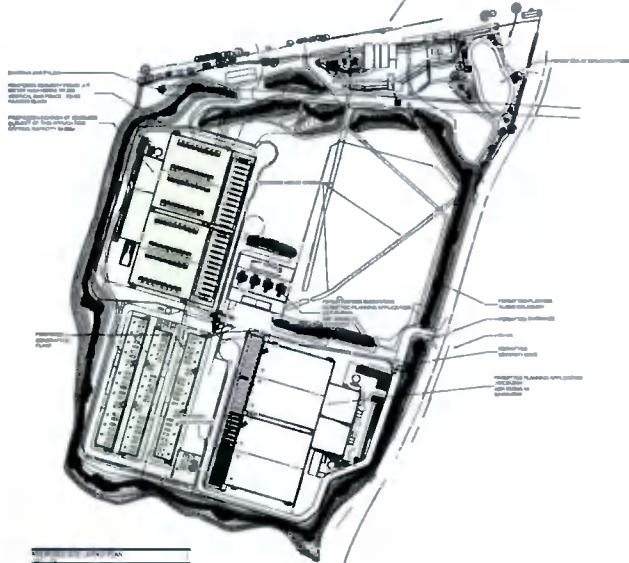






<b>Project</b>	<b>EDCDUB05 - Edgeconnex</b>		
<b>Document Title</b>	<b>Construction Management Plan</b>		
<b>Document Reference</b>	<b>EDCDUB05-CMP</b>		
			
<b>The Client</b>			<b>Edgeconnex</b>
<b>The Contractor/ PSCS</b>			<b>Winthrop Engineering &amp; Contracting Ltd.</b>
<b>Consulting Engineers</b>			<b>Pinnacle Consulting Engineers</b>
<b>Architect</b>			<b>Henry J Lyons</b>
<b>Project Scope</b>	<p>Construction works on the Project EDCDUB05 Data Centre, Grange Road, Lucan, Co. Dublin: The project entails:</p> <ul style="list-style-type: none"> <li>• Enabling Works</li> <li>• Construction of a new data centre facility including structural steel portal frame and associated groundwork's, installation of the building façade and envelope,</li> <li>• The mechanical and electrical fit out of the data centres</li> <li>• Associated landscaping and soft finishes.</li> </ul>		
<b>Date</b>	<b>04/02/21</b>	<b>Status</b>	<b>Rev 00</b>

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**Document Verification**

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		Signature			
Rev 4.0		Filename			
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		Name			
		Signature			

## 1. GENERAL

This document outlines the Execution Methodology and supporting systems / procedures that will be applied to deliver the project.

## 2. DEFINITIONS, TERMS, ACRONYMS

**Documentation (quality control)** - procedure and any form of quality reports, etc. contained herein.

**Client** – Edgeconnex

**Engineer** - means the representative of the Client.

**Contractor/ PSCS** – Winthrop Engineering & Contracting (WEC)

**Subcontractor** – Winthrop appointed firm, contracted to perform any specialist works.

**Drawings** - Client plans (schemes), BIM Models, profiles, typical cross sections, working drawings, standard drawings and additional drawings or copies that show the location, the nature, size and details of the work.

**Site** - Part of the right of way and the working width, as provided in the specifications, drawings, and conditions of the contract, where the work of the permanent construction is carried out.

**Specifications** Operating specifications included in the contract, any modification or addition made under the contract.

## 3. DESCRIPTION OF WORKS

Winthrop Engineering & Contracting Ltd. have been engaged by the client, EdgeConnex to service to fulfil construction project as detailed below:

The scope of works in the contract provides for the construction of.

- Civil Works
- Completion of the site access road
- Architectural & Structural Works
- Groundwork's
- Mechanical & Electrical Installation
- Soft finishes

### **Civil, Structural & Building Works**

The following construction & civil engineering works will be required.

- Ground disturbance works for new underground services, foundations and piles.

- New structural steel supports within the building footprint.
- Formation of roof penetrations
- Installation of Plant support systems
- Steel works to generator yard
- Installation of external stairs
- External Fencing
- Installation of external car park furniture, bollards, kerbing-
- external cladding and building envelope.
- Internal Building partitions
- External Glazing to Admin areas
- Car Park Marking
- Excavation for underground services
- Hard standing and road finishes

**Mechanical & Electrical Works**

The following mechanical and electrical engineering works will be required.

**Electrical**

- Installation of Electrical EHouses
- Installation of Electrical generators
- Installation of MV Equipment
- Installation of Primary Plant containment, subfloor and above ceiling containment
- Installation of Remote Power Panels, Distribution boards and PDU's
- Primary & Secondary Cabling
- Lighting cabling & fittings
- Security controls, sensors and services
- Data cabling
- Testing & Commissioning of Systems
- Installation of internal power distribution and telecoms services with associated controls
- Construction of 3No 2-storey buildings containing 60No permanent natural gas fired generators.



**Mechanical**

- Installation of Air Handling Plant and associated ductwork both external and internal as detailed on the project drawings.
- Installation of mechanical pipework, process and humidification
- Condensate Drainage pipework as required.
- Supply & Installation of water treatment plant
- Position and Install External Plant
- Ventilation and Fire Dampers as required
- Installation of insulation and cladding to internal/external pipework/ductwork.
- Mains/ hot & cold-water services
- Installation of fire protection/ sprinkler services and associated storage

**4. PROJECT PROCESS**

The nature of this project necessitates the appointment of a PSCS whom has the demonstrable track record in Rapid Delivery of similar projects whilst taking into consideration the unique elements that a Data Centre entails such as.

- Fast Track Nature of the Projects Design, Construction & Commissioning Phases
- An outcome-oriented procurement model including Early Contractor Involvement
- Pre-Construction focus on preparation of a detailed BIM model
- Multi Stakeholder & interface Management

**4.1 Project Schedule**

The relevant stakeholders will agree a project schedule to ensure all works are planned and executed safely on site.

**Construction Period:**

1. Commencement of Construction Phase: **TBC**
2. Completion & Handover: **16 months from Commencement**

**Project Working Hours**

The construction period for the proposed linear development is anticipated to be approximately 9 - 16 months from the commencement of the site works.

Working hours are between 7.00 am and 18.00 hours Monday to Friday



- Saturday working hours are between 8.00am to 14.00
- Working on Sundays and public holidays is not permitted without permission from Winthrop site management.

Specific works that take place within engineering hours, after the hours specified above, or at night must have written permission from Winthrop Engineering & Contracting Ltd. for these works prior to their commencement

## 4.2 Project Stages

As per the scope of work stated in the RFP, Winthrop are fully conversant with the proposed execution stages from design onwards including but not limited to.

- Early Contractor Involvement
- Engineering/Design (if applicable)
- Production of BIM Models as part of a wider team and its integration into a federated mode. Winthrop will provide a BIM Execution plan as part of works contract
- Procurement with emphasis on long lead items
- Construction & Testing
- Handover

## 4.3 Project Execution Approach

Winthrop is a multi-discipline turnkey contracting company headquartered in Dublin. As the PSCS, we recognise the importance of an integrated supply chain consisting of material vendors, Subcontractors and Specialist service providers to deliver projects on time and within budget.

Our project portfolio includes numerous fast track projects on both new build and brown field sites, allowing the company to develop working experience and operational expertise catering for fast track and mission critical projects.

Winthrop is ideally suited to execute this project drawing upon an experienced project management team with a proven track record.

Winthrop will employ two key processes to maximise the quality and productivity of their team:

- Preparation and production of detailed BIM Models
- OSM (Off Site Manufacturing) will be employed as much as possible to minimise the size of teams required on the jobsite as well as improving safety, quality, and productivity standards.

The project organization is a classic hierarchical project organization where the ownership of the project delivery resides with the Project Director.

Various elements of the project organization are described in detail under the respective sections below. This project will be under the direct sponsorship of a WEC Executive Director ensuring total commitment throughout the project life cycle.

Winthrop are very experienced with phased handovers of Client facilities and continuing build out and area upgrades. As such our day-to-day work practices take into account all aspects of Ops Teams Day to Day requirements and scheduling commitments along with early communication with Client teams.

#### **4.4 Project Management & Organisation**

This project will be managed by a Project Director with a proven track record particularly in Data Centre delivery and strong project management capabilities.

The Project Directors responsibilities will comprise of:

- Reporting all aspects of the project to the Representatives of The Client.
- Co-ordination between Winthrop and The Client project management team.
- Management and delivery of all WEC project requirements in line with this Construction Management Plan.
- Management and control of the project deliverables
- Management and control of contracts/subcontracts issued by WEC
- Management and control of all Safety aspects relating to the SOW
- Management, control and delivery accountability for Procurement and Construction schedule and productivity
- Liaison with any/all parties involved
- Management and control of Key Intervention Points as indicated above
- Client focal point
- Delivery accountability of project deliverables

#### **4.5 Project Kick Off**

Immediately following any contract award, a Kick-Off meeting will be held with The Client and WEC to review the Contract and to define all Project co-ordination aspects.

The following members of the Project Team will attend the Kick-off meeting where applicable to the scope of work

- The Client Manager
- Project Director
- WEC Executive sponsor
- Electrical Lead
- Mechanical Lead
- Architectural Lead
- Project EHS Manager

- Proposals Manager

During the Kick-off meeting, the following topics will be discussed:

- Health & Safety
- Contract Risk Register
- Critical Dates Schedule
- Contract Finalisation & Early Enablement
- Scope of Services / Works
- Project Procedures
- BIM Execution Plan
- Design Co-ordination Procedure and Document Distribution
- Interface Identification & Management
- Meetings and Reporting
- Project planning and Scheduling
- Off Site Manufacturing Scopes
- QA / QC Plan
- Safety requirements / Client's standards
- Data required from The Client
- Plan for site mobilization
- Contact details and representation responsibilities
- Impact on any Live Services
- Agreed Communication Channels
- Updating and site documentation to reflect changes
- Updating of O&M Documents to reflect any changes
- Any other Business

## **5. QUALITY MANAGEMENT SYSTEM**

WEC has a fully Integrated Management System (IMS) and is fully certified to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.

The ISO 9001 management system is mature, with a long history of project delivery, in particular complex CSA, mechanical and electrical installation projects. The Integrated Management System underpins our Project Management Process.

**PHILOSOPHY**

Winthrop operates a Client focused approach as the core principle of its QA/QC Philosophy and is accredited to:

- ISO9001:2015 – ISO14001:2015 – ISO45001:2018

The company manages the requirements of these standards through its Integrated Management System (IMS).



