal close to the source. Tones were identified at 100 Hz and 200 Hz one-third octave bands. It is likely that 100 Hz tonal noise will be audible at the nearest NSLs.

BS 4142 describes methods for rating and assessing sound of an industrial and/or commercial nature and **Table 12.49** presents a BS 4142 assessment of the likelihood of significant adverse impacts at the most exposed residential NSL (R7).

Baseline noise monitoring location NML1 has been used as a proxy location for obtaining ambient, residual and background noise levels. Given that the Proposed Development is in proximity to the East Wall Road (R131 Regional Road) and M50 Dublin Tunnel Toll, road traffic noise and distance road traffic noise dominated the soundscape. For the purpose of assessing the potential impact of the Proposed Development, the assessment focused on periods when road traffic noise was at a minimum during the respective periods (daytime, evening and night-time). The magnitude of impact is medium, and the significance of effect is deemed to be **significant** during night-time periods. At the noise levels predicted, complaints are likely, and it is recommended that mitigation measures are implemented. Mitigation measures are discussed in **Section 12.5.2**.

In addition to the BS 4142 requirements, the Proposed Development does not meet the Neighbourhood Noise criteria in EirGrid Document Reference: XDS-GFS-00-001-R4 (Refer to **Section 12.2.6**) at the nearest NSL with tonal noise likely to be highly perceptible during night-time periods.

Table 12.49: BS 4142 Assessment – Location R7 adjacent to 220 kV Substation

Location	Noise Levels, dB	Comment
Ambient Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Residual Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Background Noise	46(D) / 47(E) / 39(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Specific Noise	40	Noise level at most exposed noise sensitive location
Acoustic Feature Correction	4(D) / 4(E) / 6(N)	+4 dB penalty daytime and +6 dB penalty night-time as tone likely to be clearly perceptible during the daytime and would be highly perceptible during the night-time
Rating Level	44(D) / 44(E) / 46(N)	Resultant noise level when tonal penalty has been added
Assessment indicates a high likelihood of significant adverse impact during both the daytime and night-time	-2(D) / -3(E) / 7(N)	The predicted rating noise level is below background noise during the daytime and evening periods. The predicted rating noise level is 7 dB above the background noise during night-time periods which would indicate significant adverse effects during that period.

Note: Letters D, E and N denote periods. D - Daytime; E – Evening; and N – Night-time

St Joseph's Co-Education Primary School is approximately 200 m away from the nearest substation transformer. BS4142:2014+A1:2019 is for assessing sound from industrial and/or commercial facilities on dwellings or premises used for residential purposes. However, the school is a high sensitivity location during daytime periods when the school is occupied and has been assessed using the same criteria as dwellings or premises used for residential purposes. **Table 12.50** presents an assessment of the likelihood of significant adverse impacts at most exposed façade (R10) during daytime periods. The magnitude of impact is negligible, and the significance of effect is deemed to be **not significant** during daytime periods.

The Proposed Development also meets the Neighbourhood Noise criteria in EirGrid Document Reference: XDS-GFS-00-001-R4 at this location (Refer to **Section 12.2.6)**.

Table 12.50: BS 4142 Assessment – Location R10 adjacent to 220 kV Substation

Location	Noise Levels, dB	Comment
Ambient Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Residual Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Background Noise	46(D) / 47(E) / 39(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Specific Noise	23	Predicted noise level at school located approximately 200 m from the nearest transformer
Acoustic Feature Correction	0(D)	No penalty during daytime. Tone not likely to be perceptible during the daytime.
Rating Level	23(D)	Resultant noise level
Assessment indicates a no significant adverse impact	-23(D)	The predicted rating noise level are well below the background noise during the daytime which would indicate no adverse effects during that period.

Note: Letters D, E and N denote periods. D - Daytime; E – Evening; and N – Night-time

While there are several commercial facilities (located in Portside Business Centre) in closer proximity than the nearest residential dwelling, commercial facilities are of a lower sensitivity. Though BS4142:2014+A1:2019 is not strictly applicable to noise sensitive locations of a commercial nature, the assessment has been undertaken for completeness. **Table 12.51** presents an assessment of the likelihood of significant adverse impacts at most exposed façade (R12) during all periods.

Table 12.51: BS 4142 Assessment – Location R12 adjacent to 220 kV Substation

Results	Noise Levels, dB	Comment
Ambient Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Residual Noise Level	59(D) / 57(E) / 53(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Background Noise	46(D) / 47(E) / 39(N)	Obtained from Location NML1 - Lowest $L_{Aeq,15mins}$ noise levels during the respective periods
Specific Noise	56	Predicted noise level at one of the most exposed commercial facility
Acoustic Feature Correction	4(D) / 4(E) / 6(N)	+4 dB penalty daytime and evening, and +6 dB penalty night-time. Tone likely to be clearly perceptible during the daytime and evening, and would be highly perceptible during the night-time
Rating Level	60(D) / 60(E) / 62(N)	Resultant noise level when tonal penalty has been added
Assessment indicates a high likelihood of significant adverse impact if NSL was residential.	14(D) / 13(E) / 23(N)	The predicted excess of rating noise over background is 14 dB during the daytime, 13 dB during the evening and 23 dB during the night-time. However, this location is a commercial premises and is outside of scope of BS 4142:2014+A1:2019.

Note: Letters D, E and N denote periods. D - Daytime; E – Evening; and N – Night-time

The commercial premises will typically operate during daytime periods and the noise from the rated noise level from the Proposed Development is predicted to be 14 dB above the daytime background noise level and 1 dB above the ambient noise level. Given the lower sensitive of this

location, the magnitude of impact is low, and the significance of effect is deemed to be **moderate** during daytime periods. The measures to mitigate the noise impact at the nearest dwellings will also have a benefit at this location. Further details are discussed in **Section 12.5.2**.

12.5 Mitigation Measures

12.5.1 Construction Phase

Implementation of Best Practice Measures (BPM) will be carried out to ensure that construction noise levels are properly controlled. In addition to BPM, a range of measures will be implemented during construction works to mitigate the noise impacts where possible.

Specific Mitigation

The following specific mitigation measures will be implemented during the construction works:

- There are existing lean-to-sheds along the site boundary. Following the removal of these structures, a 3.6 m hoarding will be installed along the site boundary along the East Wall Road. Hoarding/ noise barriers will be constructed as early as practicable during the construction phase.
- When undertaking vegetation clearance and processing during site clearance works, the distance between vegetation clearance and processing plant required for site clearance and the nearest NSLs shall be maximised. Where this is not practical, the use of temporary noise barriers will be used adjacent to chipper to mitigate the noise impacts.
- The noisiest individual item of plant associated with the demolition works is the backhoe mounted hydraulic breaker, which has the potential to generate high levels of noise. Where a hydraulic breaker is required, the following measures shall be implemented:

– Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency.

– Use dampened bit to eliminate ringing.

General Mitigation

The following general mitigation applies across all aspects of the construction phase:

- Works shall, as a minimum, include the measures set out in this assessment and these measures will be documented in the Construction Environmental Management Plan (CEMP).
- Works will be carried out using Best Practicable Means (BPM) to minimise noise and vibration, such measures will comprise:

– Limiting the hours of construction to daytime only unless absolutely necessary.

– Work practices, equipment noise control and screening shall be in compliance with BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise, and BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration (together referred to as BS 5228). Standard work practices include:

  - Scheduling of noisy works to normal working hours.
  - Adopting quiet working methods, using plant with lower noise emission levels.

- Adopting working methods that minimise vibration generation particularly with regard to demolition.
- Plant such as pumps and generators used on or near sensitive locations will be contained within an acoustic enclosure.
- Plant and machinery used on-site will comply with the European Commission (EC) (Construction Plant and Equipment) Permissible, Noise Levels Regulations, 1988 (S.I. No. 320 of 1988).
- All noise producing equipment will comply with S.I. No 632 of 2001 European Communities (Noise Emission by Equipment for Use Outdoors) Regulations 2001.
- Ensuring that all plant is properly maintained, (mechanisms properly lubricated, faulty silencers replaced, worn bearings replaced, cutting tools sharpened etc.).
- Closing acoustic covers to engines when in use or idling.
- Use of electrically powered equipment in preference to internal combustion powered equipment.
- Use of hydraulic equipment in preference to pneumatic equipment.
- Use of wheeled plant in preference to tracked plant.
- Locating plant as far away from noise and vibration sensitive receptors as practicable.
- Use of temporary acoustic enclosures or screens around specific noisy static plant.
- Avoiding the unnecessary revving of engines and switch off equipment when not in use.
- Starting-up plant and vehicles sequentially rather than at the same time.
- Keeping internal haul routes well maintained to minimise impulsive noise and vibration from vehicles running over discontinuities in the running surfaces.
- Fitting rubber linings to chutes, hoppers and dumper vehicles to reduce impact noise from material transfer.
- Minimising drop heights of materials.
- Carrying out regular inspections of mitigation measures (BPM audits) to ensure compliance with noise and vibration commitments.
- Providing regular briefings for all site-based personnel so that noise and vibration issues (including the requirement to employ BPM at all locations at all times) are understood and that generic and site-specific mitigation measures are explained and adhered to.
- Ensuring that unloading is carried out within the work site rather than on adjacent roads or laybys.
- Phasing of materials deliveries to be controlled on a ‘just in time’ basis to minimise noise and congestion on roads around the site.
- A formal stakeholder engagement process shall be put in place for the duration of the construction phase, including the provision of information to local residents about noise and vibration monitoring results, works likely to

cause significant noise or vibration and/or works planned to take place outside of core working hours.

- Channels of communication between the Contractor, the relevant Planning Section (Local Authority) and residents will be established at project commencement.
- Records of any noise complaints relating to the construction operations will be investigated as soon as possible and reported to the Local Authority.

- Where works need to be completed outside normal working hours or where proposed works indicate that the noise or vibration levels set out in Section 12.2.5.1 or Section 12.2.5.3 may be exceeded, permission for these works must be sought from the Local Authority in advance of any works taking place. The application for such works will require a detailed noise control plan which should be prepared by the appointed contractor as part of the CEMP and follow up report to be prepared. This plan will include (i) a justification for the works being carried out in the manner proposed, (ii) an assessment indicating what alternatives have been considered, (iii) a statement of the noise control measures from BS 5228 to be adopted and how Best Practicable Means will be used to control noise, (iv) an activity specific noise monitoring programme including contact details for persons with the authority to cease working if required by the Local Authority. Each follow up report will include details of any complaints received and the action taken to address such complaints.

Monitoring

- Prior to the commencement of construction, the contractor will set out and agree a schedule of noise monitoring with the Local Authority to include the number and locations at which noise monitoring will be carried out, the frequency and duration of the monitoring and the reporting of results. The Local Authority shall have discretion to vary the monitoring requirements and publication of results during the course of construction.
- No specific requirements for vibration monitoring have been identified, however should this be required a similar process to the above for noise will be followed by the contractor.

12.5.2 Operational Phase

In order to reduce noise levels from the substation transformers, acoustic enclosures are recommended. The minimum insertion loss performance of the enclosure at one-third octave band frequencies is presented in **Table 12.52**.

Table 12.52: Minimum Insertion Loss Performance of Enclosure

Description	1/3 octave L_{wA} (dB) for centre frequency (Hz)							
	100	200	315	400	500	630	800	1k
Minimum Insertion Loss Performance of Enclosure (dB)	15	20	25	25	25	25	25	25

Following the implementation of the transformer noise enclosures, predicted rated noise levels will be more than 10 dB below the current background noise levels. In addition to the meeting the BS 4142 requirements, the Proposed Development will meet the Neighbourhood Noise criteria in EirGrid Document Reference: XDS-GFS-00-001-R4 at the nearest NSL with noise levels below the numerical limits and tonal noise not likely to be perceptible during all periods. With mitigation measures, **no significant residual effects** will arise as a result of the Proposed Development.

With the acoustic enclosures in place, the noise levels at St Joseph's Co-Education Primary School located approximately 200 m away from the nearest substation transformer will reduce further below the background noise level and the significance of residual effect is predicted to be **imperceptible**.

With the enclosures in place, the predicted rated noise level at the nearest commercial facility will be below the existing background noise levels and the significance of residual effect is predicted to be **negligible**.

12.6 Residual Effects

Following implementation of construction noise mitigation efforts, some noise impacts will remain. The largest exceedances of BS 5228 noise thresholds are predicted for use of rock breakers and tree removal plant albeit exceedances are expected to occur for brief periods. Taking into account the short duration of the predicted exceedances of the BS 5228 noise thresholds, the predicted significance of effect is reduced to **moderate** and temporary for these residual impacts.

For NSLs which are located closest to activities in the various works areas, the predicted residual effects range from **slight** to **moderate** and temporary. There are **no significant residual effects** predicted for noise and vibration from the Proposed Development.

With regards to operational noise, with the transformer noise enclosures in place, the predicted rated noise levels will be more than 10 dB below the current background noise levels and will also meet the Neighbourhood Noise criteria in EirGrid Document Reference: XDS-GFS-00-001-R4 at the nearest NSL. With mitigation measures, **no significant residual effects** will arise as a result of the Proposed Development.

12.7 Conclusions

12.7.1 Construction Phase

Construction noise impacts from the Proposed Development have been assessed for the nearest noise sensitive locations. For the majority of the NSLs the predicted noise levels are below the BS 5228 construction noise threshold.

For a limited a number of NSLs in close proximity to Proposed Development there is potential to exceed the construction noise thresholds.

Following implementation of construction noise mitigation efforts, some noise impacts will remain at a limited number of NSLs. However, given the short duration of these elevated noise levels, no significant effects are predicted. For NSLs which are located closest to activities in the various works areas, the predicted residual effects range from **slight** to **moderate**. There are **no significant residual effects** predicted for noise and vibration from the construction of the Proposed Development.

12.7.2 Operational Phase

Three no. transformers are required to step down electrical power from 220 kV to 110 kV and these are the main sources of noise during the operation of the Proposed Development. BS 4142 describes methods for rating and assessing sound of an industrial and/or commercial nature, and this was used for assessing likely significant effects from the Proposed Development.

The predicted noise impact at the nearest high sensitivity NSL without mitigation is medium, and the significance of effect is deemed to be **significant** during night-time periods.

Mitigation in the form of transformer noise enclosures are recommended and have been incorporated into the design of the Proposed Development. With mitigation measures in place, predicted rated noise levels will be more than 10 dB below the current background noise levels and

will meet the Neighbourhood Noise criteria in EirGrid Document Reference: XDS-GFS-00-001-R4 at the nearest NSL with noise levels below the numerical limits and tonal noise not likely to be perceptible during all periods. Hence, **no significant residual effects** will arise as a result of the operation of the Proposed Development.

12.8 Chapter References

BSI BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. - 2014.

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

BSI BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1: Noise and BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on open sites - Part 2: Vibration. - 2009.

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

BSI BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration. - 1993.

DIN DIN 4150-3 Vibrations in buildings - Part 3: Effects on structures. - 2016.

Dublin City Council Dublin City Development Plan 2022-2028. - 2022.

Dublin City Council et al. Dublin Agglomeration Noise Action Plan 2024-2028. - 2025.

EirGrid Document Reference: XDS-GFS-00-001-R4 Functional Specification 110/220/400 kV Substation General Requirements [Report]. - 2019.

EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports [Report]. - [s.l.] : EPA, 2022.

Federal Transport Authority Transit Noise and Vibration Impact Assessment Manual . - 2018.

Government of Ireland Environmental Protection Agency Act [Online] // electronic Irish Statute Book (eISB). - 1992. - https://www.irishstatutebook.ie/eli/1992/act/7/enacted/en/html.

Highways England Design Manual for Roads and Bridges LA 111 Noise and Vibration. - [s.l.] : Highways England, 2020.

IEC IEC 61672-1:2013 Electroacoustics – Sound level meters – Part 1: Specifications. - 2013.

ISO ISO 17534-1:2015 Acoustics – Software for the calculation of sound outdoors – Part 1: Quality requirements and quality assurance. - 2015.

ISO ISO 1996-1:2016 Acoustics - Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures. - 2016.

ISO ISO 1996-2:2017 Acoustics - Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels. - 2017.

ISO ISO 1996-2:2017 Acoustics - Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels. - 2017.

ISO ISO 2631-1:1997 Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration. Part 1: General requirements. - [s.l.] : ISO, 1997.

ISO ISO 2631-2:2003 Mechanical vibration and shock – Evaluation of human exposure to whole-body vibration – Part 2: Vibration in buildings (1 Hz to 80 Hz). - 2003.

ISO ISO 9613-1:1993 Acoustics – Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere. - 1993.

ISO ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors. - 2024.

Minister for the Environment, Heritage and Local Government S.I. No. 140/2006 - Environmental Noise Regulations 2006 [Online] // electronic Irish Statute Book (eISB). - 2006. - https://www.irishstatutebook.ie/eli/2006/si/140/made/en/print?q=Environmental+Noise+Regulations+2006.

Quagliata Antoinette Transit Noise and Vibration Impact Assessment Manual. - [s.l.] : Federal Transit Administration, 2018.

Transport Research Laboratory Ground Vibration Caused by Civil Engineering Works [Journal] // Transport and Road Research Laboratory Report 53. - 1986.

Wiss John F Construction Vibrations: State of the Art [Journal] // Journal of Geotechnical and Geoenvironmental Engineering. - 1981. - Vol. 107. - pp. 167-181.

13 Landscape and Visual Amenity

13.1 Introduction

This chapter of the PECR describes the potential impacts from the Central Dublin Substation Project, hereinafter referred to as the Proposed Development on Landscape and Visual Amenity. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.

The purpose of the chapter is:

- To describe the landscape and visual baseline within a defined study area; and
- Assess the likely potential effects of the proposed development on landscape elements, landscape character and visual amenity.

The scope of the landscape and visual impact assessment and structure of this chapter of the PECR is as follows:

- Assessment methodology;
- Receiving environment comprising a description of the landscape and visual baseline within a defined study area;
- Impact assessment comprising a description of the effects of the Proposed Development on landscape elements, landscape character and visual amenity; and
- Mitigation measures including a description of the measures incorporated into the site layout and design of the Proposed Development to mitigate potential adverse effects along with additional measures in the form of planting as presented in the landscape design (Drawing CP1273-RPS-03-PL-SL-D-A-2150).

The assessment is supported by photomontages of the Proposed Development which are provided under separate cover as part of the planning application documentation.

13.2 Assessment Methodology

The methodology for the landscape and visual impact assessment (LVIA) is set out below and is informed by published best practice guidance documents referenced below.

13.2.1 Relevant Legislation and Guidelines

- Landscape Institute and Institute of Environmental Management and Assessment, Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, (2013), hereinafter referred to as GLVIA 3; and
- Technical Guidance Note 06/19 Visual Representation of Development Proposals (The Landscape Institute, 2019).

13.2.2 Assessment of Impacts

The assessment was informed by the Dublin City Development Plan 2022 – 2028. Two site surveys were undertaken, one of which was conducted on 5th December 2024 to inform the landscape and visual impact assessment and the second, undertaken on 4th June 2025 by the project photographer for the purpose of capturing baseline photography for the preparation of photomontages.

The assessment of potential impacts on landscape and visual resources is based on the description of the Proposed Development in **Chapter 4** of this PECR. The key parameters for the

assessment include consideration of the project construction activities and the permanent changes during operation, including vegetation losses and introduction of electrical infrastructure.

13.2.3 Assessment Criteria

The assessment of effects on landscape resources and visual amenity are separate but interconnected processes. Landscape is defined, in the European Landscape Convention (ELC, Ref. 6.), as "*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*".

A clear distinction is drawn between landscape and visual effects as follows:

- Landscape effects relate to the effects of a Proposed development on the physical characteristics of the landscape and its resulting character and quality; and
- Visual effects relate to the effects on views experienced by visual receptors (e.g. residents, footpath users, tourists etc.) and on the visual amenity experienced by those people.

The criteria for determining the significance of effects is a two-stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of the receptors and the magnitude of potential impacts.

The likely landscape and visual effects of the Proposed Development have been assessed by considering the changes that would occur to the existing landscape and visual amenity as a result of the introduction of the Proposed Development. The assessment of effects is arrived at by combining judgements concerning the sensitivity of the landscape or visual receptor (person) with judgements concerning the predicted magnitude of impact resulting from the proposed change. It is important to note that significance is determined on a case-by-case basis using professional judgement with the methodology below as a guide and this approach accords with the guidance in GLVIA 3.

The sensitivity of the landscape and visual receptors is arrived at by combining judgements concerning susceptibility (ability to accommodate change) and value. The magnitude of impact is arrived at by combining judgements concerning size and scale of the change, the geographic extent of the change and its duration and reversibility. This methodology is summarised in **Figure 13.1** and is explained in detail below.

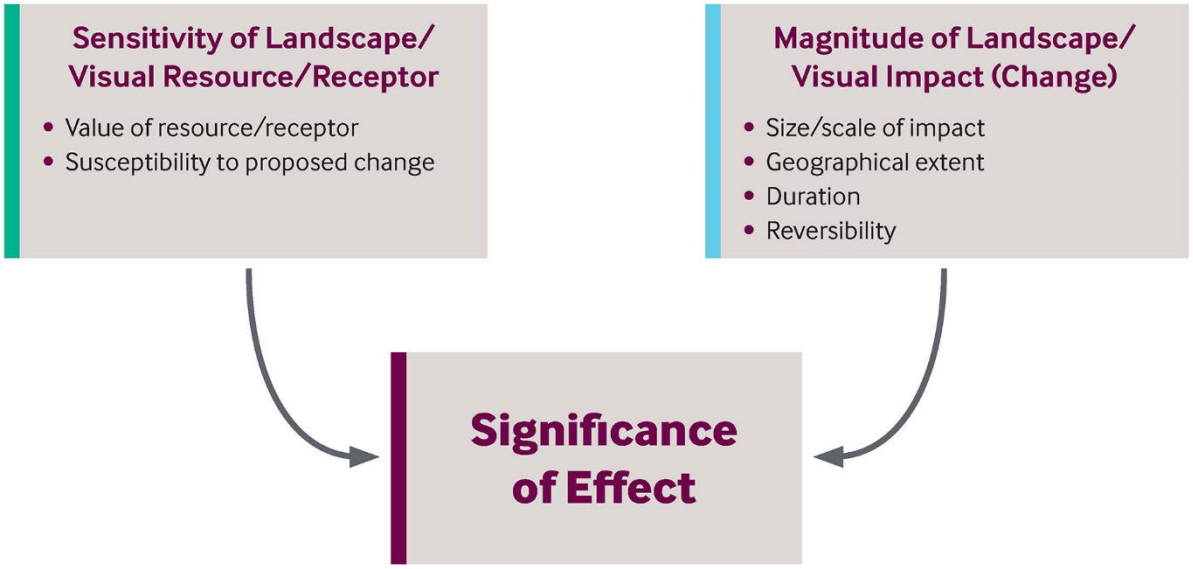


Figure 13.1: Summary of Assessment Methodology

13.2.3.1 Sensitivity of Landscape Receptors

Sensitivity is determined by assessing both the value attached to a landscape receptor and its susceptibility to the change likely to result from the Proposed Development. The sensitivity of a landscape receptor is a combination of '*judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape'* (GLVIA 3, para 5.39).

13.2.3.1.1 Value

The value of the landscape receptor is established as follows:

- '*the value of the Landscape Character Types or Areas that may be affected, based on review of any designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value*; and
- *the value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particularly landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of these contributors*' (GLVIA, para 5.44).

The value of a landscape receptor will reflect relevant designations and their level of importance as referenced in GLVIA 3 (para 5.45). It is important to note that these designations are not the sole indicator of value or valued landscapes. Non-designated landscapes can be of value. An assessment of value is made by reference to clearly stated and recognised criteria, including perceptual qualities, such as those detailed in GLVIA 3 (Box 5.1 para 5.28).

Landscapes are valued at international, national, local authority or community level with examples as follows:

- Internationally valued landscapes such as World Heritage Sites;
- Nationally valued landscapes such as Areas of Outstanding Natural Beauty and National Parks;

- Locally valued landscapes such as those covered by local authority landscape designation or, in the absence of such designation, landscapes assessed as being of equivalent value using clearly stated and recognised criteria; and
- Landscapes that are not nationally or locally designated or judged to be of equivalent value using clearly stated and recognised criteria but are valued at community level.

13.2.3.1.2 Susceptibility

Landscape susceptibility is defined as follows: *'the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies'* (GLVIA, para 5.40).

The levels of sensitivity for landscape receptors are broadly defined in accordance with **Table 13.1**.

Table 13.1: Landscape Sensitivity

Sensitivity	Susceptibility	Value
Very High	Exceptional landscape quality, no or limited potential for substitution. Key elements/features well known to the wider public. The landscape receptor is of very high susceptibility to the Proposed development and has little or no tolerance to change.	Nationally/internationally designated/valued landscape, or key elements or features of national/internationally designated landscapes.
High	Strong/distinctive landscape character; absence of landscape detractors. The landscape receptor is of high susceptibility to the Proposed development and has low tolerance to change.	Regionally/nationally designated/valued countryside and landscape features or landscapes judged to be of equivalent value using clearly stated and recognised criteria.
Medium	Some distinctive landscape characteristics; few landscape detractors. The landscape receptor is of medium susceptibility to the Proposed development and has medium tolerance to change.	Locally or regionally designated/valued countryside and landscape features or landscapes judged to be of equivalent value using clearly stated and recognised criteria
Low	Absence of distinctive landscape characteristics; presence of landscape detractors. The landscape receptor is of low susceptibility to the Proposed development and has high tolerance to change.	Undesignated landscapes and landscape features which have little value to local communities.
Negligible	Absence of positive landscape characteristics. Significant presence of landscape detractors. The landscape receptor is of negligible susceptibility to the Proposed development and has very high tolerance to change.	Undesignated landscapes and landscape features which have no particular scenic qualities or are in poor condition or altered by presence of intrusive manmade structures.

13.2.3.2 Magnitude of Impact on Landscape Receptors

The criteria for defining magnitude of landscape impact is derived from three factors: '*size or scale of change, geographic extent and duration and reversibility*' (GLVIA 3, paragraph 5.48).

The changes caused to landscape receptors as a result of the Proposed Development is evaluated in terms of their size or scale, geographical extent, duration and reversibility. Duration is defined as short-term lasting 0-5 years, medium term lasting 5-10 years, long-term lasting 10-20 years and permanent lasting more than 20 years.

Levels of magnitude of impact on landscape receptors are defined in **Table 13.2**.

Table 13.2: Magnitude of Impact on Landscape Receptors

Magnitude of Impact	Definition
Large	Total loss or addition or/very substantial loss or addition of key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of dominant elements which are uncharacteristic with the attributes of the receiving landscape.
Medium	Partial loss or addition of or moderate alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of elements that may be prominent but may not necessarily be substantially uncharacteristic with the attributes of the receiving landscape.
Small	Minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development landscape) and or introduction of elements that may not be uncharacteristic with the surrounding landscape.
Negligible	Very minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of elements that are not uncharacteristic with the surrounding landscape approximating to a 'no-change' situation.
None	No loss, alteration or addition to the receiving landscape resource.

13.2.3.3 Visual Receptor Sensitivity

Sensitivity of visual receptors (people) is arrived at by combining judgements concerning their susceptibility to the type of change or development proposed and the value attached to the particular views.

The susceptibility of different visual receptors (people) to changes in views and visual amenity is mainly a function of:

- '*the occupation or activity of people experiencing views at the particular locations; and*,
- *the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations.*' (GLVIA 3, para 6.32).

Judgements made about the value of views takes account of the following factors:

- *'recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations*; and
- *indicators of value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment (such as parking places, sign boards or interpretive material) and references to them in literature or art'* (GLVIA 3, para 6.37).

The criteria for defining sensitivity of visual receptors (people) are provided in **Table 13.3** below. Sensitivity results from combining judgements on the susceptibility of the visual receptor (person) (for example resident, commuter, tourist, walker, recreationist or worker), and the numbers of viewers affected with the value attached to views.

Table 13.3: Visual Receptor Sensitivity

Sensitivity	Susceptibility	Value
Very High	Visitors drawn to a particular view (usually promoted or in a designated landscape), including those who have travelled to experience the views. These viewers have very high susceptibility.	Views of internationally designated countryside/land or widely known/famous views.
High	Residents.	Views of nationally designated countryside/land.

Sensitivity	Susceptibility	Value
	People engaged in quiet outdoor recreation where landscape is an important part of the experience. These viewers have high susceptibility.	
Medium	Observers enjoying the countryside from vehicles on quiet/promoted routes. People engaged in outdoor sport or recreation which may involve appreciation of views (e.g. cyclists, golfers). These viewers have medium susceptibility.	Views of designated countryside/land.
Low	People engaged in outdoor sport or recreation which does not involve appreciation of views. These viewers have low susceptibility.	Views of undesignated countryside/land.
Negligible	People at work where the setting is not important to the quality of working life. Road users (commuters) where the view is incidental to the journey. These viewers have negligible susceptibility.	Views of undesignated countryside/land with significant presence of landscape detractors.

13.2.3.4 Magnitude of Impact on Visual Receptors

The criteria for defining magnitude of impact on visual receptors are defined in **Table 13.4**.

Table 13.4: Magnitude of Impact on Visual Receptors

Magnitude of Impact	Definition
Large	Complete or very substantial change in view. Change dominant involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g. through removal of key elements.
Medium	Moderate change in view which may involve partial obstruction of existing view or partial change in character and composition of baseline (i.e. pre-development view) through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. Composition of the view would alter. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant.
Small	Minor change in baseline (i.e. pre-development view). Change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances.
Negligible	Very slight change in baseline (i.e. pre-development view). Change barely distinguishable from the surroundings. Composition and character of view substantially unaltered.
None	No alteration to the existing view.

13.2.3.5 Significance of the Effect

The significance of the effect upon landscape and visual receptors is arrived at by combining judgements concerning sensitivity of the receptor and the magnitude of the impact as presented in **Table 13.5.**

The purpose of the LVIA is to determine, in a transparent way, the likely significant landscape and visual effects of the Proposed Development.

GLVIA3 identifies that *'There are no hard and fast rules about what effects should be deemed 'significant' but LVIAs should always distinguish clearly between what are considered to be the significant and non-significant effects.'* (GLVIA 3 Para 3.32).

Significance can only be defined in relation to each particular development and its specific location. The relationship between receptors and effects is not typically a linear one. It is for each LVIA to determine how judgements about receptors and effects should be combined to derive significance and to explain how this conclusion has been derived.

The identification of significant effects would not necessarily mean that the effect is unacceptable in planning terms. What is important is that the likely effects on the landscape and visibility are transparently assessed and understood.

The significance of effects on landscape, views and visual amenity have been judged according to a six-point scale: Profound, Major, Moderate, Minor, Negligible or No change as presented in **Table 13.6**. For the purposes of this assessment, those effects indicated as being Profound or Major or Moderate to Major are regarded as being significant in terms of the LVIA methodology. This is a typical approach for landscape and visual impact assessments adapted from GLVIA 3, which may differ from other environmental disciplines. In general, most effects with a significance level of moderate or less have been judged as not significant.

Table 13.5: Matrix used for the assessment of the significance of the effect

		Magnitude of Impact				
Sensitivity of Receptor		**No Change**	**Negligible**	**Small**	**Medium**	**Large**
	Negligible	No change	Negligible	Negligible to Minor	Negligible to Minor	Negligible to Minor
	Low	No change	Negligible to Minor	Negligible to Minor	Minor	Minor to Moderate
	Medium	No change	Negligible to Minor	Minor	Moderate	Moderate to Major
	High	No change	Negligible to Minor	Minor to Moderate	Moderate to Major	Major
	Very High	No change	Minor	Moderate to Major	Major	Profound

Table 13.6: Significance of effect criteria

Significance of Effect	Landscape Receptor	Visual Receptor
Profound	Where proposed changes would be uncharacteristic and/or would significantly alter a landscape of exceptional landscape quality (e.g. internationally designated landscapes), or key elements known to the wider public of nationally designated landscapes (where there is no or limited potential for substitution nationally).	Where proposed changes would be uncharacteristic and/or would significantly alter a view of remarkable scenic quality, within internationally designated landscapes or key features or elements of nationally designated landscapes that are well known to the wider public.
Major	Where proposed changes would be uncharacteristic and/or would significantly alter a valued aspect of (or a high quality) landscape.	Where proposed changes would be uncharacteristic and/or would significantly alter a valued view or a view of high scenic quality.
Moderate	Where proposed changes would be noticeably out of scale or at odds with the character of an area.	Where proposed changes to views would be noticeably out of scale or at odds with the existing view.
Minor	Where proposed changes would be at slight variance with the character of an area.	Where proposed changes to views, although discernible, would only be at slight variance with the existing view.

Significance of Effect	Landscape Receptor	Visual Receptor
Negligible	Where proposed changes would have an indiscernible effect on the character of an area.	Where proposed changes would have a barely noticeable effect on views/visual amenity.
None	Where the Proposed development would not alter the landscape character of the area	Where the Proposed development would retain existing views.

13.3 Description of Receiving Environment

13.3.1 Study Area

A study area has been defined for the purpose of identifying and describing the effects of the Proposed Development on landscape and visual amenity. This is illustrated in **Figure 13.2** below.

Figure 13.2: Landscape and Visual Amenity Study Area

13.3.2 Landscape Baseline

The site for the Proposed Development comprises an area of hardstanding in use as a car park located on East Wall Road. The site features a number of lean-to-sheds aligned along the boundary wall on East Wall Road. The eastern end of the site is somewhat derelict and overgrown with woody scrub vegetation. The landscape surrounding the site comprises a mix of urban residential and industrial land uses.

The residential area of East Wall is located immediately to the southwest of the site and comprises two storey residential dwellings arranged along a grid street pattern and featuring front and back gardens and associated tree and garden planting. The northeastern part of the site is bounded by the M50 Port Tunnel Tolling Facility and associated carparking. The Eastpoint Business Park

occupies an extensive area of land immediately north of the toll road. This features numerous office buildings of varying scale set within a network of access roads and featuring car parking facilities. The Business Park features mature soft landscape including standard trees, hedgerows and ornamental planting.

Large scale industrial buildings occupy the lands immediately adjacent to the northwestern boundary of the application site. Further northwest, the built up landscape features a mix of multi storey residential buildings along with commercial and retail uses. The lands to the southeast of the site comprise an extensive area of car parking along with the East Wall Road 38kV Substation.

Further afield to the northwest of the application site, the River Tolka flows out into the Dublin Bay Estuary. The northern bank of the river features open spaces aligned along Alfie Byrne Road with a causeway access to Eastpoint Business Park. The M50 also crosses this river near the estuary before entering the port tunnel, the portals of which are located within the open space.

13.3.3 Landscape Designations and Land Use Zonings of Relevance to Landscape and Visual Amenity

In regard to the zonings of relevance from the DCC Development Plan to landscape and visual amenity, Zoning Z2 : Residential Neighbourhoods (Conservation Areas) applies to parts of the built up residential area of East Wall including some of the houses directly opposite the application site.

13.3.4 Baseline Visual Amenity

13.3.4.1 Views and Prospects – Dublin City Development Plan 2022 - 2028

There are no designated views and prospects within the study area that would be affected by the proposed Development.

13.3.4.2 Visual Amenity at Selected Viewpoint Locations

The visual receptors with existing views of the Proposed Development Area and / or potential views of the Proposed Development mainly comprise residents of dwellings, road users and potentially recreational visitors in the surrounding area. The baseline visual amenity representing these viewer types at specific viewpoint locations is described in **Table 13.7**. Viewpoints were selected to represent a range of viewer types located at different distances and directions to the Proposed Development in line with the guidance, namely GLVIA3. The table lists the viewer types at each viewpoint and describes the existing views. An assessment of the value of the view, the susceptibility of the viewer and the overall sensitivity is provided in line with the methodology above.

Table 13.7: Existing Visual Amenity at Selected Viewpoint Locations and Assessment of Value

ID	Location	Viewer Type	Description of existing view	Value	Susceptibility	Sensitivity
Vp 1 (1025)	East Wall Road / Forth Road	Residents of dwellings	Views are available of East Wall Road which is busy with traffic and which features street lighting and overhead electricity lines. The boundary wall and gated access to the site for the Proposed Development is clearly visible at short range along with the pitched roofs of the industrial structures (sheds) within the site. Further west, multi storey mixed use	Low (view towards an undesignated landscape of limited scenic value and with detracting elements present).	High (residents of dwellings with a proprietary interest in their surroundings)	Medium

ID	Location	Viewer Type	Description of existing view	Value	Susceptibility	Sensitivity
			developments are visible in the distance.			
Vp 2 (1033)	East Wall Road / East Road	Residents of dwellings.	Views are available of East Wall Road and busy traffic. The boundary wall of the site for the Proposed Development is clearly visible at short range along with a small area of parking. The views of the site are attained against the backdrop of the multi storey mixed used development in a westerly direction. Wooded vegetation within the site for the Proposed Development is clearly visible above the line of the boundary wall along with the M50 tolling facility in the distance.	Low (view towards an undesignated landscape of limited scenic value).	High (residents of dwellings with a proprietary interest in their surroundings)	Medium
Vp 3 (1036)	East Wall Road	Residents of dwellings.	Views are available in a westerly direction of East Wall Road with busy traffic and featuring street lighting and signage. The boundary wall to the site for the Proposed Development is clearly visible along with some wooded vegetation within. Existing multi storey mixed use developments are visible in the distance.	Low (view towards an undesignated landscape of limited scenic value).	High (residents of dwellings with a proprietary interest in their surroundings)	Medium
Vp 4 (1029)	East Wall Road	Residents of dwellings.	Views are available of East Wall Road and busy traffic. The boundary wall to the site for the Proposed Development is clearly visible on the opposite side of the road further afield with industrial development in the foreground (Typeform).	Low (view towards an undesignated landscape of limited scenic value)	High (residents of dwellings with a proprietary interest in their surroundings)	Medium
Vp 5 (1027)	Forth Road	Residents of dwellings.	Views are available of East Wall Road and busy traffic framed by dwellings on Forth Road. The views are focussed on the entrance to the site for the proposed change along with the internal parking area and street lighting. The buildings associated with the M50 Port Tunnel Tolling Facility are partly visible in the distance along with a signalling mast.	Low (view towards an undesignated landscape of limited scenic value).	High (residents of dwellings with a proprietary interest in their surroundings)	Medium
Vp 6 (1035)	East Road	Residents of dwellings.	Views are available of East Wall Road and busy traffic framed by dwellings on East Road. The site for the Proposed Development is visible in the left part of the view including one of the existing sheds. The adjacent site is also visible along with wooded vegetation. Buildings associated with the M50 Port Tunnel Tolling facility are partly visible in the distance along with a signalling mast.	Low (view towards an undesignated landscape of limited scenic value).	High (residents of dwellings with a proprietary interest in their surroundings)	Medium

ID	Location	Viewer Type	Description of existing view	Value	Susceptibility	Sensitivity
Vp 7	East Point Business Park	People at work	Views are available of the boundary wall of the East Point Business Park and mature standard trees with car parking in the foreground. Part of the M50 Port Tunnel Tolling facility is visible in the distance.	Low (view towards an undesignated landscape of limited scenic value).	Low (individuals whose attention is not focussed on their surroundings)	Low

The viewpoint locations are illustrated in **Figure 13.3** below.

Figure 13.3: Viewpoint Locations

The viewpoints selected for illustration as photomontage were chosen to reflect highly sensitive receptors in close proximity to the proposed change. Photomontages of the proposed development have been prepared from viewpoints 1 and 2. Photographs of the existing view at viewpoints 1 and 2 are presented in the photomontage. Photographs of the existing view at the remaining viewpoint locations are presented below.

Viewpoint 3 - East Wall Road

Viewpoint 4 - East Wall Road

Viewpoint 5 - Forth Road

Viewpoint 6 – East Road

Viewpoint 7 - East Point Business Park

13.4 Potential for Significant Effects

The Proposed Development comprises the introduction of electricity generation infrastructure to a site on East Wall Road at the western end of the Dublin Docklands. The assessment of effects on landscape and visual amenity considered both the construction phase and the operational phase of the Proposed Development.

13.4.1 Construction Phase

The main activities which would result in landscape and visual effects during construction are listed below:

- Ground Investigation works including excavating trial pits and boreholes using percussion drilling and rotary coring;
- Site preparation works, including removal of woodland and scrub vegetation within the site on East Wall Road along with demolition of existing structures, site levelling and grading and the establishment of temporary site facilities.
- Construction of the proposed 220 kV and 110 kV GIS Substation Buildings, three transformers and associated electrical cabling, road access, car parking, lighting and other ancillary works within the site on East Wall Road;
- Construction works associated with the Grid Connection (not part of the subject planning application) to the Belcamp – Shellybanks 220 kV circuit. The details on the Grid Connection (not part of the subject planning application) are provided in **Section 4.2.10** of Chapter 4 of this PECR;
- Traffic management measures;
- Implementation of proposed planting; and
- Construction lighting comprised of low energy LED lighting and security lighting which will be directional in order to minimise light spill.

The construction phase is expected to last 2 years during which, temporary and reversible effects will arise to the surrounding landscape and visual amenity due to the presence and visibility of construction plant and machinery and construction vehicles. The 2 year construction phase will be followed by 1 year of commissioning during which, the proposed structures will be in place and long term effects on landscape and visual amenity will begin to be experienced as discussed below, The construction effects are considered to be short term (under 5 years).

13.4.2 Operational and Maintenance Phase

The main elements of the Proposed Development which would result in landscape and visual effects during operation are listed below:

- 1 no. 2-storey 220kV Gas Insulated Switchgear (GIS) substation building occupying an area of c. 51.8m x 22.2m and 20m in heigh;
- 1 no. 2-storey 110kV GIS substation building occupying an area of c. 51m x 15.9m and 16.5m in height;
- 3 no. transformers to transform electrical power from 220kV to 110kV and associated acoustic enclosures (c. 5.3m in height) and c 1m high lightning protection rods extending to a height of c. 11m above ground level;
- Site lighting within the substation compound;
- Provision of new vehicular and pedestrian access from East Wall Road, ancillary car parking spaces including internal access roads;
- 2.6 m high palisade security fence and associated gates;
- A public-facing fence and associated gates along East Wall Road varying in height from c. 2.4m to c. 3m; and
- Proposed soft landscape scheme comprising standard tree and hedgerow planting.

The assessment of effects on landscape and visual amenity during operation is presented below.

13.4.2.1 Landscape Character

Effects on the landscape of the site are discussed in terms of direct changes such as permanent loss or change to landscape elements and features as well as the introduction of new structures. Indirect effects on the surrounding landscape character within the study area are discussed and these relate to changes to the baseline character resulting from the visibility of the Proposed Development. These direct and indirect effects are described and assessed with reference to the baseline documented in **Section 13.3** above.

Direct changes would arise to the site for the Proposed Development on East Wall Road. These comprise loss of scrub vegetation and the introduction of the proposed structures into a site comprised mainly of areas of hardstanding in use as a car park along with some neglected or derelict areas in the eastern end.

Indirect effects would arise to the character of the surrounding landscape in particular due to the proposed substation buildings which will be apparent from the surrounding area of East Wall and, to a limited extent, the East Point Business Park.

The landscape of the East Wall Area surrounding the site is considered to be of low to medium value and this reflects the absence of any designated landscape conservation areas. The zoning Z2: Residential Neighbourhoods (Conservation Areas) applies to some of the dwellings on East Wall Road. The landscape surrounding the site is also considered to be of low susceptibility to the proposed change. The residential part of East Wall Road has distinctive characteristics however the landscape overall features various detracting elements including industrial and commercial facilities along with motorway tolling infrastructure. An overall low sensitivity to the proposed change is considered to apply.

The assessment took account of the mitigation measures associated with the Proposed Development. These included consideration of the site layout, the finish and appearance of the elevations of the substation buildings and the proposed planting along East Wall Road (Drawing CP1273-RPS-03-PL-SL-D-A-2150). Although adverse effects on landscape character are associated with the scale of the proposed substation buildings, some beneficial effects will be

associated with the design of the elevations and proposed planting. As a result, the changes are not expected to be entirely uncharacteristic with the attributes of the receiving landscape.

Taking into account the balance between adverse and beneficial changes, a small magnitude of impact is considered to arise to the surrounding landscape of low sensitivity resulting in a negligible to minor adverse and not significant effect.

13.4.2.2 Visual Amenity

Elements of the Proposed Development would be visible from individual viewpoint locations documented in the baseline above. The visual effects during operation are documented in **Table 13.8** below and take account of the mitigation measures outlined in **Section 13.5**. Photomontages of the Proposed Development have been prepared for viewpoints 1 and 2 as indicated in the table below. These are presented in Figures 13.4a-g and 13.5a-g respectively. The Figures show the location of the viewpoint along with a photograph of the existing view followed by photomontages of the proposed views at year 1 of operation and at year 15 of operation showing maturing planting.

Table 13.8: Effects on Visual Amenity at Selected Viewpoint Locations during Operation

ID	Location	Description of effects during operation	Sensitivity	Magnitude of Impact	Significance of effect
Vp 1	East Wall Road / Forth Road	The proposed 220kV substation building would be clearly visible at short range along with boundary fencing and proposed planting with East Wall Road and traffic in the foreground. The proposed 110kV substation building and the proposed site entrance and planting will be visible further away to the right of the viewer. Although the scale of the proposed structures will be greater than that existing, the external cladding on these has been designed with the visual amenity of individuals on East Wall Road in mind. The proposed structures and planting will replace an existing somewhat run down boundary wall and lean to sheds. In addition, existing electricity poles will be undergrounded. Although some adverse visual effects will be associated with the scale of the proposed buildings, beneficial visual effects will be derived from the building finishes and the proposed planting along with the absence of existing run down structures and overhead electricity infrastructure. Refer to photomontage in Figure 13.4a-g.	**Medium**	Medium	Moderate adverse and not significant during year 1 of operation. As the proposed planting matures, the visual effects at year 15 are expected to be minor adverse and not significant
Vp 2	East Wall Road / East Road	The proposed 110kV substation building would be clearly visible at short range along with boundary fencing and proposed planting with East Wall Road, traffic in the foreground. The proposed 220kV substation building and the proposed site entrance and planting will be visible further away to the left of the viewer. Although the scale of the proposed structures will be greater than that existing, the external cladding on these have been designed with the visual amenity of individuals on East Wall Road in mind. In addition, existing electricity poles will be undergrounded. Although some adverse visual effects will be associated with the scale of the proposed buildings, beneficial visual effects will be derived from the building finishes and the proposed planting along with the absence of existing run down structures and overhead electricity infrastructure. Refer to photomontage in Figure 13.5a-g.	**Medium**	Medium	Moderate adverse and not significant during year 1 of operation. As the proposed planting matures, the visual effects at year 15 are expected to be minor and not significant.

ID	Location	Description of effects during operation	Sensitivity	Magnitude of Impact	Significance of effect
Vp 3	East Wall Road	Views would be available of the proposed 110kV substation building in the foreground along with the 220kV substation building a little further afield and proposed planting with East Wall Road and busy traffic in the foreground. These views would be attained in a westerly direction with existing multi storey mixed use developments in the distance. Although the scale of the proposed structures will be greater than that existing, the building finishes have been designed with the visual amenity of people on East Wall Road in mind and the proposed planting which will soften the facades will bring about some beneficial effects.	**Medium**	Medium	Moderate adverse and not significant during year 1 of operation. As the proposed planting matures, the visual effects at year 15 are expected to be minor and not significant.
Vp 4	East Wall Road	Views would be available of the proposed 220kV substation building in the foreground along with the 110kV substation building a little further afield and proposed planting with East Wall Road and busy traffic in the foreground. These views would be attained in a easterly direction with existing multi storey mixed use developments in the distance. Existing industrial facilities (Typeform) would be visible in the foreground closer to the viewer than the proposed development.	**Medium**	Small	Minor adverse and not significant
Vp 5	Forth Road	Views would be available of part of the proposed development, in particular the proposed 220kV substation building and proposed planting with East Wall Road and busy traffic in the foreground. These views would be framed by buildings on Forth Road	**Medium**	Medium	Moderate adverse and not significant
Vp 6	East Road	Views would be available of part of the Proposed Development, including the 110kV substation building in the left part of the view with East Wall Road and busy traffic in the foreground.	**Medium**	Small	Minor adverse and not significant
Vp 7	East Point Business Park	Views would be available of part of the proposed substation buildings and potentially elements associated with the transformers. These elements would be visible partially above the line of the boundary wall of the Business Park with mature standard trees, the tolling facility and car parking in the foreground.	**Low**	Small	Negligible to Minor adverse and not significant

13.5 Proposed Mitigation Measures

Mitigation measures are outlined below for both the construction and operational stages of the Proposed Development.

13.5.1 Construction Phase

The following mitigation measures are proposed to avoid, reduce or remediate, wherever practicable adverse landscape and visual effects during construction:

- In regard to the site for the Proposed Development on East Wall Road, a Construction Environmental Management Plan (CEMP) will be developed prior to the commencement of construction activities, in order to minimise the effects on the environment, including landscape and visual amenity, during construction.
- In regard to the Grid Connection works (not part of the subject planning application), the layout of the works area within the East Point Business Park will be designed to minimise impacts on existing trees and ornamental vegetation. An arboricultural

survey, impact assessment and tree constraints plan will be prepared and will be made available in advance of construction in order that the necessary tree protection measures can be implemented. The tree survey will be fully updated at the end of the construction phase, with any recommendations for on-going monitoring of retained trees during the operational phase. All trees and vegetation to be retained within and adjoining the grid connection works area will be protected in accordance with the British Standard Institution (BSI) British Standard (BS) 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (BSI 2012). Where available, the updated version of this British Standard will be used to inform the works. Works required within the root protection area (RPA) of existing trees to be retained will follow a project specific method statement for such works, which will be prepared by a professional qualified arborist;

13.5.2 Operational and Maintenance Phase

The following mitigation measures are proposed to avoid, reduce or remediate, wherever practicable adverse landscape and visual effects during operation. These comprise both embedded mitigation, incorporated as part of the design of the Proposed Development along with additional measures designed to further reduce adverse effects.

13.5.2.1 Embedded mitigation

- The site layout for the Proposed Development on East Wall Road has been developed to orientate the substation buildings at an angle towards the northern edge of the site as far as is practicable in order to reduce, where possible, the visual prominence of these structures on people on East Wall Road;
- The facades of the buildings that face East Wall Road have been designed using a variety of materials and finishes with the visual amenity of people on East Wall Road in mind; and
- External lighting has been designed as façade-mounted, downcast fixtures to ensure lighting is contained within the compound perimeter. Security lighting will also be provided, designed to operate on motion sensors or timers where appropriate to limit unnecessary continuous illumination.

13.5.2.2 Additional mitigation

- A soft landscape scheme comprised mainly of standard trees and hedgerow planting is proposed along the boundary with East Wall Road and is illustrated in Drawing No CP1273-RPS-03-PL-SL-D-A-2150. The landscape scheme includes a proposed pyracantha hedge which will be planted in between the palisade security fence and the decorative railing boundary along East Wall Road. Shrub and ornamental planting is also proposed along the boundary railing and to enhance the small open spaces. Street tree planting is also proposed along East Wall Road. The planting will screen the boundary palisade fence and the tree planting will complement or enhance the façades of the substation buildings in particular on East Wall Road thereby mitigating visual effects.

13.6 Conclusion

The Proposed Development will introduce two substation buildings which are relatively large in scale into a receiving urban landscape comprised of residential and industrial land uses. The Proposed Development will replace an existing site in somewhat derelict condition with run down structures (lean to sheds) and boundary wall. The proposed substation buildings feature an

external cladding finish which has been designed with the visual amenity of individuals on East wall Road in mind. A planting scheme is proposed to soften and enhance the Proposed Development. Impacts on views held by nearby residents of dwellings on East Wall Road will be moderate but not significant (year 1 of operation). This takes account of the balance between the adverse effects relating to the scale of the proposed buildings and the beneficial effects associated with the design of the cladding materials and the proposed planting.

14 Archaeology, Architecture and Cultural Heritage

14.1 Introduction

This chapter of the PECR prepared by Courtney Deery Heritage Consultancy Ltd describes the potential impacts from the Proposed Development on the Archaeology, Architecture and Cultural Heritage Environment. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.

The purpose of this chapter is to evaluate the significance and sensitivity of the receiving heritage environment and to identify and evaluate the likely significance of the impacts of the development on this environment.

Where potential significant impacts are identified, ameliorative (remedial or reductive) measures are proposed where necessary to safeguard any monuments, features or finds of antiquity or features of local cultural heritage interest that are identified during the course of the study.

Consideration of the historic environment included the following.

'Archaeology' 'is the study of past societies through the material remains left by those societies and the evidence of their environment. The 'archaeological heritage' consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence' (DAHGI, 1999).

The Minister of the Department of Housing, Local Government and Heritage (DHLGH) has a responsibility to protect the archaeological heritage and to exercise powers of preservation under the National Monuments Acts, 1930–2004, and the Historic and Archaeological Heritage and Miscellaneous Provisions Act, 2023, taking account of the European Convention for the Protection of the Archaeological Heritage.

The protection of the archaeological heritage is provided for using the following four statutory designations:

- Record of Monuments and Places (RMP),
- National monument in the ownership or guardianship of the Minister for HLGH or a Local Authority,
- National monument subject to a Preservation Order (or temporary Preservation Order) and
- Register of Historic Monuments (RHM)

'***Architectural heritage'*** as termed in the Planning and Development Act 2000 (as amended) includes structures which are of special interest under the headings of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

This chapter seeks to identify the properties/structures of architectural heritage merit that will be directly or indirectly impacted by the Proposed Development.

The identification, recording and protection of the architectural heritage are provided using the following:

- Record of Protected Structures (RPS),
- Architectural Conservation Area's (ACA's),
- National Inventory of Architectural Heritage (NIAH) and
- NIAH Historic Garden and Designed Landscape Survey

The identification of buildings and structures to be assessed for impact is also based on the analysis of current Ordnance Survey maps as not all features of architectural heritage special interest are recorded.

'Cultural heritage' is a broad term that now has come to include a wide range of tangible and intangible cultural considerations that are bound up in cultural memory and associations, belief, traditions, past knowledge, traditional and arcane practices, craft and building skills, and the oral tradition of local populations. It encompasses aspects of archaeology, architecture, history, landscape and garden design, folklore and tradition and topography. For example, cultural heritage can be expressed in physical ways as:

- Settlements,
- designed landscapes,
- natural resources of economic value (e.g. mining sites, quarries, caves, mills weirs, fish passes etc.),
- building & structures (outside of NIAH and RPS) and
- infrastructural features (coach roads, military roads etc.)

and it is also expressed in non-physical or intangible ways, for example:

- in folklore,
- inherited tradition (pilgrim paths, pattern day routes, historical county fairs or long established sporting activities and traditional country pursuits),
- history/ historical events (e.g., battle sites),
- townland, placenames and language.

14.2 Assessment Methodology

14.2.1 Relevant Legislation and Guidelines

The Proposed Development is being progressed in accordance with the EirGrid Development Framework. The impact assessment follows the methodologies contained in the '*Cultural Heritage Guidelines for Electricity Transmission Projects'* (EirGrid 2015) and '*The Code of Practice between the Minister of EHLG (now HLGH) & EirGrid in relation to Archaeological Heritage*' (2009).

The Code of Practice outlines the principles and measures to be applied to ensure the protection of Ireland's archaeological heritage whilst developing and upgrading the existing transmission system. It is generally guided by the following principles:

- Every effort will be made to avoid direct impacts on archaeology;
- Mitigatory planning will take place at the earliest opportunity as it minimises the impact on the archaeological heritage;
- EirGrid and the Minister of HLGH will co-operate to ensure, as far as possible, that appropriate archaeological investigation is carried out during the period from route identification to the commencement of construction;
- If avoidance cannot be achieved, EirGrid will finance a balanced and cost effective approach to archaeological investigation, excavation and mitigation as an integral element of the transmission system development programme.

In Ireland there are a number of policy and guidance documents issued by the government, local authorities, and semi state bodies to assist in the identification, protection and avoidance of heritage assets. These guidelines also assist in standardising the approach taken during the planning and design stages of development. The guidelines and legislation consulted for the

purposes of the Proposed Development are provided in **Appendix G** and **Appendix H**. **Appendix I** provides excerpts from the relevant local development plan polices.

14.2.2 Assessment of Impacts

The methodology used to assess the type and level of impact assessment was based on the above mentioned Cultural Heritage Guidelines (EirGrid 2015), the EPA Guidelines (2022) and the criteria adapted from the published TII's '*Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects* (2005)'.

Potential impacts on the cultural heritage environment can be described in three categories: direct physical impacts; indirect physical impacts; and impacts on setting.

14.2.2.1 Direct Physical Impacts

Direct physical impacts describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works; e.g. they could include excavation of foundations, earthmoving/site preparation creation of access roads and the excavation of service trenches.

14.2.2.2 Indirect Physical Impacts

Indirect physical impacts describe those processes, triggered by development activity, that lead to the degradation of heritage assets.

14.2.2.3 Impacts on Setting

Impacts on the setting of heritage assets describes how the presence of a development changes the surroundings of a heritage asset (archaeological, architectural or cultural heritage sites) in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to be considered significant during the prolonged operational life of the development.

14.2.3 Assessment Criteria

Cultural heritage sites/landscapes are considered to be a non-renewable resource and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites. The likely significance of all impacts is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the cultural heritage asset). Having assessed the magnitude of impact with respect to the sensitivity/value of the asset, the overall significance of the impact is then classified as imperceptible, slight, moderate, significant, or profound. A glossary of impact assessment terms, including the criteria for the assessment of impact significance, is contained in **Appendix J**.

14.2.4 Desktop Study

A review of the following information took place in order to inform the report:

- National Monuments in State care, as listed by the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage (DHLGH);
- Sites with Preservation Orders;
- Sites listed in the Register of Historic Monuments;

- Record of Monuments and Places (RMP) and the Sites and Monuments Record (SMR) from the Archaeological Survey of Ireland; The statutory RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on vertical aerial photographs. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (National Monuments Service, DHLGH), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Archaeological sites identified since 1994 are placed on the SMR and are scheduled for inclusion on the next revision of the RMP;
- Record of Protected Structures (RPS) in the Dublin City Development Plan 2022-2028;
- Dublin City Councils Architectural Conservation Areas (ACAs) and their statements of character;
- National Inventory of Architectural Heritage (NIAH) Building Survey (NIAH ratings are international, national, regional, local and record, and those of regional and above are recommended for inclusion in the RPS);
- National Inventory of Architectural Heritage (NIAH) Garden Survey (paper survey only);
- A review of artefactual material held in the National Museum of Ireland;
- Cartographical Sources, Tailte Éireann Historic Mapping Archive, including early editions of the Ordnance Survey including historical mapping (such as Down Survey 1656 Map);
- The Irish archaeological excavations catalogue i.e. Excavations bulletin and Excavations Database;
- Place names; Townland names and toponomy (loganim.ie);
- National Folklore Collection (Duchas.ie);
- Dublin City Development Plan 2022-2028;
- A review and interpretation of aerial imagery (OSI Aerial Imagery 1995, 2000, 2005, Aerial Premium 2013-2018, Digital Globe 2011-2013, Google Earth 2001–2025, Bing 2025) to be used in combination with historic mapping to map potential cultural heritage assets.
- A review of existing guidelines and best practice approaches.

A bibliography of sources used is provided in the References section.

14.3 Description of Receiving Environment

14.3.1 Archaeological and Historical Background

The Proposed Development site lies within an area of the city that, until the large-scale reclamation projects of the late 17th century and 18th centuries, formed part of the slob-lands of the broad River Liffey estuary. It is located 1.25km from the Zone of Archaeological Potential (ZAP) for the historic city Dublin (RMP DU018-020).

