Westferry Printworks Construction Management and Logistics Plan – Phase E (Part)

May 2017

Contents

1.0 Executive Summary

Planning permission was granted on 04 August 2016 for application reference PA/15/02216. Condition 14 of this planning permission requires the submission and approval of a Construction Management and Logistics Plan (CMLP) prior to the commencement of development, other than demolition. The plan shall include specific details relating to the construction, logistics and management of all works associated with each Phase of the proposed development and aim to minimise road vehicle movements, traffic congestion, pollution and adverse amenity.

This document is submitted for consideration for the discharge of Condition 14 of the abovementioned planning permission.

The CMLP is required to include specific details relating to the construction, logistics and management of all works associated with each Phase of the proposed development and aim to minimise road vehicle movements, traffic congestion, pollution and adverse amenity.

The specific requirements of Condition 14 and the relevant section of this document that addresses these requirements are shown below:

1.1 Condition Compliance Summary

Description	Refer to Section(s) Below
a) Details of the site manager, including contact details (phone, email, postal address) and the location of a large notice board on the site that clearly identifies these details and a 'Considerate Constructors' contact telephone number;	Sections 3.1 & 3.2
b) The erection and maintenance of security hoarding including decorative displays and facilities for public viewing;	Section 5.1
c) A Water Freight Feasibility Study to assess the potential for the waterborne transportation of construction, waste and bulk materials, and to maximise its use should it be deemed economically feasible and viable;	Section 8.1 & Appendix A
d) Wheel washing facilities;	Section 5.4
e) A scheme for recycling/disposing of waste resulting from construction works;	Section 5.5
f) Any means, such as a restriction on the size of construction vehicles and machinery accessing the site, required to ensure that no damage occurs to adjacent highways through the construction period;	Sections 4.1.2
g) Any means of protection of services such as pipes and water mains within adjacent highways;	Sections 4.1.2

h) Measures to maintain the site in a tidy condition in terms of disposal/storage of rubbish, storage, loading and unloading of building plants and materials and similar demolition/construction activities;	Section 6.1
i) Measures to ensure that pedestrian access past the site on the existing public footpaths is safe and not obstructed during construction works;	Section 4.3
j) Location of workers' conveniences (e.g. portaloos);	Section 5.2
k) Ingress and egress to and from the site for construction vehicles;	Section 4.1.4
l) Proposed numbers and timings of truck movements throughout the day and the proposed routes;	Section 9.1
m) Location of vehicles and construction machinery accesses during the period of site works;	Section 5.1
n) Procedures for controlling sediment runoff, dust and the removal of soil, debris and construction materials from public roads or places;	Section 5.4
o) Details of the mitigation for dust and emissions as well as methodology for monitoring during construction;	Section 6.3
p) Details of the effects of construction traffic on air pollution;	Section 6.3
q) Measures to minimise disruption to neighbouring and adjoining residential and commercial occupiers.	Section 7

The development shall be carried out in accordance with the approved details.

2.0 Introduction & Scope

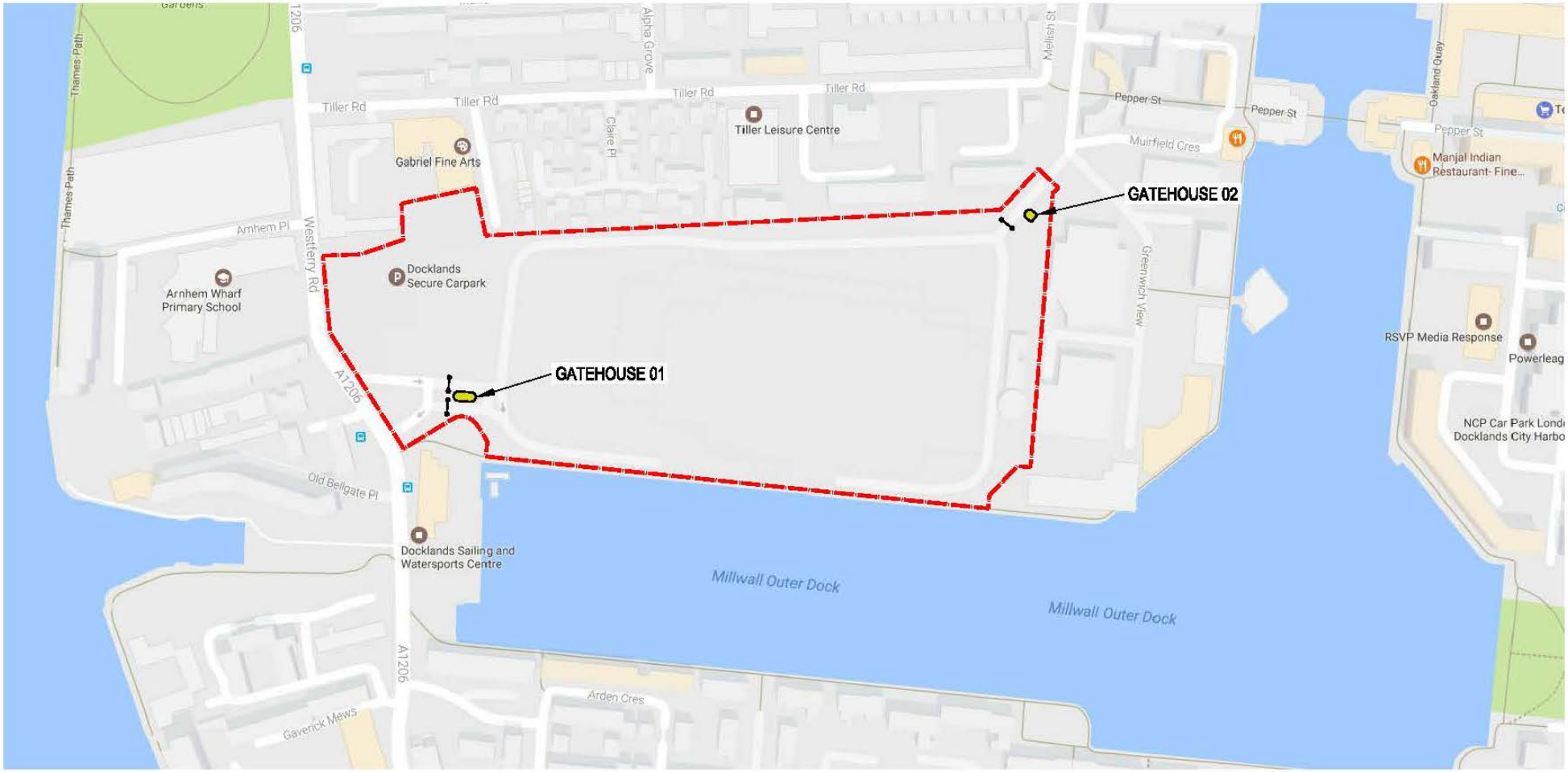
MACE has completed the production of the Construction Management Plan (CMP) as the Client Construction Advisor in advance of the appointment of a Principal Contractor for the proposed Westferry Printworks Development on the Isle of Dogs.