**ALIGNMENT WITH CLIENT DELIVERABLES AND EXPECTATIONS**

The Winthrop project QA/QC approach must be aligned to the Client QA/QC deliverables and expectations through the following elements:

- Common terminologies
- Pre-construction and in project meeting agendas
- Common format for inspection reports
- Agreeing common formats for punch list coordination
- Alignment of Winthrop in process tagging at project commissioning with the appropriate tagging process



**Certificate of Registration  
of Quality Management System to**

**I.S. EN ISO 9001:2015**

EQA (Ireland) Limited certifies that

**Winthrop Engineering & Contracting Ltd.**

Unit 7, Turaspik Business Park  
Turaspik Lane  
Ballymount  
Dublin 22

has been assessed and is in compliance with the provisions of the above standard in respect of the scope of operations listed below and is hereby included in the EQA directory of certified organisations

**Mechanical and Electrical Contracting, Maintenance & Associated Building Works**

Signature: DIRECTOR DATE: 20<sup>th</sup> August 2020

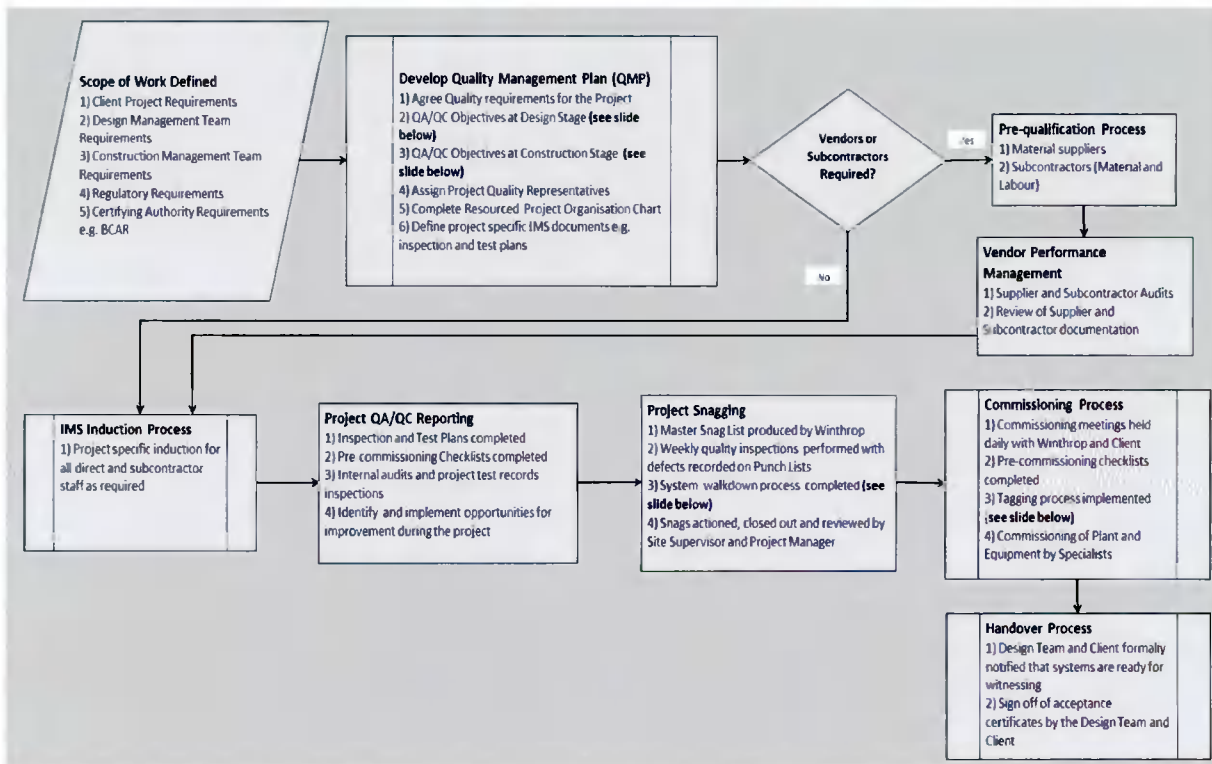
on behalf of EQA (Ireland) Limited

Registration Number Q3956 valid until: 12<sup>th</sup> August 2023

Issue or valid period of certification: 20<sup>th</sup> August 2017  
Date of re-certification audit: 19<sup>th</sup> July 2020  
Date of renewal of certification: 20<sup>th</sup> August 2020  
Date of expiry of previous certificate: 12<sup>th</sup> August 2020

and is issued subject to the regulations, and within the accredited scope, of

EQA (Ireland) Limited  
Office A, 2<sup>nd</sup> Floor  
Citywest Shopping Centre  
Citywest Business Park  
Dublin 24  
Ireland



Upon award, a project specific Quality Management Plan will be developed in conjunction with The Client, identifying and detailing the QA and QC arrangements to be implemented throughout the project lifecycle.

A site-based QA/QC Manager would be appointed to oversee the quality control arrangements and provide guidance to the site teams and supervisory managers throughout the design and build processes. They will also liaise with the engineering and BIM leads and team as well as the OSM and Off-site Laydown leads and team to ensure that the agreed processes are fully incorporated.

Each individual discipline lead will have responsibility for their disciplines and for co-ordinating the CSA/MEP aspects of works under their control, and co-ordinating with design and construction suppliers to ensure the correct verification against specification takes place and that there are the appropriate QC checks carried out during the installation.

The QA/QC Manager will engage very early on with the client to understand the labelling and verification processes required by the client,

The function of these labelling and equipment schedules will be multipurpose. These Master Schedules will be used for the Generation of all Subsequent Technical Submittal, Procurement, Construction, QA-QC & Commissioning Documentation. These schedules will also be the Aligned Equipment Naming Convention that will be the Master Document Names for all plant and equipment on site and feed into the Client Asset Management / DCIM Systems. All communications to 3<sup>rd</sup> Party Suppliers, Design Team Members will refer to these Equipment Naming Conventions.

The QA/QC Manager would be responsible for preparing the Quality Management induction which must form part of the overall site induction particularly for MEP contractors.

The design QMP (Quality Management Plan) would be agreed with all design partners, and in particular any design verification check sheets, or design risk assessments templates would be discussed. Also, with regard to the BIM Execution Plan, the QMP will ensure that the BIM lead is complying with the B.E.P. especially with regards to their responsibilities for the production of a federated model.

It is our experience that utilising a consistent template for documentation, assessments and submittals can often aid with the consolidation of the commissioning and O&M information at the handover of different sections of the project.

As per normal Winthrop Quality procedures, a Quality plan will be produced which details our IMS processes and procedures but also details the design and construction verification checklists, and MEP checklists that the company utilises to ensure appropriate QC takes place throughout the works programme.

## **6. EHS MANAGEMENT**

Safety is a core value within WEC. Our familiarity with Rapid Delivery projects and simultaneous operations strengthens our dedication to EHS and our commitment to our Risk Identification process. WEC are committed to a zero-accident work environment and fully appreciate our responsibility towards environmental management. This is achieved by effective implementation of the 'EHS Culture' amongst the workforce with demonstrable personal commitment from the senior management and project team members.



WEC are accredited under the ISO: 45001 and ISO: 14001 management system specifications. In October '19 we successfully achieved our recertification of the same. The



Managing Director has overall responsibility for Environmental Health & Safety within the company, and the Project Director has responsibility for EHS on projects under their control.

An important part of our EHS strategy is the development of a health and safety culture with all staff, contractors and stakeholders involved both at a company level and at a project level. The setting of safety as a core value with the correct mix of engagement and enforcement ensures that all personnel appreciate and understand the company arrangements and measures to ensuring a high standard of safety performance is achieved.



### HEALTH, SAFETY, ENVIRONMENTAL & ACCREDITATIONS

- ISO 45001: 2018 Certified (Safety)
- ISO 9001: 2015 (Quality)
- ISO 14001: 2015 (Environmental)
- Safe-T-Cert 'A' Rated Company
- Dedicated Safety Leadership Team (SLT)
- CIF (Construction Industry Federation) Ireland
- CIRI (Construction Industry Register Ireland) Certified
- Dedicated Internal Training process for EHS related considerations – CPD- All personnel included.
- EHS seen as a platform to co-ordinate design and construction activity underpins our approach.
- European Business Awards (including Health, Safety & Outstanding Environmental category) National Winner
- Engineers Ireland CPD Accredited 2019
- NISO Occupational Safety Awards 2019 - Distinction Award







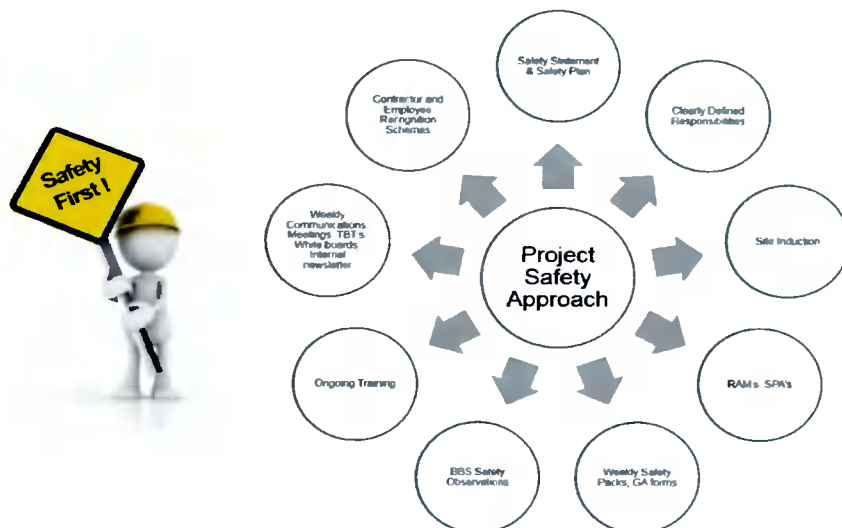


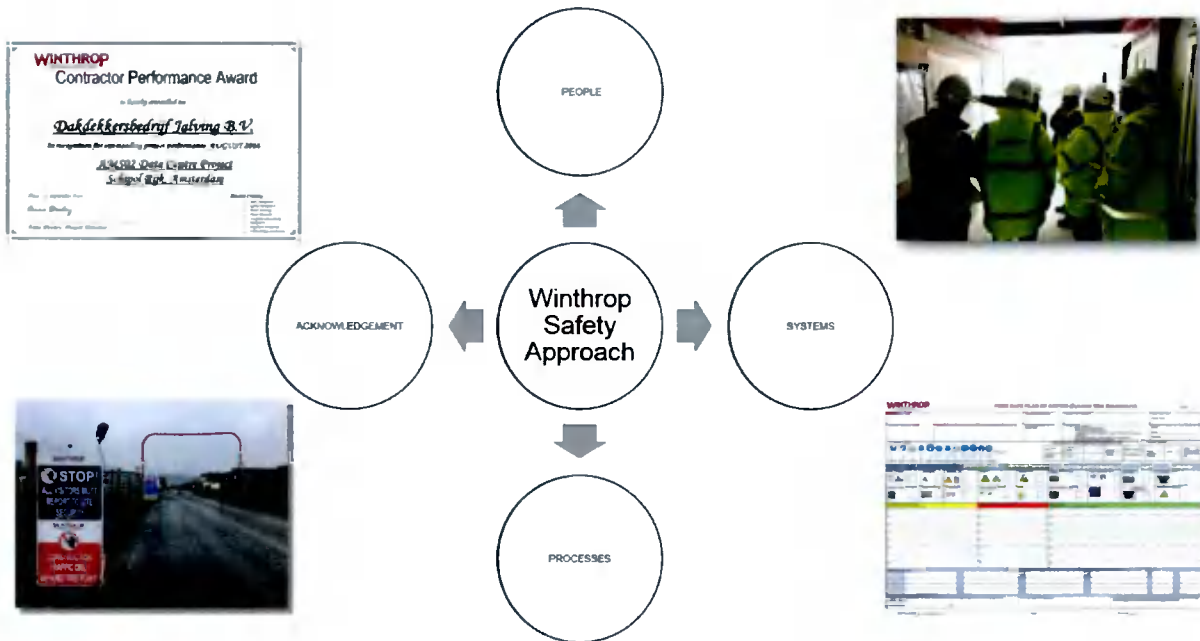



The Winthrop operational management systems are one of the main arrangements we have in place to aid in the maintenance of our EHS performance on projects. The systems are mature and contain suitable procedures, processes and templates to provide guidance to all staff, co-ordinate and control higher risk elements of works, and provide proactive templates to foster co-ordination and communication between all disciplines involved in the project.

