



Project: **City Block 2, Spencer Dock**

Contractor: PJ Hegarty and Sons

Client: Ronan Group Real Estate



Construction and Demolition Waste Management Plan (Rev3)

Prepared by: David Riordan,
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Date: 01-Feb-2019



REVIEWS

Revision	Revision Date	Reviewer	Signature	Comment
1	17-Sept-18	DR	David Riordan	
2	19-Nov-18	KS	Kate Scully	Demolition Plan
3	01-Feb-19	DR	David Riordan	Amended following DCC's comments

REVISION NOTES

1. For re-submission to Dublin City Council



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1 INTRODUCTION

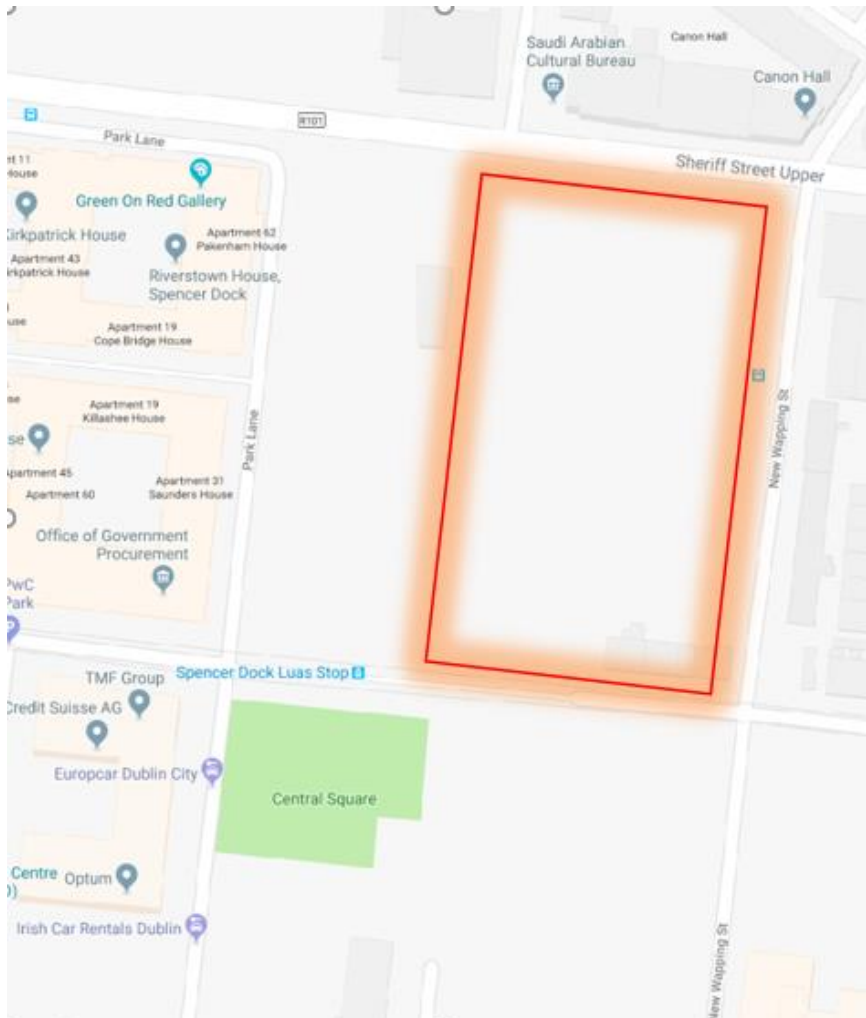
1.1 Introduction

The Construction and Demolition Waste Management Plan (CDWMP) has been prepared to set out the means in which PJ Hegarty and Sons propose to ensure that all construction and demolition wastes arising from the project are dealt with in a systematic way and in accordance with the governing legislation i.e. The Waste Management Act 1996 and subsequent amendments.

This plan has been prepared in accordance with the “Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects” (Department of Environment, Heritage and Local Government, July 2006).

1.2 Site Location

The site address is City Block 2, Spencer Dock, Dublin 1. The site is shown edged in red below and is bounded on three sides by Sheriff Street Upper, New Wapping Street and Mayor Street Upper (LUAS line).



Site Grid Reference Data

Normal Grid Ref = O 175 093

10 digit Grid Ref = O 1750934679

Latitude = 53.349502 (north)

Longitude = -6.2359246 (west)

Latitude = 53°20'58" (north)

Longitude = 6°14'9" (west)

1.3 Works Proposals

The proposed development comprises two apartment blocks of approximately 325 Units and an aparthotel of approximately 102 units over undercroft basement space adjacent to an existing operational pump station.

The Planning Application number for the development is DSDZ2896/18.

1.4 Purpose of the Construction and Demolition Waste Management Plan

The proposed development construction and demolition process will generate a significant amount of waste and require the movement of this waste off site. This Construction and Demolition Waste Management Plan outlines the approach to construction and demolition waste management, throughout the duration of the project, from demolition right through to completion of the works.