MACE has received a further commission from the client (Westferry Developments Ltd (formerly Northern & Shell Investments No. 2 Ltd)) to prepare the Construction Management and Logistics Plan (CMLP) for an enabling phase, referred to as “Phase E (part)”, prior to the appointment of an enabling contractor who will be employed to deliver each of the key items within this Phase.

2.1 Site Location

The site is located adjacent to the north side of the Millwall Outer Dock on the Isle of Dogs, London E14 8NX

2.2 Site & Immediate Surrounding Area



The works included in Phase E encompasses the works which will take place after the Demolition Phase and before the construction of the common basement internal columns, walls and basement lid.

View of Site Post Demolition Phase – Due to Complete in Q3 2017
Phase E (Part) is due to commence in Q4 2017

2.3 Overall Scheme

The 15 acre regeneration site located adjacent to the existing Millwall Outer Dock will provide many benefits to the existing surrounding neighbourhood with large areas of new green spaces and public realm as well as a mixed residential development offering affordable and private residential units, commercial units, a new school and community facilities.

The proposed Westferry Printworks Development comprises of the following key elements:

- Facilitation of a plot to enable the construction of a 1,200 pupil secondary school (construction by others)
- Ten residential buildings which will also include provision for retail, restaurant and office space; a community centre, a health centre and a crèche. Provision will also be made for basement car parking and bicycle storage.
- A new energy centre will be built to serve the development.
- The whole development area will be landscaped to include for a number of public open spaces.

Upon completion of the Phase E works, the first of the remaining four phases (Phase 1) will commence. The sequence and timing of these phases (Phases 1, 1a, 2a & 2b) will align with the requirements of the consented planning permission PA/15/02216.

2.4 Phase E (part) Scheme

The Phase E works will be carried out in two stages.
Phase E (part) comprises: site wide, and common basement preparatory operations as described below. These are due to start in Q4 2017.
Phase E (final) involves the remaining common basement preparatory operations and structural works as described in Section 1.3 (and which does not form part of the scope of works referred to in this application).

This CMLP relates solely to the Phase E (part) works as described below.

The Phase E (part) scope of work comprises:

Site Wide

- Clearance of all non-required structures / materials / other at ground level post demolition completion
- Remaining / additional: site & ground investigations and surveys
- Removal of existing contaminated ground
- Services diversions (high voltage, medium voltage & low voltage) power lines, telecommunication lines, gas lines, sewer lines and, mains water lines)
- Construction of a temporary hard surfaced haul road

Common Basement

- Probing and removal of existing underground obstructions along the line of the basement sheet pile wall
- Installation of the basement sheet pile wall.
- Dewatering
- First excavation of basement (from level +4.8m to +0.6m) and breaking down existing piles
- Lay piling mat from +0.6m to +1.5m

PHASE E (PART) WORKS

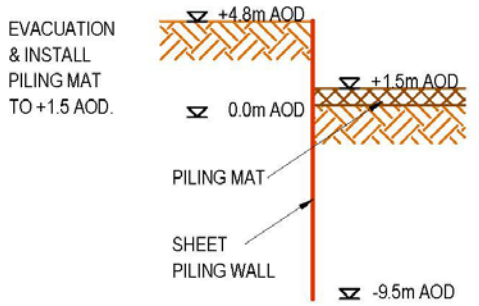
SCOPE OF WORKS:

