

OUTLINE CONSTRUCTION MANAGEMENT PLAN

FOR

WATERFRONT SOUTH CENTRAL RESIDENTIAL DEVELOPMENT, NORTH WALL QUAY, DUBLIN 1



DEVELOPER: RONAN GROUP REAL ESTATE



APPLICANT: WATERSIDE BLOCK 9 DEVELOPMENTS LTD.

ARCHITECTS: HENRY J LYONS

Henry J Lyons

STRUCTURAL ENGINEERS: CS CONSULTING GROUP



SERVICES ENGINEERS: AXIS CONSULTING ENGINEERS



PREPARED BY: PJ HEGARTY & SONS
DATE: JANUARY 2021
ISSUED FOR: PLANNING APPLICATION



1.	Introduction	3	8.5	Super-Structure	19
2.	Site Location.....	4	8.6	Envelope	20
3.	Site Setup	4	8.7	Fit-Out.....	23
3.1	Site Boundary	4	8.8	External Site Works & Finishes	23
3.2	Site Compound	6	8.9	Tower Cranes & Concrete Placing Booms	23
3.3	Car Parking.....	7	8.10	Other Plant	25
3.4	Site Power, Water & Drainage.....	7	8.11	Labour Resources	25
3.5	Site Access	7	8.12	Building Control (Amendment) Regulations	25
3.6	Site Security	8	9.	Public Relations	25
3.7	Working Hours.....	9			
3.8	Site Logistics	9			
4.	Liaison with Third Parties	10			
5.	Safety Management.....	11			
6.	Traffic Management.....	15			
7.	Environmental Management	16			
7.1	Noise, Dust & Vibration Monitoring.....	16			
7.2	Wheel Washing.....	16			
7.3	Dust Control.....	16			
7.4	Waste Management.....	17			
7.5	Storage & Use of Fuel.....	17			
7.6	Energy Efficiency	17			
7.7	Management of Odours & Other Emissions.....	17			
7.8	Management of Noise.....	17			
7.9	Management of Water Pollution.....	17			
7.10	Management of Hazardous Waste	18			
8.	Construction Methodology	18			
8.1	Introduction.....	18			
8.2	Commencement Notice	19			
8.3	Site Mobilisation	19			
8.4	Sub-Structure.....	19			

1. Introduction

Waterside Block 9 Developments Limited propose a Strategic Housing Development (SHD) application to An Bord Pleanála. The proposed scheme is situated on part of the lands identified in the North Lotts & Grand Canal Dock Planning Scheme 2014 as 'City Block 9'.

The overall landholding of 1.95 hectares enjoys two permissions for development of a residential and a commercial scheme, respectively, together with a third combining the previously permitted basements. This submission reconsiders the site's potential in light of the changing economic circumstances that pertained in 2014, but also changing town planning circumstances including the National Framework and the Ministerial Guidelines on apartments and heights, respectively.

This construction management plan refers to the application for the residential element only - a complementary commercial development proposed for the balance of the lands is shown for illustrative purposes only.

An Architectural Design Report and drawings are included with the application to fully illustrate the detailed design proposals for Waterfront South Central.

This document describes a stand-alone SHD proposal. The SHD scheme represents a component of an overall masterplan proposal. Subject to a separate application, a commercial scheme sits on the balance of the lands. The overall masterplan is shown in this document for illustrative purposes only.

The SHD proposal consists of three residential blocks; Block A (13 floors), Block B (10-40 floors) & Block C (10-44 floors). A series of public, open spaces at ground floor creates connectivity of space and people to the surrounding street network. Streets at ground floor are activated with public and resident-only amenities.

1005 apartments are proposed under this SHD application. There is a mix of one, two and three bed apartments. 100 Part V apartments have been included between Blocks A & B. An extensive series of roof terraces have been provided across the scheme. The residential terraces offer a variety of rooftop experiences across all three blocks.

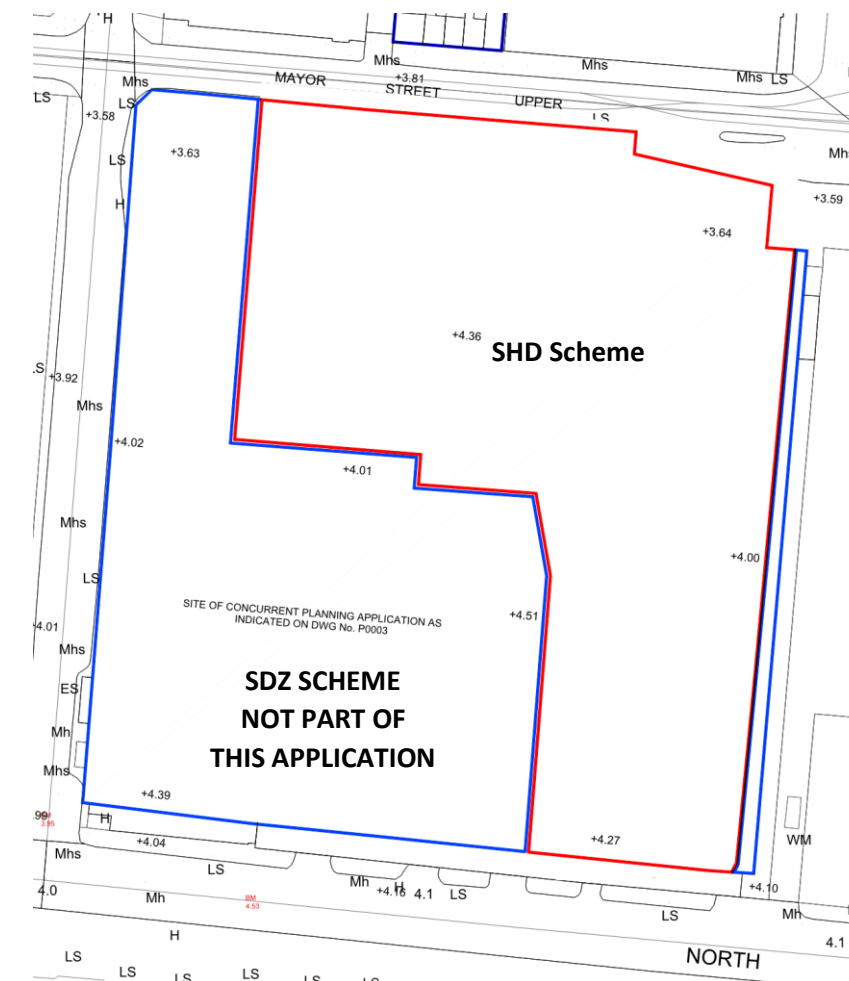
This Construction Management Plan is intended to set out the methodology and procedures that will be put into operation on the Waterfront South Central SHD Project for the duration of construction.

The Construction Management Plan will provide Dublin City Council and An Bord Pleanála with an outline proposal of how construction will be managed to comply with Local Authority and statutory requirements and will be updated post award of planning to reflect specific planning conditions which may be applied to the development.

The start date for the project is dependent on receipt of planning permission but is likely to be in Q4 2021. Construction is expected to require approximately 4 years from Q4 2021 to Q4 2025.

The combined City Block 9 basement to a depth of -9.70m is permitted by Dublin City Council Reg. Ref. DSDZ3042/19. The basement relates only to the SHD scheme and excludes the adjacent basement associated the commercial scheme. Two separate basements are proposed. The 'Commercial' basement has been excluded as part of this application. Basement works will commence under this planning permission in advance of the main construction works described in this application. Issues to be addressed during construction include:

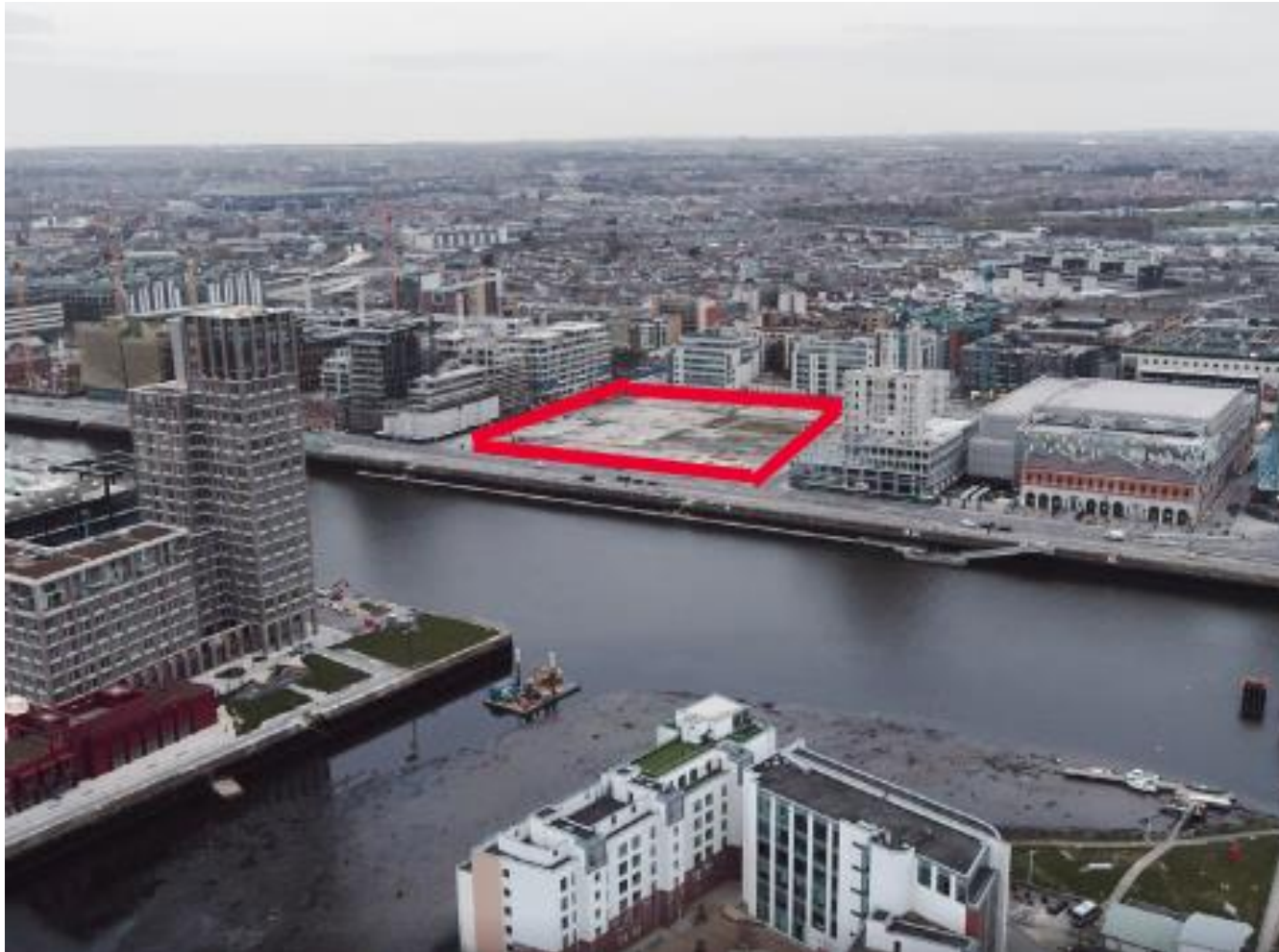
- Site Setup
- Liaison with Third Parties
- Safety Management
- Traffic Management
- Environmental Management
- Construction methodology
- Public Relations



2. Site Location

The site is located in City Block 9 of the Dublin Docklands Strategic Development Zone and lies within the administrative area of Dublin City Council. The site has previously been cleared and securely hoarded off in preparation for basement construction works granted under Dublin City Council Reg. Ref. DSDZ3042/19.

The site is bounded by North Wall Quay to the South, North Wall Avenue to the east, Mayor Street Upper to the North and Castleforbes Road to the west.