1.5 Site Investigation

RSK have undertaken Soil investigation and WAC testing throughout the site. Upon analysis of soil samples, it is expected that up to 50% of soil could be classified as hazardous. This material would require to be disposed of to a hazardous landfill or hazardous waste treatment facility.

2 Demolition Works

2.1 Demolition Plan

This project involves minimal demolition of the existing perimeter stone & block wall along Sheriff Street Upper (North) and the concrete panel fencing along New Wapping Street (East) and Residential Properties along the south, located in Spencer Place North, Dublin 1.



Figure 1 - Overall Site Layout Plan for Demolition of Perimeter Wall & Installation of Hoarding.

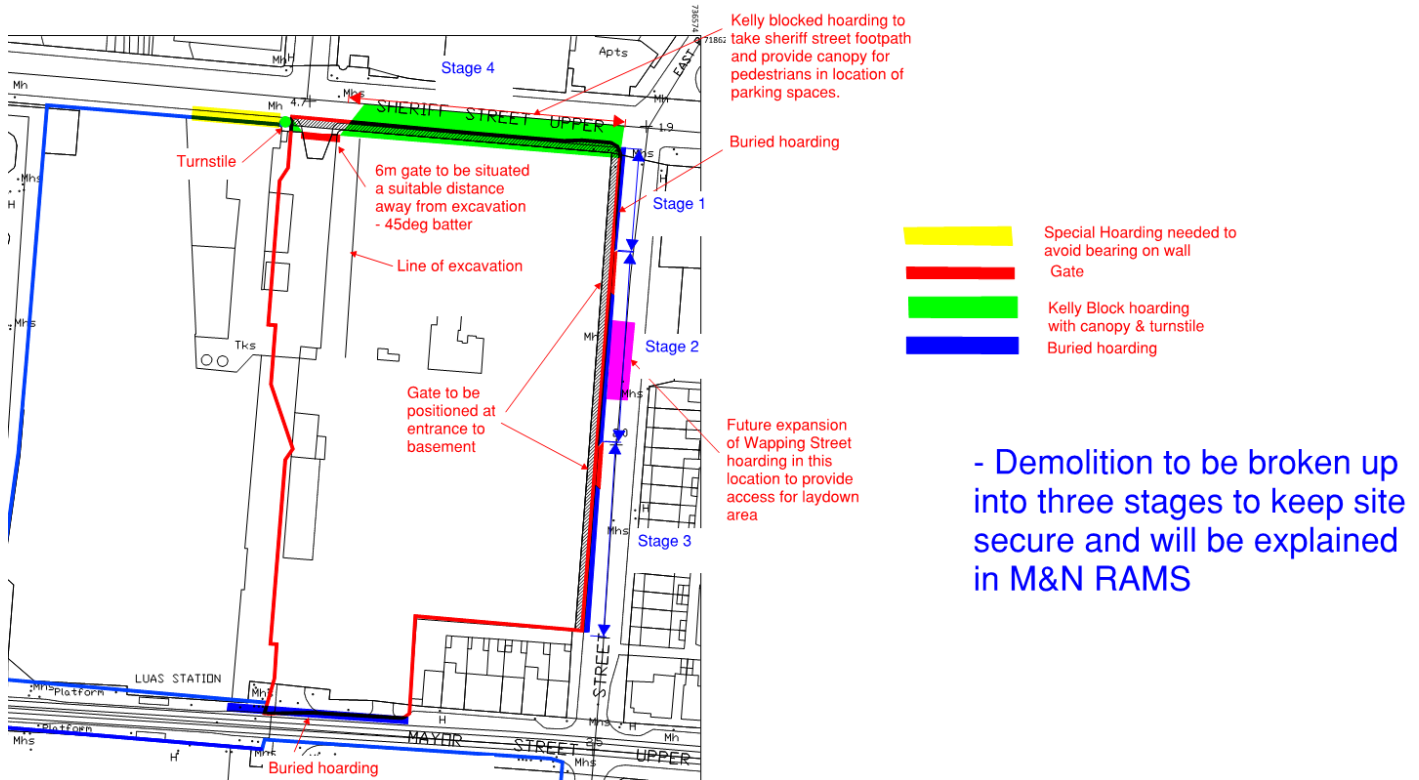


Figure 2 – Demolition Staging Drawing



Figure 3 – Image of Demolition Staging sequence.

2.2 Hoarding

During the demolition phase, temporary heras fencing will be installed along the site perimeter. The Heras fencing in addition to spotters will provide protection to the public from debris and dust. The Heras fencing will be dismantled in a phasing sequence as the demolition is carried out & the hoarding is being erected.

The site will be secured with a solid 2.4m high hoarding erected along the site boundary. The hoarding will be used to secure the site and will assist with the control of dust and debris containment throughout the main structural works. The hoarding around the site will ensure the construction works are contained within the site boundary and cause no disruption to any adjacent properties, traffic or passing pedestrians.