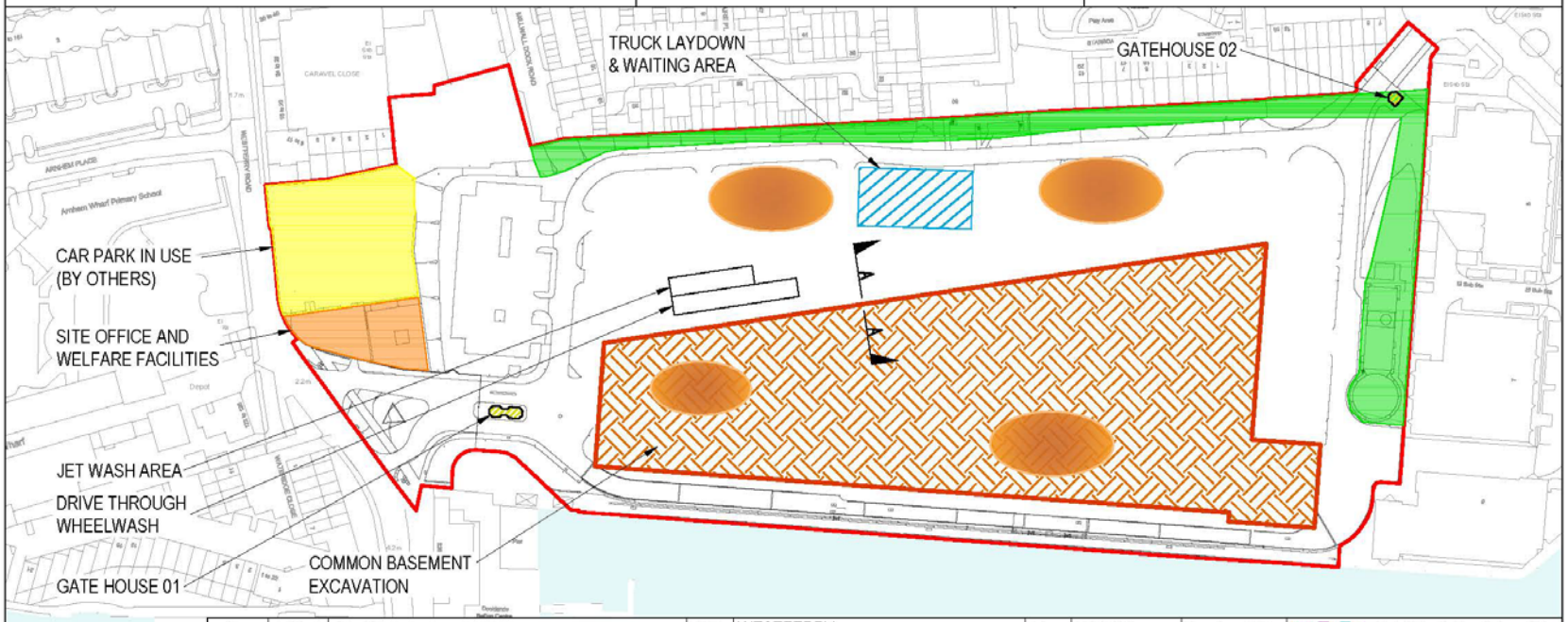
- CLEARANCE OF ALL NON-REQUIRED STRUCTURES, MATERIALS, OTHER AT GROUND LEVEL POST DEMOLITION WORKS.
- REMAINING/ADDITIONAL SITE AND GROUND INVESTIGATIONS/SURVEYS.
- REMOVAL OF EXISTING CONTAMINATED GROUND.
- SERVICES DIVERSIONS.
- PROBING AND REMOVAL OF EXISTING BELOW GROUND OBSTRUCTIONS.
- SHEET PILE WALL TO BASEMENT PERIMETER.
- DEWATERING.
- EXCAVATION OF BASEMENT TO +0.6m AOD.
- LAY PILING MAT TO +1.5m AOD.

KEY

- SERVICES DIVERSIONS
- CAR PARK IN USE (BY OTHERS)
- SITE OFFICE AND WELFARE FACILITIES
- TRUCK LAYDOWN & WAITING AREA
- SHEET PILE WALL
- BASEMENT EXCAVATION
- CRUSHED CONCRETE SPOIL HEAPS

SECTION A-A (1:300)





Rev.	Date	Description

Project: WESTFERRY

Drawing Title: PHASE E (PART) WORKS SITE LOGISTICS

Date: MAY 2017 | Drawn by: T.W.

Scale: 1:2000 @ A4 | Checked by: P.B.

Sheet: A4

Dwg.No.: WFERY_LOG-01_01A | Rev.: 00

Note: Do not scale this drawing, work from figured dimensions only

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2.5 Phase E (final) Scheme

The Phase E (final) scope of works:

Common Basement

- Install bearing piles for the buildings above
- Dewater
- Excavate to formation level (0.0m AOD), leaving a berm around the perimeter
- Construct a piled raft slab within the central area.
- Construct the perimeter slab in a series of approximately 20m wide bays, based on the following sequence: temporary prop the sheet pile wall from the central piled raft slab; remove the berm; construct the 20m wide perimeter infill slab; when the slab reaches its required strength – relocate the props to the next bay and repeat the process.