Site Location

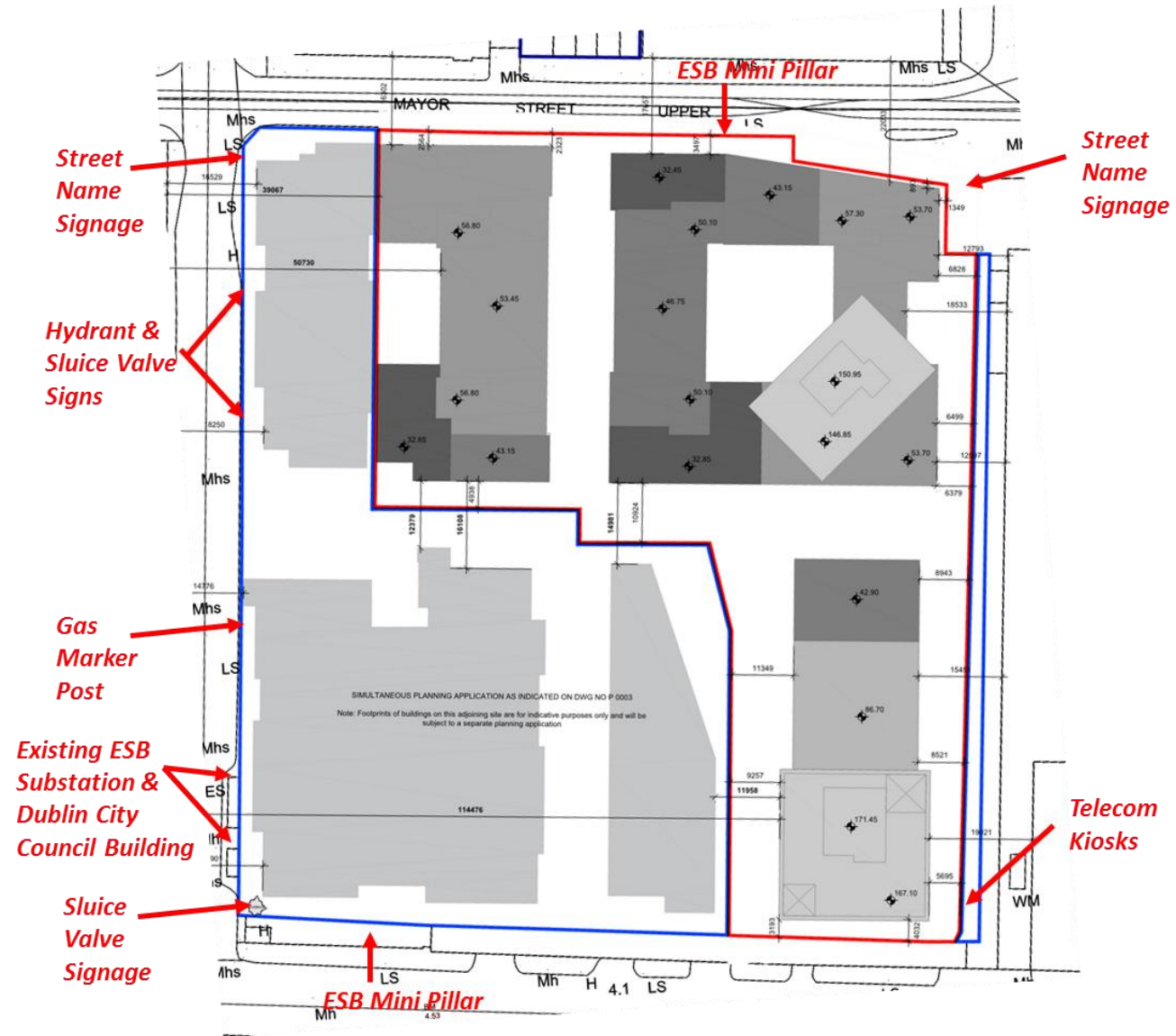
3. Site Setup

3.1 Site Boundary

The first works required on site will be to ensure the site boundary is secure from trespass. The site is currently enclosed with a timber hoarding on all sides with sections of blockwork walls mixed in with the existing timber hoarding at the northwest and west boundaries. This secure line will be maintained at all times during construction. In the event of any of the hoarding having to move outwards to facilitate construction, this will be done with the agreement of Dublin City Council including obtaining hoarding licenses as required. If this encroaches on minimum footpath widths, we will erect covered walkways or diversions to opposite footpaths will be put in place as required by Dublin City Council.

The existing sections of blockwork boundary walls at the northwest and west boundaries will be demolished as part of the works. They will be replaced with secure timber hoarding to match the existing.

There are also ESB mini pillars, telecom and Dublin City Council traffic light kiosks and signage including hydrant and sluice valve locator signage and street names on or near the existing block walls and hoardings. Access to the mini pillars and kiosks will be maintained while the signs will be displayed at all times. There are 2 existing buildings at the southwest corner of the site – an ESB substation and Dublin City Council drainage system building. These will also be maintained during construction.



Services & Signage on or Near Hoarding to be maintained

Various Kiosks & Signage on Existing Site Boundary to be Maintained During Construction Works



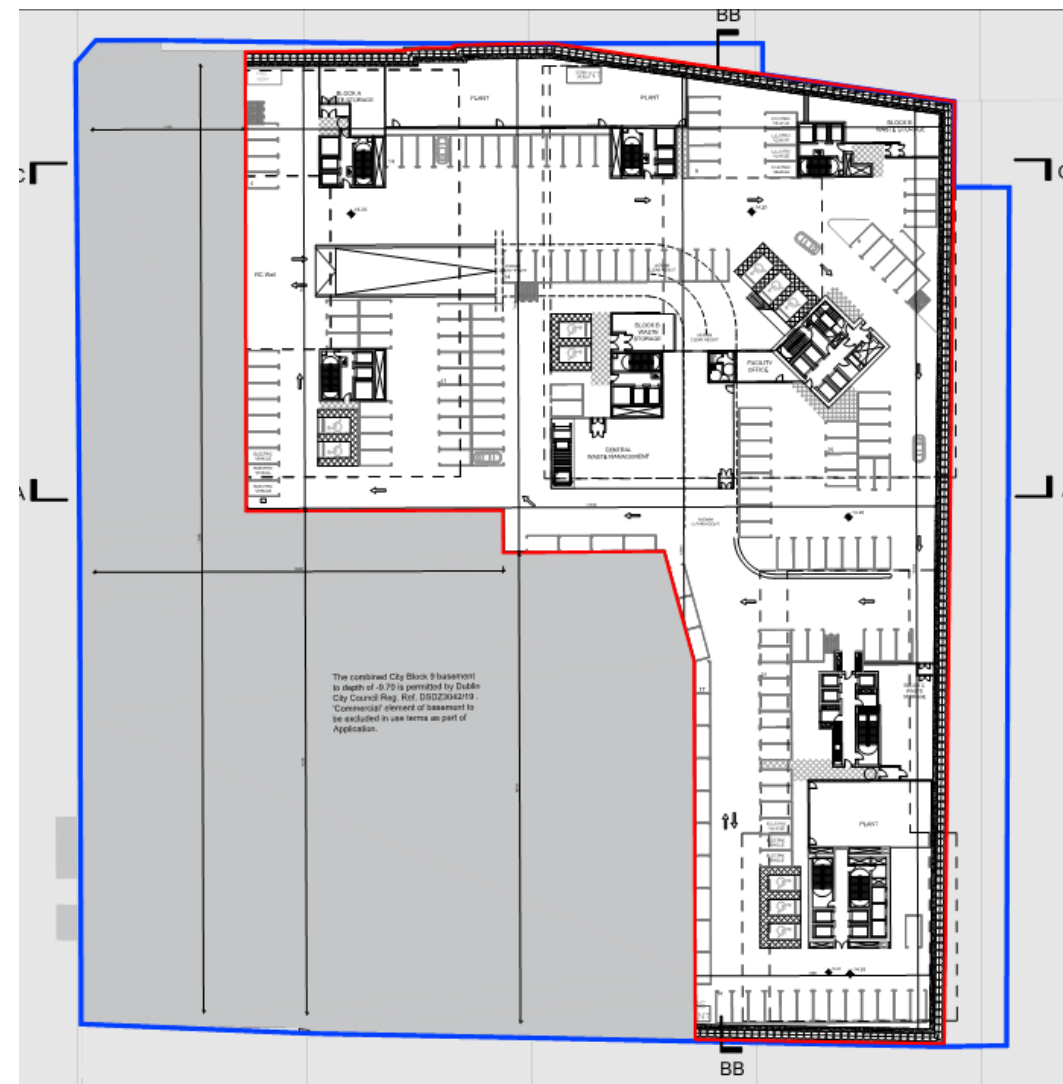
Existing ESB Substation and Dublin City Council Drainage Building on Site Boundary to be Maintained

3.2 Site Compound

The compound will consist of:

- Offices
- Meeting Rooms
- Toilet / Shower Rooms
- Drying Rooms
- Canteens
- Storage Containers

The entire footprint of the site will be excavated to form a basement so that the offices will be required to be partially located on public footpath. This will require buy out of public footpath and parking space to facilitate office installations. We have surveyed the footpath widths around the site and would suggest that the northeast corner would be best suited for positioning of offices due to generous footpaths widths at this location that will facilitate setup of the offices and provision of a covered walkway between the offices and the road edge. Alternative locations can be considered and final positioning of these offices will be done with full approval and agreement of Dublin City Council. We will also ensure that the nearby overhead electrical cables powering the LUAS line are not interfered with.



Basement Footprint to full Extent of Site – SHD site Highlighted Above

The first phase of the project will be the installation of secant piling of the basement perimeter and basement excavation during which time we will be able to locate offices and welfare facilities inside the site. As the last of the excavation approaches, we will then setup offices outside the secant piles and partially on the public footpath in agreement with Dublin City Council as previously described.

As the project progresses and key trades such as façade, mechanical and electrical subcontractors commence on site, further offices and welfare facilities will be placed in this area as the numbers on site increase. The full office setup will only be in place when these trades commence on site. Stacking of offices will be required.

All cabins will be steel securi-type with steel lockable shutters to windows and steel lockable door. All cabins will come to site in good condition and will be maintained in good order throughout the project. Double stacking of cabins will be required and safe stairs and walkways will be provided to the upper levels of offices.

Concrete footpaths will be poured to form walkways beside the offices and provide a base for the steel access stairs and gantries to the upper levels of stacked offices.

Workers will be able to enter the compound via a security turnstile and will change in to their personal protective equipment / work clothing in the drying rooms before enter the site.

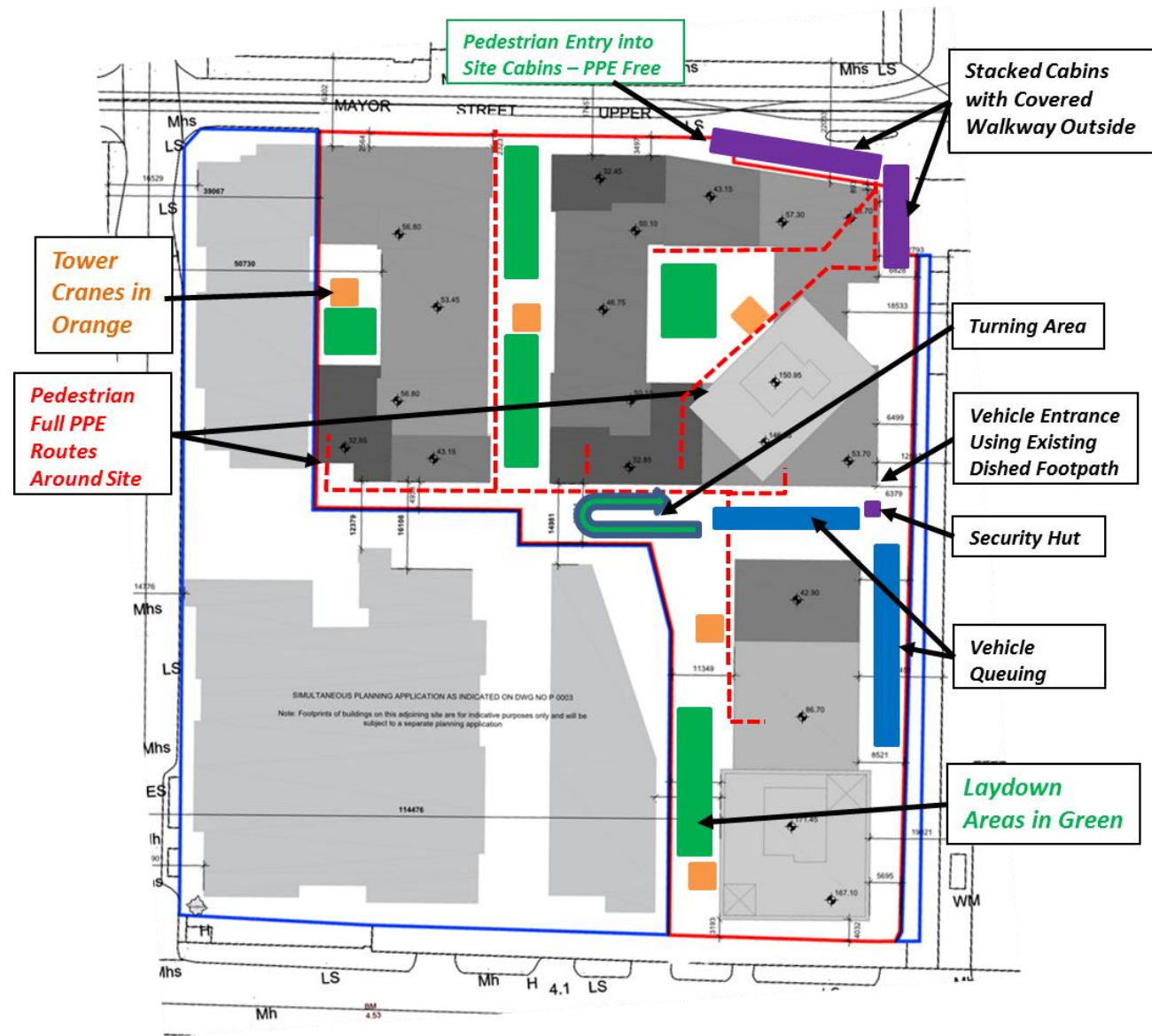
Designated pedestrian routes around the construction site will be set up using fencing and signage to separate pedestrian routes from vehicle routes.

Clearly designated areas will be set up for storage and laydown of materials, waste management skip areas and truck queuing areas.

The site logistics shown here illustrates the proposed site compound location and layout.



Covered Walkway at RGRE Spencer Place South Construction Site – Same Robust and Well Maintained Type of Walkway & Hoarding to be used on this Project



3.3 Car Parking

Car parking will initially be available on site when installing piling to the basement perimeter and beginning excavation. Once the basement construction progresses, parking space will no longer be available within the site.

On street pay parking and local multi-storey car parking will be available to personnel. The use of Public Transport will be encouraged with easy access to the Luas directly north of the site – “The Point” being the nearest stop while Dublin Bike Bays are located directly south of the site beside the river on North Wall Quay. Workers will be allowed to store their own bikes within the site compound.

3.4 Site Power, Water & Drainage

A power supply from ESB Networks to power both the compound and the construction site will be applied for. The size of supply will be calculated to ensure it is sufficient to power both the site compound office and welfare facilities and construction site which will include tower cranes, task lighting, power tools and charging stations for plant such as electric hoists.

In the event of any delays securing the required power supply to power offices and cranes, generators may be required. Diesel generators will have sound enclosures and will be regularly serviced to prevent noise and odour pollution and setup in a spill tray to prevent any spillage contaminating the ground. Temporary site lighting will be installed to provide safe and well-lighted walkways around the site compound and task lighting to the construction site.

Water and drainage will be required to service the site toilet and canteen facilities. We will carry out a site survey to identify the locations of the water and foul drainage connections to the warehousing units that previously operated on the site. We will apply to Irish Water for connections to the water main and foul drain, ideally utilising the previous connection points if possible to avoid excavation of public footpaths or roads.