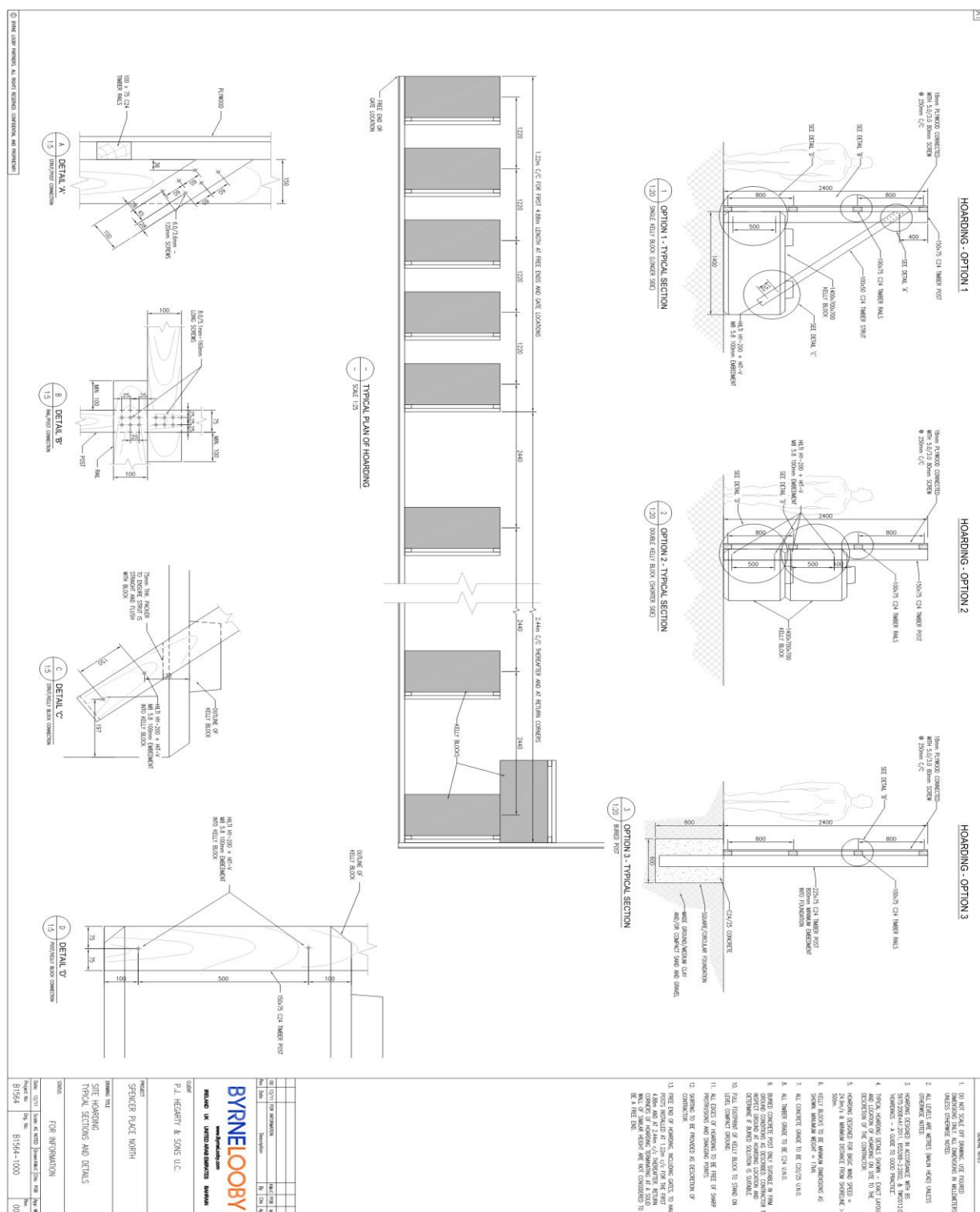
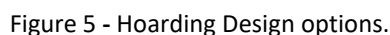


Figure 4 – Hoarding Design options.