The EHS team for this project will be led by an experienced EHS Manager with significant experience in large projects, working in live and occupied environments and fast track general contracting works. The EHS team will be supplemented by EHS Officers in line with the construction programme and the numbers of operatives on the project. The EHS Manager has a direct reporting link to the Managing Director to ensure that Winthrop EHS values maintain the visibility and appreciation they require, and to ensure that all procedures are appropriately followed.

As a summary, the key aspects of our EHS related policies and procedures that would be implemented on this project would include:



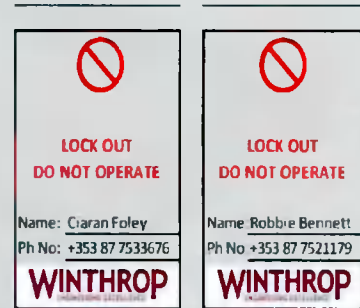


- Policies and Principles:** The Safety Management Plan will outline the required policies under which it shall operate. These will include the company H&S Policy, Environmental policy, Disciplinary policy, etc.
- Responsibilities:** The Safety Management Plan will outline the HSE Management/Personnel responsibility and the required accountabilities to the various parties including the Company Management. The responsibilities of the Project Management Team will be defined, clearly demonstrate that all HSE requirements, plans and system will be implemented, and compliance is verified and documented.
- HSE in Project Management:** The Safety Management Plan shall include reference to the documentation covering HSE technical, administrative and management aspects to ensure both the Contractor and its nominated sub-contractors are implementing the same standards and principles. Nominated sub-contractors HSE systems and performances will be assessed during pre-award and tendering stage and will be audited during the Contract period. These systems will include the project meetings and co-ordination processes, project induction and training arrangements, High risk works control and permitting systems, project EHS communication mechanisms (Toolbox Talks, Town Hall Meetings, Project Notice Board, Safety Award arrangements, Behavioural Safety systems, RAMS communication systems, etc.
- HSE in Design:** During the design phase the Contractor shall perform Hazop (Hazard and operability study), FTA and constructability Safety studies as required working from the concept and detailed design. This will ensure the design does not import unacceptable risks into the construction phase, which would likely transpose into the operation and maintenance phase. The main mechanism utilised to this intent is our Design Risk Assessment procedures, which includes for a consolidated design risk assessment template. The DRA process identifies levels of risk and appropriate mitigations to ensure that all designs are fully assessed prior to IFC.
- Communication of Live Changes:** As these types of project will develop within live environments it is of Critical Importance to communicate live services changes

**SECTIONAL HANDOVERS**

**COMMISSIONING**

- Ensure design drawings for sectional handover compatibility
- LSS's are a key part- to be constructed and commissioned in line with the programme- Fire Alarm / Emg Lighting / Sprinkler / Access control
- Construction works are phased to suit sectional handovers
- MEP systems will be commissioned to minimise disruption at a later date.
- C&E matrix and evacuation plans shall be based on the sectional handover areas and amended as more areas are integrated into the live Data Centre
- Ensure critical rooms such as IDF's and MPOE's are monitored under mission critical programme.
- Mechanical services (BAS / Ventilation and cooling) will be certified for the handover space
- Permitting systems to be put in place and warning signage to be prominent.
- Common Live areas / zones to have controlled and monitored access.
- LOTO enforcement to be zero tolerance
- Use the experience of key people to achieve successful and safe handovers



**7. ENVIRONMENTAL MANAGEMENT**

Winthrop are accredited to the ISO 14001 standard and have a multidisciplinary HSE team to manage all environmental aspects and impacts on site. The site Environmental management plan will address all environmental requirements. A register will be kept on site to track the various waste disposal hauliers and licences required.

**7.1 Dust**

Dust prevention measures shall be included for control of any site airborne particulate pollution. WEC shall continuously monitor dust over the variations of weather and material disposal to ensure the limits are not breached throughout the project. It is proposed to use a water spray machine in order to contain dust on site, if required. This dust suppression method is very successful in containing dust on-site. Stockpiles of relevant materials shall also be covered or capped if they are likely to release airborne dusts.

**7.2 Dirt**

Given the volumes of construction traffic generated by the Site Works WEC shall ensure that adequate measure are implemented to maintain an appropriate level of cleanliness, these methods will include the following:

- A wheel wash located within the site confines.

- All vehicles required to pass through the wheel wash before exiting the site to the public road network.
- A manned power washer put in place to assist the wheel wash system.
- A road sweeper used at particular time's during the duration of the groundworks; and water supplies to be recycled for use in the wheel wash. All waters would be drained through appropriate filter material prior to discharge from the site.

### 7.3 Noise

WEC shall implement measures to eliminate noise pollution wherever possible and reduce noise levels to the appropriate level so as not to affect local neighbours or facilities. The proposed development shall comply with BS 5228 "Noise Control on Construction and open sites Part 1: Code of practice for basic information and procedures for noise control" (or such further limits as imposed by South Dublin County Council).

### 7.4 Harmful Materials

Harmful materials shall be stored on site for use in connection with the construction works only. These materials shall be stored in a controlled manner.

This may include paints and specialist floor coatings, and these shall be delivered on a Just in Time basis and stored in protected containers.

Where on site fuelling facilities are used there shall be a bunded filling area using a double bunded steel tank at a minimum, or mobile bowsers shall also be used. An emergency spill kit shall be retained on site and located adjacent to any fuel storage.

No fuels will be stored near to the adjacent ditches or to the attenuation pond constructed as part of the EDCDUB 05 works.

## 8. PROGRAMME

WEC will develop a project specific programme for the, Procurement, Construction and Testing of the project.

WEC recognises its responsibility for the provision of an experienced Project Management Team and all associated equipment required to deliver the project.

We would produce:

- A Compliant Programme – based on agreed access dates
- A Schedule of Milestones based upon detailed design, procurement, and construction requirements.
- An associated BIM production program
- OSM production program
- Critical Dates Schedule

The project schedule underpins this Construction Management Plan and drives all activities to meet the specified dates as required.

Mobilization to site will involve a management team that is totally conversant with the project, the schedule and with the project plans.

Constant monitoring of the project plans and the project schedule by the management team will provide the necessary impetus to deliver the project on schedule with zero defects and zero accidents and injuries. The execution plan by necessity follows the functional specifications and key dates for delivery; there is no intent to duplicate the specifications herein. It is a given that all buildings and services will comply in all manners with the approved drawings and the functional specifications.

## **9. DESIGN ENGINEERING AND PERMITTING**

WEC will engage with Client Design team to ensure all Design Information and Permits are in place to ensure we achieve the project schedule dates.

WEC recognises the importance of early engagement with the Architects and Engineers, the key benefits to the project being.

- Achieving the project Schedule successfully
- Early Risk identification & mitigation
- Collaborative Prioritization of the Workflow
- Early Issuance of Purchase orders for long lead items
- Interface Identification & Management
- Implementing Constructability through the Design process
- Increased Certainty of Cost & Quality

## **10. DESIGN CO-ORDINATION & CONSTRUCTION LIAISON**

Engineering and design are the responsibility of the Client. We will participate on an early engagement basis when and where required. Details and level of engagement to be agreed after award.

## **11. KNOWLEDGE TRANSFER**

WEC will incorporate our Lessons Learnt and best practices from similar projects delivered, capturing the wealth of knowledge generated during these contracts for the benefit of a successful outcome. WEC are aware of our commitment to ensure excellence in respect of every facet of our business operations and in the service, we provide to our clients. In undertaking this journey WEC is determined to ensure that the knowledge and experience which resides within the Company is used to develop a consistent and collaborative approach to project delivery excellence.



Winthrop shall implement a lesson learnt programme in line with the WEC standard procedures and shall include the following:

- Identification of a knowledge sharing officer on the project
- Measures to avoid the mistakes that have occurred in past projects.
- The establishment of objectives and expectations for information capturing and dissemination
- Means of ensuring that relevant lessons learned are captured and available for wider benefit of the Company and staff and to share with The Client on an ongoing basis.
- The provision of contract information and experience for a full BIM operated contract up to LOD levels as defined by the contract.

All WEC's staff are encouraged to actively participate in this initiative by recording and sharing their personal experiences with the Company for the benefit of their colleagues and the future generation of the contractor's professionals.

## **12. INTERFACE MANAGEMENT**

On a project of this complexity, it will be essential to maintain close coordination between WEC and numerous stakeholders including the Client, Local Authorities, design team Client's Representative, Construction team, and any sub-contractors engaged in the project.

WEC has designated that ALL communications shall pass through the WEC Project Manager in order to have a single point of contact for all parties.

An interface management plan will be developed in consultation with the Client's Representative and submitted for approval following contract award

## **13. RISK MANAGEMENT**

At the commencement WEC will schedule a risk review and will concentrate on the areas of schedule risks, safety risks in design and construction, procurement/delivery risks, and commercial/cost risks.

The risk register developed during the tender phase will be developed further and will rank the risk in terms of impact on the project. Regular risk reviews will be held to monitor and control the applicable risks with all Stakeholders

While working in a Live Datacentre the Risk register is a Document of Critical Importance.

The Critical Date Schedule will be tracked in conjunction with risk management to highlight any issues and any mitigation required.

## 14. CHANGE MANAGEMENT

The WEC Project Director and Commercial Manager shall ensure that all staff members are made aware and fully understand and appreciate the Management of Change process that applies on this contract.

## 15. PRE-CONSTRUCTION AND MOBILISATION

Preconstruction and mobilisation activities will be required to support the construction stage, provide storage for materials and allow the works to be constructed in a safe and efficient manner, with reference to adjacent utility provider services, adjacent tenants, and adjacent structures/facilities.