3.5 Site Access

Pedestrian access will be through the site office as shown over. The vehicle entrance will be on North Wall Avenue.

There is also a construction entrance to an adjacent construction project at the Junction of North Wall Avenue and Mayor Street Upper. The main site entrance on North Wall Avenue as shown on the Compound and Logistics Plan over will coincide with the future basement ramp access but will be wide enough to allow vehicles drive onto the podium slab when it is completed. The site entrance can be accessed from both North Wall Quay to the South and from Sherriff Street Upper to the North as shown over.



Existing Dished Footpath on North Wall Avenue Proposed for Use as Main Vehicle Entrance



Proposed Site Entrance and Access Routes

The vehicle gate at the entrance will be recessed from the road line so vehicles can turn into the site entrance before stopping at the entrance gate for security personnel to take their details. This will ensure the vehicle will not protrude on to public roads causing traffic disruption.

Days of large vehicle activity, such as concrete pours will be managed to prevent disruption to the public. Existing car parking on North Wall Avenue may be purchased from Dublin City Council to facilitate queuing at this location. Where possible, delivery trucks will be brought into site and queued internally. A detailed traffic management plan will be put in place to prevent any disruption to public traffic. Wheel washing will be provided at the site entrance.

As the project proceeds and the basement access ramp is constructed, the access to this ramp on North Wall Avenue will align with the main Site Entrance. Small rigid type trucks will be able to access the basement to make deliveries – trucks will immediately enter the basement to avoid any queuing on the street.

All personnel will undergo a site safety induction upon their arrival on site. These will be held on Monday, Wednesday and Fridays at 08:30. The induction will be by appointment only so site management will know in advance who will be attending. Once the induction is complete, workers will be issued with a swipe card that will allow them to access the site via turnstile at the site entrance. First time visitors to site will sign in with security who will direct the visitor to the site office.

All workers will also be issued with a helmet sticker identifying that they have been inducted on this site and a name sticker will be required to be displayed on safety helmets so staff or security can identify workers by name.

The pedestrian route into site will be PPE free and will be fenced off from the work area. Workers will be able to change in the drying rooms provided in the site compound and can access the site wearing full PPE via designated pedestrian routes as shown below.

3.6 Site Security

The site will be enclosed by a secure timber hoarding as previously outlined. The existing hoarding will be maintained and upgraded as required to enhance the visual amenity of the project.



Hoarding at RGRE Spencer Place South Construction Site – Similar Hoarding will secure this Site.

The pedestrian entrance into the site compound will be controlled by swipe card and turnstile. The site reception will be located adjacent to this turnstile so persons entering site for the first time to attend induction can be brought into the site office by reception.



Security Turnstile at RGRE Spencer Place South



Vehicle Entrance at RGRE Spencer Place South

There will be a security hut located at the vehicle entrance. Security will record vehicles entering and leaving site. A gateman will monitor the entrance to ensure only authorised vehicles and personnel may enter.

Swipe cards will only be issued following safety induction as previously outlined. Issue of cards will be recorded at the induction and the swipe reader will record all swipes on computer so the access system will record who accesses or leaves the site and when. It will also serve as a database for roll call in the event of emergency and evacuation of the site.

The vehicle entrance will be manned by security during site opening hours and monitored PTZ CCTV will provide security during closing hours. Statutory requirements regarding CCTV will be strictly adhered to.

An intruder alarm system will be set up to secure offices and a series of motion sensors will be set up along the inside of the site hoarding to detect trespass. These motion sensors will be connected to the CCTV monitoring control centre so security personnel will be able to direct the PTZ cameras at the location where the motion sensor has been activated and An Garda and the Project manager can both be contacted.

Security will be monitored on an ongoing basis and will be improved if required to both prevent trespass and to ensure the safety of the public passing by the site. The Main Contractor insurance company will audit the site to ensure site security systems are in place and functioning as required.

A full time security presence may be required as the project finishes and fit-out commences. This will be decided when the project reaches this stage.

3.7 Working Hours

The working hours will be dictated by the planning conditions and are expected to be as follows:

Days	Start Time	Finish Time
Monday –Friday	8:00	18:00
Saturday	8:00	14:00
Sunday	No work permitted	No work permitted
Bank or Public Holidays	No work permitted	No work permitted

We shall wherever possible work within the hours permitted by the Planning Decision for the development. It will be necessary to work outside these hours at times, for example for early morning concrete pours and late evening concrete finishing. Dublin City Council will be consulted about out of hours working and local residents and businesses will be informed of any out of hours works required. A planning derogation will be applied for to Dublin City Council when out of hours working is required. The terms and conditions of the planning derogation will be strictly adhered to at all times.

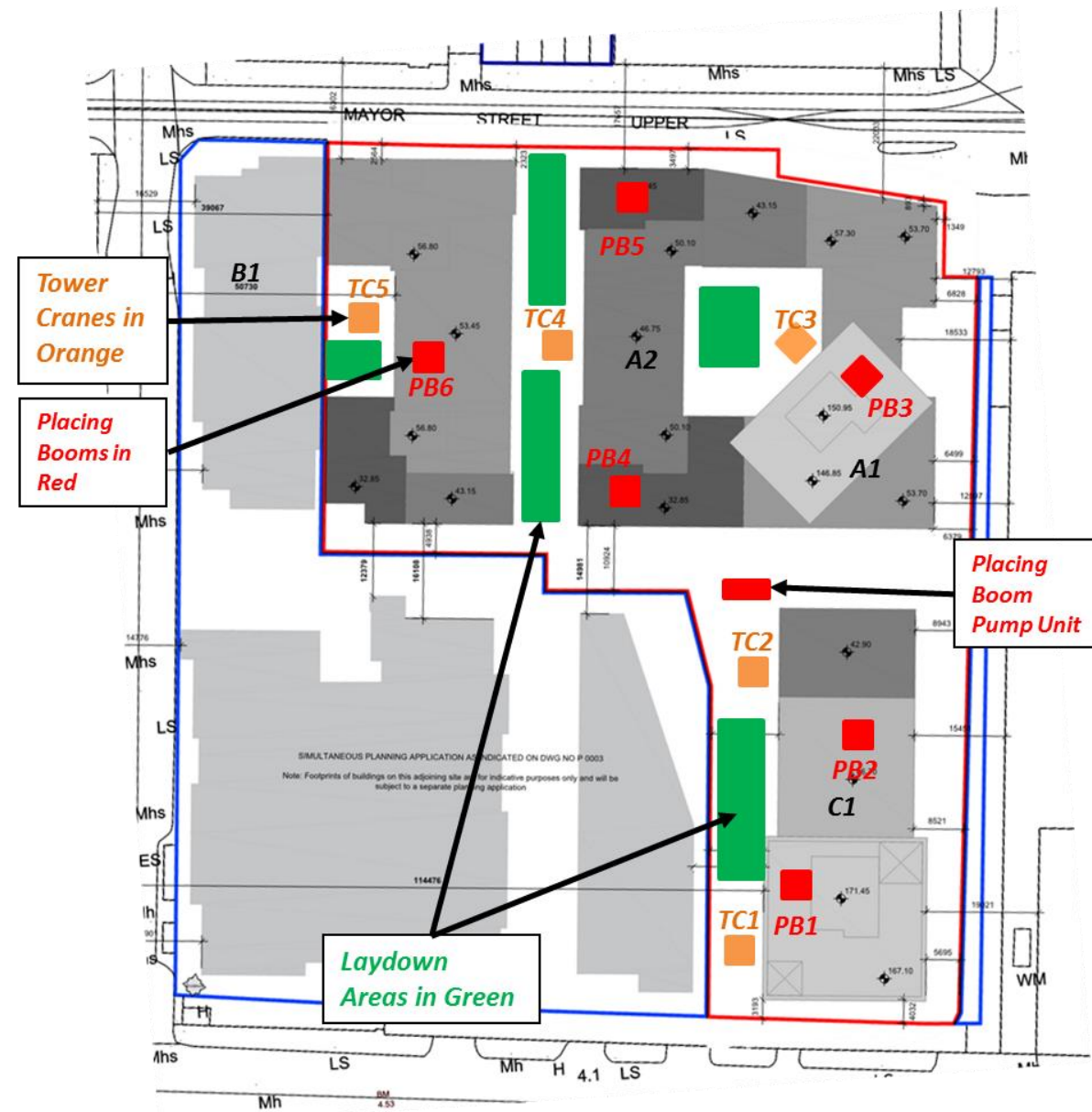
3.8 Site Logistics

The traffic and pedestrian routes have already been outlined. The new buildings will be a concrete frame construction which will require tower cranes and concrete placing booms to service the concrete crews. The tower cranes will then also service the envelope and fit-out lifting requirements. 5 tower cranes and six placing booms will be required as shown over. These will be complemented with teleporters, mobiles cranes and mobile concrete pumps as required. This is detailed further under the construction methodology section.

Trucks will be off loaded from designated laydown areas – each building will have a designated laydown area where the delivery truck will park up as shown on the logistics plan below. Propping to the basement slabs will be installed to ensure the trucks can travel safely on the podium level slabs.

The concrete pump unit feeding the placing booms will be located near the site entrance where concrete trucks can queue and back up to discharge.

If any plant setups are required outside the site, a road lane closure may be required. The road closure license will be obtained from Dublin City Council if this is required and an agreed traffic management plan will be implemented as required. Any traffic management measures will be designed by qualified personnel in accordance with Chapter 8 of the Traffic Signs Manual and implemented by Signing, Lighting & Guarding (SLG) trained operatives.



Tower Crane & Placing Boom Locations & Typical Logistics for a Concrete Pour

The logistics plan will be presented to workers during the site induction. Refresher training in the logistics plan will be presented in toolbox talks.

4. Liaison with Third Parties

The PJ Hegarty Contract Manager will be appointed as Liaison Officer to deal with third parties. As Contract Manager, he will be in a position to immediately deal with any issues that may arise. Third parties may include:

- Members of the public
- Dublin City Council
- Health & Safety Authority
- An Garda Síochána
- Ambulance Service
- Fire Brigade

In the unlikely event that the public complain about nuisance caused by the works, the Contract Manager will be responsible for immediately dealing with this complaint and ensuring that it is addressed to the satisfaction of the person in question. A contact number of the Liaison Officer will be exhibited on all construction site notice boards and on any other information or correspondence, which may be distributed via leaflet drop or direct contact with local resident representatives from time to time. A system of recording all queries and complaints will be maintained.

We will ensure we operate as a 'good neighbour' throughout the Construction Period. The intention is for the project to add value to the neighbourhood, and will not detract nor be a nuisance. We will carry out the works in a manner which are sensitive to the adjoining owners and the wider local community. We will operate to an equivalent standard as the UK "Considerate Constructors Scheme" including their code of practice.

Interaction with Dublin City Council will be required and will continue in line with existing procedures operated on our other Dublin City Centre sites. Planning conditions must be adhered to and clear lines of communication will be maintained with the relevant persons in the Local Authority to ensure all planning conditions are complied with on an ongoing basis.

Other interaction with Dublin City Council may be required for obtaining hoarding licenses if we are required to move the hoarding line or place offices onto footpaths, road opening / road closure licenses in case of service tie-ins outside the site boundary or apply for planning derogations for out of hours working.

We will also ensure, in conjunction with the Client appointed Assigned Certifier, that a commencement notice will be submitted with all required information to Building Control. This will be uploaded to the Building Control Management System ahead of the project commencing. We will comply fully with the Building Control (Amendment) Regulations for the duration of the project including submittal of documentation upon completion to ensure certificate of compliance is placed on the register before the buildings come into use.

We will submit Approved Form AF2 to the Health & Safety Authority to ensure they are aware of the project in accordance with Regulation 22 - Schedule 3 of the Safety, Health and Welfare at Work (Construction) Regulations, 2013.

The emergency services will be made aware of the site location and the access and egress points both for both the construction area and the site compound so they are familiar with the site if they are ever required in the event of an emergency.

5. Safety Management

Our Safe-T-Cert accredited safety management system will be implemented on site. The Project Supervisor Design Stage and Project Supervisor Construction Stage will liaise with each other to ensure the relevant documentation is in place and that the safety management system to be implemented on site is fully agreed.



The Project Supervisor Construction Stage will then work closely with our Site Management Team including the Site Safety Officer to ensure safety is given the number one priority on site.

A safety induction will be given to all personnel and the site induction register will include details of safe pass and CSCS card. Tracking of expiry dates will ensure training is kept up to date and valid while workers are on site.

Method statements with comprehensive risk assessments will be prepared 2 weeks in advance of commencing a task on site to allow time for review and revision so that the method statement is approved 1 week in advance of commencement. This will allow time to organise any specific requirements or safety resources to carry out the work safely.

Site safety stations with the daily whiteboard are setup to provide a location for sub-contractor foremen to gather each morning to complete their Safe Plan of Action and obtain their work permits and outline to each other where on the site they are working. A spill kit, fire extinguishers and safety glasses lens cleaning kit are located at these stations.