Project Risk Assessment of Safety and Health Hazards / Risks			
Engineers Ireland			
Designer's Assessment of Safety and Health Hazards / Risks			
Project: Spencer North		Designer: Pdraig O'Brien	Date: 26/11/2018
Ref No: B1564-DRA02		Checker: Flavio Natale	Date: 26/11/2018
Design Phase (Concept; Preliminary; Detailed or Redesign): Design of site hoarding			
Note: review previous phase b/f items			
No.	Key construction hazards (or risks) identified	Evaluations. Design decisions made (or alternative actions)	
1	Unsuitable design approach	The hoarding has been designed in accordance with design principles of 'TWf:2012:01 HOARDING - a guide to good practice' and IS EN 1995 Eurocode 5. Contractor to install hoarding as per drawings and keep hoarding in good condition. Memembers to be replaced as necessary due to weathering.	
2	Excessive horizontal load on hoarding resulting in damage to hoarding	The hoarding has been designed for wind load and notional horizontal load as per design principles of 'TWf:2012:01 HOARDING - a guide to good practice'. Hoarding not designed for impact load or crowd loading. Independent vehicle impact barrier or other protections measures to be provided as deemed necessary by the Contractor.	
3	Sliding / overturning of ballast blocks	Minimum ballast block size and orientation to be provided as shown. Blocks to be provided on competent firm ground / surface.	
4	Anchor bolts damaging ballast blocks	Minimum concrete grade as specified on drawings to be used in blocks. Anchor bolts to be installed as per drawing with minimum edge distance and embedment depth as shown. Contractor required to bolt into ballast blocks, to be confirmed acceptable should blocks be leased.	
5	Unsuitable ground conditions for ballast blocks or buried post solution	Ground conditions to be assessed on site and correct hoarding foundation chosen. Buried post only suitable for ground conditions noted, ground to be firm and competent to take buried post solution.	
6	Unsuitable timber grade	Minimum timber grade as specified on drawings to be used.	
7	Design life of hoarding exceeded used	The hoarding has been designed for a maximum design life of 2 years and a 2 year return period for wind loading. Memembers may need replacing due to weathering. Hoarding to be kept in good condition.	
8	Fall of material/construction debris from site over hoarding causing injury to pedestrians	Crash deck to be provided over canopy walkway as detailed on the drawings. Canopy crash deck to be provided where risk of falling objects to pedestrians. To the descretion of the contractor. If canopy and crash deck becomes damaged due to falling object, walkway to be closed and contractor to repair deck.	
9	Failure of fixings	All fixings to be installed as per drawing with minimum edge distance and embedment depth as shown.	
10	Undermining of hoarding foundation or ballast blocks	Foundation of hoarding (i.e. ballast block or buried post) not be undermined during construction works such as piling or excavations. Contractor to take necessary precautions and provide offset from construction work to hoarding.	
11			
12			
Notes re providing info.		Item Nos. (from above)	Remarks
a) For client's designer	-		
b) Hazards particular risks	-		
c) Other particular risks	-		
d) Re assumed construction methods	All		
e) For safety file	All		
f) In-house: b/f to future stages	-		
Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designer's duties under the Safety, Health and Welfare at Work (Construction) Regulations 2006 -2013, CDM2015 CDM2016 N.I. or other legislative EHS requirements. The evaluations relate only to those aspects / elements of the project which we are responsible for designing under the terms of our appointment by our client. Other Parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control risk arising during construction, must carry out their own definitive risk assessment ab initio for that purpose			

Figure 6 – Hoarding Designers Risk Assessment.



Form: HST1



Temporary Works Designer's Certificate

(For use in connection with the Safety Health and Welfare at Work (Construction) Regulations 2013. Nothing in this certificate shall be construed as imposing on the designer any liability whether in negligence, for breach of duty or otherwise that would not otherwise attach and the certificate is provided on this basis)

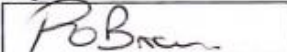
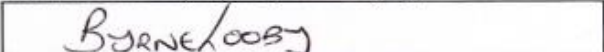
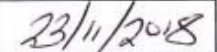
PSDP's Certificate Ref. No:

1.	Project:	Spencer Place North
2.	Designer:	ByrneLooby
3.	Designer's client:	P.J. Hegarty & Sons U.C.
4.	Elements/features of the temporary works for which we were/are appointed.	Temporary Site Hoarding – Standard Details Hoarding and Canopy Hoarding
5.	Main design codes adopted: (if applicable)	TWf:2012: 01 HOARDINGS – A guide to good practice IS EN1995-1-1: Eurocode 5: Design of timber structures
6.	Drawings: (schedule may be appended)	Refer to Drg(s): B1564-1000 B1564-1001
7.	The intended construction sequence is detailed in:	Refer to Drg(s): B1564-1000 B1564-1001
8.	Requirements for temporary stability, propping, bearing, bracing, loading restrictions etc are detailed in:	Refer to Drg(s): B1564-1000 B1564-1001
9.	Certificate(s) by permanent works designer(s) which we have taken particular account of in respect of its/their Item 9: (if applicable; quote the PSDP's Certificate Ref. No.)	N/a

We hereby confirm that we have to date carried out, and will continue to carry out as necessary, the design of those parts of the works which we are appointed to design exercising reasonable professional skill, care and diligence and with due regard to our duties under the Safety Health and Welfare at Work Act 2005 and under the Safety Health and Welfare at Work (Construction) Regulations, 2013 (the 'Regulations') in that we:

1. have taken account of the General Principles of Prevention and any existing Safety File,
2. have provided the PSDP & PSCS as appropriate with relevant information as required by the Regulations, and
3. have cooperated with the PSDP & PSCS and with other designers as necessary.

We confirm we have received all information and cooperation which we required from the designer(s) noted in Item 9.