14.3.1.1 Prehistory

The earliest human activity in Ireland dates from the Mesolithic period (c. 8000-4000BC), with the evidence indicating a strong preference for riverine and coastal areas. In the greater Dublin area, for example, large numbers of Mesolithic tools have been recovered from the Malahide and

Rogerstown estuaries. Middens are also recorded at Sutton to the north of Dublin Bay and at Dalkey Island to the south. Evidence for activity in the vicinity of rivers, the sea and indeed lakes probably reflects the importance of fish in the diet of Mesolithic people, a trend observed in other European countries. Furthermore, given the absence of the large mammals hunted in mainland Europe, it is even more likely that fish and fowl were important sources of meat in Mesolithic Ireland (McQuade 2007).

There is very little evidence for prehistoric activity in the Dublin city area, although a number of artefacts recovered from excavations indicate a prehistoric presence on and around the banks of the Liffey. The most significant evidence was revealed in 2004 and 2006-07 during archaeological investigations at the Spencer Dock development site on North Wall Quay, c. 1km south of the subject site (now houses the National Convention Centre and adjacent residential buildings). The material uncovered had been sealed beneath 18th century reclamation deposits and post-medieval structural remains and was located at the southern end of the site, in an area formerly occupied by the Liffey estuary (McQuade, Excavations 2003:0576, Licence No. 03E0654; Myles & McQuade, Excavations 2006:634 & 2007:494, Licence no. 06E0668).

The excavations revealed evidence relating to prehistoric riverine activity in the silts which had accumulated to the south of the former shoreline of the Liffey, c. 13m–16m north of the North Wall Quay. This included the discovery in 2006/07 of Late Mesolithic fish trap remains (radiocarbon dated to 6000-5840 BC) and a mid-Neolithic wattle fence (which was probably also part of a fish trap structure) and dated to 5980-5760BC (located at depths of -5m OD and c -4.66m OD respectively; McQuade 2007). The Late Mesolithic fish traps excavated in 2006/07 are similar to the very well-preserved archaeological remains of up to five finely woven wooden fish traps of late Mesolithic date (6100-5720 cal. BC) identified in 2003/4 on the adjacent site to the east. The wooden remains were preserved in the silt deposit, with the activity concentrated c.1.2–1.3m to the south of the early shoreline of the river Liffey and in the estuarine waters to the south at an average depth of -5m OD.

The discovery of the first fish traps in 2003/04 was of international significance as they were the earliest dated examples recorded in either Ireland or the UK. They provided the first definitive evidence for the use of fish traps in Ireland during the Mesolithic period. The subsequent discovery of another Late Mesolithic fish trap nearby illustrates that the Late Mesolithic population of the Dublin area were, over a period of up to 200 years, fishing along a 70m a stretch of the Liffey intertidal zone in the area currently known as Spencer Dock. The remains of the large wooden Middle Neolithic fish trap further indicates that several millennia later, the occupants of the surrounding area were once again fishing along this part of the Liffey estuary (McQuade 2007). Although no evidence for prehistoric settlement was uncovered at the site, the people who constructed and used the fish traps must have been living nearby.

There is tantalising evidence of further waterlogged wooden remains of possible prehistoric date on a neighbouring site, though unfortunately no radiocarbon dates are currently available. They were uncovered during archaeological monitoring of bulk excavations by Archaeological Development Services (ADS) Ltd in 2011/2012 in advance of the planned North Lotts pumping station. The remains comprised two clusters of horizontal brushwoods that were identified in the sandy silt deposit at levels of between -1.39m and -1.43m OD, which is significantly closer to present ground level than the remains found on the NCC / Spencer Dock site. The arrangement of the surviving wood pieces did not retain the original form of the structures from which they came. In addition, there were no in situ pegs and none of the pieces could be described as stakes. Nonetheless, the remains may represent parts of larger structures, possibly fish-traps that had been damaged and displaced by the tide (McQuade 2012; Licence No. 09E0375). All of the remains were preserved by record by means of archaeological excavation (McQuade 2012).

14.3.1.2 Early Medieval Period

The Early Medieval period is principally characterized by the introduction of Christianity with the earliest churches and monasteries; literacy and the first historical records; and the proliferation of

enclosed settlements or ringforts. Later came the arrival of the Vikings and the development of the likeliest first urban settlements on the island. The settlement of Dublin emerged in the 9th century as a *longphoirt* or defensive location to berth their ships, and it became one of the most significant ports in the Irish Sea region during the next few centuries. This part of the Dublin coastline was in the Gaelic kingdom of Brega during the early part of this period that contained two prominent royal centres in Cnogba (modern Castleknock) and Lagore (near Dunshaughlin, Co. Meath). The arrival of the Vikings upended the way of life for many in the island while the lands of north County Dublin became known as Fingal or the lands of the fair foreigners, i.e. Vikings. The development of the modern city has erased much evidence for activity in the locality from this period. However, one of the most prominent events of this time, the Battle of Clontarf in 1014 (see RMP no. DU019-020) took place in and around the modern suburb of Clontarf that lies around a 1km to the north-east.

14.3.1.3 Late Medieval Period

The late medieval period is characterized by the arrival of the Anglo-Normans who quickly conquered large parts of the country. They built stone and wooden castles, brought their own system of land ownership and many craftspeople, merchants and farm workers came to live here forming many new settlements. Existing religious organisations, principally St. Mary's Abbey and Christchurch Cathedral, came to accumulate huge tracts of land around the city and it is thought likely they held some of the lands along the shoreline in this area. Sites indicating activity from this period include the locations of a bridge (RMP DU018-02201) over the Tolka River at Ballybough, c. 1km to the north-west, and a mill (DU018-030) at the Grange at Clonliffe owned by St. Mary's Abbey, c. 500m upriver from the same bridge. The religious estates were broken up after the Dissolution of the monasteries in the mid - 16th century, marking the end of the medieval period in Ireland.

14.3.1.4 Post-Medieval Period

The relatively settled state of Ireland after the tumult of the Cromwellian period acted as a catalyst to the continued expansion of the urban centre beyond the medieval walls. In Dublin, the requirement of new building ground to ease the accommodation situation within the walls was analogous with the necessity of keeping the harbour open to shipping. The construction of permanent stone quaysides had the double advantage of providing secure berthing for shipping while allowing the directed flow of the Liffey to retard the silting up process that had always been a problem for the medieval port. Land thus reclaimed was ostensibly in the hands of the city, the shoreline having been included in the riding of the franchises as early as 1488; private development was encouraged, however, with preferential rents and leases.

Several maps from the 1670's accurately depict the city and harbour in the period immediately prior to the reclamation of the slob-lands to the north-east of the city. One (**Figure 14.2**) shows the general area of the site is located among the tortuous channels of the Liffey, where expanses of mud may have been exposed at spring tides. The situation was further complicated by the estuary of the River Tolka, which emerged from the north-west, the confluence of both rivers leaving only one area of high ground, Clontarf Island, exposed at high tides. The impetus to extend this shoreline to the east came from the City Assembly, which commissioned a survey of the area stretching eastwards to the present-day East Wall Road in 1682.

The assembly had previously taken a speculative interest in the reclamation of the Liffey slob-lands on the southside, offering George Burroes a lease of four and a half acres east of the mouth of the River Staine in 1599 to manufacture bricks (Gilbert 1889, 328-9). If the ground were to prove inadequate, Burroes was to be given the opportunity to relocate his workings, provided he backfill his old site and 'committ noe nusans.' The period leading up to the Confederate Wars of the 1640s saw interest grow in the financial possibilities of reclamation work along the south side of the river. This is reflected in the number of disputes between the City Assembly and prominent property speculators of the day. While reclamation work initially focused on the opening of a direct and secure route to Ringsend – and in doing so, provide new ground for the city to lease at a profit –

the need for a secure harbour to advance the interest of the city's merchants and traders became paramount. William Hawkins's construction of a wall along the river as far as the present-day Townsend Street in 1662–63 was to have an adverse effect on the northern side of the river, where the force of the incoming tide would redirect the flow, causing the formation of sand banks and shallow streams that were even more hazardous to shipping (CARD vi, 402).

On the north-side of the river, the North Wall Quay (RMP DU018-020564) was definitely established by the 1720's, though Charles Brooking's Map of Dublin (1728) states it was still overcome by the tide at this time. The East Wall area is likely to have been set out around this time too.

14.3.2 Cartographic Sources

14.3.2.1 Down Survey (c. 1656)

The maps for the Down Survey were made to facilitate the transfer of land from Catholic to Protestant after the Cromwellian wars. The map of the county of Dublin (**Figure** 14.1) map shows the coastline to the north-west of the city with the Tolka River visible and a bridge over the river that may well represent Ballybough Bridge (RMP DU018-022001). An island is marked, termed *Iantarfe Isle* that probably refers to Clontarf Island as recorded on the First Edition Ordnance Survey map and in proximity to the subject site. The subject site is in an estuarine location prior to any reclamation activities that were begun in the latter part 17th century.

Figure 14.1: Down Survey County Map of Dublin showing approximate site location (c. 1656)

14.3.2.2 Map of Dublin (1673)

A map of the city and harbour of Dublin was produced in 1678. Of most interest for the subject site (approximate location in red box) is the depiction of the coastline to the north-east of the city that shows the frequent channels and sand-bars that the port was known for (**Figure** 14.2). While undoubtedly a major hazard for shipping, such an environment would have been an excellent resource for plants, birds, fish and shell-fish that the people of the locality would have collected and exploited.

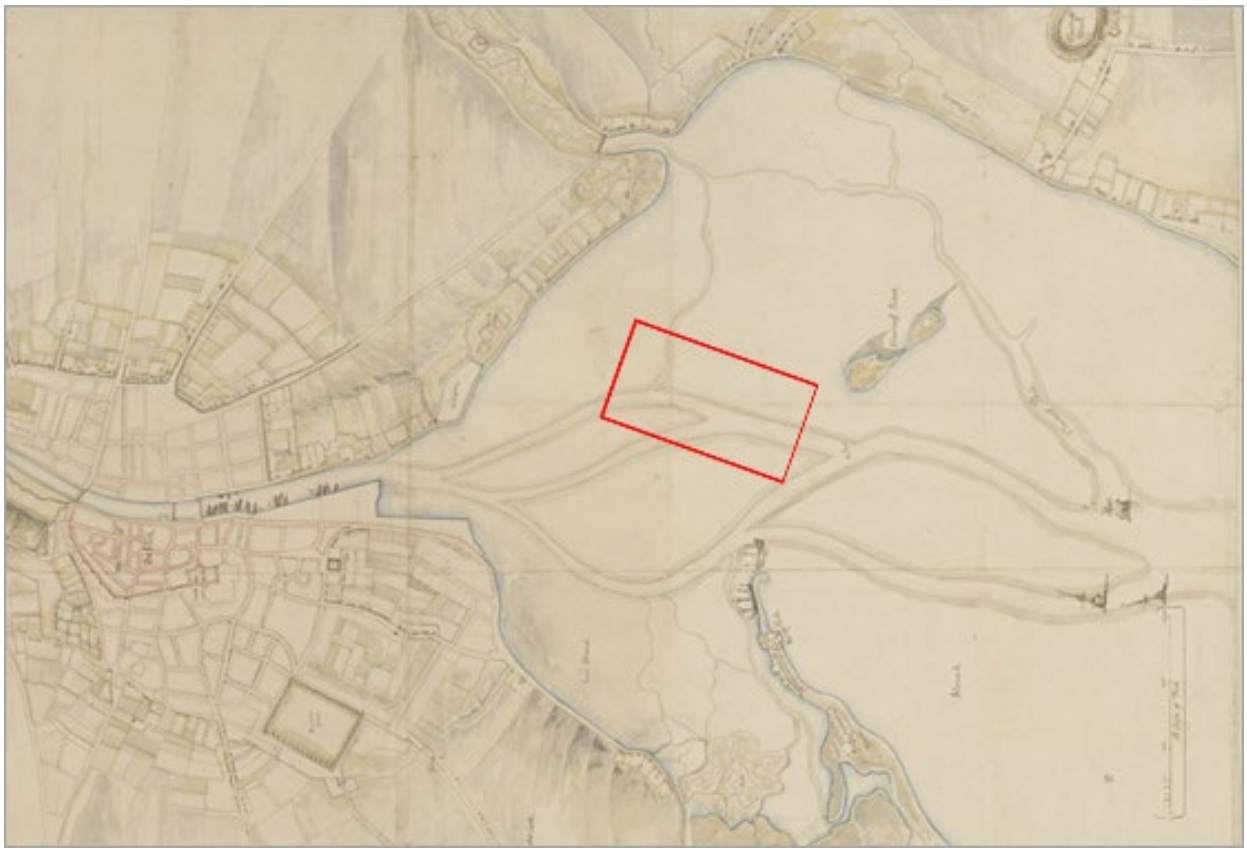


Figure 14.2: Map of Dublin showing approximate site location (1678)

14.3.2.3 Rocque's Map of Dublin (1757)

Rocque's map of 1757 shows that the works to reclaim the ground to the east of what is now North Strand Road had commenced (**Figure** 14.3). East Wall Road is the boundary of the reclamation works and so the subject site (marked in red box) is still located in an estuarine/coastal environment at the time of the surveying of the map. Clontarf Island, apparently marked on the Down Survey map though with a different spelling, is clearly recorded here to the north-east of the subject site and contains a house or building on it. While roads have been laid out and named, e.g. Church Road and East Road, there are few houses recorded in the East Wall area in comparison to numerous plots around the North Wall suggesting that the reclamation works here were not as developed.

Figure 14.3: Rocque's Map of Dublin showing approximate site location (1757)

14.3.2.4 Ordnance Survey

The First Edition 6-inch OS map was surveyed in 1837 but published in 1844. It shows the area in much greater and reliable detail. The subject site is located beyond the East Wall Road between East Road and Church Road (**Figure** 14.4). Still in estuarine muds, there are more houses in the East Wall area than the previous map recorded showing that the development of the area had progressed further. A railway line proposed for construction has been marked out to the west of the subject site. The trenchless crossing for the circuit tie-in will cross what is shown as the municipal boundary on the map.

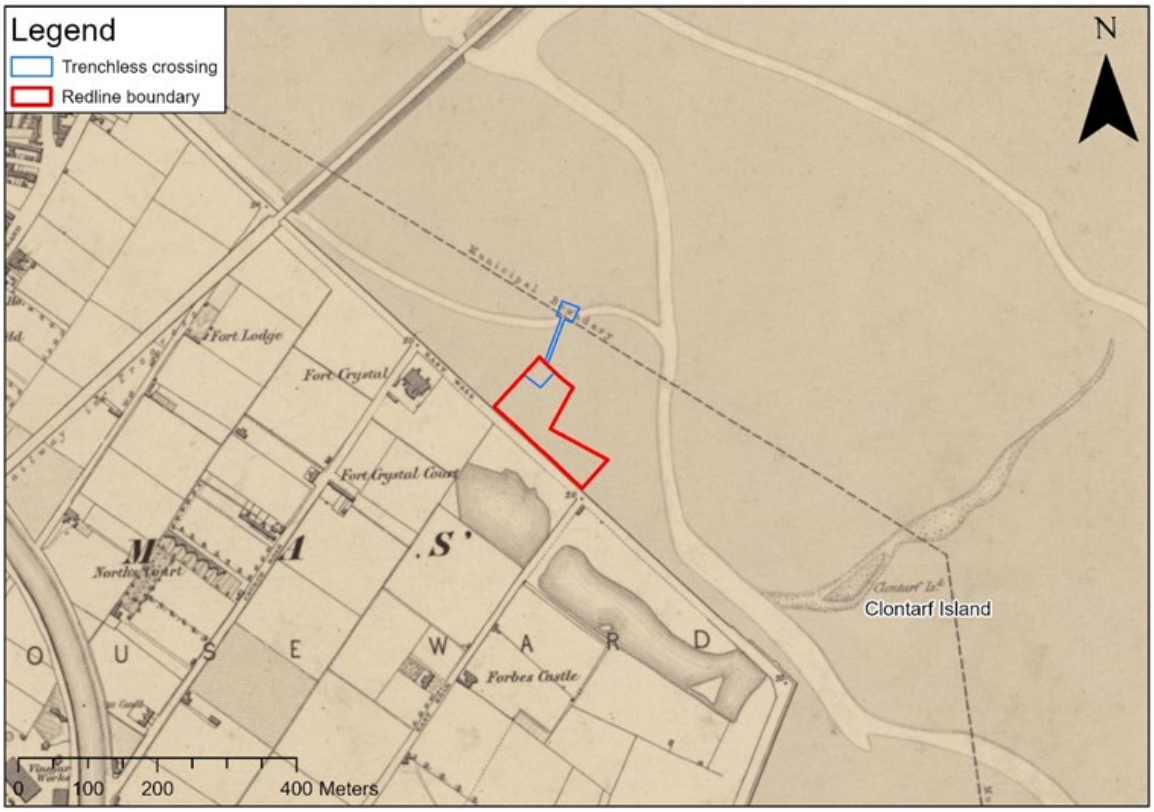


Figure 14.4: First Edition 6-inch OS map showing site location and trenchless crossing (1837)

The 25-inch OS map was surveyed in 1907-08 and published in 1912. The scale of 25 inches to the mile allowed for greater detail to be recorded with many small individual buildings discernible in comparison to earlier maps that are either pictorial or struggle to provide detail greater than plot boundaries. The subject site is recorded as an area of mud with a meandering channel for the Tolka River winding its way through the slob-lands (**Figure** 14.5). Many more residential and industrial/commercial buildings are in place in the East Wall area compared to the previous map. The municipal boundary had been pushed slightly further north by this time, and no longer turned south around Clontarf Island, which is not depicted on this map.

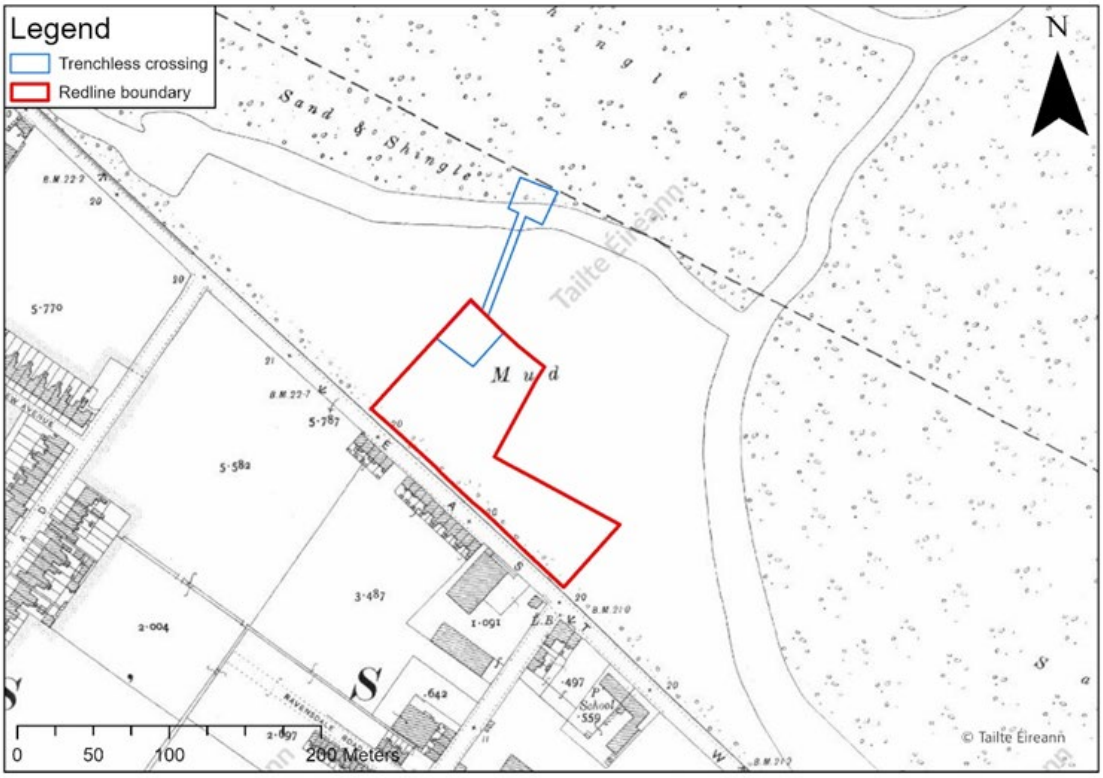


Figure 14.5: Historical 25-inch OS map showing site location and trenchless crossing (1907-08)

The revised or final edition of the 6-inch OS map was surveyed in 1936-37 and published in 1954. Significant changes can be seen compared to the earlier map with the first lands to the north-east of East Wall Road now reclaimed and Alexander House in place. There are a large number of houses and other buildings in the East Wall area (**Figure 14.6**).

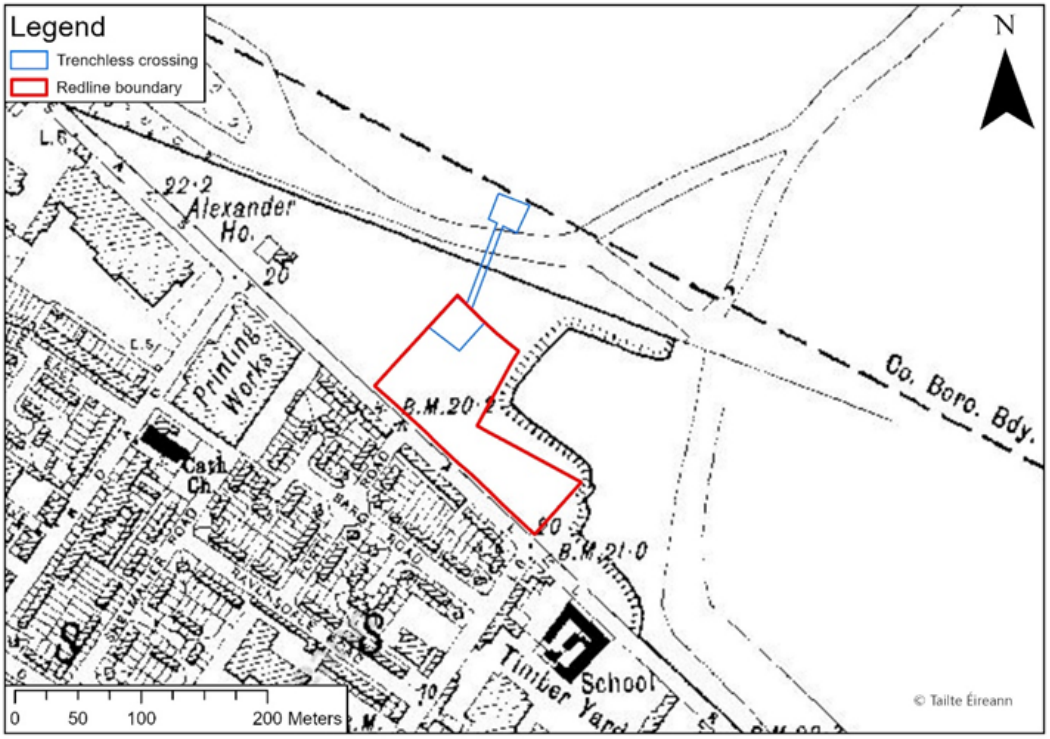


Figure 14.6: Revised edition 6-inch OS map (1936-37)

14.3.3 Aerial Photography

Aerial imagery is best suited to greenfield sites where buried archaeological sites can sometimes be discerned through crop or soil marks. In an urban setting such as the subject site, some value can be gained through the study of aerial imagery if earlier disturbance of the site is recorded. In these examples, industrial or commercial sheds are in place for large parts of the site in the 1995 image (**Figure 14.7**). These were levelled and the site converted into a surface car-park sometime in the mid-2010's (**Figure 14.8**). The M50 motorway had not yet been constructed in 1995 imagery, and the Eastpoint Business Park to the north was at that time an undeveloped, albeit potentially disturbed, field.

The business park is shown in the 1996-2000 imagery, and the motorway was under construction in Google Earth imagery dating to 2003.

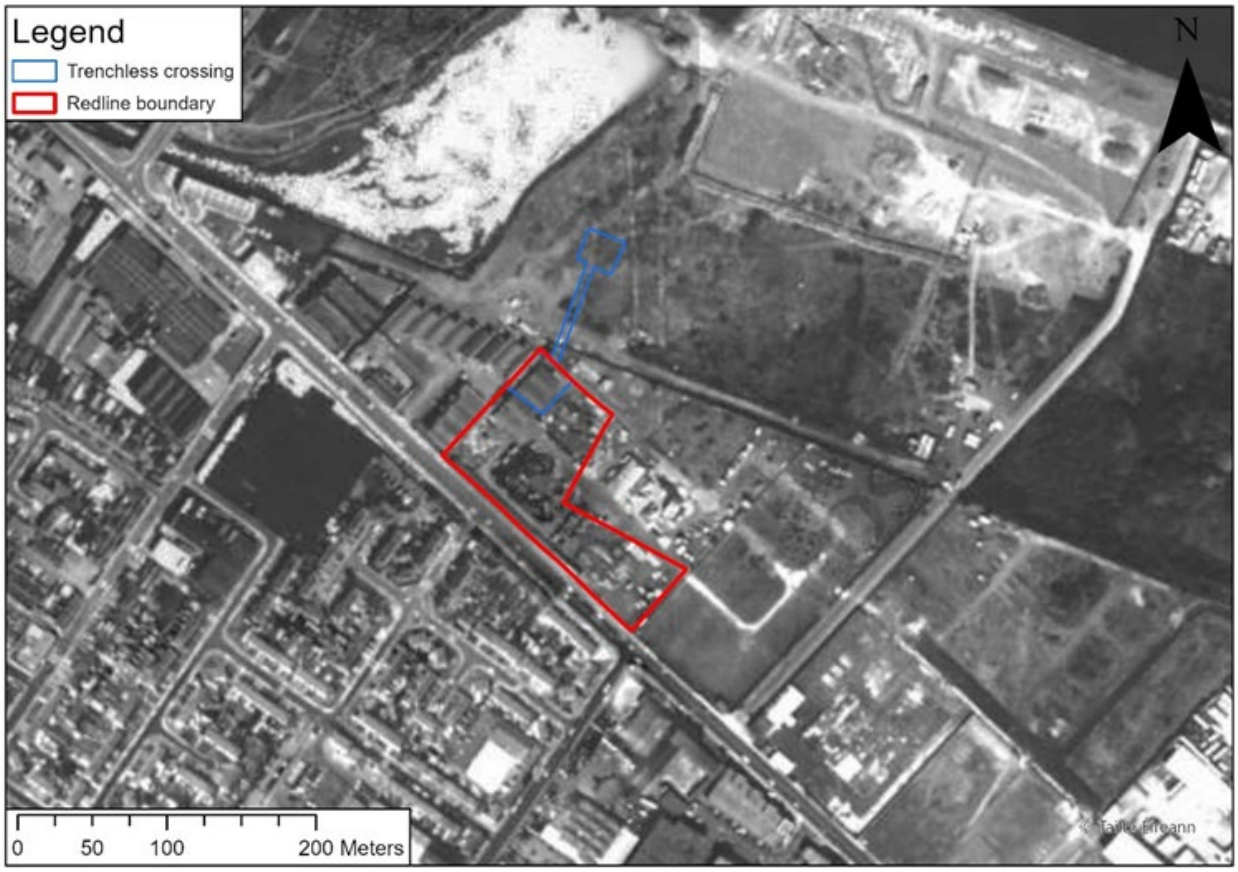


Figure 14.7: Tailte Éireann aerial image (1995)

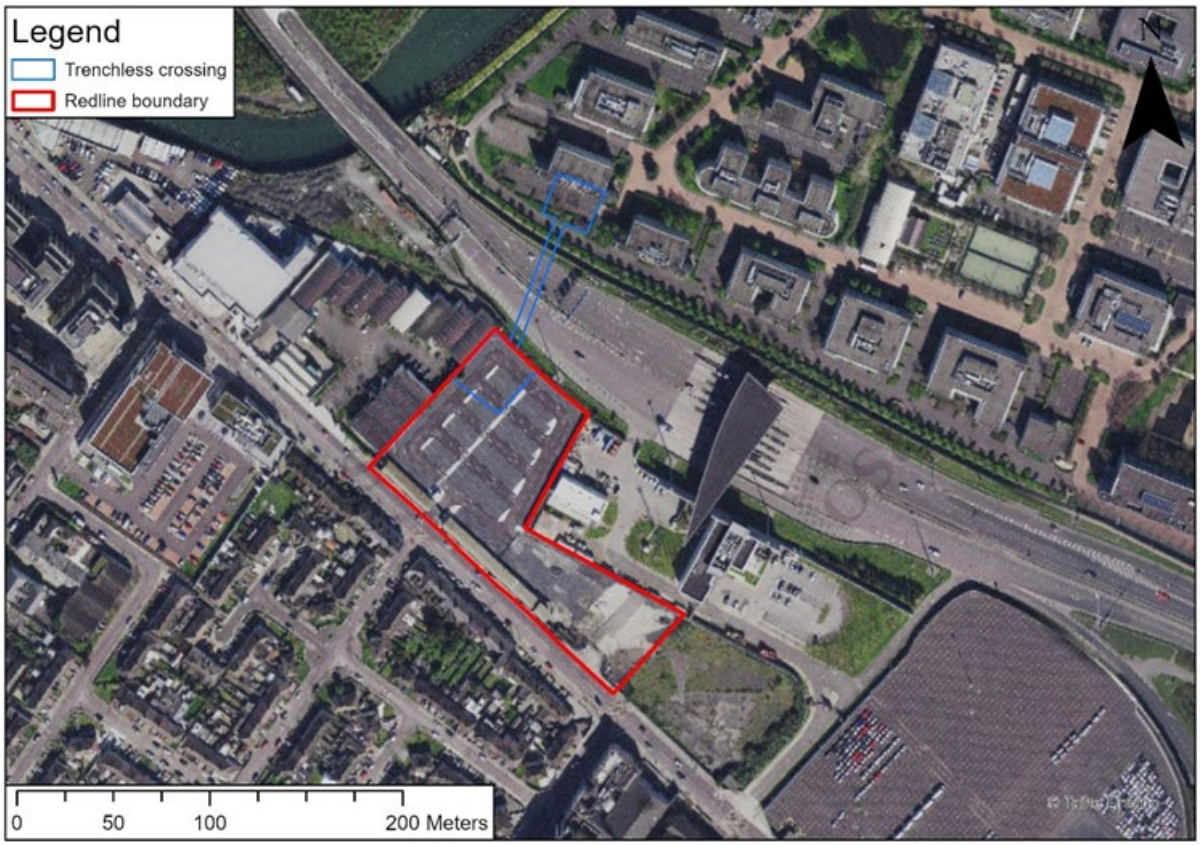


Figure 14.8: Tailte Éireann aerial image (2013-18)

14.3.4 Previous Archaeological Investigations

No previous archaeological investigations have been undertaken within the site boundaries. Several have taken place in the immediate vicinity though none have identified archaeological remains. The remains of the 18th century sea wall survive under East Wall Road, identified during monitoring of SI pits (Licence no. 21E0733; Excavation Bulletin ref. 2024:127). In the wider area however, significant archaeological remains in the form of Mesolithic fish traps have been identified during works at a site at Spencer Dock, approximately 1km south of the development site. Dated to the sixth millennium BC, these were used to capture fish in the Liffey estuary by the hunter gatherer groups who inhabited the island at the time. Coastal areas are generally considered to have an elevated archaeological potential due to their attractiveness for resource exploitation and the survival of the fish trap illustrates this.

It is proposed that the directional drilling for the cable connection will be 5.6m below the M50 motorway. The Mesolithic fishtraps at Spencer Dock were found as low as -4m OD. Monitoring of works at the nearby Dublin Port Tunnel revealed layers of black soils rich in organic material and post-medieval rubbish up to 9m below ground on the east side of the railway. This offers some indication of the potential depths of deposits which may be encountered in the reclaimed estuarine environment and there is the potential for the directional drilling to encounter archaeological stratigraphy or artefacts.

Table 14.1 summarizing previous archaeological works in the surrounding area is presented below.

Table 14.1: Summary of Previous Excavations

Licence No.	Excavations Bulletin Ref.	Investigation Type	Location	Distance	Summary Findings
02E0191	2002:0537	Monitoring	Fairview Park & near Alfie Byrne Road	c. 330m to NW	Monitoring of Dublin Port Tunnel works to the north-west of Tolka River. Modern reclamation material under sod, natural gravels & clays encountered between 3-7m below ground level. No archaeology found.
03E0654	2003:0576; 2004:0565	Monitoring & Excavation	Spencer Dock	c. 980m SW	Mid-18th century house cellars during initial monitoring. Later phase of monitoring & excavation identified late Mesolithic fish trap remains. Above this lay 18th & 19th century reclamation deposits and structures built on these reclamation deposits including the remains of an 18th century windmill & other 19th & early 20th century buildings.
05E0080	2005:477	Testing	Sheriff St / Church St East	c. 640m SW	Remains of late 18th / 19th century church foundations.
06E0668	2006:634; 2007:493; 2007:494	Monitoring & Excavation	Spencer Dock	c. 980m SW	Monitoring of ground reductions for National Conference Centre. Post-medieval/early modern stone & brick walls and a Neolithic fish trap/weir were identified at between -2.4m - -3m OD. Late Mesolithic fish traps were found at -4m OD.
06E0682	2006:639	Monitoring	Sheriff St Lwr	c. 800m SW	Monitoring for Docklands train station. Uncovered reclamation deposits and remains of small post-medieval red-brick building.
06E0327	2006:640	Monitoring	117-126 Sheriff St Upr.	c. 650m SSW	Monitoring of general ground reductions & other works. No archaeology found.
07E0636	2007:492	Monitoring	North Wall Quay	c. 880m SSW	Monitoring of general ground reductions & other works up to 7m below ground level. No archaeology found.
08E0915	2009:AD5	Monitoring	North Quays to East Wall	c. 780-980m SW	Monitoring of SI pits from Inchicore to East Wall area. In North Wall/East Wall area, there was no certain evidence of archaeological deposits. The area has been heavily truncated, levelled and filled with post-medieval and modern landfill deposits. Immediately behind the North Quay wall, boring demonstrated slightly over 7m of fill (base –3.87m OD)
09E0375	2011:200	Monitoring	New Wapping St / Sheriff St Upr.	c. 650m SW	Monitoring of ground reductions up to 9m in depth for pumping station. Post-medieval reclamation and modern landfill deposits, overlying waterlogged

Licence No.	Excavations Bulletin Ref.	Investigation Type	Location	Distance	Summary Findings
					wooden remains of potentially prehistoric date (around – 1.4m OD))
12E0126	2012:211	Monitoring	North Wall Quay	c. 950m SSW	Post-medieval. Walls of 19th century structures and 18th/19th century quay wall, with a depth of c. 4.3m.
12E0295	2012:646	Monitoring	Santry to East Wall Rd.	Adjacent to development	Monitoring of gas pipeline from Santry to East Wall/Tolka Road. Pipeline trench (>1.2m in depth) largely through introduced soils under roads or Fairview Park. Deeper near Tolka River crossing. No archaeology found
16E0500	2017:109	Monitoring	Port Precinct Area, East Wall / Alexander Rd.	c. 550m SE	Tarmac & mixed fill material removed for landscaping of Port Centre Precinct area. No archaeology found.
16E0671	n/a	Monitoring	113-115 Upper Sherriff St / Upper Mayor St.	c. 610m SSE	Monitoring of ground reductions for apartment blocks. 18th century reclamation deposits over riverine gravels & sands & foundations of 19th century structures, chimney & drains
17E0405	n/a	Monitoring	North Wall Quay / East Wall Road	c. 800m SSE	Monitoring of ground reductions for a commercial building. Depths up to 4.5m excavated. Reclamation deposits exposed. No archaeology identified
17E0504	2018:644	Monitoring	91-94 North Wall Quay	c. 780m S	Monitoring of ground reductions for a commercial building. Depths up to 2.2m excavated. Reclamation deposits exposed. No archaeology identified
21E0733	2024:127	Monitoring	East Wall Rd.	Adjacent to development	Monitoring of SI pits along Liffey Tolka greenway along East Wall Road. Discovery of 18th century sea wall along East Wall Road

14.3.5 Topographical Files of the National Museum of Ireland

There are no stray finds recorded in the Topographical Files of the National Museum of Ireland directly associated with the subject site. The closest entry is located in what is now Alfie Byrne Park, c. 800m to the north-east. The entry, NMI ref. 1970:190-197, records a group of artefacts that were collected after dredging material around the location of a wooden wreck at a depth of c. 30 feet. The finds include a sherd of red-earthenware pottery, a fragment of a copper vessel, and clay pipe fragments, some of which are likely to date to the mid-17th century.

14.3.6 Recorded Monuments (RMP / SMR Sites)

There are no Recorded Monuments, i.e. RMP / SMR sites, within the proposed development site or in its vicinity. The closest site lies over 900m to the south, the 18th/19th century quay at North Wall Quay, RMP DU018-020564. The proposed development site is also located well outside of the Zone of Archaeological Potential (ZAP) for the Historic Town of Dublin, RMP DU018-020. This Zone extends along Amiens Street and is approximately 1km to the west-south-west at its closest point from the subject site.

14.3.7 Architectural Heritage

The subject site is located in an area marked by a strong industrial and commercial character. The Docklands area was developed following a land reclamation scheme initiated in the late 17th century, with the construction of warehouses and stores beginning in earnest following the building of the Custom House a century later. Cartographic evidence shows a still relatively sparse level of development in the East Wall area by the middle of the 19th century. While the principal activities for Dublin Port moved in the latter half of the 20th centuries to further reclaimed grounds beyond East Wall Road, the East Wall and North Wall areas still contain many elements such as railways, the canal and buildings that were constructed during its industrial heyday. Built between 1789 and 1817, the Royal Canal connected Spencer Dock to the River Shannon. Formally closed in 1961, the canal has gradually been restored and was re-opened c. 2010. Most of the railway tracks and stations were constructed by the second half of the 19th century.

14.3.7.1 Protected Structures

There are no entries on the Record of Protected Structures within or adjacent to the subject site. The closest entry is an ESB substation (RPS ref. 8771) from the early 20th century near the corner of East Wall and Alexandra Road, c. 500m to the south-east. There will be no direct or indirect impact from the development on this structure given the distance involved and the intervening urban landscape.

14.3.7.2 Architectural Conservation Area

There are no Architectural Conservation Areas (ACA) in proximity to the subject site. The closest is Hollybrook Road in Clontarf and the boundary of this ACA is over 1km to the north-east. There will be no impact from the development in this ACA.

14.3.7.3 National Inventory of Architectural Heritage

There are two entries on the National Inventory of Architectural Heritage (NIAH) in relative proximity to the subject site. A house, NIAH ref. 50120260 is located on the corner of Seaview Avenue East and Church Road and was built in the mid-19th century. Across the road on Church Road proper lies a building known as the Tin Church, NIAH ref. 50120262, now operating as a commercial premises. Both buildings lie around 200m to the south-west of the site. There is no intervisibility between these structures and the subject site and there will consequently be no impact from the Proposed Development.

14.4 Potential for Significant Effects

14.4.1 Construction Phase

14.4.1.1 Substation

The archaeological, architectural and cultural heritage assessment for the proposed development of an electricity substation and associated features has found that;

- The site is moderate in scale, c. 1 ha in extent;
- There are no Recorded Monuments (RMP / SMR sites) within or near the subject site;
- Study of cartographic sources indicate the site was not reclaimed from the sea until the middle of the 20th century;

- Study of aerial photography shows the former presence of now demolished buildings on the site;
- No previous archaeological investigations have occurred in or adjacent to the site; others in the wider area have often exposed the remains of now demolished 18th-20th century structures with the noted exception of prehistoric fish traps revealed along the old shore line of the Liffey;
- There are no entries in the Topographical Files of the NMI directly associated with the site but dredging of mud near the old coastline to the north of the site has revealed 17th century activity;
- There are no entries on the RPS within or near the subject site and the site is not in proximity to an ACA.

These factors indicate the site has a low to moderate level of potential for the survival of buried archaeological remains. The land reclamation deposits are of early 20th century date, and the area was further disturbed with hard surfaces and former industrial or commercial structures which were demolished c. 2010. However, the archaeological potential relates to earlier archaeological features or deposits which may survive beneath the land reclamation levels. It can be assumed that the remains of the late 17th or early 18th century sea wall that was constructed to facilitate the land reclamation in this area survives under the current line of the East Wall Road. The 25-inch map of 1912, which is of excellent accuracy, suggests that there is an approximate buffer of 7m between the redline boundary and the historic wall which is beneath the now widened East Wall Road. There is a small chance that if the mapping is not sufficiently accurate and ground reductions are sufficiently deep, then this feature may be encountered. Should additional ducting for services to the road be required in the future then this may similarly encounter the historic East Wall.

There is therefore the potential, albeit negligible, for direct negative impact to subsurface archaeological features.

14.4.1.2 Grid Connection (not part of the subject planning application)

Although not part of the current application, the trenchless crossing which will facilitate the grid connection has also been assessed in this chapter. Potential archaeological impacts relate to the horizontal directional drilling (HDD) itself and the receiving pits for the drilling. The HDD will be approximately 100m in length and will reach a depth of up to 10m below the M50 motorway. Nearby investigations have demonstrated a depth of up to 9m of black organic-rich deposits overlying natural sands and gravels. It is therefore likely that directional drilling will encounter these deposits, and there is the potential that they will preserve archaeological features or artefacts related to the estuarine environment. The receiving pits will also require ground reduction, potentially impacting underlying archaeological features or artefacts beneath the reclaimed ground.

14.4.2 Operational and Maintenance Phase

The impacts of the proposed development relate to the construction phase. All potential archaeological impacts will have been resolved as part of the construction phase.

14.5 Proposed Mitigation Measures

14.5.1 Construction Phase

14.5.1.1 Substation

It is recommended that archaeological monitoring by a suitably qualified archaeologist be undertaken of all excavations and earth moving activities associated with the proposed electricity

substation. This will include topsoil stripping, foundation excavations, any trenching which may be necessary for underground ducting and any other excavation which may be required.

All archaeological monitoring will be carried out under licence to the DHLGH and 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.

In the event that archaeological remains are discovered, the National Monuments Service of the DHLGH and the National Museum of Ireland will be informed and all construction works will cease in the vicinity of the remains and the area fenced off until a licensed archaeologist has resolved the archaeological issues in consultation with the authorities, who will advise on the most appropriate remedial action (such as preservation by record through excavation or preservation in-situ through redesign).

It is acknowledged, however, that the depths of 20th century land reclamation deposits may exceed any excavations required as part of the construction phase. Should it be found through the archaeologically monitored geotechnical investigations that land reclamation levels across the site are of sufficient depth that there will be no potential impact to underlying archaeology (including the East Wall), then it may be possible, with written agreement from the National Monuments Service and DCC, that further archaeological monitoring will not be required.

All recommendations are subject to the approval of DCC and the National Monuments Service of the DHLGH. This suggested strategy does not prejudice recommendations made by DCC and the National Monuments Service.

14.5.1.2 Grid Connection (not part of the subject planning application)

Archaeological monitoring under licence from the National Monuments Service of the DHLGH will be undertaken in the course of ground reduction for the working areas and receiving pits for the directional drilling. The monitoring archaeologist will monitor and make a visual inspection of the arisings from the HDD in order to retrieve any potential artefacts and to record the presence of environmental material etc.

14.5.2 Operational and Maintenance Phase

The impacts of the proposed development relate to the construction phase. All potential archaeological impacts will have been resolved as part of the construction phase.

14.6 Conclusion

14.6.1.1 Substation

In conclusion, while the proposed development site is located outside of the historic city of Dublin and there is prior disturbance from former structures on the site, there is some archaeological potential related to the estuarine environment. This area was reclaimed in the 20th century and there is the potential for archaeological features, which may include organic material, to survive beneath the reclamation levels. A similar environment on the North Lotts has revealed significant prehistoric material.

The potential effects from the proposed electricity substation relate to impacts from ground reduction as part of the construction phase. There is the potential for ground reduction activity associated with the construction phase to have a direct negative impact on pre-reclamation levels, should they require sufficiently deep ground reduction or excavations.

It is recommended that archaeological monitoring by a suitably qualified archaeologist be undertaken of all excavations and earth moving activities associated with the construction of the proposed electricity substation, under licence to the DHLGH.

This recommendation may be reviewed should geotechnical investigations demonstrate that the depth of 20th century reclamation deposits across the site exceed the excavation required for the construction phase. In this event, and if written agreement is received from the National Monuments Service and DCC, then it may be found that archaeological monitoring will not be required for the development.

14.6.1.2 Grid Connection (not part of the subject planning application)

The Grid Connection (not part of the subject planning application) has been assessed for potential impact. The current assessment has however shown that the HDD will impact sediments which predate the 20th century land reclamation and which have the potential to contain archaeological features or artefacts. The receiving pits may also impact these levels. Archaeological monitoring under licence from the National Monuments Service of the DHLGH will be undertaken in the course of ground reduction for the working areas and receiving pits for the directional drilling. The monitoring archaeologist will monitor and make a visual inspection of the arisings from the HDD in order to retrieve any potential artefacts and to record the presence of environmental material etc.

14.7 Chapter References

Wordwell 2025 ‘Database of Irish Excavation Reports’. [Online] Available at www.excavations.ie [Accessed 02/04/2025]

Gilbert, J.T. 1889. *Calendar of Ancient Records of Dublin, in the Possession of the Municipal Corporation of that City.* [Online] Available at https://archive.org/details/calendarofancien01dubl/page/30/mode/2up [Accessed 02/04/2025]

McQuade, M. 2003 ‘Final Report of Archaeological Excavation Building C, Spencer Dock, North Wall Quay, Dublin 1’. Licence No. 03E0654. Unpublished report, Margaret Gowen & Co. Ltd.

McQuade, M. 2007 ‘Final Report of Archaeological Excavation National Conference Centre, Spencer Dock, North Wall Quay, Dublin 1’. Licence No. 06E0668. Unpublished report, Margaret Gowen & Co. Ltd.

McQuade, M. 2012 ‘Preliminary Report for Archaeological Monitoring and Excavation, North Lotts Pumping Station, New Wapping Street / Sheriff Street, Dublin 1’. Licence No. 09E0375. Archaeological Development Services Ltd, unpublished report.

McQuade, M & Weldon, K. 2003 ‘Archaeological Monitoring and Excavation, Block RSTUV, Spencer Dock, North Wall Quay, Dublin 1’. Unpublished report, Margaret Gowen & Co. Ltd.

National Monuments Service 2025. ‘Historic Environment Viewer’. [Online] Available at www.archaeology.ie [Accessed 02/04/2025]

Tailte Éireann 2025 ‘Geohive Map Viewer’. [Online] Available at www.geohive.ie [Accessed 02/04/2025]

Trinity College Dublin 2025. ‘The Down Survey of Ireland’. [Online] Available at https://downsurvey.tchpc.tcd.ie/ [Accessed 02/04/2025]

15 Biodiversity

15.1 Introduction

This chapter of the PECR details the results of the desk study and field survey completed to establish the baseline ecological conditions at the site. The purpose of the chapter is to provide an appraisal of the potential ecological impacts associated with the Proposed Development. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.The assessment provides a description of the existing ecological environment, the potential effects likely to occur due to the Proposed Development as well as an assessment of the significance of such effects from an ecological perspective.

A separate Report to Inform Screening for Appropriate Assessment (AA) (RPS, 2025) has been prepared for the Proposed Development (provided under separate cover) which focus on European Sites and the features for which these sites are designated. With respect to relevant European Sites, the Report to Inform Screening for AA should be read in conjunction with this chapter of the PECR. For expediency and to avoid unnecessary repetition, the information and assessment of the Proposed Development with respect to European Sites and their relevant features is cross-referenced in this report with the Report to Inform Screening for AA.

15.2 Assessment Methodology

15.2.1 Relevant Legislation and Guidelines

The assessment of the likely impacts of the Proposed Development on biodiversity has had regard to the following legislation, policy documents and guidelines, where relevant. Whilst this is not an exhaustive list of all legislative, policy and guidance documents, it contains those that are most relevant for the purposes of preparing this section of the PECR.

Legislation

- EU Habitats and Birds Directives; as transposed into Irish law via the European Communities (Birds and Natural Habitats Regulations 2011 (as amended);
- EU Invasive Alien Species Regulations 2024
- Wildlife Act 1976 (as amended), Wildlife (Amendment) Act 2000 (as amended) further amended by Wildlife (Amendment) Act 2023;
- Planning and Development Acts 2000 (as amended); and
- Flora (Protection) Order, 2022.

Policy

- National Planning Framework – Project Ireland (2040 Government of Ireland, 2018);
- National Development Plan 2021 – 2030 (Government of Ireland, 2021) which was updated on the 22nd of July 2025[25];
- Climate Action Plan 2024 (Government of Ireland, 2024)
- 4th National Biodiversity Action Plan (NBAP) 2023-2030 (NPWS, 2024);
- Dublin City Development Plan 2022 – 2028 (DCC, 2022);

[25] https://assets.gov.ie/static/documents/NDP_Review_document_-_22_July_2025_1025.pdf

- Dublin City Council Local Authority Climate Action Plan 2024-2029 (DCC, 2004);
- Dublin City Biodiversity Action Plan 2021-2025 (DCC, 2021).

15.2.2 Study Area and Zone of Influence

The ecological study area is determined by the potential Zone of Influence (ZoI) of the Proposed Development. The ZoI for a Proposed Development is the area over which ecological features may be subject to significant impacts as a result of the Proposed Development and associated activities.

The ZoI is likely to extend beyond the boundary of a development, for example where there are hydrological links extending beyond the site boundaries. Activities associated with the construction and operational and maintenance phases should be separately identified (where relevant) (CIEEM, 2018).

The ZoI will vary for different ecological features depending on their sensitivity to an environmental change. It is therefore appropriate to identify different ZoIs for different features. The features affected could include habitats, species, and the processes on which they depend. ZoIs are specified for different features, and types of potential impact.

It is also important to acknowledge that the absence of a designation or documented feature does not mean that no such feature exists within the site. As such, ZoI should be identified for all features potentially occurring within the site of the Proposed Development, in addition to any known to occur. As recommended by CIEEM (2018), professionally accredited or published studies, as well as professional judgement, were used to determine ZoI for this Proposed Development.

Through the incorporation of relevant ZoIs for the Proposed Development, the ecological study area is determined to extend outside of the footprint of the Proposed Development, to include the ecological features as set out in **Table 15.1**.

Table 15.1: Study Area and Zone of Influence for different Ecological Features

Ecological Features	Study Area for Desk Study	Zone of Influence Identified
Sites designated for nature conservation	Catchment Management Unit, groundwater body, and Dublin Bay	All sites with connectivity to the Proposed Development
Otter	5 km	Up to 150 m along suitable otter watercourses
Bats	5 km	Redline boundary of the Proposed Development and adjoining habitats
Breeding Birds	5 km	Redline boundary of the Proposed Development and adjoining habitats
Other protected mammals	5 km	Redline boundary of the Proposed Development and adjoining habitats
Groundwater dependant fauna	Dublin Groundwater Body (GWB)	Redline boundary of the Proposed Development and adjoining habitats
Groundwater dependant habitats	Dublin GWB	500m for excavation risk to flow/yield, and Dublin GWB for pollution
Habitats, rare, threatened and protected flora, and invasive alien plant species.	5 km	Redline boundary of the Proposed Development and adjoining habitats

15.2.3 Sources of Information to Inform the Assessment

15.2.3.1 Desk Study

Relevant information within the biodiversity study area was collected through a detailed desktop review in April 2025, of existing studies and datasets. Sources of information that were used to inform the desk study assessment included:

- Environmental Protection Agency (EPA) online interactive mapping tools (https://gis.epa.ie/EPAMaps) and (https://www.catchments.ie/maps/) for water quality data including surface and ground water quality status, and river catchment boundaries[26];
- Geological Survey of Ireland (GSI)[27], consulted for data on groundwater bodies;
- National Biodiversity Data Centre (NDBC) database[28], consulted for records of rare, protected and invasive species; within a certain km distance of the Grid Square in which the Proposed Development is located.

15.2.3.2 Field Surveys

In addition to a desk study, ecological site walkover surveys were conducted between 2024 and 2025. The walkover surveys were undertaken by qualified professional ecologists within the extent of the Proposed Development site. A summary of site-specific surveys is outlined in **Table 15.2** below.

Table 15.2: Summary of Field Surveys completed to date

Field survey focus	Overview of survey	Survey Date(s)
Habitats	Habitat classification to Fossitt (2000) of the Proposed Development site and surrounding environs.	September 2024, April, May, and June 2025
Protected flora	Assessment of potential for species listed in Flora (Protection) Order 2022, and Red Lists (Wyse Jackson et al., 2016; Lockhart et al., 2012).	September 2024
Invasive alien plants and animals	Identification of Third Scheduled species of European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and under the First Schedule of the European Union (EU) (Invasive Alien Species) Regulations 2024.	September and October 2024, April, May, and June 2025
Bats – Suitability for roosting, commuting, and foraging habitats	Suitability assessments completed with cognisance of the 4th edition of Bat Conservation Trust (BCT) guidelines (Collins, 2023).	December 2024
Bats – Internal building inspection	Internal building inspection was carried out by ecologists with cognisance of the 4th edition of BCT guidelines (Collins, 2023).	December 2024 and April 2025

[26] Available online at: https://gis.epa.ie/EPAMaps and https://www.catchments.ie/maps/ , accessed April 2025.
[27] Available online at: https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/activities/understanding-ireland-groundwater/Pages/Groundwater-bodies.aspx, accessed April 2025.
[28] Available online at: https://biodiversityireland.ie/ , accessed April 2025.

Field survey focus	Overview of survey	Survey Date(s)
Bats – Emergence Survey	Determine the presence or absence of roosting bats within a structure identified within the site boundary.	June 2025
Breeding Birds	The survey methodology employed was a scaled down version of the British Trust for Ornithology's (BTO) Common Bird Census (CBC) technique (Bibby et al., 2000; Gilbert et al., 1998), which aimed to capture a snap-shot of breeding bird activity within the Proposed Development site. This method required a competent observer to complete multiple monthly visits, slowly walking transects through the site, recording all birds seen or heard	April, May and June 2025

15.2.3.2.1 Habitats and Flora

The purpose of the site surveys was to classify habitats using the Heritage Council's habitat classification system (Fossitt, 2000) for terrestrial habitats occurring within the footprint of the Proposed Development. The information gained from the survey was used to describe habitat features, and to direct further habitat and species-specific survey work to inform this assessment.

15.2.3.2.2 Invasive Plants and Animals

Habitat surveys in September and October 2024, and April, May, and June 2025 recorded the presence and location of any Invasive Alien Plant Species (IAPS) and Invasive Alien Animal Species (IAAS). For the purpose of this assessment, IAPS and IAAS are those listed under the Third Schedule of the European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), as amended, and under the First Schedule of the European Union (EU) (Invasive Alien Species) Regulations 2024 (SI 374 of 2024). The species listed on both of these schedules are the same.

15.2.3.2.3 Breeding Birds

Breeding bird assessments of the Proposed Development site were carried out in April, May and June 2025. The survey methodology employed was a scaled down version of the British Trust for Ornithology's (BTO) Common Bird Census (CBC) technique (Bibby *et al*., 2000; Gilbert *et al*., 1998), which aimed to capture a snap-shot of breeding bird activity within the Proposed Development site. This method required a competent observer to complete multiple visits, slowly walking transects through the site, recording all birds seen or heard.

Species encountered were mapped and coded using standard BTO species codes with categories of breeding evidence then assigned. No attempts were made to locate nests as the survey methods are generally sufficient to determine probable or confirmed breeding. The survey identified all bird species as Low, Medium or High Conservation Concern as per the latest Birds of Conservation Concern in Ireland (BoCCI) listing (Gilbert *et al*., 2021).

Survey visits were conducted during the morning to coincide with the peak bird activity period and were not made during adverse weather conditions.

15.2.3.2.4 Bats

With cognisance of 4th edition of Bat Surveys for Professional Ecologists: Good practice guidelines (Collins, 2023), a preliminary ground-level roost assessment was carried out during daylight hours, using close focusing binoculars, to identify features with suitability for roosting bats in trees and/or

structures within or adjoining the footprint of the Proposed Development. A survey of structures was completed in December 2024.

All trees and structures within or adjoining the footprint of the Proposed Development assessed for the presence of Potential Roost Features (PRFs) including cavities, frost cracks, trunk and branch splits, rot holes, and hollow sections of trunk and branches. The results of this assessment were used to grade trees into the categories: NONE (no PRFs in tree or highly unlikely), FAR (further assessment required to establish if PRFs are present), PRF-I (a PRF suitable for an individual bat) and PRF-M (a PRF suitable for multiple bats).

There were a number of existing lean-to structures within the Proposed Development boundary which will be demolished to accommodate the Proposed Development. The exteriors of these structures within and adjoining the footprint of the Proposed Development were assessed for potential bat access points in features including soffits, roof beam joints, roofing, eaves and broken plaster. Structures were graded into the potential suitability categories: none, negligible, low, moderate and high.

A bat roost emergence survey was carried out in June 2025 for a structure that was determined to have low roosting suitability. The purpose of the survey was to observe the potential roost features during the period of emergence to determine the presence or likely absence of bats at the time of surveying. Emergence surveys commenced 15 minutes before sunset and ended two hours after sunset, and were undertaken using two infrared digital recording cameras and infrared touches.

15.2.3.2.5 Other Protected Mammals

During all walkover surveys of the site of the Proposed Development, the potential was also noted for suitable habitats and presence of any other protected terrestrial mammal species potentially present in an urban environment such as hedgehog *Erinaceus europaeus*.

15.2.4 Limitations

An extensive search of available datasets for records of rare and protected species within proximity of the Proposed Development has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.

No limitations were encountered which would prevent robust conclusions being drawn as to the potential impacts and effects of the Proposed Development.

15.2.5 Assessment Criteria

Having defined the relevant baseline conditions within the ZoI of the Proposed Development, ecological features therein are valued, in advance of commencing the assessment of potential impacts.

The methodology used to value ecological features takes cognisance of the relevant principles underpinning impact assessment under the EPA (2022) guidelines; however, it also has regard for the geographic frames of reference outlined by the NRA (2009b). The geographic frames of reference outlined by the NRA (2009b) are employed in this assessment.

It is possible that features which are in and of themselves of negligible ecological value (e.g. improved grassland of negligible floristic value) may be of high value in the resource they provide to other features (e.g. a significant resource of invertebrates breeding in the grasslands, which are an important food for local badgers). In some cases, therefore, habitats and species of negligible value may nevertheless be considered of greater importance due to their value to protected species.

'Important Ecological Features', as termed in CIEEM (2018), are defined here as those ecological features which are valued at Local Importance (Higher Value) or above (NRA, 2009b). Ecological features below this value are not carried forward to impact assessment.

15.2.6 Potential Biodiversity Impacts

A description of the Proposed Development is provided in **Chapter 4** of this PECR. The activities that have potential to result in likely significant effects on ecological receptors are outlined here.

15.2.6.1 Construction Phase

The key activities which have potential to result in likely significant effects on ecological receptors during construction are:

- Site clearance and enabling works including vegetation removal;
- Demolition of existing buildings;
- Earthworks and construction activities; and
- Surface water run-off, with potential to carry suspended silt or contaminants into local watercourses and associated habitat deterioration effects upon terrestrial habitats.

15.2.6.2 Operational Phase

The key activities which have potential to result in likely significant effect on ecological receptors during the operational and maintenance phases are:

- Movement of maintenance vehicles and personnel; and
- Operational and maintenance lighting.

15.2.6.3 Impact Categories

The impact categories scoped for assessment are set out as follows:

- Habitat loss, fragmentation, degradation and alteration;
- Disturbance from noise, vibration, lighting, and human presence;
- Pollution to water, air, and/or soil; and
- Spread of invasive alien species

15.3 Description of Receiving Environment

This section outlines the ecological baseline environment, as informed by the desktop studies and field surveys.

15.3.1 Designated Sites for Nature Conservation

The Proposed Development is not located within or adjoining any internationally or nationally designated sites for nature conservation. Designated sites for nature conservation within the Zone of Influence are detailed in **Table 15.3**.