Site Safety Station

HEGARTY SAFE PLAN OF ACTION											
Task	Permit No:	EMERGENCY PLAN				LIVE SERVICES IN YOUR WORK AREA					
Building	Permits Required	Nearest Exit		Nearest Alarm		Electrical	Yes	No	Gas	Yes	No
Exact Location	Hot Works	Nearest Extinguisher		Your Trained First Aider		Mechanical	Yes	No	Water	Yes	No
Crew	Ladder	Excavator		In an Emergency Call		Sprinkler	Yes	No	Fire	Yes	No
Date	Confined Space	Additional Permits		Assembly Point		Other	Yes	No	Optics	Yes	No
RAMS Number	Excavator	Additional Permits		Assembly Point		Other	Yes	No	Optics	Yes	No
Supervisor	Excavator	Additional Permits		Assembly Point		Other	Yes	No	Optics	Yes	No
STEPS REQUIRED		HAZARDS		SAFE PLAN		ACCESS & EGRESS ROUTES					
CHANGES REQUIRED		FAILING TO PLAN		STOP, REVIEW PLAN AND UPDATE SPA		Is there clear access to your work area? Have you permission to cross into someone else's area?					
						Safety boots, high vis, hard hat, safety glasses & gloves					
						TASK SPECIFIC PPE					
						Chemical Suit, Visor, Hearing, Dust Mask, Harness, Chin Strap					
						Type of lanyard to be specified below					
						Controls – Plant & Equipment					
						Suitability, Inspect It, Guards, Checks, Pat Test in Date, Colour Coded					
						Hazard Manual Handling, Can Manual Handling Be Avoided, Risk Assess, Can aids be used?, Training					
						Hazard House Keeping, Tick whatever you intend to use					
						Bin / Skip Present, Clean As You Go, Leads Up, Barriers					
						Hot Topics For Today					
						Remember To Place Your SPA With Your Permit					
						Are there any unprotected open					
						DETOUR					
STEP BACK, TAKE TIME TO PLAN YOUR WORK. IF THERE ARE ANY DEVIATIONS FROM THIS SPA, YOU MUST CONTACT YOUR SUPERVISOR AND RE-ASSESS THE TASK											

Safe Plan of Action Form



Daily Whiteboard Meeting – Attended by Project Manager, Area Supervisor and Subcontractor Foremen



Typical Pedestrian Crossing Point & Pedestrian Route Separated from Vehicles Route



Typical Safety Signage Erected on Site

Plant and equipment will be inspected upon arrival on site. Their details including certificates and expiry dates will be entered on to a site plant register and tracking of this will identify when inspection and servicing is due. All plant will be provided with a plant sticker to identify dates of inspection and next inspection due.

CONSTRUCTION EQUIPMENT INSPECTION	
HEGARTY SIGNING & CIVIL ENGINEERING CONTRACTORS	EQUIPMENT TYPE <input type="text"/>
	EQUIPMENT ID NUMBER <input type="text"/>
	NEXT TEST DUE DATE <input type="text"/>
CONTRACTOR <input type="text"/>	INSPECTED BY <input type="text"/>

Plant ID Sticker

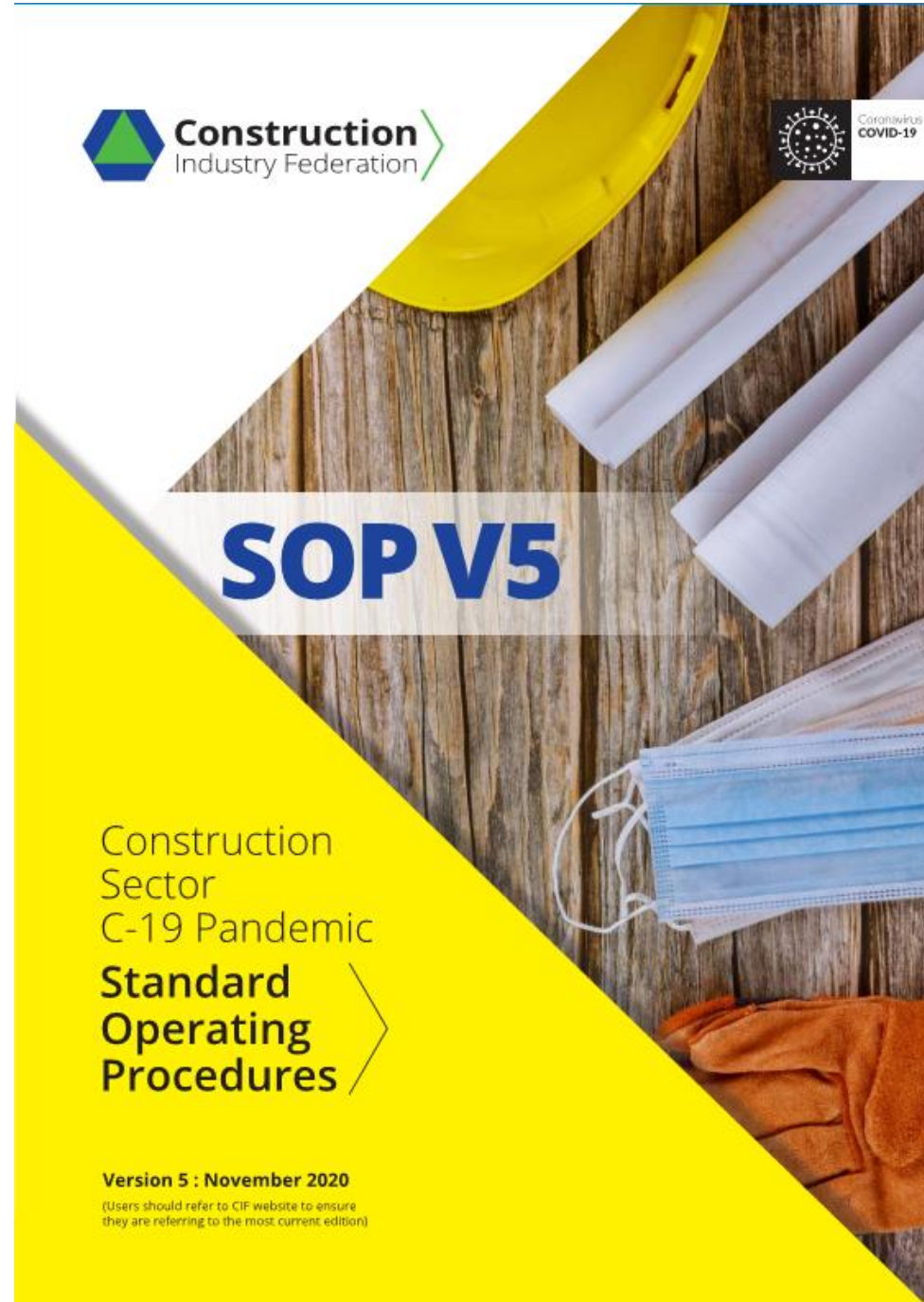
Working at height will be a major requirement on this project with buildings varying from 8 to 44 floors above ground. Access systems will include scissors lifts, boom hoists, goods hoists, personnel / good lifts and scaffolding. Each of these will be inspected and signed off as being in good order and safe to use each day. Training will be required to use the mobile elevated work platforms and this will be recorded at induction. Scaffolding will be built and inspected by qualified scaffolders.

As previously outlined, a secure hoarding will be put in place and swipe controlled access gates will be utilised to prevent entry into the site by members of the public.

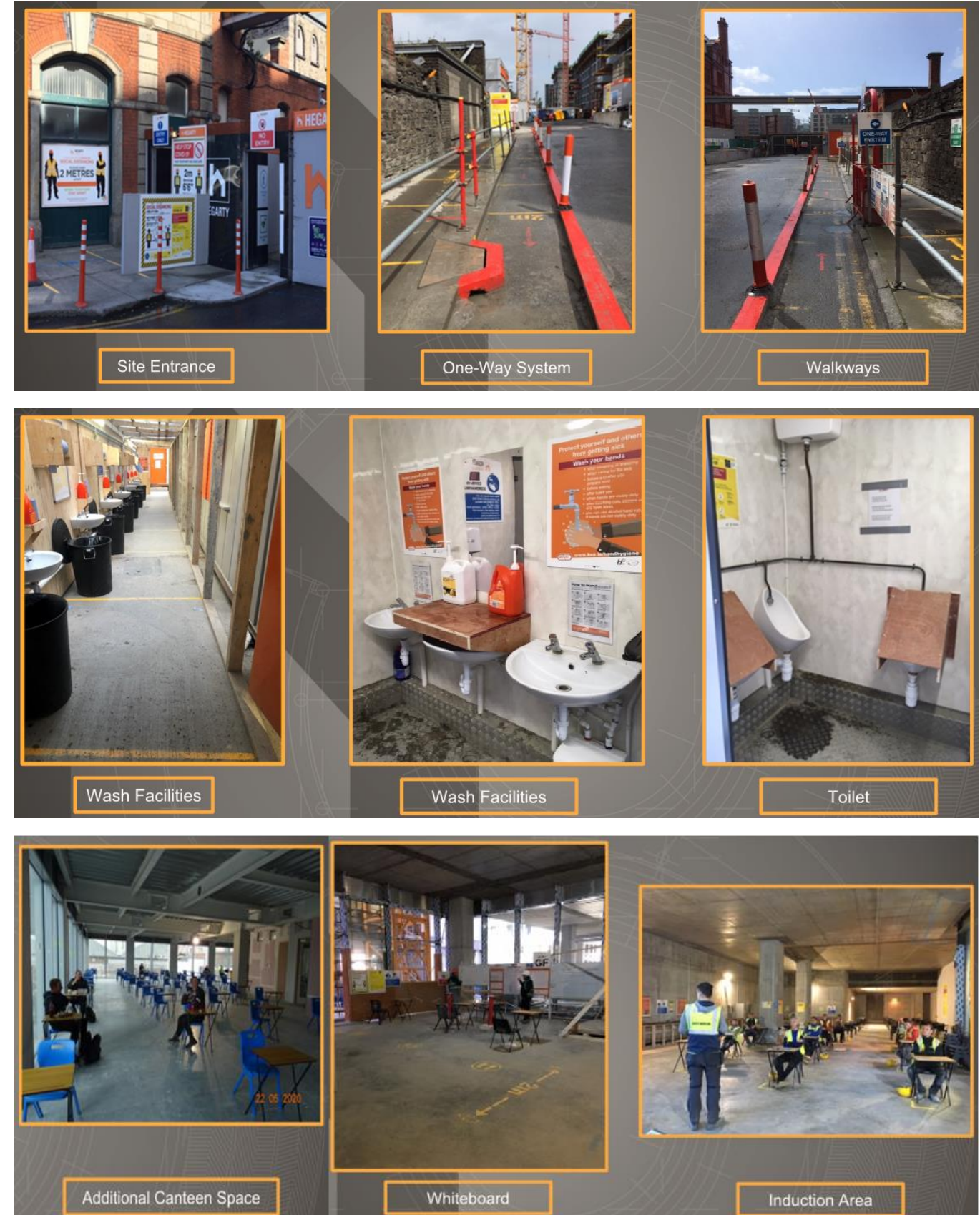
The hoardings will also to prevent construction debris from site, which could cause damage or harm to members of the public or public property, escaping to public areas. Walkways outside the site hoarding will be covered to protect pedestrians in the event of falling debris. Cantilevered debris net fans will be erected where required as the building superstructures progress above ground level to catch any falling debris.

COVID 19

COVID 19 precautions will be implemented on site in accordance with the Construction Industry Federation approved document. We will keep up to date with the latest updates and ensure these are implemented on site. Where we commence on an existing site.



Key control measures including hand sanitizing and social distancing through installation of walkways, extra canteens, drying rooms, outdoor facilities, etc. as shown over will be put in place. Covid-19 will be considered when preparing method statements and when carrying out the works on site. All works will be monitored by the Site Covid Compliance Officers and Safety Officers.



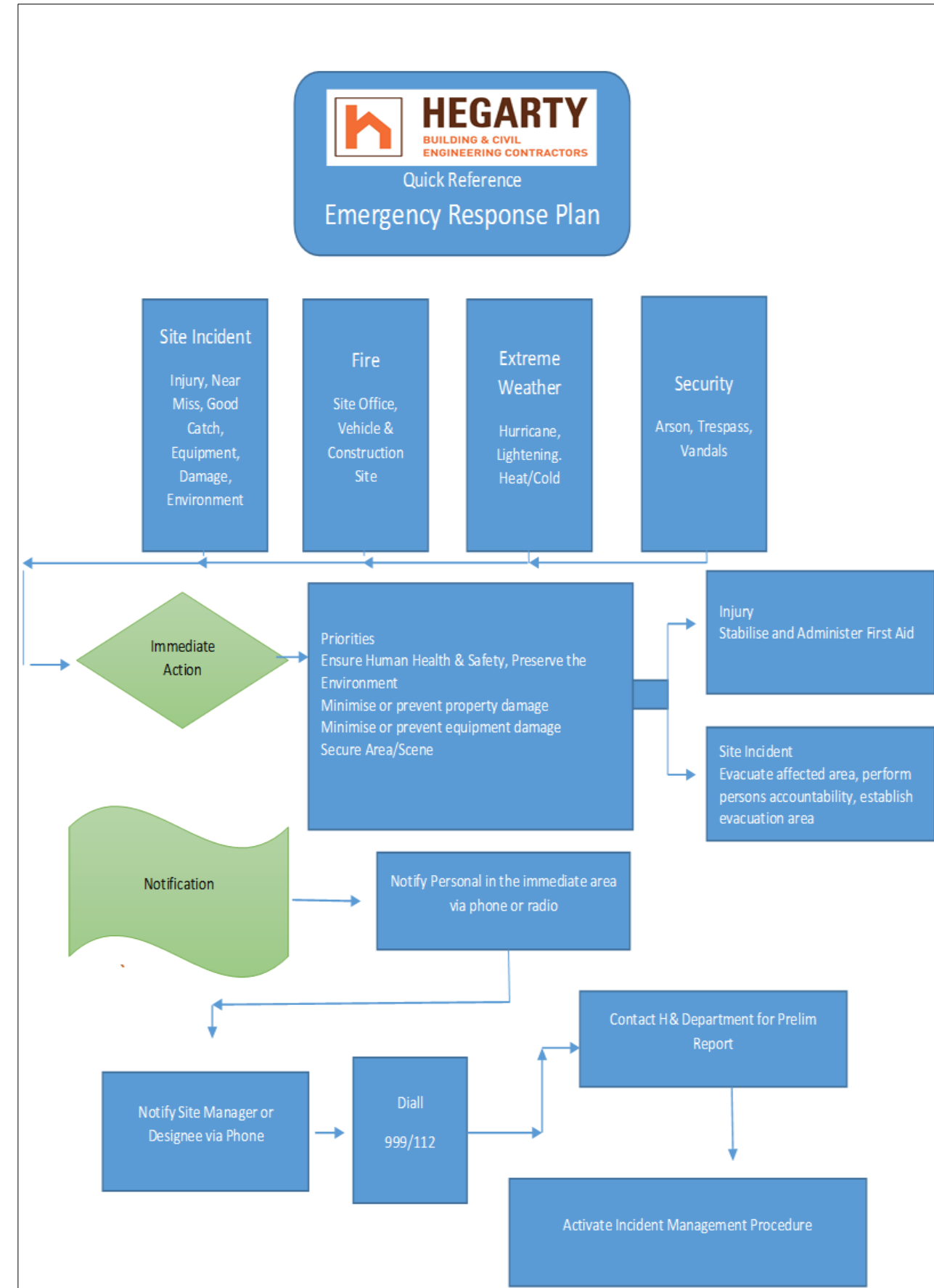
An Emergency Incident Response Plan will be prepared for the site. In the event of an emergency or incident of serious and imminent danger, the Safety Officer will be immediately notified. This will be addressed at the safety induction and all workers will be provided with the contact details for the safety officer. Alternatively, if any workers witness an emergency situation, they can immediately notify their supervisor who will in turn contact the safety officer.