The preconstruction and mobilisation activities will include but not be limited to.

- communication with Utility providers
- communication with the Estate Management company
- mobilisation of compounds, offices, and welfare facilities
- provision of works accesses and delineation of the site boundaries
- works to identify, delineate, and protect power utility apparatus, other hazards, and environmental constraints.

### 15.1 Aims for pre-construction and mobilisation activities

- To engage effectively with the estate management entity and adjacent facilities to minimise any potential impacts to the estate, and to facilitate any local agreements that may be required for traffic management, sourcing of staging areas, planning of out of hours works requirements, and identification of any sensitive service/timeframes that could impact on the works programme local and directly affected landowners to explain the planned works.
- To mobilise the site efficiently to minimise disruption, provide safe access, and adequate security is provided to keep the site and any valuable resources secure.

### 15.2 Works Management

#### 15.2.1 Communications

- Pre-Construction meetings will be held to align all stakeholders to the Site-Specific Scope of works for each project
- All Critical Milestones will be listed and agreed at these meetings



- Actions lists for liaison with 3<sup>rd</sup> party suppliers and service agreements partners will be listed for engagement and their alignment with the project specific milestones

**15.2.2 The Pre-Construction and Mobilisation Works**

- These activities would commence with the setting out of secure and non-secure areas within the building and external areas
- Set up onsite car parking sufficient to accommodate peak site numbers
- Clear Signage and maps will be displayed so all Construction and Client Staff understand these areas.



It is also understood that as the project develops these Secure and non-Secure areas are likely to change and these changes will be communicated to all staff associate with these works.

**16. CONSTRUCTION TRAFFIC MANAGEMENT**

**16.1 Purpose**

This section of the Construction Management Plan defines the traffic control arrangements that WEC will put in place throughout the works to manage all traffic associated with the construction activities and to co-ordinate all interfaces with public traffic.

**16.2 Scope**

The objective of this section of the plan is to ensure that the residual impacts to the public road network during the construction phase of the project which have been identified in the application documentation are minimised and that transport related activities are carried out as safely as possible and with minimum disruption to other road users.

This plan has also been prepared for the purpose of identifying appropriate and safe methods of access/egress for construction traffic to the EDCDUB05 building and surrounding facilities.

This plan describes the traffic management requirements for the transportation of construction materials, equipment and personnel along the public road network to facilitate the construction of the proposed development. Light vehicles, such as cars and vans, will be used by site operatives travelling to and from the site. Heavy Construction Vehicles (HCV) will be required to deliver general construction materials, such as concrete, to the site.

This plan is a live document that will be reviewed by WEC and expanded upon, where necessary, throughout the construction phase of the project, in order to ensure a comprehensive, effective and transparent management plan is available, communicated and implemented through all stages of the construction.

This section of the Construction Management Plan includes a detailed traffic management plan which addresses the following:

- Vehicular access
- Entrances & Exit routes
- Parking arrangements
- Site Speed Limits
- Construction delivery schedule arrangement
- Plant & Pedestrian segregation
- Traffic Management signage
- Routing of construction traffic
- Vehicular cleaning arrangements
- Road Cleaning
- Communication arrangements

### **16.3 Implementation**

Key to the implementation of this plan is the dedication of an on-site construction manager who will regularly liaise with and update the Client's Resident Engineer (RE) and associated team on all environmental and construction programming issues relating to the site. All site personnel are charged with following good practice and are encouraged to provide feedback and suggestions for improvements. All site personnel are also required to ensure compliance with the requirements of this plan.

It is the specific duty of the WEC Project Manager to liaise with the Client Resident Engineer, and the Project Managers. The Project Managers will co-ordinate discussions with the local authority roads engineer for any works which affect any public roads or thoroughfares.

Other measures that shall be in place to aid in the implementation of the plan during the course of the works will include:

- Ongoing discussion regarding traffic management arrangements at the weekly site progress meeting, weekly safety meeting and subcontractor meetings.
- Development and review of method statements for all works including invasive works, complex or higher risk works or works affecting traffic routes.
- The convening of the daily whiteboard meeting, and the Daily Activity Briefing which is attended by nominated supervisors from all contractors. The purpose of the whiteboard

meeting, and DAB's meeting is to co-ordinate dynamic elements of the works which includes all traffic management and deliveries, or activities that affect traffic routes.

- Drafting of Safe Plan of Action documents for all tasks/activities
- Induction for all new staff attending the project which has specific mention of traffic management arrangements, speed and parking restrictions, and requirements for transporting of materials on site.

## 16.4 Overview

The construction site will be organised so that vehicles and pedestrians using site routes are segregated and can move around safely. The routes will be suitable for the persons or vehicles using them, in suitable positions and sufficient in number and size, this is so that incidents can be prevented by the effective management of transport operations throughout the construction process.

During the construction, the Pedestrians and vehicles shall be kept apart by management of the following:

- **Entrances and exits** - separate entry and exit gateways for pedestrians and vehicles will be provided at the main security turnstile.
- **Walkways** - firm, level, well-drained pedestrian walkways that take a direct route will be provided both to the compound and site accommodation areas, and then to the front entrances to the main site buildings and surrounds.
- **Crossings** - where site walkways cross site roadways, a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly will be provided. As these crossings change in line with the progress of construction this will be outlined in advance through the site communications mechanism
- **Visibility** - drivers driving out onto public roads will have full visibility in both directions and the entrance will have a visibility splay to enable this. No fencing or construction materials will be permitted to block visibility and site lighting shall be provided to ensure pedestrians who may be crossing the site entrance can be seen.
- **Obstructions** –walkways shall not be blocked so that pedestrians have to step onto the vehicle route; and barriers will be installed to segregate pedestrians and vehicles. There is no envisaged construction activity of the roads or pathways on the R120 and any construction vehicles using these roads shall be for the purposes of entering or existing the site only.

Vehicle movement will be minimised by management of the following:

- Providing car and van parking for the workforce and visitors away from the work area in the site compound.
- Only vans or construction vehicles which are necessary for construction will be permitted into the site footprint. Vans etc. which can be unloaded of their construction materials will be advised by security that they must unload and then return to the construction compound.

- All vehicular access to the site will be controlled at the manned security gate and security will give instruction to all vehicle drivers.
- Storage areas will be planned so that delivery vehicles do not have to cross the site.
- People who direct vehicle movements (banksmen) must be trained and authorised to do so.
- Making sure that all drivers and pedestrians know and understand the routes and traffic rules on site; (induction & security guard).
- Use standard road signs where appropriate using colours as detailed in Chapter 8 DoT manual.
- Providing induction training for drivers, workers and visitors and send instructions out to visitors before their visit.

This management will be assisted by utilising the following:

- **Banksmen** - who are appointed to control manoeuvres and who are trained in the task. These shall be sourced from the appropriate contractors on site.
- **Clothing** - pedestrians on site will wear high-visibility clothing as well as other relevant P.P.E.
- **Gate Security**- to direct/summon banksmen from the worksite to guide long loads or relevant vehicles.
- **Speed limits**- speed limits to be restricted on site for all vehicles. The site speed limit on the EDCDUB05 site is 15kmph and this shall be signed on site and adequate signage shall be put in place.

## 16.5 Vehicular Access

The data centre will be accessed from the Grange Road R120, serving the route from Lucan to Rathcoole. This road has an 80kmph speed limit. This single carriageway stub is approximately 11m wide and will serve the surrounding area.

WEC shall ensure that the site entrance takes cognisance of the R120 and the entrance shall be suitably set up with a wide angle entrance, speed ramps upon exit to control speed and adequate sight lines in both directions (in excess of 150m).

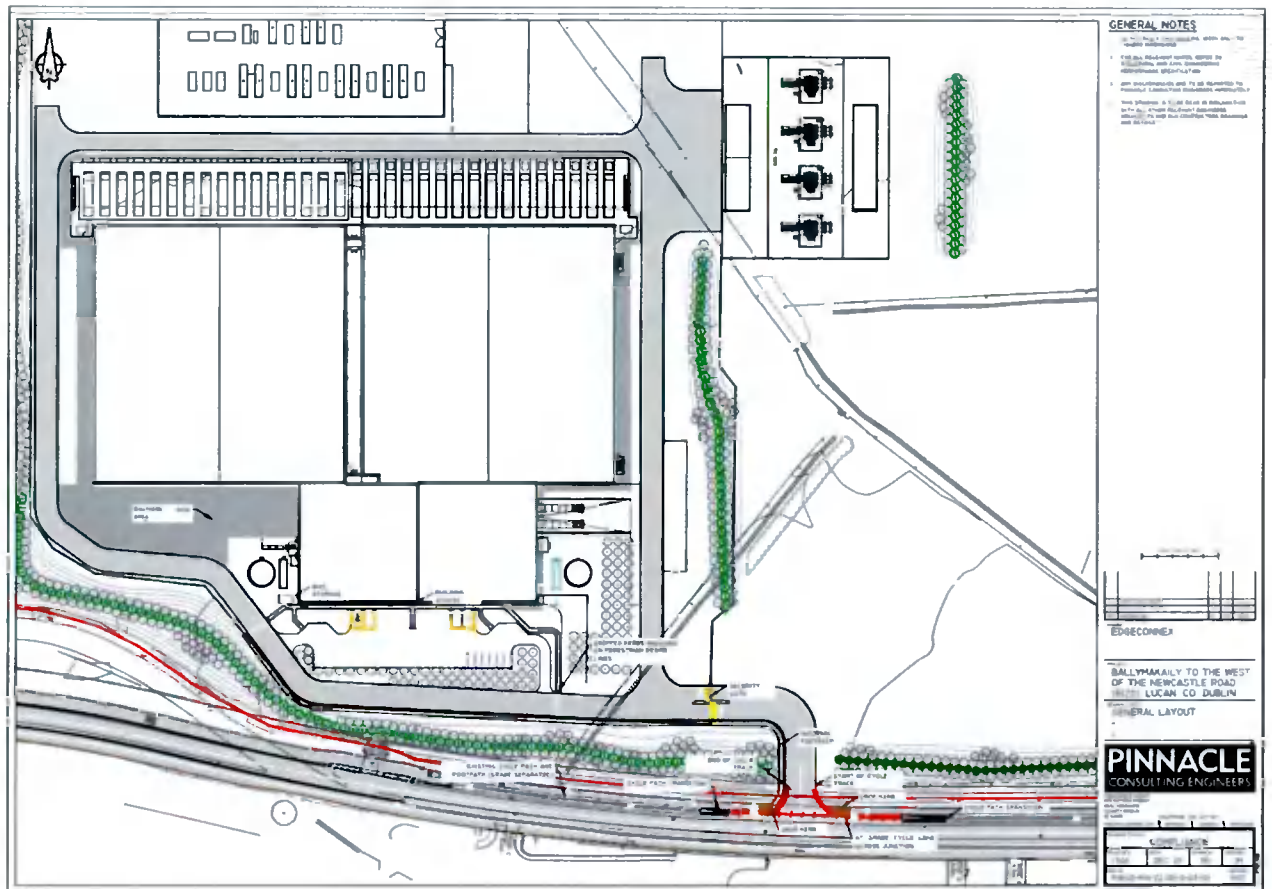
There is provision for 150 car parking spaces on site as part of the EDCDUB05 works. This level of parking is sufficient for all employee and visitor parking requirements.