Signed:  for and on behalf of (temporary works designer)  Date: 

We hereby confirm that we have coordinated the activities of the designer named above and the other designers on the project in respect of the taking account of the General Principles of Prevention during the design of the element(s) of the works described above with due regard to our duties as PSDP under the Safety Health and Welfare at Work (Construction) Regulations, 2013.

Erection of the Temporary Works may proceed, subject to the provision of a Temporary Works Method Statement agreed by the Contractor, Temporary Works Erector and PSCS as being adequate.



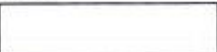
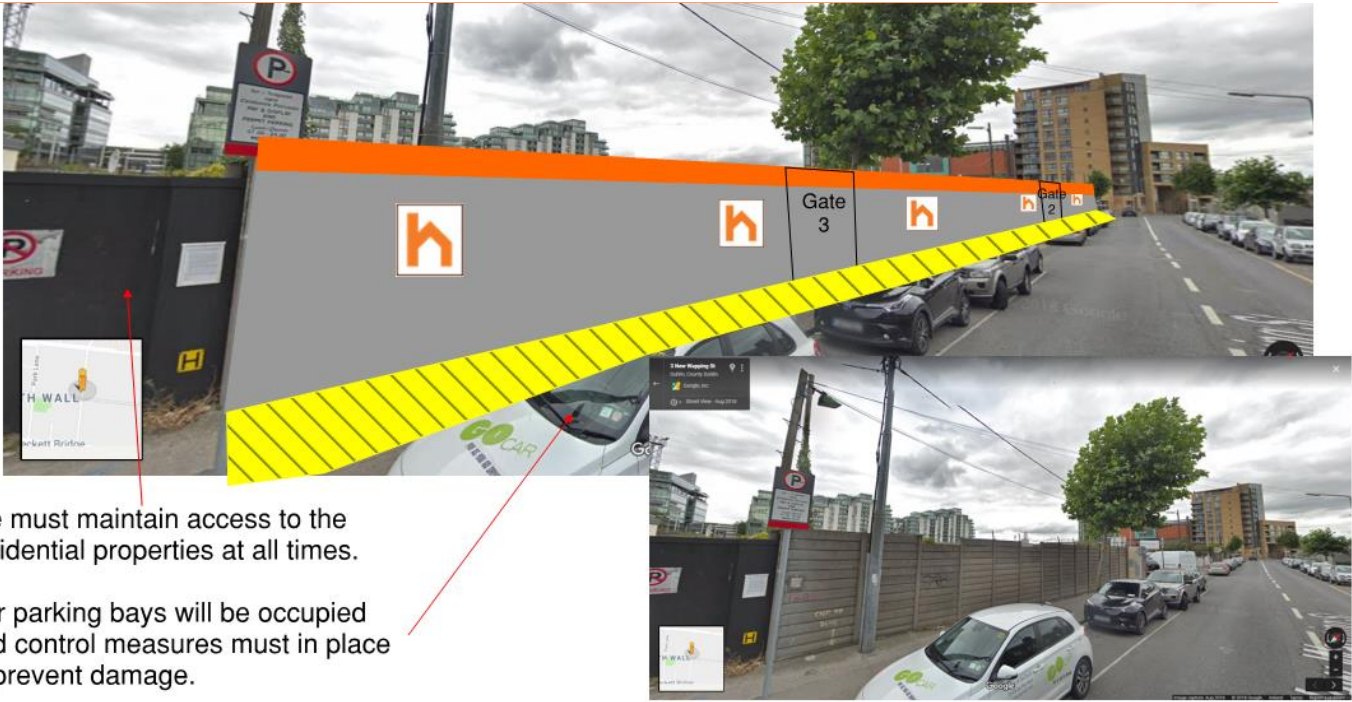
Signed:  for and on behalf of (PSDP)  Date: 