The Safety Officer will then notify all persons concerned of the risks involved and the steps to be taken. The Safety Officer or supervisor will instruct on how to proceed next depending on the nature of the incident. Work may be able to continue or it may have to stop work or immediately and workers would have to leave the place of work and proceed to a designated safe place.

Possible hazardous situations which may require evacuation are: - serious fire, explosion, rupture of gas or fuel line, serious accidents, collapse of building or structure, flooding, electrocution, chemical spills or articles falling on personnel. The following will be the emergency procedures.

- Alarm**
 Alarm will be raised by contacting the Safety Officer or Project Manager who will arrange the alerting of the emergency services immediately by phoning 999 and requesting the appropriate services – fire brigade, ambulance, etc. The person making this call will provide full details as requested by the dispatcher. The next call will be to the Site Supervisors so they can initiate emergency procedures outlined to all workers at site induction.
- Control**
 The Safety Officer will ensure immediate and accurate assessment of the situation, its seriousness and emergency services required and will exercise full control over the incident.
- Communication**
 The Safety Officer will keep his mobile phone clear throughout the emergency (if it is safe to do so) and will be responsible for communicating with the emergency services following the initial call from the Safety Officer. Another member of staff, will be despatched to the North Wall Quay to direct emergency vehicles to the site and others may be arranged around the site to ensure the speedy arrival of the emergency services to the site of the incident.
- Assembly Point**
 The main assembly point will be located at the site compound and will be pointed out to workers at the site induction. Tool box talks will be used to remind workers of this.
- Treatment of Injuries**
 Only approach an injured person if safe to do so. Remove the person from further danger if necessary and safe to do so. Administer first aid if necessary until ambulance personnel arrive on site.
- Environmental Incident**
 Minor spillages will be cleaned up using the spill kits that will be maintained in site. This may include hydraulic oil from burst excavator hose or similar minor spills. If the incident is hazardous in nature, wait for fire brigade / specialist clean up personnel – do not attempt clean-up of any hazardous waste.

Safety management systems will be inspected weekly and audited monthly by the Company Health & Safety Manager who will visit site to carry out these inspections and audits. A full time Site Safety Manager supported by a number of full time safety officers will monitor safety continuously while site management and site supervisors will promote a safety culture to target zero incidents on site.



6. Traffic Management

Site logistics governing traffic flow within the site have already been described in section 3 of this document. A traffic management plan will be implemented from day one of the project and will be kept under constant review and adjusted as required to reflect changing conditions on site.

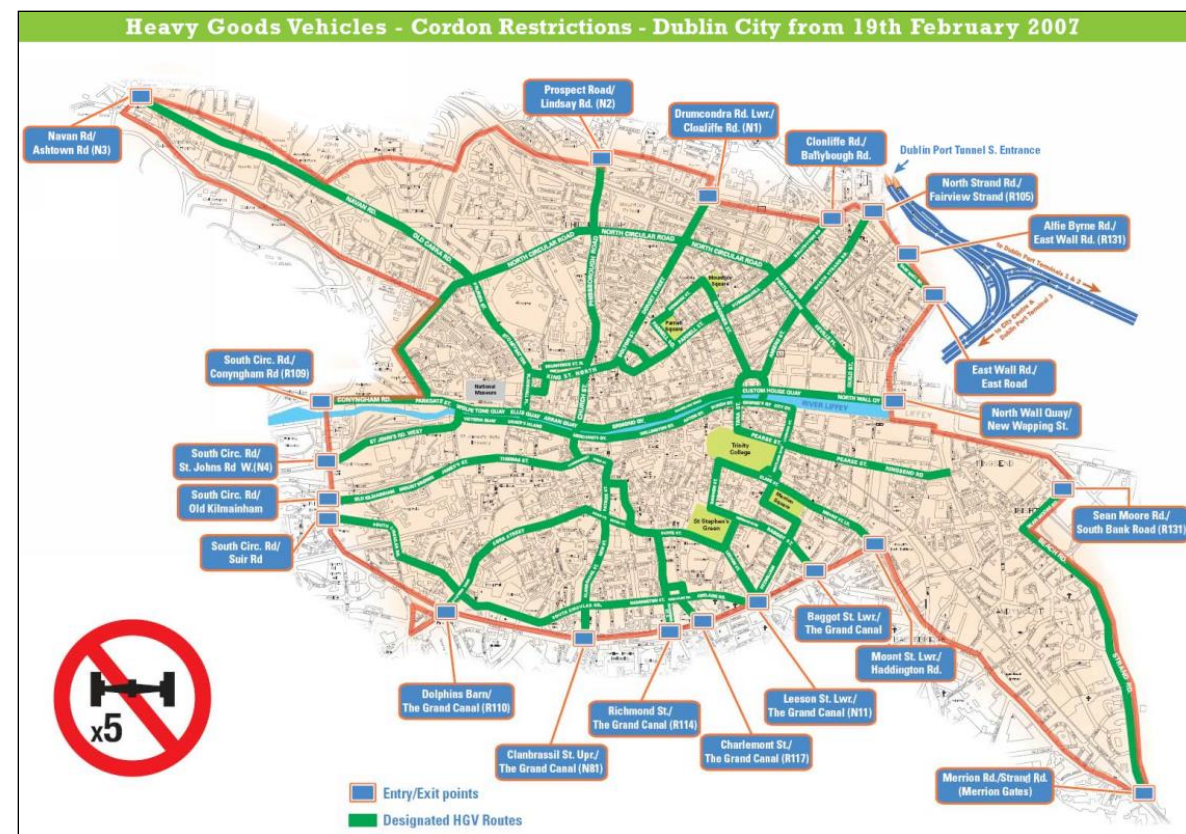
Provisions of this plan including erection of signage on public roads will be agreed with Dublin City Council in advance of implementing any changes to the traffic management system. The traffic management plan shall be updated appropriately to ensure coordinated and effective traffic management practices and arrangements are in place throughout the construction period.

External to the site, traffic will include construction workers travelling to site and materials deliveries which will include small delivery vans, large rigid trucks, articulated trucks and trailers and concrete trucks. Large volumes of excavated material will be removed off site due to the basement excavation works.

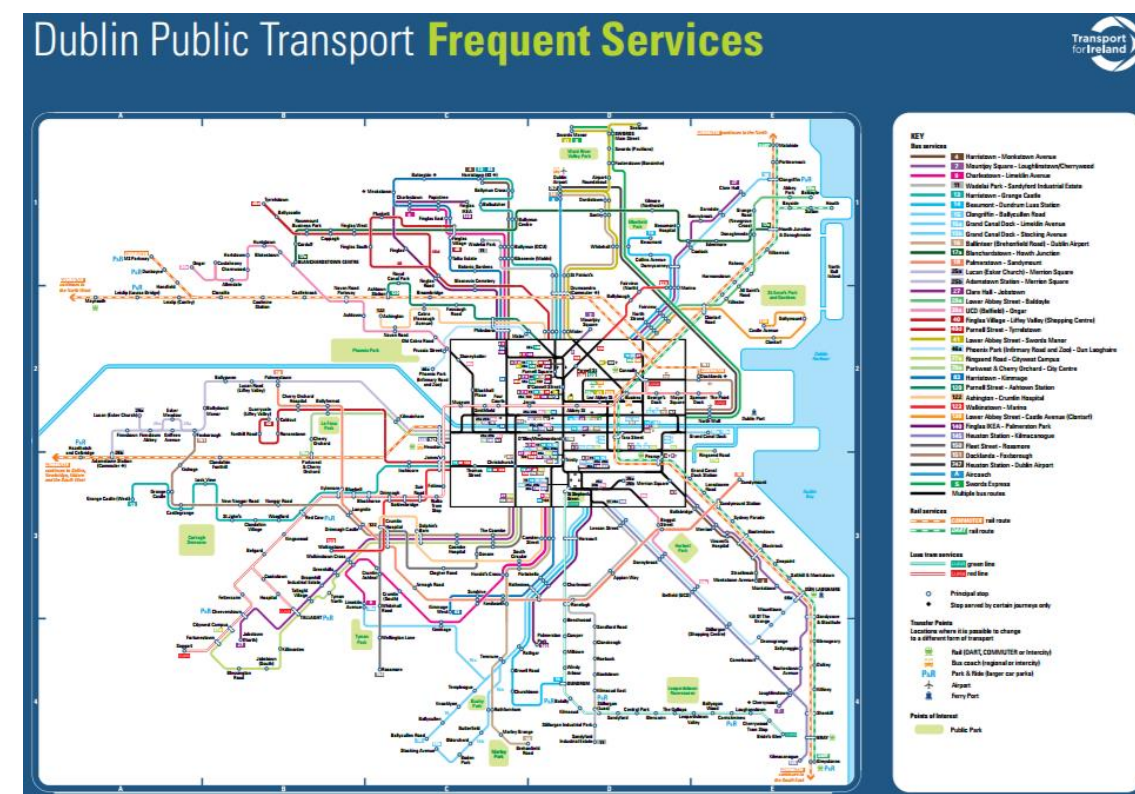
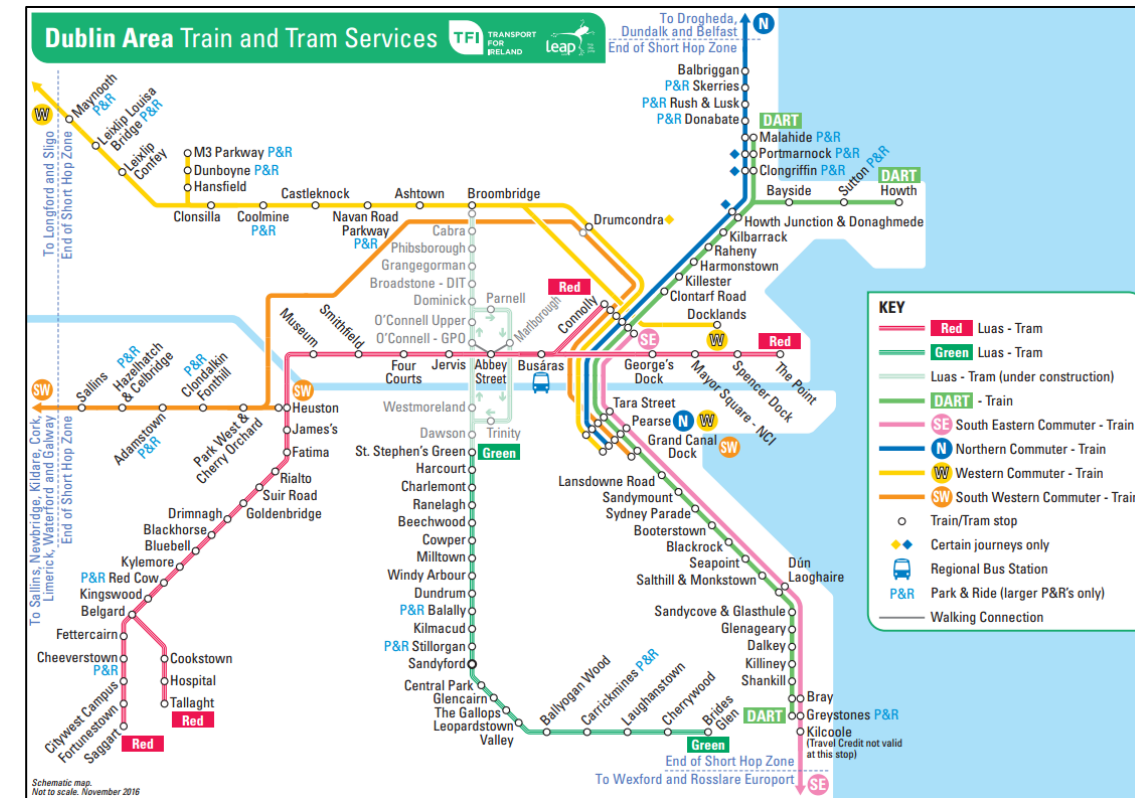
PJH will organise deliveries to minimise congestion on public roads by avoiding peak traffic periods where possible. During particularly busy periods such as during concrete pours, trucks will be queued up inside the site as previously outlined to avoid queuing on public roads.

We will also liaise with the neighbouring construction sites to the east and west of the CB9 site to ensure congestion is minimised. Ideally, we will be able to schedule large deliveries at different times or days from the neighbouring properties to avoid congestion.

Deliveries will be on a just in time basis and this system will be strictly controlled between our Site Supervisors and our Purchasing Manager who will organise the deliveries. The purchasing Manager will provide the Site Supervisors with contact details for suppliers who will make contact to ensure drivers are made aware of the site location and the correct route to site in accordance with the Dublin City Council heavy goods vehicles cordon restrictions as shown below.