Provision will be made for a HGV turning area in order to allow HGV's to make deliveries to the site in a safe and efficient manner and exit the site in a forward gear.

The design of the project provides for a complete encompassing road around the data hall allowing a full circle of the buildings for traffic.

The proposals at the access junctions are illustrated on Pinnacle Consulting Engineering drawings submitted as part of this application. All signing and lighting will be designed in accordance with the DOT Traffic Signs Manual to ensure that glare from site lighting onto the public road does not create a traffic hazard.





### 16.6 Pedestrian/Cyclists

Extension of the access stub includes provision of cycle paths, footpaths, verges and appropriate landscaping on either side of the access road in order to provide appropriate access for pedestrians and cycles.

Appropriately designed cycle parking facilities will be provided close to the entrance of the proposed data centre and office block. Given the size of the development, and level of staff, there will be a small bicycle shelter with locking facilities, in the construction site compound.

The design and layout of the proposal has been prepared so as to fully comply with the rigorous design standards and specifications applicable to this form of development. The applicant has drawn upon considerable experience in the design and implementation of such proposals.

### 16.7 Envisioned Construction Traffic

As part of the development of this plan, the traffic generation was calculated based upon similar construction activities which would have taken place in previous years on comparable developments. Staffing levels, material deliveries and envisaged plant requirements, and the associated access and traffic and transport impacts, are calculated based on similar project activities.

Automatic Traffic Counts were carried out as part of the design and planning stages to ascertain the typical existing traffic volumes currently using the roads which will be potentially impacted by the construction of the EDCDUB05 development. Details of the Automatic Traffic Counts are detailed in the Traffic Assessment that was submitted to South Dublin County Council as part of the original planning application.

## **16.8 Days and Hours of Construction/Delivers**

All deliveries will be advised, via the necessary delivery notification form, to the WEC Project Manager/Traffic Management Co-ordinator at least 1 day in advance with specific times identified. These are collated and held in a diary by the relevant site manager who will manage the deliveries on a daily basis. The daily whiteboard meeting and DAB's meeting will also be a pivotal element of the co-ordination process for managing site deliveries. The relevant site manager will highlight any clashes and anticipated busy periods to streamline the processing of deliveries.

On arrival at the agreed locations, drivers must wait at security in accordance with the relevant site signage. Security will contact the relevant site manager and the delivery will then be escorted to the appropriate location for unloading by the contractor's Banksmen.

Unloading will be carried out at one of the material storage areas until the delivery is scheduled to be immediately loaded into the building. All deliveries, where possible, must be able to be unloaded by forklift or mechanical means.

Times and deliveries will be restricted 7:00 hours on weekdays and 9:00 hours on Saturdays nor after 19:00 hours on weekdays and 13:00 hours on Saturdays as per the South Dublin County Council planning conditions. No deliveries will be scheduled for Sundays or Bank Holidays. All access roads used by contractors will be monitored for mud and any construction materials and cleared using a shovel and broom and if required a mechanical road sweeper.

## **16.9 Traffic Generation**

It is anticipated that there will be up to approximately 30 HGV deliveries per day of plant and equipment to/from the temporary construction material storage yard during the peak of the construction. This would prevail for the first nine months of construction and will reduce significantly thereafter. It is also envisaged that there will be approx 10 van deliveries per day at peak of construction which will reduce to 4 per day during off peak times (testing & commissioning, fit out stage).

The envisaged traffic generated during the construction will depend on the phasing of the construction which will be determined by the Client, and WEC. It is anticipated that there will not be any significant effects as a result of the construction of the site compound/parking area when compared to the operational traffic volumes during the construction of the proposed development.

The majority of traffic generated delivering materials during the project are envisaged to occur during the following construction elements:

- Site clearance
- Laying of internal road

- Concrete, steel, roofing and cladding material deliveries to site during the construction of structures
- Delivery of Mechanical & Electrical Plant

For the construction of the proposed development, it will be necessary to transport the construction materials, equipment and personnel to and from the work areas.

This includes (but is not limited to):

- Establishing the construction site compounds.
- The removal of surplus soil material. At this stage it is not expected that any spoil will be removed from the site as all materials will be utilised on site and rock crusher for re-use will be in place, where necessary.
- The importation of suitable soil material where required.
- The importation of relevant construction materials and equipment.
- The exportation of Construction and Demolition Waste.

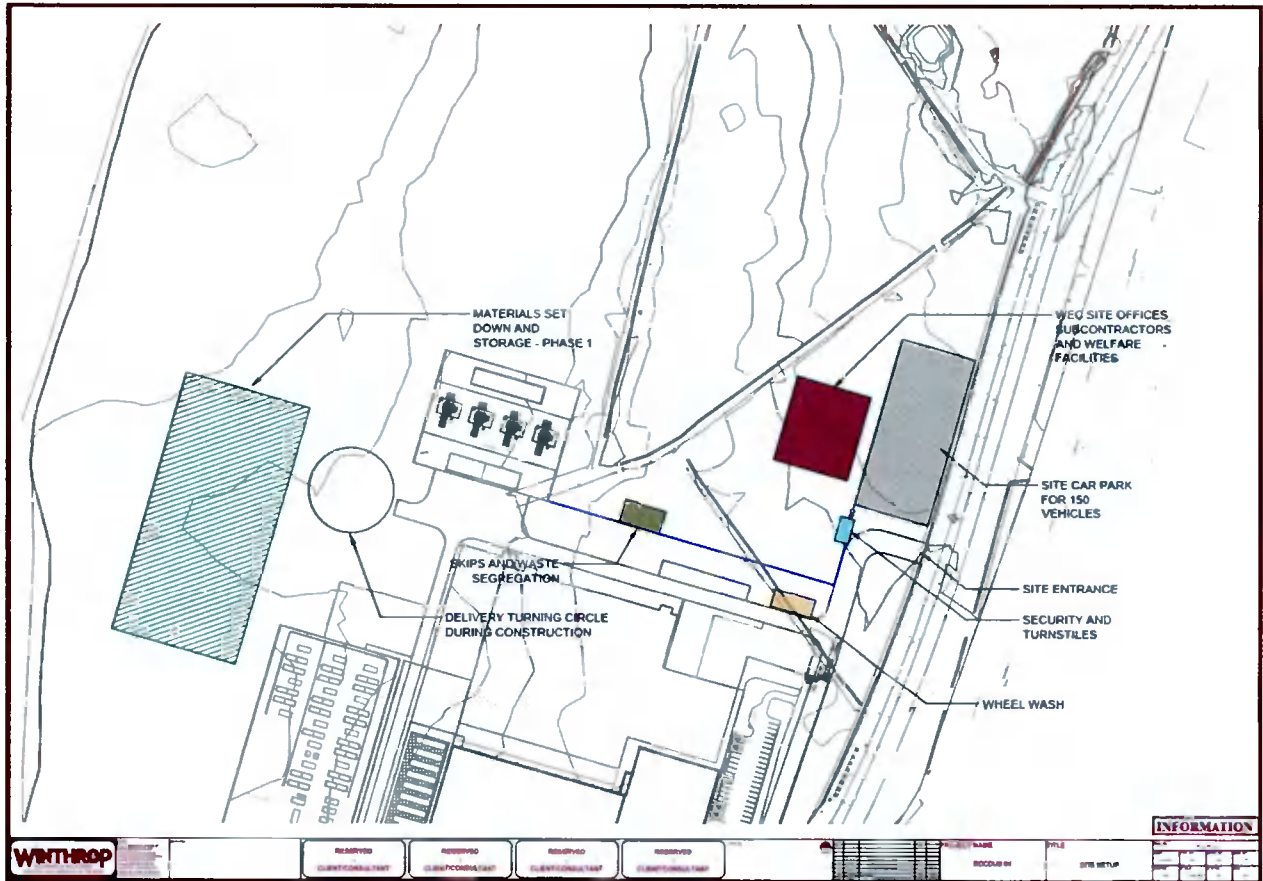
Materials such as steel and concrete required in the construction of the development are likely to be sourced from manufacturers that are not situated within close vicinity of the proposed development. Accordingly, a temporary construction material setdown and storage compound is being located inside the security gate (see below drawing) which will be the source / destination from which construction traffic, particularly for steel deliveries, will be generated.

Vehicles will access the road network to the temporary construction material storage yard using the R120 via the N7/M50 and the N4/M50.

The total number of vehicular traffic movements between the temporary construction material compound and construction site location will be determined by WEC based on the phasing of the proposed development but as all movements are internal to the site this will not have any residual effect on public traffic.

Arrivals and departures to the proposed temporary construction material compound are to be carried out in as few vehicle movements as possible in order to minimise potential impacts on the road network.





**16.10 Staff Levels**

At the peak of construction, it is anticipated that there will be a requirement for approximately 250 construction workers. This will vary over the life of the project.

Arrivals and departures to the sites are to be carried out in as few vehicle movements as possible to minimise parking requirements and potential impacts on the local road network. This will be executed by the availability of a significant construction compound which allows bulk storage.

There are a number of Dublin Bus services located within 1km of the site which take approximately twelve minutes to reach at normal walking pace.

There are two bus stops adjacent to the site at Adamstown, which are within a walking distance of 800m (No. 25b) which has an associated walking time of around 10 minutes. The No. 13 and No. 68 bus routes also have bus stops that are within walking distance.

The nearest railway line runs east-west approximately 600m north of the site. Intercity services to Cork and Limerick run on this line, as well as commuter railway services to Portlaoise. The nearest stations are Adamstown, approximately 2km to the north-west of the site and Clondalkin Fonthill approximately 3km to the north-west of the site. These stations are served by around 20 suburban commuter trains in each direction during weekdays.

Given direct pedestrian linkage to public transport surrounding the development, there is the opportunity to cultivate increased bus and train patronage by workers travelling to/from the site and this is being carried out through contractor consultation.

For staff that chooses to travel to site using cars or other motorised vehicles, a vehicle pooling system will be put in operation by WEC through pre-works consultation with the subcontractors. Such measures shall be adopted in order to reduce traffic levels on the local road networks.

Parking of construction staff vehicles on the public road network will not be permitted. The public road network surrounding the site will be included as part of the daily site EHS inspection. Offenders will be required to relocate their vehicles immediately.

### **16.11 Construction Traffic Management Elements**

This section of the Construction Management Plan details the working elements of the Construction Traffic Management Plan.