2.6 Working Hours

The Planning Consent allows for the following working hours.

Works Preparatory to or ancillary to the construction:

- 8.00am – 5.00pm Monday to Friday
- 8.00am – 1.00pm Saturdays

No work will be carried out outside of these times or on Sundays or Public holidays without written consent.

Work outside of these days or times may only take place if it is associated with an emergency, or carried out with the prior written approval of the relevant planning authority.

Any hammer drive piling or impact breaking out of materials:

- 10.00am – 4.00pm Mondays to Fridays

No work will be carried out outside of these times or on Saturdays, Sundays or Bank holidays.

3.0 Contact Details

3.1 Site Manager (condition a)

The Phase E (part) contractor (yet to be appointed) will install display boards at strategic locations along the site perimeter which will clearly identify the contact details of his personnel that can be made during normal site operating times and an emergency number for all other times. This will include key personnel, contact addresses, web site and emergency / daily telephone numbers and, complaint contact numbers. Additional information may include details of the scheme and its progress. The site manager's details will be forwarded to the London Borough of Tower Hamlets, once the Phase E (part) contractor is appointed.

3.2 Considerate Constructors (condition a)

The requirements for the Phase E (part) contractor to be a member of Considerate Constructor Scheme CCS will be set out in the contract documents with Westferry Developments Ltd.

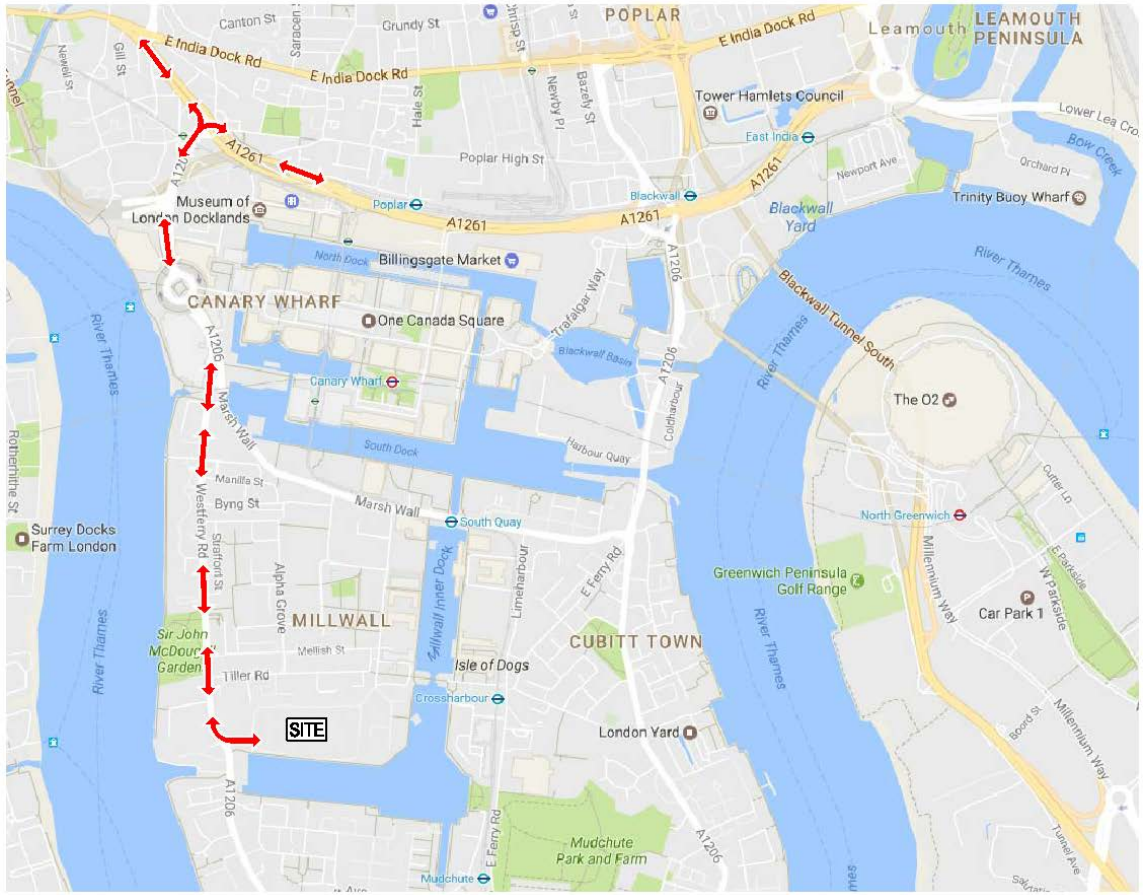
The Phase E (part) contractor will only be appointed for these works if he already participates in the CCS. The Considerate Constructor's telephone number will be displayed around the site perimeter either on independent display boards or combined with the boards referred to in 3.1 above.