As previously mentioned in section 3, workers will be encouraged use public transport where possible to reduce congestion on public roads. The area is well served by public transport and options include LUAS and bus services as shown on the Dublin Area Train and Tram Services and Dublin Public Transport Frequent Services maps shown here.



7. Environmental Management

PJH are accredited to ISO14001: 2015 environmental management and environmental protection measures will be put in place to prevent damage to the environment and to comply with planning conditions. In addition to the following mitigation measures listed below please see Appendix A for revised Dublin City Council Construction Protocols which will be adhered to during the construction period.

7.1 Noise, Dust & Vibration Monitoring

Noise and vibration monitoring already in place on site will be continued in line with existing planning conditions. These will be maintained in accordance with any new planning conditions placed on the project. Vibration monitors together with the monitor enclosure, battery, and GSM modem to enable remote downloading and a dual alarm system.

The alarm system will alert us if vibrations exceed the allowable limit. If this happens, work will be stopped and the methodology will be revised to reduce vibrations. A monthly report will be prepared showing the actual vibrations recorded.

Noise monitors together with Enclosure, Battery, GSM Modem and microphone protection system will also allow reporting showing noise levels generated by the construction works.

Dust monitoring locations will be set up as agreed and will follow the German TA-Luft Standard for deposition of non-hazardous dust.



Noise & Dust Monitoring Points on RGRE Spencer Place South Development

7.2 Wheel Washing

On this site in a prominent city centre location, the main source of any environmental problem will be the visibility of debris or dust on public roads. The site entrance roadway off the North Wall Quay is a good surfaced road, which keeps the majority of delivery trucks on a clean surface during their time on site. This road will be maintained in a good clean condition for the duration of the project. In the event of construction activities generating mud or other debris, wheel washing will be implemented and road sweeping will be carried out as required.



Wheel Washing

7.3 Dust Control

Dry weather coupled with high winds can sometimes lead to dust being generated on site. In the event of this occurring, dust suppression will be implemented through water spraying. This will be carefully managed as application of too much water can lead to mud forming. Road sweeping will be carried out if required to control this.



Dust Suppression



Road Sweeping

7.4 Waste Management

A waste management plan will be implemented on site to control waste generated. Lean construction techniques will be implemented on site to minimise waste.

- Accurately quantify materials to be ordered
- Ensure approved materials that comply with specification are ordered
- Arrange just in time delivery of materials to minimize possibility of damage
- All deliveries to be inspected and placed in appropriate storage areas
- Incorrect deliveries will be returned to the supplier immediately.
- Handle materials to avoid damage and waste of good materials.
- Completed work to be protected from damage and maintained in good order.

Waste Reuse and Recycling will be required and will be implemented as follows:

- Setup dedicated skip area
- Segregate waste into separate skips for recycling
- Ensure subcontractors use the various skips correctly



7.5 Storage & Use of Fuel

- fuels will be stored in a dedicated bunded fuel storage area
- fuels stored in approved storage containers within this area
- fuel storage isolated from any source of ignition or impact
- refuelling of plant at designated refuelling points or from bowser
- spills to be contained, reported and dealt with using an agreed method.

7.6 Energy Efficiency

- Electrical equipment to be switched off when not in use.
- Non-essential lighting will also be turned off when not in use
- Office equipment to be switched off nightly and at weekends
- All electrical equipment to be kept in good order by a qualified electrician.
- Ensure that water is not wasted; taps will be turned off, leaks repaired
- All plant and machinery turned off when not in use to conserve fuel
- plant such as generators, lighting towers not to be used unnecessarily

7.7 Management of Odours & Other Emissions

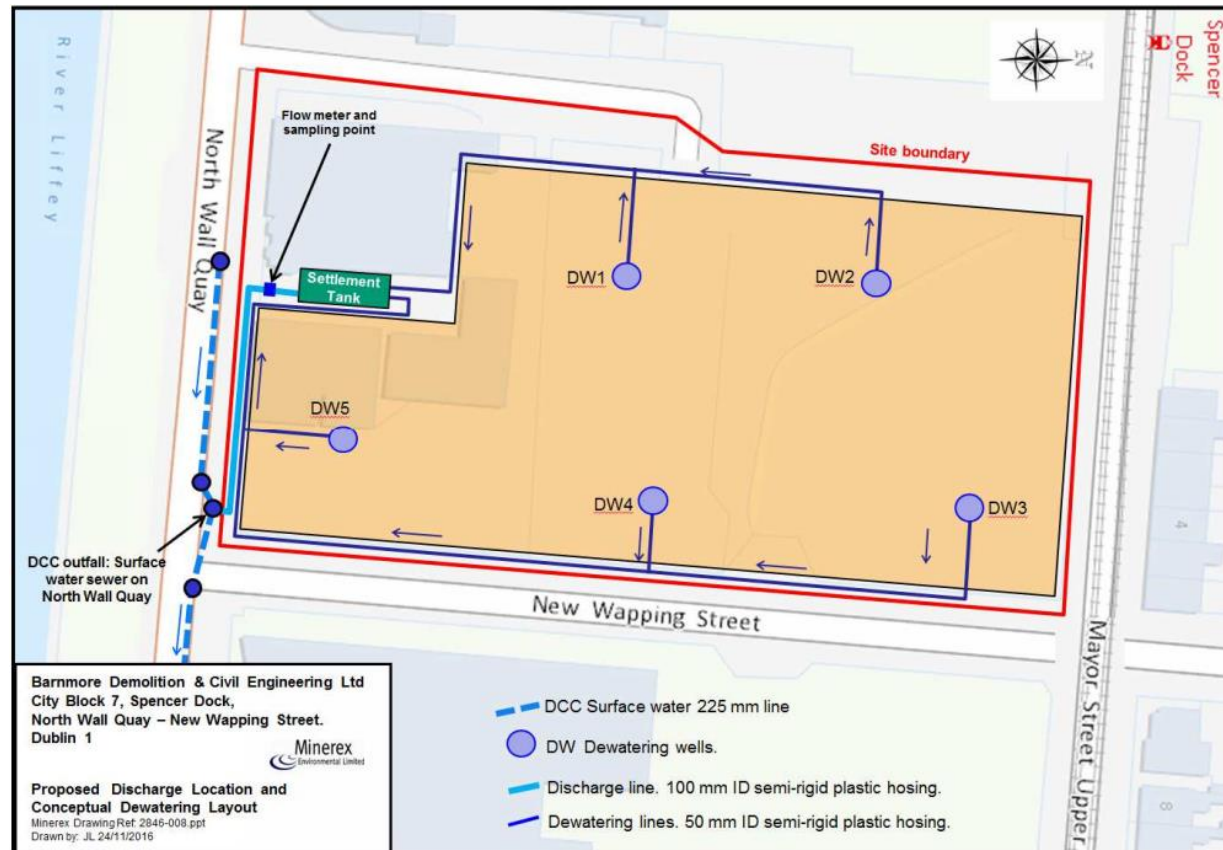
- Engines must be switched off when not in use.
- All equipment will be correctly operated & maintained.
- Burning of waste materials on-site is strictly prohibited.
- Refuelling will be in a designated area, away from the general public/sensitive residents.
- All organic wastes will be stored in covered containers or bins, prior to removal from site.
- Temporary drains will be maintained so as to prevent emission of odours.
- Domestic and canteen bins skips will be emptied regularly in the designated skip.

7.8 Management of Noise

- Ear Protection Zones shall be clearly identified
- Ensure our employees are provided with, and use, suitable approved hearing protection when working in these zones.
- Ensure that noise levels produced by plant or machinery on the site are as low as practicably possible.
- All plant and equipment on site must comply with European Standards.
- Advise the Client if we anticipate excessive noise levels from our work operations so that all reasonably practicable precautions can be taken to protect persons who may be affected.

7.9 Management of Water Pollution

- We will comply with planning conditions regarding water pollution
- Construction related substances such as oil or diesel to be stored in secure bunded containers
- Spill trays to be used under generators
- Concrete lorries to wash their chutes only in a designated area and all wash will be collected and treated.
- The basement works will be assessed for water infiltration and a dewatering system will be installed if required. Water from any dewatering system will be pumped to a settlement tank before discharge to the Dublin City Council sewer – this will remain in place until the basement has been completed.



RGRE Spencer Place South Dewatering System – similar system to be used on Project Waterfront

7.10 Management of Hazardous Waste

- Provide MSDS for hazardous materials in advance of being brought to site
- Comply with Safety, Health and Welfare at Work (Chemical Agents) Regulations
- Carry out risk assessments for the transport, storage, use and disposal of such substances
- Use suitable and secure storage in bunded areas

8. Construction Methodology

8.1 Introduction

As the project is currently only approaching planning stage, there is no detailed design commenced yet. This is due to commence in Q1 2021 in advance of the construction works in Q4 2021 subject to planning permission.

For the purposes of explaining the construction methodology to be employed, the substructure will consist of secant piles to the basement perimeter with CFA piles supporting the foundations pile caps and raft slabs. Stair and lift cores will be constructed in concrete with a reinforced concrete frame wrapping around these cores.

The facades will be a mixture of glazing, rain screen cladding, stone cladding and vertical green walls.



Proposed Waterfront South Central Development

The basement works have begun under a separate planning permission. The main construction works will require approximately 4 years from Q4 2021 to Q4 2025 as shown in the indicative bar chart programme below. This start date will be dependent on obtaining the required planning permission.

	Q4 '20	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22	Q4 '22	Q1 '23	Q2 '23	Q3 '23	Q4 '23	Q1 '24	Q2 '24	Q3 '24	Q4 '24	Q1 '25	Q2 '25	Q3 '25	Q4 '25
Secant Piling	█	█																			
Basement Excavation		█	█	█	█																
Foundation Piling					█	█	█														
Basement Structure						█	█	█	█	█											
Superstructures								█	█	█	█	█	█	█	█	█	█				
Envelopes										█	█	█	█	█	█	█	█	█			
Fit-outs														█	█	█	█	█	█	█	█
Site Finishes																			█	█	█
LEGEND	Combined City Block 9 Basement Works Permitted under Dublin City Council Reg. Ref. DSDZ3042-19																				
	Construction Works Associated with this Application																				

8.2 Commencement Notice

BCAR requirements will be complied with in full. A commencement notice along with the required information will be submitted by the Assigned Certifier to Building Control. A dedicated BCAR Champion will be appointed to the project to ensure the required inspection, testing and logging of all BCAR information is kept up to date.

8.3 Site Mobilisation

The existing site hoarding will be inspected in full prior to commencement and plans will be made to upgrade the hoarding as required to meet the proposed specification.

The site offices will initially be setup inside the site until such time as the basement excavation requires the offices to be moved to the site perimeter as previously outlined.

Dust suppression will be used as required to prevent dust and road sweeping will be used to maintain public roads in a clean and tidy state. Noise and vibration monitors will be installed to ensure dust and noise levels comply with planning conditions. Immediate corrective action will be implemented in the event of any noise or dust limits being broken.

8.4 Sub-Structure

The secant piling to the basement perimeter will be installed first. Excavation will follow on with anchors being installed through the secant piles as the excavation progresses.

A dewatering system will be installed ahead of the excavation and all water will be pumped through settlement tanks before discharge to a location agreed with Dublin City Council.

A ramp will be maintained into the basement to allow the piling rigs track into the site and install foundation piles at low level. Once cured and tested, breakdown of the piles will be progressed allowing pouring of the concrete pile caps, ground beams and basement slabs to commence.

Ground investigations carried out in advance of the main works as part of the detailed foundation design will determine if any ground contamination is present. All excavated material will be disposed of to licensed landfill sites. Any contaminated materials will be kept separate and removed to specialist facilities in accordance with environmental legislation.

Dust suppression and road sweeping will be undertaken as required to maintain the site, neighbouring properties and adjacent public roads in clean condition.

8.5 Super-Structure

As the basement level slabs are completed, stair and lift cores will be constructed. Tower cranes will be erected as required to service the lifting requirements for the project.

The reinforced concrete suspended slabs at each floor level above will use the Peri Skydeck formwork system. The decking will be erected complete with edge handrails and access towers to each level. Steel reinforcement will then be installed on the deck. Lifting of decking and rebar will be by tower crane while a static concrete pump will be used to pour the concrete.

After curing of the slab, the skydeck panels will be removed for reuse on the next floor above while the skydeck supports remain in place as back propping. Back props will be removed at a later date when the building has progressed and the structure has cured sufficiently to remove the props.



Skydeck system (left) and decking panels removed with back propping left in place (right)



Reinforcement on Skydeck Formwork

After each floor is poured, the columns and core walls will be poured to the next level and the decking and steel fixing will commence again. Safe access will be provided for steel fixing of walls and columns and preparatory platforms at the top of the wall formwork will be used for pouring of the concrete by crane and skip.

Super deck platforms will be utilised to allow removal of materials off floors or loading materials into floors. These platforms are installed between completed floors as shown below and cantilever outwards from the building allowing the crane to remove and drop materials on the deck. These decks will be installed on internal elevations of the buildings so they are not located over public streets.

The process of pouring slabs followed by rising elements will be repeated until roof level is reached. At roof level, structural steel and metal decking will be used to form the roof slab.



Superdeck Platform, Skydeck and Preparatory Access Platforms in use on Similar Project

Sufficient tower craneage will be provided to service the individual buildings and a crane co-ordination plan will be put in place to manage lifts. All banksmen and drivers will be in radio contact and will be overseen by a crane co-ordinator. Concrete pumping will be used for all large pours to free up cranes for other lifting operations. Wind and weather will be monitored and crane usage will be restricted as required during inclement weather to ensure safety of all personnel.