The closest nationally designated site for nature conservation Proposed Development is the North Dublin Bay pNHA (site code 000206), located c. 153 m north-west. The closest internationally designated site is the South Dublin Bay and River Tolka Estuary SPA (site code 004024), located approximately 250 m from the Proposed Development (or 170 m, from the Grid Connection which is not part of the subject planning application).

A Report to Inform Screening for Appropriate Assessment been prepared to assess the potential for likely significant effects on European sites arising from the Proposed Development. It has been concluded that there is no potential for likely significant effects, alone or in-combination with other plans and projects. As such, a Natura Impact Statement (NIS) has not been prepared.

Table 15.3: Designated Sites within the Zone of Influence

Designated Site	Overview	Distance from Proposed Development
European Sites (SAC and SPA)		
South Dublin Bay and River Tolka Estuary SPA (004024)	To maintain each designated SCI species in favourable condition.	Located c. 170m north
South Dublin Bay SAC (000210)	To maintain or restore the favourable conservation condition of each designated feature.	Located c. 3.77km south-east
North Bull Island SPA (004006)	To maintain each designated SCI species in favourable condition.	Located c. 3.5km north-east
North Dublin Bay SAC (000206)	To maintain or restore the favourable conservation condition of each designated feature.	Located c. 3.7km north-east
Northwest Irish Sea SPA (004236)	To maintain or restore the favourable conservation condition of designated SCI species.	Located c. 3.4km north-east
Rockabill to Dalkey Island SAC (003000)	To maintain each designated feature in favourable condition.	Located c. 9.76km east
Howth Head SAC (00202)	To maintain each designated feature in favourable condition.	Located c.9.33km east
Baldoyle Bay SPA (004016)	To maintain each designated SCI species in favourable condition.	Located c. 8.6km north-east
Baldoyle Bay SAC (000199)	To maintain each designated feature in favourable condition.	Located c. 8.14km north-east
Dalkey Islands SPA (004172)	To maintain each designated SCI species in favourable condition.	Located c. 10.06km south-east
Howth Head Coast SPA (004113)	To maintain each designated SCI species in favourable condition.	Located c. 11.71km east
Ireland's Eye SAC (002193)	To maintain each designated feature in favourable condition.	Located c. 12.23km north-east
Ireland's Eye SPA (004117)	To maintain each designated SCI species in favourable condition.	Located c. 11.23km north-east
Malahide Estuary SAC (000205)	To maintain or restore the favourable conservation condition of each designated feature.	Located c. 11.74km north
Wicklow Mountains SAC (002122)	To maintain or restore the favourable conservation condition of each designated feature.	Located c. 11.96km south
Wicklow Mountains SPA (004040)	To maintain or restore the favourable conservation condition of each designated SCI species.	Located c. 14.72 km south

Designated Site	Overview	Distance from Proposed Development
Malahide Estuary SPA (004025)	To maintain each designated SCI species in favourable condition.	Located c. 11.89km north
Glenasmole Valley SAC (001209)	To restore the favourable conservation condition of each designated feature.	Located c. 12.6km south-west
Rogerstown Estuary SPA (004015)	To maintain each designated SCI species in favourable condition.	Located 16.71km north
Lambay Island SPA (004069)	To maintain or restore the favourable conservation condition of designated SCI species.	Located c. 20.26km north-east
Ramsar Sites		
Sandymount Strand / Tolka Estuary (Ramsar ID: 832)	The Site in Dublin Bay features extensive intertidal mud and sand flats. The sands support the largest stand of seagrass beds (*Zostera noltii*) on Ireland's east coast. South Dublin Bay is the premier site in Ireland for the Mediterranean gull (*Larus melanocephalus*) and is a regular autumn roosting ground for significant numbers of terns. More than 1% of the global population of light-bellied brent goose (*Branta bernicla hrota*), black-tailed godwit (*Limosa limosa*) and bar-tailed godwit (*Limosa lapponica*) are present in the Site.	Located c. 694m north-east
North Bull Island (Ramsar ID: 406)	The Site covers most of an island within the wider coastal and estuarine waters of Dublin Bay. The wider estuarine complex provides feeding and roosting habitat for more than 1% of the global population of more than 20 wintering birds, including black-tailed godwit (*Limosa limosa*) and light-bellied brent goose (*Branta bernicla hrota*).	Located c. 3.42km south-east
Baldoyle Bay (Ramsar ID: 413)	This estuarine system fed by two small rivers, the Mayne and the Sluice, is separated from the sea by a major sand dune peninsula. It is part of the Dublin Bay wetlands complex. In the inner estuary there are extensive beds of common cordgrass, while seawards vast mudflats are exposed at low tide. These characteristic habitats provide good quality feeding areas and roost sites for a wide range of birds such as the regionally threatened pale-bellied brent goose (*Branta bernicla hrota*), which winters there, and the nationally threatened Eurasian oystercatcher (*Haematopus ostralegus*).	Located c. 8.24km north-east
Broadmeadow Estuary (Ramsar ID: 833)	This estuary is cut off from the sea by a large sand spit and includes saltmarshes, salt meadows, rocky shores, a well-developed dune ridge and sand mudflats. The estuary is an important wintering site for numerous species of waterbird including the globally threatened common loon (*Gavia immer*). The Site supports more than one percent of the flyway population of the light-bellied brent goose (*Branta bernicla hrota*).	Located c. 3.7km north-east
Rogerstown Estuary (Ramsar ID: 412)	A small tidal embayment sheltered from the sea by a broad sand and shingle spit. Extensive areas of mud, sand and gravel are exposed at low tide. The mudflats support beds of green algae (Enteromorpha) and *Spartina anglica*. Numerous species of large numbers of wintering waterbirds use the tidal flats and the site is internationally important for *Branta bernicla hrota*.	Located c. 11.64km north-east

Designated Site	Overview	Distance from Proposed Development
UNESCO Biosphere		
Dublin Bay	In 1981, UNESCO designated North Bull Island as a Biosphere because of its rare and internationally important habitats and species of wildlife. There have subsequently been additional international and national designations. In 2015, the designation of Dublin Bay as a Biosphere by UNESCO acknowledged the value of Dublin Bay and its environs to Dublin City, ensuring the protection of its water quality and biodiversity.	Located c. c. 253m north-east
pNHA		
North Dublin Bay pNHA (000206)	This site is designated for the same features for which the North Dublin Bay SAC and the South Dublin Bay and River Tolka Estuary SPA have been, which includes intertidal/coastal habitats and the flora and fauna species thy support, particularly bird species.	Located c. 153m north-west
Royal Canal pNHA (002103)	The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It provides a refuge for species threatened by modern farming methods.	Located c. 690m south-west
Grand Canal pNHA (002104)	This site is comprised on a number of different habitats within the canal boundaries including hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The pNHA has been designated for the diversity of species supported along the linear habitats of the canal.	Located c. 1.28 km south
South Dublin Bay pNHA (000210)	This site is designated for the same features for which the South Dublin Bay SAC and the South Dublin Bay and River Tolka Estuary SPA have, namely the diverse coastal, estuarine, intertidal and marine habitats and the flora and fauna species they support.	Located c. 2.38 km south-east
Dolphins, Dublin Docks pNHA (000201)	Site synopsis is unavailable for this site. The boundary of this site overlaps with South Dublin Bay and River Tolka Estuary SPA. Nesting common terns	Located c. 2.56 km south-east
Booterstown Marsh pNHA (001205)	Booterstown Marsh is the only saltmarsh in south Dublin and remains a valuable habitat for many birds as well as containing a diverse flora including the protected plant Borrer's Saltmarsh grass *Puccinellia fasciculata.*	Located c. 5.17 km south-east
Baldoyle Bay pNHA (000199)	This site is designated for the same features for which the Baldoyle Bay SAC and SPA have been, namely dry heath and sea cliffs habitats and bird species.	Located c. 8.07 km north-east
Howth Head pNHA (000202)	This site is designated for the same features for which the Howth Head SAC and Howth Head Coast SPA have been, namely dry heath and sea cliffs habitats and bird species.	Located c. 8.67 km north-east
Sluice River Marsh pNHA (001763)	This site is of importance as a relatively intact freshwater marsh, a habitat that is now rare in County Dublin. Mallard, Snipe, Grey Heron, Moorhen and Reed Bunting have been recorded from the marsh. The herons nest nearby. Some waterfowl from Baldoyle Estuary may use the marsh on occasions.	Located c. 8.95 km north-east

Designated Site	Overview	Distance from Proposed Development
Dalkey Coastal Zone and Killiney Hill pNHA (001206)	This site represents a fine example of a coastal system with habitats ranging from the sub-littoral to coastal heath. The flora is well developed and includes some scarce species. The islands are important bird sites. The site also has geological importance.	Located c. 9.6 km south-east
Malahide Estuary pNHA (000205)	This site is designated for the same features for which the Malahide Estuary SAC and SPA: intertidal/coastal habitats and bird species.	Located c. 11.12 km north-east
Ireland's Eye pNHA (000203)	This site is designated for the same features for which the Ireland's Eye SAC and SPA have been, including coastal habitats and bird species.	Located c. 11.99 km north-east
Portraine Shore pNHA (001215)	This site is designated for the same features for which Rogerstown Estuary SAC and SPA have been.	Located c. 15.43 km north-east
Rogerstown Estuary pNHA (000208)	Listed under similar conservation objectives as its SPA designations.	Located c. 15.86 km north-east
Lambay Island pNHA (000204)	This site is designated for the same features for which the Lambay Island SAC and SPA have been.	Located c. 19.53 km north-east
Wildfowl Sanctuaries		
North Bull Island (WFS-19)	As well as being a statutory Wildfowl Sanctuary, North Bull Island is designated as a Special Protection Area under the E.U. Birds Directive, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site. The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest.	Located c. 3.4 km north-east
Rogerstown Estuary (WFS-20)	The Rogerstown Nature Reserve is set within the inner Rogerstown estuary, a relatively small, narrow and extremely shallow estuary with extensive mudflats at low tide. The reserve was an area of reclaimed land used as grazing pasture but is now being restored back to saltmarsh. The brackish grasslands and inter-tidal creeks are extremely important for birds, providing safe roosting sites for thousands of wintering wildfowl and waders. The soft mud flats, exposed during low tides, are their feeding areas. The wintertime is when Golden Plover, Lapwing, Curlew, Black-tailed Godwits, Dunlin, Redshank, Light-bellied Brent Geese, Shelduck, Wigeon and Teal are numerous. During the summer Lapwings breed and the surrounding trees are home to a variety of summer visitors, such as Willow Warblers, Chiffchaffs and Blackcaps.	Located c. 17km north-east
Brittas Ponds (WFS-18)	South of Crooksling Glen are Brittas Ponds, a Wildfowl Sanctuary, that supports a variety of wildfowl, including Teal, Mallard, Pochard and Tufted Duck. The ponds themselves are of interest for the aquatic plants they support (including Shoreweed (*Littorella uniflora*), a rare plant in Dublin) and the marginal areas of freshwater marsh and wet grassland vegetation found.	Located c. 19.34 km south-west
Nature Reserves		

Designated Site	Overview	Distance from Proposed Development
North Bull Island	The island is covered with dune grassland. An extensive salt marsh lies to the northwest and at extreme low tides there are extensive mud flats between the island and the mainland. The reserves are of international scientific importance for Brent Geese and also on botanical, ornithological, zoological and geomorphological grounds.	Located c. 6.4 km north-east
Baldoyle Estuary	Baldoyle is of international importance as a wintering area for Brent Geese. Wading birds that winter at Baldoyle include black-tailed Godwits, Redshanks and Curlews. When the tide comes in, fish enter the estuary and become prey for diving birds like the Great-crested Grebe and the Red-breasted Merganser.	Located c. 8.61 km north-east

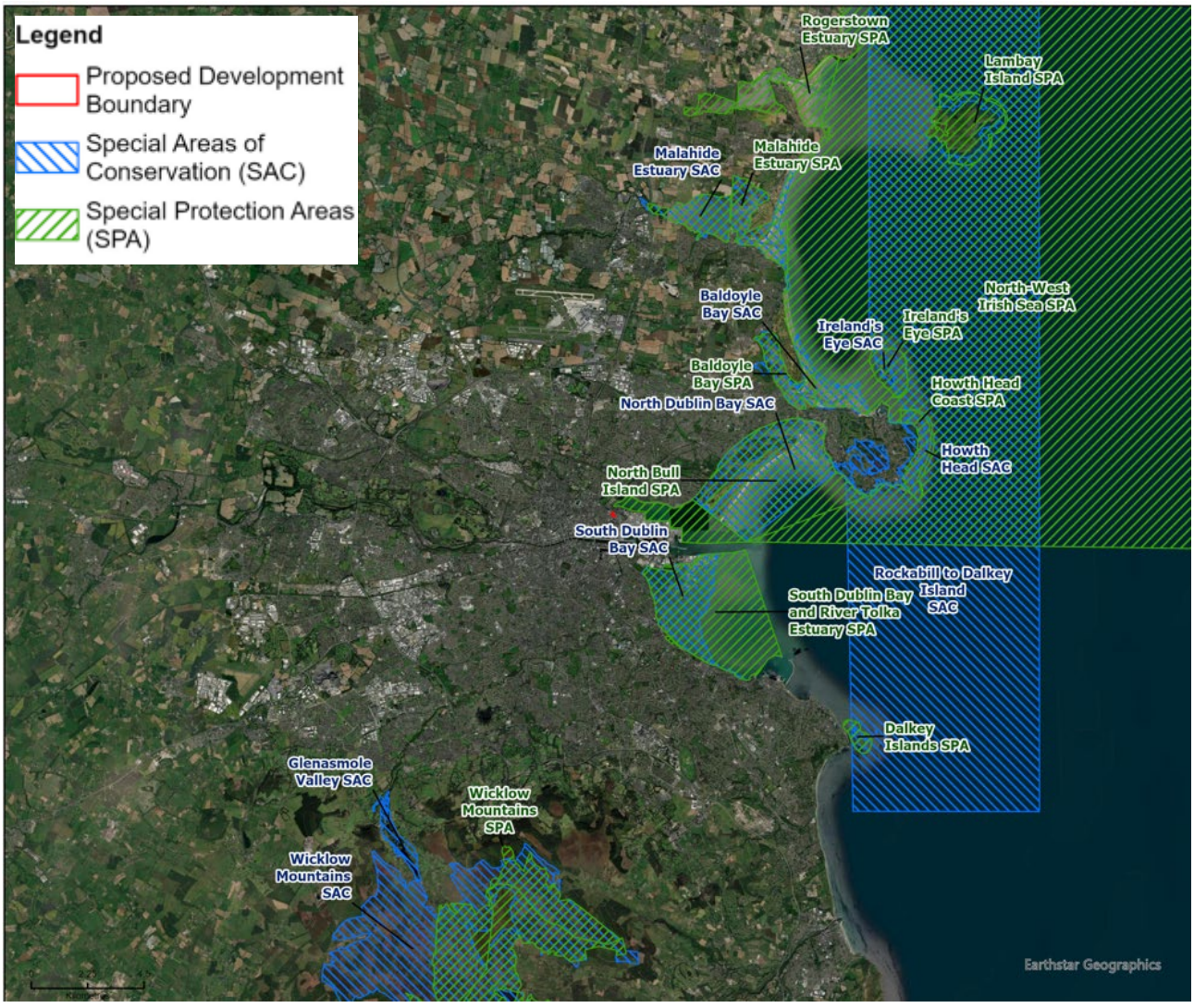


Figure 15.1: Designated Sites for Nature Conservation

15.3.2 Habitats and Flora

15.3.2.1 Habitats

The Proposed Development area is within hardstanding areas, and brownfield habitats. The walkover surveys concluded that there was no Annex I habitat located within the footprint of the Proposed Development.

Habitats recorded comprised Buildings and artificial surfaces (BL3), scrub (WS1), ornamental/non-native scrub (WS3) and recolonising bare ground (ED3). Species within the Scrub and recolonising bare ground habitats comprised primarily of buddleja (*Buddleja davidii*), sycamore (*Acer pseudoplatanus*), hedge bindweed (*Calystegia sepium*), stonecrop (*Sedum sp.*), common ragwort (*Jacobaea vulgaris*), herb Robert (*Geranium robertianum*), and red valerian (*Centranthus ruber*). The ornamental/non-native habitat was composed of common hornbeam (*Carpinus betulus*), black locust (*Robinia peudoacacia*) and several additional unidentified ornamental plants.

15.3.2.2 Protected Flora

Records of rare, protected, or threatened botanical species were obtained from the Botanical Society of the British Isles (BSBI), National Biodiversity Data Centre (NBDC) and the National Parks and Wildlife Service (NPWS) databases within the 5km of the Proposed Development (**Table 1-1,** found in **Appendix K**).

An Annex II plant petalwort (*Petalophyllum ralfsii*) is a qualifying feature of the North Dublin Bay SAC, c. 3.7km north-east of the Proposed Development. However, the desk study returned no Annex II flora species, and no species protected under the Flora Protection Order 2022. Three near threatened plant species were found within the 2km grid square which included Milk Thistle (*Silybum marianum)* and Corn Marigold (*Glebionis segetum).*

No protected plant species listed on the Flora Protection Order 2022, or those listed on the EU Habitats Directive were observed during surveys.

15.3.2.3 Invasive Alien Plant and Animal Species

The desk study returned 8 records for Scheduled invasive alien plant species and 4 records of Scheduled invasive alien animal species from the preceding ten years, within 5km of the Proposed Development (See **Table 1-2**, found in **Appendix K**). However, no Scheduled invasive alien plant or animal species were recorded during the field survey.

15.3.3 Hydrology and Hydrogeology

15.3.3.1 Surface Water

The Proposed Development is located within the Liffey and Dublin Bay WFD catchment (ID 09). The Liffey and Dublin Bay Catchment includes the area drained by the River Liffey and by all streams entering tidal water between Sea Mount and Sorrento Point, Co. Dublin, draining a total area of 1,616km². There are no river waterbodies with freshwater pearl mussel *Margaritifera* habitats for this catchment. Within the catchment, the Proposed Development crosses the Tolka_SC_020 sub-catchment (Sub-catchment ID: 09_4) and the Tolka_060 river sub basin.

The Tolka Estuary transitional waterbody (WFD ID: IE_EA_090_0200) is located c. 95 m north-west of the site boundary. The River Tolka (WFD ID: IE_EA_09T011150) flows into this transitional waterbody, then flows south-east until it feeds into the Liffey Estuary Lower transitional waterbody (WFD ID: IE_EA_090_0300), and into Dublin Bay coastal waterbody (WFD ID: IE_EA_090_0000).

The Proposed Development does not intersect any watercourses. It is located within c. 70m south of the high-water mark of the Tolka Estuary waterbody.

Given the scale and nature of Proposed Development, the setback distance between the Proposed Development and the closest coastal waterbody, and the negligible potential for any surface water run-off, the Report to Inform Screening for AA concluded that although hydrological connectivity was identified, the magnitude of the impacts would not result in a likely significant effect to any European site(s). It was concluded that any impacts will be localised and therefore not deemed significant.

15.3.3.2 Groundwater

The Proposed Development is located within the Dublin (IE_EA-G_008) groundwater body (GWB). This GWB has a status of 'Good' for the period of 2016-2021. Groundwater discharges to the numerous streams and rivers crossing the aquifer, and to the springs and seeps towards the coast. This GWB is located in the Greater Dublin City area and extends southwest towards Kildare. The bedrock aquifer is described as locally important, and the bedrock is moderately productive only in local zones. Groundwater vulnerability describes the natural ground characteristics that determine the ease with which groundwater may be contaminated by human activities. Bedrock aquifers are protected by the subsoil and therefore the type and thickness of the subsoil will determine the aquifers vulnerability. The groundwater vulnerability within the Proposed Development is low. In addition no Groundwater Dependant Terrestrial Ecosystems (GWDTEs) were identified in proximity to the area of proposed works.

15.3.4 Fauna

15.3.4.1 Bats – Commuting and Foraging

The NBDC maps landscape suitability for bats based on Lundy *et al*. (2011). The map provides a habitat suitability index which ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats. **Table 1-6** in **Appendix K** gives the suitability of the study area for each Irish bat species (based on NBDC). The overall habitat suitability of the Proposed Development area was 18.44. The NBDC held records of six bat species within 5 km of the Proposed Development are detailed in **Table 1-5** in **Appendix K**.

15.3.4.2 Bats – Roosting

There were no suitable trees or vegetation containing potential bat roosting features. All trees and scrubs were classified as having a suitability of 'none'.

The Proposed Development will consist of the demolition of the existing single storey shed / storage buildings and the boundary wall to East Wall Road. The extent of the demolitions are shown on Drawing CP1273-RPS-03-PL-SL-D-C-2161. As noted previously in **Section 15.2.3.2.4**, the structures were assessed for potential bat access points in features including soffits, roof beam joints, roofing, eaves and broken plaster. Of the structures proposed for removal, one was determined to have low suitability for roosting bats due to missing brickwork. This structure consisted of a block and plaster, flat-roofed shed, containing electrical substation. The building was located within the lean-to sheds along the southern boundary of the Proposed Development. All other structures proposed for removal were determined to have no suitability for roosting bats.

15.3.4.2.1 Emergence Survey

An emergence survey of the structure which was determined to have roosting potential was carried out on 17th June 2025. As noted previously in **Section 15.2.3.2.4** the survey commenced 15 minutes before sunset and ended two hours after sunset and was undertaken by two surveyors using two infrared digital recording cameras and infrared touches. The timing and weather conditions for the emergence survey are detailed in Table x below. There were no bats recorded during the survey.

Table 15.4: Dates, Timings and Weather Conditions for Emergence Survey

Date	Sunset Time	Start Time of Survey	End Time of Survey	Cloud Cover (100%)	Precipitation	Wind (0-7)	Temperature (°C)
17/06/2025	21:55	21:40	23:55[29]	70	None	2	18

15.3.4.3 Other Protected Mammals

The NBDC records of protected mammal species within 5 km of the Proposed Development are detailed in **Table 1-7,** found in **Appendix K.** No evidence of these species was recorded during the site visits. It is assumed that the species identified in the desk study are not likely to occur within the footprint and environs of the Proposed Development. However, if they do occur, they are deemed to be present in low numbers given the urban setting and are unlikely to be significantly negatively impacted by the likely effects.

15.3.4.4 Birds

The vegetation and existing structures within the survey area was surveyed for birds. The structures were checked for possible nests during each of the three visits. The results of the species observed and/or heard during the three site visits are listed below in **Table 15.5**, along with the confirmation of breeding status as set out in the latest Bird Atlas 2007-11 (Balmer *et al*., 2013). Birds recorded as flying over have not been included in the table.

Table 15.5: Birds recorded during the dedicated Breeding Bird Surveys

Common name (*Scientific name*)	BoCCI Status	Breeding Evidence	17th April 2025	8th May 2025	5th June 2025
Robin (*Erithacus rubecula*)	*Green*	Probable	✓	✓	✓
Blackbird (*Turdus merula*)	*Green*	Probable	✓	✓	✓
Starling (*Sturnus vulgaris*)	*Amber*	Possible	-	✓	✓
Magpie (*Pica pica*)	*Green*	Possible	-	✓	-
Dunnock (*Prunella modularis*)	*Green*	Possible	-	✓	-
House Sparrow (*Passer domesticus*)	*Amber*	Probable	-	✓	✓
Woodpigeon (*Columba palumbus*)	*Green*	Possible	-	✓	-
Wren (*Troglodytes troglodytes*)	*Green*	Probable	✓	✓	✓

[29] Survey concluded at 23:55 due to site access restrictions.

Common name (*Scientific name*)	BoCCI Status	Breeding Evidence	17th April 2025	8th May 2025	5th June 2025
Hooded crow (*Corvus cornix*)	*Green*	Possible	-	✓	-
Goldfinch (*Carduelis carduelis*)	*Green*	Possible	✓	-	✓

Four species were recorded as exhibiting signs of probable breeding (three green listed, one amber listed), while six species were recorded as exhibiting signs of possible breeding (five green listed, one amber). A maximum count of individuals of each species per visit was derived from the data, with the results suggesting there is a maximum of two breeding pairs of each probable/possible breeding species within the site. While the site offers some nesting and foraging habitat for breeding birds, its significance as a suitable breeding bird habitat is minimal especially with notably more suitable habitat within Fairview Park to the northwest of the site.

The site does not offer significant suitable foraging or nesting habitat to any SCI species.

The desk study returned records for 13 SCI bird species from the preceding ten years, within 5km of the Proposed Development (See **Table 1-10,** found in **Appendix K**). The desk study returned records for 4 bird species that are not listed as SCIs from the preceding ten years, within 5km of the Proposed Development (See **Table 1-11**, found in **Appendix K**). No evidence of these species was recorded in the field study. There are no habitats offering significant breeding or foraging sites for these species within the footprint of the Proposed Development.

15.3.4.5 Amphibians and Reptiles

The presence of amphibians was noted in the data search (NBDC) within 5 km of the Proposed Development site. No significant habitat is present within the ZoI of the Proposed Development for significant populations of protected amphibian and reptile species to occur. The NBDC data search noted the presence of common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*) within 5m of the site.

15.3.4.6 Terrestrial Invertebrates

The NBDC records of threatened terrestrial invertebrate species within 5 km of the Proposed Development are detailed in **Table 1-9,** found in **Appendix K**. No significant habitat is present within the ZoI of the Proposed Development for significant populations of terrestrial invertebrates to occur.

15.3.4.7 Important Ecological Features (IEFs)

The flora and fauna identified during the baseline surveys of the site were deemed of local scale lower importance. Therefore, there are no IEFs identified on site. The presence of SCI herring gull is noted, however the site does not offer suitable foraging habitat for the species and the Proposed Development will not have a significant effect on the species.

15.4 Proposed Mitigation Measures

15.4.1 Construction Phase

The following measures will be adhered to:

- Prior to the commencement of works, a suitable qualified and experienced ecologist will
  - reassess all buildings on site for the potential for roosting bats and/or nesting birds;
  - reassess the Proposed Development for invasive alien species; and
  - outline and incorporate any additional mitigation measures required as a result of the reassessments.
- Any vegetation clearance or structure demolitions on site will be carried out outside of the breeding bird season (i.e. no removal between March and August, inclusive), unless a suitably qualified and experienced ecologist completes a pre-removal assessment for nesting bird and deems the proposed removal areas to be unused by nesting birds.

15.4.2 Operational Phase

All external lighting will be mounted and directed inwards, facing the buildings and internal operational areas to avoid light spill beyond the site boundary and reduce environmental impacts.

15.5 Cumulative Impacts

If the Proposed Development and existing or proposed projects or plans impact on the same ecological features, there is potential to lead to cumulative impacts which could be of a higher level of significance. This applies to potential impacts on local wildlife due to the combined loss of suitable commuting and/or foraging habitats in the locality and potential impacts on designated sites and species due to contaminated surface water runoff on the habitats associated with site designated for nature conservation.

There are several existing planning permissions within 1km of the Proposed Development, ranging from small-scale extensions and alterations to existing residential properties to larger-scale developments. The planning applications within the vicinity of the site are not considered to result in significant negative effects given the urban context and when considered with the Proposed Development and Grid Connection (not part of the subject planning application).

15.6 Residual Impact

There are no IEFs identified within the ZoI of the Proposed Development. Residual significance is defined as the level of significance of a potential effect following the implementation of appropriate mitigation measures. Through the implementation of the mitigation, there will be no significant residual adverse effects anticipated as a result of the construction or operation of the Proposed Development.

15.7 Chapter References

Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. and Fuller, R.J., 2013. *Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland*. Thetford: BTO.

Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S. (2000) Bird Census Techniques. Second Edition. Academic Press, London.

CIEEM. (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester, UK. Updated September 2024.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.3 (updated September 2024). Chartered Institute of Ecology and Environmental Management.

Collins, J. (2016). Bat Conservations Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn), The Bat Conservation Trust, London.

Department of the Environment, Heritage and Local Government. (2010). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. DEHLG, Dublin. (Rev. Feb 2010).

Devlin, Z. (2021). The Wildflowers of Ireland. A Field Guide. (2nd Edition). Gill Books. Dublin.

DCC (2004) Dublin City Council Local Authority Climate Action Plan 2024-2029. Dublin City Council.

DCC (2021) Dublin City Biodiversity Action Plan 2021-2025. Dublin City Council.

DCC (2022) Dublin City Development Plan 2022 – 2028. Dublin City Council.

European Commission. (2000). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. European Communities, Luxembourg.

European Communities. (2021). Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Communities, Luxembourg.

Fossitt, J. (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny.

Gilbert, G., Gibbons, D.W., & Evans, J. (1998) Bird Monitoring Methods: A Manual of Techniques for UK Key Species. The Royal Society for the protection of Birds, Sandy, Bedfordshire, England

Gilbert, G., Stanbury, A. and Lewis, L. (2021). Birds of Conservation Concern in Ireland 4: 2020–2026. Irish Birds 43: 1–22

Government of Ireland (2018) National Planning Framework – Project Ireland (2040)

Government of Ireland (2021) National Development Plan 2021 – 2030

Government of Ireland (2024) Climate Action Plan 2024

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.

NPWS (2024) 4th National Biodiversity Action Plan (NBAP) 2023-2030. National Parks and Wildlife Service

NRA (2009) *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*, revision 2. National Roads Authority.

Transport Infrastructure Ireland (2020). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Transport Infrastructure Ireland

16 Soils, Geology and Hydrogeology

16.1 Introduction

This Chapter of the PECR provides an assessment of the potential impact of the Proposed Development on land, soils, geology and hydrogeology.

The chapter presents an overview of the soils, geological and hydrogeological environment of the study area, and describes and evaluates the potential impacts from the Proposed Development on the receiving environment as well as providing the mitigation measures that will be implemented. Although the Grid Connection associated with the Proposed Development is not part of the subject planning application, it has also been assessed in this chapter.

16.2 Assessment Methodology

The assessment was conducted following the guidelines established by the Institute of Geologists Ireland (IGI, 2013), *Guidelines for Preparation of Soils, Geology & Hydrogeology Chapters in Environmental Impact Statements*. This assessment evaluates the characteristics of the Proposed Development and identifies the relevant receptors and their attributes. Professional judgment and expertise were applied to determine the likely effects and their potential significance in relation to the Proposed Development and the identified receptors. Additionally, relevant mitigation and management measures pertaining to construction, operation, and decommissioning are discussed.

16.2.1 Study Area

The study area for the geology and soils assessment is focused on land within the site of the Proposed Development. To examine the potential impacts on adjacent soils and land, the study extends outside the footprint of the Proposed Development site which includes a 1 km buffer zone from the works areas.

16.2.2 Source of Information to Inform the Assessment

The following data sources have been accessed during the collation of baseline information on the receiving environment with respect to land and land use, soils,geology and hydrogeology:

- Geological Survey of Ireland (GSI) - https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx;
- Environmental Protection Agency (EPA) - https://gis.epa.ie/EPAMaps/;
- National Parks & Wildlife Service (NPWS) - https://www.npws.ie/maps-and-data
- GeoHive online historical maps and aerial photographs - https://www.geohive.ie/.

At the time of writing of this assessment the intrusive ground investigation works had not been carried out and consequently, no GI information has been incorporated into this assessment. Intrusive ground investigations will be required to advance the design for construction and to provide confirmation of the existing ground conditions. The ground investigations will be conducted at pre-construction stage.

16.3 Description of Receiving Environment

16.3.1 Soil

The GSI database (GSI, 2025) identified the soil within the Proposed Development site and in the study area as Made ground. Irish Soil Information System National Soils Map (1:250,000) indicates that the site of the Proposed Development is underlain by Urban soils.

According to the GSI Quaternary Sediments map the site is characterised by Urban sediment type as presented in **Figure** 16.1. The majority of the study area is characterized by urban sediments however gravels derived by limestones, till derived by limestones, Windblown sands and dunes and alluvium can also be found.

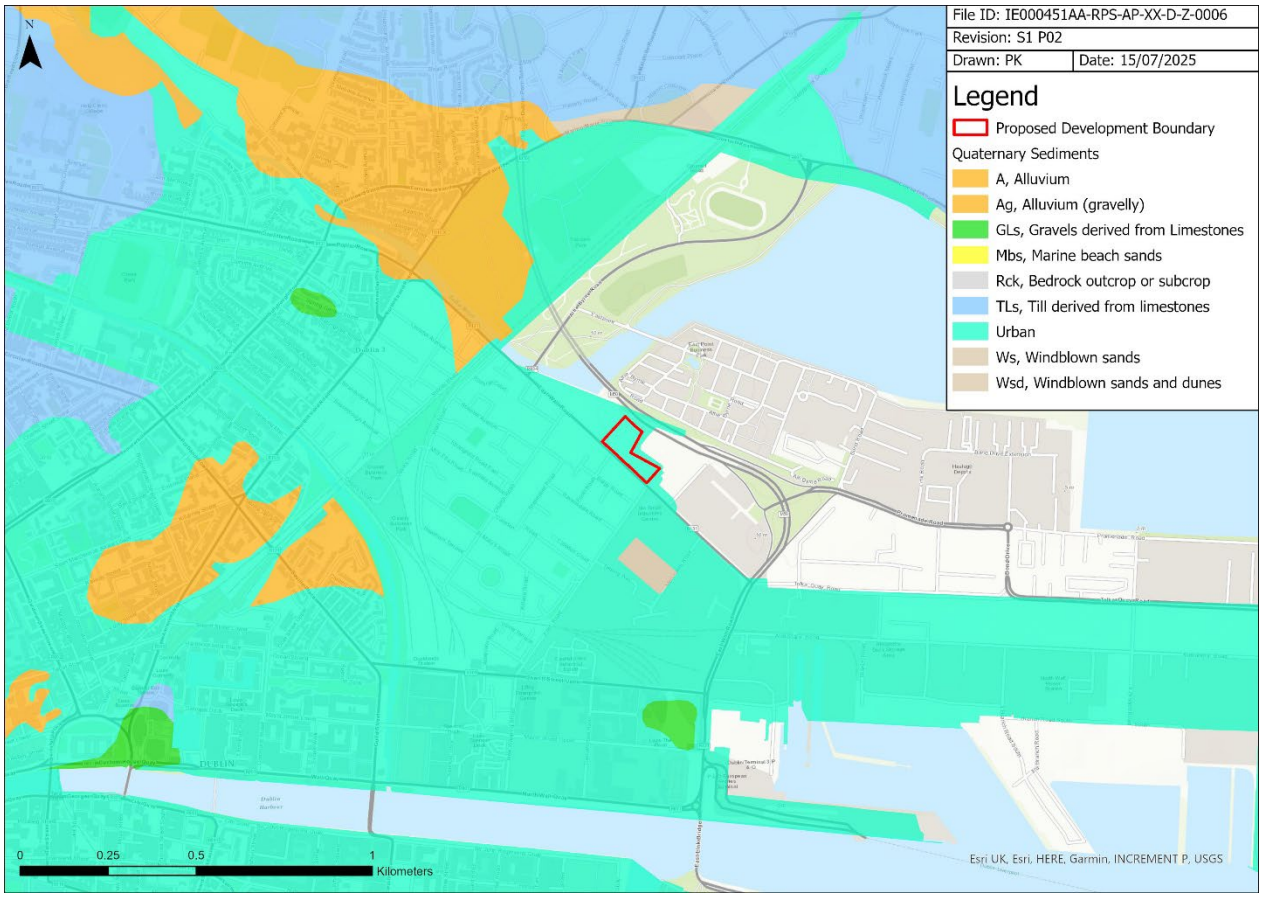


Figure 16.1: GSI Quaternary Sediments

16.3.2 Geology

16.3.2.1 Bedrock Geology

The GSI 100k bedrock series indicates that the site of the Proposed Development is underlain by dark limestone and shale (calp), of the Lucan Formation as illustrated in **Figure** 16.2. The Lucan Formation comprises dark-grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. There are rare dark coarser grained calcarenitic limestones, sometimes graded, and interbedded dark-grey. The formation ranges from 300m to 800m in thickness and was formed during the Dinantian series of the Carboniferous period.

The GSI data also indicates that there is no bedrock outcrop within the boundary of the site of the Proposed Development. The site and immediate surrounding area is classified by the GSI as having low aggregate potential.

There are a number of quaternary geomorphological features within the Study Area which include Glaciofluvial Terraces along the River Liffey and Tolka River as well as Mega Scale Glacial Lineations, the closest of which are located approximately 11.45km north-west of the Proposed Development site.

There are no karst features located within the Proposed Development site or immediate surrounding area.

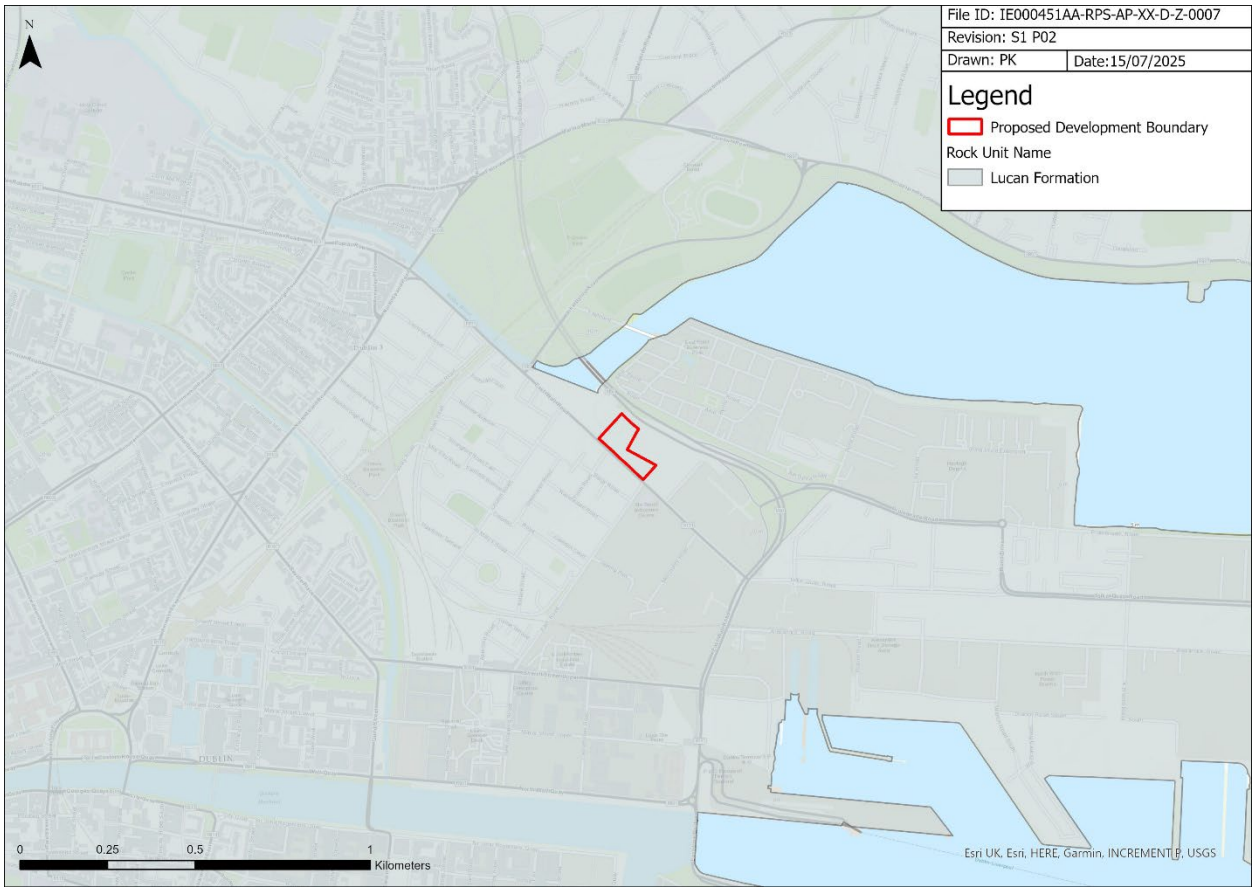


Figure 16.2: Bedrock Geology 100k

16.3.2.2 Geological Heritage Sites

The GSI Public Viewer was reviewed to identify sites of geological heritage for the site and surrounding area. There are no County Geological Sites (CGS) located within 1km of the Proposed Development site. There are also no GSI listed Geological Heritage Areas (Audited and Unaudited sites) within 1km of the Proposed Development site.

16.3.3 Hydrogeology

Potential hydrogeological receptors include the following: aquifers, abstractions (public and private), groundwater/surface water interactions (baseflow contributions), groundwater-dependent terrestrial ecosystems, etc., and karst features.

The study area is underlain by the Dublin Groundwater Body (GWB) (IE_EA_G_008). The Dublin GWB is currently at Good WFD status for the 2016 – 2021 monitoring cycle and the GWB Risk is currently categorised as “Review” by the EPA as additional information is needed to determine their status before resources and more targeted measures are initiated.

According to the GSI, the site is underlain by the following aquifers as presented in **Figure 16.3**:

- Locally important gravel aquifer (Lg)(ID: IE_GSI_sgAq_40K_176),which is identified as the Liffey Gravel body;
- Locally Important (LI) aquifer which is described as bedrock that is moderately productive only in local zones.

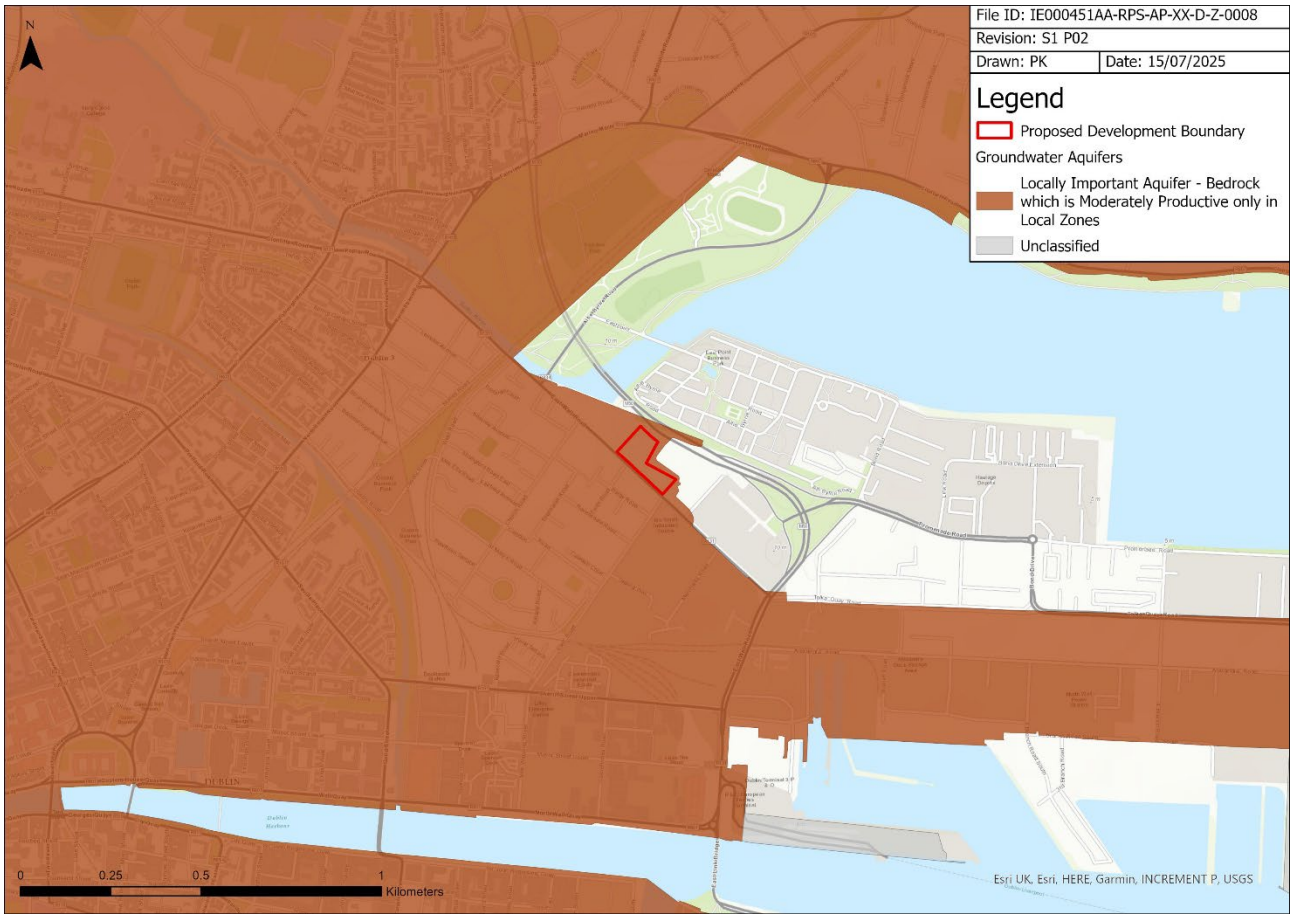


Figure 16.3: Groundwater Aquifer

In the absence of site-specific ground investigation data, groundwater levels are unknown.

The GSI data regarding groundwater vulnerability is shown on **Figure 16.4** and indicates a low vulnerability across the majority of the site of the proposed development. However, to the north of the study area, the ground water vulnerability is shown to be Moderate, High and in a small area, extreme. The variations in groundwater vulnerability relate to the inferred nature and thickness of soil/subsoils overlying the bedrock, with thicker, less permeable soil/subsoils offering more protection to the underlying aquifer.

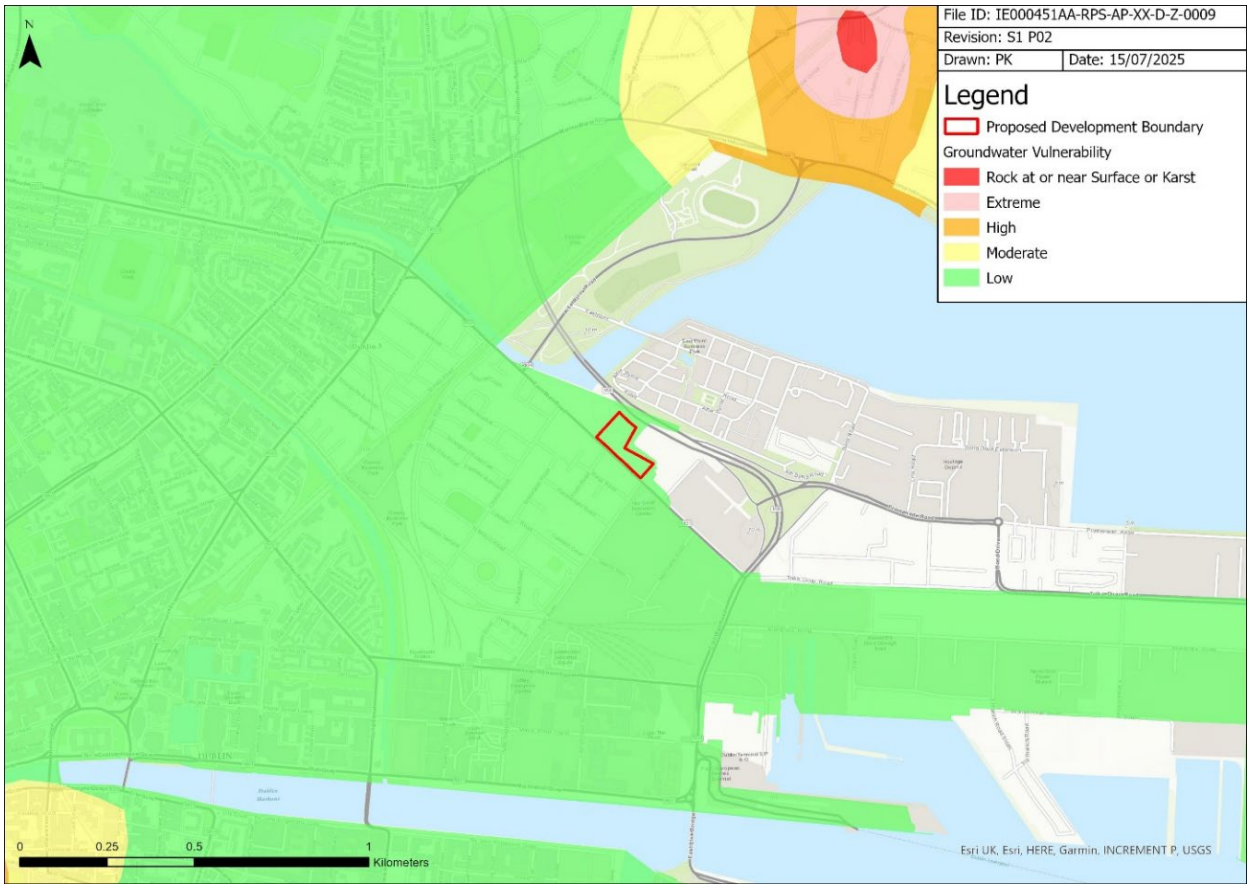


Figure 16.4: Groundwater Vulnerability

Within the Proposed Development site and the immediate surrounding area, no group water schemes are identified, and there are no public and group supply source protection zones. There is however three No. wells within 2km of the Proposed Development site as outlined in **Table 16.1** below.

Table 16.1 List of Wells and Springs within study area

Wells / Springs ID	Source type	Distance from site	Location accuracy
IE_GSI_GW_Well_7748	Borehole	0.68km	200m
IE_GSI_GW_Well_7747	Borehole	0.84km	100m
IE_GSI_GW_Well_7754	Borehole	1.58km	20m

16.3.4 Designated Sites

Designated sites are recognized as potential environmental receptors in relation to soils, geology ad hydrogeology. The South Dublin Bay and River Tolka Estuary SPA is located 207m north-east of the Proposed Development site.

The proposed project does not intersect any watercourses. It is located within c. 150m south of the high-water mark[30] of the River Tolka waterbody. The distance to the boundaries of the South Dublin Bay and River Tolka Estuary SPA is c. 350m from the Proposed Development site. Within

[30] Information available at www.data-osi.opendata.arcgis.com Accessed in October 2024.

this c. 350m area it is predominately industrial in nature and outside of any populated residential areas.

It is also noted that within 5km of the site lies the North Dublin Bay SAC (code: IE0000206), the South Dublin Bay SAC (code: IE0000210),North Bull Island SPA (code: IE0004006) and the Northwest Irish Sea SPA (code: 004236) .

16.3.5 Land use

16.3.5.1 Current Land Use

The site is currently in use as a temporary surface car park for ESB Networks staff with an adjacent vacant brownfield site.

16.3.5.2 Historical Land Use

An assessment of site history using historical mapping and satellite imagery was carried out.

A review of historical mapping and satellite imagery shows that the site was undeveloped during the period of 1829 to the 1930s with no features of interest within the site boundary. A printing works is mapped immediately south of the site in 1930s OSI maps however, all other structures mapped within the vicinity of the site appear to be residential.

OSI photography of the site from 1995 shows development across the site. Landuse to the west, north and south-east of the site all appear to be industrial and commercial in nature. Structures located south of the site appear to be residential in nature.

OSI photography form 2000 and 2005 show permanent structures located within the northern portion of the site with vehicle and equipment storage shown within the rest of the site. Lands located immediately north of the site are shown to have commercial structures constructed within them.

OSI photography form 2006 and 2012 show little change within the site. Groundworks are shown in lands located north and north-west of the site indicating the start of the construction of the current-day motorway.

OSI photography form 2013 and 2018 show resurfacing at the site with a carpark in the northern portion of the site, while offices and additional carparking is shown in the central and southern portion of the site. The M50 is shown fully constructed in lands north of the site with the toll gate located immediately north of the site.

Information from the client indicates that operations on site historically included maintenance of ESB infrastructure.

16.3.5.3 Contaminated Land

The site has previously been used as a Transport Depot and so has historically been used for vehicle parking and for transport of heavy transport vehicles. Anecdotal evidence also suggest that the site was used for painting ESB Poles so there is potential for contaminated land to be encountered at the brownfield site (paints / creosote). Based on a review of publicly available aerial maps the site has been industrial land since 1995.

The surrounding landuse, particularly in lands located to the north, west and east were identified as being historically in use for industrial and commercial uses, there is potential for contamination in lands surrounding the site.

16.4 Potential for Significant Effects

16.4.1 Construction Phase

16.4.1.1 Substation

The main potential impacts associated with the construction of the Proposed Development include:

- Soil excavation - site stripping and bulk earthworks for foundations and underground services as part of the construction would leave deposits exposed to erosion by wind or rain and this could potentially lead to increases in surface water run-off containing large amounts of silt which can migrate to groundwater;
- Accidental Emissions and Release of Potentially Hazardous Substances - may result in localised contamination of soils / subsoils underlying the site and groundwater (via migration through soil); and
- Potential to encounter contaminated soil which could be disturbed during the construction works – resulting in mobilisation of possible contaminants.
- Impacts to the underlying bedrock aquifer and to soils and sediments in surrounding grounds may arise from potential dewatering activities where groundwater arises from excavation areas in the works area.

16.4.1.1.1 Erosion of Exposed Subsoils

Due to the predominant urban nature of the Proposed Development site, the soils and subsoils expected to be encountered comprise of made ground which has low value and is considered of having low importance. In terms of site levelling, an estimated volume of 17.23m^3 is expected to be excavated during the levelling works. An additional volume of 6,000m^3 of clean soils is anticipated to be used as fill material during the levelling works.

Silt-laden water can arise from exposed ground from excavations and soil stockpiles during construction of the Proposed Development. Surface water run-off containing large amounts of silt could migrate into the groundwater which can cause significant pollution of water through the generation of suspended solids. Where soils are to be stored on site, stockpiles with significant side slopes can create another source of sediment laden run-off. Once the slopes are built up, rainfall landing on the slope and runoff from the top of the stockpile can travel uncontrolled – potentially at high velocities – causing suspension of soil particles from the surface of the slope.

Short-term effects on groundwater quality can occur through the infiltration of surface run-off within, or adjacent to construction areas.

16.4.1.1.2 Accidental Emissions and Release of Potentially Hazardous Substances

Accidental spills (such as fuel, oils, chemicals or other contaminants) and/or improper management of solid and liquid waste during the construction phase may result in localised contamination of the soil, subsoil, groundwater, and surface water underlying the Proposed Development site. There is also a risk of release of potentially hazardous substances from imported material which has not been appropriately screened. There is potential for accidental spillage of diesel fuel and / or hydraulic oil from on-site machinery during the construction phase. Construction phase storage of fuels and hazardous materials has the potential to impact soil quality if not stored correctly.

In the absence of mitigation, localised accidental spillages of fuel, oils or chemicals on the site have the potential to contaminate the underlying soils and groundwater resulting in a short-term, small adverse effect on soils and groundwater.

16.4.1.1.3 Encountering Contamination

There is potential of encountering contaminated soil or groundwater due to the presence of made ground and historical use of the site. Exposure of locations of contamination and excavation of contaminated soil may potentially lead to a risk to the surrounding environment or underlying soil if not dealt with in an appropriate manner. Consequently, the excavations required for the construction of the Proposed Development may pose potential risks to human health (for construction workers and future site users) and/or the water environment (particularly through the discharge of potentially contaminated abstracted groundwater) if such contaminated ground or groundwater is encountered.

Should unknown contamination be encountered during construction, material will be considered as potentially hazardous and further testing will be required to confirm waste classification of suitability for re-use / retention on-site or disposal off site. Where material is confirmed to be hazardous it will be removed to a suitably licenced facility. Assuming proper handling, this would be considered to be direct, permanent, beneficial impact on soil and groundwater by removing a potential source of contamination. Prior to construction, a ground investigation will be conducted to verify in-situ conditions and assess any potential for ground and/or groundwater contamination. Therefore, significant adverse effects on soils and groundwater due to unknown contamination are considered unlikely.

16.4.1.1.4 Dewatering

During construction groundwater may be encountered in excavations at the site and in these instances, dewatering may be required where significant groundwater is encountered in the works area. Prior to construction, a ground investigation will be conducted to verify in-situ conditions and this will inform the requirement for additional mitigation measures such as those required for dewatering. In the absence of specific ground investigation date, the requirement for dewatering cannot be ruled out.

Where dewatering may be required, there is the potential for a hydrogeological impact on local water features such as local abstraction locations, groundwater level and flow direction and alteration to groundwater baseflow feeding watercourses or Groundwater Dependant Terrestrial Ecosystems (GWDTEs).

Dewatering also has the potential to create subsurface changes to soils and sediments that include movement and settlement of surrounding ground. However, the extent of dewatering required will be short-term and localised and is therefore not expected to result in any significant impact on the above aspects of the hydrogeological regime. In addition no groundwater wells or GWDTEs were identified in proximity to the area of proposed works.

If not carefully managed, untreated pump-out water from excavations are likely to contain highly concentrated suspended solids and may contain other pollutants (concrete, hydrocarbons) which have a negative potential to impact on soil and groundwater quality.

This impact is considered to be a temporary, short-term, negligible impact of Imperceptible significance.

16.4.1.2 Grid Connection (not part of subject planning application)

Although the Grid Connection is not part of the subject planning application, the trenchless crossing which will facilitate the grid connection has also been assessed in this chapter. The HDD methodology is outlined in Section x of this PECR. The use of HDD method for crossing the M50 at a depth of 5.6m below the M50 roadway will avoid direct impact to the M50 and minimise any traffic disruption. There is however potential for runoff from drilling fluid returns at tunnel entry and exit points from the HDD works. However, this occurs very infrequently as the drilling process is closely monitored and managed. In addition, the limited length, diameter, and depth of the HDD and the use of best practice methods, including the processing of the drilling fluid as noted in

Section 4.2.10 of this PECR, no impacts related to groundwater quality, yield, and/or flow paths are anticipated.

16.4.2 Operational Phase

The main potential impacts associated with the operation of the Proposed Development include:

- Accidental Emissions and Release of Potentially Hazardous Substances during the operation and maintenance phase;
- Surface water run-off carrying suspended silt or contaminants.

16.4.2.1 Accidental Emissions and Release of Potentially Hazardous Substances

During the operational stage there is a potential for leaks and spillages from any fuel or chemical storage on-site. In addition, there is a potential for leaks and spillages from vehicles in parking areas. Any accidental spillages and leaks of oil, petrol or diesel could cause soil/groundwater contamination if the spillages and leaks are unmitigated.

16.4.2.2 Surface water run-off carrying suspended silt or contaminants

There is a possibility that runoff from the hardstanding associated with the Proposed Development may contain contaminants and fines, which, if allowed to seep into the ground, could negatively impact groundwater quality. The risks are amplified at this site due to the high groundwater vulnerability identified in the area. However, the drainage design for the Proposed Development includes for collection and management of runoff from hardstanding areas within the substation compound site. This includes the collected runoff passing through an oil/ petrol interceptor prior to entering an attenuation unit before discharge to the public surface water drainage system. The introduction of additional impermeable surfaces in the form of concrete hardstanding required for the Proposed Development in the brownfield area of the site may locally disrupt the recharge mechanism to the underlying aquifer. Nevertheless, given the relatively small additional area of new impermeable, this potential adverse effect is deemed insignificant.

16.5 Proposed Mitigation Measures

16.5.1 Construction Phase

16.5.1.1 Substation

The following mitigation measures will be implemented during the construction phase to manage impacts from erosion of exposed soils:

- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind;
- Stockpiles will be fully managed through height restrictions stockpiles and shall be limited to heights not exceeding three metres;
- Excavated materials will be repurposed within the Proposed Development whenever feasible.
- In cases where surplus material cannot be reused on-site, opportunities for its use as a by-product off-site will be explored, subject to appropriate testing in accordance with Article 27 of the Waste Directive Regulations. If excavated material is found unsuitable for reuse, it will be transported off-site to a licensed facility.
- Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods;

- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road.