4.0 Access to / from and on the site

4.1 Construction Vehicles

4.1.1 Road Access

The primary access route will be from the A1261, along the A1206 (Westferry) and on to site using Gate 1.



4.1.2 Restrictions on size / weight to ensure no damage to surrounding roads and utilities (condition f and g)

There are expected to be a number of construction vehicle types visiting site, including; transit vans, articulated trucks, ready mix concrete trucks, mobile cranes, skip lorries and tipper trucks. Normal weight ranges are expected to be between 5 and 32 tonnes and normal overall lengths of between 4m and 16.5m.These are commonly seen on the surrounding public roads as they do not exceed the 44 tonne gross (4 axle) limit.

However, there is an expectation that there may be a small number of vehicles where the weight may be in excess of 44 tonnes. These vehicles will typically be used for transporting heavy excavation plant during the early and late stages of the basement excavation. The gross weight of the transport truck and excavator could typically be 50+ tonnes in weight. The excavation plant is normally transported as a single unit, referred to as “an abnormal and indivisible load” by a multi-wheeled articulated vehicle which includes additional non-driving axles so that each axel does not exceed the 10 tonne Highways England specified maximum limit.

In these instances the Phase E (part) contractor will ensure that the transportation company used (chosen from the contractor’s supply chain list of reputable and experienced contractors) will provide details of the abnormal loads and proposed routes to Highways England using the HE’s Electronic Service Delivery for Abnormal Loads (ESDAL), to Tower Hamlets Highways Department and the Tower Hamlets Environmental Department. During the application process the transportation company may also need to inform the police, and bridge and structure owners (such as Network Rail), depending on the load being moved and the route chosen.

Once the axel configuration and selected routes have been approved the possibility of damage to the surrounding roads and utilities will be removed and protection of these will not be required.

4.1.3 Delivery time restrictions

Due to the close proximity of the Arnhem Wharf Primary School, the Phase E (part) Contractor will ensure that construction traffic movement is limited during the morning drop off and afternoon pick up periods during term times.

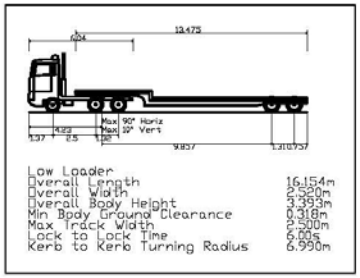
At all other times, deliveries will be made during normal site operating times or as previously agreed with the Local Authority (in the case of abnormal load deliveries, etc).

4.1.4 Site Perimeter Access Points (condition k)

Currently there are two site perimeter access points:

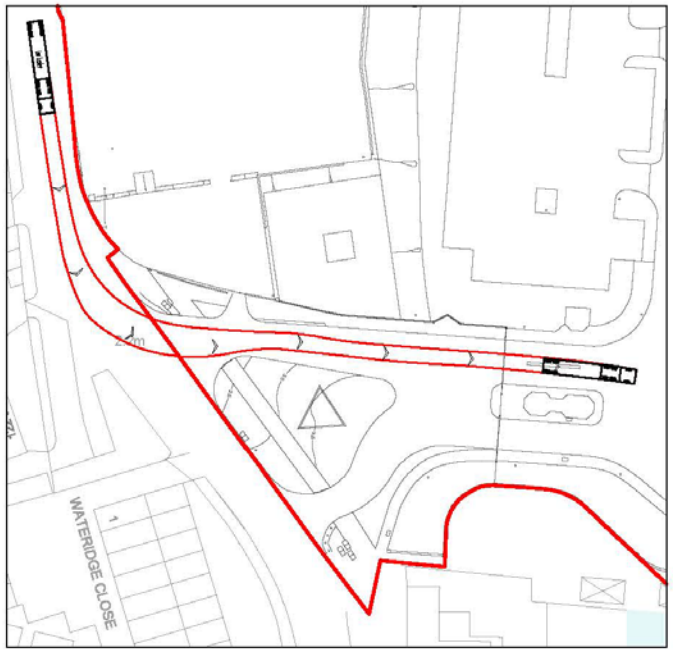
- A single functioning access point into the site, which provides pedestrian and vehicle access onto Westferry Road (Gate 1)
- A currently redundant entrance which was previously used to provide access onto Millharbour. (Gate 2). This entrance will be surveyed and later prepared to provide a second access point during subsequent phases.

There are no vehicle access points along the southern edge as this borders the Millwall Outer Dock. During the Phase E (part) works period, all construction vehicle movements and pedestrian access will be via Gate 1 only. All vehicles entering and leaving site will be subject to registration / security checks by security guards and traffic marshals. Drivers will be advised to observe site traffic signs/signals and to keep within the specified speed limits. Swept path analyses for tipper trucks and low loaders transporting heavy plant via Gate 1 is shown below.