This Construction Management Plan shall be termed a 'Live Document', such that any changes to the construction programme or operations shall be incorporated into this plan.

WEC is contractually required to ensure that the elements of the planning stage Construction Traffic Management Plan are incorporated into this Construction Management Plan and any commentary from the Local Authority or Planning Office is also incorporated into the Construction Management Plan. This has been carried out and any revisions are tracked. WEC shall also ensure compliance with this Construction Management Plan and monitor its effectiveness throughout the construction process by regular site inspection, observation and testing of the safety controls.

The following headings shall be used to guide persons involved in implementing or revising this plan to ensure all requirements are afforded appropriate attention.

- Site Access & Egress
- National Road Network
- Regional and Local Road Network
- Traffic Management Signage
- Routing of Construction Traffic
- Road Closures
- Timings of Material Deliveries to Site
- Speed Limits
- Vehicle and Road Cleaning
- Road Condition
- Enforcement of Construction Traffic Management Plan
- Details of Working Hours and Days
- Details of Emergency Plan
- Communication

- Construction Methodologies
- Particular Construction Impacts

These items are explained in detail in the remainder of this section of this plan.

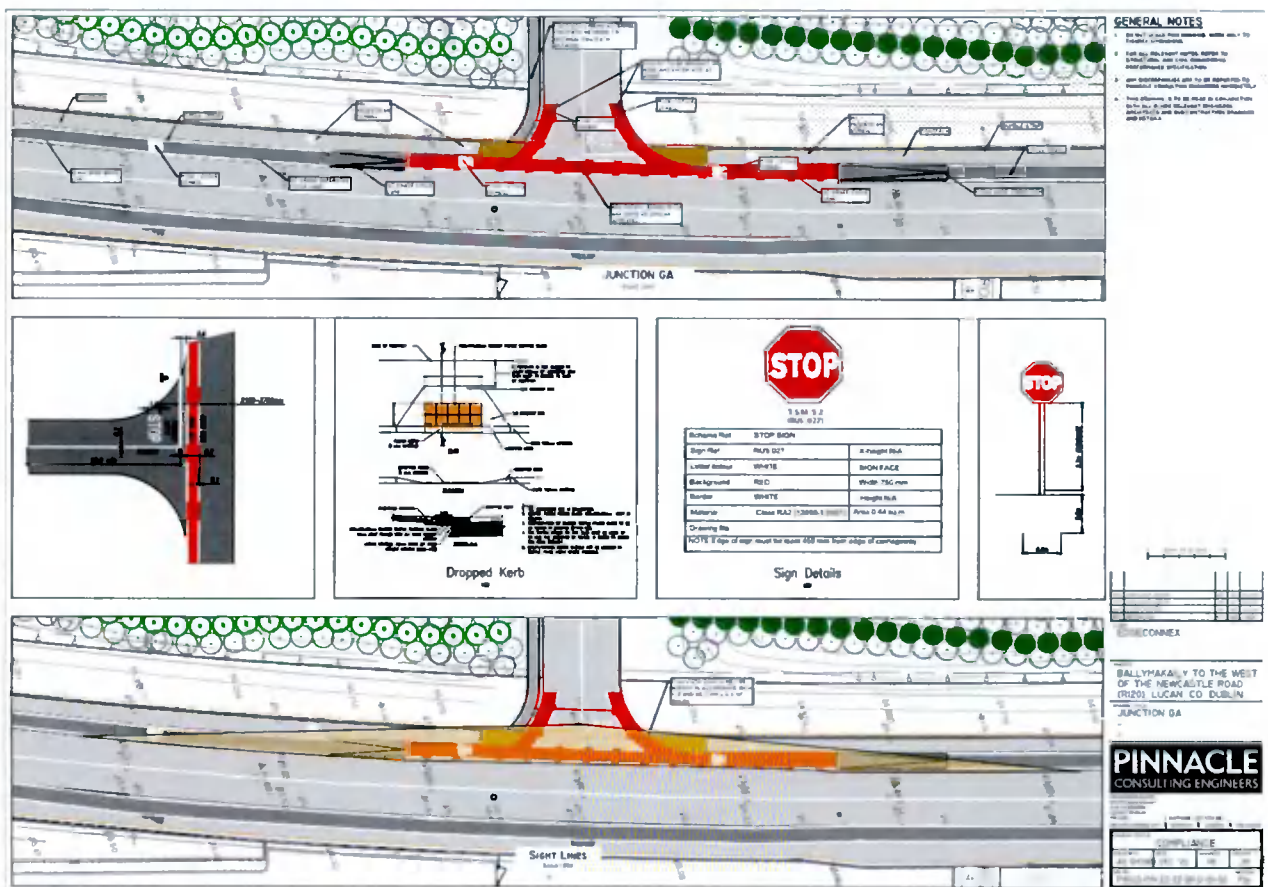
**16.11.1 Site Access and Egress**

Site access will be provided via the Grange Road R120 as shown in the below drawing.

The contractor shall provide advanced warning signs, in accordance with Chapter 8 of the Department of Transport's Traffic Signs Manual 2010, on the approach to proposed site access locations prior to construction.

There will be herras fencing/site hoarding secured to a minimum height of 2 metres alongside the construction site areas.

This fence will be checked daily and maintained as necessary and it will be the responsibility of the Site Manager to ensure that the gates are opened and locked each working day to ensure the site is not left open and unattended at any time.



**16.11.2 National Road Network**

Access to the site along the National Road Network will be via the N4 and N7 and from the M50. It is anticipated that the majority of construction related traffic will travel along the N4/N7 at which point construction traffic will enter the regional/local road network i.e. R120.

**16.11.3 Regional & Local Road Network**

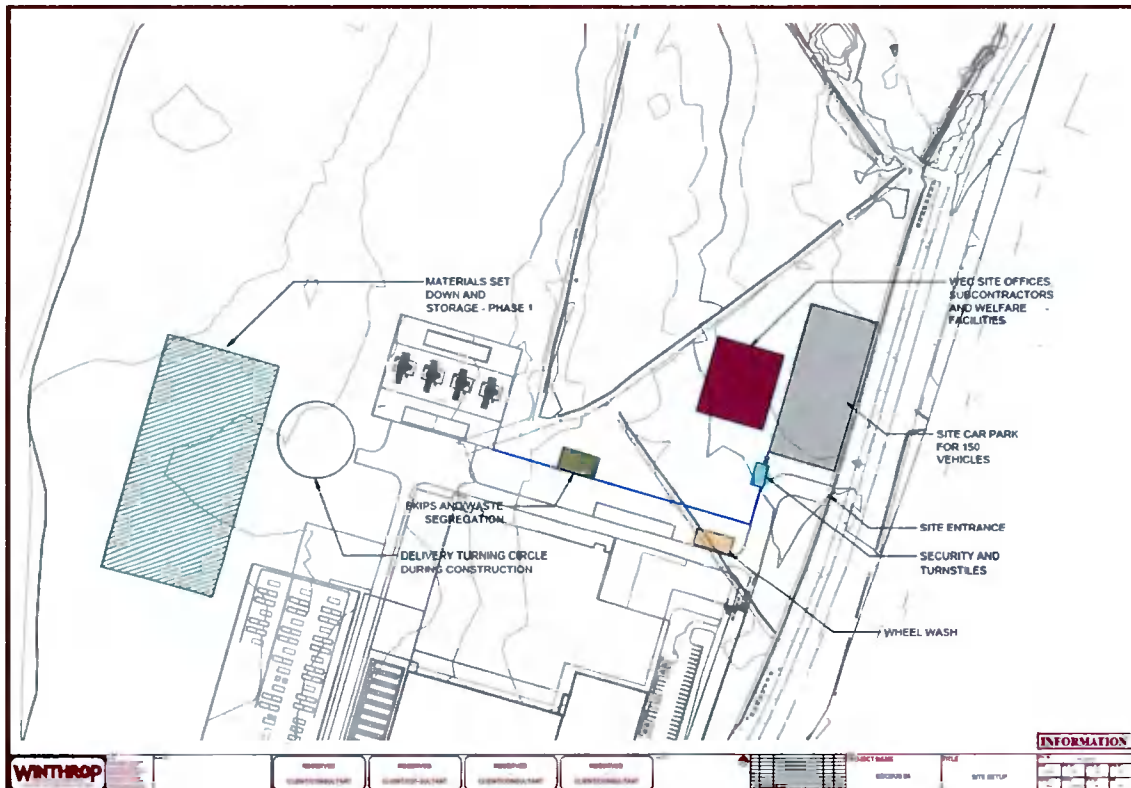
The majority of access / egress to the site shall be facilitated from the local road networks. To mitigate against possible restrictions in visibility requirements WEC shall ensure there is full site lighting at the site entrance to ensure full visibility is achieved. No adjacent residences are present but the lighting shall be positioned so it does not create a nuisance to adjacent premises. The site entrance will be constructed to allow straight access for vehicles particularly long load vehicles, so vehicles do not slow or stall when entering the site thus posing an issue to other roads users.

There will be one access point along the Grangecastle Road (R120).

**16.11.4 Construction Material Storage Compound**

As noted previously, it is proposed to construct a temporary construction material storage compound inside the site security gate. The location of the temporary construction storage compound including the access routes is detailed in the below drawing.

Access to the temporary construction storage will be through the site security gate which is approx 100m inside the proposed development access. WEC shall ensure the access route to the compound is kept clear at all times.





### **16.11.5 Traffic Management Signage**

WEC shall erect traffic management signage both internal and external to the site to co-ordinate traffic movements and outline any parking, speed or lay down restrictions that exist to ensure traffic on public thoroughfares is co-ordinated. Any traffic management signage that is erected on public thoroughfares such as the external footpaths on the R120 will be erected in line with the specifications detailed in Chapter 8 of the DoT road signs manual and with the agreement of South Dublin County Council.

As there no envisaged tie in work or works likely to affect public roads it is envisaged that the only signs required externally to the site will be notification type signs identifying the location of the site access gate.

Where signage is required particularly permanent signage WEC shall consult with the relevant authorities for the purpose of identifying and agreeing signage requirements.

Proposed signage may include warning signs to provide warning to road users of the works access / egress locations and the presence of construction traffic. All signage shall be provided in accordance with Department of Transport's Traffic Signs Manual, Chapter 8 – Temporary Traffic Measures and Signs for Roadworks.

<http://www.dttas.ie/roads/publications/english/traffic-signs-manual-2010>

In summary, WEC will ensure that the following elements are implemented:

- Consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements
- Provision of temporary signage indicating site access route and locations for contractors and associated suppliers
- Provision of general information signage to inform road users and local communities of the nature and locations of the works, including project contact details.

### **16.11.6 Routing of Construction Traffic**

As outlined above, a temporary construction material storage yard will be utilised for the proposed development. Deliveries to the temporary construction material storage will be permitted to access the road network using the R120 to the N4/N7/M50.