The following mitigation measures will be implemented during the construction phase to manage accidental emissions and release of potentially hazardous substances:

- Imported materials to the site will be sourced from a reputable supplier (who will provide certification of materials where required) to ensure that only clean material is brought to site;
- The storage and handling of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compound and will be away from surface water gullies or drains;
- Storage of fuels, chemicals and lubricants at the site compound must be fenced off and have a lockable gate to prevent unauthorised access or vandalism;
- Fuel and oil containers shall be stored within a secondary containment system e.g. bund to 110% of volume for static tanks or a drip tray for mobile stores. All ancillary equipment such as hoses, pipes are contained within the bund;
- Fuel and oil stores including tanks and drums shall be regularly inspected for leaks and signs of damage;
- Only designated trained operators are authorised to refuel plant on site;
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in designated impermeable refuelling areas isolated from surface water drains;
- Where mobile fuel bowsers are used on the site, in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank;
- Interceptor drip trays will be used during all refuelling operations and for stationary mobile plant;
- Adequate stocks of hydrocarbon absorbent materials (e.g., spill-kits and/or booms) shall be held onsite in order to facilitate response to accidental spills. Spill response materials shall also be stored on all construction vehicles.
- An Emergency Response Plan detailing the procedures to be undertaken in the event of a spillage of chemical, fuel or other hazardous wastes (e.g. concrete) to be in place prior to commencement of construction works.

The following mitigation measures will be implemented during the construction phase in the event that contaminated land is encountered:

- Prior to construction, a ground investigation will be conducted to verify in-situ conditions and assess any potential for ground and/or groundwater contamination.
- Should unknown contamination be encountered during construction, material will be considered as potentially hazardous and further testing will be required to confirm waste classification of suitability for re-use / retention on-site or disposal off site.
- Where material is confirmed to be hazardous it will be removed to a suitably licenced facility.
- Any dewatering in areas of contaminated ground shall be designed by the appointed contractor to minimise the mobilisation of contaminants into the surrounding environment.

Where dewatering, pump-out water and over-pumping occurs the following will be carried out:

- Pump-out water will be pumped out via a bowser and taken off-site to a suitably licensed facility for treatment/ disposal or alternatively treated on-site via portable on-site settlement tank for treatment (sediment settlement and pH monitored) and where required, will be removed off-site for disposal at a licenced treatment facility;
- On-site storage facilities for pump-out water (e.g., proprietary sedimentation tanks) will be of sufficient volume to hold the volumes of pump-out water encountered, and tank volume should be overcompensated by 10% so as to ensure adequate containment capacity;.
- No extracted or pumped groundwater will be discharged directly to surface water bodies such as rivers, streams or to any adjoining drainage channel.
- Dewatering works will be overseen and monitored by a designated competent member of the construction team on a regular basis to ensure that they are working effectively.

16.5.1.2 Grid Connection (not part of the subject planning application)

The following mitigation measures will be implemented during the construction phase of the grid connection:

- HDD will be a closed system, with drilling fluid recirculated, the drill cuttings recovered, and drilling fluid reused. Pneumatic leak testing shall be carried out to confirm the integrity of the return line;
- Spent drilling fluids including separated drill materials shall be contained in secure bunded areas for offsite disposal at a licensed disposal facility.

16.5.2 Operational Phase

The Proposed Development will include design in or embedded mitigation including oil interceptors and attenuation tanks. These will undergo routine maintenance as necessary.

In addition, oil and fuel storage tanks, transformers have been designed to be contained within appropriately bunded areas and will be subject to regular inspection and maintenance.

During the operational phase, the proposed substation infrastructure will be operated and maintained by ESB Networks and as such will be subject to ESB established procedures with respect to operation and maintenance. No further operational phase mitigation measures are proposed.

16.6 Residual Effects

After implementing the mitigation measures, no likely significant effects are expected on soils, geology, and hydrogeology during the construction or operation of the Proposed Development.

16.7 Conclusions

An evaluation of the potential effects of the Proposed Development on soils, geology, and hydrogeology receptors was carried out for the Proposed Development.

In the absence of mitigation measured for the Proposed Development likely significant effects were identified in regard to the construction phases from soil excavation, accidental emissions, dewatering activities as well as from the potential to encounter pre-existing soils during the works and during the operational phases from accidental emissions relating to site activities and from surface water run-off

Following the implementation of the mitigation measures, it is concluded that no significant adverse effects are expected on soils, geology and hydrogeology during the construction or operational phases of the Proposed Development.

17 Summary of Mitigation Measures

This Chapter of the PECR sets out a summary of the mitigation measures which have been detailed within Chapters 8 to 16. The mitigation measures are summarised in **Table 17.1** below.

Table 17.1: Summary Table of Mitigation Measures within this PECR

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
Traffic & Transport (Chapter 8)	8.5.1	The appointed contractor will be required to prepare and implement a Construction Traffic Management Plan (CTMP) prior to the commencement of the development, which will outline local safety measures and be subject to agreement with Dublin City Council. The CTMP will be prepared in accordance with the following guidance documents: • Chapter 8 of the Traffic Signs Manual (Department of Transport, 2021); • Temporary Traffic Management Design Guidance (DoT, 2019); and • Temporary Traffic Management Operations Guidance (DoT, 2019). These three documents must be read and understood as a comprehensive set. The CTMP will be a “live” document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities. These three documents must be read and understood as a comprehensive set. The CTMP will be a “live” document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities. The following mitigation will also be implemented: • Roads with existing weight restrictions will be identified in advance and avoided for transporting oversized loads • During the construction phase, signage will be installed to warn road and recreational route users to the presence of the proposed construction compound access and the associated likely presence of large or slow-moving construction traffic; • To minimise inconvenience to the local community in terms of obstructive parking, car parking will not be permitted on any public road network adjacent to the site, to maintain sight lines and minimise the potential for obstruction and delay for other road users; • The appointed contractor will nominate a person to be responsible for the coordination of all elements of traffic and transport during the construction process (liaison officer). This person will liaise with the local community, and be a direct point of contact within the contractor organisation for the community to contact for information or to discuss the traffic management;

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		• To minimise disruption, deliveries will be scheduled during off-peak hours, avoiding sensitive periods such as school drop-off and collection times, church services, and peak commuting hours; • To mitigate impacts on St. Joseph's Co-educational Primary School on East Wall Road, heavy goods vehicle (HGV) movements will be timed to avoid early morning and afternoon school traffic and pedestrians; • Construction traffic management measures will be monitored throughout the construction phase by the appointed contractor to respond to dynamic conditions and measures will be adjusted to match construction sequencing where appropriate and necessary.
		Abnormal loads During the electrical installation phase three 220 kV transformers, each a large and heavy component requiring specialist handling, will be delivered to the site. As abnormal loads, these deliveries will comply with the Road Traffic (Construction and Use of Vehicles) Regulations 2003 (S.I. No. 5 of 2003) and the maximum height restrictions outlined in S.I. No. 366 of 2008.
Population and Human Health (Chapter 9)	9.5.1	**Construction Phase** During the construction phase, the legal duties under the Construction Regulations (*Safety, Health and Welfare at Work (Construction) Regulations 2013*) will be adhered to. In accordance with these duties, a Project Supervisor Design Process (PSDP) will be appointed by the relevant contractor to coordinate the design effort and minimise the construction risks during the design period. In addition, a Project Supervisor - Construction Stage (PSCS) will be appointed to coordinate and supervise all safety aspects of the project. The Outline Construction Environmental Management Plan (OCEMP) for the project, prepared by RPS and submitted with the planning application, sets out the basic measures and provides a mechanism for implementation of the various mitigation measures which are described in this PECR to be employed in order to mitigate potential negative effects during construction. The OCEMP will be a key contract document that the the appointed contractor will be required to implement in full. It will be updated by the appointed contractor in consultation with the local authority as required. The appointed contractor will be responsible for ensuring that all sub-contractors adhere to and implement the procedures and measures included in the CEMP. All personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.
Air Quality (Chapter 10)	10.5.1	The IAQM Guidance relevant to the construction dust assessment lists measures that will be applied, relative to the risk identified. In this instance, a Medium risk of dust impacts was identified due to the

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		potential dust emission magnitude and sensitivity of the area. Therefore the list of IAQM recommended mitigation measures is proportionate to the risk identified. The appointed contractor will prepare and implement a Construction Environmental Management Plan prior to the commencement of the development. The CEMP will be a "live" document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities. **IAQM recommended dust mitigation measures for Medium risk sites are as follows:** • Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken. • Record any exceptional incidents that cause dust and / or air emissions, either on-site or off-site and the action taken to resolve the situation in the logbook. • Plan site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. • Keep the site fencing, barriers and scaffolding clean using wet methods. • Remove materials that have a potential to produce dust from the site as soon as possible, unless being re-used on-site. If they are being re-used on-site, cover as described below. • Ensure all vehicles switch off engines when stationary- no idling vehicles. • Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable. • Impose and signpost a maximum speed limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the agreement of the nominated undertaker and with the agreement of the Local Authority, where appropriate). • The Contractor is required to produce a Construction Traffic Management Plan and a Construction Logistics Plan to manage the sustainable delivery of goods and materials as appropriate. • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		• Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Avoid scabbing (roughening of concrete surfaces) where possible. • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. **Measures Specific to Track-out** • Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport. • Inspect on-site haul routes for integrity and instigate any necessary repairs to the surface as soon as reasonably practicable. • Record all inspections of haul routes and any subsequent action in a site logbook. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). A pre-construction dilapidation survey of all buildings/structures to be demolished will be carried out prior to commencement of any demolition works. If asbestos potential is indicated in the pre-construction dilapidation survey, a fully intrusive asbestos-containing materials survey will be completed. Prior to commencement of the demolition works, all asbestos containing materials identified by the survey will be removed by a suitably trained and competent person. Asbestos-containing materials will only be removed from site by a suitably permitted/licensed waste contractor and will be brought to a suitably licensed facility. The Health and Safety Authority will be contacted where needed in relation to the handling of asbestos and material will be dealt with in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, as amended and associated approved Codes of Practice.
Climate (Chapter 11)	11.1	An embodied carbon assessment will be completed at detailed design stage when the exact materials and specifications are known. EirGrid/ESB will, where possible and appropriate, promote the use of sustainable materials, adopt circular economy principles and promote

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		supplier innovation in the delivery of works and services. A Project Carbon Management Plan (PCMP) will be prepared in accordance with PAS 2080 (Carbon Management in Infrastructure) and low-carbon materials will be maximised where they meet EirGrid / ESB's technical requirements.
Noise and Vibration (Chapter 12)	12.5.1	Implementation of Best Practice Measures (BPM) will be carried out to ensure that construction noise levels are properly controlled. In addition to BPM, a range of measures will be implemented during construction works to mitigate the noise impacts where possible. **Specific Mitigation** The following specific mitigation measures will be implemented during the construction works: • There are existing lean-to-sheds along the site boundary. Following the removal of these structures, a 3.6 m hoarding will be installed along the site boundary along the East Wall Road. Hoarding/ noise barriers will be constructed as early as practicable during the construction phase. • When undertaking vegetation clearance and processing during site clearance works, the distance between vegetation clearance and processing plant required for site clearance and the nearest NSLs shall be maximised. Where this is not practical, the use of temporary noise barriers will be used adjacent to chipper to mitigate the noise impacts. • The noisiest individual item of plant associated with the demolition works is the backhoe mounted hydraulic breaker, which has the potential to generate high levels of noise. Where a hydraulic breaker is required, the following measures shall be implemented: – Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency. – Use dampened bit to eliminate ringing. **General Mitigation** The following general mitigation applies across all aspects of the construction phase: • Works shall, as a minimum, include the measures set out in this assessment and these measures will be documented in the Construction Environmental Management Plan (CEMP). • Works will be carried out using Best Practicable Means (BPM) to minimise noise and vibration, such measures will comprise of: – Limiting the hours of construction to daytime only unless absolutely necessary. – Work practices, equipment noise control and screening shall be in compliance with BS 5228-1:2009+A1:2014

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		Code of practice for noise and vibration control on construction and open sites – Part 1: Noise, and BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration (together referred to as BS 5228). Standard work practices include: ○ Scheduling of noisy works to normal working hours. ○ Adopting quiet working methods, using plant with lower noise emission levels. ○ Adopting working methods that minimise vibration generation particularly with regard to demolition. ○ Plant such as pumps and generators used on or near sensitive locations will be contained within an acoustic enclosure. ○ Plant and machinery used on-site will comply with the European Commission (EC) (Construction Plant and Equipment) Permissible, Noise Levels Regulations, 1988 (S.I. No. 320 of 1988). ○ All noise producing equipment will comply with S.I. No 632 of 2001 European Communities (Noise Emission by Equipment for Use Outdoors) Regulations 2001. ○ Ensuring that all plant is properly maintained, (mechanisms properly lubricated, faulty silencers replaced, worn bearings replaced, cutting tools sharpened etc.). ○ Closing acoustic covers to engines when in use or idling. ○ Use of electrically powered equipment in preference to internal combustion powered equipment. ○ Use of hydraulic equipment in preference to pneumatic equipment. ○ Use of wheeled plant in preference to tracked plant. ○ Locating plant as far away from noise and vibration sensitive receptors as practicable. ○ Use of temporary acoustic enclosures or screens around specific noisy static plant. ○ Avoiding the unnecessary revving of engines and switch off equipment when not in use.

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		○ Starting-up plant and vehicles sequentially rather than at the same time. ○ Keeping internal haul routes well maintained to minimise impulsive noise and vibration from vehicles running over discontinuities in the running surfaces. ○ Fitting rubber linings to chutes, hoppers and dumper vehicles to reduce impact noise from material transfer. ○ Minimising drop heights of materials. ○ Carrying out regular inspections of mitigation measures (BPM audits) to ensure compliance with noise and vibration commitments. ○ Providing regular briefings for all site-based personnel so that noise and vibration issues (including the requirement to employ BPM at all locations at all times) are understood and that generic and site-specific mitigation measures are explained and adhered to. ○ Ensuring that unloading is carried out within the work site rather than on adjacent roads or laybys. ○ Phasing of materials deliveries to be controlled on a 'just in time' basis to minimise noise and congestion on roads around the site. ○ A formal stakeholder engagement process shall be put in place for the duration of the construction phase, including the provision of information to local residents about noise and vibration monitoring results, works likely to cause significant noise or vibration and/or works planned to take place outside of core working hours. ○ Channels of communication between the Contractor, the relevant Planning Section (Local Authority) and residents will be established at project commencement. ○ Records of any noise complaints relating to the construction operations will be investigated as soon as possible and reported to the Local Authority. • Where works need to be completed outside normal working hours or where proposed works indicate that the noise or vibration levels set out in **Section 12.2.5.1** or **Section 12.2.5.3**may be exceeded, permission for these works must be sought from the Local

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		Authority in advance of any works taking place. The application for such works will require a detailed noise control plan which should be prepared by the appointed contractor as part of the CEMP and follow up report to be prepared. This plan will include (i) a justification for the works being carried out in the manner proposed, (ii) an assessment indicating what alternatives have been considered, (iii) a statement of the noise control measures from BS 5228 to be adopted and how Best Practicable Means will be used to control noise, (iv) an activity specific noise monitoring programme including contact details for persons with the authority to cease working if required by the Local Authority. Each follow up report will include details of any complaints received and the action taken to address such complaints.
Landscape and Visual Amenity (Chapter 13)	13.5.1	• In regard to the Grid Connection works (not part of the subject planning application), the layout of the works area within the East Point Business Park will be designed to minimise impacts on existing trees and ornamental vegetation. An arboricultural survey, impact assessment and tree constraints plan will be prepared and will be made available in advance of construction in order that the necessary tree protection measures can be implemented. The tree survey will be fully updated at the end of the construction phase, with any recommendations for on-going monitoring of retained trees during the operational phase. All trees and vegetation to be retained within and adjoining the grid connection works area will be protected in accordance with the British Standard Institution (BSI) British Standard (BS) 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (BSI 2012). Where available, the updated version of this British Standard will be used to inform the works. Works required within the root protection area (RPA) of existing trees to be retained will follow a project specific method statement for such works, which will be prepared by a professional qualified arborist; • In regard to the site for the Proposed Development on East Wall Road, a Construction Environmental Management Plan (CEMP) will be developed prior to the commencement of construction activities, in order to minimise the effects on the environment, including landscape and visual amenity, during construction.
Archaeology, Architecture and Cultural Heritage (Chapter 14)	14.5.1	It is recommended that archaeological monitoring by a suitably qualified archaeologist be undertaken of all excavations and earth moving activities associated with the proposed electricity substation. This will include topsoil stripping, foundation excavations, any trenching which may be necessary for underground ducting and any other excavation which may be required. All archaeological monitoring will be carried out under licence to the DHLGH and 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.

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		In the event that archaeological remains are discovered, the National Monuments Service of the DHLGH and the National Museum of Ireland will be informed and all construction works will cease in the vicinity of the remains and the area fenced off until a licensed archaeologist has resolved the archaeological issues in consultation with the authorities, who will advise on the most appropriate remedial action (such as preservation by record through excavation or preservation in-situ through redesign). It is acknowledged, however, that the depths of 20th century land reclamation deposits may exceed any excavations required as part of the construction phase. Should it be found through the archaeologically monitored geotechnical investigations that land reclamation levels across the site are of sufficient depth that there will be no potential impact to underlying archaeology (including the East Wall), then it may be possible, with written agreement from the National Monuments Service and DCC, that further archaeological monitoring will not be required. All recommendations are subject to the approval of DCC and the National Monuments Service of the DHLGH. This suggested strategy does not prejudice recommendations made by DCC and the National Monuments Service. Grid Connection (not part of the subject planning application) Archaeological monitoring under licence from the National Monuments Service of the DHLGH will be undertaken in the course of ground reduction for the working areas and receiving pits for the directional drilling. The monitoring archaeologist will monitor and make a visual inspection of the arisings from the HDD in order to retrieve any potential artefacts and to record the presence of environmental material etc..
Biodiversity (Chapter 15)	15.4.1	The measures set out in **Section 3.3.7** of the PECR will be adhered to throughout the construction phase of the Proposed Development. Additionally, the following measures will be adhered to: • Prior to the commencement of works, a suitable qualified and experienced ecologist will – reassess all buildings on site for the potential for roosting bats and/or nesting birds; – reassess the Proposed Development for invasive alien species; and – outline and incorporate any additional mitigation measures required as a result of the reassessments. • Any vegetation clearance or structure demolitions on site will be carried out outside of the breeding bird season (i.e. no removal between March and August, inclusive), unless a suitable qualified and experienced ecologist completes a pre-removal assessment

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		for nesting bird and deems the proposed removal areas to be unused by nesting birds.
Soils, Geology and Hydrogeology (Chapter 16)	16.5.1	The following mitigation measures will be implemented during the construction phase to manage impacts from erosion of exposed soils: • Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind; • Stockpiles will be fully managed through height restrictions stockpiles and shall be limited to heights not exceeding three metres; • Excavated materials will be repurposed within the Proposed Development whenever feasible. • In cases where surplus material cannot be reused on-site, opportunities for its use as a by-product off-site will be explored, subject to appropriate testing in accordance with Article 27 of the Waste Directive Regulations. If excavated material is found unsuitable for reuse, it will be transported off-site to a licensed facility. • Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods; • All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road. The following mitigation measures will be implemented during the construction phase to manage accidental emissions and release of potentially hazardous substances: • Imported materials to the site will be sourced from a reputable supplier (who will provide certification of materials where required) to ensure that only clean material is brought to site; • The storage and handling of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compound and will be away from surface water gullies or drains; • Storage of fuels, chemicals and lubricants at the site compound must be fenced off and have a lockable gate to prevent unauthorised access or vandalism; • Fuel and oil containers shall be stored within a secondary containment system e.g. bund to 110% of volume for static tanks or a drip tray for mobile stores. All ancillary equipment such as hoses, pipes are contained within the bund; • Fuel and oil stores including tanks and drums shall be regularly inspected for leaks and signs of damage; • Only designated trained operators are authorised to refuel plant on site; • Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in designated impermeable refuelling areas isolated from surface water drains;

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		• Where mobile fuel bowsers are used on the site, in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank; • Interceptor drip trays will be used during all refuelling operations and for stationary mobile plant; • Adequate stocks of hydrocarbon absorbent materials (e.g., spill-kits and/or booms) shall be held onsite in order to facilitate response to accidental spills. Spill response materials shall also be stored on all construction vehicles. • An Emergency Response Plan detailing the procedures to be undertaken in the event of a spillage of chemical, fuel or other hazardous wastes (e.g. concrete) to be in place prior to commencement of construction works. The following mitigation measures will be implemented during the construction phase in the event that contaminated land is encountered: • Prior to construction, a ground investigation will be conducted to verify in-situ conditions and assess any potential for ground and/or groundwater contamination. • Should unknown contamination be encountered during construction, material will be considered as potentially hazardous and further testing will be required to confirm waste classification of suitability for re-use / retention on-site or disposal off site. • Where material is confirmed to be hazardous it will be removed to a suitably licenced facility. • Any dewatering in areas of contaminated ground shall be designed by the appointed contractor to minimise the mobilisation of contaminants into the surrounding environment. Where dewatering, pump-out water and over-pumping occurs the following will be carried out: • Pump-out water will be pumped out via a bowser and taken off-site to a suitably licensed facility for treatment/ disposal or alternatively treated on-site via portable on-site settlement tank for treatment (sediment settlement and pH monitored) and where required, will be removed off-site for disposal at a licenced treatment facility; • On-site storage facilities for pump-out water (e.g., proprietary sedimentation tanks) will be of sufficient volume to hold the volumes of pump-out water encountered, and tank volume should be overcompensated by 10% so as to ensure adequate containment capacity; • No extracted or pumped groundwater will be discharged directly to surface water bodies such as rivers, streams or to any adjoining drainage channel. • Dewatering works will be overseen and monitored by a designated competent member of the construction team on a regular basis to ensure that they are working effectively.

PECR Chapter Reference	Section Reference	Description of mitigation measure for implementation
		Grid Connection (not part of the subject planning application) The following mitigation measures will be implemented during the construction phase of the grid connection: • HDD will be a closed system, with drilling fluid recirculated, the drill cuttings recovered, and drilling fluid reused. Pneumatic leak testing shall be carried out to confirm the integrity of the return line; • Spent drilling fluids including separated drill materials shall be contained in secure bunded areas for offsite disposal at a licensed disposal facility.

18 Conclusion

This PECR has described the Proposed Development and assessed it against relevant national, regional and local planning policy documents. It has also assessed the likely environmental impacts associated with the Proposed Development. The potential environmental impacts arising from the Proposed Development have been considered with regards to the construction and operational phases.

In conclusion, there are no likely significant residual impacts associated with the Proposed Development, assuming the mitigation measures outlined in this report are implemented during the construction and operational phases. The potential impacts arising from the Proposed Development are considered not significant.

The Proposed Development will help to meet the growing and changing electricity needs of Dublin, which is vital to allow for the planned and continued growth of the city. It is considered that the principle of the Proposed Development is supported by national, regional, and local planning policies.

Appendices

Appendix A Traffic Data

IDASO
Innovative Data Solutions

Project Reference:

25398 - Dublin Central Grid Reinforcement

Project ATC

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Ireland +353 (0)44 931 8019
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Website: idaso.co
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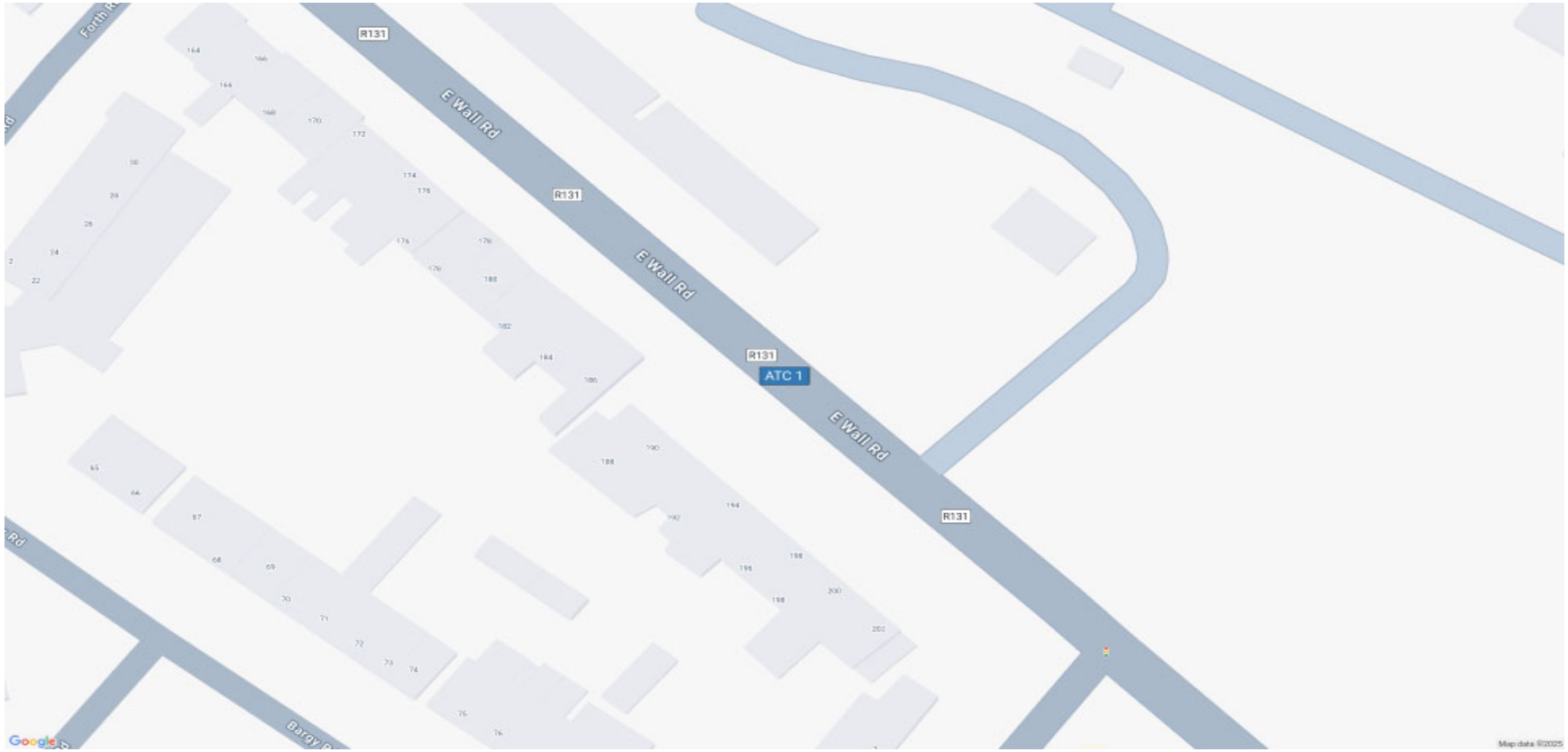
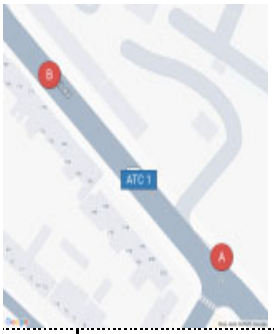
IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Date: Wed 14 May 2025 — Tue 20 May 2025



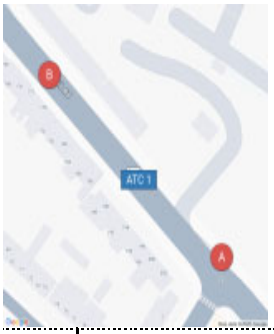


IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Wed 14-May-2025
AM Peak: 09:09 — 10:09 **Total:** 970
PM Peak: 13:20 — 14:20 **Total:** 951
15 Min Peak: 09:40 — 09:55 **Total:** 267
Overall 15 Min Peak: 14:36 — 14:51 **Total:** 284 **Date:** 17/05/2025

Note: Queues were observed during the survey period.

	Northbound (A => B)								Mean Speed	85% Speed	Southbound (B => A)								Mean Speed	85% Speed
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)
00:00	0	10	4	1	0	0	15	15.9	40.8	52.2	0	20	2	3	0	0	25	27.7	42.3	50.1
00:15	0	8	2	0	0	0	10	10	44.4	53.6	0	11	10	1	2	0	24	28.7	44.3	51.4
00:30	0	9	1	3	0	0	13	15.7	46.7	57.5	0	7	4	1	3	0	15	21.6	45.5	49.9
00:45	0	5	0	0	0	0	5	5	42.3	45.4	0	9	1	2	0	0	12	13.8	43.6	52.4
H/TOT	0	32	7	4	0	0	43	46.6	43.6	52.2	0	47	17	7	5	0	76	91.8	43.7	50.2
01:00	1	7	1	1	1	0	11	13.2	52.6	70.5	0	14	1	1	0	0	16	16.9	42.1	52.7
01:15	0	5	2	1	0	0	8	8.9	38.9	53.8	0	7	3	2	1	0	13	16.7	47.5	57.8
01:30	0	6	3	1	0	0	10	10.9	49.4	55.7	0	3	2	1	0	0	6	6.9	47.7	70.2
01:45	0	4	2	3	1	0	10	14.6	42.5	55.9	0	3	3	0	0	0	6	6	46.4	59.4
H/TOT	1	22	8	6	2	0	39	47.6	46.4	59.6	0	27	9	4	1	0	41	46.5	45.3	53.5
02:00	0	6	1	2	0	0	9	10.8	46.3	59.1	0	2	0	2	0	0	4	5.8	43.1	44.1
02:15	0	3	2	1	0	0	6	6.9	45.4	61.7	1	4	1	2	0	0	8	9.2	46.5	53.5
02:30	0	2	0	1	0	0	3	3.9	39.1	40.1	0	3	2	1	0	0	6	6.9	45.3	55.6
02:45	0	2	1	1	0	0	4	4.9	46.3	47.9	0	4	1	0	0	0	5	5	49.8	52.5
H/TOT	0	13	4	5	0	0	22	26.5	45.1	59.1	1	13	4	5	0	0	23	26.9	46.3	53.1
03:00	0	2	0	1	0	0	3	3.9	37.2	37.6	0	3	0	1	0	0	4	4.9	47.6	53.7
03:15	0	1	0	3	0	0	4	6.7	44.8	48.7	0	6	1	0	0	0	7	7	55.6	67.6
03:30	0	1	3	1	0	0	5	5.9	55.3	70.3	0	5	1	1	0	0	7	7.9	38.9	58.0
03:45	0	1	2	0	0	0	3	3	41.5	43.5	1	7	1	0	1	0	10	11.3	55.8	69.0
H/TOT	0	5	5	5	0	0	15	19.5	46.1	62.5	1	21	3	2	1	0	28	31.1	50.4	63.4
04:00	0	4	1	1	0	0	6	6.9	49.1	60.6	0	8	0	1	0	0	9	9.9	48.4	66.4
04:15	0	1	2	2	0	0	5	6.8	51.1	54.9	0	7	0	1	0	0	8	8.9	46.5	56.7
04:30	0	8	1	3	2	0	14	20.5	40.3	50.2	0	18	6	2	2	0	28	33.6	45.2	55.4
04:45	0	7	7	3	1	0	18	22.6	52.2	62.3	1	20	2	1	0	0	24	24.3	51.2	59.5
H/TOT	0	20	11	9	3	0	43	56.8	47.7	59.7	1	53	8	5	2	0	69	76.7	47.9	55.8
05:00	0	10	2	3	0	0	15	17.7	46.9	60.2	1	20	7	0	0	0	28	27.4	47.7	58.9
05:15	0	12	6	1	3	0	22	28.6	48.8	59.6	0	28	3	1	1	0	33	35.8	49.5	56.9
05:30	1	12	4	3	0	0	20	22.1	45.6	52.7	1	43	8	3	0	0	55	57.1	47.3	56.5
05:45	2	8	6	7	0	0	23	28.1	50.8	63.3	3	51	10	2	2	0	68	71.8	44.9	53.0
H/TOT	3	42	18	14	3	0	80	96.5	48.2	58.8	5	142	28	6	3	0	184	192.1	46.9	55.9
06:00	1	22	6	5	1	0	35	40.8	44.3	51.8	3	61	16	4	0	0	84	85.8	43.6	51.7
06:15	0	24	4	0	0	0	28	28	47.4	57.7	4	99	27	7	0	0	137	140.9	36.3	48.9
06:30	1	34	7	7	2	0	51	60.5	42.3	50.8	2	133	30	7	0	0	172	177.1	32.6	44.0
06:45	1	49	8	9	0	0	67	74.5	42.0	48.4	1	104	31	8	1	0	145	153.5	36.8	47.0
H/TOT	3	129	25	21	3	0	181	203.8	43.4	51.3	10	397	104	26	1	0	538	557.3	36.4	47.5
07:00	1	55	10	5	0	0	71	74.9	37.1	45.4	6	132	31	4	1	0	174	175.9	24.8	32.3
07:15	4	41	13	3	4	0	65	72.9	38.3	46.8	2	108	30	4	1	1	146	151.3	19.1	28.3
07:30	4	63	22	4	1	0	94	97.1	36.3	41.0	3	81	23	7	0	0	114	118.5	20.1	32.4
07:45	1	97	16	4	0	1	119	123	37.7	45.8	3	76	14	2	0	0	95	95	26.6	39.0
H/TOT	10	256	61	16	5	1	349	367.9	37.3	45.1	14	397	98	17	2	1	529	540.7	22.5	32.4
08:00	1	83	22	5	2	1	114	122.7	35.6	42.6	2	88	17	3	0	6	116	123.5	25.6	36.2
08:15	0	69	17	9	2	0	97	108.9	33.6	40.6	5	82	13	8	0	4	112	120.2	21.8	31.2
08:30	1	81	12	7	0	0	101	106.7	35.1	40.1	4	99	19	5	0	1	128	131.1	23.9	35.2
08:45	2	82	23	9	1	1	118	127.8	31.4	38.6	4	73	16	1	0	3	97	98.5	16.0	21.3
H/TOT	4	315	74	30	5	2	430	466.1	33.9	40.3	15	342	65	17	0	14	453	473.3	22.1	31.7
09:00	0	78	19	9	0	0	106	114.1	36.7	42.3	3	85	16	5	1	1	111	116.6	23.0	33.5
09:15	1	84	20	6	0	0	111	115.8	36.4	43.4	4	98	21	7	1	2	133	140.8	28.8	39.8
09:30	2	64	21	14	3	1	105	123.1	33.4	41.5	3	84	31	8	2	0	128	137.2	25.6	34.1
09:45	2	89	20	6	0	1	118	123.2	33.1	42.0	2	96	21	4	0	1	124	127.4	22.8	28.8
H/TOT	5	315	80	35	3	2	440	476.2	34.9	42.1	12	363	89	24	4	4	496	522	25.2	35.7
10:00	2	84	15	8	3	1	113	125.7	32.4	40.2	2	94	23	10	2	0	131	142.6	28.7	38.4
10:15	1	83	17	10	1	0	112	122.3	37.9	44.2	0	64	21	8	1	0	94	103.1	33.7	44.5
10:30	0	74	32	10	5	0	121	139.5	38.3	44.0	0	62	19	7	0	1	89	96.3	36.5	45.9
10:45	1	67	17	14	1	0	100	113.9	37.7	44.9	2	72	23	10	1	1	109	119.7	32.3	40.7
H/TOT	4	308	81	42	10	1	446	501.4	36.6	43.3	4	292	86	35	4	2	423	461.7	32.4	43.5
11:00	0	57	15	8	1	0	81	90.1	41.0	50.5	0	75	16	6	0	0	97	102.4	35.3	44.6
11:15	1	80	24	9	1	0	115	124.4	40.6	47.2	1	70	23	6	1	0	101	107.7	33.7	42.2
11:30	1	75	39	10	0	0	125	133.4	38.4	46.4	2	65	17	7	0	1	92	98.1	31.8	45.1
11:45	3	69	29	8	2	0	111	120.2	36.9	43.5	0	77	18	9	2	0	106	117.9	29.0	40.5

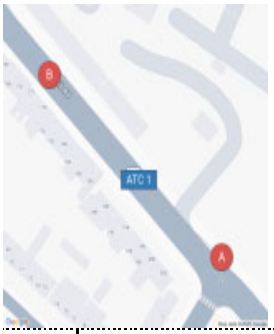


IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project ATC		
Site:	ATC 1		
Location:	E Wall Rd		
Date:	Wed 14-May-2025		
AM Peak:	09:09 — 10:09	**Total:**	970
PM Peak:	13:20 — 14:20	**Total:**	951
15 Min Peak:	09:40 — 09:55	**Total:**	267
Overall 15 Min Peak:	14:36 — 14:51	**Total:**	284 **Date:** 17/05/2025

Note: Queues were observed during the survey period.

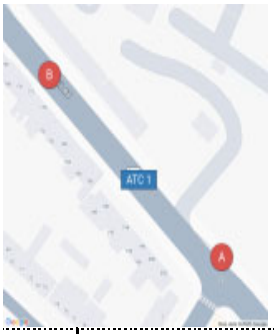
H/TOT	5	281	107	35	4	0	432	468.1	39.1	46.7	3	287	74	28	3	1	396	426.1	32.4	42.9
12:00	0	73	24	11	0	0	108	117.9	33.0	40.2	2	78	15	9	0	1	105	112.9	28.0	40.3
12:15	5	71	26	12	0	0	114	121.8	37.5	44.3	0	68	23	6	1	0	98	105.3	29.4	43.4
12:30	1	85	28	16	1	0	131	146.7	36.9	45.7	1	76	19	8	0	1	105	112.6	35.4	45.0
12:45	3	74	24	10	2	0	113	124	38.2	47.5	6	54	16	10	0	2	88	95.4	30.6	41.7
H/TOT	9	303	102	49	3	0	466	510.4	36.5	44	9	276	73	33	1	4	396	426.2	30.9	42.4
13:00	0	84	20	8	2	2	116	129	38.1	45.5	0	57	13	4	1	1	76	82.5	33.5	45.9
13:15	1	87	20	9	1	0	118	127.4	36.5	43.0	1	86	11	7	0	1	106	112.7	31.9	42.1
13:30	2	100	26	7	2	0	137	145.9	32.4	38.3	1	82	10	8	2	1	104	115.4	26.8	38.8
13:45	2	100	16	13	1	2	134	148.4	26.8	37.2	1	67	24	7	2	0	101	110.5	27.1	35.5
H/TOT	5	371	82	37	6	4	505	550.7	33.2	41.7	3	292	58	26	5	3	387	421.1	29.6	39.9
14:00	3	93	27	7	2	1	133	142.3	36.8	43.3	3	80	20	6	0	0	109	112.6	28.7	39.3
14:15	0	65	26	7	0	0	98	104.3	39.4	45.3	2	70	21	9	0	1	103	110.9	34.7	46.0
14:30	0	68	32	8	0	1	109	117.2	39.2	45.4	1	59	17	8	2	0	87	97.4	31.3	40.1
14:45	1	73	30	6	0	1	111	116.8	39.8	47.7	1	63	19	10	3	0	96	110.1	30.9	43.0
H/TOT	4	299	115	28	2	3	451	480.6	38.7	45.2	7	272	77	33	5	1	395	431	31.4	42.5
15:00	2	93	18	6	3	0	122	131.9	40.2	46.6	2	65	19	7	0	0	93	98.1	32.7	44.6
15:15	2	63	20	5	0	0	90	93.3	41.4	48.7	1	80	23	10	0	0	114	122.4	31.0	44.3
15:30	6	79	14	5	2	1	107	112.7	36.8	42.7	3	107	26	3	0	2	141	143.9	28.9	38.1
15:45	1	80	17	4	0	0	102	105	35.6	46.7	0	89	28	7	0	1	125	132.3	31.0	44.4
H/TOT	11	315	69	20	5	1	421	442.9	38.5	46.4	6	341	96	27	0	3	473	496.7	30.7	42.8
16:00	3	82	20	2	0	0	107	107	37.2	46.8	0	76	17	4	0	1	98	102.6	32.3	44.8
16:15	4	91	21	3	0	0	119	119.3	38.7	46.3	2	67	10	6	0	0	85	89.2	30.0	42.5
16:30	7	79	23	7	0	0	116	118.1	37.4	44.4	2	72	13	7	0	0	94	99.1	30.3	39.4
16:45	3	111	17	4	1	0	136	139.7	38.5	46.4	0	55	13	4	0	1	73	77.6	31.7	46.3
H/TOT	17	363	81	16	1	0	478	484.1	38	45.9	4	270	53	21	0	2	350	368.5	31.1	42.7
17:00	7	112	23	5	0	0	147	147.3	32.6	40.5	1	82	15	5	0	0	103	106.9	27.3	36.5
17:15	3	95	24	4	0	0	126	127.8	22.1	33.1	2	48	8	1	0	0	59	58.7	34.3	42.5
17:30	4	106	18	2	0	0	130	129.4	37.6	44.1	1	58	12	3	1	0	75	79	30.5	39.5
17:45	4	102	12	5	0	0	123	125.1	35.9	42.4	0	52	11	8	2	0	73	84	31.4	45.4
H/TOT	18	415	77	16	0	0	526	529.6	32.1	41.3	4	240	46	17	3	0	310	328.6	30.4	40.8
18:00	3	104	19	6	0	0	132	135.6	33.7	40.2	0	88	7	2	0	0	97	98.8	29.9	42.0
18:15	6	130	18	1	0	0	155	152.3	34.5	41.1	2	59	10	2	0	0	73	73.6	33.3	43.0
18:30	2	122	23	0	0	0	147	145.8	23.0	32.3	1	63	13	3	0	0	80	82.1	24.9	36.1
18:45	0	121	11	3	1	0	136	140.6	20.0	25.7	0	66	11	3	0	0	80	82.7	26.7	39.5
H/TOT	11	477	71	10	1	0	570	574.3	27.9	38	3	276	41	10	0	0	330	337.2	28.6	40.2
19:00	2	91	20	3	1	0	117	120.4	25.4	38.2	3	65	11	1	0	0	80	79.1	24.3	36.9
19:15	3	87	21	4	0	0	115	116.8	36.6	44.9	0	57	15	2	0	0	74	75.8	34.1	46.6
19:30	5	80	10	1	0	0	96	93.9	37.6	44.8	1	47	12	5	0	0	65	68.9	33.1	43.0
19:45	1	83	17	3	1	0	105	109	36.4	42.5	1	35	5	4	0	0	45	48	33.0	42.7
H/TOT	11	341	68	11	2	0	433	440.1	33.7	42.8	5	204	43	12	0	0	264	271.8	30.7	42.7
20:00	1	93	13	4	1	0	112	116.9	38.1	43.1	0	40	11	6	0	1	58	64.4	32.4	41.7
20:15	4	77	10	4	0	0	95	96.2	39.9	44.3	0	30	10	1	0	0	41	41.9	32.3	41.8
20:30	4	59	11	2	0	0	76	75.4	39.9	46.4	3	53	5	3	0	0	64	64.9	37.1	44.3
20:45	3	59	10	4	0	0	76	77.8	40.1	46.6	1	41	5	3	0	1	51	54.1	35.2	44.6
H/TOT	12	288	44	14	1	0	359	366.3	39.4	44.8	4	164	31	13	0	2	214	225.3	34.4	42.7
21:00	2	53	7	2	1	0	65	67.5	38.1	46.8	2	47	9	3	1	1	63	67.4	34.2	44.6
21:15	3	59	14	2	0	0	78	78	38.5	46.7	4	39	11	2	1	0	57	58.3	35.9	43.7
21:30	0	65	14	4	1	0	84	89.5	38.4	45.4	4	52	7	1	0	0	64	62.5	35.5	45.0
21:45	3	49	14	2	2	0	70	73.8	39.8	46.4	0	54	5	2	0	0	61	62.8	37.1	45.7
H/TOT	8	226	49	10	4	0	297	308.8	38.7	45.9	10	192	32	8	2	1	245	251	35.7	44.6
22:00	0	52	7	1	0	0	60	60.9	39.9	46.2	1	45	8	2	1	0	57	60.1	36.0	42.3
22:15	5	43	10	3	0	0	61	60.7	40.0	49.5	0	35	6	1	2	1	45	50.7	38.0	45.3
22:30	0	45	5	0	0	0	50	50	40.8	47.6	1	28	6	2	0	0	37	38.2	37.1	43.7
22:45	0	48	6	3	0	0	57	59.7	40.8	48.5	0	27	2	1	0	0	30	30.9	38.3	44.6
H/TOT	5	188	28	7	0	0	228	231.3	40.4	47.5	2	135	22	6	3	1	169	179.9	37.2	43.7
23:00	1	33	3	2	0	0	39	40.2	42.1	50.4	0	19	0	2	0	0	21	22.8	43.5	49.4
23:15	0	27	11	1	0	0	39	39.9	45.9	55.3	0	18	5	4	1	0	28	33.5	40.0	44.6
23:30	1	18	7	0	0	0	26	25.4	44.7	52.3	0	7	3	2	0	0	12	13.8	37.1	48.1
23:45	0	9	3	2	1	0	15	18.7	41.2	52.0	1	8	4	3	0	0	16	18.1	44.7	53.3
H/TOT	2	87	24	5	1	0	119	124.2	43.8	52.6	1	52	12	11	1	0	77	88.2	41.5	49.1
24 TOT	148	5411	1291	445	64	14	7373	7820	36.4	44.9	124	5095	1169	393	46	39	6866	7272	31.2	43.6



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Thu 15-May-2025
AM Peak: 09:21 — 10:21 **Total:** 964
PM Peak: 16:10 — 17:10 **Total:** 970
15 Min Peak: 16:08 — 16:23 **Total:** 271

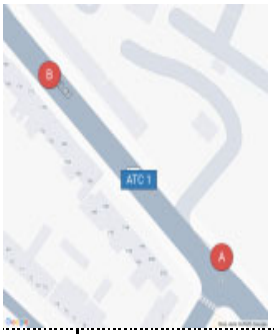
	Northbound (A => B)								Mean Speed	85% Speed	Southbound (B => A)								Mean Speed	85% Speed
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)
00:00	1	15	1	1	0	0	18	18.3	45.4	54.0	2	10	5	2	0	0	19	19.6	46.9	54.4
00:15	0	7	7	0	0	0	14	14	49.3	63.0	1	7	1	1	0	0	10	10.3	44.9	58.7
00:30	0	7	4	1	0	0	12	12.9	43.4	56.0	0	9	1	1	0	0	11	11.9	47.2	57.8
00:45	0	2	1	0	0	0	3	3	50.5	51.8	0	4	0	2	0	0	6	7.8	45.3	49.5
H/TOT	1	31	13	2	0	0	47	48.2	46.4	55.7	3	30	7	6	0	0	46	49.6	46.3	54.3
01:00	0	5	2	1	0	0	8	8.9	44.1	56.6	0	5	1	0	0	0	6	6	47.1	80.8
01:15	0	6	3	0	0	0	9	9	46.3	52.6	0	2	0	2	1	0	5	8.7	42.7	43.6
01:30	0	3	1	1	0	0	5	5.9	41.4	49.2	0	2	1	1	1	0	5	7.8	43.4	46.0
01:45	0	5	1	1	0	0	7	7.9	43.2	61.1	0	5	0	0	0	0	5	5	42.7	44.6
H/TOT	0	19	7	3	0	0	29	31.7	44.1	53.6	0	14	2	3	2	0	21	27.5	44.1	52.5
02:00	1	6	0	1	0	0	8	8.3	46.0	60.9	0	3	1	0	0	0	4	4	48.9	49.4
02:15	1	5	2	1	0	0	9	9.3	41.9	54.4	0	5	0	1	0	0	6	6.9	42.9	46.7
02:30	2	2	3	1	0	0	8	7.7	47.0	57.0	1	3	0	0	0	0	4	3.4	51.1	55.5
02:45	0	2	1	1	0	1	5	6.9	49.5	54.0	1	4	1	1	0	0	7	7.3	51.2	59.0
H/TOT	4	15	6	4	0	1	30	32.2	45.6	55.3	2	15	2	2	0	0	21	21.6	48.4	58.7
03:00	0	6	0	1	0	0	7	7.9	48.4	74.8	0	5	2	0	0	0	7	7	56.8	65.3
03:15	0	2	0	0	0	0	2	2	38.9	39.1	0	5	1	1	0	0	7	7.9	54.2	69.3
03:30	0	2	1	1	0	0	4	4.9	43.1	50.0	1	7	3	1	0	0	12	12.3	42.0	52.8
03:45	0	3	0	1	0	0	4	4.9	47.2	52.1	0	4	0	0	0	0	4	4	62.7	63.8
H/TOT	0	13	1	3	0	0	17	19.7	45.7	55	1	21	6	2	0	0	30	31.2	51.1	63.5
04:00	1	8	4	3	0	0	16	18.1	52.1	60.9	0	10	2	2	0	0	14	15.8	52.4	63.6
04:15	0	12	0	1	0	0	13	13.9	48.7	57.9	0	7	0	0	1	0	8	9.9	48.2	64.5
04:30	0	7	3	2	0	0	12	13.8	46.9	53.5	0	17	3	1	1	0	22	24.8	50.7	59.9
04:45	0	8	3	1	0	0	12	12.9	47.3	56.4	0	26	3	2	1	0	32	35.7	51.5	60.4
H/TOT	1	35	10	7	0	0	53	58.7	49	57.8	0	60	8	5	3	0	76	86.2	51.1	61.6
05:00	0	5	0	2	0	0	7	8.8	49.4	57.0	0	21	6	1	0	0	28	28.9	47.8	61.6
05:15	0	13	4	1	1	0	19	21.8	47.6	55.3	0	22	1	3	0	0	26	28.7	52.5	68.9
05:30	1	12	4	1	1	0	19	21.2	44.0	50.6	1	42	9	3	0	0	55	57.1	48.9	57.4
05:45	1	16	2	8	1	0	28	36.5	49.7	61.4	1	47	8	0	1	0	57	58.3	48.2	54.8
H/TOT	2	46	10	12	3	0	73	88.3	47.6	56	2	132	24	7	1	0	166	173	49	57.5
06:00	1	20	4	4	0	1	30	34	40.3	48.8	2	67	19	6	1	0	95	101.1	38.9	46.4
06:15	0	35	1	3	1	0	40	44.6	39.5	47.6	7	114	30	7	1	1	160	165	35.1	47.2
06:30	0	38	2	4	0	0	44	47.6	42.7	50.2	3	132	39	8	0	0	182	187.4	31.9	43.3
06:45	1	41	7	5	0	0	54	57.9	41.6	49.6	0	124	33	9	0	3	169	180.1	27.4	36.8
H/TOT	2	134	14	16	1	1	168	184.1	41.2	48.8	12	437	121	30	2	4	606	633.6	32.6	44.4
07:00	0	52	10	5	5	0	72	86	39.3	45.7	6	103	30	7	2	0	148	154.5	29.8	41.5
07:15	2	53	14	3	2	0	74	79.3	36.0	44.2	3	97	32	8	0	2	142	149.4	28.4	40.2
07:30	0	72	12	1	2	0	87	91.7	36.7	44.1	2	121	17	5	1	0	146	151.2	28.7	43.0
07:45	0	94	13	7	0	0	114	120.3	33.5	40.5	5	111	15	4	1	0	136	138.5	25.2	33.2
H/TOT	2	271	49	16	9	0	347	377.3	36	44.2	16	432	94	24	4	2	572	593.6	28.1	40.2
08:00	1	64	8	7	0	0	80	85.7	39.3	47.1	3	96	11	6	1	3	120	128.5	28.8	41.2
08:15	1	64	13	10	1	0	89	99.3	36.2	43.2	0	94	20	4	0	2	120	125.6	25.1	36.1
08:30	1	76	11	11	0	0	99	108.3	38.3	44.3	4	89	21	4	0	0	118	119.2	35.9	44.5
08:45	1	86	8	9	0	0	104	111.5	36.5	41.8	5	80	17	3	1	1	107	109.6	27.4	36.7
H/TOT	4	290	40	37	1	0	372	404.8	37.5	44.3	12	359	69	17	2	6	465	482.9	29.4	40.9
09:00	1	90	18	6	1	0	116	122.7	35.7	41.8	4	92	25	5	1	0	127	131	30.5	40.4
09:15	1	87	26	8	1	2	125	135.5	34.2	40.4	1	92	14	8	1	1	117	126.5	23.6	38.7
09:30	3	76	21	12	1	0	113	123.9	35.6	41.6	0	85	29	8	1	0	123	132.1	28.4	39.5
09:45	2	81	20	8	0	1	112	119	33.6	43.4	2	80	22	7	2	0	113	121.9	27.4	39.2
H/TOT	7	334	85	34	3	3	466	501.1	34.8	41.6	7	349	90	28	5	1	480	511.5	27.5	39.3
10:00	2	82	23	16	2	0	125	142	34.7	40.9	2	96	22	7	2	1	130	139.9	25.2	33.6
10:15	1	89	28	11	3	0	132	147	37.3	43.5	1	68	18	7	0	1	95	101.7	33.8	43.7
10:30	0	47	25	10	2	0	84	96.8	39.4	47.3	0	84	12	13	1	0	110	123.6	33.5	43.7
10:45	0	78	19	10	1	0	108	118.9	40.4	46.8	0	79	22	9	0	0	110	118.1	35.2	45.8
H/TOT	3	296	95	47	8	0	449	504.7	37.7	44.6	3	327	74	36	3	2	445	483.3	31.6	43.2
11:00	2	54	32	17	0	0	105	119.1	39.3	47.3	1	53	20	7	0	0	81	86.7	30.8	41.4
11:15	1	52	31	17	1	0	102	118.6	38.8	45.6	0	63	20	9	1	0	93	103	30.9	40.5
11:30	2	66	33	7	2	1	111	120.9	35.6	44.1	2	73	13	4	2	0	94	100.2	34.7	45.1
11:45	0	85	28	6	0	0	119	124.4	37.1	44.3	2	69	15	11	2	0	99	111.5	31.4	41.8



IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project ATC		
Site:	ATC 1		
Location:	E Wall Rd		
Date:	Thu 15-May-2025		
AM Peak:	09:21 — 10:21	**Total:**	964
PM Peak:	16:10 — 17:10	**Total:**	970
15 Min Peak:	16:08 — 16:23	**Total:**	271

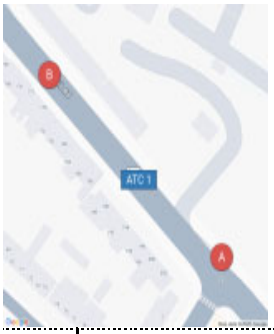
H/TOT	5	257	124	47	3	1	437	483	37.7	45	5	258	68	31	5	0	367	401.4	32	42.1
12:00	1	61	19	8	1	0	90	98.5	36.0	42.7	0	77	15	6	1	0	99	106.3	23.8	35.7
12:15	1	87	34	11	2	0	135	148.1	36.5	42.4	1	73	24	9	1	0	108	117.4	31.8	41.9
12:30	2	82	17	15	2	1	119	136.1	32.5	40.8	5	67	17	5	4	0	98	107.1	28.5	42.8
12:45	3	71	21	4	3	0	102	109.5	35.5	43.1	2	80	15	8	3	0	108	119.7	25.7	38.2
H/TOT	7	301	91	38	8	1	446	492.2	35.1	42.6	8	297	71	28	9	0	413	450.5	27.5	40.5
13:00	1	86	23	8	0	1	119	126.6	35.6	46.4	0	85	19	2	1	1	108	112.7	32.2	43.1
13:15	0	71	29	10	1	0	111	121.9	39.1	46.1	5	59	15	4	1	1	85	88.5	33.6	44.6
13:30	2	81	26	14	1	1	125	139.3	31.8	38.6	0	80	14	6	0	1	101	107.4	30.2	42.3
13:45	3	88	32	8	2	0	133	142.2	36.2	42.9	0	65	21	4	0	2	92	97.6	29.4	40.8
H/TOT	6	326	110	40	4	2	488	530	35.6	43.3	5	289	69	16	2	5	386	406.2	31.3	42.6
14:00	2	84	25	8	1	0	120	127.9	36.6	45.6	0	78	19	6	0	0	103	108.4	35.7	47.9
14:15	2	77	23	8	2	1	113	123.8	35.7	41.2	5	88	16	12	0	0	121	128.8	27.1	38.6
14:30	2	85	24	6	1	0	118	124.1	38.0	46.6	3	58	20	8	0	0	89	94.4	32.7	44.0
14:45	2	76	17	7	1	0	103	110	40.2	47.5	2	84	25	10	0	0	121	128.8	32.8	44.9
H/TOT	8	322	89	29	5	1	454	485.8	37.6	45.3	10	308	80	36	0	0	434	460.4	31.9	43.7
15:00	3	75	27	7	0	1	113	118.5	41.5	47.2	0	72	21	6	0	0	99	104.4	33.0	44.7
15:15	2	64	20	6	0	0	92	96.2	39.6	47.3	1	85	20	13	0	3	122	136.1	33.4	42.8
15:30	3	72	13	3	1	0	92	94.8	36.7	46.2	1	98	16	7	1	1	124	132.6	27.3	38.6
15:45	3	61	18	5	0	0	87	89.7	38.9	46.4	1	89	23	11	2	0	126	139.1	34.2	44.8
H/TOT	11	272	78	21	1	1	384	399.2	39.3	46.6	3	344	80	37	3	4	471	512.2	31.9	43.2
16:00	5	99	16	3	2	0	125	128.5	35.6	46.2	2	101	12	5	0	0	120	123.3	26.9	37.4
16:15	4	86	29	8	1	0	128	134.7	36.1	43.4	3	80	21	4	1	1	110	114.7	31.3	44.8
16:30	2	95	20	3	0	0	120	121.5	36.6	45.0	2	76	19	10	1	0	108	117.7	31.4	43.6
16:45	4	103	29	3	0	0	139	139.3	37.1	47.5	0	65	15	3	1	0	84	88.6	30.8	40.2
H/TOT	15	383	94	17	3	0	512	524	36.4	45.4	7	322	67	22	3	1	422	444.3	30	41.7
17:00	6	102	27	4	4	0	143	150.6	26.8	35.6	2	69	23	4	1	0	99	103.3	27.0	38.9
17:15	6	113	15	2	1	0	137	137.1	19.8	27.2	2	78	8	0	0	0	88	86.8	19.2	24.0
17:30	6	111	21	2	2	0	142	144	22.2	29.5	0	80	10	2	1	0	93	96.7	22.0	33.3
17:45	4	118	21	4	0	0	147	148.2	27.4	37.3	0	56	9	3	1	0	69	73.6	27.7	38.2
H/TOT	22	444	84	12	7	0	569	579.9	24.1	33.1	4	283	50	9	3	0	349	360.4	23.8	33.2
18:00	3	113	21	3	1	1	142	145.8	23.9	32.5	0	49	10	5	0	0	64	68.5	30.9	39.1
18:15	2	87	19	3	0	2	113	116.5	16.7	23.0	2	65	10	1	0	0	78	77.7	28.4	40.7
18:30	2	91	16	7	0	0	116	121.1	14.2	18.3	2	59	4	0	0	0	65	63.8	28.2	38.6
18:45	4	107	18	1	1	3	134	137.4	16.7	23.2	1	62	13	5	0	0	81	84.9	30.1	40.1
H/TOT	11	398	74	14	2	6	505	520.8	18.1	25.8	5	235	37	11	0	0	288	294.9	29.4	40.1
19:00	3	99	10	3	0	0	115	115.9	28.4	39.6	3	75	11	5	1	1	96	101.6	23.9	33.0
19:15	4	91	14	0	1	0	110	109.5	38.5	44.1	0	56	14	2	0	0	72	73.8	37.5	47.3
19:30	0	90	12	3	0	0	105	107.7	35.6	44.1	0	58	11	5	0	0	74	78.5	33.9	42.6
19:45	3	78	25	1	2	0	109	111.9	39.2	44.9	2	39	13	2	0	0	56	56.6	34.2	40.6
H/TOT	10	358	61	7	3	0	439	445	35.3	43.7	5	228	49	14	1	1	298	310.5	31.6	42.1
20:00	4	70	13	3	2	0	92	96.1	39.3	44.7	0	42	11	3	0	0	56	58.7	33.1	41.5
20:15	3	102	10	3	2	0	120	124.7	37.5	43.0	0	42	9	4	1	0	56	61.5	33.6	41.1
20:30	1	89	10	3	0	0	103	105.1	37.8	43.8	2	41	9	2	1	0	55	57.5	31.7	41.2
20:45	4	75	18	2	1	0	100	101.3	36.3	43.4	2	37	17	2	0	0	58	58.6	37.4	44.6
H/TOT	12	336	51	11	5	0	415	427.2	37.7	43.9	4	162	46	11	2	0	225	236.3	34	42.2
21:00	1	53	15	3	0	0	72	74.1	40.6	45.5	1	41	5	3	0	0	50	52.1	37.3	46.7
21:15	2	64	12	3	0	0	81	82.5	38.4	46.7	0	49	12	3	0	0	64	66.7	34.1	41.5
21:30	1	72	12	2	1	0	88	91.1	38.5	44.6	3	50	11	3	0	0	67	67.9	34.0	45.7
21:45	0	37	15	3	0	0	55	57.7	41.6	49.1	1	29	8	3	1	0	42	46	37.6	48.7
H/TOT	4	226	54	11	1	0	296	305.4	39.6	46.4	5	169	36	12	1	0	223	232.7	35.4	46.1
22:00	2	52	14	0	0	0	68	66.8	40.7	47.9	0	36	9	2	1	1	49	53.7	33.7	42.6
22:15	1	46	3	1	0	0	51	51.3	39.1	45.4	0	38	2	2	0	0	42	43.8	39.6	45.7
22:30	1	39	12	3	0	0	55	57.1	43.3	47.0	1	28	6	1	0	0	36	36.3	39.1	45.5
22:45	0	32	8	0	0	0	40	40	42.9	49.0	0	15	5	2	0	0	22	23.8	43.3	54.3
H/TOT	4	169	37	4	0	0	214	215.2	41.4	46.6	1	117	22	7	1	1	149	157.6	38.1	45
23:00	2	32	4	2	0	0	40	40.6	42.5	49.4	3	28	5	2	0	0	38	38	41.0	51.4
23:15	0	29	10	1	0	0	40	40.9	43.5	50.0	3	19	5	3	0	0	30	30.9	41.8	45.5
23:30	1	16	5	1	0	0	23	23.3	47.2	53.7	0	14	1	1	0	0	16	16.9	45.8	51.2
23:45	0	25	13	1	0	0	39	39.9	44.7	53.8	2	15	4	4	0	0	25	27.4	42.4	50.3
H/TOT	3	102	32	5	0	0	142	144.7	44.1	51	8	76	15	10	0	0	109	113.2	42.3	50.1
24 TOT	144	5378	1309	437	67	17	7352	7803	35.3	44.7	128	5264	1187	404	52	27	7062	7475	31.6	43.6