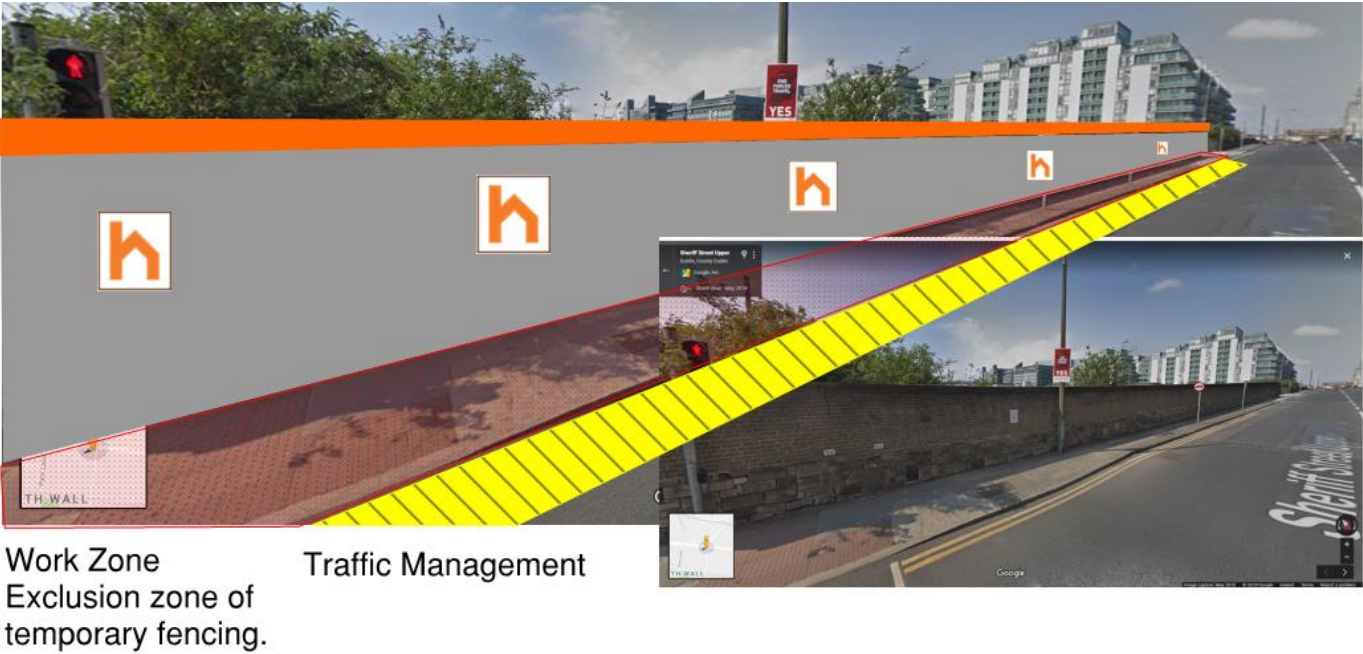
Figure 7 – Hoarding Designers compliance certificate.



We must maintain access to the residential properties at all times.

Car parking bays will be occupied and control measures must in place to prevent damage.

Figure 8 – Demolition Sequence Staging 1, 2 & 3 on New Wapping Street.



Work Zone
Exclusion zone of
temporary fencing.

Traffic Management

Figure 9 – Demolition Sequence Stage 4 on Sheriff Street

2.3 Traffic Management

A detailed traffic management plan (TMP) has been developed and will be reviewed continually throughout the contract works. DCC permits will be obtained prior to commencing the demolition works. Temporary Heras fencing will be erected along the public footpath to segregate the construction zone. Traffic management plan will be implemented to occupy the car parking bays and redirect the pedestrians along a temporary walkway.



Figure 10 - Traffic Management Plan

2.4 Environmental Monitoring

NVM installed a monitoring scheme for noise, vibration and dust as part of the redevelopment works. Baseline levels will be monitored for noise and vibration prior to any works commencing on site and will continue through demolition phase to completion. Noise monitors (N1, V1 & N2) affected by demolition and hoarding works will be repositioned.

RSK conducted an investigation to determine the presence of any potential hazardous materials prior to works commencing. There was no hazardous materials identified in the brick and concrete perimeter structure. RSK will be continuously monitor compliance for the segregation and removal of excavated soil and demolition waste.

Alert Information

- N1 – Sherriff St Upper
- N2 – New Wapping St Boundary
- N3 – CIE site boundary
- V1 – New Wapping street Boundary
- V2 – No 1 – Mayor Street
- V3 – No 2 – Mayor Street

Alert Notifications (guidance)

- Noise Monitoring. 75 dB (A) – 1 hr LAeq.
- Vibration Monitoring. 5mm/s Max.





2.5 Temporary Works

Prior to commencing demolition works, a structural survey will be conducted to ensure that the public road & rail infrastructure and adjacent residential properties, are not at risk of being undermined.

The temporary works coordinator will ensure that structural support works are designed and installed on adjoining structures prior to commencing demolition. Full height perimeter hoarding / scaffolding / structural ground supports will be installed along the party walls as required. Once all required temporary works are installed demolition will commence using 'work down' methods i.e. small plant and machinery demolishing.

2.6 Structural Demolition

PJ Hegarty Demolition permit will be implemented to ensure that all control measures are in place prior to commencing the demolition works. A service detection survey will be carried out to confirm the presence of any live services along the perimeter structure. All services will be removed during the soft strip works following their disconnection and capping. Mechanical protection will be placed over permanent electrical assets.

The demolition works will commence with the removal of vegetation and the soft strip of gates and loose structural components. The sequence of demolition will commence from Gate 1 on the north wall, eastbound along Sheriff Street Upper and continue in a clockwise direction southbound on New Wapping Street. The soft strip will also include the removal of street signage and noise / vibration monitors for installation outside the hoarding structure.

Demolition Contractor will provide a detailed RAMS for the scope of works. MEWP will be used for access at height and complete a saw cut separation line of the concrete structure in small manageable sections. The top sections will be initially remove by hand or pushed into the construction site boundary by an excavator.

3T Excavator will be used to push the perimeter wall internally towards the construction site. Protection will be placed on the public surfaces for protection. Dust will be controlled with water spray. All demolition waste will be transported inside the construction site for segregation. And disposed off-site to licensed disposal facilities for processing and recycling where possible.