Traffic leaving the storage yard will turn left or right onto the R120 then turn left/right towards the N4/N7/M50.

It is envisaged that construction works travelling to the site will do so via the primary road network i.e. N4/N7/M50 with access to Grange Road via the R120.

### **16.11.7 Programming**

In order to reduce impacts on local communities and residents adjacent to the proposed site, it is proposed that:

- WEC will liaise with the management of other construction projects and the Local Authorities to co-ordinate deliveries.

- WEC will schedule deliveries in such a way that significant construction activities and large deliveries activities do not run concurrently e.g. avoiding pouring of concrete on the same day as material deliveries in order to reduce the possibility of numbers of construction delivery vehicles arriving on site simultaneously, resulting in a build-up of traffic on the road network.
- WEC will schedule deliveries to and from the proposed temporary construction materials storage compound such that traffic volumes on the surrounding road network are kept to a minimum.
- HGV deliveries to the EDCDUB05 site will be suspended on the days of any major event in the area that have the potential to cause larger than normal traffic volumes. This may include events at the Grangecastle Golf Club.
- WEC will interact with members of the local community to ensure that deliveries will not conflict with sensitive events such as funerals.
- HGV deliveries will avoid passing schools on the R120 at the entrance to the Hillcrest Housing estate in Lucan at opening and closing times where it is reasonably practicable.
- Times and deliveries will be restricted 7:00 hours on weekday and 9.00 hours on Saturdays nor after 19:00 hours on weekdays and 13:00 hours on Saturdays as per the South Dublin County Council planning conditions. No delivers will be scheduled for Sundays or Bank Holidays.

The construction period for the proposed development is anticipated to be approximately 14 - 16 months from the commencement of the site works. This is subject to change and dependent on specific conditions.

#### **16.11.8 Recommended Traffic Management Speed Limits**

Adherence to posted / legal speed limits will be emphasised to all staff / suppliers and contractors during induction training.

Drivers of construction vehicles / HGVs will be advised that vehicular movements in locations, such as local community areas, shall be restricted to 50 km/h. Special speed limits of 30 km/h shall be implemented for construction traffic in sensitive areas such as school locations. Such recommended speed limits will only apply to construction traffic and shall not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

#### **16.11.9 Road Cleaning**

WEC will carry out road sweeping operations to remove any project related dirt and material deposited on the road network by construction / delivery vehicles. A wheel wash will be available at the site entrance and road sweeping will complement the operations of the wheel wash where necessary.

Road Sweepers will dispose of material following sweeping of road network, to a licensed waste facility.

**16.11.10 Vehicle Cleaning**

WEC will ensure appropriate measures are in place to ensure mud and other organic material is removed from vehicles exiting the site, - i.e. providing wheel washing facilities, and any other necessary measures etc. In addition, the cleaning of delivery trucks such as concrete delivery trucks shall be carried out at the material storage compound at the concrete wash out area and shall not be undertaken off site.

**16.11.11 Road Condition**

The extent of the heavy vehicle traffic movements and the nature of the payload may create problems of:

- Fugitive losses from wheels, trailers or tailgates; and
- Localised areas of subgrade and wearing surface failure.

WEC shall ensure that:



- Loads of materials leaving site will be evaluated and covered if considered necessary to minimise potential dust impacts during transportation. This shall be monitored by gate security personnel.
- The waste and groundworks contractor shall take all reasonable measures while transporting waste or any other materials likely to cause fugitive losses from a vehicle during transportation to and from site, including but not limited to:
  - Covering of all waste or material with suitably secured tarpaulin/ covers to prevent loss; and
  - Utilisation of enclosed units to prevent loss.
- The roads forming part of the haul routes around the site will be monitored visually throughout the construction period and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required.
- Throughout the course of the construction of the proposed development, on-going visual inspections and monitoring of the haul roads will be undertaken to ensure any damage caused by construction traffic is recorded and that the relevant local authority is notified. Arrangements will be made to repair any such damage to an appropriate standard in a timely manner such that any disruption is minimised.

#### **16.11.12 Road Closures**

During the course of the works, it is not envisaged that road closures will be required. However, if any are required WEC will follow, communicate and follow the SDCC requirements.

#### **16.11.13 Enforcement of Construction Traffic Management Plan**

All project staff, subcontractors and material suppliers will be required to adhere to the construction traffic management requirements detailed in this plan. As outlined above, WEC shall agree and implement monitoring measures to confirm the effectiveness of this plan.

#### **16.11.14 Details of Working Hours and Days**

Times and deliveries will be restricted to between 7:00 hours on weekday and 9.00 hours on Saturdays and 19:00 hours on weekdays and 13:00 hours on Saturdays as per the South Dublin County Council planning conditions. No deliveries will be scheduled for Sundays or Bank Holidays.

#### **16.11.15 Emergency Procedures During Construction**

WEC will ensure that unobstructed access is provided to all emergency vehicles along all routes and site accesses and will provide to the local authorities and emergency services, contact details of the contractor's personnel responsible for construction traffic management.

Emergency vehicle access routes will always be maintained with full access around the site. In the event that an emergency vehicle must attend site, they will be met at security point by a member of the WEC's ERT and accompanied to the incident location. The Permit to Work system will be utilized to ensure that all road closures are properly planned and communicated to the workforce.

In the case of an emergency the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112
- Exact details of the emergency / incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer; All construction traffic shall be notified of the incident
- Where required, appointed site first aiders will attend the emergency immediately; and
- The site Safety Officer will ensure that the emergency services are en-route where required.

#### **16.11.16 Communication**

WEC shall ensure that clear communication with the relevant local authorities and the emergency services shall be maintained throughout the construction phase. Such communications shall include:

Where works are likely to affect normal road traffic:

- Submissions of proposed traffic management measures for comment and approval to the local authority
- On-going reporting relating to the condition of the road network and updates to construction programming
- Information relating to local and community events that could conflict with proposed traffic management measures and construction traffic, in order to implement alternative measures to avoid such conflicts.
- WEC shall also ensure that the local community is informed of proposed traffic management measures in advance of their implementation if and where they arise. Such information shall be disseminated by posting advertisements in local newspapers and delivering leaflets to houses in the affected areas. A local consultation group will be set up between representatives from the local community and EdgeConnex. Such information shall contain contact information for members of the public to obtain additional information and to provide additional knowledge such as local events, sports fixtures etc. which may conflict with proposed traffic management measures.

#### **16.11.17 Particular Construction Impacts**

WEC is aware of the following particular issues in relation to the construction of the proposed development.

- National, Regional and Local Road Crossings -
- WEC do not envisage any requirement for the installation and removal of guarding across National, Regional and Local Roads for the construction of this project.

## **17. CONSTRUCTION MANAGEMENT**

The construction team proposed will have significant experience in Data Centre Projects across Europe. The project requirements will be reviewed in their entirety, and this

implementation plan will address each area of responsibility for the project. The project team are committed to delivering a project that exceeds the requirements set forth in the tender documents and that exceeds expectations in the area of HSE. As a minimum, the following objectives will be achieved:

- Complete the project on schedule and meet all schedule milestones
- Exceed the Client's HSE goals
- Achieve an Incident and Injury Free environment for all our workers
- Meet and/or exceed all technical performance objectives
- Achieve total satisfaction for both the client and the owner in the services of WEC
- Comply with all contract and regulatory requirements

### **17.1 Construction Structure**

The Project Director will have direct line reports from discipline project managers on Architectural, Mechanical and Electrical works. These PM's have a demonstrable track record in the industry with relevant project experience. In conjunction with the Project Director these PM's will be directly responsible for safety of all personnel under the project umbrella.

Each project manager will have a dedicated construction manager who will have the relevant expertise in similar projects.

WEC will comply with the Construction Industry Federation regulations and in all areas will utilize a Method Statement, Safe Plan of Action (SPA), and Permit to Work (PTW) system (associated with Commissioning and Finishing activities). All permits to work shall be secured from the Client Representative prior to commencement of any associated activity.

Method statements will describe the work to be performed, materials and tools and equipment to be used, risk and hazard identification and remediation, and the actual work methods and techniques to be used. Drawings will be attached to the method statement for reference. Methods statements will cover extensive pieces of work and can cover the entire duration of the project.

SPAs (Safe Plan of Action) will follow the method statement layout describing the work and tools and risks but will be prepared daily for each work crew. The SPA will have input from crew members during the daily toolbox talk and each member will sign the SPA before starting work.

The SPA is a living document and must be changed during the day if the crew's activities change. All new activity – no matter the duration – must be addressed in a SPA. Any visitor to the work area must first read and sign the SPA before entering the work area.

A permit-to-work will be issued by a skilled construction safety engineer jointly with the client after having reviewed the drawing, the method statement, and the SPA. Most PTWs can be issued for up to a 30-day period if the work is repetitive but there must be a new PTW for each new piece of work.

On site, the method statement, SPA, and PTW will be prominently displayed and ready for inspection and review by any interested party.

## 17.2 Extent of Works

The construction works will involve an indicative sequence of works, with a brief description outlined below. WEC will clearly outline works which impact public spaces and thoroughfares within this Construction Management Plan that shall be submitted as part of the planning process.

## 17.3 Hoarding, site set-up and Formation of site access / egress points

The site area will be enclosed with herras fencing to secure the site. Fencing panels will be maintained and kept clean for the duration of the project.