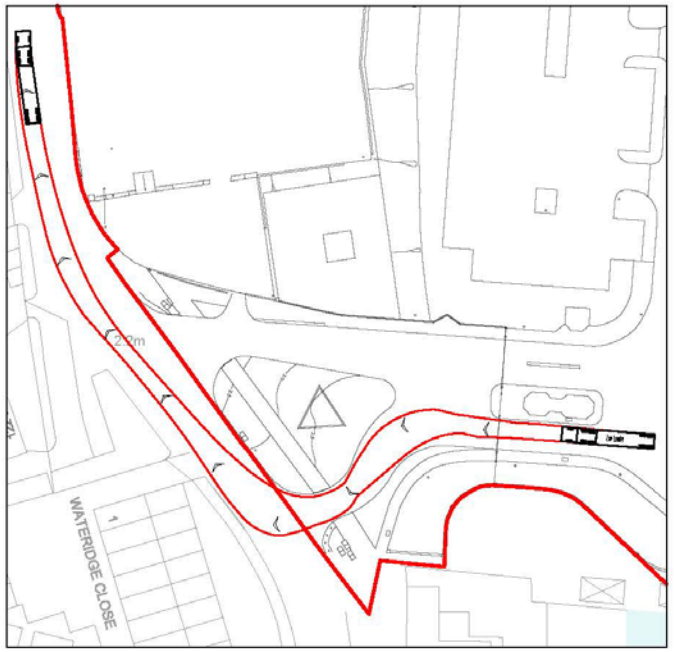


Low Loader

Overall Length	16.154m
Overall Width	2.520m
Overall Body Height	3.393m
Min Body Ground Clearance	0.318m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.990m



THE VEHICLE TURNS LEFT FROM WESTFERRY ROAD ONTO SITE



THE VEHICLE LEAVES SITE AND TURNS RIGHT ONTO WESTFERRY ROAD

Rev.	Date	Description

Note: Do not scale this drawing, work from figured dimensions only

Project	WESTFERRY	Date	MAY 2017	Drawn by	T.W.
		Scale	1:1000 @ A4	Checked by	P.B.
Drawing Title	PHASE E (PART) WORKS VEHICLE TRACKING LOW LOADER (FIVE AXLE)	Sheet	A4		
		Dwg.No.	WFERY_LOG-01_02	Rev.	00

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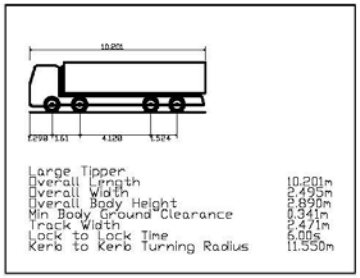
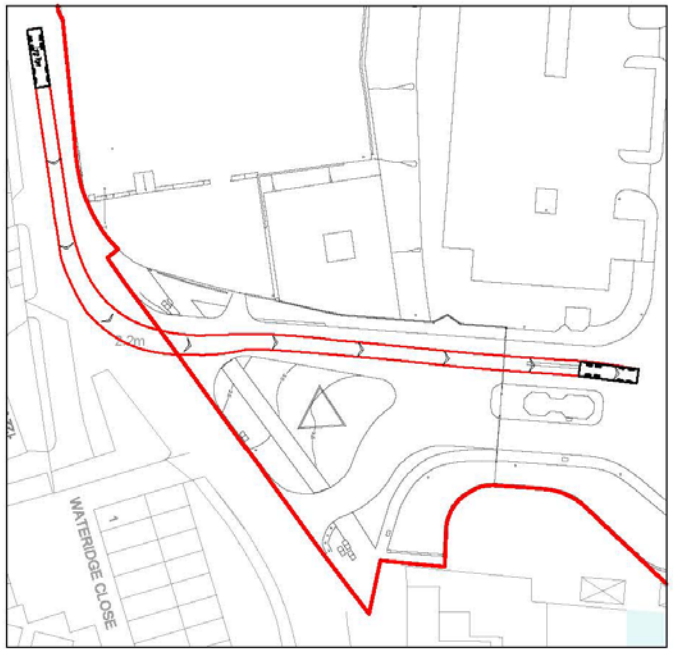
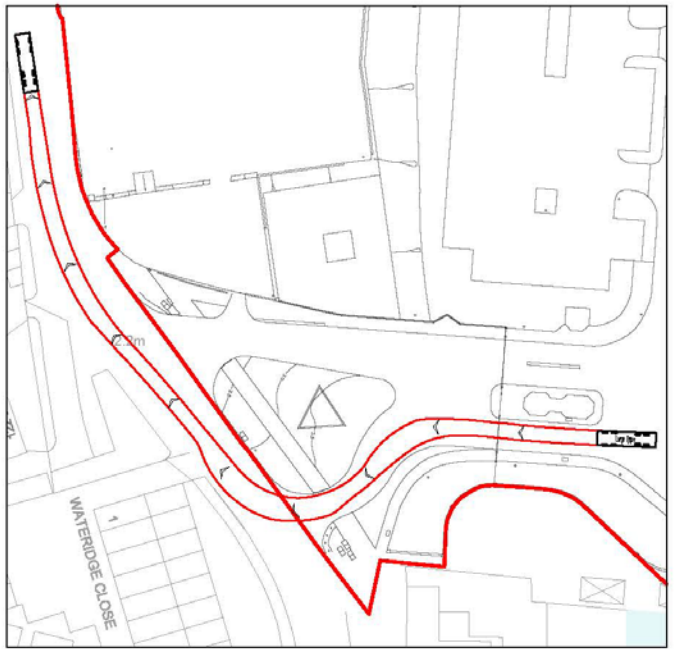