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Fri 16-May-2025
AM Peak: 06:28 — 07:28 **Total:** 868
PM Peak: 14:58 — 15:58 **Total:** 988
15 Min Peak: 15:08 — 15:23 **Total:** 263

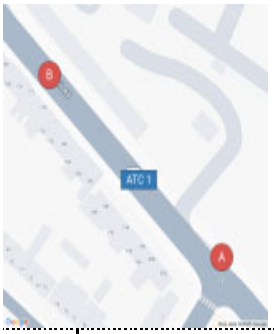
	Northbound (A => B)								Mean Speed	85% Speed	Southbound (B => A)								Mean Speed	85% Speed
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)
00:00	0	16	3	1	0	0	20	20.9	44.0	50.6	0	14	6	3	0	0	23	25.7	41.4	48.2
00:15	1	13	3	0	0	0	17	16.4	49.1	55.1	0	13	3	1	0	0	17	17.9	47.9	53.6
00:30	1	11	4	1	0	0	17	17.3	47.2	56.1	0	9	2	3	0	0	14	16.7	39.0	47.8
00:45	0	11	2	0	0	0	13	13	44.1	50.1	0	10	1	0	0	0	11	11	44.7	54.5
H/TOT	2	51	12	2	0	0	67	67.6	46.1	52.7	0	46	12	7	0	0	65	71.3	43.1	51.3
01:00	0	7	1	1	0	0	9	9.9	37.4	50.8	1	4	2	1	1	0	9	11.2	45.4	62.4
01:15	0	8	0	0	0	0	8	8	49.9	59.6	0	5	1	1	0	0	7	7.9	44.6	56.4
01:30	0	8	1	2	0	0	11	12.8	44.0	52.3	0	5	1	1	0	0	7	7.9	47.8	62.0
01:45	0	6	3	0	1	0	10	11.9	45.7	56.8	0	4	0	0	0	0	4	4	45.1	50.2
H/TOT	0	29	5	3	1	0	38	42.6	44.1	52.9	1	18	4	3	1	0	27	31	45.8	57.5
02:00	0	3	3	3	0	0	9	11.7	47.4	55.6	0	2	1	2	0	0	5	6.8	43.9	46.8
02:15	0	10	2	0	0	0	12	12	45.6	51.6	0	1	0	1	0	0	2	2.9	54.3	54.8
02:30	0	7	1	1	0	0	9	9.9	41.0	60.7	0	2	0	1	0	0	3	3.9	62.8	76.2
02:45	0	3	0	3	0	0	6	8.7	48.0	55.0	0	5	0	3	1	0	9	13.6	54.8	64.2
H/TOT	0	23	6	7	0	0	36	42.3	45.3	53.8	0	10	1	7	1	0	19	27.2	53.1	66.6
03:00	0	7	2	2	0	0	11	12.8	48.4	64.5	1	9	2	0	0	0	12	11.4	44.5	58.5
03:15	0	5	1	0	0	0	6	6	44.3	51.8	0	4	0	1	0	0	5	5.9	49.0	50.7
03:30	0	5	0	0	0	0	5	5	47.1	51.5	1	9	2	1	0	0	13	13.3	49.0	55.3
03:45	0	7	2	0	0	0	9	9	49.7	61.9	0	5	1	0	0	0	6	6	60.5	77.0
H/TOT	0	24	5	2	0	0	31	32.8	47.8	53.3	2	27	5	2	0	0	36	36.6	49.4	59.3
04:00	0	5	0	1	0	0	6	6.9	51.2	62.5	0	11	0	1	0	0	12	12.9	48.7	58.5
04:15	0	7	1	2	1	0	11	14.7	45.0	55.1	0	14	1	1	0	0	16	16.9	48.8	55.2
04:30	0	4	1	4	1	0	10	15.5	47.9	64.6	2	19	2	2	0	0	25	25.6	48.5	61.3
04:45	1	9	3	1	0	0	14	14.3	54.6	66.4	0	22	5	2	1	0	30	33.7	49.4	58.4
H/TOT	1	25	5	8	2	0	41	51.4	49.9	62.7	2	66	8	6	1	0	83	89.1	48.9	58.2
05:00	0	8	4	0	0	0	12	12	48.1	69.5	0	23	6	0	0	0	29	29	48.6	61.8
05:15	0	7	5	1	1	0	14	16.8	48.7	61.9	0	27	6	0	1	0	34	35.9	49.2	57.0
05:30	0	18	6	3	0	0	27	29.7	44.8	59.5	2	51	12	4	0	0	69	71.4	44.2	52.9
05:45	2	13	9	4	0	0	28	30.4	45.9	60.5	5	49	15	6	0	0	75	77.4	43.8	54.8
H/TOT	2	46	24	8	1	0	81	88.9	46.4	59.6	7	150	39	10	1	0	207	213.7	45.5	55.5
06:00	1	26	5	2	1	0	35	38.1	43.7	51.8	4	58	14	4	1	0	81	84.1	42.3	51.1
06:15	1	28	8	2	2	0	41	46	43.9	53.8	2	111	24	9	1	0	147	155.8	33.0	46.4
06:30	0	39	6	5	0	0	50	54.5	43.2	50.6	4	120	34	7	0	0	165	168.9	37.3	46.5
06:45	1	39	12	4	1	0	57	61.9	39.1	44.8	2	100	37	10	0	1	150	158.8	28.2	36.3
H/TOT	3	132	31	13	4	0	183	200.5	42.2	50.5	12	389	109	30	2	1	543	567.6	34.4	45.7
07:00	0	41	13	6	0	0	60	65.4	39.2	46.2	2	108	33	8	4	0	155	168.6	27.8	36.7
07:15	1	62	12	6	2	0	83	91.6	36.4	42.6	2	97	31	2	1	1	134	137.5	30.8	41.1
07:30	0	53	17	6	2	2	80	91.2	37.3	44.5	1	92	25	3	0	0	121	123.1	37.9	46.2
07:45	2	61	22	11	0	0	96	104.7	37.0	42.7	3	89	32	4	0	2	130	133.8	27.1	39.2
H/TOT	3	217	64	29	4	2	319	352.9	37.3	44	8	386	121	17	5	3	540	563	30.7	41.7
08:00	1	51	13	4	1	0	70	74.9	36.2	44.5	3	76	26	2	0	0	107	107	29.6	39.2
08:15	2	61	14	6	1	0	84	90.1	34.7	44.3	5	97	23	8	1	1	135	142.1	27.7	39.5
08:30	1	68	11	7	0	0	87	92.7	35.8	43.9	2	87	21	7	0	1	118	124.1	27.4	37.4
08:45	0	55	16	5	2	1	79	88.3	32.8	40.2	0	77	34	7	1	0	119	127.2	27.2	37.2
H/TOT	4	235	54	22	4	1	320	346	34.8	43.4	10	337	104	24	2	2	479	500.4	27.9	38.5
09:00	1	58	24	6	0	1	90	95.8	35.2	41.1	2	73	19	4	2	0	100	106.2	32.5	43.5
09:15	1	55	18	8	0	0	82	88.6	35.2	43.2	1	80	22	10	1	0	114	124.3	26.9	38.6
09:30	1	71	17	6	1	0	96	102.7	34.6	42.3	1	76	23	8	0	0	108	114.6	30.3	40.0
09:45	2	63	30	10	2	0	107	118.6	37.0	43.1	1	75	25	4	0	0	105	108	33.8	45.3
H/TOT	5	247	89	30	3	1	375	405.7	35.6	42.6	5	304	89	26	3	0	427	453.1	30.8	42.3
10:00	1	49	20	9	0	0	79	86.5	37.3	46.1	1	61	23	14	0	0	99	111	36.5	45.9
10:15	2	69	26	18	0	2	117	134	38.9	48.5	0	70	19	4	1	0	94	99.5	35.8	46.9
10:30	0	59	20	16	2	0	97	115.2	37.5	45.1	1	69	24	10	1	0	105	115.3	34.4	44.8
10:45	1	58	28	11	3	1	102	118	36.7	42.7	1	88	20	12	1	0	122	134.1	31.1	41.5
H/TOT	4	235	94	54	5	3	395	453.7	37.7	45.2	3	288	86	40	3	0	420	459.9	34.2	44.6
11:00	0	63	20	9	1	0	93	103	40.0	45.1	1	53	23	5	1	0	83	88.8	32.7	43.1
11:15	0	69	27	11	0	0	107	116.9	37.4	44.4	2	70	25	8	2	0	107	116.8	30.5	41.4
11:30	0	56	20	5	4	1	86	99.1	38.4	46.9	1	68	26	8	0	0	103	109.6	31.4	42.5
11:45	1	67	17	7	3	0	95	106.4	35.5	41.8	4	73	13	8	1	1	100	107.7	31.9	40.9



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Fri 16-May-2025
AM Peak: 06:28 — 07:28 **Total:** 868
PM Peak: 14:58 — 15:58 **Total:** 988
15 Min Peak: 15:08 — 15:23 **Total:** 263

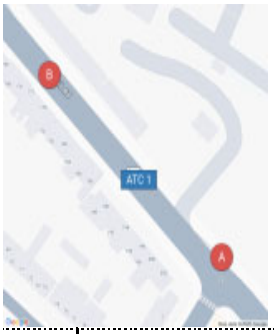
H/TOT	1	255	84	32	8	1	381	425.4	37.8	44.5	8	264	87	29	4	1	393	422.9	31.6	42
12:00	1	67	29	8	2	0	107	117.4	39.4	45.5	0	72	24	13	1	0	110	123.6	35.9	45.9
12:15	1	80	19	9	0	1	110	118.5	37.2	45.2	2	68	16	5	0	0	91	94.3	30.4	42.8
12:30	3	78	17	7	2	0	107	115.3	38.3	46.7	1	83	23	6	0	3	116	123.8	30.9	44.0
12:45	1	92	19	8	1	1	122	131.5	35.8	43.3	2	70	16	5	1	0	94	99.2	35.5	47.9
H/TOT	6	317	84	32	5	2	446	482.7	37.6	45.3	5	293	79	29	2	3	411	440.9	33.2	45.5
13:00	3	76	21	3	0	0	103	103.9	38.2	45.5	0	76	20	7	0	1	104	111.3	35.3	44.8
13:15	4	88	21	6	0	0	119	122	37.8	43.7	1	88	22	10	1	3	125	138.3	27.3	39.9
13:30	1	70	25	8	0	2	106	114.6	34.6	41.7	1	82	18	3	0	1	105	108.1	28.0	40.8
13:45	1	91	28	5	1	0	126	131.8	32.2	45.1	2	73	16	5	2	1	99	107.1	28.2	43.3
H/TOT	9	325	95	22	1	2	454	472.3	35.6	43.7	4	319	76	25	3	6	433	464.8	29.6	42.1
14:00	5	93	25	9	3	0	135	145.8	36.9	44.3	0	76	16	6	0	0	98	103.4	31.0	43.5
14:15	4	71	21	3	1	0	100	102.2	38.0	44.9	1	70	12	8	2	2	95	107.4	27.8	37.5
14:30	3	74	12	3	0	0	92	92.9	34.9	40.8	1	85	22	8	1	0	117	125.5	26.9	41.1
14:45	1	91	30	4	0	0	126	129	37.2	45.3	0	89	21	7	0	0	117	123.3	30.4	39.8
H/TOT	13	329	88	19	4	0	453	469.9	36.8	44	2	320	71	29	3	2	427	459.6	29	39.9
15:00	2	105	25	4	1	0	137	141.3	37.1	44.1	1	91	22	7	1	1	123	131.6	30.3	41.3
15:15	4	82	24	3	0	0	113	113.3	37.5	45.4	2	84	28	6	1	0	121	127.1	27.4	37.5
15:30	0	89	20	7	0	0	116	122.3	35.9	43.4	1	102	13	9	0	0	125	132.5	30.1	38.3
15:45	4	86	19	5	1	0	115	119	38.0	44.8	3	88	23	10	1	0	125	134.1	30.4	39.9
H/TOT	10	362	88	19	2	0	481	495.9	37.1	44.7	7	365	86	32	3	1	494	525.3	29.6	39.8
16:00	3	91	27	4	1	0	126	129.7	38.1	43.6	2	74	14	9	0	2	101	109.9	30.4	40.8
16:15	3	102	29	6	1	0	141	146.5	34.8	43.6	3	74	9	4	1	0	91	94.7	31.3	41.4
16:30	3	108	19	5	0	0	135	137.7	34.9	40.8	2	76	15	2	0	0	95	95.6	31.9	41.8
16:45	3	103	33	2	0	0	141	141	36.4	45.0	0	48	7	1	0	0	56	56.9	38.2	49.7
H/TOT	12	404	108	17	2	0	543	554.9	36	42.8	7	272	45	16	1	2	343	357.1	32.3	43.8
17:00	4	108	24	4	2	0	142	147	36.4	43.5	1	70	19	1	1	0	92	94.2	30.5	43.1
17:15	3	115	18	2	0	0	138	138	31.0	39.0	0	65	15	3	0	0	83	85.7	30.9	43.2
17:30	4	98	15	4	0	0	121	122.2	23.1	33.3	1	86	16	2	0	0	105	106.2	28.0	38.6
17:45	3	98	16	5	0	0	122	124.7	31.4	40.1	0	70	10	6	0	0	86	91.4	29.8	37.5
H/TOT	14	419	73	15	2	0	523	531.9	30.7	40.2	2	291	60	12	1	0	366	377.5	29.7	40.5
18:00	3	92	17	2	0	0	114	114	38.2	46.0	0	76	11	1	1	0	89	91.8	32.6	44.3
18:15	4	90	25	4	0	0	123	124.2	34.6	42.4	1	65	9	2	0	2	79	82.2	31.8	43.5
18:30	4	119	21	3	2	1	150	155.1	32.6	39.7	0	85	17	3	1	0	106	110.6	31.9	42.2
18:45	0	87	19	6	0	0	112	117.4	34.6	41.3	0	88	15	6	0	0	109	114.4	26.8	39.3
H/TOT	11	388	82	15	2	1	499	510.7	34.8	41.5	1	314	52	12	2	2	383	399	30.6	42.4
19:00	2	95	22	1	0	0	120	119.7	33.0	41.4	1	94	13	2	0	0	110	111.2	32.1	42.7
19:15	1	99	20	1	1	0	122	124.2	31.8	40.2	1	75	5	7	1	0	89	96.6	27.6	38.9
19:30	2	86	5	3	1	1	98	102.4	36.2	43.2	0	69	18	4	0	0	91	94.6	30.7	43.2
19:45	2	92	20	3	2	0	119	124.3	36.3	42.3	1	64	15	2	0	1	83	85.2	32.2	41.5
H/TOT	7	372	67	8	4	1	459	470.6	34.2	41.7	3	302	51	15	1	1	373	387.6	30.7	42
20:00	1	81	14	1	1	0	98	100.2	40.8	47.6	1	48	12	3	0	0	64	66.1	37.7	44.7
20:15	5	74	9	3	0	0	91	90.7	38.9	47.1	1	44	13	4	1	0	63	67.9	36.7	43.6
20:30	3	60	11	3	0	0	77	77.9	36.7	43.5	1	43	11	3	0	0	58	60.1	34.0	44.4
20:45	1	56	14	3	1	0	75	79	41.3	47.7	1	41	15	3	1	0	61	65	37.2	46.5
H/TOT	10	271	48	10	2	0	341	347.8	39.5	46.8	4	176	51	13	2	0	246	259.1	36.4	44.4
21:00	1	73	12	2	0	0	88	89.2	36.4	44.7	1	53	7	1	1	0	63	65.2	32.8	45.0
21:15	0	49	13	2	0	0	64	65.8	40.6	45.9	0	40	15	2	0	0	57	58.8	35.2	43.6
21:30	1	49	6	2	0	0	58	59.2	39.3	45.9	1	58	15	2	1	0	77	80.1	33.8	41.2
21:45	3	60	15	1	0	0	79	78.1	42.3	50.0	0	47	13	3	0	0	63	65.7	34.3	42.0
H/TOT	5	231	46	7	0	0	289	292.3	39.5	46.5	2	198	50	8	2	0	260	269.8	34	41.6
22:00	2	39	6	0	0	0	47	45.8	40.1	50.7	0	70	18	1	0	1	90	91.9	31.9	40.7
22:15	3	36	7	1	0	0	47	46.1	37.7	46.0	0	88	15	5	0	0	108	112.5	35.9	41.7
22:30	5	61	13	0	0	0	79	76	38.0	43.5	0	77	13	0	0	0	90	90	29.7	40.9
22:45	1	87	12	0	0	0	100	99.4	34.2	43.3	0	68	12	1	1	0	82	84.8	31.8	42.5
H/TOT	11	223	38	1	0	0	273	267.3	36.9	44.9	0	303	58	7	1	1	370	379.2	32.5	41.5
23:00	4	79	13	2	0	0	98	97.4	38.6	46.4	0	59	15	2	0	0	76	77.8	33.5	45.2
23:15	0	80	17	2	0	0	99	100.8	39.0	44.1	0	40	7	3	0	0	50	52.7	40.4	47.9
23:30	0	51	12	0	0	0	63	63	40.1	47.4	0	23	1	0	0	0	24	24	41.6	48.5
23:45	0	28	8	0	0	0	36	36	42.8	49.3	1	24	2	2	0	0	29	30.2	41.1	49.5
H/TOT	4	238	50	4	0	0	296	297.2	39.6	46.5	1	146	25	7	0	0	179	184.7	37.8	47.7
24 TOT	137	5398	1340	379	56	14	7324	7703	36.9	44.7	96	5584	1369	406	44	25	7524	7940	32.4	43.8



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Sat 17-May-2025
AM Peak: 10:52 — 11:52 **Total:** 898
PM Peak: 12:40 — 13:40 **Total:** 1028
15 Min Peak: 14:36 — 14:51 **Total:** 284

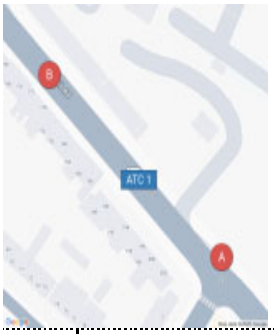
	Northbound (A => B)										Southbound (B => A)									
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	Mean Speed (KPH)	85% Speed (KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	Mean Speed (KPH)	85% Speed (KPH)
00:00	0	29	5	0	0	0	34	34	43.1	53.7	0	25	13	0	0	0	38	38	44.5	53.3
00:15	1	27	8	0	0	0	36	35.4	42.2	49.4	0	18	5	3	0	0	26	28.7	42.5	49.8
00:30	0	17	4	2	0	0	23	24.8	44.1	54.1	0	15	2	2	0	0	19	20.8	41.8	48.9
00:45	1	16	9	1	0	0	27	27.3	46.3	58.5	0	10	2	1	0	0	13	13.9	41.9	49.4
H/TOT	2	89	26	3	0	0	120	121.5	43.8	53.5	0	68	22	6	0	0	96	101.4	43.1	49.9
01:00	1	18	5	2	0	0	26	27.2	46.1	58.3	4	7	1	1	0	0	13	11.5	56.8	85.4
01:15	0	18	2	0	0	0	20	20	45.9	54.2	0	12	1	0	0	0	13	13	47.6	59.8
01:30	0	13	2	1	0	0	16	16.9	45.4	57.5	0	5	1	1	0	0	7	7.9	41.4	46.2
01:45	1	8	3	1	0	0	13	13.3	44.9	59.3	0	7	1	0	0	0	8	8	41.2	48.7
H/TOT	2	57	12	4	0	0	75	77.4	45.7	54.3	4	31	4	2	0	0	41	40.4	48.2	58.7
02:00	1	11	1	2	1	0	16	19.1	40.2	49.1	0	7	0	0	0	0	7	7	38.7	46.1
02:15	0	10	1	0	0	0	11	11	45.0	49.7	0	4	1	0	0	0	5	5	48.7	52.9
02:30	0	11	4	0	0	0	15	15	43.4	60.4	0	7	3	0	1	0	11	12.9	43.8	58.6
02:45	0	4	2	1	0	0	7	7.9	48.2	52.4	0	4	0	0	0	0	4	4	41.0	41.8
H/TOT	1	36	8	3	1	0	49	53	43.4	50.5	0	22	4	0	1	0	27	28.9	43	50.9
03:00	0	7	1	1	0	0	9	9.9	45.8	56.8	0	4	4	2	0	0	10	11.8	46.7	57.1
03:15	1	14	4	0	0	0	19	18.4	43.0	48.6	1	5	1	0	0	0	7	6.4	47.9	59.4
03:30	0	4	1	0	0	0	5	5	45.5	44.0	0	8	0	1	0	0	9	9.9	45.5	53.1
03:45	0	7	1	0	0	0	8	8	46.3	58.8	0	6	1	0	0	0	7	7	49.0	58.6
H/TOT	1	32	7	1	0	0	41	41.3	44.6	51.5	1	23	6	3	0	0	33	35.1	47.1	56.5
04:00	1	8	3	2	0	0	14	15.2	50.1	71.4	1	6	3	2	0	0	12	13.2	53.3	70.0
04:15	0	7	0	0	1	0	8	9.9	48.6	58.6	0	12	1	0	0	0	13	13	44.6	51.7
04:30	0	5	5	3	0	0	13	15.7	50.6	61.8	0	13	1	1	0	0	15	15.9	51.3	61.9
04:45	0	11	1	1	0	0	13	13.9	48.5	56.9	0	10	0	0	0	0	10	10	56.9	75.8
H/TOT	1	31	9	6	1	0	48	54.7	49.5	60.6	1	41	5	3	0	0	50	52.1	51.1	62.4
05:00	1	10	2	2	0	0	15	16.2	49.8	76.9	0	9	4	3	0	0	16	18.7	49.5	59.8
05:15	0	8	6	2	1	0	17	20.7	44.4	54.1	1	15	6	0	1	0	23	24.3	46.7	53.4
05:30	2	8	3	2	0	0	15	15.6	48.2	62.9	0	21	3	2	0	0	26	27.8	49.8	60.5
05:45	1	5	3	2	0	0	11	12.2	53.1	71.4	3	18	8	1	0	0	30	29.1	51.2	63.7
H/TOT	4	31	14	8	1	0	58	64.7	48.4	63.4	4	63	21	6	1	0	95	99.9	49.4	57.6
06:00	0	8	2	2	1	0	13	16.7	42.8	55.1	0	23	2	2	0	1	28	30.8	42.2	53.4
06:15	0	18	3	2	0	0	23	24.8	49.1	61.7	2	28	4	2	1	0	37	39.5	47.3	53.0
06:30	0	17	8	1	1	0	27	29.8	46.9	63.5	1	49	8	3	0	0	61	63.1	47.7	56.2
06:45	0	22	2	2	0	0	26	27.8	45.6	56.3	0	31	6	5	1	0	43	49.4	44.8	51.6
H/TOT	0	65	15	7	2	0	89	99.1	46.5	57.9	3	131	20	12	2	1	169	182.8	46	54.4
07:00	0	17	9	1	0	0	27	27.9	48.8	63.7	0	30	7	2	1	0	40	43.7	47.4	56.0
07:15	3	34	5	1	0	0	43	42.1	45.0	56.5	0	31	7	3	1	0	42	46.6	41.6	52.7
07:30	1	30	7	7	0	1	46	52.7	44.4	53.2	0	41	8	3	0	0	52	54.7	43.9	51.1
07:45	0	33	13	6	2	0	54	63.2	42.8	54.5	1	37	9	3	0	1	51	54.1	45.0	53.9
H/TOT	4	114	34	15	2	1	170	185.9	44.7	54.5	1	139	31	11	2	1	185	199.1	44.4	53.2
08:00	1	22	8	4	1	0	36	40.9	43.8	51.6	0	36	11	8	1	0	56	65.1	45.6	53.7
08:15	1	25	8	6	0	1	41	46.8	44.4	52.8	2	59	13	3	2	0	79	84.3	43.2	50.5
08:30	0	47	13	3	0	0	63	65.7	44.1	53.0	1	61	21	6	0	0	89	93.8	37.3	47.9
08:45	1	62	15	5	1	0	84	89.8	44.1	52.0	1	59	13	2	3	0	78	84.9	38.1	48.5
H/TOT	3	156	44	18	2	1	224	243.2	44.1	52.1	4	215	58	19	6	0	302	328.1	40.6	50.5
09:00	1	58	20	3	0	0	82	84.1	42.3	51.1	1	64	8	4	1	0	78	82.9	38.0	49.3
09:15	0	61	21	2	1	0	85	88.7	41.8	48.4	0	97	13	3	1	0	114	118.6	36.4	46.1
09:30	1	75	16	1	0	0	93	93.3	35.3	42.7	1	86	10	8	0	0	105	111.6	36.1	45.5
09:45	0	76	26	11	0	1	114	124.9	39.8	46.7	0	65	16	3	1	0	85	89.6	39.8	46.8
H/TOT	2	270	83	17	1	1	374	391	39.7	46.8	2	312	47	18	3	0	382	402.7	37.4	46.7
10:00	0	72	20	3	0	0	95	97.7	38.9	46.5	1	59	14	8	0	0	82	88.6	35.3	47.6
10:15	1	60	19	10	0	0	90	98.4	42.9	51.1	2	57	25	4	0	0	88	90.4	36.4	47.5
10:30	3	67	15	3	0	0	88	88.9	39.8	46.4	0	89	11	5	0	0	105	109.5	38.7	48.0
10:45	2	101	22	5	0	0	130	133.3	37.7	43.9	2	77	14	3	0	0	96	97.5	36.8	46.1
H/TOT	6	300	76	21	0	0	403	418.3	39.6	47.1	5	282	64	20	0	0	371	386	36.9	47
11:00	1	81	26	3	0	0	111	113.1	38.0	46.6	1	75	12	1	1	0	90	92.2	34.0	45.6
11:15	2	97	16	5	0	0	120	123.3	38.6	45.2	0	74	13	2	0	0	89	90.8	35.4	43.4
11:30	2	89	18	10	2	1	122	134.6	39.7	45.4	1	100	20	5	0	0	126	129.9	32.1	44.8
11:45	5	86	14	5	0	0	110	111.5	39.0	44.8	3	82	18	2	1	0	106	107.9	31.5	41.9



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Sat 17-May-2025
AM Peak: 10:52 — 11:52 **Total:** 898
PM Peak: 12:40 — 13:40 **Total:** 1028
15 Min Peak: 14:36 — 14:51 **Total:** 284

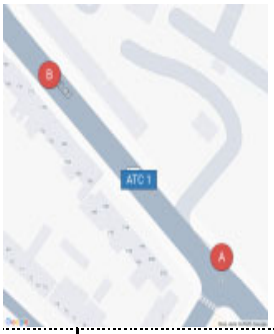
H/TOT	10	353	74	23	2	1	463	482.5	38.8	45.3	5	331	63	10	2	0	411	420.8	33.1	43.9
12:00	2	107	18	1	0	1	129	129.7	27.9	36.8	1	88	12	5	1	0	107	112.8	25.8	37.4
12:15	2	107	22	6	1	0	138	144.1	34.7	41.6	0	87	21	2	1	0	111	114.7	27.2	39.2
12:30	3	94	16	1	1	1	116	118	38.7	44.7	1	89	20	1	0	0	111	111.3	31.9	42.9
12:45	2	99	23	5	1	0	130	135.2	35.1	41.9	2	104	27	4	1	0	138	142.3	33.3	45.0
H/TOT	9	407	79	13	3	2	513	527	34	42	4	368	80	12	3	0	467	481.1	29.8	42.2
13:00	2	106	13	5	2	0	128	135.1	34.8	41.0	1	94	18	5	0	0	118	121.9	28.2	39.6
13:15	7	107	13	4	0	0	131	130.4	35.8	45.1	1	93	19	2	0	0	115	116.2	26.1	38.9
13:30	5	98	23	4	3	0	133	139.3	36.6	44.2	4	94	17	3	0	1	119	120.3	28.4	40.1
13:45	0	120	22	2	0	0	144	145.8	33.7	38.7	1	90	11	3	1	0	106	110	23.0	29.3
H/TOT	14	431	71	15	5	0	536	550.6	35.2	42.3	7	371	65	13	1	1	458	468.4	26.5	36.8
14:00	2	130	25	3	0	1	161	163.5	22.7	30.9	1	85	12	1	0	0	99	99.3	24.9	38.0
14:15	1	103	10	5	2	0	121	128.7	28.2	36.6	2	82	14	3	1	1	103	107.4	27.0	39.1
14:30	1	91	27	3	1	0	123	127	37.4	45.7	1	95	20	1	0	0	117	117.3	33.1	46.3
14:45	1	109	15	2	1	0	128	131.1	38.8	43.1	0	128	14	3	2	0	147	153.5	28.8	41.2
H/TOT	5	433	77	13	4	1	533	550.3	31.2	41.8	4	390	60	8	3	1	466	477.5	28.7	42.2
15:00	1	115	20	8	0	0	144	150.6	33.3	41.2	1	94	10	2	0	1	108	110.2	29.5	41.9
15:15	1	99	18	2	0	0	120	121.2	38.8	44.0	2	77	14	4	0	0	97	99.4	35.7	44.2
15:30	1	92	23	1	0	0	117	117.3	40.8	46.6	1	90	14	1	0	0	106	106.3	34.1	42.8
15:45	1	92	14	3	1	0	111	115	38.9	46.1	0	94	13	4	1	0	112	117.5	30.0	45.0
H/TOT	4	398	75	14	1	0	492	504.1	37.7	44.6	4	355	51	11	1	1	423	433.4	32.2	43.3
16:00	2	85	20	4	0	0	111	113.4	40.1	46.3	1	69	9	4	0	1	84	88	37.3	48.7
16:15	4	89	20	2	0	0	115	114.4	40.3	48.8	5	81	13	0	0	0	99	96	35.7	46.1
16:30	1	84	20	5	1	0	111	116.8	39.3	46.4	0	72	13	2	0	0	87	88.8	31.8	44.5
16:45	3	75	12	1	0	0	91	90.1	39.6	45.9	3	91	17	5	0	0	116	118.7	36.4	47.3
H/TOT	10	333	72	12	1	0	428	434.7	39.9	46.4	9	313	52	11	0	1	386	391.5	35.4	46.9
17:00	3	97	22	3	1	0	126	128.8	40.4	47.4	0	70	14	0	0	0	84	84	38.5	46.3
17:15	1	105	20	4	0	0	130	133	39.4	44.9	2	89	11	3	0	0	105	106.5	34.5	44.5
17:30	0	82	18	1	0	0	101	101.9	40.9	47.5	2	85	14	3	0	0	104	105.5	31.0	42.2
17:45	5	101	21	0	0	0	127	124	36.7	43.5	3	96	11	0	0	0	110	108.2	36.8	45.7
H/TOT	9	385	81	8	1	0	484	487.7	39.3	45.7	7	340	50	6	0	0	403	404.2	35.1	45
18:00	2	72	19	2	0	0	95	95.6	36.6	44.6	1	101	11	2	0	0	115	116.2	32.8	42.6
18:15	4	108	16	5	1	0	134	138	33.6	43.9	0	84	12	2	1	1	100	104.7	26.5	40.2
18:30	3	102	15	4	1	0	125	128.7	36.9	42.1	1	108	15	0	1	2	127	130.3	31.4	43.5
18:45	2	89	14	2	0	0	107	107.6	39.3	48.2	0	75	9	4	0	0	88	91.6	33.0	43.0
H/TOT	11	371	64	13	2	0	461	469.9	36.4	44.2	2	368	47	8	2	3	430	442.8	31	42.6
19:00	1	83	23	3	0	0	110	112.1	34.4	41.4	1	78	22	1	0	0	102	102.3	26.7	39.7
19:15	2	98	22	2	1	0	125	127.5	34.8	41.5	1	74	16	2	0	0	93	94.2	28.4	36.8
19:30	4	89	16	1	0	0	110	108.5	37.0	44.4	2	60	12	3	0	0	77	78.5	34.5	43.6
19:45	2	90	23	1	0	0	116	115.7	39.1	48.1	0	68	14	1	0	0	83	83.9	34.7	43.6
H/TOT	9	360	84	7	1	0	461	463.8	36.3	44.1	4	280	64	7	0	0	355	358.9	30.7	42
20:00	2	74	13	3	0	0	92	93.5	36.5	46.9	0	76	15	1	0	0	92	92.9	32.1	46.2
20:15	2	83	14	2	0	0	101	101.6	38.3	48.0	1	67	16	0	0	0	84	83.4	34.2	44.8
20:30	2	60	8	0	0	0	70	68.8	39.8	48.5	0	50	13	4	0	0	67	70.6	33.8	46.2
20:45	3	59	11	0	0	0	73	71.2	39.8	48.3	0	65	10	1	0	0	76	76.9	35.6	45.1
H/TOT	9	276	46	5	0	0	336	335.1	38.4	47.7	1	258	54	6	0	0	319	323.8	33.8	45.4
21:00	5	45	15	2	0	0	67	65.8	41.2	49.3	2	41	6	1	0	0	50	49.7	36.9	45.0
21:15	1	36	13	1	0	0	51	51.3	41.9	50.5	0	48	19	3	0	0	70	72.7	36.0	46.1
21:30	0	40	9	1	0	0	50	50.9	42.3	52.4	0	50	11	1	0	0	62	62.9	37.4	44.4
21:45	0	65	14	1	1	0	81	83.8	40.4	45.9	2	49	7	1	0	0	59	58.7	33.8	43.2
H/TOT	6	186	51	5	1	0	249	251.8	41.3	48.7	4	188	43	6	0	0	241	244	36	44.6
22:00	1	52	15	3	0	0	71	73.1	40.1	45.7	0	45	19	1	0	0	65	65.9	36.8	42.7
22:15	0	42	15	2	1	0	60	63.7	38.5	43.9	0	81	13	0	0	0	94	94	34.2	42.3
22:30	1	66	11	0	1	0	79	80.3	37.8	44.7	0	81	23	1	0	0	105	105.9	33.3	42.0
22:45	0	80	16	0	1	0	97	98.9	39.5	45.8	0	71	10	0	0	0	81	81	32.9	44.9
H/TOT	2	240	57	5	3	0	307	316	39	45.6	0	278	65	2	0	0	345	346.8	34.1	42.6
23:00	2	74	19	1	0	0	96	95.7	41.3	48.2	2	47	9	2	0	0	60	60.6	36.8	45.0
23:15	0	76	25	1	0	0	102	102.9	41.4	47.3	0	25	5	1	0	0	31	31.9	36.8	43.0
23:30	2	46	9	1	0	2	60	61.7	39.3	46.7	0	26	6	1	0	0	33	33.9	38.1	47.4
23:45	1	33	6	1	0	0	41	41.3	40.5	51.8	0	29	6	3	0	0	38	40.7	39.9	47.8
H/TOT	5	229	59	4	0	2	299	301.6	40.8	47.5	2	127	26	7	0	0	162	167.1	37.8	45.2
24 TOT	129	5583	1218	240	34	9	7213	7425	38.4	46.5	78	5294	1002	207	27	9	6617	6817	34.5	46



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Sun 18-May-2025
AM Peak: 10:56 — 11:56 **Total:** 729
PM Peak: 13:11 — 14:11 **Total:** 987
15 Min Peak: 13:39 — 13:54 **Total:** 277

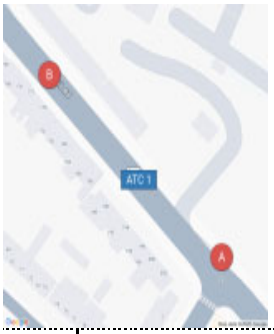
	Northbound (A => B)								Mean Speed	85% Speed	Southbound (B => A)								Mean Speed	85% Speed
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)
00:00	0	30	3	1	0	0	34	34.9	43.1	47.2	1	13	2	1	0	0	17	17.3	44.1	53.6
00:15	0	16	9	1	0	0	26	26.9	42.2	47.6	0	21	8	1	0	0	30	30.9	45.8	58.6
00:30	0	28	5	1	0	0	34	34.9	41.5	49.8	0	12	8	1	0	0	21	21.9	41.2	52.3
00:45	1	22	2	0	0	0	25	24.4	42.1	50.4	0	18	2	0	0	1	21	22	42.4	50.4
H/TOT	1	96	19	3	0	0	119	121.1	42.2	49.1	1	64	20	3	0	1	89	92.1	43.6	51.9
01:00	0	20	2	0	0	0	22	22	43.4	52.2	1	10	3	1	0	0	15	15.3	40.1	44.9
01:15	1	12	11	1	0	0	25	25.3	47.2	61.0	0	12	3	0	1	0	16	17.9	43.0	50.3
01:30	0	13	3	1	0	0	17	17.9	43.7	48.3	0	11	1	0	0	0	12	12	43.9	51.3
01:45	0	13	1	0	0	0	14	14	41.9	49.8	0	11	4	0	0	0	15	15	51.0	60.8
H/TOT	1	58	17	2	0	0	78	79.2	44.4	52.2	1	44	11	1	1	0	58	60.2	44.5	51.3
02:00	2	14	5	0	0	0	21	19.8	39.9	50.8	0	10	3	0	0	0	13	13	46.3	57.9
02:15	0	15	4	0	0	0	19	19	43.6	55.8	0	6	0	1	0	0	7	7.9	44.9	57.5
02:30	0	9	1	2	0	0	12	13.8	52.1	66.3	0	1	1	1	0	0	3	3.9	43.7	49.2
02:45	0	6	0	0	0	0	6	6	41.6	45.7	0	2	0	0	0	0	2	2	42.4	42.6
H/TOT	2	44	10	2	0	0	58	58.6	43.8	52.6	0	19	4	2	0	0	25	26.8	45.3	57.1
03:00	0	5	1	1	0	0	7	7.9	41.8	46.1	0	7	1	1	0	0	9	9.9	44.5	56.2
03:15	0	4	2	0	0	0	6	6	44.9	50.1	0	6	2	0	0	0	8	8	45.7	58.5
03:30	0	8	1	2	0	0	11	12.8	43.0	50.4	0	4	2	1	0	0	7	7.9	46.3	56.5
03:45	0	8	1	0	0	0	9	9	47.3	64.2	0	1	1	1	0	0	3	3.9	42.6	43.5
H/TOT	0	25	5	3	0	0	33	35.7	44.3	50.2	0	18	6	3	0	0	27	29.7	45.1	56.5
04:00	0	4	0	1	0	0	5	5.9	43.0	47.7	1	4	3	1	0	0	9	9.3	54.2	65.5
04:15	0	8	1	0	1	0	10	11.9	48.6	62.1	0	12	0	0	0	0	12	12	48.0	60.3
04:30	0	4	2	0	0	0	6	6	55.5	76.8	0	9	2	2	0	0	13	14.8	44.2	59.3
04:45	0	17	1	0	1	0	19	20.9	45.6	56.6	0	12	0	0	0	0	12	12	46.9	61.6
H/TOT	0	33	4	1	2	0	40	44.7	47.5	56.6	1	37	5	3	0	0	46	48.1	47.9	59.9
05:00	1	6	3	2	0	0	12	13.2	49.5	63.7	1	6	2	1	0	0	10	10.3	41.3	52.9
05:15	1	8	4	1	0	0	14	14.3	50.2	68.6	0	10	0	0	0	0	10	10	51.1	61.9
05:30	0	9	3	1	0	0	13	13.9	47.9	64.0	0	14	1	1	1	0	17	19.8	43.6	56.4
05:45	0	11	1	0	0	0	12	12	49.7	62.9	1	17	4	1	0	0	23	23.3	55.0	68.8
H/TOT	2	34	11	4	0	0	51	53.4	49.3	62.4	2	47	7	3	1	0	60	63.4	48.8	60.2
06:00	0	7	5	4	0	0	16	19.6	56.7	72.6	0	13	3	2	0	0	18	19.8	48.4	60.0
06:15	0	3	2	1	0	0	6	6.9	44.1	52.8	5	26	4	1	0	0	36	33.9	50.1	64.4
06:30	0	13	4	1	0	0	18	18.9	45.1	54.1	2	35	5	1	1	0	44	45.6	43.0	56.3
06:45	2	20	3	1	0	0	26	25.7	48.4	54.7	0	24	8	2	0	0	34	35.8	43.1	50.3
H/TOT	2	43	14	7	0	0	66	71.1	49.1	60.7	7	98	20	6	1	0	132	135.1	45.7	56.6
07:00	2	24	1	1	0	0	28	27.7	48.6	62.5	1	12	2	0	1	0	16	17.3	48.6	62.4
07:15	0	13	9	2	0	0	24	25.8	47.6	59.8	1	13	5	2	0	0	21	22.2	48.7	63.1
07:30	0	20	7	1	0	0	28	28.9	48.0	56.9	0	32	3	1	0	0	36	36.9	46.4	53.3
07:45	0	28	2	0	0	0	30	30	48.4	55.7	1	39	5	1	0	1	47	48.3	46.6	57.3
H/TOT	2	85	19	4	0	0	110	112.4	48.2	57.5	3	96	15	4	1	1	120	124.7	47.2	57.3
08:00	0	13	1	1	0	0	15	15.9	48.9	63.2	1	26	5	1	0	0	33	33.3	44.5	51.3
08:15	0	26	7	2	0	0	35	36.8	47.3	57.2	0	44	11	2	0	0	57	58.8	43.6	52.1
08:30	0	30	8	1	0	0	39	39.9	45.7	56.1	2	46	9	1	0	0	58	57.7	41.1	47.0
08:45	3	38	8	2	1	0	52	53.9	45.5	57.0	0	45	9	0	1	0	55	56.9	42.9	51.3
H/TOT	3	107	24	6	1	0	141	146.5	46.4	56.9	3	161	34	4	1	0	203	206.7	42.9	50
09:00	1	50	5	0	0	0	56	55.4	45.1	50.3	1	48	11	1	0	1	62	63.3	41.3	49.1
09:15	0	48	13	1	0	0	62	62.9	40.4	46.4	2	57	16	0	0	0	75	73.8	35.9	45.1
09:30	2	48	9	1	0	0	60	59.7	42.5	53.1	2	62	15	1	0	0	80	79.7	39.7	48.6
09:45	1	57	19	1	1	2	81	85.2	42.3	50.2	1	53	14	4	1	0	73	77.9	38.7	47.9
H/TOT	4	203	46	3	1	2	259	263.2	42.5	49.6	6	220	56	6	1	1	290	294.7	38.8	48.2
10:00	2	73	15	4	0	1	95	98.4	38.0	44.8	0	67	12	3	1	0	83	87.6	33.1	44.3
10:15	1	56	10	4	0	0	71	74	44.4	50.6	1	69	8	3	0	0	81	83.1	32.3	43.5
10:30	2	65	6	0	0	0	73	71.8	38.8	43.9	0	65	12	1	0	0	78	78.9	38.1	47.1
10:45	1	70	19	2	0	0	92	93.2	40.0	44.5	0	54	11	2	0	0	67	68.8	35.6	47.5
H/TOT	6	264	50	10	0	1	331	337.4	40.1	46.4	1	255	43	9	1	0	309	318.4	34.7	45.8
11:00	1	70	16	3	1	0	91	95	38.4	42.9	1	79	13	2	0	0	95	96.2	35.4	47.2
11:15	1	72	16	2	0	0	91	92.2	40.5	47.8	1	72	12	4	0	0	89	92	37.1	46.4
11:30	2	69	11	2	0	0	84	84.6	41.3	50.0	0	54	15	3	0	0	72	74.7	39.7	47.8
11:45	4	71	13	3	0	1	92	93.3	38.7	45.6	2	86	15	4	0	0	107	109.4	27.8	38.9



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Sun 18-May-2025
AM Peak: 10:56 — 11:56 **Total:** 729
PM Peak: 13:11 — 14:11 **Total:** 987
15 Min Peak: 13:39 — 13:54 **Total:** 277

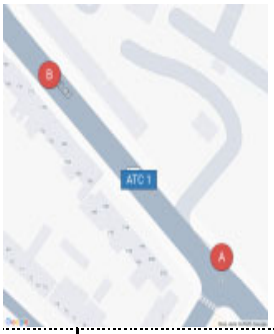
H/TOT	8	282	56	10	1	1	358	365.1	39.7	47	4	291	55	13	0	0	363	372.3	34.4	46.1
12:00	2	84	14	5	0	1	106	110.3	40.4	48.8	0	82	17	1	0	0	100	100.9	34.9	45.3
12:15	5	94	28	0	1	0	128	126.9	37.6	44.9	1	63	13	2	0	0	79	80.2	33.8	46.5
12:30	1	101	20	3	0	0	125	127.1	39.3	46.3	1	64	20	1	0	0	86	86.3	37.4	46.6
12:45	1	108	13	2	1	0	125	128.1	38.4	45.0	1	82	11	6	0	0	100	104.8	35.4	45.5
H/TOT	9	387	75	10	2	1	484	492.4	38.9	45.7	3	291	61	10	0	0	365	372.2	35.4	45.6
13:00	1	88	20	3	0	0	112	114.1	34.0	45.0	2	79	20	2	0	0	103	103.6	40.1	49.6
13:15	3	99	21	5	1	0	129	133.6	37.0	44.2	0	85	20	4	0	1	110	114.6	33.3	43.1
13:30	5	103	26	3	0	0	137	136.7	35.0	41.9	0	98	19	0	1	0	118	119.9	28.4	38.4
13:45	1	132	19	7	1	1	161	169.6	27.0	37.4	0	96	16	1	0	0	113	113.9	33.3	42.0
H/TOT	10	422	86	18	2	1	539	554	32.9	41.6	2	358	75	7	1	1	444	452	33.6	43.7
14:00	6	101	12	1	2	1	123	125.1	35.9	44.0	1	73	13	2	1	0	90	93.1	33.0	46.0
14:15	3	56	9	3	2	0	73	77.7	35.8	42.7	1	98	10	1	0	0	110	110.3	28.7	38.4
14:30	1	114	26	3	2	0	146	151.9	38.4	46.0	2	74	8	0	1	0	85	85.7	36.9	46.0
14:45	0	106	20	4	1	2	133	140.5	34.3	41.1	1	80	12	2	1	1	97	101.1	30.0	40.8
H/TOT	10	377	67	11	7	3	475	495.2	36.2	44.1	5	325	43	5	3	1	382	390.2	31.9	43.6
15:00	2	81	24	6	1	1	115	122.1	39.4	46.1	3	63	12	2	2	0	82	85.8	35.9	47.8
15:15	3	77	15	3	0	0	98	98.9	39.6	49.5	1	78	9	2	0	0	90	91.2	34.0	46.4
15:30	3	97	19	1	0	1	121	121.1	39.9	48.5	1	69	15	2	0	0	87	88.2	37.9	44.9
15:45	2	80	13	1	1	0	97	98.6	38.7	47.2	2	51	17	4	1	0	75	79.3	34.6	45.8
H/TOT	10	335	71	11	2	2	431	440.7	39.4	47.8	7	261	53	10	3	0	334	344.5	35.6	45.9
16:00	4	64	10	1	0	0	79	77.5	41.0	50.6	1	93	11	3	0	0	108	110.1	33.5	46.4
16:15	2	108	20	2	1	0	133	135.5	34.2	42.1	4	71	8	2	0	0	85	84.4	36.2	42.7
16:30	1	86	16	2	1	0	106	109.1	36.4	43.2	4	74	10	3	0	0	91	91.3	37.0	45.0
16:45	3	94	14	4	1	0	116	119.7	38.3	44.3	0	75	12	3	0	0	90	92.7	33.1	43.5
H/TOT	10	352	60	9	3	0	434	441.8	37.1	44	9	313	41	11	0	0	374	378.5	34.9	45
17:00	1	96	16	4	0	0	117	120	41.3	49.0	0	77	14	1	0	1	93	94.9	35.4	45.8
17:15	1	79	16	2	1	0	99	102.1	39.2	46.5	4	55	13	2	0	0	74	73.4	37.4	46.9
17:30	0	91	12	2	1	0	106	109.7	37.7	44.9	0	69	14	4	0	0	87	90.6	36.3	48.0
17:45	6	92	20	2	0	0	120	118.2	40.9	47.9	2	69	14	3	0	0	88	89.5	40.1	47.5
H/TOT	8	358	64	10	2	0	442	450	39.9	47	6	270	55	10	0	1	342	348.4	37.3	47
18:00	1	91	10	2	0	0	104	105.2	39.4	46.1	1	75	8	4	0	0	88	91	36.5	46.2
18:15	3	102	11	1	0	0	117	116.1	35.8	43.6	3	74	19	2	0	1	99	100	30.2	41.0
18:30	1	108	21	2	0	0	132	133.2	39.1	44.5	2	73	8	5	0	0	88	91.3	37.8	46.6
18:45	5	70	23	2	1	0	101	101.7	39.7	48.3	1	67	11	3	1	0	83	87	37.9	47.0
H/TOT	10	371	65	7	1	0	454	456.2	38.5	45.4	7	289	46	14	1	1	358	369.3	35.4	45.8
19:00	5	88	17	1	0	0	111	108.9	38.6	46.8	1	81	11	2	0	0	95	96.2	30.4	43.6
19:15	4	94	19	3	0	0	120	120.3	40.5	47.5	0	68	16	1	0	0	85	85.9	39.2	48.2
19:30	7	94	17	0	0	0	118	113.8	40.6	48.9	1	58	12	1	1	0	73	75.2	35.0	46.4
19:45	1	82	19	2	0	0	104	105.2	39.4	46.7	1	60	15	1	0	0	77	77.3	32.1	43.0
H/TOT	17	358	72	6	0	0	453	448.2	39.8	47.3	3	267	54	5	1	0	330	334.6	34.1	45.3
20:00	3	63	15	5	0	0	86	88.7	38.0	45.2	1	60	12	0	0	0	73	72.4	35.7	46.3
20:15	4	67	18	1	0	0	90	88.5	39.7	48.6	3	46	8	2	0	0	59	59	35.4	46.1
20:30	2	67	14	0	0	0	83	81.8	38.1	45.9	0	50	7	1	1	0	59	61.8	37.2	45.0
20:45	1	49	9	1	0	1	61	62.3	41.6	51.1	0	40	6	2	0	0	48	49.8	39.4	48.9
H/TOT	10	246	56	7	0	1	320	321.3	39.2	47.9	4	196	33	5	1	0	239	243	36.8	46.5
21:00	2	47	9	1	0	0	59	58.7	42.0	50.0	1	47	11	3	0	0	62	64.1	42.7	49.7
21:15	1	53	10	2	0	0	66	67.2	38.3	43.3	0	48	6	3	0	0	57	59.7	37.7	45.8
21:30	2	48	7	0	0	0	57	55.8	41.0	49.6	1	42	4	2	0	0	49	50.2	38.3	47.2
21:45	0	40	6	1	0	0	47	47.9	43.7	51.3	0	27	5	1	0	0	33	33.9	42.4	48.4
H/TOT	5	188	32	4	0	0	229	229.6	41	49.2	2	164	26	9	0	0	201	207.9	40.2	47.7
22:00	2	30	9	2	0	0	43	43.6	45.8	58.8	2	30	2	1	0	0	35	34.7	42.6	51.7
22:15	1	37	5	1	0	0	44	44.3	41.7	51.3	0	31	10	1	0	0	42	42.9	40.5	49.5
22:30	0	22	10	0	0	0	32	32	46.0	55.4	2	21	4	0	0	0	27	25.8	43.1	50.2
22:45	0	32	2	2	0	0	36	37.8	41.2	47.7	0	16	8	0	0	0	24	24	43.1	52.1
H/TOT	3	121	26	5	0	0	155	157.7	43.6	52.7	4	98	24	2	0	0	128	127.4	42.1	50.7
23:00	0	33	7	1	0	0	41	41.9	44.1	51.2	0	19	0	1	1	1	22	25.8	42.1	49.2
23:15	1	21	8	2	0	0	32	33.2	44.3	50.5	1	15	2	2	0	0	20	21.2	44.3	55.1
23:30	0	11	4	2	0	0	17	18.8	45.0	61.1	0	10	1	1	0	0	12	12.9	47.3	54.0
23:45	1	12	3	0	1	0	17	18.3	46.6	55.0	0	9	3	0	0	0	12	12	46.4	55.5
H/TOT	2	77	22	5	1	0	107	112.2	44.7	51.4	1	53	6	4	1	1	66	71.9	44.5	53.5
24 TOT	135	4866	971	158	25	12	6167	6288	39.5	47.8	82	4235	793	149	18	8	5285	5412	37	47.3



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Mon 19-May-2025
AM Peak: 08:29 — 09:29 **Total:** 882
PM Peak: 14:39 — 15:39 **Total:** 874
15 Min Peak: 12:56 — 13:11 **Total:** 246

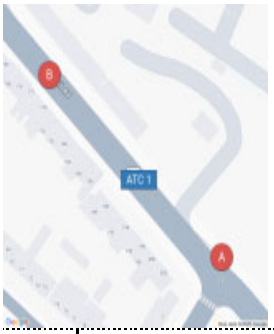
	Northbound (A => B)										Southbound (B => A)									
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	Mean Speed (KPH)	85% Speed (KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	Mean Speed (KPH)	85% Speed (KPH)
00:00	0	13	0	1	0	0	14	14.9	44.3	51.1	0	11	1	1	0	0	13	13.9	50.7	64.5
00:15	0	10	4	1	0	0	15	15.9	46.0	53.5	0	8	1	1	0	0	10	10.9	43.5	49.5
00:30	0	13	4	0	0	0	17	17	42.4	54.6	1	6	1	2	1	0	11	14.1	46.0	61.0
00:45	0	6	0	0	0	0	6	6	49.1	62.5	0	5	2	1	0	0	8	8.9	51.6	61.8
H/TOT	0	42	8	2	0	0	52	53.8	44.7	52.8	1	30	5	5	1	0	42	47.8	47.9	58.8
01:00	0	5	2	1	0	0	8	8.9	44.5	54.9	0	1	0	1	1	0	3	5.8	26.2	31.6
01:15	0	6	2	0	0	0	8	8	48.9	60.7	0	1	1	0	0	0	2	2	53.7	53.9
01:30	0	8	1	1	0	0	10	10.9	38.6	47.0	0	7	0	2	0	0	9	10.8	44.4	47.0
01:45	0	5	3	0	0	0	8	8	47.7	59.0	1	8	0	0	0	0	9	8.4	50.5	68.6
H/TOT	0	24	8	2	0	0	34	35.8	44.6	53.5	1	17	1	3	1	0	23	27	45.2	58.7
02:00	0	7	4	1	0	0	12	12.9	47.6	55.2	0	5	0	2	0	1	8	10.8	49.7	62.5
02:15	0	4	1	0	0	0	5	5	65.0	80.1	0	2	1	0	0	0	3	3	53.3	56.1
02:30	1	1	0	2	0	0	4	5.2	40.4	41.5	0	6	0	2	0	0	8	9.8	43.7	54.4
02:45	0	3	2	0	0	0	5	5	37.1	38.2	1	1	1	0	0	0	3	2.4	54.0	59.1
H/TOT	1	15	7	3	0	0	26	28.1	47.8	64.6	1	14	2	4	0	1	22	26	48.6	61.6
03:00	0	1	0	2	1	0	4	7.7	45.0	47.9	0	3	0	1	0	0	4	4.9	50.2	52.7
03:15	0	2	0	0	0	0	2	2	46.9	47.0	0	2	1	0	0	0	3	3	47.8	48.5
03:30	0	6	0	1	0	0	7	7.9	43.5	51.5	1	5	0	2	1	0	9	12.1	50.5	57.6
03:45	0	2	0	0	0	0	2	2	56.3	57.4	0	5	0	1	0	0	6	6.9	53.0	62.1
H/TOT	0	11	0	3	1	0	15	19.6	46.1	51.5	1	15	1	4	1	0	22	26.9	50.7	56
04:00	0	9	1	0	0	0	10	10	45.4	55.6	0	8	1	0	0	0	9	9	52.1	68.8
04:15	0	5	0	1	1	0	7	9.8	38.8	53.5	0	10	0	0	0	0	10	10	41.8	64.1
04:30	0	1	0	1	0	0	2	2.9	46.5	47.5	1	12	4	1	0	0	18	18.3	50.9	58.4
04:45	0	10	1	1	0	0	12	12.9	44.5	51.0	0	22	2	1	0	0	25	25.9	54.0	61.8
H/TOT	0	25	2	3	1	0	31	35.6	43.6	52.1	1	52	7	2	0	0	62	63.2	50.9	61.8
05:00	1	6	3	0	0	0	10	9.4	53.8	68.7	0	15	4	1	0	0	20	20.9	47.6	60.2
05:15	3	10	3	1	2	0	19	21.9	44.3	59.6	2	21	4	1	0	0	28	27.7	48.8	61.9
05:30	0	13	3	2	3	0	21	28.5	48.1	58.5	1	48	8	3	1	1	62	67	47.1	60.0
05:45	1	10	6	1	1	0	19	21.2	48.9	59.6	3	57	4	3	1	0	68	70.8	46.7	53.3
H/TOT	5	39	15	4	6	0	69	81	48.1	59.5	6	141	20	8	2	1	178	186.4	47.3	57.4
06:00	1	21	9	2	0	0	33	34.2	46.6	54.6	4	61	18	1	1	0	85	85.4	43.2	54.0
06:15	0	24	3	0	0	0	27	27	49.7	57.2	4	100	25	8	0	0	137	141.8	40.1	52.0
06:30	2	28	4	2	0	0	36	36.6	41.1	48.5	3	127	32	11	0	0	173	181.1	38.2	46.7
06:45	1	36	10	3	1	0	51	55	41.9	50.6	1	108	32	2	0	0	143	144.2	37.0	46.1
H/TOT	4	109	26	7	1	0	147	152.8	44.2	52.7	12	396	107	22	1	0	538	552.5	39.2	48.7
07:00	0	42	13	9	1	0	65	75	36.5	42.6	2	110	39	9	1	1	162	171.8	27.0	36.3
07:15	1	49	14	3	1	0	68	72	42.7	50.0	2	108	23	6	4	1	144	156.8	27.3	37.4
07:30	0	59	15	5	1	0	80	86.4	36.9	44.7	4	90	23	6	1	0	124	128.9	24.4	42.9
07:45	0	69	16	2	1	1	89	93.7	37.6	48.8	2	90	35	3	0	2	132	135.5	28.4	39.6
H/TOT	1	219	58	19	4	1	302	327.1	38.3	47.3	10	398	120	24	6	4	562	593	26.8	38.3
08:00	1	77	12	3	2	0	95	100.9	34.9	40.3	1	102	20	4	2	1	130	137.8	25.2	37.0
08:15	0	71	17	8	1	1	98	108.1	35.4	42.7	5	76	20	3	1	0	105	106.6	29.1	38.4
08:30	0	69	14	8	1	0	92	101.1	33.9	41.8	2	103	20	4	2	2	133	141.2	25.0	32.9
08:45	0	79	24	5	0	0	108	112.5	35.6	42.8	1	74	23	7	1	0	106	113.6	28.3	39.3
H/TOT	1	296	67	24	4	1	393	422.6	35	42	9	355	83	18	6	3	474	499.2	26.7	37
09:00	1	61	14	4	1	0	81	85.9	36.4	44.3	5	95	23	4	0	0	127	127.6	26.9	40.8
09:15	1	70	15	2	0	0	88	89.2	38.1	44.3	2	91	31	8	0	0	132	138	34.7	45.4
09:30	0	59	17	14	1	0	91	105.5	35.8	41.3	1	90	16	8	1	0	116	124.5	31.9	41.8
09:45	2	54	12	13	0	0	81	91.5	38.0	46.1	0	71	25	14	0	0	110	122.6	31.2	44.2
H/TOT	4	244	58	33	2	0	341	372.1	37.1	43.6	8	347	95	34	1	0	485	512.7	31.2	42.8
10:00	1	64	12	7	1	0	85	92.6	35.1	43.8	0	88	26	6	1	0	121	128.3	30.0	40.5
10:15	1	48	24	9	0	2	84	93.5	39.3	46.7	1	66	22	12	0	0	101	111.2	37.3	46.1
10:30	0	51	20	10	1	0	82	92.9	39.4	45.9	0	76	17	4	0	0	97	100.6	37.6	47.5
10:45	0	57	23	9	0	0	89	97.1	40.0	48.6	0	65	19	10	1	0	95	105.9	33.0	44.7
H/TOT	2	220	79	35	2	2	340	376.1	38.5	46.2	1	295	84	32	2	0	414	446	34.3	45.2
11:00	3	65	23	9	1	0	101	109.2	37.9	47.0	1	64	14	11	1	2	93	106.2	33.8	47.4
11:15	1	51	34	16	1	0	103	118.7	38.4	45.5	0	53	23	4	0	0	80	83.6	34.5	44.5
11:30	0	68	20	13	2	0	103	118.5	39.6	48.1	1	55	9	9	1	0	75	84.4	36.0	46.9
11:45	6	56	25	10	1	0	98	105.3	38.3	46.4	2	76	23	8	0	0	109	115	31.2	40.1