All materials will be loaded into specific waste skips which will be allocated to certain waste streams for recycling purposes. The waste materials will be segregated on site into four different categories:

- Clean rubble
- Scrap metal
- Mixed C&D waste

3 WASTE ARISING

3.1 Construction Waste

Quantities of general construction wastes such as concrete, blocks, bricks, wood, packaging, metals, plastic, canteen waste, site clearance and residual wastes will be generated from the construction of the new development. The current waste streams for this project are presented in Table 2.1 below.

Table 2.1 Identification of Waste Streams

Waste Collection Company & Waste Collection Permit Reference	Waste Destination Company Name and Waste Code	Waste Destination Company Address & Waste Facility License Reference
M&N Groundworks NWCPO-16-11834-02	Cemex (ROI) Limited (Code:17-05-04)	Walshestown, Blackhall, Naas, Kildare W0254-01
M&N Groundworks NWCPO-16-11834-02	Killcarrig Quarries (Code:17-01-01 & 17-01-02)	Killcarrig, Bagenalstown, Carlow WFP-CW-16-4
M&N Groundworks NWCPO-16-11834-02	N&C Enterprises Limited (Code:17-	Kilmeage, Naas, Kildare W0292-01
M&N Groundworks NWCPO-16-11834-02	Rilta Environmental (Code:17-05-03)	Block 402, Granys Drive, Greenogue Bus.Park, Rathcoole WO192-03



Chain of Custody Form for Waste Transfer

No: 00001

Part 1 – For completion by WASTE PRODUCER			
Waste Producer	Company	PJ Hegarty	Waste Removal Contractor
	Site Address	Junction of Sheriff Street Upper & New Wapping Street, City Block 2, Spencer Dock, Dublin 1	Company Name
	Site Contact		M&N Groundworks
	Phone Number		Address
	Waste Description		Hearse Road, Lanistown, Donabate, Dublin K36 K314
	Physical Description		Site Contact
			Phone Number
			EWV CODE
			Quantity (Approximate Tonnage)
Type of Analysis undertaken prior to removal from site			
Part 2 – For completion by DRIVER before leaving site			
Site Ref No.		Drivers Name (Block Capitals)	
NWCPO Code		Drivers Signature	
Time & Date despatched from site		Vehicle Registration	
Company relinquishing waste		Signature of person relinquishing waste	
Part 3 – For completion at PERMITTED / LICENCED SITE REPRESENTATIVE			
Licensed Site Owner / Company name receiving waste			
Site Address			
Permitted Site(LA) / Licensed Site (EPA)			
Site Telephone Number			
Waste Permit or Waste Licence Number			
Receiver Name (Block Capitals)			
Receiver Name Signature			
Time & Date Received			
Part 4 – For completion by WASTE PRODUCER			
Chain of Custody Return and Completion	Time & Date form returned		
	Received From – Drivers Name & Company		
	Supervisors Signature whom receives form		
	Comments		
Docket Logged on PJH WMP01 Form	Yes	No	
Logged By		Date	

PJH Chain of Custody form to track and reference individual dockets specific to authorized waste collectors that collected the waste load. Up to date waste logs will be available onsite for inspection at any time.



4 PROPOSALS FOR MINIMISATION, REUSE, RECYCLING AND MANAGEMENT OF C&D WASTE

4.1 Waste Handling

The primary aim of this CDWMP is to ensure that the wastes generated during the course of the project are managed in accordance with the governing Waste Management Legislation and the principles of Waste Hierarchy i.e. prevention, minimization, reuse, recovery and recycling.

Under the Waste Management (collection Permit) Regulations 2007 a waste collection permit, for the appropriate code(s) and destinations, is required by a waste hauler to transport waste from one site to another. Compliance with the Waste Management (Movement of Hazardous Waste) Regulations, 1998 is also required for the transportation of hazardous waste by road. The export of waste from Ireland is subject to the requirements of the Waste Management (Shipment of Waste) Regulations, 2007. P.J. Hegarty will ensure that the transport and movements of all wastes are carried out in compliance with these requirements. Details of proposed waste collection companies and permit references can be found in Table 2.1.

Waste will only be treated or disposed of at facilities that are licensed to carry out that specific activity (e.g. recycling, landfill, incineration etc.) for a specific waste type. Records of all waste movements and documentation should be held on site. Details of proposed waste destinations and license references can be found in Table 2.1

In order to prevent and minimize the generation of wastes, P.J. Hegarty will ensure that raw materials are ordered so that the timing of the delivery, the quantity delivered and the storage is not conducive to the creation of unnecessary waste. By following a “just in time” approach, this decreases waste, utilises storage space better, reduces potential losses and damage as well as making the site safer.

The construction work planning will be carried out closely with the waste management contractors, in order to determine the best techniques for managing waste and ensure a high level of recovery of materials for recycling. P.J. Hegarty will continuously seek to improve the waste management process on site during all stages of construction and maximise opportunities for reuse or recycling where they exist.