Large Tipper
Overall Length 10.201m
Overall Width 2.499m
Overall Body Height 3.899m
Min Body Ground Clearance 0.341m
Track Width 2.471m
Lock to Lock Time 5.00s
Kerb to Kerb Turning Radius 11.550m



THE VEHICLE TURNS LEFT FROM WESTFERRY ROAD ONTO SITE



THE VEHICLE LEAVES SITE AND TURNS RIGHT ONTO WESTFERRY ROAD

Rev.	Date	Description

Note: Do not scale this drawing, work from figured dimensions only

Project	WESTFERRY	Date	MAY 2017	Drawn by	T.W.
		Scale	1:1000 @ A4	Checked by	P.B.
Drawing Title	PHASE E (PART) WORKS VEHICLE TRACKING LARGE TIPPER (FOUR AXLE)	Sheet	A4		
		Dwg.No.	WFERY_LOG-01_03	Rev.	00

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4.2 Workforce and Visitors

The Phase E (part) contractor's workforce and visitors will be encouraged to make use of public transport whilst travelling to and from the site. There are bus stops adjacent to the site at the Westferry site entrance and three DLR stations (South Quay, Mudchute and Crossharbour) within close proximity to the site. Both the buses and the DLR link into the LUL underground network at Canary Wharf.

The Phase E (part) contractor will ensure that no workforce car parking will be permitted on the site (unless delivering tools to site), however, provision will be made for bicycle storage within the main office and welfare compound adjacent to the Westferry entrance.

4.3 Safe Pedestrian Access past the Site on existing Public Footpaths (condition i)

Prior to commencement of the Phase E (part) works, the contractor will undertake risk assessments of all construction operations on the site and its potential impact along the surrounding public access routes / footpaths and implement appropriate safety measures. During normal working times, It is planned to use one site access point which interfaces with the public directly – this being on the west side of the site at Gate 1. Average traffic figures during the basement dig period are expected to be 61 one way movements per day with a peak of 92 one way movements per day. Under normal circumstances there will be sufficient time for pedestrians to cross the entrance in a safe manner. However, contingency plans will be prepared (as part of the risk assessment) and implemented should the need arise. This may include:

- Sub-contractors being instructed not to use the vehicle entrance during certain times of the day (see 4.1.3 above)
- Traffic marshals preventing vehicles from entering or leaving the site during an unplanned incident
- Traffic marshals re-directing vehicles away from the entrance if access onto the site becomes blocked
- Site operatives keeping the footpath and drive at the entrance clean and clear of obstructions as required (e.g. removal of branches following high winds, removal of material or liquid spillages from vehicles)
- The provision of CCTV cameras sited at the entrance to allow monitoring of the footpath and drive.

Due to the nature of these works (pre-dominantly sheet piling and bulk excavation) and the distance that construction operations will be conducted away from the site boundary adjacent to public footpaths, it is not envisaged that any additional measures will be required around the edge of the site other than that currently in place (metal fencing and masonry walls).

There are no public footpaths outside the north and south boundaries. Outside of the southern boundary is the footpath which lies between the site and the Millwall Outer Dock. It is not intended to have access onto this path or to cross the path during this phase of the works.

5.0 Site Establishment

5.1 Hoardings & Gates (criteria b & m)

The site is enclosed by existing metal railings along the south and west boundaries, with existing metal gates to the entrance off Westferry Road, and, brick/masonry walls along the east and north boundaries. The Phase E (part) contractor will retain and maintain these during the construction period and provide a 2.4m high hoarding/fence where this is not practical.

All access onto site will be controlled. The site access point (Gate 1) will be secured with access only granted following contact being made with designated site personnel. Visitors will only be allowed on site if accompanied at all times by an inducted employee whose responsibility it will be to ensure all PPE clothing is worn and all safety precautions are adhered to.

Decorative displays of the hoarding and facilities for public viewing are not planned for this phase of the project.

Gates 1 & 2: There are existing gatehouses at the Westferry and the Millharbour entrances. The Westferry gatehouse is currently in use and will be continually used throughout the Phase E (part) construction period. The Millharbour entrance gatehouse will be upgraded to provide better security and will be used during later phases. Gate keepers/traffic marshals will be engaged to control security and traffic movement. Turnstiles will be installed to control the movement of the workforce and visitors on and off site at the Westferry entrance.

5.2 Site Offices & Welfare Facilities (criteria j)

During the Phase E (part) construction period, the site office and welfare facilities will be located on the north-west side of the site, (north of Gate 1).

Facilities will include: the Phase E (part) contractor and his sub-contractor offices, bicycle storage, and, welfare facilities (comprising: first aid station; toilets; canteen; changing & drying rooms).

5.3 Access routes and waiting areas on site pre-final road construction

Hard paved haul roads and vehicle waiting areas will be provided on site to suit the works being carried out during this phase. These may be amended or extended from time to time to accommodate this and later work phases. The vehicle waiting areas will be sited away from surrounding properties – drivers will be instructed to turn off their engines whilst parked. The wheel wash facilities referred to below will exit on to a hard paved apron / road before final inspection and exiting site – to ensure that the wheels remain clean prior to joining the public highway.