8.6 Envelope

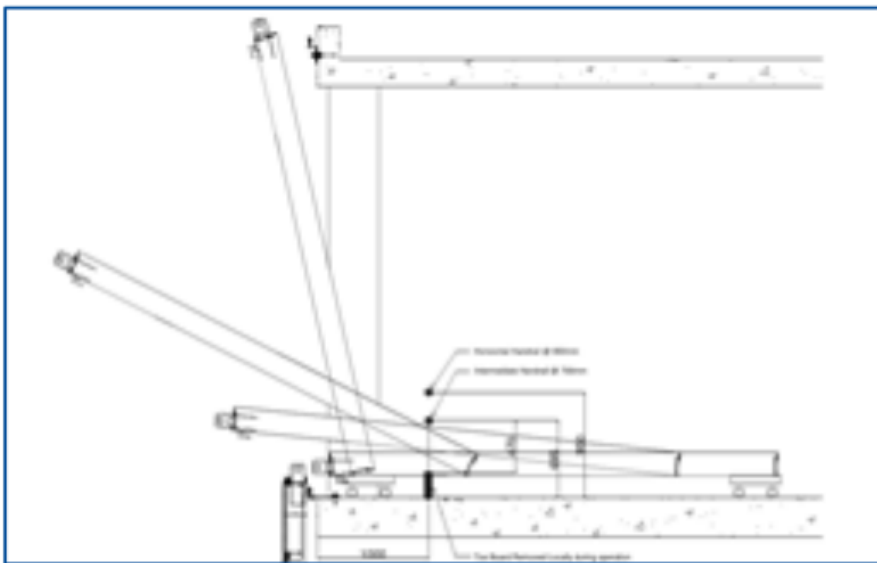
Extensive deliveries will be required for the façade. All deliveries will be brought to site on a just in time basis.

Curtain walling will be erected by a specialist glazing company. They will erect the framing and glazing units using a teleporter/mini crane for lifting and a mobile elevated work platform (MEWP) for access for workers. Suction lifters will be used to lift heavy glass units.



Installing ground floor glazing using mini crane and power sucker.

A unitised glazing system will be lifted directly from the delivery truck on to a superdeck platform at each floor level and moved into the floor of the building. A mini crane sitting two floors above where the unit is being installed will lift the unit into place. The glazed unit will be horizontal on the floor and the mini crane will lift it into the vertical position when operatives will then fix brackets on the internal face of the unit into the floor slab at the base and slab soffit at the top. All lifting and access will be from inside the building with no external MEWP / scaffolding required. All workers will wear harnesses tied off to a secure line.



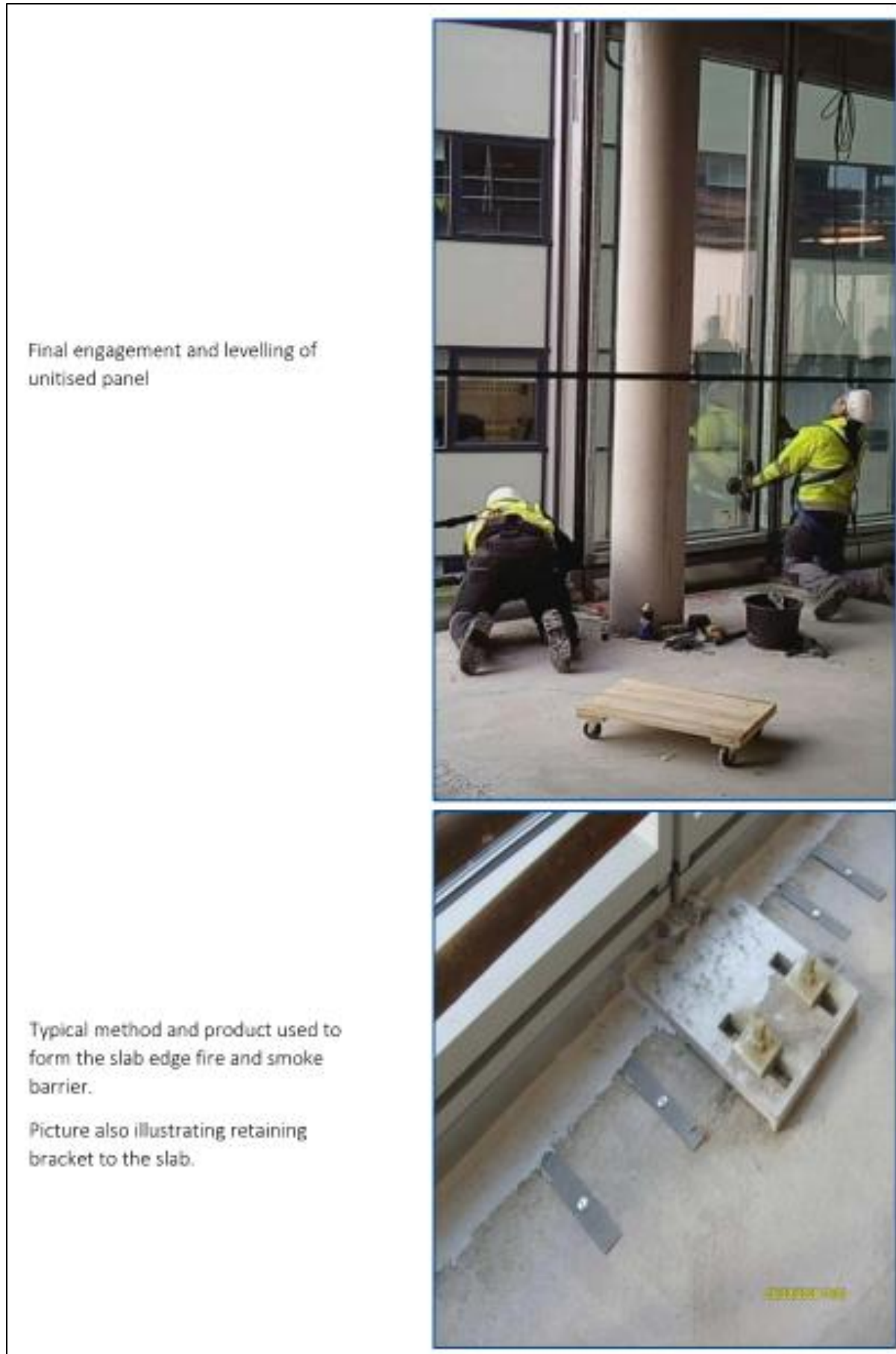
Sketch of unit being lifted from the floor to the external



Crane Set-Up



Crane lifting from floor above



The installation of unitised glazing will overlap with the concrete frame works overhead. Debris net fans will be installed to protect the glazing operatives working below as required.



Unitised Façade Installation – Mini Crane on Floor Above Lifting Unit into Position; Debris Net Fans Above.

Scaffolding and / or mast climber hoists may be required for parts of the façade. Where required, safe access stairs and loading bays will be provided and scaffolding will be tied into the building structure. The tower cranes will lift materials on to the loading bays.

Where works require a setup of plant outside the site, this will require a lane closure to facilitate MEWPs and a mobile crane lifting elements of the façade into position. This may occur if there is insufficient space between the building façade and site hoarding to fit a crane or MEWP. We will ensure the relevant license from Dublin City Council which will be obtained well in advance of the works and an agreed traffic management system will be implemented.

At roof level, there will be green roofs, roof lights as well as roofing membrane. The roof light locations will have a scaffolding crash deck erected below to provide a safe working platform for installation of the roof lights.

8.7 Fit-Out

The fit-out works will consist of:

- Partitions
- Mechanical
- Electrical
- Sprinkler
- Lift Installations
- Firestopping
- Decoration
- Ceilings
- Joinery
- Flooring
- Furniture, Fixtures and Equipment

The mechanical and electrical 1st fix works will commence early in the project when floor areas are cleared of all decking materials. Heavy plant such as chillers, boilers, etc. will mainly be placed in the basement level plant rooms. These will be brought into the basement via the access ramp off North Wall Avenue where a lane closure will occasionally be required for offloading.

Finished elements such as plasterboard partitions and ceilings will progress as the façade of the building progresses. Full weathering will be required before completion of joinery, doors, flooring, final fix mechanical and electrical items, etc.

Materials will be brought into the buildings using goods hoists and lifts will be protected and used once they are installed.

8.8 External Site Works & Finishes

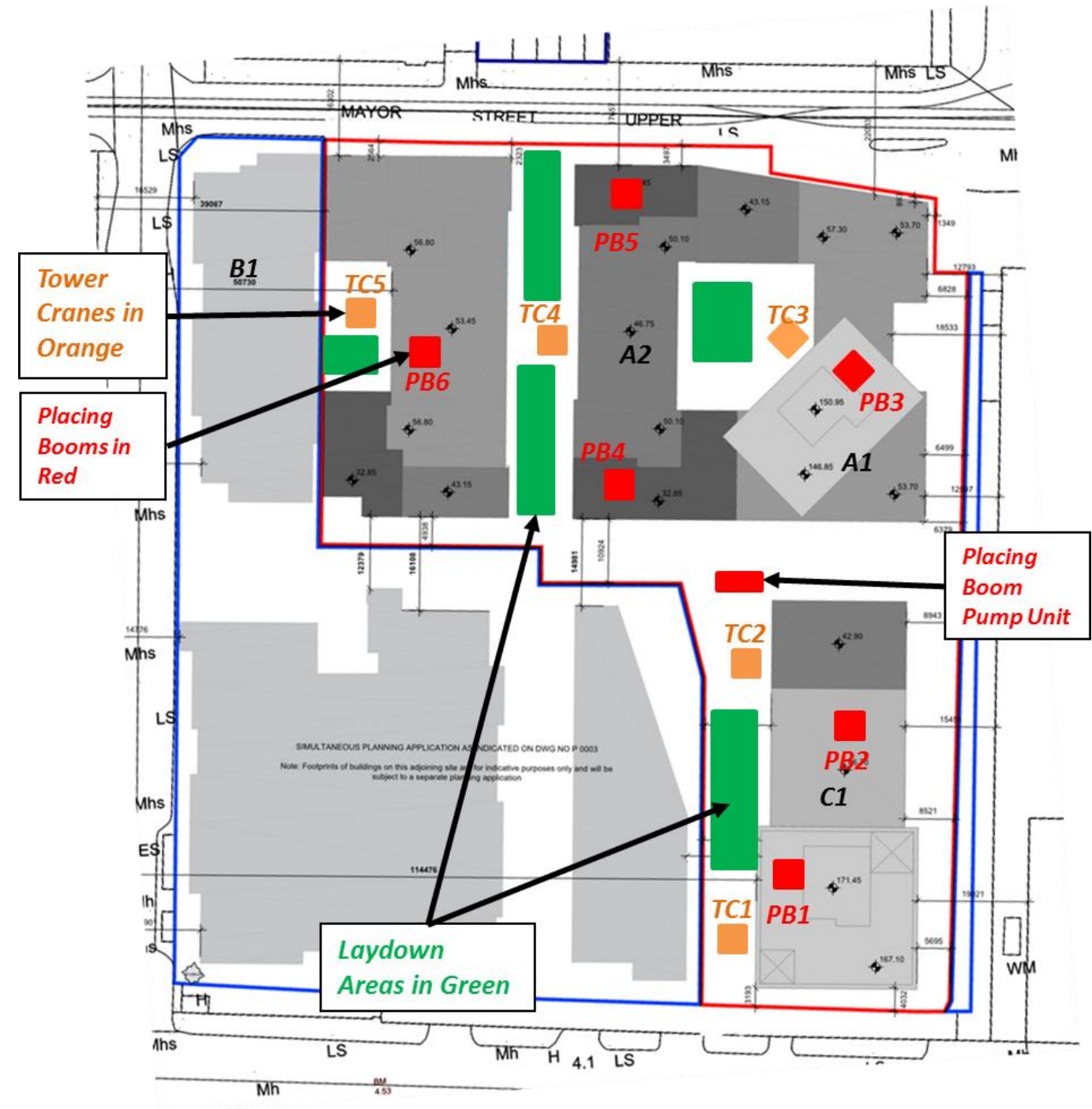
As each façade is completed, the site services and finishes will be completed adjacent to that façade. Each building will have an ESB substation which will be serviced with ducts from the nearest street manholes. Storm, foul, gas, water and telecom services will also be installed in agreement with relevant parties including Irish Water, Dublin City Council, Gas Networks Ireland, ESB Networks and Eircom.

Any road opening licenses required for ducting or sewer tie-in works will be obtained from Dublin City Council and full traffic management systems will be implemented for the works.

As hoardings are removed, the new paving will be worked into existing surfacing in agreement with Dublin City Council.

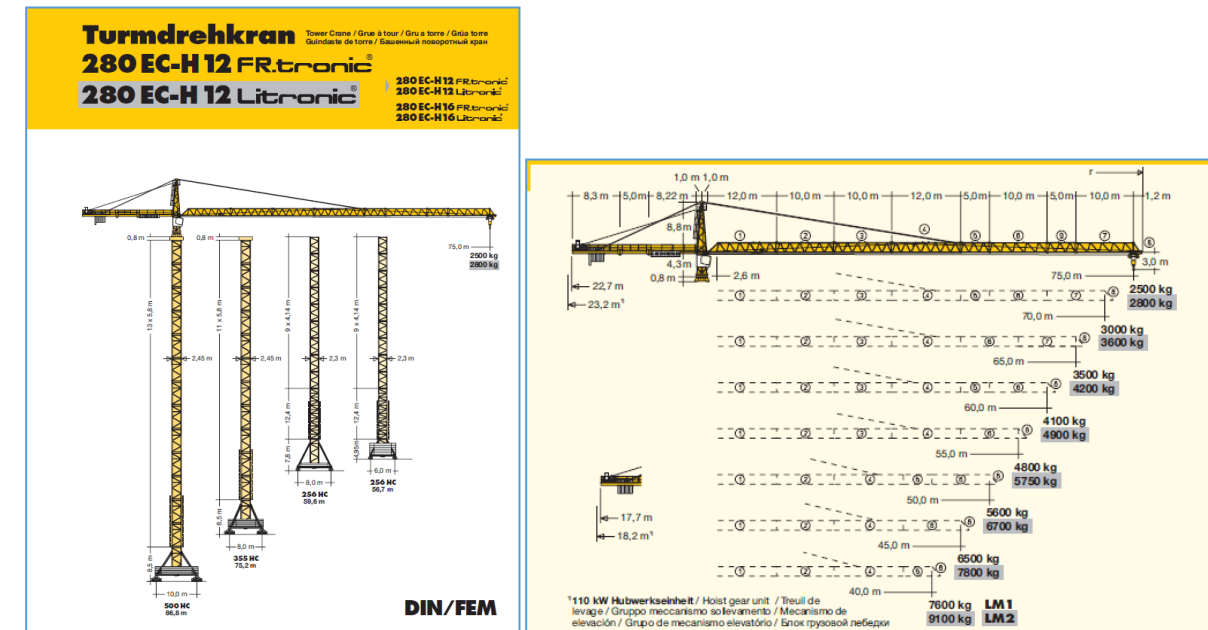
8.9 Tower Cranes & Concrete Placing Booms

The construction of the new concrete frame buildings will require 5 tower cranes (shown in orange below) and 6 concrete placing booms (shown in red below) to manage the lifting and concrete pumping requirements for the project.