4.2 Primary Waste Streams

A brief overview of the methods to manage the primary waste streams expected is presented below. The main types of construction waste produced will be:

Concrete, Blocks and Bricks

Waste concrete, blocks and brick will arise during the construction phase. Where possible, this waste will be removed off site to a remote facility and recycled for reuse. Where this cannot be achieved the waste may be crushed and screened and used within the project area where appropriate to do so.

Metals

Where possible all steel and non-ferrous metals will be transported to a metal processing facility for recycling. Skips will be provided for the storage of scrap metal on site and once full will be removed by the waste storage contractor and transported to a metal recycling processing facility located in Newry, County Down.



Timber

Timber waste will be stored separately as it is readily contaminated by other wastes and if it is allowed to rot will reduce the recyclability of the other stored wastes. Any pallets will be returned to the supplier for reuse. Offcuts and trimmings will be used in the formwork where possible. The waste wood will be collected by a waste contractor who will transport it to a wood recycling facility for chipping.

Plasterboard

Waste plasterboard from the construction phase will be segregated and stored on site prior to transportation to a recycling facility. The plaster board waste will be processed to produce a recycled gypsum product.

Other wastes (Residual)

Waste materials other than those outlined above can constitute a significant proportion of the total waste generated by a construction site. This waste is normally made up of residual non-recyclable waste such as soiled paper, cloth, cardboard or plastics as well as canteen waste including food. This material will be stored in dedicated waste containers. Container size and collection frequency will be assessed as works proceed.

5 ASSIGNMENT OF RESPONSIBILITIES AND TRAINING

5.1 C&D Waste Manager

A Construction and Demolition Waste Manager (CDWM) has been appointed. David Riordan, whose contact details are found on the cover sheet, will have overall responsibility for the management of waste on site. David has experience in all aspects of site logistics including waste and materials management. Project goals will include:

- Distinguish reusable materials from materials suitable for recycling
- Ensure maximum segregation at source;
- Co-operate with site manager on best locations for stockpiling reusable materials;
- Separate materials for recovery; and
- Identify and liaise with operators of recovery outlets

The CDWM will be responsible for educating all site staff, sub-contractors and suppliers about the available alternatives to conventional waste disposal. The CDWM will continually identify waste minimization actions on site and these will be updated in the plan.

5.2 Training

Copies of the Waste Management Plan will be made available to all personnel on site. All site personnel and subcontractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them. This will typically be carried out during the induction process for all new site staff and subcontractors. Where source segregation and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan. Site notices will be in place to reinforce the key messages of the Waste Management Plan and will be displayed prominently for the benefit of all site staff.



6 WASTE RECORDING AND AUDITING

6.1 Waste Records

Full details of all construction waste discarded from site will be recorded during all stages of the project. Each consignment of C&D waste removed from the site will be documented in the form of a Waste Movement Records which will ensure full traceability of the material to its final destination. Printed documents/records from waste disposal companies quantifying exact amount of waste materials removed from site will also be received. This sheet from the disposal company will also identify how much material went to landfill and how much went for recycling. All such records will be retained in a designated location on site and made available for auditing of the waste management plan. All waste logs will be available in up to date digital formats for inspection.

6.2 Waste Auditing

To ensure quality, effectiveness and efficiency, P.J Hegarty implement a Quality Environmental Management System (QEMS) (ISO 14001 approved) on all projects. Key implements of this QEMS include:

- A regime of internal and external audits, consisting of a systematic study of all waste management practices which have been adopted on-site.
- Monthly environmental audit, which will highlight corrective actions that will be taken in relation to management polices of site practices in order to bring about further waste reductions.
- Waste walks, part of our “Lean Approach” to the project, will be carried out to identify opportunities for waste reduction.



Appendix 1

Waste License Permit Letters



MR Credit 2: Construction Waste Management

1-2 points

Intent

To divert construction and demolition debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

Requirements

Recycle and/or salvage non-hazardous construction and demolition debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or comingled. Excavated soil and land-clearing debris do not contribute to this credit. Calculations can be done by weight or volume, but must be consistent throughout. The minimum percentage debris to be recycled or salvaged for each point threshold is as follows:

Recycled or Salvaged	Points
50%	1
75%	2

Potential Technologies & Strategies

Establish goals for diversion from disposal in landfills and incineration facilities and adopt a construction waste management plan to achieve these goals. Consider recycling cardboard, metal, brick, mineral fiber panel, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Construction debris processed into a recycled content commodity which has an open market value (e.g. wood derived fuel [WDF], alternative daily cover material, etc.) may be applied to the construction waste calculation. Designate a specific area(s) on the construction site for segregated or comingled collection of recyclable materials, and track recycling efforts throughout the construction process. Identify construction haulers and recyclers to handle the designated materials. Note that diversion may include donation of materials to charitable organizations and salvage of materials on-site.