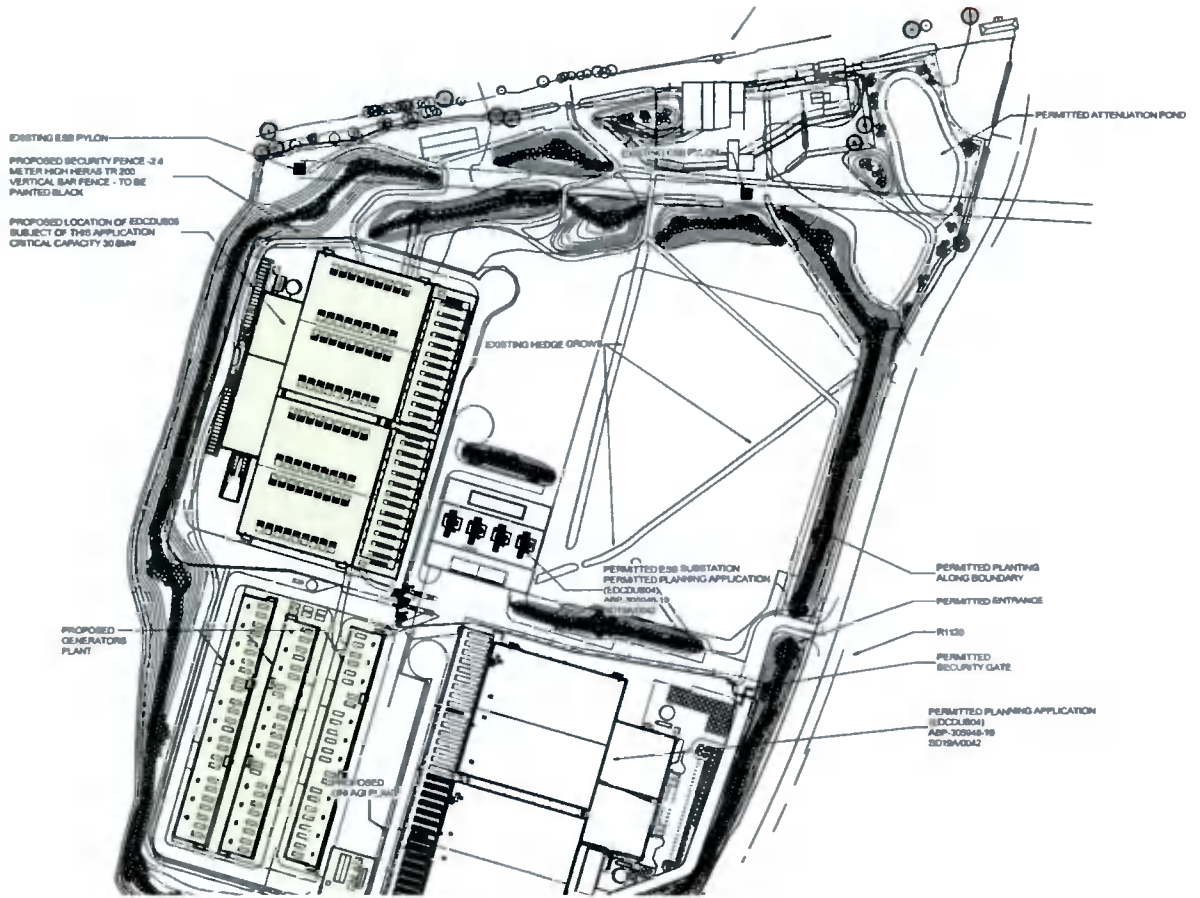
This will involve erecting the fencing around the proposed site perimeter in line with the finished development description.

A construction materials compound and parking area will be facilitated within the site footprint. The location of this facility is shown in the below figure.

WEC will be responsible for the security of the site.

WEC will:

- Operate a Site Induction Process for all site staff
- Ensure all site staff shall have current 'Safe Pass' cards and CSCS plant operator cards where relevant
- Install adequate site hoarding to the site boundary
- Maintain Site Security staff at all times.
- Install access security in the form of turn-styles and gates for staff
- Separate public pedestrian access from construction vehicular access
- Ensure restricted access is maintained to the works and prevent access to unauthorised persons
- Provide appropriate site welfare and personnel accommodation including canteens on site.
- Ensure that any planned activities do not adversely impact on adjacent residences





#### **17.4 Bulk Excavation**

The footprint area will involve the excavation and removal of material which will be reused for landscaping. We do not expect there to be any contaminated material given the nature of the site. It is not expected that any soil will be removed from site as all materials will be utilised on site and rock crushing will also be in place.

#### **17.5 Construction Sequence of Substructure**

The nature and type of the proposed development indicates that to prevent any potential risk of groundwater intrusion during the excavation of the pad foundations that pumps will be maintained on site to facilitate any localised De-watering requirements. The concrete works will involve concrete deliveries to site and adequate wash-down and wheel wash facilities must be provided for the concrete wagons.

#### **17.6 Construction Sequence of Superstructure**

The construction of the superstructure will involve sequencing of activities and various construction methodologies to deliver the Contract. The nature of the building, the column grid, and economic factors, indicate a simple methodology with the installation of the steel frame and cladding. Scaffolding will not be required for the majority of the external envelope sequence and cherry pickers, MEWP's, Telehandlers, and cranes will be used.

The following outlines a general construction sequence for the superstructure:

##### **17.6.1 Building Structure**

- Site establishment and excavation
- Construction of the foundation pads
- Construction of Level 0 floor slab
- Commencement of steel works to full extent of roof and side envelopes including low level precast wall panels. Advancing of Cladding two or three levels behind the structure.

##### **17.6.2 Mechanical & Electrical fit-out**

- First fix will commence at each area behind structure
- This will be followed by the second fix and the final connections

##### **17.6.3 Fit-out**

- Initial installation of wall work when cladding is complete, and floor is weather tight
- Installation of equipment and associated connection to services

- Completion of finishes

#### **17.6.4 Commissioning**

The final commissioning period will commence during fit-out.

The above is an indicative construction sequence. It is envisaged that 1 crane will be required to accommodate the construction works for the distribution of reinforcing steel, concrete skips, concrete formwork elements and general building materials. WEC will ensure all necessary licences from the Local Authority and nearby Baldonnell Airport are obtained where required. Large cherry pickers will be used to facilitate particular façade features.

### **18. SITE PROCEDURES**

#### **18.1 Weekly Progress Meetings**

The Construction Manager will chair a weekly progress meeting to be attended by The Clients Rep. WEC will provide representatives for construction, project control, procurement, for these meetings. All open items from previous meetings and open RFIs will be a priority on the agenda. Progress will be a major item on every agenda and updated current schedules will be distributed prior to the meeting. Thirty and sixty-day schedules will be discussed as well. Any material/procurement and engineering issues will be discussed. Minutes will be kept and disseminated immediately following the close of the meeting.

#### **18.2 Tool Box Meetings**

Every construction crew will start the day with a Toolbox meeting in which the day's activities, risks and hazards will be discussed by the entire crew. At the end of the meeting, a Safe Plan of Action (SPA) will be prepared and signed by all crew members. Any visitors to the work site must first read and sign the SPA before entering the site.

#### **18.3 Site-Wide Safety Meeting**

There will a site-wide safety meeting once a week with Client Ops participation invited. The Construction Manager will co-host these meetings with the HSE Manager. These Meetings are invaluable and shall be used to reinforce the importance of safety in all aspects of our lives.

### **19. MANAGEMENT OF SUB-CONTRACTORS**

#### **19.1 Procurement of Sub-Contractors**

The sub-contracting process used by WEC seeks to ensure that the work is carried out in accordance with the requirements of the Conditions of the Main contract.

WEC's team will implement a comprehensive subcontractor procurement strategy. As part of its strategy, the team shall:

- Identify the key subcontract packages and their respective lead-in durations. Utilise the standard Company Procurement Schedule to identify the key milestone dates relevant to the award process.
- Scope the packages to ensure a completeness of award and to minimize split responsibility with other subcontract packages.
- Develop and agree a rigorous subcontractor selection criterion and any particular tendering option worthy of consideration. For example, negotiation with a key partner. The criteria for selection of sub-contractors must not be limited to cost and must include issues such as co-operation, management structure, capacity to bond, health and safety policy, claims policy, current workload, quality, snagging policy, ability to provide attendances, cleaning policy etc. The Project Director shall make the final decision should any dispute arise regarding the appointment of a particular sub-contractor.
  
- Specify WEC's expectations of the subcontractor, particularly in terms of:
  - Health and Safety Regime
  - Scope, quality, and specification of work.
  - Programme obligations.
  - Contractual obligations
  - Design responsibility
  - Insurances, Bonds, Guarantees, Warranties, Certificates of Compliance.
  - Change Management/Conditions Precedent/Timing of notifications
  - Statutory requirements
  - Cleaning/Waste Management
  - Sub-contractors Site Management.
  - Maintenance of Records
  - Payment arrangements/Submission of progress applications.
  - Contra charge procedures
  - Attendances. Endeavour to ensure that each sub-contractor provides its own attendance, (labour and plant) whenever possible.
  - Ensure that daily/weekly reports contain a status report in respect of progress on the procurement/ award of each subcontract package.
  - Ensure that a formal Pre-Appointment Meeting is convened with all subcontractors This meeting should serve to confirm the Contractors expectations of the subcontractor and to confirm the agreement of the parties to the conditions discussed during procurement. It also serves to tidy up loose ends and eliminate the scope for future claims. The minutes of the Pre-Appointment Meeting must form part of the formal subcontract documentation and take precedence over any conflicting documents

## 20. CRITICAL ASPECTS OF DATA CENTRE CONSTRUCTION

As detailed previously throughout this submission Winthrop have extensive experience in working in Data Centre delivery. To this effect we recognize that as these projects become live our project management and safety arrangements on the project must migrate towards an operational data centre environment.

To cater for this requirement, we have developed extensive procedures within our management systems to ensure that our works do not compromise the integrity of operations in these areas. These include:

- Designation of data hall works supervisors separate from other construction supervisory tasks
- Development of a separate induction programme for all staff which includes reference to sensitive services, MOP's, clean environment controls/hygiene, Information security etc.
- Adjustment and amendment of our permit to work systems to ensure client involvement in high risk works.
- Development of access control arrangements to ensure all live areas are segregated from general construction areas
- Procurement of clean environment equipment to include isolation bubbles, air scrubber equipment etc. to aid in maintaining the environment even for invasive works
- Development of a Safe Plan of Action document which identifies the key risks associated with these environments, and specifies the acceptable risk control

As per our experience, we work closely with Our Clients to further develop these procedures to ensure the areas integrity is maintained and subsequent works in the live environments can be managed, and any procedures that the client would have; i.e. MOP, permit systems, service isolation permits can be integrated into the Winthrop arrangements.

Dust and vibration mitigation arrangements would include:

- Use of negative pressure environments particularly in installation at the appropriate stage
- Use of covers over louvres/grills and external ductwork to minimise dust ingress into partially finishes buildings. Also, temporary realignment of ducting to avoid air intakes during the invasive works
- Use of internal air scrubber equipment during the installation of soft finishes within the spaces
- Utilisation of offsite prefabrication, and external workshops to minimise the introduction of dusts into internal spaces, and co-ordinating the use of cold cutting equipment for invasive operations
- Utilising storage areas to ensure that only clean equipment and PPE is used in near complete spaces to minimise contamination.

- Early engagement of high-level clean contractors who would commence cleaning operations at an appropriate time during the fitting out phase

## **21. LOGISTICS**

We envisage a Temporary Site Setup for the duration of the works for Material & Component Storage but also to facilitate site specific pre-fabrication within a controlled zone thus removing as much construction works as possible to outside the Live environments.

A secure manned access and egress point will be created to ensure security and control of site vehicle & staff movement.

A Fire access route shall be maintained through the project

## **22. INDIVIDUAL SYSTEM CONSTRUCTION**

Close coordination of the interface between all aspects of the build – CSA & MEP – must be maintained to minimize the risk of services clashing with each other and MEP clashing with the Structure of the building. Access openings in the buildings and utility buildings must be coordinated with the architects and structural designers to ensure adequate openings are made in the structure for the easy ingress and egress of construction equipment and the permanent plant.

Detailed movement and lifting plans will be carried out in conjunction with the CSA designers and Engineering with input from the H&S department to ensure all movements are within the design limits of the moving equipment and the structures across which any items are being moved.