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Mon 19-May-2025
AM Peak: 08:29 — 09:29 **Total:** 882
PM Peak: 14:39 — 15:39 **Total:** 874
15 Min Peak: 12:56 — 13:11 **Total:** 246

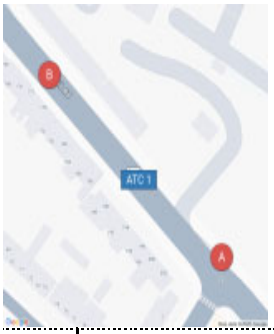
H/TOT	10	240	102	48	5	0	405	451.7	38.5	46.4	4	248	69	32	2	2	357	389.2	33.6	45.1
12:00	0	83	23	4	1	0	111	116.5	30.3	38.9	2	69	17	11	0	0	99	107.7	31.1	39.9
12:15	1	78	35	10	0	0	124	132.4	39.1	47.3	2	50	20	7	0	0	79	84.1	40.7	50.3
12:30	1	76	21	11	1	0	110	121.2	39.2	48.0	1	72	16	13	0	0	102	113.1	35.4	46.1
12:45	1	85	24	4	1	0	115	119.9	38.7	43.9	0	71	15	8	2	0	96	107	31.6	42.8
H/TOT	3	322	103	29	3	0	460	490	36.9	45.1	5	262	68	39	2	0	376	411.9	34.4	45.8
13:00	1	92	24	7	1	0	125	132.6	38.1	44.3	0	65	21	4	3	0	93	102.3	29.4	37.8
13:15	1	76	30	11	1	1	120	132.2	39.4	47.6	0	53	23	4	0	0	80	83.6	34.1	47.1
13:30	0	98	29	6	3	1	137	149.1	32.9	41.0	1	53	15	3	1	2	75	81	31.8	42.8
13:45	3	76	27	10	2	0	118	129	37.9	45.9	0	72	21	7	0	0	100	106.3	31.1	42.4
H/TOT	5	342	110	34	7	2	500	542.9	36.9	44.8	1	243	80	18	4	2	348	373.2	31.5	42.6
14:00	2	74	19	7	3	0	105	115.8	36.7	42.9	2	65	12	6	0	0	85	89.2	28.8	41.5
14:15	3	79	23	5	0	1	111	114.7	39.4	45.9	0	74	25	3	0	1	103	106.7	32.7	43.8
14:30	3	74	16	10	1	1	105	115.1	36.8	42.3	1	65	16	4	2	1	89	96.8	31.1	43.7
14:45	2	81	25	8	0	0	116	122	37.3	44.6	0	75	23	5	1	0	104	110.4	31.9	43.3
H/TOT	10	308	83	30	4	2	437	467.6	37.6	44.7	3	279	76	18	3	2	381	403.1	31.3	43.3
15:00	5	104	20	4	0	0	133	133.6	39.8	46.6	2	75	24	7	0	0	108	113.1	30.4	43.2
15:15	3	69	23	2	1	0	98	99.9	41.2	48.9	2	65	18	6	2	0	93	101	33.7	45.5
15:30	2	92	15	7	0	1	117	123.1	38.0	44.8	1	74	22	6	1	0	104	110.7	30.6	41.3
15:45	4	63	19	6	2	0	94	100.8	42.1	48.6	1	69	16	6	0	0	92	96.8	30.3	45.2
H/TOT	14	328	77	19	3	1	442	457.4	40.1	47.5	6	283	80	25	3	0	397	421.6	31.2	43.8
16:00	3	108	21	5	2	0	139	145.5	34.3	44.6	2	68	18	6	0	0	94	98.2	28.6	36.9
16:15	3	95	34	2	6	0	140	151.4	36.2	42.9	2	62	12	6	0	0	82	86.2	33.6	42.6
16:30	3	103	26	7	2	1	142	151.3	26.4	35.8	1	57	11	5	1	0	75	80.8	31.6	40.9
16:45	1	108	19	2	1	1	132	136.1	19.8	27.0	0	44	14	1	1	0	60	62.8	29.8	38.8
H/TOT	10	414	100	16	11	2	553	584.3	29.3	41.3	5	231	55	18	2	0	311	328	30.9	40.4
17:00	1	109	12	4	1	4	131	139.9	17.5	22.1	2	55	10	3	0	0	70	71.5	24.0	32.6
17:15	2	102	32	3	1	3	143	149.4	24.2	35.5	1	45	8	3	0	0	57	59.1	27.9	37.1
17:30	1	96	17	4	2	2	122	130.8	18.3	26.0	1	56	11	3	0	0	71	73.1	28.0	36.6
17:45	1	109	25	2	2	3	142	150	20.2	26.9	1	63	8	2	0	2	76	79.2	22.4	35.4
H/TOT	5	416	86	13	6	12	538	570.1	20.2	28.2	5	219	37	11	0	2	274	282.9	25.4	35.6
18:00	2	82	17	3	1	0	105	108.4	17.4	22.5	1	54	9	2	0	0	66	67.2	25.1	34.6
18:15	7	105	12	0	2	1	127	127.6	18.5	25.6	2	57	5	1	1	0	66	67.6	29.5	40.0
18:30	0	113	20	4	1	0	138	143.5	20.7	26.9	3	61	18	1	0	1	84	84.1	24.6	30.9
18:45	5	81	16	4	0	0	106	106.6	38.4	46.4	5	60	8	6	0	0	79	81.4	34.7	46.5
H/TOT	14	381	65	11	4	1	476	486.1	23.3	36.4	11	232	40	10	1	1	295	300.3	28.5	40.7
19:00	1	93	31	5	1	0	131	136.8	36.4	43.6	1	57	12	0	1	0	71	72.3	32.4	41.1
19:15	2	71	12	4	0	0	89	91.4	40.4	48.8	0	51	15	5	0	0	71	75.5	31.7	41.8
19:30	1	69	19	1	0	0	90	90.3	39.7	47.8	0	49	9	2	1	0	61	64.7	38.6	46.8
19:45	2	76	16	2	0	0	96	96.6	40.4	47.4	0	44	9	3	0	0	56	58.7	36.1	44.1
H/TOT	6	309	78	12	1	0	406	415.1	39	46.3	1	201	45	10	2	0	259	271.2	34.4	44.1
20:00	1	54	17	4	1	0	77	81.9	40.9	48.2	0	42	3	1	0	1	47	48.9	36.5	45.8
20:15	3	87	17	0	1	0	108	108.1	39.6	46.0	1	34	9	1	1	0	46	48.2	36.5	46.1
20:30	3	51	12	4	1	0	71	74.7	41.8	46.4	2	30	5	3	2	0	42	47.3	38.1	47.2
20:45	1	52	6	1	0	0	60	60.3	40.0	48.0	0	43	9	3	2	0	57	63.5	36.2	47.7
H/TOT	8	244	52	9	3	0	316	325	40.5	46.8	3	149	26	8	5	1	192	207.9	36.8	46.9
21:00	1	52	15	2	1	0	71	74.1	41.9	48.2	0	41	14	1	2	0	58	62.7	38.0	47.8
21:15	2	47	7	1	0	0	57	56.7	41.4	48.6	0	31	6	2	1	0	40	43.7	38.8	49.1
21:30	3	46	4	3	1	0	57	59.8	38.1	46.1	0	39	6	3	1	0	49	53.6	38.2	47.4
21:45	0	45	8	1	0	0	54	54.9	41.7	50.3	1	33	4	3	0	0	41	43.1	43.0	51.5
H/TOT	6	190	34	7	2	0	239	245.5	40.8	47.4	1	144	30	9	4	0	188	203.1	39.3	48.4
22:00	1	29	4	1	0	0	35	35.3	42.3	48.3	1	49	5	0	1	0	56	57.3	40.2	45.8
22:15	2	34	7	3	0	0	46	47.5	42.6	49.7	0	39	1	4	0	0	44	47.6	39.3	46.5
22:30	0	27	10	2	0	0	39	40.8	39.8	48.1	0	29	4	3	2	0	38	44.5	38.1	44.5
22:45	1	17	2	1	0	0	21	21.3	44.8	53.6	1	13	3	2	0	0	19	20.2	42.5	48.9
H/TOT	4	107	23	7	0	0	141	144.9	42.1	49.4	2	130	13	9	3	0	157	169.6	39.7	46.9
23:00	3	27	5	1	0	0	36	35.1	43.1	49.9	0	16	0	3	0	0	19	21.7	43.9	52.9
23:15	1	19	12	1	0	0	33	33.3	43.1	53.0	0	9	2	3	1	0	15	19.6	42.6	51.2
23:30	0	16	5	3	0	0	24	26.7	46.8	53.1	0	9	3	1	0	0	13	13.9	44.5	54.5
23:45	2	13	6	0	0	0	21	19.8	49.8	64.4	0	12	5	2	0	0	19	20.8	40.5	45.6
H/TOT	6	75	28	5	0	0	114	114.9	45.1	53	0	46	10	9	1	0	66	75	42.7	49
24 TOT	119	4920	1269	375	70	24	6777	7200	35.5	45.6	98	4727	1154	372	53	19	6423	6819	33.1	45.1



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Tue 20-May-2025
AM Peak: 06:51 — 07:51 **Total:** 906
PM Peak: 18:23 — 19:23 **Total:** 954
15 Min Peak: 19:13 — 19:28 **Total:** 262

	Northbound (A => B)								Mean Speed	85% Speed	Southbound (B => A)								Mean Speed	85% Speed
TIME	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	(KPH)	(KPH)
00:00	0	15	3	0	0	0	18	18	50.1	60.1	0	9	2	4	0	0	15	18.6	46.2	59.8
00:15	1	9	4	0	0	0	14	13.4	44.1	53.5	0	6	1	0	0	0	7	7	44.1	50.4
00:30	0	6	2	1	0	0	9	9.9	44.6	57.7	0	9	2	3	1	0	15	19.6	46.0	56.3
00:45	0	4	2	0	0	0	6	6	41.9	59.3	0	5	1	0	0	0	6	6	42.6	50.7
H/TOT	1	34	11	1	0	0	47	47.3	46.2	58.1	0	29	6	7	1	0	43	51.2	45.3	52
01:00	0	8	2	1	0	0	11	11.9	46.0	56.0	0	6	2	1	0	0	9	9.9	50.0	67.0
01:15	0	7	4	1	0	0	12	12.9	47.8	56.8	0	2	2	1	0	0	5	5.9	46.6	48.0
01:30	0	4	4	0	0	0	8	8	48.2	55.4	0	2	0	1	0	0	3	3.9	48.2	48.9
01:45	1	4	3	2	0	0	10	11.2	50.4	69.9	0	2	2	0	0	0	4	4	46.3	49.7
H/TOT	1	23	13	4	0	0	41	44	48	56.2	0	12	6	3	0	0	21	23.7	48.2	62.8
02:00	0	9	1	2	1	0	13	16.7	44.8	50.1	0	3	0	1	0	0	4	4.9	50.4	56.6
02:15	0	9	1	0	0	0	10	10	50.4	60.8	0	4	3	1	0	0	8	8.9	49.5	63.3
02:30	0	0	0	0	0	0	0	0	0.0	0.0	0	4	0	1	0	0	5	5.9	44.6	51.6
02:45	0	3	2	1	0	0	6	6.9	50.8	62.1	0	3	1	0	0	0	4	4	54.1	64.2
H/TOT	0	21	4	3	1	0	29	33.6	48	59.1	0	14	4	3	0	0	21	23.7	49.4	62
03:00	0	5	1	0	0	0	6	6	48.4	62.3	0	2	2	1	0	0	5	5.9	47.9	50.2
03:15	0	3	0	0	0	0	3	3	49.0	50.9	0	1	3	0	0	0	4	4	49.4	53.9
03:30	0	1	2	1	0	0	4	4.9	39.7	43.7	0	6	1	1	0	0	8	8.9	46.8	64.3
03:45	0	3	0	0	0	0	3	3	50.6	57.4	1	5	2	0	0	0	8	7.4	56.0	66.4
H/TOT	0	12	3	1	0	0	16	16.9	46.8	57.6	1	14	8	2	0	0	25	26.2	50.4	65.9
04:00	0	3	0	1	0	0	4	4.9	56.2	63.7	0	5	3	2	0	0	10	11.8	45.7	55.2
04:15	0	6	1	1	0	0	8	8.9	50.5	68.2	0	13	0	0	0	0	13	13	56.8	65.4
04:30	1	3	0	3	1	0	8	12	51.3	78.6	0	14	4	1	0	0	19	19.9	47.3	61.4
04:45	0	9	0	2	0	0	11	12.8	58.8	71.5	1	23	1	0	1	0	26	27.3	55.5	61.9
H/TOT	1	21	1	7	1	0	31	38.6	54.4	70.6	1	55	8	3	1	0	68	72	52	61.1
05:00	0	5	5	1	0	0	11	11.9	55.8	68.2	0	15	2	2	1	0	20	23.7	47.0	56.6
05:15	1	4	0	2	1	0	8	11.1	46.5	68.7	0	31	6	0	0	0	37	37	51.6	62.8
05:30	0	19	5	0	0	2	26	28	49.1	54.8	0	45	10	1	0	1	57	58.9	47.4	54.8
05:45	1	13	5	5	1	0	25	30.8	48.6	59.5	5	59	10	4	0	0	78	78.6	45.3	56.0
H/TOT	2	41	15	8	2	2	70	81.8	49.7	59.9	5	150	28	7	1	1	192	198.2	47.3	56.2
06:00	1	25	8	5	1	0	40	45.8	46.1	59.5	5	69	17	5	2	0	98	103.3	45.8	54.3
06:15	1	25	7	5	1	0	39	44.8	45.6	56.9	1	105	35	5	1	0	147	152.8	34.1	46.9
06:30	2	21	6	8	1	0	38	45.9	42.1	49.2	4	131	31	7	3	0	176	185.6	33.3	46.1
06:45	1	50	4	4	0	0	59	62	41.6	47.9	0	133	34	5	0	1	173	178.5	31.2	44.0
H/TOT	5	121	25	22	3	0	176	198.5	43.6	51.4	10	438	117	22	6	1	594	620.2	34.9	47.6
07:00	0	41	12	4	0	0	57	60.6	37.0	43.4	4	118	30	2	2	0	156	159.2	24.4	36.8
07:15	2	56	12	3	0	0	73	74.5	37.2	46.8	1	125	22	4	0	0	152	155	27.6	38.7
07:30	1	62	21	7	1	0	92	99.6	36.6	44.3	3	102	22	2	3	2	134	141.7	29.1	41.7
07:45	1	72	11	3	0	0	87	89.1	39.8	47.8	2	101	23	2	2	0	130	134.4	33.5	42.6
H/TOT	4	231	56	17	1	0	309	323.8	37.7	46	10	446	97	10	7	2	572	590.3	28.4	40.7
08:00	2	69	24	9	1	0	105	113.8	36.5	44.2	2	92	20	2	0	0	116	116.6	29.3	39.7
08:15	0	63	16	7	2	0	88	98.1	35.4	41.3	3	95	17	4	1	0	120	123.7	21.9	28.8
08:30	0	69	22	7	0	0	98	104.3	31.1	38.5	5	87	15	5	1	0	113	116.4	24.4	35.3
08:45	0	84	13	6	0	0	103	108.4	30.2	40.1	6	94	20	5	0	2	127	129.9	19.2	28.0
H/TOT	2	285	75	29	3	0	394	424.6	33.3	41	16	368	72	16	2	2	476	486.6	23.6	33.2
09:00	0	50	17	7	3	0	77	89	36.8	42.4	1	83	32	7	5	0	128	143.2	28.4	41.0
09:15	0	85	14	6	0	0	105	110.4	34.7	40.9	2	104	13	6	1	1	127	134.1	25.5	37.7
09:30	1	70	21	12	1	0	105	117.1	30.2	35.3	1	86	17	6	0	2	112	118.8	18.8	26.9
09:45	0	56	16	10	0	0	82	91	34.3	42.9	1	82	27	6	1	0	117	123.7	24.6	36.7
H/TOT	1	261	68	35	4	0	369	407.5	33.8	40.8	5	355	89	25	7	3	484	519.8	24.5	36.9
10:00	1	82	26	14	0	0	123	135	32.2	40.7	1	74	23	6	1	0	105	111.7	19.2	27.2
10:15	3	87	22	15	1	0	128	141.6	39.4	47.6	1	76	16	5	1	0	99	104.8	33.0	46.4
10:30	0	52	18	11	0	1	82	92.9	38.6	45.8	1	60	18	9	0	0	88	95.5	31.4	41.6
10:45	1	52	18	13	2	0	86	100.9	41.0	47.6	0	50	18	6	1	0	75	82.3	34.1	45.3
H/TOT	5	273	84	53	3	1	419	470.4	37.4	45.6	3	260	75	26	3	0	367	394.3	28.9	42.5
11:00	0	62	14	14	2	0	92	108.4	38.4	44.0	2	54	17	8	1	0	82	89.9	35.3	44.9
11:15	0	57	14	6	1	0	78	85.3	40.4	45.9	1	66	24	10	2	1	104	117.2	33.8	46.4
11:30	1	78	23	10	2	0	114	126.2	36.8	45.2	1	71	19	8	1	0	100	108.5	32.7	42.5
11:45	1	72	20	12	1	0	106	118.1	39.5	46.3	3	81	24	8	1	0	117	124.3	30.0	40.2



IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project ATC		
Site:	ATC 1		
Location:	E Wall Rd		
Date:	Tue 20-May-2025		
AM Peak:	06:51 — 07:51	**Total:**	906
PM Peak:	18:23 — 19:23	**Total:**	954
15 Min Peak:	19:13 — 19:28	**Total:**	262

H/TOT	2	269	71	42	6	0	390	438	38.6	45.3	7	272	84	34	5	1	403	439.9	32.7	43.6
12:00	0	62	23	8	0	1	94	102.2	39.0	46.6	1	86	19	10	0	1	117	126.4	28.4	39.4
12:15	3	64	34	9	2	0	112	122.1	38.5	46.6	1	58	14	7	1	0	81	88.6	37.5	46.9
12:30	2	79	18	6	4	0	109	120.8	37.3	42.9	1	69	19	6	1	0	96	102.7	30.6	42.0
12:45	1	67	17	6	2	1	94	103.6	36.8	42.7	0	68	22	5	0	1	96	101.5	26.0	38.3
H/TOT	6	272	92	29	8	2	409	448.7	37.9	45.3	3	281	74	28	2	2	390	419.2	30.2	41.5
13:00	3	63	18	9	2	0	95	105.1	36.2	43.0	0	74	21	3	1	1	100	105.6	29.5	41.2
13:15	2	73	17	10	1	1	104	114.7	38.4	46.0	1	51	16	8	0	0	76	82.6	35.5	47.1
13:30	5	99	22	9	1	0	136	143	34.7	41.2	3	75	23	6	0	1	108	112.6	31.0	40.7
13:45	1	84	19	6	0	0	110	114.8	36.7	44.1	0	86	22	11	1	1	121	133.8	29.7	40.6
H/TOT	11	319	76	34	4	1	445	477.6	36.4	43.5	4	286	82	28	2	3	405	434.6	31.1	42.2
14:00	3	97	24	8	0	1	133	139.4	35.5	42.9	0	68	16	12	1	0	97	109.7	30.7	41.4
14:15	2	92	28	6	1	1	130	137.1	36.8	44.5	1	71	21	6	0	1	100	105.8	31.6	44.0
14:30	4	102	23	11	2	1	143	155.3	27.4	37.2	2	78	17	3	0	1	101	103.5	23.9	37.6
14:45	1	76	23	6	0	0	106	110.8	36.6	44.5	2	76	23	4	1	0	106	110.3	30.9	39.8
H/TOT	10	367	98	31	3	3	512	542.6	33.8	42.5	5	293	77	25	2	2	404	429.3	29.3	40.9
15:00	1	67	24	8	1	1	102	111.5	35.4	43.7	0	63	18	4	1	0	86	91.5	33.2	44.2
15:15	3	85	25	6	0	1	120	124.6	32.7	43.6	3	72	18	4	0	1	98	100.8	28.5	37.4
15:30	3	81	12	5	2	0	103	109.5	37.0	45.8	3	91	16	8	0	0	118	123.4	28.6	37.0
15:45	2	70	22	7	3	0	104	114.8	38.4	46.1	0	71	23	8	2	1	105	117	30.1	42.6
H/TOT	9	303	83	26	6	2	429	460.4	35.8	45	6	297	75	24	3	2	407	432.7	29.9	40.4
16:00	1	73	22	4	1	0	101	105.9	37.1	44.9	2	74	22	8	1	0	107	114.9	29.0	40.8
16:15	2	87	26	2	1	0	118	120.5	36.7	43.2	3	63	13	6	0	2	87	92.6	31.9	42.5
16:30	1	99	16	3	1	0	120	124	37.8	43.3	0	80	18	6	1	0	105	112.3	30.8	40.2
16:45	3	104	13	5	1	2	128	134.6	23.5	33.4	0	71	16	4	0	0	91	94.6	25.0	33.7
H/TOT	7	363	77	14	4	2	467	485	33.4	42.8	5	288	69	24	2	2	390	414.4	29.2	40.2
17:00	4	103	18	3	0	2	130	132.3	31.6	39.9	2	83	13	2	0	0	100	100.6	24.1	35.8
17:15	5	106	14	3	1	0	129	130.6	37.0	43.7	1	68	17	5	0	1	92	96.9	25.1	34.0
17:30	3	107	18	1	0	0	129	128.1	30.7	38.7	2	89	12	2	0	0	105	105.6	27.5	35.9
17:45	3	102	20	2	1	0	128	129.9	30.0	37.5	0	82	14	4	0	0	100	103.6	26.5	40.0
H/TOT	15	418	70	9	2	2	516	520.9	32.3	39.9	5	322	56	13	0	1	397	406.7	25.8	35.8
18:00	4	89	23	3	1	0	120	122.2	35.7	42.6	0	75	17	4	0	1	97	101.6	28.9	39.0
18:15	3	111	18	4	2	0	138	143.6	31.2	40.5	3	82	9	2	1	1	98	100.9	26.5	43.3
18:30	3	112	18	1	0	0	134	133.1	31.3	40.6	3	82	15	3	1	0	104	106.8	27.8	38.7
18:45	3	104	16	1	0	0	124	123.1	36.9	43.6	0	77	16	4	0	0	97	100.6	28.0	39.2
H/TOT	13	416	75	9	3	0	516	522	33.6	41.4	6	316	57	13	2	2	396	409.9	27.8	39.6
19:00	4	108	13	3	1	0	129	131.2	31.6	39.5	2	78	10	3	1	0	94	97.4	27.8	39.7
19:15	2	106	24	0	1	0	133	133.7	36.1	43.6	2	101	15	2	0	1	121	122.6	26.4	38.4
19:30	3	94	33	3	0	0	133	133.9	36.4	41.5	1	73	10	2	1	0	87	90.1	34.9	44.5
19:45	2	110	22	2	0	0	136	136.6	36.2	43.8	1	54	9	3	1	0	68	72	27.3	37.5
H/TOT	11	418	92	8	2	0	531	535.4	35.1	42.1	6	306	44	10	3	1	370	382.1	28.9	39.4
20:00	2	101	12	2	0	0	117	117.6	40.7	46.8	1	50	6	4	0	0	61	64	32.2	41.3
20:15	1	73	15	2	2	0	93	98	40.6	47.2	0	34	7	1	0	0	42	42.9	37.4	47.9
20:30	2	73	23	3	0	0	101	102.5	39.2	46.5	2	46	10	3	1	0	62	65.4	36.6	43.4
20:45	1	65	15	1	0	0	82	82.3	41.0	49.1	1	31	9	4	1	1	47	52.9	37.4	46.4
H/TOT	6	312	65	8	2	0	393	400.4	40.3	47.2	4	161	32	12	2	1	212	225.2	35.7	44.6
21:00	1	62	14	0	0	0	77	76.4	40.6	47.0	1	32	4	3	0	0	40	42.1	34.8	44.9
21:15	3	53	6	0	1	0	63	63.1	39.0	44.0	0	48	15	1	0	0	64	64.9	34.5	44.3
21:30	0	57	17	1	0	0	75	75.9	38.1	45.0	0	27	3	4	0	0	34	37.6	41.0	49.4
21:45	0	55	2	0	0	0	57	57	40.9	47.7	1	39	12	2	0	1	55	57.2	38.3	45.1
H/TOT	4	227	39	1	1	0	272	272.4	39.6	45.7	2	146	34	10	0	1	193	201.8	36.8	45.6
22:00	1	44	9	0	1	0	55	56.3	42.1	50.0	0	32	4	1	0	0	37	37.9	42.6	49.4
22:15	1	52	6	0	0	0	59	58.4	37.5	47.4	1	53	7	3	1	1	66	71	33.7	44.5
22:30	1	75	13	1	0	0	90	90.3	39.9	46.0	1	44	9	4	0	1	59	63	35.1	44.4
22:45	0	83	11	0	0	0	94	94	39.9	46.4	0	54	9	1	0	1	65	66.9	37.0	47.4
H/TOT	3	254	39	1	1	0	298	299	39.8	46.9	2	183	29	9	1	3	227	238.8	36.5	46.2
23:00	2	71	20	2	0	0	95	95.6	40.9	48.6	0	37	4	2	1	0	44	47.7	40.2	45.9
23:15	0	44	12	1	0	0	57	57.9	41.7	48.6	0	28	9	2	0	0	39	40.8	38.5	45.6
23:30	0	25	5	0	0	0	30	30	43.3	47.4	0	13	2	2	0	0	17	18.8	45.2	55.3
23:45	0	20	8	0	0	0	28	28	42.6	49.5	0	13	5	2	0	0	20	21.8	42.7	51.2
H/TOT	2	160	45	3	0	0	210	211.5	41.7	48.6	0	91	20	8	1	0	120	129.1	40.8	47.8
24 TOT	121	5421	1277	395	60	15	7289	7701	36.6	45	106	5383	1243	362	53	30	7177	7570	30.8	43.4

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Survey Name: 25398 - Dublin Central Grid Reinforcement Project ATC
Site: ATC 1
Location: E Wall Rd
Date: Wed 14 May 2025 — Tue 20 May 2025

Note: Queues were observed during the survey period.

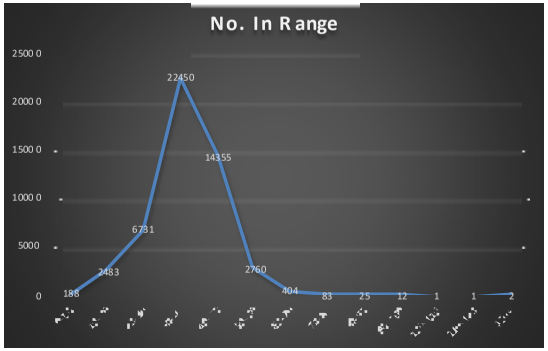
Speed Survey

Cummulative 85% Speed	45.2 KPH
Cummulative Minimum Speed	1.1 KPH
Cummulative Maximum Speed	149.1 KPH
Cummulative Average Speed	34.9 KPH

Northbound (A => B)

No. of Vehicles	49495
85% Speed	45.6 KPH
Minimum Speed	4.2 KPH
Maximum Speed	143.9 KPH
Average Speed	36.9 KPH

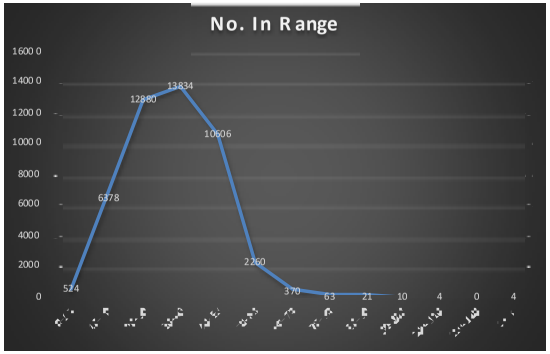
Speed KPH	No. In Range
0-10	188
10-20	2483
20-30	6731
30-40	22450
40-50	14355
50-60	2760
60-70	404
70-80	83
80-90	25
90-100	12
100-110	1
110-120	1
120+	2



Southbound (B => A)

No. of Vehicles	46954
85% Speed	44.8 KPH
Minimum Speed	1.1 KPH
Maximum Speed	149.1 KPH
Average Speed	32.8 KPH

Speed KPH	No. In Range
0-10	524
10-20	6378
20-30	12880
30-40	13834
40-50	10606
50-60	2260
60-70	370
70-80	63
80-90	21
90-100	10
100-110	4
110-120	0
120+	4



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Innovative Data Solutions

Project Reference:

25398 - Dublin Central Grid Reinforcement Project

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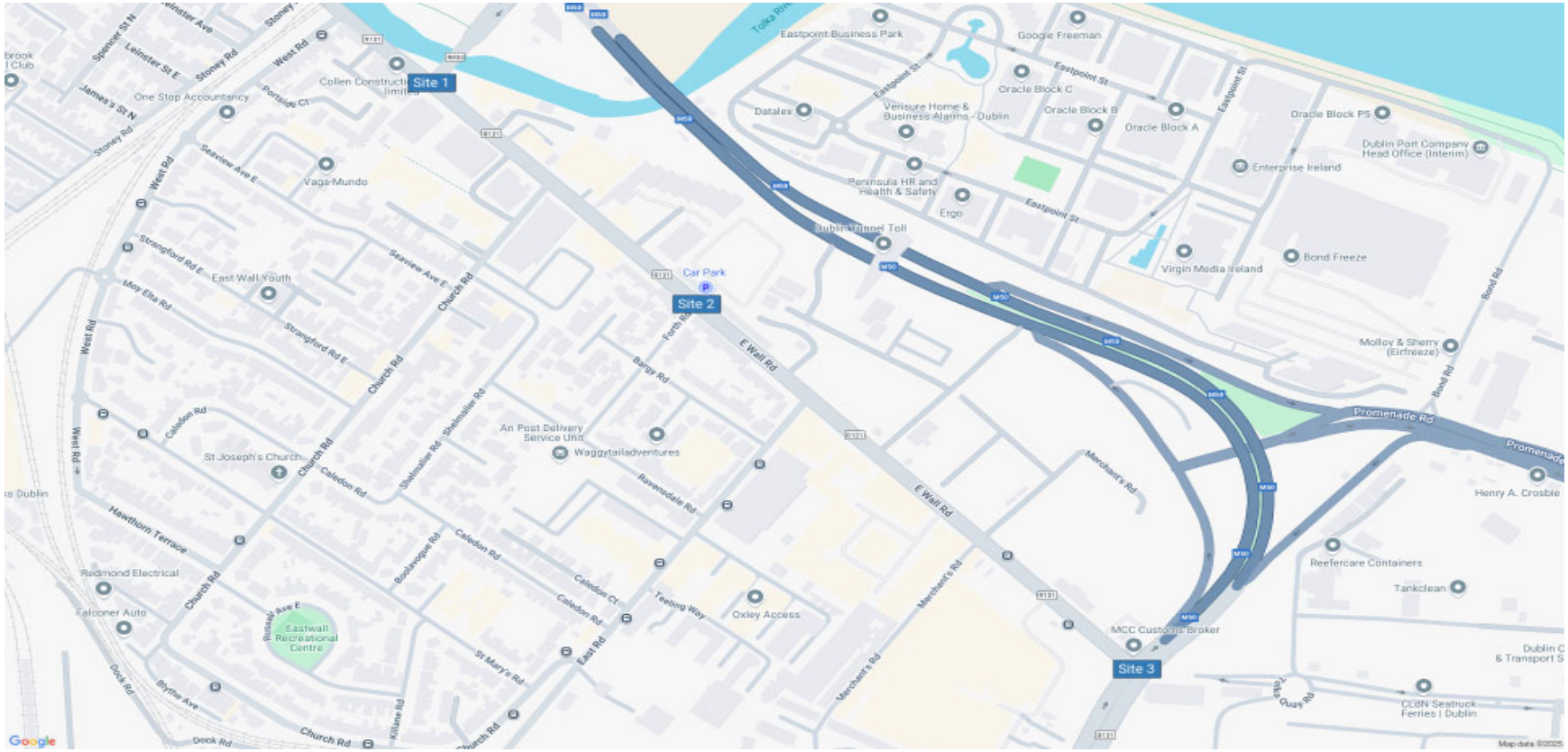
Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Date: Wed 14 May 2025



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Survey Name:	25398 - Dublin Central Grid Reinforcement Project		
Site:	Site 1		
Location:	R131/R834		Arm A - R834
Date:	Wed 14-May-2025		Arm B - R131
AM Peak:	08:00 — 09:00	**Total:** 1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:** 1617	
15 Min Peak:	17:00 — 17:15	**Total:** 493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

	A => A									A => B								
TIME	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	0	0	14	4	161	26	1	2	1	209	201.1
07:15	0	0	0	0	0	0	0	0	0	25	1	130	31	0	2	1	190	174.2
07:30	0	0	0	0	0	0	0	0	0	22	5	113	18	1	0	1	160	141.3
07:45	0	0	0	0	0	0	0	0	0	25	1	99	20	3	0	1	149	132.1
H/TOT	0	0	0	0	0	0	0	0	0	86	11	503	95	5	4	4	708	648.7
08:00	0	0	0	0	0	0	0	0	0	30	2	123	16	5	2	1	179	163.1
08:15	0	0	0	0	0	0	0	0	0	34	3	90	8	1	1	1	138	112.8
08:30	0	0	0	0	0	0	0	0	0	38	4	140	12	1	1	2	198	170
08:45	0	0	0	0	0	0	0	0	0	36	9	107	5	5	0	0	162	132.3
H/TOT	0	0	0	0	0	0	0	0	0	138	18	460	41	12	4	4	677	578.2
09:00	0	0	0	0	0	0	0	0	0	36	2	104	10	2	2	3	159	137.6
09:15	0	0	0	0	0	0	0	0	0	19	5	114	10	3	2	1	154	143.3
09:30	0	0	0	0	0	0	0	0	0	6	2	118	14	4	0	5	149	151.6
09:45	0	0	0	0	0	0	0	0	0	6	2	108	14	1	0	1	132	127.9
H/TOT	0	0	0	0	0	0	0	0	0	67	11	444	48	10	4	10	594	560.4
10:00	0	0	0	0	0	0	0	0	0	7	2	70	20	3	2	1	105	105.7
10:15	0	0	0	0	0	0	0	0	0	8	0	63	8	1	3	1	84	85.2
10:30	0	0	0	0	0	0	0	0	0	3	1	70	8	2	0	2	86	86.8
10:45	0	0	0	0	0	0	0	0	0	8	2	64	14	2	1	4	95	95.1
H/TOT	0	0	0	0	0	0	0	0	0	26	5	267	50	8	6	8	370	372.8
11:00	0	0	0	0	0	0	0	0	0	2	1	62	9	4	1	1	80	84.3
11:15	0	0	0	0	0	0	0	0	0	6	2	51	14	2	1	2	78	77.7
11:30	0	0	0	0	0	0	0	0	0	10	1	58	7	4	3	1	84	85.7
11:45	0	0	0	0	0	0	0	0	0	4	1	58	10	3	4	1	81	88.5
H/TOT	0	0	0	0	0	0	0	0	0	22	5	229	40	13	9	5	323	336.2
12:00	0	0	0	0	0	0	0	0	0	10	0	65	6	4	1	2	88	87.5
12:15	0	0	0	0	0	0	0	0	0	7	0	70	8	4	0	2	91	91
12:30	0	0	0	0	0	0	0	0	0	8	1	68	9	3	2	2	93	94.5
12:45	0	0	0	0	0	0	0	0	0	9	1	38	7	5	2	1	63	64.5
H/TOT	0	0	0	0	0	0	0	0	0	34	2	241	30	16	5	7	335	337.5

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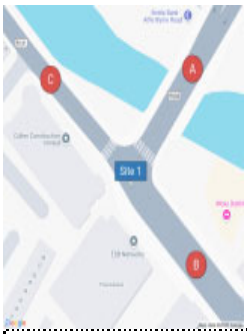
Survey Name:	25398 - Dublin Central Grid Reinforcement Project		
Site:	Site 1		
Location:	R131/R834		Arm A - R834
Date:	Wed 14-May-2025		Arm B - R131
AM Peak:	08:00 — 09:00	**Total:** 1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:** 1617	
15 Min Peak:	17:00 — 17:15	**Total:** 493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

	A => A									A => B								
TIME	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**
13:00	0	0	0	0	0	0	0	0	0	11	1	54	5	4	1	2	78	76.1
13:15	0	0	0	0	0	0	0	0	0	11	0	70	12	3	1	0	97	92.8
13:30	0	0	0	0	0	0	0	0	0	4	1	68	11	4	3	1	92	98.5
13:45	0	0	0	0	0	0	0	0	0	6	1	65	6	3	1	3	85	87.2
H/TOT	0	0	0	0	0	0	0	0	0	32	3	257	34	14	6	6	352	354.6
14:00	0	0	0	0	0	0	0	0	0	9	0	63	12	4	2	1	91	92.2
14:15	0	0	0	0	0	0	0	0	0	8	2	58	7	2	1	1	79	76.1
14:30	0	0	0	0	0	0	0	0	0	9	4	64	6	3	6	2	94	100.5
14:45	0	0	0	0	0	0	0	0	0	4	1	56	13	2	4	2	82	89.6
H/TOT	0	0	0	0	0	0	0	0	0	30	7	241	38	11	13	6	346	358.4
15:00	0	0	0	0	0	0	0	0	0	7	0	60	9	1	2	1	80	80.1
15:15	0	0	0	0	0	0	0	0	0	5	1	75	11	0	1	5	98	100.3
15:30	0	0	0	0	0	0	0	0	0	6	2	83	16	3	0	3	113	112.7
15:45	0	0	0	0	0	0	0	0	0	6	0	76	14	5	0	3	104	106.7
H/TOT	0	0	0	0	0	0	0	0	0	24	3	294	50	9	3	12	395	399.8
16:00	0	0	0	0	0	0	0	0	0	8	0	70	10	6	2	1	97	100.8
16:15	0	0	0	0	0	0	0	0	0	5	2	50	8	1	2	0	68	67.5
16:30	0	0	0	0	0	0	0	0	0	15	1	74	12	2	0	3	107	99.2
16:45	0	0	0	0	0	0	0	0	0	4	1	56	8	4	0	0	73	72.8
H/TOT	0	0	0	0	0	0	0	0	0	32	4	250	38	13	4	4	345	340.3
17:00	0	0	0	0	0	0	0	0	0	15	4	109	6	3	1	2	140	132.2
17:15	0	0	0	0	0	0	0	0	0	12	1	62	5	2	0	1	83	75.6
17:30	0	0	0	0	0	0	0	0	0	6	0	65	5	2	1	1	80	79.9
17:45	0	0	0	0	0	0	0	0	0	6	0	74	3	2	0	1	86	84
H/TOT	0	0	0	0	0	0	0	0	0	39	5	310	19	9	2	5	389	371.7
18:00	0	0	0	0	0	0	0	0	0	17	0	74	4	1	0	2	98	87.3
18:15	0	0	0	0	0	0	0	0	0	5	2	57	0	0	0	2	66	62.8
18:30	0	0	0	0	0	0	0	0	0	10	1	74	4	0	1	3	93	89.3
18:45	0	0	0	0	0	0	0	0	0	5	1	69	1	0	0	2	78	75.4
H/TOT	0	0	0	0	0	0	0	0	0	37	4	274	9	1	1	9	335	314.8
12 TOT	0	0	0	0	0	0	0	0	0	567	78	3770	492	121	61	80	5169	4973



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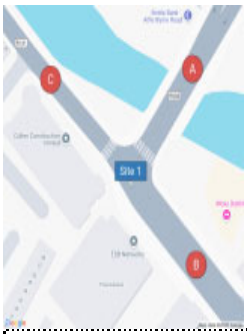
Survey Name:	25398 - Dublin Central Grid Reinforcement Project			
Site:	Site 1			
Location:	R131/R834			Arm A - R834
Date:	Wed 14-May-2025			Arm B - R131
AM Peak:	08:00 — 09:00	**Total:**	1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:**	1617	
15 Min Peak:	17:00 — 17:15	**Total:**	493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

A => C									B => A								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
2	0	0	0	0	0	0	2	0.4	0	3	37	9	2	3	2	56	63.7
3	0	0	0	0	0	0	3	0.6	0	1	28	9	0	4	1	43	51
1	0	0	0	0	0	0	1	0.2	6	1	39	10	4	3	1	64	68.9
1	0	0	0	0	0	0	1	0.2	7	0	46	6	2	2	1	64	65
7	0	0	0	0	0	0	7	1.4	13	5	150	34	8	12	5	227	248.6
2	0	0	0	0	0	0	2	0.4	5	0	55	9	6	0	2	77	80.4
5	0	0	0	0	0	0	5	1	8	1	52	10	3	1	1	76	74.6
4	0	0	0	0	0	0	4	0.8	3	0	48	5	4	1	1	62	66.1
3	0	0	1	0	0	0	4	1.6	4	0	46	8	7	0	1	66	70.1
14	0	0	1	0	0	0	15	3.8	20	1	201	32	20	2	5	281	291.2
1	0	0	0	0	0	0	1	0.2	6	0	54	9	5	0	3	77	79.7
0	0	0	0	0	0	0	0	0	7	0	53	9	3	1	1	74	74
0	0	0	0	0	0	0	0	0	5	4	45	12	3	3	3	75	80
0	0	0	0	0	0	0	0	0	8	1	52	9	5	1	5	81	85.4
1	0	0	0	0	0	0	1	0.2	26	5	204	39	16	5	12	307	319.1
1	0	0	0	0	0	0	1	0.2	7	2	60	8	0	1	4	82	81.1
0	0	0	0	0	0	0	0	0	6	9	59	6	2	2	3	87	85.4
1	0	0	0	0	0	0	1	0.2	6	0	56	11	4	4	1	82	89.4
1	0	0	0	0	0	0	1	0.2	6	1	62	10	3	2	1	85	87.1
3	0	0	0	0	0	0	3	0.6	25	12	237	35	9	9	9	336	343
0	0	0	0	0	0	0	0	0	2	1	49	11	6	0	1	70	74.2
0	0	0	0	0	0	0	0	0	1	1	58	9	1	2	2	74	79.3
0	0	0	0	0	0	0	0	0	7	1	78	12	9	1	1	109	113.8
0	0	0	0	0	0	0	0	0	5	0	61	11	4	0	1	82	82.6
0	0	0	0	0	0	0	0	0	15	3	246	43	20	3	5	335	349.9
1	0	1	0	0	0	0	2	1.2	8	1	61	22	6	1	1	100	101.3
1	0	0	0	0	0	0	1	0.2	9	2	58	8	3	2	2	84	84.1
0	0	0	0	0	0	0	0	0	10	0	75	20	5	1	1	112	111.4
1	0	0	1	0	0	0	2	1.2	9	3	73	18	3	0	2	108	103.7
3	0	1	1	0	0	0	5	2.6	36	6	267	68	17	4	6	404	400.5



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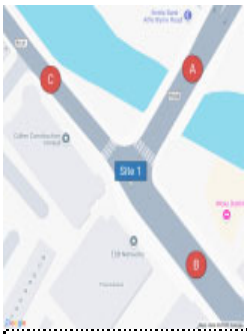
Survey Name:	25398 - Dublin Central Grid Reinforcement Project			
Site:	Site 1			
Location:	R131/R834			Arm A - R834
Date:	Wed 14-May-2025			Arm B - R131
AM Peak:	08:00 — 09:00	**Total:**	1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:**	1617	
15 Min Peak:	17:00 — 17:15	**Total:**	493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

A => C									B => A								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	11	1	83	12	2	1	2	112	108.3
1	0	0	0	0	0	0	1	0.2	4	1	71	7	2	0	2	87	87
0	0	0	0	0	0	0	0	0	7	1	85	10	0	1	0	104	99.7
0	0	0	0	0	0	0	0	0	10	1	83	12	0	2	3	111	109.2
1	0	0	0	0	0	0	1	0.2	32	4	322	41	4	4	7	414	404.2
1	0	0	0	0	0	0	1	0.2	6	0	97	12	1	3	1	120	122.8
0	0	0	0	0	0	0	0	0	5	0	73	8	2	1	3	92	94.7
0	0	0	0	0	0	0	0	0	10	1	76	20	4	0	1	112	108
0	0	0	0	0	0	0	0	0	7	0	85	18	2	0	1	113	110.2
1	0	0	0	0	0	0	1	0.2	28	1	331	58	9	4	6	437	435.7
2	0	0	0	0	0	0	2	0.4	14	3	86	6	3	2	1	115	109.5
0	0	0	0	0	0	0	0	0	10	2	75	12	1	0	1	101	93.7
1	0	1	0	0	0	0	2	1.2	8	4	67	10	2	3	3	97	98.7
0	0	0	0	0	0	0	0	0	16	1	70	17	1	0	1	106	94.5
3	0	1	0	0	0	0	4	1.6	48	10	298	45	7	5	6	419	396.4
0	1	0	0	0	0	0	1	0.4	21	2	102	19	1	0	1	146	129.9
2	0	0	0	0	0	0	2	0.4	19	1	97	15	0	0	1	133	118.2
3	0	0	0	0	0	0	3	0.6	25	3	102	15	2	0	2	149	131
1	0	0	0	0	0	0	1	0.2	35	4	96	15	1	0	2	153	125.5
6	1	0	0	0	0	0	7	1.6	100	10	397	64	4	0	6	581	504.6
3	0	0	0	0	0	0	3	0.6	43	2	120	14	1	0	1	181	147.3
2	0	0	0	0	0	0	2	0.4	22	2	111	18	0	0	1	154	136.2
3	0	0	0	0	0	0	3	0.6	33	4	117	12	1	1	3	171	148
4	1	0	0	0	0	0	5	1.2	42	2	120	8	1	1	1	175	144
12	1	0	0	0	0	0	13	2.8	140	10	468	52	3	2	6	681	575.5
4	0	0	0	0	0	0	4	0.8	35	7	94	6	1	0	1	144	113.7
2	0	0	0	0	0	0	2	0.4	37	3	122	5	1	0	1	169	139.5
0	0	0	0	0	0	0	0	0	29	3	124	11	0	0	2	169	146
1	1	0	0	0	0	0	2	0.6	34	1	120	11	0	0	1	167	140.2
7	1	0	0	0	0	0	8	1.8	135	14	460	33	2	0	5	649	539.4
58	3	2	2	0	0	0	65	16.8	618	81	3581	544	119	50	78	5071	4808

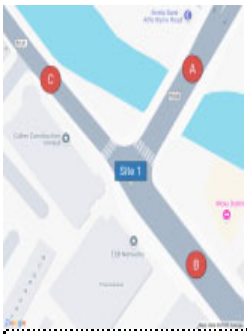


IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project		
Site:	Site 1		
Location:	R131/R834		Arm A - R834
Date:	Wed 14-May-2025		Arm B - R131
AM Peak:	08:00 — 09:00	**Total:** 1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:** 1617	
15 Min Peak:	17:00 — 17:15	**Total:** 493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

B => B									B => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	3	0	26	7	3	0	0	39	39.3
0	0	0	0	0	0	0	0	0	2	1	27	9	1	1	0	41	41.6
0	0	0	0	0	0	0	0	0	2	1	43	11	3	0	1	61	62.5
0	0	0	0	0	0	0	0	0	2	2	60	10	3	0	0	77	76.9
0	0	0	0	0	0	0	0	0	9	4	156	37	10	1	1	218	220.3
0	0	0	0	0	0	0	0	0	2	2	62	13	0	1	0	80	79.1
0	0	0	0	0	0	0	0	0	3	0	61	7	2	0	0	73	72.4
0	0	0	0	0	0	0	0	0	8	1	58	13	2	0	1	83	78.8
0	0	0	0	0	0	0	0	0	6	3	51	11	7	0	0	78	77.7
0	0	0	0	0	0	0	0	0	19	6	232	44	11	1	1	314	308
0	0	0	0	0	0	0	0	0	4	0	67	6	2	2	0	81	83.4
0	0	0	0	0	0	0	0	0	3	0	53	6	0	0	0	62	59.6
0	0	0	0	0	0	0	0	0	2	1	52	11	3	0	1	70	71.5
0	0	0	0	0	0	0	0	0	3	0	48	20	3	0	0	74	74.3
0	0	0	0	0	0	0	0	0	12	1	220	43	8	2	1	287	288.8
0	0	0	0	0	0	0	0	0	3	0	42	9	1	0	1	56	55.5
0	0	0	0	0	0	0	0	0	1	0	51	8	2	1	0	63	65.9
0	0	0	0	0	0	0	0	0	4	1	40	10	3	0	1	59	58.9
0	0	0	0	0	0	0	0	0	2	0	41	8	2	0	0	53	53.2
0	0	0	0	0	0	0	0	0	10	1	174	35	8	1	2	231	233.5
0	0	0	0	0	0	0	0	0	1	0	44	8	0	0	0	53	52.2
0	0	0	0	0	0	0	0	0	5	0	44	6	1	0	0	56	52.9
0	0	0	0	0	0	0	0	0	2	0	59	10	4	0	0	75	77
0	0	0	0	0	0	0	0	0	2	3	27	11	1	0	0	44	41.5
0	0	0	0	0	0	0	0	0	10	3	174	35	6	0	0	228	223.6
0	0	0	0	0	0	0	0	0	4	1	48	11	2	0	0	66	64
0	0	0	0	0	0	0	0	0	6	0	51	17	3	0	0	77	74.9
0	0	0	0	0	0	0	0	0	5	1	47	10	2	1	0	66	65.1
0	0	0	0	0	0	0	0	0	3	0	43	13	1	0	0	60	58.5
0	0	0	0	0	0	0	0	0	18	2	189	51	8	1	0	269	262.5

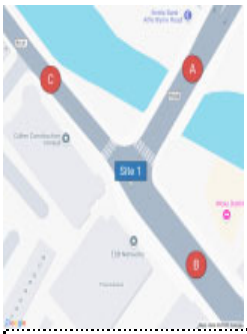


IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project			
Site:	Site 1			
Location:	R131/R834			Arm A - R834
Date:	Wed 14-May-2025			Arm B - R131
AM Peak:	08:00 — 09:00	**Total:**	1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:**	1617	
15 Min Peak:	17:00 — 17:15	**Total:**	493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

B => B									B => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	3	0	45	6	4	0	0	58	59.2
0	0	0	0	0	0	0	0	0	5	0	55	13	1	0	0	74	70.9
0	0	0	0	0	0	0	0	0	0	2	55	13	2	0	1	73	74.6
0	0	0	0	0	0	0	0	0	8	1	49	14	5	0	1	78	76.5
0	0	0	0	0	0	0	0	0	16	3	204	46	12	0	2	283	281.2
0	0	0	0	0	0	0	0	0	5	0	53	7	2	0	1	68	66.8
0	0	0	0	0	0	0	0	0	4	1	41	6	1	1	0	54	53
0	0	0	0	0	0	0	0	0	6	0	48	10	3	0	0	67	64.9
0	0	0	0	0	0	0	0	0	4	0	40	9	4	0	0	57	57.4
0	0	0	0	0	0	0	0	0	19	1	182	32	10	1	1	246	242.1
0	0	0	0	0	0	0	0	0	3	0	51	11	1	0	1	67	66.5
0	0	0	0	0	0	0	0	0	2	0	34	12	2	0	0	50	50.2
0	0	0	0	0	0	0	0	0	6	3	39	13	5	0	0	66	63.9
0	0	0	0	0	0	0	0	0	9	1	44	4	0	0	0	58	50.2
0	0	0	0	0	0	0	0	0	20	4	168	40	8	0	1	241	230.8
0	0	0	0	0	0	0	0	0	5	1	52	6	2	0	0	66	63.2
0	0	0	0	0	0	0	0	0	9	3	39	5	1	0	0	57	48.9
0	0	0	0	0	0	0	0	0	4	4	44	4	2	0	0	58	54.2
0	0	0	0	0	0	0	0	0	6	2	64	7	0	0	0	79	73
0	0	0	0	0	0	0	0	0	24	10	199	22	5	0	0	260	239.3
0	0	0	0	0	0	0	0	0	24	3	77	6	2	0	0	112	92.8
0	0	0	0	0	0	0	0	0	9	2	52	12	0	0	0	75	66.6
0	0	0	0	0	0	0	0	0	8	1	55	3	0	0	1	68	62
0	0	0	0	0	0	0	0	0	10	1	41	6	0	0	0	58	49.4
0	0	0	0	0	0	0	0	0	51	7	225	27	2	0	1	313	270.8
0	0	0	0	0	0	0	0	0	8	0	54	6	1	0	0	69	63.5
0	0	0	0	0	0	0	0	0	7	0	66	1	0	0	1	75	70.4
0	0	0	0	0	0	0	0	0	5	0	54	8	1	0	0	68	64.9
0	0	0	0	0	0	0	0	0	6	2	57	4	0	0	0	69	63
0	0	0	0	0	0	0	0	0	26	2	231	19	2	0	1	281	261.8
0	0	0	0	0	0	0	0	0	234	44	2354	431	90	7	11	3171	3063

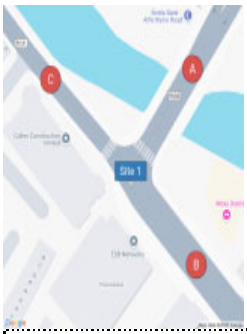


IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project			
Site:	Site 1			
Location:	R131/R834			Arm A - R834
Date:	Wed 14-May-2025			Arm B - R131
AM Peak:	08:00 — 09:00	**Total:**	1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:**	1617	
15 Min Peak:	17:00 — 17:15	**Total:**	493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

C => A									C => B									C => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
2	0	8	0	0	0	0	10	8.4	4	3	21	10	0	0	0	38	33	0	0	0	0	0	0	0	0	0
1	0	13	0	0	0	0	14	13.2	9	3	26	7	0	0	0	45	36	0	0	0	0	0	0	0	0	0
12	0	16	1	1	0	0	30	21.3	5	1	16	5	0	0	0	27	22.4	0	0	0	0	0	0	0	0	0
9	1	21	0	0	0	0	31	23.2	8	0	28	5	1	0	0	42	36.5	0	0	0	0	0	0	0	0	0
24	1	58	1	1	0	0	85	66.1	26	7	91	27	1	0	0	152	127.9	0	0	0	0	0	0	0	0	0
8	0	22	0	0	0	0	30	23.6	5	0	17	7	2	0	0	31	28.8	0	0	0	0	0	0	0	0	0
7	0	21	1	0	0	0	29	23.4	6	4	15	6	1	0	0	32	25.7	0	0	0	0	0	0	0	0	0
2	0	17	1	0	0	0	20	18.4	5	0	15	3	1	1	0	25	23.8	0	0	0	0	0	0	0	0	0
6	0	16	2	0	0	0	24	19.2	9	2	18	4	2	0	0	35	28.4	0	0	0	0	0	0	0	0	0
23	0	76	4	0	0	0	103	84.6	25	6	65	20	6	1	0	123	106.7	0	0	0	0	0	0	0	0	0
3	0	11	1	0	0	0	15	12.6	6	0	21	3	1	0	0	31	27.1	0	0	0	0	0	0	0	0	0
4	0	17	1	0	0	0	22	18.8	4	2	15	5	3	0	0	29	27.3	0	0	0	0	0	0	0	0	0
3	1	10	1	0	0	0	15	12	1	0	17	3	1	0	0	22	22.1	0	0	0	0	0	0	0	0	0
3	0	8	0	0	0	0	11	8.6	1	0	22	9	2	0	0	34	35	0	0	0	0	0	0	0	0	0
13	1	46	3	0	0	0	63	52	12	2	75	20	7	0	0	116	111.5	0	0	0	0	0	0	0	0	0
2	0	9	0	0	0	0	11	9.4	0	0	28	5	0	0	1	34	35	0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	4	2	0	30	11	2	0	0	45	45.2	0	0	0	0	0	0	0	0	0
2	0	5	2	0	0	0	9	7.4	1	0	33	3	2	0	0	39	40	0	0	0	0	0	0	0	0	0
1	0	11	2	0	0	0	14	13.2	1	0	28	7	4	0	0	40	42.8	0	0	0	0	0	0	0	0	0
5	0	29	4	0	0	0	38	34	4	0	119	26	8	0	1	158	163	0	0	0	0	0	0	0	0	0
1	0	5	1	1	0	1	9	10.1	4	0	20	8	1	1	0	34	33.6	0	0	0	0	0	0	0	0	0
1	0	3	2	0	0	0	6	5.2	4	1	26	3	2	0	0	36	34	0	0	0	0	0	0	0	0	0
2	0	12	2	0	0	0	16	14.4	2	0	15	8	3	0	0	28	29.1	0	0	0	0	0	0	0	0	0
1	0	7	3	0	0	0	11	10.2	2	1	28	4	1	0	0	36	34.7	0	0	0	0	0	0	0	0	0
5	0	27	8	1	0	1	42	39.9	12	2	89	23	7	1	0	134	131.4	0	0	0	0	0	0	0	0	0
3	0	5	1	0	0	0	9	6.6	1	0	30	10	2	0	0	43	44	0	0	0	0	0	0	0	0	0
2	0	11	3	0	0	0	16	14.4	1	0	20	10	0	1	0	32	33.1	0	0	0	0	0	0	0	0	0
2	0	8	2	0	0	0	12	10.4	8	1	39	6	1	0	0	55	48.9	0	0	0	0	0	0	0	0	0
4	0	6	0	0	0	0	10	6.8	4	3	35	3	4	0	0	49	47.6	0	0	0	0	0	0	0	0	0
11	0	30	6	0	0	0	47	38.2	14	4	124	29	7	1	0	179	173.6	0	0	0	0	0	0	0	0	0



IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project			
Site:	Site 1			
Location:	R131/R834			Arm A - R834
Date:	Wed 14-May-2025			Arm B - R131
AM Peak:	08:00 — 09:00	**Total:**	1513	Arm C - R131
PM Peak:	17:00 — 18:00	**Total:**	1617	
15 Min Peak:	17:00 — 17:15	**Total:**	493	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

C => A									C => B									C => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
3	0	7	0	0	0	0	10	7.6	4	0	34	3	2	0	0	43	41.6	0	0	0	0	0	0	0	0	0
2	1	9	0	0	0	0	12	9.8	4	2	31	2	2	0	0	41	38.4	0	0	0	0	0	0	0	0	0
3	0	6	1	0	0	0	10	7.6	3	0	27	12	2	0	0	44	43.4	0	0	0	0	0	0	0	0	0
1	0	18	1	0	0	0	20	19.2	3	1	31	9	4	0	0	48	48.6	0	0	0	0	0	0	0	0	0
9	1	40	2	0	0	0	52	44.2	14	3	123	26	10	0	0	176	172	0	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	11	11	6	1	23	6	2	0	0	38	34.4	0	0	0	0	0	0	0	0	0
5	1	11	1	0	0	0	18	13.4	3	0	32	6	1	1	0	43	43.4	0	0	0	0	0	0	0	0	0
1	0	10	0	0	0	0	11	10.2	0	0	17	2	0	0	0	19	19	0	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	11	11	4	0	29	4	1	0	0	38	35.7	0	0	0	0	0	0	0	0	0
6	1	43	1	0	0	0	51	45.6	13	1	101	18	4	1	0	138	132.5	0	0	0	0	0	0	0	0	0
0	0	11	1	0	0	0	12	12	8	1	27	5	1	0	0	42	35.9	0	0	0	0	0	0	0	0	0
0	2	13	1	0	0	0	16	14.8	0	1	29	4	0	1	0	35	36.3	0	0	0	0	0	0	0	0	0
1	1	11	0	0	0	0	13	11.6	3	1	26	6	1	0	0	37	34.9	0	0	0	0	0	0	0	0	0
1	0	17	2	0	0	0	20	19.2	3	0	30	2	2	0	0	37	36.4	0	0	0	0	0	0	0	0	0
2	3	52	4	0	0	0	61	57.6	14	3	112	17	4	1	0	151	143.5	0	0	0	0	0	0	0	0	0
5	0	12	5	1	0	0	23	19.9	4	1	26	3	0	1	0	35	33.1	0	0	0	0	0	0	0	0	0
3	1	13	2	0	0	0	19	16	3	0	26	5	3	0	0	37	37.3	0	0	0	0	0	0	0	0	0
4	0	19	1	0	0	0	24	20.8	2	0	30	3	0	0	0	35	33.4	0	0	0	0	0	0	0	0	0
3	0	19	1	0	0	0	23	20.6	1	1	22	0	1	0	0	25	24.5	0	0	0	0	0	0	0	0	0
15	1	63	9	1	0	0	89	77.3	10	2	104	11	4	1	0	132	128.3	0	0	0	0	0	0	0	0	0
9	2	23	0	0	0	0	34	25.6	1	0	18	3	1	0	0	23	23.1	0	0	0	0	0	0	0	0	0
4	1	19	2	0	0	0	26	22.2	5	1	20	2	0	0	0	28	23.4	0	0	0	0	0	0	0	0	0
4	1	9	0	0	0	0	14	10.2	6	2	23	1	0	0	0	32	26	0	0	0	0	0	0	0	0	0
2	0	22	1	0	0	0	25	23.4	6	1	28	4	0	0	0	39	33.6	0	0	0	0	0	0	0	0	0
19	4	73	3	0	0	0	99	81.4	18	4	89	10	1	0	0	122	106.1	0	0	0	0	0	0	0	0	0
8	0	15	0	0	0	0	23	16.6	7	0	24	0	0	0	0	31	25.4	0	0	0	0	0	0	0	0	0
5	0	14	0	0	0	0	19	15	4	1	34	2	0	0	0	41	37.2	0	0	0	0	0	0	0	0	0
0	0	21	1	0	0	0	22	22	6	1	25	1	0	0	0	33	27.6	0	0	0	0	0	0	0	0	0
5	0	13	0	0	0	0	18	14	3	0	37	2	0	0	0	42	39.6	0	0	0	0	0	0	0	0	0
18	0	63	1	0	0	0	82	67.6	20	2	120	5	0	0	0	147	129.8	0	0	0	0	0	0	0	0	0
150	12	600	46	3	0	1	812	688.5	182	36	1212	232	59	6	1	1728	1626	0	0	0	0	0	0	0	0	0

IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
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Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
PM Peak: 17:00 — 18:00 **Total:** 1162
15 Min Peak: 17:00 — 17:15 **Total:** 330

Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

	A => A									A => B								
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
16:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
17:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
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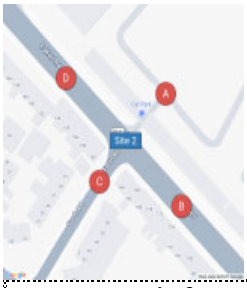

IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
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Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

A => C									A => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
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0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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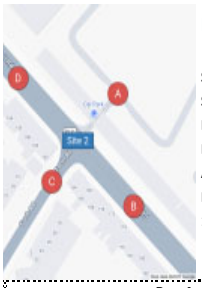

IDASO

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Arm A - Access to Car Park
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Arm C - Forth Rd
Arm D - R131/ E Wall Rd

B => A									B => B								
P/C	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
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0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
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0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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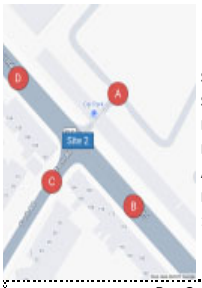

IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 2
Location: E Wall Rd/ Forth Rd/ Access to Car Park
Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
PM Peak: 17:00 — 18:00 **Total:** 1162
15 Min Peak: 17:00 — 17:15 **Total:** 330

Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

B => C									B => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	2	1	51	15	4	3	1	77	85.1
0	0	0	0	0	0	0	0	0	4	2	48	14	1	6	1	76	84.9
0	0	0	1	0	0	0	1	1	12	2	64	19	6	3	2	108	110.3
0	0	0	1	0	0	0	1	1	9	2	93	16	6	2	1	129	130.8
0	0	0	2	0	0	0	2	2	27	7	256	64	17	14	5	390	411.1
0	0	0	0	0	0	0	0	0	5	2	99	20	5	2	2	135	140.1
0	0	2	0	0	0	0	2	2	6	1	83	23	4	1	1	119	120.1
0	0	0	0	0	0	0	0	0	8	1	82	16	6	0	2	115	115.4
0	0	1	1	0	0	0	2	2	6	1	85	20	13	1	1	127	136.2
0	0	3	1	0	0	0	4	4	25	5	349	79	28	4	6	496	511.8
0	0	1	0	0	0	0	1	1	4	0	96	18	7	1	3	129	137
0	0	0	0	0	0	0	0	0	7	1	84	17	5	1	1	116	117.2
0	0	1	0	0	0	0	1	1	4	4	80	19	6	3	4	120	129.5
0	0	1	0	0	0	0	1	1	10	1	79	26	8	1	6	131	137.5
0	0	3	0	0	0	0	3	3	25	6	339	80	26	6	14	496	521.2
0	0	1	0	0	0	0	1	1	8	3	99	18	1	2	4	135	135.5
0	0	0	3	0	0	0	3	3	5	8	94	10	4	2	3	126	127.6
0	0	0	0	0	0	0	0	0	7	1	86	17	7	5	2	125	136.6
0	0	2	0	0	0	0	2	2	8	0	80	17	5	3	1	114	118.8
0	0	3	3	0	0	0	6	6	28	12	359	62	17	12	10	500	518.5
0	0	0	0	0	0	0	0	0	2	1	58	16	5	0	2	84	88.3
0	0	0	0	0	0	0	0	0	7	1	85	17	4	2	1	117	119.2
0	0	0	0	0	0	0	0	0	1	0	98	21	10	1	1	132	143.1
0	0	0	0	0	0	0	0	0	6	4	78	23	6	1	1	119	120.1
0	0	0	0	0	0	0	0	0	16	6	319	77	25	4	5	452	470.7
0	0	0	0	0	0	0	0	0	3	0	79	26	5	1	2	116	122
0	0	0	0	0	0	0	0	0	11	2	90	27	5	2	1	138	137.3
0	0	0	0	0	0	0	0	0	7	1	91	27	10	2	1	139	146.6
0	0	0	0	0	0	0	0	0	8	3	80	28	4	0	2	125	122.4
0	0	0	0	0	0	0	0	0	29	6	340	108	24	5	6	518	528.3
0	0	0	0	0	0	0	0	0	9	0	99	15	5	2	2	132	135.1
0	0	1	0	0	0	0	1	1	5	0	91	20	2	1	2	121	122.7
0	0	1	0	0	0	0	1	1	3	2	112	24	2	3	3	149	155.9
0	0	0	0	0	0	0	0	0	17	2	108	27	7	1	2	164	159.4
0	0	2	0	0	0	0	2	2	34	4	410	86	16	7	9	566	573.1
0	0	1	0	0	0	0	1	1	7	0	108	17	2	3	2	139	142.9
0	0	0	0	0	0	0	0	0	4	1	85	15	6	2	3	116	124.4
0	0	0	0	0	0	0	0	0	4	0	85	25	6	0	1	121	124.2
0	0	0	0	0	0	0	0	0	8	0	89	22	7	0	1	127	127.9
0	0	1	0	0	0	0	1	1	23	1	367	79	21	5	7	503	519.4
0	0	0	0	0	0	0	0	0	7	4	102	15	2	2	3	135	135.6
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0	0	1	0	0	0	0	1	1	11	5	74	12	10	3	2	117	121.9
0	0	1	0	0	0	0	1	1	13	1	84	20	0	0	1	119	109
0	0	3	0	0	0	0	3	3	41	12	338	63	14	5	7	480	469.1
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0	0	0	0	0	0	0	0	0	18	4	97	16	2	0	1	138	124
0	0	0	0	1	0	0	1	1.9	26	7	97	13	2	0	3	148	127.8
0	0	0	0	0	0	0	0	0	28	5	113	16	2	0	1	165	142.4
0	0	0	0	1	0	0	1	1.9	95	18	402	63	7	0	6	591	516.5
0	0	0	1	0	0	0	1	1	40	4	127	15	2	0	1	189	157.4
0	0	0	0	0	0	0	0	0	27	1	112	27	0	0	3	170	150.8
0	0	0	0	0	0	0	0	0	35	6	109	15	1	1	2	169	142.2
0	0	0	0	0	0	0	0	0	46	4	115	8	2	1	1	177	142.5
0	0	0	1	0	0	0	1	1	148	15	463	65	5	2	7	705	592.9
0	0	1	0	0	0	0	1	1	41	3	114	6	3	0	1	168	137.1
0	0	0	0	0	0	0	0	0	27	5	139	11	0	0	2	184	161.4
0	0	0	0	0	0	0	0	0	26	3	141	8	2	0	2	182	163.2
0	0	0	0	0	0	0	0	0	32	1	135	14	2	0	2	186	163.6
0	0	1	0	0	0	0	1	1	126	12	529	39	7	0	7	720	625.3
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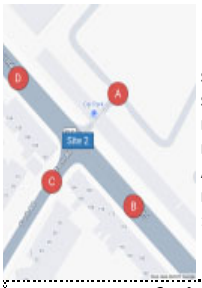

IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 2
Location: E Wall Rd/ Forth Rd/ Access to Car Park
Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
PM Peak: 17:00 — 18:00 **Total:** 1162
15 Min Peak: 17:00 — 17:15 **Total:** 330

Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

C => A									C => B								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2
0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	2.2
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
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0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
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0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	0	8	5	0	0	0	13	13
0	0	0	0	0	0	0	0	0	0	0	17	8	0	0	0	25	25
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
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0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
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0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	8	8
0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	9	9
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0	0	0	0	0	0	0	0	0	0	0	7	4	0	0	0	11	11
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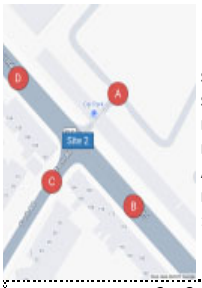

IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 2
Location: E Wall Rd/ Forth Rd/ Access to Car Park
Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
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Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

C => C									C => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	1	1	6	0	1	0	0	9	8.5
0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	7	7
0	0	0	0	0	0	0	0	0	1	0	2	2	0	0	0	5	4.2
0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6
0	0	0	0	0	0	0	0	0	2	1	18	5	1	0	0	27	25.7
0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	7	6.2
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0	0	0	0	0	0	0	0	0	0	1	5	1	0	0	0	7	6.4
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0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	6	5.4
0	0	0	0	0	0	0	0	0	2	3	22	5	0	0	0	32	28.6
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0	0	0	0	0	0	0	0	0	3	1	2	1	0	0	0	7	4
0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	11	11
0	0	0	0	0	0	0	0	0	1	0	6	6	0	0	0	13	12.2
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0	0	0	0	0	0	0	0	0	1	1	6	2	1	0	0	11	10.5
0	0	0	0	0	0	0	0	0	2	0	6	2	0	0	0	10	8.4
0	0	0	0	0	0	0	0	0	2	0	6	0	0	0	0	8	6.4
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0	0	0	0	0	0	0	0	0	6	2	22	7	1	0	0	38	32.9
0	0	0	0	0	0	0	0	0	1	1	5	1	0	0	0	8	6.6
0	0	0	0	0	0	0	0	0	2	1	5	1	0	0	0	9	6.8
0	0	0	0	0	0	0	0	0	1	1	11	1	0	0	0	14	12.6
0	0	0	0	0	0	0	0	0	3	0	4	1	0	0	0	8	5.6
0	0	0	0	0	0	0	0	0	7	3	25	4	0	0	0	39	31.6
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0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	7	7.9
0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	1	31	3	1	0	0	36	36.3
0	0	0	0	0	0	0	0	0	0	0	14	2	0	0	0	16	16
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0	0	0	0	0	0	0	0	0	2	1	11	1	0	0	0	15	12.8
0	0	0	0	0	0	0	0	0	4	0	11	1	0	0	0	16	12.8
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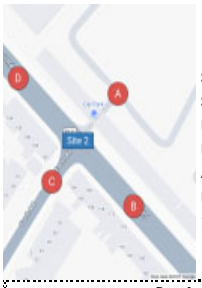
0	0	0	0	0	0	0	0	0	1	1	18	3	1	0	0	24	23.5
0	0	0	0	0	0	0	0	0	4	0	9	1	0	0	0	14	10.8
0	0	0	0	0	0	0	0	0	2	0	9	2	0	0	0	13	11.4
0	0	0	0	0	0	0	0	0	1	2	14	2	0	0	0	19	17
0	0	0	0	0	0	0	0	0	8	3	50	8	1	0	0	70	62.7
0	0	0	0	0	0	0	0	0	6	0	11	0	0	0	0	17	12.2
0	0	0	0	0	0	0	0	0	2	1	10	0	0	0	0	13	10.8
0	0	0	0	0	0	0	0	0	6	1	9	1	0	0	0	17	11.6
0	0	0	0	0	0	0	0	0	3	0	13	2	0	0	0	18	15.6
0	0	0	0	0	0	0	0	0	17	2	43	3	0	0	0	65	50.2
0	0	0	0	0	0	0	0	0	2	0	15	2	0	0	0	19	17.4
0	0	0	0	0	0	0	0	0	2	1	7	0	0	0	0	10	7.8
0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	7	7
0	0	0	0	0	0	0	0	0	2	0	9	1	0	0	0	12	10.4
0	0	0	0	0	0	0	0	0	6	1	36	5	0	0	0	48	42.6
0	0	0	0	0	0	0	0	0	68	19	367	59	4	0	0	517	454.8

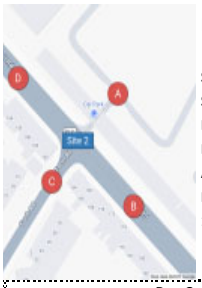


IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 2
Location: E Wall Rd/ Forth Rd/ Access to Car Park
Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
PM Peak: 17:00 — 18:00 **Total:** 1162
15 Min Peak: 17:00 — 17:15 **Total:** 330

Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

D => A									D => B								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	16	4	138	26	1	2	1	188	178.5
0	0	0	0	0	0	0	0	0	29	4	114	26	2	2	1	178	159
0	0	1	0	0	0	0	1	1	26	4	88	20	1	0	1	140	118.7
0	0	2	0	0	0	0	2	2	31	2	82	14	2	0	0	131	106.8
0	0	3	0	0	0	0	3	3	102	14	422	86	6	4	3	637	563
0	0	2	0	0	0	0	2	2	26	3	86	23	4	1	2	145	129.9
0	0	1	0	0	0	0	1	1	31	6	70	14	5	2	1	129	109.9
0	0	0	0	0	0	0	0	0	40	4	97	16	1	2	2	162	134.3
0	0	0	0	0	0	0	0	0	36	7	84	8	6	0	0	141	113.4
0	0	3	0	0	0	0	3	3	133	20	337	61	16	5	5	577	487.5
0	0	1	0	0	0	0	1	1	30	3	86	15	4	3	3	144	130.5
0	0	1	0	0	0	0	1	1	19	7	99	16	5	2	1	149	138.9
0	0	1	0	0	0	0	1	1	6	2	99	20	2	0	5	134	134.8
0	0	0	0	0	0	0	0	0	4	1	88	21	6	0	0	120	121.6
0	0	3	0	0	0	0	3	3	59	13	372	72	17	5	9	547	525.8
0	0	2	0	0	0	0	2	2	5	2	100	24	5	3	3	142	150
0	0	0	0	0	0	0	0	0	7	0	70	18	3	3	1	102	105.8
0	0	0	0	0	0	0	0	0	2	1	74	13	4	0	2	96	99.4
0	0	0	0	0	0	0	0	0	5	2	75	22	4	2	4	114	120.2
0	0	2	0	0	0	0	2	2	19	5	319	77	16	8	10	454	475.4
0	0	0	0	0	0	0	0	0	4	0	72	20	5	1	1	103	107.2
0	0	0	0	0	0	0	0	0	9	2	71	19	3	3	2	109	111
0	0	0	0	0	0	0	0	0	8	1	62	17	6	2	1	97	100.2
0	0	0	0	0	0	0	0	0	3	0	72	22	4	5	1	107	118.7
0	0	0	0	0	0	0	0	0	24	3	277	78	18	11	5	416	437.1
0	0	0	0	0	0	0	0	0	9	2	85	12	7	1	2	118	119.8
0	0	0	0	0	0	0	0	0	5	0	66	22	3	1	1	98	99.6
0	0	0	0	0	0	0	0	0	7	1	82	12	6	2	2	112	117
0	0	0	0	0	0	0	0	0	7	6	63	6	9	2	2	95	99.7
0	0	0	0	0	0	0	0	0	28	9	296	52	25	6	7	423	436.1
0	0	0	0	0	0	0	0	0	8	0	60	11	5	1	1	86	87
0	0	0	0	0	0	0	0	0	6	1	82	15	4	1	1	110	111.1
0	0	0	0	0	0	0	0	0	4	2	71	22	8	4	1	112	123.4
0	0	0	0	0	0	0	0	0	10	2	83	16	4	2	3	120	121.2
0	0	0	0	0	0	0	0	0	28	5	296	64	21	8	6	428	442.7
0	0	1	0	0	0	0	1	1	6	1	67	19	8	2	1	104	110.6
0	0	0	0	0	0	0	0	0	7	2	77	11	6	3	1	107	112.3
0	0	0	0	0	0	0	0	0	2	4	58	16	5	6	2	93	106.9
0	0	0	0	0	0	0	0	0	5	1	69	14	3	5	1	98	106.6
0	0	1	0	0	0	0	1	1	20	8	271	60	22	16	5	402	436.4
0	0	0	0	0	0	0	0	0	5	2	66	16	3	2	2	96	99.3
0	0	0	0	0	0	0	0	0	2	1	84	14	1	2	5	109	116.5
0	0	0	0	0	0	0	0	0	4	3	98	25	3	0	3	136	136.7
0	0	0	0	0	0	0	0	0	3	0	82	15	8	0	3	111	118.8
0	0	0	0	0	0	0	0	0	14	6	330	70	15	4	13	452	471.3
0	0	0	0	0	0	0	0	0	9	0	78	10	7	3	1	108	113.8
0	0	0	0	0	0	0	0	0	3	1	57	15	3	2	0	81	84.5
0	0	0	0	0	0	0	0	0	9	1	74	13	3	1	2	103	101.8
0	0	0	0	0	0	0	0	0	3	0	49	11	4	0	1	68	70.2
0	0	0	0	0	0	0	0	0	24	2	258	49	17	6	4	360	370.3
0	0	0	0	0	0	0	0	0	9	2	85	12	4	1	2	115	114.1
0	0	0	0	0	0	0	0	0	16	2	60	3	2	0	1	84	72.8
0	0	0	0	0	0	0	0	0	11	1	66	2	1	1	1	83	77.4
0	0	0	0	0	0	0	0	0	6	3	62	7	4	0	1	83	81
0	0	0	0	0	0	0	0	0	42	8	273	24	11	2	5	365	345.3
0	0	0	0	0	0	0	0	0	15	0	83	6	1	0	2	107	97.9
0	0	0	0	0	0	0	0	0	7	3	61	2	1	0	1	75	69.5
0	0	0	0	0	0	0	0	0	7	1	72	5	0	1	3	89	87.7
0	0	0	0	0	0	0	0	0	9	1	72	3	1	0	3	89	85.1
0	0	0	0	0	0	0	0	0	38	5	288	16	3	1	9	360	340.2
0	0	12	0	0	0	0	12	12	531	98	3739	709	187	76	81	5421	5331



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 2
Location: E Wall Rd/ Forth Rd/ Access to Car Park
Date: Wed 14-May-2025
AM Peak: 08:00 — 09:00 **Total:** 1147
PM Peak: 17:00 — 18:00 **Total:** 1162
15 Min Peak: 17:00 — 17:15 **Total:** 330

Arm A - Access to Car Park
Arm B - R131/ E Wall Rd
Arm C - Forth Rd
Arm D - R131/ E Wall Rd

D => C									D => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	1	0	0	1	1.9	0	0	0	0	0	0	0	0	0
0	0	3	3	0	0	0	6	6	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	4	3	1	0	0	8	8.9	0	0	0	0	0	0	0	0	0
2	0	4	1	0	0	0	7	5.4	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	4	2.4	0	0	0	0	0	0	0	0	0
1	1	1	0	0	0	0	3	1.6	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
5	1	9	1	0	0	0	16	11.4	0	0	0	0	0	0	0	0	0
3	0	1	0	0	0	0	4	1.6	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	4	2.4	0	0	0	0	0	0	0	0	0
5	0	6	1	0	0	0	12	8	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
1	0	4	0	0	0	0	5	4.2	0	0	0	0	0	0	0	0	0
1	1	2	0	0	0	0	4	2.6	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0
2	0	1	0	0	0	0	3	1.4	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
4	1	5	0	0	0	0	10	6.2	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
1	0	1	1	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
1	0	7	1	0	0	0	9	8.2	0	0	0	0	0	0	0	0	0
1	0	1	1	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0
1	0	2	0	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
2	0	6	2	0	0	0	10	8.4	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	4	2.4	0	0	0	0	0	0	0	0	0
1	0	4	1	0	0	0	6	5.2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
3	0	8	1	0	0	0	12	9.6	0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
2	0	2	1	0	0	0	5	3.4	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
2	0	9	1	0	0	0	12	10.4	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	1	1
1	1	0	0	0	0	0	2	0.6	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0
1	1	6	1	0	0	0	9	7.6	0	0	0	1	0	0	0	1	1
0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1
2	1	0	0	0	0	0	3	0.8	0	0	1	0	0	0	0	1	1
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
2	1	5	0	0	0	0	8	5.8	0	0	2	0	0	0	0	2	2
1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
1	0	3	0	0	0	0	4	3.2	0	0	0	0	0	0	0	0	0
27	4	72	11	1	0	0	115	91.9	0	0	2	1	0	0	0	3	3

IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project		
Site:	Site 3		
Location:	Eastern end of E Wall Rd		Arm A - M50
Date:	Wed 14-May-2025		Arm B - R131
AM Peak:	07:45 — 08:45	**Total:** 2637	Arm C - R131/ E Wall Rd
PM Peak:	15:00 — 16:00	**Total:** 2599	
15 Min Peak:	10:15 — 10:30	**Total:** 699	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

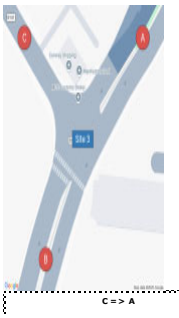
	A => A									A => B									A => C								
TIME	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	0	0	1	0	114	76	22	36	9	258	354.4	0	0	17	14	4	9	0	44	64.7
07:15	0	0	0	0	0	0	0	0	0	1	0	146	66	17	47	12	289	404.8	0	0	18	6	3	7	1	35	52
07:30	0	0	0	0	0	0	0	0	0	0	0	164	75	21	28	16	304	392.1	0	0	27	12	4	4	1	48	60.2
07:45	0	0	0	0	0	1	0	1	2.9	0	0	202	69	19	31	13	334	423	1	0	34	11	4	3	0	53	61.5
H/TOT	0	0	0	0	0	1	0	1	2.9	2	0	626	286	79	142	50	1185	1574	1	0	96	43	15	23	2	180	238.4
08:00	0	0	0	0	0	0	0	0	0	0	1	157	46	26	36	28	294	413.2	0	0	44	13	3	1	1	62	67.6
08:15	0	0	0	0	0	0	0	0	0	1	1	183	60	25	30	23	323	424.1	0	0	30	13	0	1	0	44	45.9
08:30	0	0	0	0	0	0	0	0	0	2	0	185	37	14	38	16	292	391.2	0	0	32	15	8	0	1	56	64.2
08:45	0	0	0	0	0	0	0	0	0	1	0	175	47	20	31	12	286	374.4	0	0	39	10	9	3	0	61	74.8
H/TOT	0	0	0	0	0	0	0	0	0	4	2	700	190	85	135	79	1195	1603	0	0	145	51	20	5	2	223	252.5
09:00	0	0	0	0	0	0	0	0	0	2	0	172	35	21	47	10	287	403.6	0	0	32	15	7	0	2	56	64.3
09:15	0	0	0	0	0	0	0	0	0	1	0	202	40	15	28	8	294	367.9	0	0	35	11	4	6	0	56	71
09:30	0	0	0	0	0	0	0	0	0	0	0	195	34	21	50	8	308	429.7	0	0	25	8	5	3	1	42	53.2
09:45	0	0	0	0	0	0	0	0	0	3	0	148	29	17	38	15	250	350.1	0	0	24	9	5	1	0	39	45.4
H/TOT	0	0	0	0	0	0	0	0	0	6	0	717	138	74	163	41	1139	1552	0	0	116	43	21	10	3	193	233.9
10:00	0	0	0	0	0	0	0	0	0	0	0	201	27	9	37	7	281	366.4	0	0	36	6	2	2	1	47	53.6
10:15	0	0	0	0	0	0	0	0	0	1	1	195	29	12	35	11	284	370.9	0	0	26	8	7	5	0	46	61.8
10:30	0	0	1	0	0	0	0	1	1	1	0	157	29	9	29	5	230	297.4	0	0	21	3	0	4	1	29	37.6
10:45	0	0	0	0	0	0	0	0	0	1	0	133	26	14	47	10	231	342.1	0	0	24	3	4	3	0	34	43.3
H/TOT	0	0	1	0	0	0	0	1	1	3	1	686	111	44	148	33	1026	1377	0	0	107	20	13	14	2	156	196.3
11:00	0	0	0	0	0	0	0	0	0	1	1	115	25	12	53	7	214	331.1	0	0	22	6	4	1	1	34	40.5
11:15	0	0	0	0	0	0	0	0	0	0	1	110	14	11	49	4	189	295.4	0	0	24	8	2	6	0	40	53.2
11:30	0	0	0	0	0	0	0	0	0	1	0	128	15	16	52	8	220	340.4	0	4	22	5	4	3	0	38	44.9
11:45	0	0	0	0	0	0	0	0	0	0	0	103	20	8	41	6	178	269.1	0	0	17	9	8	1	1	36	46.1
H/TOT	0	0	0	0	0	0	0	0	0	2	2	456	74	47	195	25	801	1236	0	4	85	28	18	11	2	148	184.7
12:00	0	0	0	0	0	0	0	0	0	3	2	91	22	9	40	11	178	269.3	0	0	26	10	6	3	1	46	58.1
12:15	0	0	0	0	0	0	0	0	0	3	0	93	12	8	48	8	172	276	0	0	16	6	7	3	0	32	44
12:30	0	0	0	0	0	0	0	0	0	0	0	121	21	8	54	7	211	327.8	0	1	16	5	3	2	0	27	32.9
12:45	0	0	0	0	0	0	0	0	0	3	2	115	12	6	25	9	172	230.3	0	1	12	6	3	2	0	24	29.9
H/TOT	0	0	0	0	0	0	0	0	0	9	4	420	67	31	167	35	733	1103	0	2	70	27	19	10	1	129	164.8
13:00	0	0	0	0	0	0	0	0	0	1	1	106	14	7	56	7	192	310.3	1	0	23	4	2	2	1	33	38.8
13:15	0	0	0	0	0	0	0	0	0	0	1	106	12	6	41	9	175	266.7	0	1	24	6	2	1	0	34	37.1
13:30	0	0	1	0	0	0	0	1	1	3	2	104	15	7	42	11	184	277.5	0	0	35	6	3	5	2	51	65.2
13:45	0	0	0	1	0	0	0	1	1	0	0	91	15	4	43	5	158	248.3	0	0	25	6	6	3	1	41	53.1
H/TOT	0	0	1	1	0	0	0	2	2	4	4	407	56	24	182	32	709	1103	1	1	107	22	13	11	4	159	194.2
14:00	0	0	0	0	0	0	0	0	0	0	0	101	11	6	46	9	173	274.9	0	0	32	5	0	5	2	44	55.5
14:15	0	0	0	0	0	0	0	0	0	0	1	107	6	4	42	12	172	266.8	1	0	23	4	7	1	0	36	43.4
14:30	0	0	1	0	0	0	0	1	1	1	2	91	13	5	37	9	158	239.8	1	0	23	9	7	1	0	41	48.4
14:45	0	0	0	0	0	0	0	0	0	0	0	65	7	4	30	5	111	176.6	0	0	22	1	4	0	0	27	30.6
H/TOT	0	0	1	0	0	0	0	1	1	1	3	364	37	19	155	35	614	958	2	0	100	19	18	7	2	148	177.9
15:00	0	0	0	0	0	0	0	0	0	1	1	114	11	6	44	9	186	282.8	0	0	28	5	3	2	2	40	48.5
15:15	0	0	0	0	0	0	0	0	0	0	0	73	4	5	35	16	133	220	0	0	18	7	3	1	0	29	33.6
15:30	0	1	0	0	0	0	0	1	0.4	4	0	90	10	3	29	21	157	232.6	0	2	19	2	5	3	1	32	42
15:45	0	0	0	0	0	0	0	0	0	1	0	81	7	1	30	24	144	225.1	1	0	22	5	1	0	0	29	29.1
H/TOT	0	1	0	0	0	0	0	1	0.4	6	1	358	32	15	138	70	620	960.3	1	2	87	19	12	6	3	130	153.2
16:00	0	0	0	0	0	0	0	0	0	3	0	60	13	0	21	24	121	182.5	0	0	23	1	0	0	0	24	24
16:15	0	0	0	0	0	0	0	0	0	4	2	82	8	1	25	21	143	208	0	0	18	0	2	0	1	21	23.8
16:30	0	0	0	0	0	0	0	0	0	5	1	99	9	3	37	16	170	254.4	1	1	19	4	1	0	0	26	25.5
16:45	0	0	0	0	0	0	0	0	0	8	0	100	14	0	26	16	164	223	0	1	38	4	2	0	0	45	46.2
H/TOT	0	0	0	0	0	0	0	0	0	20	3	341	44	4	109	77	598	867.9	1	2	98	9	5	0	1	116	119.5
17:00	0	0	0	0	0	0	0	0	0	4	0	92	5	2	27	13	143	205.9	3	0	37	3	2	0	1	46	46.4
17:15	0	0	0	0	0	0	0	0	0	4	0	110	7	2	22	9	154	203.4	0	0	25	1	0	0	1	27	28
17:30	0	0	0	0	0	0	0	0	0	1	3	118	5	3	26	13	169	231.3	1	0	15	4	0	0	0	20	19.2
17:45	0	0	0	0	0	0	0	0	0	5	2	112	9	2	9	12	151	176.7	0	0	22	2	2	0	0	26	27.8
H/TOT	0	0	0	0	0	0	0	0	0	14	5	432	26	9	84	47	617	817.3	4	0	99	10	4	0	2	119	121.4
18:00	0	0	0	0	0	0	0	0	0	1	2	132	2	5	8	13	163	193.7	1	0	25	3	1	0	1	31	32.1
18:15	0	0	0	0	0	0	0	0	0	3	0	94	3	0	10	8	118	142.6	1	2	21	3	0	0	0	27	25
18:30	0	0	0	0	0	0	0	0	0	1	1	99	5	3	10	7	126	153.3	0	0	28	2	2	0	0	32	33.8
18:45	0	0	0	0	0	0	0	0	0	2	0	113	2	1	9	6	133	155.4	1	0	25	1	1	0	1	29	30.1
H/TOT	0	0	0	0	0	0	0	0	0	7	3	438	12	9	37	34	540	645	3	2	99	9	4	0	2	119	121
12 TOT	0	1	3	1	0	1	0	6	7.3	78	28	5945	1073	440	1655	558	9777	13796	13	13	1209	300	162	97	26	1820	2158

IDASO

Survey Name:	25398 - Dublin Central Grid Reinforcement Project		
Site:	Site 3		
Location:	Eastern end of E Wall Rd		Arm A - M50
Date:	Wed 14-May-2025		Arm B - R131
AM Peak:	07:45 — 08:45	**Total:** 2637	Arm C - R131/ E Wall Rd
PM Peak:	15:00 — 16:00	**Total:** 2599	
15 Min Peak:	10:15 — 10:30	**Total:** 699	

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

B => A									B => B									B => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	74	6	1	9	5	95	118	0	0	0	0	0	0	0	0	0	2	0	24	7	1	2	1	37	41.1
0	0	86	7	3	7	7	110	133	0	0	0	0	0	0	0	0	0	2	2	30	6	0	1	0	41	40.1
1	0	70	3	4	14	9	101	139.4	0	0	0	0	0	0	0	0	0	8	3	42	6	1	0	0	60	52.7
5	0	103	5	6	19	13	151	201.5	0	0	0	0	0	0	0	0	0	4	3	45	3	2	0	2	59	57.8
6	0	333	21	14	49	34	457	591.9	0	0	0	0	0	0	0	0	0	16	8	141	22	4	3	3	197	191.7
0	0	91	3	2	23	16	135	196.5	0	0	0	0	0	0	0	0	0	5	0	42	11	0	1	0	59	56.9
4	1	109	5	6	18	11	154	200.8	0	0	0	0	0	0	0	0	0	1	1	37	5	1	0	1	46	46.5
6	2	87	8	3	23	8	137	185.4	0	0	0	0	0	0	0	0	0	6	1	46	5	1	0	2	61	58.5
7	0	94	9	3	19	18	150	201.2	0	0	0	0	0	0	0	0	0	2	0	27	4	3	0	0	36	37.1
17	3	381	25	14	83	53	576	783.9	0	0	0	0	0	0	0	0	0	14	2	152	25	5	1	3	202	199
6	0	94	6	3	21	24	154	215.8	0	0	0	0	0	0	0	0	0	2	0	35	5	1	0	3	46	48.1
6	2	117	8	2	15	19	169	212.3	0	0	0	0	0	0	0	0	0	4	1	53	7	4	0	2	71	72.8
2	1	83	4	1	19	16	126	176.6	0	0	0	0	0	0	0	0	0	6	1	37	7	2	2	0	55	55.2
1	0	103	13	14	19	21	171	239.9	0	0	0	0	0	0	0	0	0	2	1	39	4	1	0	5	52	55.7
15	3	397	31	20	74	80	620	844.9	0	0	0	0	0	0	0	0	0	14	3	164	23	8	2	10	224	237
1	0	83	10	11	14	22	141	198.7	0	0	0	0	0	0	0	0	0	4	2	52	8	0	1	3	70	70.5
0	1	131	20	9	18	14	193	248.7	0	0	0	0	0	0	0	0	0	4	6	52	5	3	1	4	75	76.8
3	1	101	22	6	20	13	166	219.4	0	0	0	0	0	0	0	0	0	2	0	38	6	4	0	1	51	54
0	0	110	10	12	26	11	169	240.2	0	0	0	0	0	0	0	0	0	1	0	27	7	2	1	0	38	40.9
4	2	425	62	38	78	60	669	907	0	0	0	0	0	0	0	0	0	11	8	169	26	9	3	8	234	242.2
0	1	109	21	5	23	13	172	232.6	0	0	0	0	0	0	0	0	0	1	0	24	9	4	0	1	39	42.8
0	2	117	14	9	22	13	177	238.7	0	0	0	0	0	0	0	0	0	3	1	53	10	3	0	1	71	71.7
1	0	106	18	16	35	6	182	268.1	0	0	0	0	0	0	0	0	0	1	0	56	9	5	1	1	73	79.6
1	0	118	28	14	23	5	189	249.5	0	0	0	0	0	0	0	0	0	2	0	42	17	2	0	1	64	65.2
2	3	450	81	44	103	37	720	988.9	0	0	0	0	0	0	0	0	0	7	1	175	45	14	1	4	247	259.3
0	6	125	19	14	25	14	203	273.5	0	0	0	0	0	0	0	0	0	1	2	36	10	0	0	1	50	49
0	0	114	18	5	26	5	168	226.9	0	0	0	0	0	0	0	0	0	3	2	48	11	1	0	1	66	64.3
0	1	130	28	7	26	12	204	271.1	0	0	0	0	0	0	0	0	0	4	0	59	14	3	0	1	81	81.5
3	1	117	11	10	26	10	178	243.4	0	0	0	0	0	0	0	0	0	3	1	45	19	2	0	2	72	72.8
3	8	486	76	36	103	41	753	1013	0	0	0	0	0	0	0	0	0	11	5	188	54	6	0	5	269	267.6
0	0	123	23	7	32	8	193	268.1	0	0	0	0	0	0	0	0	0	1	0	51	10	2	0	2	66	69
0	0	136	28	6	24	7	201	259	0	0	0	0	0	0	0	0	0	2	0	65	12	1	0	0	80	79.3
0	3	152	21	16	26	6	224	292	0	0	0	0	0	0	0	0	0	0	2	51	12	1	0	0	66	65.7
0	0	135	26	10	20	10	201	258	0	0	0	0	0	0	0	0	0	7	1	53	10	1	0	2	74	70.7
0	3	546	98	39	102	31	819	1077	0	0	0	0	0	0	0	0	0	10	3	220	44	5	0	4	286	284.7
1	0	151	40	6	30	11	239	311.6	0	0	0	0	0	0	0	0	0	5	1	53	11	1	1	2	74	74.2
0	0	127	34	10	23	5	199	256.7	0	0	0	0	0	0	0	0	0	4	1	38	7	0	0	0	50	46.2
1	1	147	39	10	20	9	227	281.6	0	0	0	0	0	0	0	0	0	1	0	39	11	0	0	2	53	54.2
0	0	156	47	6	28	12	249	319.6	0	0	0	0	0	0	0	0	0	3	0	59	8	3	0	0	73	73.3
2	1	581	160	32	101	37	914	1170	0	0	0	0	0	0	0	0	0	13	2	189	37	4	1	4	250	247.9
1	0	177	66	20	17	7	288	344.5	0	0	0	0	0	0	0	0	0	4	2	56	8	0	0	1	71	67.6
0	0	204	67	8	8	7	294	323.4	0	0	0	0	0	0	0	0	0	5	0	35	5	0	0	1	46	43
0	0	161	76	4	21	8	270	321.5	0	0	0	0	0	0	0	0	0	4	4	33	8	2	0	0	51	47.2
0	0	193	64	10	12	10	289	330.8	0	0	0	0	0	0	0	0	0	9	1	39	10	0	0	1	60	53.2
1	0	735	273	42	58	32	1141	1329	0	0	0	0	0	0	0	0	0	22	7	163	31	2	0	3	228	211
0	0	156	53	7	19	7	242	291.4	0	0	0	0	0	0	0	0	0	15	3	35	7	1	0	0	61	48.1
0	0	186	60	11	15	12	284	334.4	0	0	0	0	0	0	0	0	0	9	4	42	9	0	0	1	65	56.4
1	0	140	28	4	23	14	210	270.5	0	0	0	0	0	0	0	0	0	14	2	33	7	1	0	1	58	47.5
1	0	157	39	5	18	14	234	285.9	0	0	0	0	0	0	0	0	0	8	3	47	10	0	0	1	69	61.8
2	0	639	180	27	75	47	970	1182	0	0	0	0	0	0	0	0	0	46	12	157	33	2	0	3	253	213.8
1	1	162	25	7	14	19	229	279.5	0	0	0	0	0	0	0	0	0	19	3	47	10	1	0	1	81	65.7
1	1	175	40	6	12	12	247	285.8	0	0	0	0	0	0	0	0	0	12	0	51	15	0	0	1	79	70.4
0	1	167	40	3	12	16	239	279.9	0	0	0	0	0	0	0	0	0	16	5	61	11	1	2	1	97	86.9
1	0	167	23	2	8	15	216	247.2	0	0	0	0	0	0	0	0	0	24	3	59	4	1	1	1	93	75.8
3	3	671	128	18	46	62	931	1097	0	0	0	0	0	0	0	0	0	71	11	218	40	3	3	4	350	299
1	0	165	37	5	12	21	241	288.5	0	0	0	0	0	0	0	0	0	15	3	59	3	2	0	0	82	70
1	0	155	30	5	4	25	220	256.3	0	0	0	0	0	0	0	0	0	11	2	89	8	0	0	4	114	108
1	0	142	24	1	4	11	183	201.7	0	0	0	0	0	0	0	0	0	13	1	111	5	1	0	1	132	122.9
0	1	110	14	3	3	18	149	174.8	0	0	0	0	0	0	0	0	0	19	1	82	5	0	0	1	108	93.2
3	1	572	105	14	23	75	793	921.3	0	0	0	0	0	0	0	0	0	58	7	341	21	3	0	6	436	394.1
58	27	6216	1240	338	895	589	9363	11894	0	0	0	0	0	0	0	0	0	293	69	2277	401	65	14	57	3176	3042



IDASO

Survey Name: 25398 - Dublin Central Grid Reinforcement Project
Site: Site 3
Location: Eastern end of E Wall Rd — Arm A - M50
Date: Wed 14-May-2025 — Arm B - R131
AM Peak: 07:45 — 08:45 **Total:** 2637 — Arm C - R131/ E Wall Rd
PM Peak: 15:00 — 16:00 **Total:** 2599
15 Min Peak: 10:15 — 10:30 **Total:** 699

Note: Few illegal movements were observed, its been verified through video footage and have kept those records.

C => A									C => B									C => C								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
2	1	15	5	1	5	0	29	37.2	12	4	81	14	2	0	0	113	102.8	0	0	0	0	0	0	0	0	0
0	0	15	3	1	3	0	22	28.6	15	3	41	5	0	0	0	64	50.2	0	0	0	0	0	0	0	0	0
3	0	11	1	0	5	0	20	27.1	14	2	41	15	1	0	1	74	63.5	0	0	0	0	0	0	0	0	0
1	0	12	2	0	1	0	16	17.1	23	2	44	6	0	0	0	75	55.4	0	0	0	0	0	0	0	0	0
6	1	53	11	2	14	0	87	110	64	11	207	40	3	0	1	326	271.9	0	0	0	0	0	0	0	0	0
0	0	10	2	2	1	0	15	18.7	16	1	45	6	2	1	0	71	61.3	0	0	0	0	0	0	0	0	0
0	0	9	2	2	2	0	15	20.6	14	3	47	9	2	2	2	79	73.6	0	0	0	0	0	0	0	0	0
0	0	18	5	0	1	0	24	25.9	17	5	48	9	1	1	0	81	67.2	0	0	0	0	0	0	0	0	0
0	0	5	2	3	0	0	10	12.7	15	5	32	7	1	0	0	60	45.9	0	0	0	0	0	0	0	0	0
0	0	42	11	7	4	0	64	77.9	62	14	172	31	6	4	2	291	248	0	0	0	0	0	0	0	0	0
0	0	16	2	4	3	0	25	34.3	6	4	43	6	3	0	0	62	57.5	0	0	0	0	0	0	0	0	0
1	0	12	2	2	4	0	21	29.6	3	6	43	4	1	1	4	62	62.8	1	0	0	0	0	0	0	1	0.2
0	0	12	5	2	3	2	24	33.5	9	2	53	6	2	0	0	72	65.4	0	0	0	0	0	0	0	0	0
1	0	10	2	1	2	0	16	19.9	1	1	65	15	4	0	0	86	88.2	0	0	0	0	0	0	0	0	0
2	0	50	11	9	12	2	86	117.3	19	13	204	31	10	1	4	282	273.9	1	0	0	0	0	0	0	1	0.2
0	0	15	3	6	3	0	27	38.1	3	1	61	11	1	0	1	78	76.9	0	0	0	0	0	0	0	0	0
0	0	18	6	3	5	0	32	44.2	2	0	52	10	3	1	1	69	73	0	0	0	0	0	0	0	0	0
0	0	13	5	2	1	0	21	24.7	1	1	45	10	1	0	0	58	57.5	0	0	0	0	0	0	0	0	0
0	0	19	7	4	2	1	33	41.4	3	1	38	10	0	2	1	55	56.8	0	0	0	0	0	0	0	0	0
0	0	65	21	15	11	1	113	148.4	9	3	196	41	5	3	3	260	264.2	0	0	0	0	0	0	0	0	0
0	0	18	10	4	2	0	34	41.4	1	0	61	10	3	0	0	75	76.9	0	0	0	0	0	0	0	0	0
0	0	15	7	1	3	0	26	32.6	2	1	47	10	5	1	2	68	74.2	0	0	0	0	0	0	0	0	0
0	0	15	5	3	2	0	25	31.5	1	0	38	7	4	2	0	52	58.6	0	0	0	0	0	0	0	0	0
0	0	22	8	3	5	0	38	50.2	1	1	36	11	3	2	0	54	59.1	0	0	0	0	0	0	0	0	0
0	0	70	30	11	12	0	123	155.7	5	2	182	38	15	5	2	249	268.8	0	0	0	0	0	0	0	0	0
0	0	25	6	7	4	0	42	55.9	4	3	45	8	1	0	1	62	58.9	0	0	0	0	0	0	0	0	0
0	1	18	6	3	3	0	31	38.8	5	0	57	9	3	0	1	75	74.7	0	0	0	0	0	0	0	0	0
0	0	26	6	6	3	0	41	52.1	5	0	61	7	2	0	0	75	72.8	0	0	0	0	0	0	0	0	0
0	1	20	5	9	4	0	39	54.1	1	4	39	2	4	1	0	51	53.3	0	0	0	0	0	0	0	0	0
0	2	89	23	25	14	0	153	200.3	15	7	202	26	10	1	2	263	259.7	0	0	0	0	0	0	0	0	0
0	0	23	5	4	1	0	33	38.5	4	0	39	2	2	0	0	47	45.6	0	0	0	0	0	0	0	0	0
0	0	22	5	3	3	0	33	41.4	1	2	42	7	1	0	1	54	53.9	0	0	0	0	0	0	0	0	0
0	0	21	6	6	3	0	36	47.1	0	3	56	12	3	1	0	75	77.8	0	0	0	0	0	0	0	0	0
2	1	29	8	4	3	0	47	54.1	4	2	39	4	1	0	0	50	46.5	0	0	0	0	0	0	0	0	0
2	1	95	24	17	10	0	149	181.1	9	7	176	25	7	1	1	226	223.8	0	0	0	0	0	0	0	0	0
0	0	27	8	5	1	0	41	47.4	3	0	38	8	4	0	0	53	54.2	0	0	0	0	0	0	0	0	0
0	1	22	10	5	5	0	43	56.4	3	2	53	4	2	3	1	68	72.9	0	0	0	0	0	0	0	0	0
0	0	24	12	3	4	0	43	53.3	0	4	45	4	3	0	1	57	58.3	0	0	0	0	0	0	0	0	0
0	0	23	10	4	9	0	46	66.7	0	1	49	7	1	0	1	59	60.3	0	0	0	0	0	0	0	0	0
0	1	96	40	17	19	0	173	223.8	6	7	185	23	10	3	3	237	245.7	0	0	0	0	0	0	0	0	0
1	1	26	12	2	3	0	45	51.1	2	1	39	4	1	1	0	48	48.6	0	0	0	0	0	0	0	0	0
0	0	33	14	2	2	0	51	56.6	2	1	53	6	0	0	4	66	67.8	0	0	0	0	0	0	0	0	0
0	0	41	19	6	2	0	68	77.2	3	3	41	7	0	0	2	56	53.8	0	0	0	0	0	0	0	0	0
0	0	67	19	9	0	0	95	103.1	2	0	39	6	1	1	1	50	52.2	0	0	0	0	0	0	0	0	0
1	1	167	64	19	7	0	259	288	9	5	172	23	2	2	7	220	222.4	0	0	0	0	0	0	0	0	0
0	0	39	14	5	3	0	61	71.2	2	0	33	3	0	0	0	38	36.4	0	0	0	0	0	0	0	0	0
0	0	33	14	2	1	0	50	53.7	1	2	40	5	2	1	1	52	54.7	0	0	0	0	0	0	0	0	0
0	0	28	9	3	2	0	42	48.5	5	1	22	7	0	0	0	35	30.4	0	0	0	0	0	0	0	0	0
0	0	15	9	4	0	0	28	31.6	1	0	42	2	1	0	1	47	48.1	0	0	0	0	0	0	0	0	0
0	0	115	46	14	6	0	181	205	9	3	137	17	3	1	2	172	169.6	0	0	0	0	0	0	0	0	0
0	0	16	8	3	0	0	27	29.7	3	0	41	4	0	1	1	50	50.5	0	0	0	0	0	0	0	0	0
0	1	20	4	1	0	0	26	26.3	5	3	46	2	0	0	1	57	52.2	0	0	0	0	0	0	0	0	0
0	0	11	1	0	1	0	13	14.9	3	1	33	3	2	0	0	42	40.8	0	0	0	0	0	0	0	0	0
0	0	29	8	4	0	0	41	44.6	5	3	50	2	1	0	0	61	56.1	0	0	0	0	0	0	0	0	0
0	1	76	21	8	1	0	107	115.2	16	7	170	11	3	1	2	210	199.6	0	0	0	0	0	0	0	0	0
0	0	15	8	0	0	0	23	23	7	0	56	2	1	0	0	66	61.3	0	0	0	0	0	0	0	0	0
0	1	22	1	1	0	0	25	25.3	7	1	47	1	0	0	1	57	51.8	0	0	0	0	0	0	0	0	0
0	0	13	0	0	1	1	15	17.9	1	1	43	2	0	0	0	47	45.6	0	0	0	0	0	0	0	0	0
0	0	14	3	1	0	1	19	20.9	6	0	43	1	0	0	0	50	45.2	0	0	0	0	0	0	0	0	0
0	1	64	12	2	1	2	82	87.1	21	2	189	6	1	0	1	220	203.9	0	0	0	0	0	0	0	0	0
11	8	982	314	146	111	5	1577	1911	244	81	2192	312	75	22	30	2956	2852	1	0	0	0	0	0	0	1	0.2

Appendix B Construction Dust Assessment Methodology

Defining Dust Emission Magnitude (Step 2A IAQM Guidance)

Demolition

Dust emission magnitude from demolition can be classified as small, medium, or large and are described as follows:

- Large: Total building volume >75,000m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level;
- Medium: Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material, demolition activities 6-12m above ground level; and
- Small: Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6m above ground, demolition during wetter months.

Earthworks

Earthworks will primarily involve excavating material, haulage, tipping, and stockpiling. This may also involve levelling the site and landscaping. Dust emission magnitude from earthworks can be classified as small, medium, or large and are described as follows:

- Large: Total site area >110,000m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height;
- Medium: Total site area 18,000m^2 – 110,000m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m - 6m in height; and
- Small: Total site area <18,000m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height.

Construction

Dust emission magnitudes from construction can be classified as small, medium, or large and are described as follows:

- Large: Total building volume >75,000m^3, on site concrete batching, sandblasting;
- Medium: Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- Small: Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber).

Track-out

Factors which determine the dust emission magnitude are vehicle size, vehicle speed, vehicle numbers, geology, and duration. Track-out refers to the dirt, mud, or other debris tracked or carried onto the public road network on the wheels of vehicles exiting construction sites. Dust emission magnitude from Track-out can be classified as small, medium or large and are described as follows:

- Large: >50 Heavy Duty Vehicle (HDV) (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m;
- Medium: 20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m; and
- Small: <20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length.

Defining Sensitivity of the Area (Step 2B IAQM Guidance)

Receptor Sensitivity

Receptor sensitivity can be described as follows with respect to nuisance dust as per the IAQM Guidance:

- High sensitivity receptor with respect to dust nuisance – surrounding land where:
  - Users can reasonably expect enjoyment of a high level of amenity;
  - The appearance, aesthetics or value of their property would be diminished by soiling;
  - The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land; or
  - Examples include dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms.
- Medium sensitivity receptor with respect to dust nuisance – surrounding land where:
  - Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home;
  - The appearance, aesthetics or value of their property could be diminished by soiling;
  - The people or property would not reasonably be expected to be present continuously or regularly for extended periods as part of the normal pattern of use of the land; or
  - Indicative examples include parks and places of work.
- Low sensitivity receptor with respect to dust nuisance – surrounding land where:
  - The enjoyment of amenity would not reasonably be expected;
  - Property would not reasonably be expected to be diminished in appearance, aesthetics, or value by soiling;
  - There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land; or
  - Indicative examples include playing fields, farmland (unless commercially sensitive horticultural), footpaths, short term car parks and roads.

Receptor sensitivity can be described as follows with respect to human health as per the IAQM Guidance:

- High sensitivity receptor with respect to human health – surrounding land where:
  - Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day); or
  - Indicative examples include residential properties. Hospitals, schools, and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.
- Medium sensitivity receptor with respect to human health – surrounding land where:
  - Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives,

relevant location would be one where individuals may be exposed for eight hours or more in a day); or

- Indicative examples include office and shop workers but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.

- Low sensitivity receptor with respect to human health – surrounding land where:
- Locations where human exposure is transient; or
- Indicative examples include public footpaths, playing fields, parks, and shopping streets.

Receptor sensitivity can be described as follows with respect to ecology as per the IAQM Guidance:

- High sensitivity receptor with respect to ecology – surrounding land where:
- Locations with an international or national designation and the designated features may be affected by dust soiling; or
- Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.

- Medium sensitivity receptor with respect to ecology – surrounding land where:
- Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or
- Locations with a national designation where the features may be affected by dust deposition.
- Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.

- Low sensitivity receptor with respect to ecology – surrounding land where:
- Locations with a local designation where the features may be affected by dust deposition; or
- Indicative example is a local Nature Reserve with dust sensitive features.

Determining the Sensitivity of the area for dust soiling, human health and ecological impacts

Table 1, Table 2 and Table 3 show how the sensitivity of the area may be determined for dust soiling, human health and ecosystem impacts respectively.

Table 1: Determining Sensitivity of the Area - Dust Soiling Effects on People and Property (from IAQM Guidance)

Receptor Sensitivity	Number of Receptors	Distance from Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low

Low	>1		Low	Low	Low	Low

Table 2: Determining Sensitivity of the Area to PM_{10} Human Health Impacts (from IAQM Guidance)

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from Source (m)			
			<20	<50	<100	<250
High	> 32µg/m^3	>100	High	High	High	Medium
		10 - 100	High	High	Medium	Low
		1 – 10	High	Medium	Low	Low
	28µg/m^3 - 32µg/m^3	>100	High	High	Medium	Low
		10 - 100	High	Medium	Low	Low
		1 – 10	High	Medium	Low	Low
	24µg/m^3 – 28µg/m^3	>100	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low
		1 – 10	Medium	Low	Low	Low
	< 24µg/m^3	>100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low
Medium	> 32µg/m^3	>10	High	Medium	Low	Low
		1 – 10	Medium	Low	Low	Low
	28µg/m^3 - 32µg/m^3	>10	Medium	Low	Low	Low
		1 - 10	Low	Low	Low	Low
	24µg/m^3 - 28µg/m^3	>10	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
	< 24µg/m^3	>10	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Low	-	1+	Low	Low	Low	Low

Table 3: Sensitivity of the Area to Ecological Impacts (from IAQM Guidance)

Receptor Sensitivity	Distance from Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Define the Risk of Impacts (Step 2C)

The dust emission magnitude determined at Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The matrices in Table 4, Table 5, Table 6 and Table 7 provide a method of assigning the level of risk for each activity. This should be used to determining the level of mitigation that must be applied.

Table 4: Risk of Dust Impacts - Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 5: Risk of Dust Impacts - Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 6: Risk of Dust Impacts – Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 7: Risk of Dust Impacts – Track Out

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Appendix C Noise Equipment Calibration Certificates

CALIBRATION CERTIFICATE

Issued By AcSoft Limited Calibration Laboratory

Date Of Issue: 17-12-2024 **Certificate No:** 1510189-1

Calibrated By: W. Jay

Approved By: W. Jay

CUSTOMER RPS Consulting UK & Ireland

INSTRUMENT DETAILS

Manufacturer:	SVANTEK
Model:	SV307A
Serial No.:	119015
Firmware Version:	1.22.5
Description:	Sound Level Meter
Performance Class:	1

Type Approved to IEC 61672-1:2013: No

(If Yes, there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013)

SENSOR DETAILS

Manufacturer:	SVANTEK
Model:	ST30A
Serial No.:	123497
Description:	Microphone

P/O NUMBER 30445
DATE RECEIVED 12-12-2024
DATE CALIBRATED 17-12-2024

CALIBRATION RESULTS The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

REPORTED RESULTS The results contained in this Certificate refer only to the measurements made at the time of test for the instrument detailed above. These results do not reflect the instrument's ability to maintain calibration.

This calibration was performed by AcSoft Ltd, 11 Abbey Court, Fraser Road,
Priory Business Park, Bedford, MK44 3WH
T: 01234 639550 W: www.acsoft.co.uk E: sales@acsoft.co.uk

(AP 17/05/2024 Issue No. 5)

HBK HOTTINGER BRÜEL & KJÆR

The Calibration Laboratory
Teknikerbyen 28, DK-2830 Virum, Denmark

ilac-MRA DANAK CAL Reg.No. 307 Member of EA MLA

CERTIFICATE OF CALIBRATION

No: CDK2302913

CALIBRATION OF

Sound Level Meter:	Brüel & Kjær Type 2250	No: 2690265	Id: -
Microphone:	Brüel & Kjær Type 4189	No: 2748694	
PreAmplifier:	Brüel & Kjær Type ZC-0032	No: 15279	
Calibrator:	Brüel & Kjær Type 4231	No: 2389038	
Software version:	BZ7224 Version 4.7.5	Pattern Approval:	PTBDE-16-M-PTB-0038 Rev 2 / DE-16-M-PTB-0039 Rev 2
Instruction manual:	BE1712-22		

CUSTOMER

RPS Group Ltd.
Knockstown
Summerhill
A83CD30 Co. Meath
Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C

Environment conditions: *See actual values in **Environmental conditions** sections.*

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC 61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used to perform the periodic tests. The accreditation assures the traceability to the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 8.6 - DB: 8.60) by using procedure B&K proc 2250, 4189 (IEC 61672:2013).

RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device(s) under calibration. The results are only applicable for the specific device(s) listed above.

Date of calibration: 2023-04-20

Date of issue: 2023-04-20

Sylvia Wu
Sylvia Wu Andersen
Calibration Technician

Susanne Jørgensen
Susanne Jørgensen
Approved Signatory

NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to

RPS Consulting Engineers Ltd.
West Pier Business Campus
Dun Laoghaire
Co. Dublin

Certificate Number	**242452**
Item Calibrated	Bruel & Kjaer Type 4231 Sound Level Calibrator
Serial Number	2389038
ID Number	None
Order Number	30188
Date Received	24 May 2024
NML Procedure Number	TFAP-NM-11
Method	The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity (half-inch configuration). The calibrator's operating frequency was also measured.
Calibration Standards	Norsonic 1504A Calibration System incorporating: Agilent 34401A Multimeter, No. 0736 [Cal due: 01 Sep 2024] B & K 4180 Measuring Microphone, No. 1069 [Cal due: 15 Sep 2025] B & K 4228 Pistonphone, No. 0741 [Cal due: 14 Sep 2025]

Calibrated by David Fleming

Approved by Rory Hanrahan

Date of Calibration 01 Jul 2024

Date of Issue 01 Jul 2024

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Glas Naíon | Baile Átha Cliath 11 | Eire
Glasnevin | Dublin 11 | Ireland T+ 353 1 808 2609 | F+353 1 808 2603 | NSAI.ie

Appendix D Photographs of Noise Monitoring Locations

Plate 18-1: Photographs of NML

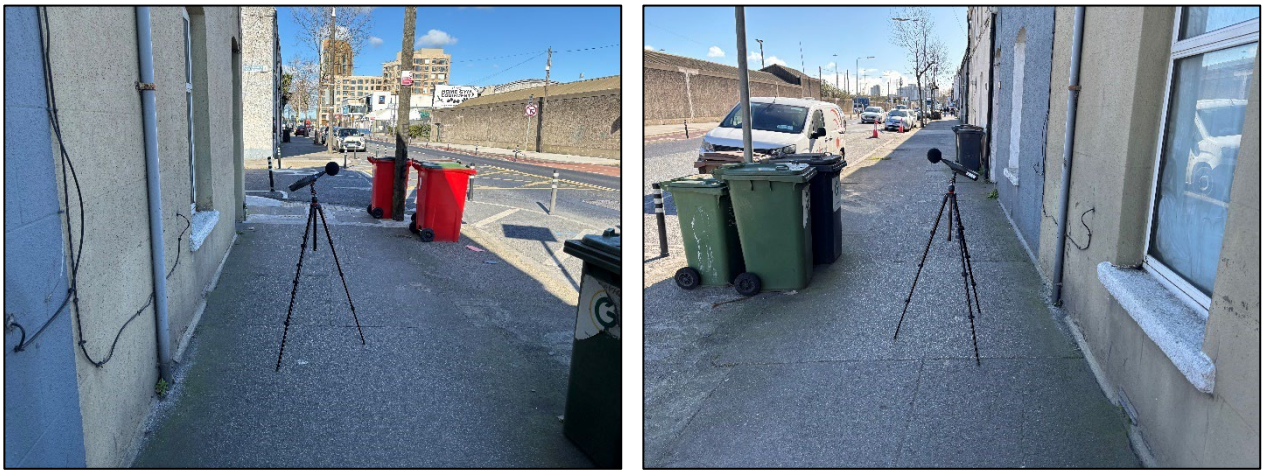
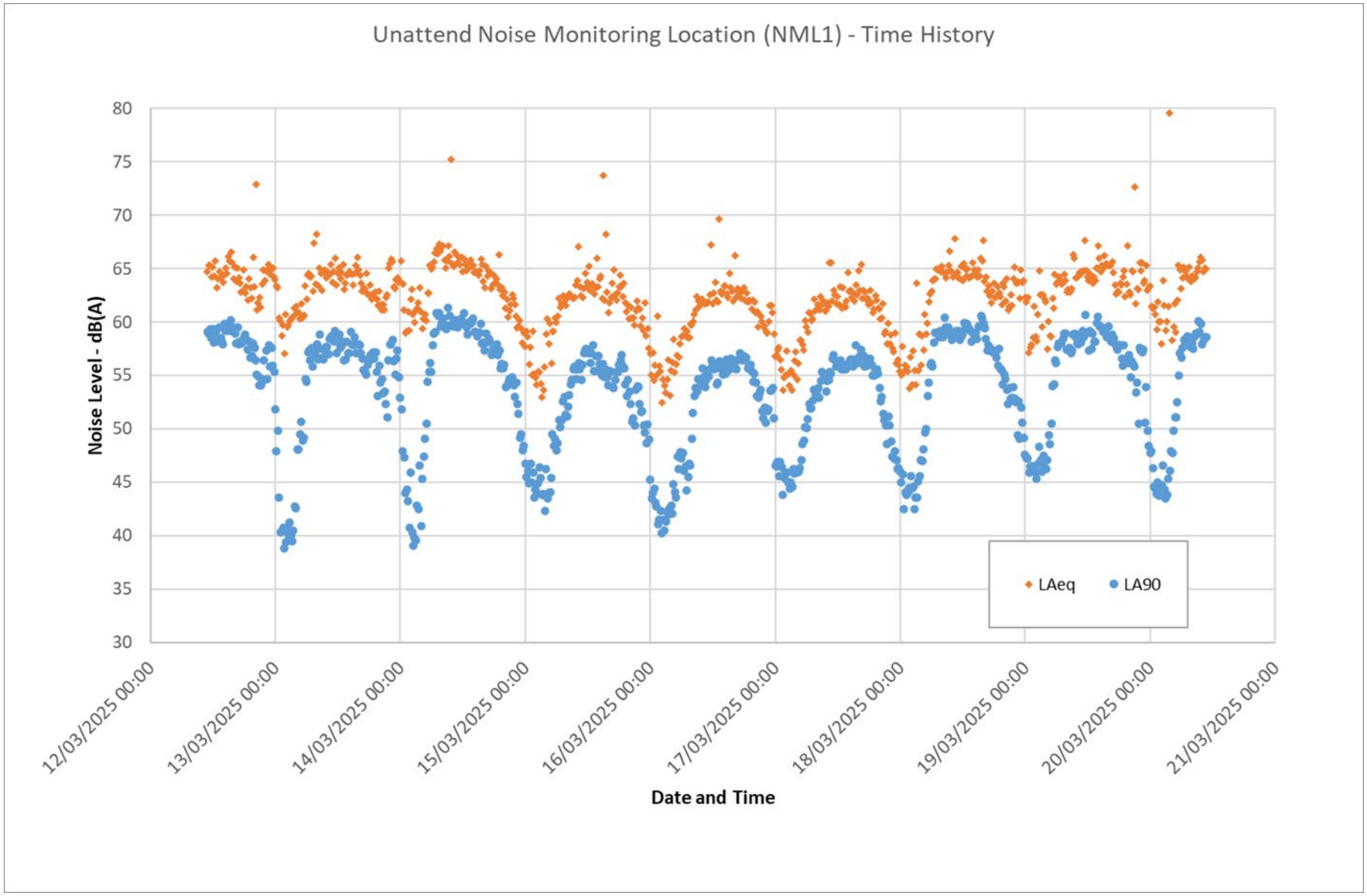


Plate 18-2: Photographs of S1

Plate 18-3: Photographs of S2

Appendix E Baseline Noise Time History


Unattend Noise Monitoring Location (NML1) - Time History
Noise Level - dB(A)
80
75
70
65
60
55
50
45
40
35
30
12/03/2025 00:00
13/03/2025 00:00
14/03/2025 00:00
15/03/2025 00:00
16/03/2025 00:00
17/03/2025 00:00
18/03/2025 00:00
19/03/2025 00:00
20/03/2025 00:00
21/03/2025 00:00
Date and Time
LAeq
LA90

Appendix F Noise Sensitive Location Details

Receptor ID	Description	Easting	Northing
R1	Residential	717718	735459
R2	Residential	717740	735439
R3	Residential	717753	735434
R4	Residential	717770	735418
R5	Residential	717783	735406
R6	Residential	717800	735390
R7	Residential	717812	735378
R8	Residential	717824	735367
R9	Residential	717846	735339
R10	School	717927	735265
R11	Commercial	717786	735493
R12	Commercial	717800	735508
R13	Commercial	717785	735520
R14	Commercial	717881	735571
R15	Commercial	717932	735430
R16	Residential	717850	735336

Appendix G Relevant Archaeology, Architecture and Cultural Heritage Standards and Guidelines

The following guidelines were considered and consulted for the purposes of the proposed development:

- Department of Arts, Heritage, Gaeltacht and Islands (formerly DAHGI, now DHLGH) (1999), Framework and Principles for the Protection of the Archaeological Heritage.
- DAHGI (1999), Policy and Guidelines on Archaeological Excavation.
- DAHGI (2011), Architectural Heritage Protection Guidelines for Planning Authorities.
- The Heritage Council (2013), Historic Landscape Characterisation in Ireland: Best Practice Guidance.
- National Roads Authority (NRA) (2006), Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes.
- NRA (2006), Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes.
- NRA (2010), Project Management Guidelines.
- English Heritage (2011), The Setting of Heritage Assets, English Heritage Guidance.
- Historic England (July 2015), Historic Environment Good Practice Advice in Planning, Note 3: The Setting of Heritage Assets.
- Historic Scotland (October 2016), Managing Change in the Historic Environment: Setting.
- The Heritage Council (2013), Historic Landscape Characterisation in Ireland: Best Practice Guidance.
- The Heritage Council (2010), Proposals for Irelands Landscapes Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2003) (EPA).
- Environmental Protection Agency (2002), Guidelines on the information to be contained in Environmental Impact Statements.
- EirGrid (2015). 'Cultural Heritage Guidelines for Electricity Transmission Projects: A Standard Approach to Archaeological, Architectural and Cultural Heritage Impact Assessment of High Voltage Transmission Projects'. Ireland: EirGrid.
- TII (2024), Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects.
- Dublin City Development Plan 2022-2028

Legislation and international charters include:

- Council of Europe Convention for the Protection of the Architectural Heritage of Europe (Granada) 1985, ratified by Ireland in 1991.
- Council of Europe European Convention on the Protection of the Archaeological Heritage (Valletta) 1992, ratified by Ireland in 1997.
- The 'Valletta and Granada' Council of Europe conventions place legal obligations on Member States in relation to the recording, conservation and management of archaeological and built heritage. In essence these conventions prescribe that heritage is conserved and maintained preferably in-situ and that archaeological and architectural heritage concerns are integrated into the planning and development process for example through the Environmental Impact Assessment process. In Ireland these conventions are given effect through the National Monuments Acts 1930-2012 and the Planning and Development Act 2000 and its amendments.

- The Valetta Convention requires the state ‘to ensure that environmental impact assessments and the resulting decisions involve full consideration of archaeological sites and their settings’.
- The Granada Convention requires that ‘In the surroundings of monuments, within groups of buildings and within sites, each Party undertakes to promote measures for the general enhancement of the environment’.
- International Council on Monuments and Sites (2011), Guidance on Heritage Impact Assessments for Cultural World Heritage Properties.
- The Burra Charter, the Australia ICOMOS Charter for Places of Cultural Significance 2013.
- UNESCO Convention concerning the Protection of World Cultural and Natural Heritage 1972, ratified by Ireland in 1991.
- UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage. Paris, 17 October 2003.
- The European Landscape Convention (ELC), ratified by Ireland 2002 European Landscapes Convention 2010. (The Department of the Environment, Heritage and Local Government ‘Landscape and Landscape Assessment Guidelines’ have been in draft form since 2000, however the National Landscape Strategy 2015-2025(NLS) was launched in 2015.).
- The European Landscape Convention promotes landscape as a primary aspect of heritage and defines landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and /or human factors’.
- ICOMOS Xi’an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas. Paris: International Council on Monuments and Sites, 2005.
- National Monuments Act, 1930, as amended in 1954, 1987, 1994, 2004 and 2012 (S.I. 249 of 2012).
- Historic and Archaeological Heritage and Miscellaneous Provisions Act, 2023.
- The Heritage Act, 1995.
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999.
- Planning and Development Act, 2000, as amended.
- Planning and Development Act, 2024.

Appendix H Summary of Archaeology, Architecture and Cultural Heritage Relevant Legislation

Historic and Archaeological Heritage and Miscellaneous Provisions Act (2023)

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 was enacted in October 2023 and this this Act is now law. The Minister for DHLGH commenced certain provisions in May 2024 (S.I. No. 252/2024) which relate to World Heritage Property in the State, inventories, the protection of certain records, the promotion of heritage, and the issuing of statutory guidance. Certain related and supporting provisions concerning implementation and enforcement are also commenced. Further provisions in December 2024 (S.I. No. 663/2024) relate to underwater cultural heritage. However, until the Act is fully commenced, the National Monuments Acts and the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act have not yet been repealed and therefore remain in force.

The Act also contains transitional provisions which will, if necessary, enable certain aspects of the existing National Monuments Acts 1930 to 2014 to continue in operation while successor provisions are being brought fully into operation. An example of this would be provisions enabling the Record of Monuments and Places to continue to have effect pending the establishment of a new Register of Monuments.

A person performing a function under this Act shall recognise and take due account of the following principles in performing that function:

a) that historic heritage is a non-renewable resource of great cultural and scientific importance which, in addition to its intrinsic value, provides evidence for the development of society and promotes public understanding and appreciation of all periods of the past;

b) that the first option to be considered should be the protection in situ of historic heritage and that there ought to be a presumption in favour of this option;

c) that any removal or alteration of historic heritage should be accompanied by all necessary and appropriate recording of such heritage;

d) that the Valletta Convention should be adhered to as well as any other international treaty, to which the State is a party, the provisions of which are aimed at promoting or securing the protection of the archaeological, architectural or other historic heritage;

e) that responsibility for the protection of historic heritage is, as a resource of benefit to all, shared by all and, accordingly, that those permitted to remove or interfere with such heritage should, in the normal course, bear the costs of any recording or protective work necessitated by, or associated with, such removal or interference.

For the avoidance of doubt, it is hereby declared that the destruction, whether in whole or in part and by whatever means, of a monument to which general protection or special protection applies shall not prejudice the continuation of such protection to the remainder (if any) of the monument, including the site, surrounding area and immediate surroundings of the monument.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 will establish a Register of Monuments which will replace and supersede the existing Record of Monuments and Places and the Register of Historic Monuments. The Register shall include

a) prescribed monuments known to the Minister which are deemed appropriate to be entered in the Register;

b) relevant things of a relevant interest deemed appropriate to be entered in the Register.

A prescribed monument will be a relevant thing of archaeological interest or of other relevant interest. It may be prescribed by reference to any one or more than one of the following criteria:

(a) age, date or period (including by reference to any terminology relating to periods) that, in the opinion of the Minister, is or has been in use in archaeology or other relevant disciplines;

(b) morphology;

(c) condition;

(d) typology (including by reference to typologies which, in the opinion of the Minister, are or have been in use in archaeology or other relevant disciplines);

(e) the environment in which the relevant thing is situated (including whether or not the relevant thing is situated under water);

(f) the circumstances in which the relevant thing is found (including the manner of finding);

(g) whether the relevant thing is or is not marked or shown on any—

i. edition of any ordnance map, or

ii. map prescribed for the purposes of this paragraph.

“Relevant thing” means any of the following things, means any of the following things, whether situated on, in or under land and whether or not attached to the surface of the land or forming part of land and whether or not intentionally or originally in the sites where they respectively are::

a) any artificial structure, construction, deposit, feature or layer (including any building and any burial or interment);

b) any artificially altered structure, construction, deposit, feature or layer, whether or not natural in origin;

c) any wreck;

d) any ritual or ceremonial site;

e) any site where an historic event took place, including any other site directly associated with that event;

f) any battlefield;

g) any site with legendary or mythological associations;

h) any feature, deposit or layer, whether or not natural in origin and whether or not artificially altered, containing or providing information or evidence relating to the past environment;

The Register shall be in the form of an electronic database which is easily accessible to members of the public through public telecommunication networks. The registered monument may include a surrounding area which is considered reasonably necessary to secure the protection of the monument or thing.

Where a person finds, or believes that he or she has found a prescribed monument other than a registered monument, the person shall make a preliminary report Minister or a member of An Garda Síochána within 72 hours, or in the case of discovery in the course of licensable activity, that it be reported to the Minister in such a manner as specified in the licence.

Special protection may be applied to a registered monument taking into account whether the monument is, in terms of such heritage, of special or particular interest, character, integrity, community or amenity value, whether at a local, regional, national or international level. This includes

a) a national monument,

b) a wreck of 100 or more years old, or

c) a guardianship monument.

A person shall not carry out works at, on, in, under, to, or within the immediate surroundings of a monument to which special protection applies, or direct or authorise the carrying out of such works, other than under and in accordance with a licence. This shall be deemed to apply to a registered monument in the ownership or guardianship of the Minister or a local authority where special protection does not otherwise apply to the monument.

General protection applies to

a) a registered monument to which special protection does not apply, and

b) a prescribed monument (not being a registered monument).

A person shall not carry out works at, on, in, under, to, or within the immediate surroundings of a monument to which general protection applies, or direct or authorise the carrying out of such works, other than under and in accordance with a licence.

A person shall not, except under and in accordance with a licence, do any of the following at, on, in, over, under or in the vicinity of a wreck 100 or more years old, a registered monument or prescribed monument which is under water, or an archaeological object which is underwater:

a) dive or direct or authorise diving;

b) use or possess, or direct or authorise the use or possession of, diving, survey or salvage equipment;

c) dump or deposit, or direct or authorise the dumping or deposition of, any thing whether or not it interferes with or causes damage to the thing;

d) interfere, remove or tamper in any way (whether with or without causing damage) with the thing.

The Minister may prescribe a licence, consent, approval, permission or other authorisation where

a) a licence, consent, approval, permission or other authorisation is required to be granted, issued or given under an enactment (not being the Act of 2000) for works to be carried out which may require an EIA, and

b) the Minister is satisfied that such works are capable of being at, on, in, under, to, or within the immediate surroundings of a monument, and it is reasonable and proportionate to do so and compatible with the protection of monuments,

The Minister shall consider whether or not the relevant works in respect of which they should be made subject to conditions and may require all or any of the following:

a) the carrying out of an assessment of heritage interest or potential including an assessment by way of archaeological excavation, use of detection devices or any form of photographic or geophysical survey equipment or any other appropriate form of survey or inspection;

b) the recording of the monument as a whole or any part or aspect of it (including its immediate surroundings) or any objects on, in, under or within it or its immediate surroundings including recording by way of archaeological excavation, use of detection devices or any form of photographic or geophysical survey equipment or any other appropriate form of survey or inspection;

c) the carrying out of any form of monitoring (including archaeological monitoring), supervision or inspection;

d) the salvaging, collection or protection of any part of the monument (including its immediate surroundings) or any object on, in, under or within it or its immediate surroundings and, where appropriate, the preparation of such part or object for deposition in an appropriate museum or other site for such deposition;

e) the specification of the time period when the relevant works are to be carried out;

f) that the relevant works be done in a specified manner or be funded or carried out by a specified person or a person falling within a specified category of persons.

The Minister shall make a screening determination for EIA in respect of the proposed relevant works on the basis of the information provided by the applicant. The Minister shall ensure that, before the application is determined, proposed relevant works likely to have significant effects on the environment by virtue of their nature, size or location (or any combination thereof) are made subject to an EIA. The applicant shall in this case submit to the Minister an EIAR in respect of the proposed relevant works, having regard to guidelines issued by the Minister.

The Minister may appoint himself or herself, or with the consent of a local authority, appoint the local authority as the guardian of a registered monument to which special protection applies. A national monument under the Act of 1930 will be deemed both a registered monument and a guardianship monument.

Any archaeological object where such object has no known owner shall be vested in the State. An owner or owner exception of land, not being the State, or a finder of an archaeological object is deemed not to acquire any rights of ownership to an archaeological object found on, in or under the land.

Where a person finds, or believes that he or she has found an archaeological object, the person shall make a preliminary report of the finding of the thing to the Board of the National Museum of Ireland or a member of An Garda Síochána within 72 hours, in the case of licensable activity, to the Minister or the Board in such manner as is specified in the licence. A person, other than a relevant person, shall not interfere with or remove a relevant archaeological object, or cause it to be interfered with or removed, except under and in accordance with a licence, or where there is reasonable grounds to believe that it is necessary to remove the thing from the site where he or she found it for the purposes of the safekeeping of the thing.

“Architectural heritage” means—

a) structures and buildings together with their settings and attendant grounds, fixtures and fittings,

b) groups of structures and buildings referred to in paragraph (a), and

c) sites,

that are of archaeological, architectural, cultural, historic, scientific, social or technical interest;

A person shall not, other than under and in accordance with a licence—

a) undertake or carry out, or direct or authorise the undertaking or carrying out of, archaeological excavation,

b) … archaeological monitoring,

c) search for or collect… archaeological objects lying exposed on the surface of land, whether or not any such object is known to be on, in or under that land,

d) search for… wrecks one hundred or more years old or archaeological objects or prescribed monuments, or other relevant things of archaeological interest, situated on, in or under the sea bed or land covered by water…

e) be in possession of a detection device in, at, on, over or above, or within the immediate surroundings of, a registered monument or a wreck one hundred or more years old, or

f) use… a detection device for the purpose of identifying, locating (including searching for), investigating, surveying or recording any archaeological object or monument or relevant thing of archaeological interest…

Anything done by a person in the course of his or her employment shall, in any proceedings brought under this Act, be treated as done also by that person’s employer, whether or not it was done with the employer’s knowledge or approval. Anything done by a person as agent for another person, with the authority (whether express or implied and whether precedent or subsequent) of that other person shall, in any proceedings brought under this Act, be treated as done also by that other person.

National Monuments Legislation 1930-2004

All archaeological sites have the full protection of the national monuments legislation (Principal Act 1930; Amendments 1954, 1987, 1994 and 2004).

In the 1987 Amendment of Section 2 of the Principal Act (1930), the definition of a national monument is specified as:

- any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections,
- any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not

form part of the place where it is) appears to have been purposely put or arranged in position,

- any, or any part of any, prehistoric or ancient

(i) tomb, grave or burial deposit, or

(ii) ritual, industrial or habitation site,

and

- any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site...

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),

or

to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930), a person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána...or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief.

In the 1994 Amendment of Section 12 of the Principal Act (1930), all of the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law. This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.

The National Monuments Amendment Act 2004

The National Monuments Amendment Act enacted in 2004 provides clarification in relation to the division of responsibilities between the Minister of Environment, Heritage and Local Government, Finance and Arts, Sports and Tourism together with the Commissioners of Public Works. The Minister of Environment, Heritage and Local Government will issue directions relating to archaeological works and will be advised by the National Monuments Section and the National Museum of Ireland. The Act gives discretion to the Minister of Environment, Heritage and Local Government to grant consent or issue directions in relation to road

developments (Section 49 and 51) approved by An Bord Pleanála and/or in relation to the discovery of National Monuments

14A. (1) The consent of the Minister under section 14 of this Act and any further consent or licence under any other provision of the National Monuments Acts 1930 to 2004 shall not be required where the works involved are connected with an approved road development.

(2) Any works of an archaeological nature that are carried out in respect of an approved road development shall be carried out in accordance with the directions of the Minister, which directions shall be issued following consultation by the minister with the Director of the National Museum of Ireland.

Subsection 14A (4) Where a national monument has been discovered to which subsection (3) of this section relates, then:

the road authority carrying out the road development shall report the discovery to the Minister

subject to subsection (7) of this section, and pending any directions by the minister under paragraph (d) of this subsection, no works which would interfere with the monument shall be carried out, except works urgently required to secure its preservation carried out in accordance with such measures as may be specified by the Minister

The Minister will consult with the Director of the National Museum of Ireland for a period not longer than 14 days before issuing further directions in relation to the national monument.

The Minister will not be restricted to archaeological considerations alone but will also consider the wider public interest.

Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999

This Act provides for the establishment of a national inventory of architectural heritage and historic monuments.

Section 1 of the act defines “architectural heritage” as:

(a) all structures and buildings together with their settings and attendant grounds, fixtures and fittings,

(b) groups of such structures and buildings, and,

(c) sites which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Section 2 of the Act states that the Minister (for Arts, Heritage, Gaeltacht and the Islands) shall establish the NIAH, determining its form and content, defining the categories of architectural heritage, and specifying to which category each entry belongs. The information contained within the inventory will be made available to planning authorities, having regard to the security and privacy of both property and persons involved.

Section 3 of the Act states that the minister may appoint officers, who may in turn request access to premises listed in the inventory from the occupiers of these buildings. The officer is required to inform the occupier of the building why entry is necessary, and in the event of a refusal, can apply for a warrant to enter the premises.

Section 4 of the Act states that obstruction of an officer or a refusal to comply with requirements of entry will result in the owner or occupier being guilty of an offence.

Section 5 of the Act states that sanitary authorities who carry out works on a monument covered by this Act will as far as possible preserve the monument with the proviso that its condition is not a danger to any person or property, and that the sanitation authority will inform the Minister that the works have been carried out.

The provisions in the Act are in addition to and not a substitution for provisions of the National Monument Act (1930–94), and the protection of monuments in the National Monuments Act is extended to the monuments covered by the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act (1999).

The Local Government (Planning and Development) Act, 1999, which came into force on 1st January 2000, provides for the inclusion of protected structures into the planning authorities’ development plans and sets out statutory regulations regarding works affecting such structures, thereby giving greater statutory protection to buildings. All structures listed in the development plan are now referred to as Protected

Structures and enjoy equal statutory protection. Under the 1999 Act the entire structure is protected, including a structures interior, exterior, the land lying within the curtilage of the protected structure and other structures within that curtilage. This Act was subsequently repealed and replaced by the Planning and Development Act, 2000, where the conditions relating to the protection of architectural heritage are set out in Part IV of the Act.

Protected Structures, Curtilage & Attendant Grounds

A protected structure is defined in the Local Government (Planning and Development) Act 2000 as any structure or specified part of a structure, which is included in the planning authorities' Record of Protected Structures (RPS). Section 57 (1) of the 2000 Act states that "…the carrying out of works to a protected structure, or a proposed protected structure, shall be exempted development only if those works would not materially affect the character of

(a) the structure, or

(b) any element of the structure, which contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

By definition, a protected structure includes the land lying within the curtilage of the protected structure and other structures within that curtilage and their interiors. The notion of curtilage is not defined by legislation, but according to Architectural Heritage Protection Guidelines for Planning Authorities (2004) and for the purposes of this report it can be taken to be the parcel of land immediately associated with that structure and which is (or was) in use for the purpose of the structure.

The attendant grounds of a structure are lands outside the curtilage of the structure but which are associated with the structure and are intrinsic to its function, setting and/or appreciation. The attendant grounds of a country house could include the entire demesne, or pleasure grounds, and any structures or features within it such as follies, plantations, lakes etc.

Appendix I Summary of Relevant Dublin City Council Policies in Relation to Cultural Heritage (2022-2028)

Record of Protected Structures

It is the Policy of Dublin City Council to:

BHA1 Record of Protected Structures (a) To include those structures that are considered to be of special architectural, historical, archaeological, artistic, cultural, scientific, technical or social interest in the Record of Protected Structures, and to remove those structures where protection is no longer warranted. (b) To maintain and review the RPS whilst having regard to recommendations for additions to the RPS made by the Minister under Section 53 of the Planning and DUBLIN CITY DEVELOPMENT PLAN 2022-2028 Development Act, 2000 (as amended).

BHA2 Development of Protected Structures That development will conserve and enhance Protected Structures and their curtilage and will: (a) Ensure that any development proposals to Protected Structures, their curtilage and setting shall have regard to the 'Architectural Heritage Protection Guidelines for Planning Authorities' 2011 published by the Department of Culture, Heritage and the Gaeltacht. (b) Protect Structures included on the RPS from any works that would negatively impact their special character and appearance. (c) Ensure that works are carried out under supervision of a suitably qualified person with expertise in architectural conservation. (d) Ensure that any development, modification, alteration, or extension affecting a Protected Structure and/or its setting is sensitively sited and designed, and is appropriate in terms of the proposed scale, mass, height, density, layout and materials. (e) Ensure that the form and structural integrity of the Protected Structure is retained in any redevelopment and ensure that new development does not adversely impact the curtilage or the special character of the Protected Structure. (f) Respect the historic fabric and the special interest of the interior, including its plan form, hierarchy of spaces, structure and architectural detail, fixtures and fittings and materials. (g) Ensure that new and adapted uses are compatible with the architectural character and special interest(s) of the Protected Structure. (h) Protect and retain important elements of built heritage including historic gardens, stone walls, entrance gates and piers and any other associated curtilage features. (i) Ensure historic landscapes, gardens and trees (in good condition) associated with Protected Structures are protected from inappropriate development. (j) Have regard to ecological considerations for example, protection of species such as bats.

BHA3 Loss of Protected Structures That the City Council will resist the total or substantial loss of Protected Structures in all but exceptional circumstances. It is the Policy of Dublin City Council:

BHA4 Ministerial Recommendations To have regard to the National Inventory of Architectural Heritage (NIAH) rating of a structure and any associated Ministerial Recommendation in the assessment of planning applications.

BHA5 Demolition of Regional Rated Building on NIAH That there is a presumption against the demolition or substantial loss of any building or other structure assigned a 'Regional' rating or higher by the National Inventory of Architectural Heritage (NIAH), unless it is clearly justified in a written conservation assessment that the building has no special interest and is not suitable for addition to the City Council's Record of Protected Structures (RPS); having regard to the provisions of Section 51, Part IV of the Planning and Development Act, 2000 (as amended) and the Architectural Heritage Protection Guidelines for Planning Authorities (2011).

BHA6 Buildings on Historic Maps That there will be a presumption against the demolition or substantial loss of any building or other structure which appears on historic maps up to and including the Ordnance Survey of Dublin City, 1847. A conservation report shall be submitted with the application and there will be a presumption against the demolition or substantial loss of the building or structure, unless demonstrated in the submitted conservation report this it has little or no special interest or merit having regard to the provisions of the Architectural Heritage Protection Guidelines for Planning Authorities (2011).

It is an Objective of Dublin City Council:

BHAO1 Buildings-at-Risk Register To continue to maintain and proactively manage the Buildings-at-Risk Register of Protected Structures that are considered to be endangered or have the potential to become endangered through neglect, decay, damage and harm.

Architectural Conservation Areas

It is the Policy of Dublin City Council:

BHA7 Architectural Conservation Areas (a) To protect the special interest and character of all areas which have been designated as an Architectural Conservation Area (ACA). Development within or affecting an ACA must contribute positively to its character and distinctiveness, and take opportunities to protect and enhance the character and appearance of the area and its setting wherever possible. Development shall not harm buildings, spaces, original street patterns, archaeological sites, historic boundaries or features, which contribute positively to the ACA. Please refer to Appendix 6 for a full list of ACAs in Dublin City. (b) Ensure that all development proposals within an ACA contribute positively to the character and distinctiveness of the area and have full regard to the guidance set out in the Character Appraisals and Framework for each ACA. (c) Ensure that any new development or alteration of a building within an ACA or immediately adjoining an ACA is complementary and/or sympathetic to their context, sensitively designed and appropriate in terms of scale, height, mass, density, building lines and materials and that it protects and enhances the ACA. Contemporary design which is in harmony with the area will be encouraged. (d) Seek the retention of all features that contribute to the character of an ACA including boundary walls, railings, soft landscaping, traditional paving and street furniture. (e) Promote sensitive hard and soft landscaping works that contribute to the character and quality of the ACA. (f) Promote best conservation practice and encourage the use of appropriately qualified professional advisors, tradesmen and craftsmen, with recognised conservation expertise, for works to buildings of historic significance within Architectural Conservation Areas. All trees which contribute to the character and appearance of an Architectural Conservation Area, in the public realm, will be safeguarded, except where the tree is a threat to public safety, prevents universal access or requires removal to protect other specimens from disease.

BHA8 Demolition in an ACA There is a presumption against the demolition or substantial loss of a structure that positively contributes to the character of the ACA except in exceptional circumstances where such loss would also contribute to a significant public benefit.

It is an Objective of Dublin City Council:

BHAO2 Designation of ACAs To identify and designate further Architectural Conservation Areas (ACAs), within the identified priority areas in accordance with the Architectural Heritage Protection Guidelines, (2011).

BHAO3 Areas of Special Planning Control To prepare schemes for Areas of Special Planning Control, where deemed desirable and appropriate, having regard to the statutory needs of the city.

Conservation Areas

It is the Policy of Dublin City Council:

BHA9 Conservation Areas To protect the special interest and character of all Dublin's Conservation Areas – identified under Z8, Z2 zoning objectives and denoted by red line conservation hatching on the zoning maps. Development within or affecting a Conservation Area must contribute positively to its character and distinctiveness and take opportunities to protect and enhance the character and appearance of the area and its setting, wherever possible. Enhancement opportunities may include: 1. Replacement or improvement of any building, feature or element which detracts from the character of the area or its setting. 2. Re-instatement of missing architectural detail or important features. 3. Improvement of open spaces and the wider public realm and reinstatement of historic routes and characteristic plot patterns. 4. Contemporary architecture of exceptional design quality, which is in harmony with the Conservation Area. 5. The repair and retention of shop and pub fronts of architectural interest. 6. Retention of buildings and features that contribute to the overall character and integrity of the Conservation Area. Changes of use will be acceptable where in compliance with the zoning objectives and where they make a positive contribution to the character, function and appearance of the Conservation Areas and its setting. The Council will consider the contribution of existing uses to the special interest of an area

when assessing change of use applications and will promote compatible uses which ensure future long-term viability.

BHA10 Demolition in a Conservation Area There is a presumption against the demolition or substantial loss of a structure that positively contributes to the character of a Conservation Area, except in exceptional circumstances where such loss would also contribute to a significant public benefit.

Buildings of Heritage Interest Including Mews and Vernacular Buildings

It is the Policy of Dublin City Council:

BHA11 Rehabilitation and Reuse of Existing Older Buildings (a) To retain, where appropriate, and encourage the rehabilitation and suitable adaptive reuse of existing older buildings/structures/features, which make a positive contribution to the character and appearance of the area and streetscape in preference to their demolition and redevelopment. (b) Encourage the retention and/or reinstatement of original fabric of our historic building stock such as windows, doors, roof coverings, shopfronts (including signage and associated features), pub fronts and other significant features. (c) Ensure that appropriate materials are used to carry out any repairs to the historic fabric.

BHA12 Industrial, Military and Maritime, Canal-side and Rural Heritage To promote the awareness of Dublin's industrial, military and maritime, canal-side (including lock-keepers' dwellings), rail and rural (vernacular) heritage.

BHA13 Maritime Heritage and Maritime Villages To support maritime heritage in built form, to foster initiatives that give expression to the maritime heritage of Dublin City, including trails, features and public realm design and to promote and develop the character and heritage of coastal and maritime villages.

BHA14 Mews To promote the redevelopment and regeneration of mews lanes, including those in the north and south Georgian core, for sensitively designed, appropriately scaled, infill residential development, that restores historic fabric where possible and that removes inappropriate backland car parking areas.

It is an Objective of Dublin City Council:

BHAO5 Mews To prepare a best practice design guide regarding appropriate mews development in the city including for the north and south Georgian cores.

Twentieth Century Buildings and Structures

It is the Policy of Dublin City Council:

BHA15 Twentieth Century Buildings and Structures (a) To encourage the appropriate development of exemplar twentieth century buildings and structures to ensure their character is not compromised. (b) To encourage the retention and reinstatement of internal and external features that contribute to the character of exemplar twentieth century buildings, such as roofscapes, boundary treatments, fenestration pattern, materials, and other features, fixtures and fittings (including furniture and artwork) considered worthy of retention.

It is an Objective of Dublin City Council:

BHAO6 Twentieth Century Buildings and Structures and the RPS To identify and protect exemplar buildings of the twentieth century; to categorise, prioritise, and, where appropriate, add to the Record of Protected Structures (RPS); to produce guidelines and offer advice for protection and appropriate refurbishment of such structures.

Industrial Heritage

It is the Policy of Dublin City Council:

BHA16 Industrial Heritage To have regard to the city's industrial heritage and Dublin City Industrial Heritage Record (DCIHR) in the preparation of Local Area Plans and the assessment of

planning applications. To review the DCHIR in accordance with Ministerial recommendations arising from the National Inventory of Architectural Heritage (NIAH) survey of Dublin City.

BHA17 Industrial Heritage of Waterways, Canals and Rivers To support and promote a strategy for the protection and restoration of the industrial heritage of the city's waterways, canals and rivers, including retaining features such as walls, weirs and millraces.

It is an Objective of Dublin City Council:

BHAO8 Industrial Heritage and the RPS To identify and protect further sites of industrial heritage; to categorise, prioritise and where, appropriate, add to the RPS.

Protection of Historic Ground Surfaces, Street Furniture and Public Realm

It is the Policy of Dublin City Council:

BHA18 Historic Ground Surfaces, Street Furniture and Public Realm (a) To protect, conserve and retain in situ historic elements of significance in the public realm including milestones, jostle stones, city ward stones, bollards, coal hole covers, gratings, boot scrapers, cast iron basement lights, street skylights and prisms, water troughs, street furniture, post boxes, lampposts, railings and historic ground surfaces including stone kerbs, pavement flags and setts and to promote conservation best practice and high standards for design, materials and workmanship in public realm improvements within areas of historic character, having regard to the national Advice Series on 'Paving: The Conservation of Historic Ground Surfaces' (2015). (b) To maintain schedules of stone setts, historic kerbing and historic pavers/flags, and associated features in the public realm, to be protected, conserved or reintroduced (Appendix 6 and to update and review these schedules during the period of this development plan.

BHA19 Historic Street Furniture and the RPS To maintain a schedule of features in the public realm identified for protection in Appendix 6 whilst also having regard to recommendations for additions to the RPS made by the Minister for such structures under Section 53 of the Planning and Development Act, 2000 (as amended).

BHA20 Ghost Heritage Signs To seek the retention and maintenance of heritage signs and advertising through the city, where appropriate.

Retrofitting, Sustainability Measures and Addressing Climate Change

It is the Policy of Dublin City Council:

BHA21 Retrofitting Sustainability Measures To have regard to the Department of Environment, Heritage and Local Government's publication on 'Energy Efficiency in Traditional Buildings' (2010) and the Irish Standard IS EN 16883:2017 'Conservation of Cultural Heritage- Guidelines for Improving the Energy Performance of Historic Buildings' (2017) and any future updates or advisory documents in assessing proposed works on heritage buildings.

BHA22 Upgrading Environmental Performance To ensure a sustainable future for historic and other buildings subject to heritage protection, the City Council will encourage and support works to upgrade the environmental performance of the existing building stock that incorporates good standards of design and appearance. Where these works involve historic buildings subject to protection (this includes buildings referenced on the Record of Protected Structures and non-protected structures in an Architectural Conservation Area), the works shall not adversely affect the special interest of the structure and thus a sensitive approach will be required, taking into account:

- The significance of the structure, and
- The extent of intervention, including impact on historic fabric, the technical requirements of a traditionally constructed building, visibility, siting and design. The installation of renewable energy measures and equipment will be acceptable where sited and designed to minimise the visual impact and does not result in any significant loss of historic fabric or otherwise affect the significance of the structure.

BHA23 Climate Action To co-operate with other agencies in the investigation of climate change on the fabric of historic buildings and to enhance adaptive capacity, strengthen resilience and reduce the vulnerability of heritage in line with the National Climate Change Sectoral Adaptation Plan for Built and Archaeological Heritage. (2020) It is an Objective of Dublin City Council: BHAO9 Community Monuments Fund To support the implementation of the Community Monuments Fund in order to ensure the monitoring and adaptation of archaeological monuments and mitigate against damage caused by climate change.

It is the Policy of Dublin City Council:

BHAO9 Community Monuments Fund To support the implementation of the Community Monuments Fund in order to ensure the monitoring and adaptation of archaeological monuments and mitigate against damage caused by climate change.

Reuse and Refurbishment of Historic Buildings

It is the Policy of Dublin City Council:

BHA24 Reuse and Refurbishment of Historic Buildings Dublin City Council will positively encourage and facilitate the careful refurbishment of the historic built environment for sustainable and economically viable uses and support the implementation of the National Policy on Architecture as it relates to historic buildings, streetscapes, towns and villages, by ensuring the delivery of high quality architecture and quality place-making and by demonstrating best practice in the care and maintenance of historic properties in public ownership.

BHA25 Loss of Upper Floor Access There will be a presumption against the loss of upper floor access to buildings from street frontages, and the City Council will seek reinstatement of upper floor access points wherever possible from the street.

Archaeological Heritage

It is the Policy of Dublin City Council:

BHA26 Archaeological Heritage

1. To protect and preserve Sites and Zones of Archaeological interest which have been identified in the Record of Monuments and Places and the Historic Environment Viewer (www.archaeology.ie).

2. To protect archaeological material in situ by ensuring that only minimal impact on archaeological layers is allowed, by way of re-use of standing buildings, the construction of light buildings, low impact foundation design, or the omission of basements (except in exceptional circumstances) in the Zones of Archaeological Interest.

3. To seek the preservation in situ (or where this is not possible or appropriate, as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places, and of previously unknown sites, features and objects of archaeological interest that become revealed through development activity. In respect of decision making on development proposals affecting sites listed in the Record of Monuments and Places, the Council will have regard to the advice and/or recommendations of the Department of Housing, Heritage and Local Government.

4. Development proposals within Sites and Zones of Archaeological Interest, of sites over 0.5 hectares size and of sites listed in the Dublin City Industrial Heritage Record, will be subject to consultation with the City Archaeologist and archaeological assessment prior to a planning application being lodged.

5. To preserve known burial grounds and disused historic graveyards. Where disturbance of ancient or historic human remains is unavoidable, they will be excavated according to best archaeological practice and reburied or permanently curated.

6. Preserve the character, setting and amenity of upstanding and below ground town wall defences.

7. Development proposals in marine, lacustrine and riverine environments and areas of reclaimed land shall have regard to the Shipwreck Inventory maintained by the Department of Culture, Heritage and the Gaeltacht and be subject to an appropriate level of archaeological assessment.

8. To have regard to national policy documents and guidelines relating to archaeology and to best practice guidance published by the Heritage Council, the Institute of Archaeologists of Ireland and Transport Infrastructure Ireland.

It is an Objective of Dublin City Council:

BHAO10 Conservation Plans To prepare and implement conservation plans for National Monuments and Recorded Monuments in Dublin City Council ownership.

BHAO11 Dublin City Archaeological Archive To maintain, develop and promote the Dublin City Archaeological Archive (DCAA) at Pearse Street Library and Archives.

BHAO12 Findings of Licenced Archaeological Activity To ensure the public dissemination of the findings of licenced archaeological activity in Dublin through the Dublin County Archaeological GIS, publications and public lectures and to promote awareness of, and access to, the city's archaeological inheritance and foster high quality public archaeology.

BHAO13 Management Plan To develop a long-term management plan to promote the conservation, management and interpretation of archaeological sites and monuments and to identify areas for strategic research.

BHAO14 Viking Dublin To promote the awareness of the international significance of Viking Dublin. To support the Viking York Axis Project, the Destination Viking Network and the Dublin Festival of History Viking Seminar; to explore the feasibility of a research excavation in Viking Dublin; to support post-excavation research into the Wood Quay excavations 1962-81; to record and map the survival of water-logged Viking Age and medieval archaeological stratigraphy.

BHAO15 Civic Museum To develop a strategy for improving public access to the former Civic Museum collection and for curation of other collections of civic interest and importance.

BHAO16 City Wall and City Defences To continue to preserve, and enhance the surviving section of the City Wall and City Defences - a National Monument, according to the recommendations of the City Walls Conservation Plan (2005) - with reference to the National Policy on Town Defences (2008).

BHAO17 Tourism Promote tourism in the medieval city drawing on its archaeological heritage to create a strong and authentic sense of place and to support educational and historical tours of sites in the city.

BHAO18 OPW Heritage Sites and Assets Work proactively with the OPW to promote and improve the visitor experience and interpretation of their heritage sites and assets within Dublin City area.

BHAO19 Built Heritage and Archaeology To provide for the protection, preservation and promotion of the built heritage, including architectural heritage and archaeological heritage and support the in-situ presentation and interpretation of archaeological finds within new developments.

City Heritage Plan

It is the Policy of Dublin City Council:

BHA27 Dublin City Heritage Plan To implement the current Dublin City Heritage Plan and to support the preparation and implementation of the Dublin City Heritage Plan 2022-2026.

BHA28 Historic Place and Street Names To preserve historic place and street names and ensure that new street names reflect appropriate local archaeological, historical or cultural associations.

BHA29 World Heritage Nomination To support and pursue a World Heritage nomination for the Historic City of Dublin, in partnership with the Department of Housing, Heritage and Local Government.

BHA32 Water Related Heritage Strategies To support the creation and implementation of water related heritage strategies in partnership with restoration and enhancement of river and canal corridors within the city.

BHA33 Dublin Port Heritage Quarter To support the vision of the Dublin Port Company for the Flour Mill and surrounding heritage assets of the port to deliver a new cultural heritage quarter and maritime museum for the city, that documents Dublin's rich maritime history and the social history of the Dock workers.

Appendix J Glossary of Archaeology, Architecture and Cultural Heritage Impacts

Potential impacts on the receiving archaeological and cultural heritage environment can be described as direct physical impacts, indirect physical impacts, and impacts on setting (i.e. the surroundings in which an archaeological / cultural heritage asset can be experienced; Historic England 2017).

Direct physical impacts are those development activities that directly cause damage to the fabric of an archaeological / cultural heritage asset. Typically, these activities are related to construction works; e.g. they could include excavation of foundations and earthmoving / site preparation creation of access roads.

Indirect physical impacts are those processes, triggered by development activity, that lead to the degradation of archaeological / cultural heritage assets. Mitigation strategies and knowledge of detail design can often ameliorate any adverse indirect impact. Indirect impacts may include severance of linked features, degradation of setting and amenity or provide a visual intrusion.

Impacts on the setting of archaeological / cultural heritage assets describe how the presence of a development changes the surroundings of an asset in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered. Such impacts may be encountered at all stages in the life cycle of a development, but they are only likely to be considered significant during the prolonged operational life of the development.

Types of impact, as defined by the EPA Guidelines on Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2017):

Cumulative Impact – The addition of many small impacts to create one larger, more significant, impact.

Do Nothing Impact – The environment as it would be in the future should no development of any kind be carried out.

Indeterminable Impact – When the full consequences of a change in the environment cannot be described.

Irreversible Impact – When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.

Residual Impact – The degree of environmental change that will occur after the proposed mitigation measures have taken impact.

'*Worst case' Impact* – The impacts arising from a development in the case where mitigation measures substantially fail.

Indirect or Secondary Impacts – Impacts that arise off-site or are caused by other parties that are not under the control of the developer. Impacts which are caused by the interaction of impacts, or by associated or off-site projects.

Quality of Impacts

Impacts on the archaeological and cultural heritage environment are assessed in terms of their quality, i.e. positive, negative, neutral:

Negative Impact: A change that will detract from or permanently remove an archaeological monument / cultural heritage asset from the landscape;

Neutral Impact: A change that does not affect archaeological and cultural heritage; and

Positive Impact: A change that improves or enhances the setting of an archaeological / cultural heritage asset.

Duration of Impacts

The duration of an impact can be as follows:

Temporary Impact	Impact lasting for one year or less;

Short-term Impacts	Impact lasting one to seven years;
Medium-term Impact	Impact lasting seven to fifteen years;
Long-term Impact	Impact lasting fifteen to sixty years; and
Permanent Impact	Impact lasting over sixty years.

Appendix K NDBC Records

Table 1-1: Records for Protected Flora within 5 km of the Proposed Development

Common name	Scientific name	Data source	Red List Category**
Opposite-leaved pondweed	*Groenlandia densa*	BSBI	NT
Dittander	*Lepidium latifolium*	BSBI	VU
Green Field-speedwell	*Veronica agrestis*	NBDC	NT
Milk Thistle	*Silybum marianum*	NBDC	NT
Megapolitan Feather-moss	*Rhynchostegium megapolitanum*	NBDC	NT
Pale Flax	*Linum bienne*	NBDC	NT
Marigold Corn	*Glebionis segetum*	NBDC	NT
Slender Thistle	*Carduus tenuiflorus*	NBDC	NT
Strawberry-tree	*Arbutus unedo*	NBDC	NT
Tufted Feathermoss	*Scleropodium cespitans*	NBDC	NT

**Wyse *et al*. (2016) Red List categories: VU (Vulnerable); NT (Near Threatened)

Table 1-2: Record of Scheduled IAPS returned from the data search

Common Name *Scientific Name*	Record Count	Date of Last Record	Data source
American Mink (*Mustela vison*)	3	05/10/2024	NBDC
Eastern Grey Squirrel (*Sciurus carolinensis*)	96	02/03/2023	NBDC
Fallow Deer (*Dama dama*)	1	04/12/2022	NBDC
Giant Hogweed (*Heracleum mantegazzianum*)	52	13/06/2024	NBDC
Giant-rhubarb (*Gunnera tinctoria*)	1	28/06/2020	NBDC
Harlequin Ladybird (*Harmonia axyridis*)	98	13/11/2024	NBDC
Indian Balsam (*Impatiens glandulifera*)	28	01/07/2023	NBDC
Japanese Knotweed (Reynoutria *japonica*)	66	13/07/2024	NBDC
Nuttall's Waterweed (*Elodea nuttallii*)	4	31/07/2009	NBDC
Sea-buckthorn (*Hippophae rhamnoides*)	8	10/07/2022	NBDC
Spanish Bluebell (*Hyacinthoides hispanica*)	2	15/04/2022	NBDC
Three-cornered Garlic (*Allium triquetrum*)	16	21/03/2024	BSBI, NBDC

Table 1-3: Records of IAPS returned from the data search that are not listed as Scheduled invasive

Common Name *Scientific Name*	Record Count	Date of Last Record	Data source	Designation
Cherry Laurel (*Prunus laurocerasus*)	4	26/01/2023	NBDC	High Impact Invasive Species
Butterfly-bush (*Buddleja davidii*)	65	09/09/2024	NBDC	Medium Impact Invasive Species
Canadian Fleabane (*Conyza canadensis*)	5	23/08/2018	NBDC	Medium Impact Invasive Species
Common Broomrape (*Orobanche minor*)	1	18/07/2018	NBDC	Medium Impact Invasive Species
European Rabbit (Oryctolagus cuniculus)	2	30/06/2015	NBDC	Medium Impact Invasive Species
Evergreen Oak (*Quercus ilex*)	1	07/05/2020	NBDC	Medium Impact Invasive Species
False acacia (*Robinia pseudoacacia*)	1	20/06/2021	NBDC	Medium Impact Invasive Species
Greater white-toothed shrew (*Crocidura russula*)	2	19/06/2017	NBDC	Medium Impact Invasive Species
Himalayan Honeysuckle (*Leycesteria formosa*)	5	26/11/2021	NBDC	Medium Impact Invasive Species
House Mouse (*Mus musculus*)	8	25/07/2018	NBDC	High Impact Invasive Species
Japanese Rose (*Rosa rugosa*)	1	08/06/2013	NBDC	Medium Impact Invasive Species
Narrow-leaved Ragwort (*Senecio inaequidens*)	13	07/07/2023	BSBI, NBDC	Medium Impact Invasive Species
New Zealand Flatworm (*Arthurdendyus triangulatus*)	6	07/05/2020	NBDC	High Impact Invasive Species
Norway maple (*Acer platanoides*)	1		BSBI	Low Impact Invasive Species
Pampas-grass (*Cortaderia selloana*)	1	15/01/2019	NBDC	Medium Impact Invasive Species
Ragweed (*Ambrosia artemisiifolia*)	1	06/09/2022	NBDC	Medium Impact Invasive Species
Red-eared Terrapin (*Trachemys scripta*)	3	19/04/2021	NBDC	Medium Impact Invasive Species EU Regulation No. 1143/2014
Red valerian (*Centranthus ruber*)	2		BSBI	Low Impact Invasive Species

Common Name *Scientific Name*	Record Count	Date of Last Record	Data source	Designation
Reed canary grass (*Phalaris arundinacea*)	1		BSBI	Low Impact Invasive Species
Rose-ringed Parakeet (Psittacula krameri)	101	26/11/2024	NBDC	High Impact Invasive Species
Sycamore (*Acer pseudoplatanus*)	17	22/02/2024	BSBI, NBDC	Medium Impact Invasive Species
Traveller's-joy (*Clematis vitalba)*	6	07/09/2024	BSBI, NBDC	Medium Impact Invasive Species
Tree-of-heaven (*Ailanthus altissima*)	1	25/10/2009	NBDC	Medium Impact Invasive Species
Wall lettuce (*Mycelis muralis*)	1		BSBI	Low Impact Invasive Species
Wild Parsnip (*Pastinaca sativa*)	1	23/08/2016	NBDC	Medium Impact Invasive Species

Table 1-4: Suitability of the proposed development area for bat species (based on NBDC data)

Common Name *Scientific Name*	Suitability Index
All bats	18.44
Soprano pipistrelle (*Pipistrellus pygmaeus*)	35
Brown long-eared bat (*Plecotus auratus*)	19
Common pipistrelle (*Pipistrellus pipistrellus*)	40
Lesser-horseshoe bat (*Rhinolophus hipposideros*)	0
Leisler’s bat (*Nyctalus leisleri*)	31
Whiskered bat (*Myotis mystacinus*)	14
Daubenton’s bat (*Myotis daubentonii*)	5
Nathusius’ pipistrelle (*Pipistrellus nathusii*)	13
Natterer’s bat (*Myotis nattereri*)	9

Table 1-5: NDBC Bat Species Results

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Brown Long-eared Bat (*Plecotus auritus*)	2	11/08/2017	EU Habitats Directive: Annex IV Wildlife Acts
Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	88	20/09/2020	
Daubenton's Bat (*Myotis daubentonii*)	16	30/08/2021	EU Habitats Directive: Annex IV Wildlife Acts
Lesser Noctule (*Nyctalus leisleri*)	56	05/08/2020	EU Habitats Directive: Annex IV Wildlife Acts
Nathusius's Pipistrelle (*Pipistrellus nathusii*)	4	15/09/2020	EU Habitats Directive: Annex IV Wildlife Acts
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	5	21/11/2022	EU Habitats Directive: Annex IV Wildlife Acts
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	19	04/06/2020	EU Habitats Directive: Annex IV Wildlife Acts

Table 1-6: Suitability of the proposed development area for bat species (based on Lundy et al., 2011)

Common Name *Scientific Name*	Suitability Index
All bats	18.44
Soprano pipistrelle (*Pipistrellus pygmaeus*)	35
Brown long-eared bat (*Plecotus auratus*)	19
Common pipistrelle (*Pipistrellus pipistrellus*)	40
Lesser-horseshoe bat (*Rhinolophus hipposideros*)	0
Leisler’s bat (*Nyctalus leisleri*)	31
Whiskered bat (*Myotis mystacinus*)	14
Daubenton’s bat (*Myotis daubentonii*)	5
Nathusius’ pipistrelle (*Pipistrellus nathusii*)	13
Natterer’s bat (*Myotis nattereri*)	9

Table 1-7: Protected mammal species returned from the NBDC search

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Fallow Deer (*Dama dama*)	1	04/12/2022	High Impact Invasive Species Regulation S.I. 477 (Ireland) Wildlife Acts
Eurasian Badger (*Meles meles*)	4	22/07/2015	Wildlife Acts
Eurasian Pygmy Shrew (*Sorex minutus*)	1	08/04/2015	Wildlife Acts

Table 1-8: Terrestrial invertebrate species returned from the NBDC search

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Icelandic Cyprine (*Arctica islandica*)	1	13/03/2020	Threatened Species: OSPAR Convention
Large Red Tailed Bumble Bee (*Bombus (Melanobombus) lapidarius*)	77	17/08/2024	Threatened Species: Near threatened
Patchwork Leafcutter Bee (*Megachile (Megachile) centuncularis*)	4	10/06/2023	Threatened Species: Near threatened
Moss Carder-bee (*Bombus (Thoracombus) muscorum*)	50	14/08/2024	Threatened Species: Near threatened
Small Heath (*Coenonympha pamphilus*)	3	30/05/2021	Threatened Species: Near threatened

Table 1-9: QI species returned from the NBDC search

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Common Porpoise (*Phocoena phocoena*)	5	14/03/2023	EU Habitats Directive: Annex II, IV Wildlife Act OSPAR Convention
Common Seal (*Phoca vitulina*)	1	25/01/2023	EU Habitats Directive: Annex II, V Wildlife Act
Fin Whale (*Balaenoptera physalus*)	2	04/10/2019	EU Habitats Directive: Annex IV Wildlife Act
Grey Seal (*Halichoerus grypus*)	10	09/04/2023	EU Habitats Directive: Annex II, V Wildlife Act
European Otter (*Lutra lutra*)	5	08/10/2015	EU Habitats Directive: Annex II, IV

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
			Wildlife Act

Table 1-10: Special Conservation Interest birds returned from NBDC search

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Bar-tailed Godwit (*Limosa lapponica*)	6	23/03/2023	EU Birds Directive: Annex I BoCCI - Red List
Common Coot (*Fulica atra*)	14	26/01/2023	EU Birds Directive: Annex II, III BoCCI - Amber List
Common Goldeneye (*Bucephala clangula*)	2	15/01/2018	EU Birds Directive: Annex II BoCCI - Red List
Common Kingfisher (*Alcedo atthis*)	13	01/01/2024	EU Birds Directive: Annex I BoCCI - Amber List
Common Tern (*Sterna hirundo*)	13	30/05/2018	EU Birds Directive: Annex I BoCCI - Amber List
Eurasian Curlew (*Numenius arquata*)	27	06/02/2023	EU Birds Directive: Annex II BoCCI - Red List.
Great Northern Diver (*Gavia immer*)	2	19/02/2020	EU Birds Directive: Annex I
Greater Scaup (*Aythya marila*)	2	02/09/2016	EU Birds Directive: Annex II, III BoCCI - Red List
Mallard (*Anas platyrhynchos*)	80	16/04/2023	EU Birds Directive: Annex II, III
Peregrine Falcon (*Falco peregrinus*)	3	14/07/2021	EU Birds Directive: Annex I
Red-breasted Merganser (*Mergus serrator*)	7	02/03/2021	EU Birds Directive: Annex II
Tufted Duck (*Aythya fuligula*)	76	01/04/2023	EU Birds Directive: Annex II, III BoCCI - Amber List
Whooper Swan (*Cygnus cygnus*)	1	04/03/2020	EU Birds Directive: Annex I BoCCI - Amber List

Table 1-11: Non-SCI birds returned from NBDC search

Common Name *Scientific Name*	Record Count	Date of Last Record	Designation
Common Snipe (*Gallinago gallinago*)	2	18/01/2019	EU Birds Directive: Annex II, III BoCCI - Red List
Common Wood Pigeon (*Columba palumbus*)	48	27/03/2023	EU Birds Directive: Annex II, III
Little Egret (*Egretta garzetta*)	21	29/01/2023	EU Birds Directive: Annex I
Rock Pigeon (*Columba livia*)	54	05/04/2023	EU Birds Directive: Annex II