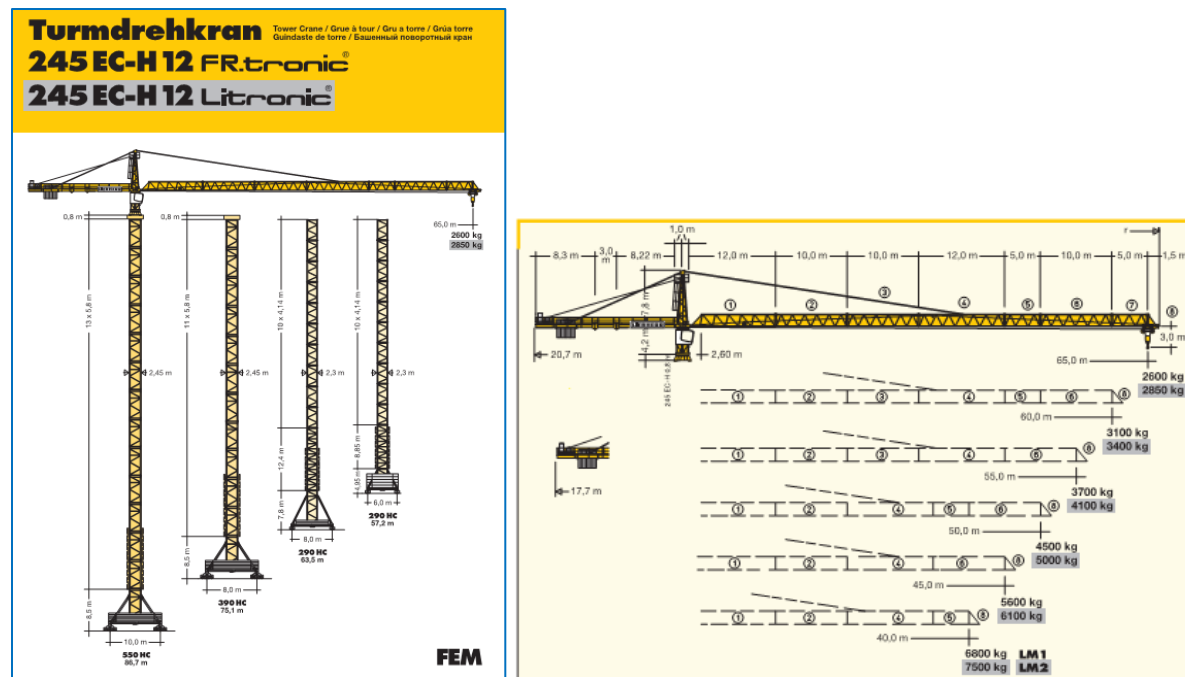
These will be as detailed below:

Crane / Placing Boom No.	Crane Jib Radius / Placing Boom Reach	Serves Block	Crane Type
TC1	55m	C – South	Liebherr 280 ECH
TC2	50m	C – North	Liebherr 280 ECH
TC3	60m	B – East	Liebherr 280 ECH
TC4	50m	B – West	Liebherr 245 ECH
TC5	50m	A	Liebherr 245 ECH
PB1	30m	C – South	
PB2	30m	C – North	
PB3	30m	B – East	
PB4	30m	B – Northwest	
PB5	30m	B - Southwest	
PB6	30m	A	

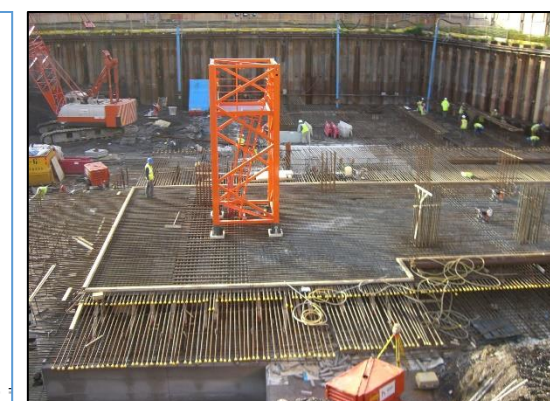
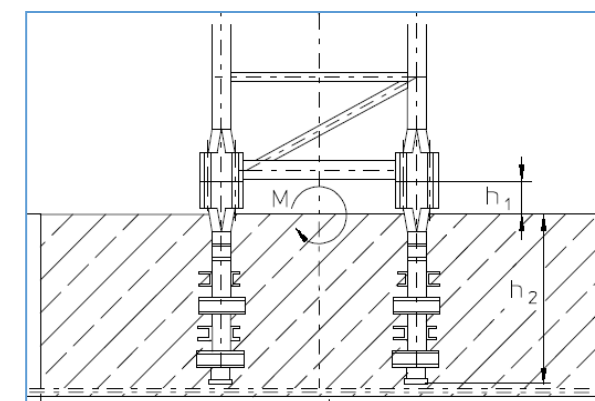


The tower cranes will be erected to heights so that jibs are at different heights to avoid clashes and to oversail other cranes. The tallest tower cranes will be fixed back to the building structure for shaft support. A crane co-ordination plan will be put in place to manage crane operations when there are mobile cranes or concrete pumps in operation alongside the tower cranes to ensure there are no collisions. Banksmen will control crane lifts and will be in radio contact to co-ordinate lifts. A crane co-ordinator will oversee all lifting operations. Beacon lights will be placed on the cranes for aviation purposes and flood lights will be placed on the crane shafts for site lighting. Drivers will be instructed to slew loads so that materials remain over the foot print of the site although jibs will oversail properties outside of the site.

Cast-in anchors in the basement slab will be used to secure the tower cranes. These crane foundations will be progressed early to allow erection of the cranes to proceed. Where a crane is located inside a building due to space constraints, openings in floor slabs will be cast around the crane shaft and will be infilled upon removal of the cranes.



Typical Tower Crane to be used



Cast in crane anchors to be used to secure tower cranes into basement slab

The crane bases will be enclosed in a secure hoarding with door access available to the driver only as shown below.



Secure Fencing, Lockable Door and Anti Climb Fan around Crane Base

The tower cranes will be used primarily for lifting decking, structural steel and metal decking, rebar and for small concrete pours such as columns. After superstructure, they will be used for lifting materials to the facade of the building for envelope installation and for lifting materials into the building for fit out works.

8.10 Other Plant

Mobile cranes will be required from time to time on site while a teleporter will also be on site for offloading of smaller delivery trucks.

The podium slab will be checked for the loading in the event of any plant being required to travel on it. Back propping will be installed as required to facilitate this.

Concrete pumps will be used for all large pours including floor slabs and walls. This will take pressure off the tower cranes and allow them to concentrate of lifting of steel, rebar and decking false work and formwork.

Minor small plant will include vibrators, power floats, compressors, generators, etc. during the course of the concrete works. Boom hoists will be used in conjunction with scaffolding to access wall and column pours.

Plant required to install the building envelope will include scaffolding, scissors hoists, boom hoists and mini cranes.

Fit-out works will mainly require small electric powered scissors hoists suitable for use indoors. These will be required for installation of partitions and services during the fit-out period.

Proprietary decking systems will be used to pour the concrete frames consisting of both wall and floor shutters. Wind shields will be erected around the higher buildings which will be moved up hydraulically as the building frame progresses. Reinforced concrete decking systems will be removed when concrete slabs have achieved their required strength and will be replaced with back propping. The decking will then be moved to the upper

floors for reuse. This will reduce the amount of decking materials required on site and will reduce storage requirements.

Loading bays will consist of both scaffolding and super-deck platforms. Cranes will lift materials on to the loading bays where workers will immediately bring materials into the building. Fit out materials will be loaded in once decking systems and back propping are removed to ensure the materials can be brought into the building ahead of façade works which will close off access.

Concrete stairs will be precast and will be installed as soon as stair cores are ready to receive them. This will provide a safe access to each floor level. An electric hoist will also be used before stairs are in place.

Permanent lift installations will be used for the latter stages of fit-out to bring in furniture and equipment. Lifts will be protected to prevent damage.

8.11 Labour Resources

The expected numbers will vary throughout the project commencing with 30- 40 personnel when excavating the basement to in excess of 250 personnel when at the height of construction.

8.12 Building Control (Amendment) Regulations

Inspection, testing and certification of all works will be carried out in agreement with the Assigned Certifier for the project.

The compilation of handover documents and other documentation required for BCAR uploads will be an ongoing task throughout the project.

At completion, all required information will be completed and submitted to Building Control to ensure the Certificate of Completion for the project is validated and placed on the statutory register.

9. Public Relations

A communication system will be put in place to ensure good relationships with the public and with neighbours.

Ronan Group Real Estate and PJ Hegarty & Sons will observe the Dublin City protocol outlined below:

Following the receipt of multiple complaints relating to large scale commercial development sites in Dublin Docklands Area relating to;

Alleged breaches of standard permitted working hours, excessive noise and dust levels, dirt and debris on approach roads, damage to surrounding footpaths, illegal parking, lack of courtesy from contractors and sub-contractors to residents in the vicinity.

Alleged excessive hours of work extensions being sought by contractors and granted by Dublin City Council which is allegedly causing undue disruption to the lives of residents in the vicinity of certain sites in the area.

The following updated protocol has been produced (with reference to the London Good Practice Guide: Noise and Vibration Control for Demolition and Construction produced by the London Authorities Noise Action Forum, July 2016) to alleviate/mitigate some of the issues that are being raised by existing residents in the Docklands Area.

1. General Considerations

All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.	All sites
Site hoarding should be erected to maximise the reduction in noise levels	All sites
The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work	All sites
The site entrance shall be located to minimise disturbance to noise sensitive receptors	All sites
Internal haul routes shall be maintained and steep gradients shall be avoided	All sites
Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management(i.e. road closure) or health and reasons(application must be made to DCC a minimum of 4 days prior to proposed works)	All sites
Use rubber linings in chutes, dumpers and hoppers to reduce impact noise	All sites
Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements	All sites
No materials shall be burned on site	All sites
Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times.	All sites

All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site.	All sites
The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather.	All sites
Dust suppression equipment must be used when point source emissions are likely.	All sites
The entry and exit points to the site should be constructed of hard standing which is regularly dampened to minimise dust emissions.	All sites

2. Plant

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

3. Vehicle activity

Ensure all vehicle movement (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons)	All sites
Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off	All sites
Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements	All sites
Plan the site layout to ensure that reversing is kept to a minimum	All sites
Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banks-men	All sites
Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.	All sites
Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers	All sites

4. Demolition Phase

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

5. Ground Works and Piling Phase

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

6. Monitoring

Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps.	All sites
Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include; <ul style="list-style-type: none"> Hours of work Presence of mitigation measures Number and type of plant Construction methods Site reviews must be recorded and made available for inspection	All sites
Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DCC at agreed intervals and in an agreed format.	All sites
Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM	All sites
The ‘ABC’ Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work.	All sites
Vibration levels must be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned and an explanation given.	All sites
Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways	All sites
Street and footpath cleaning must be undertaken during the demolition and ground works phase to minimise dust emissions	All sites
Continuous dust monitoring along the site boundary should be undertaken during any demolition or ground works	All sites

7. Communication and Liaison

A Community Liaison Plan should be developed by the developer in consultation with local residents/businesses and a single point of contact nominated to engage with Dublin City Council and the residents/businesses and to handle complaints and communication of site information	All sites
Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding	All sites
All site staff should be briefed on the complaints procedure and mitigation requirements and their responsibilities to register and escalate complaints received.	All sites
Send regular updates at appropriate intervals to all identified affected neighbours/businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website	All sites
Arrange regular community liaison meetings at appropriate intervals (including prior to commencement of the project in the future).	All sites
Meet regularly with neighbouring construction sites to ensure activities are coordinated to minimise any potential cumulative issues.	All sites

8. Extensions of Working Hours in exceptional circumstances

Ensure at least 4 days' notice is given to Dublin City Council when applying for extensions to normal working hours. Do not undertake out of hours work unless permission to do so has been granted.	All sites
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The applicant must demonstrate in writing that the works required cannot be carried out during normal working hours. The documentation sent in must be accompanied by a detailed engineering or traffic management or safety case as to why the works are required outside normal hours. The application must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance	All sites
Advise neighbours about reasons for and duration of any permitted works outside of normal working hours, following receipt of approvals from DCC.	All sites
All complaints will be referred directly to the site liaison person and a reply must issue to the complaint within 3 hours of receipt of the complaint.	All sites
A log of all complaints and a summary of how they were dealt with should be kept and be made available to DCC, as required.	All sites
No more than two work extensions will be considered per week to facilitate required concrete pours. Power floating after 6pm is the only activity that will be permitted during the extensions relating to large concrete pours. Measures such as the use of electrical power floats should be considered to minimise noise associated with this work.	All sites
Any breaches of permitted working hours or permitted extended working hours or developers or subcontractors not carrying out their requirements under this protocol will lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of Dublin City Council.	All sites