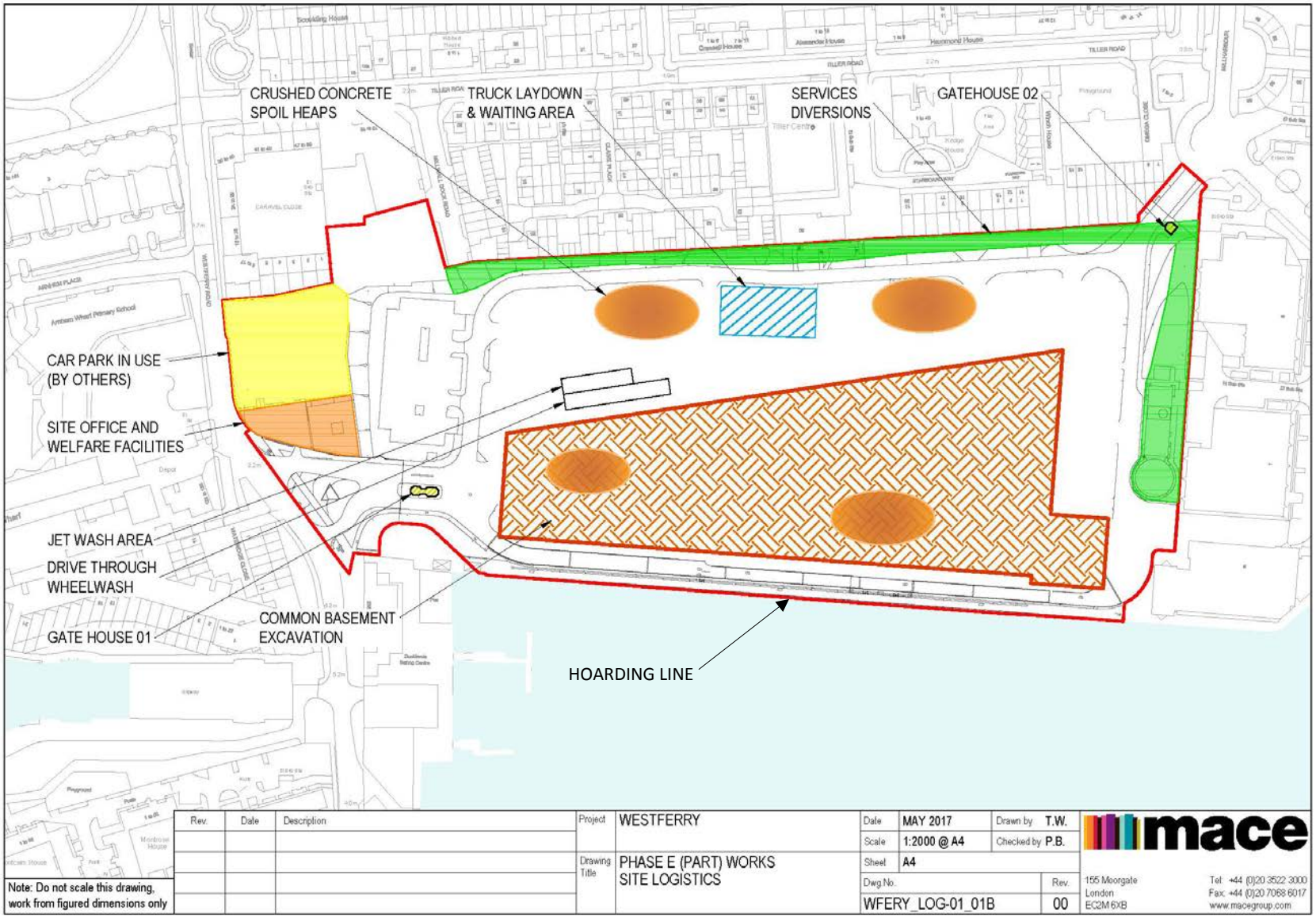
Traffic marshals (located at the site entrances) will inform drivers of the site speed limit and any restrictions currently in force. Speed limit signs will be strategically positioned on site. From time to time spot checks will be made to ensure that speed limits are being observed. Warnings will be given to first offenders, followed by a fine for a second offence and a permanent ban for the driver from entering site for a third offence.

5.4 Wheel Wash facilities (criteria d and n)

Wheel wash facilities will be located in close proximity to the exit lane at the site entrance (Gates 1). Two types of wheel washing equipment will be used: drive through and jet washer. Refer to the plan on the following page as a visual location marker.

The final system configuration selected will rest with the Phase E (part) contractor based on programme demands (expected configuration to be a minimum of one drive through wheel wash and one jet wash).

The Phase E (part) contractor will ensure that mud removed at the wheel wash centers is collected in sump pits and removed off site on a regular basis. In addition to the above the site hard paved roads and hard standings and surrounding public roads will be cleaned using a mobile road sweeper, as and when required.


CRUSHED CONCRETE SPOIL HEAPS
TRUCK LAYDOWN & WAITING AREA
SERVICES DIVERSIONS
GATEHOUSE 02
CAR PARK IN USE (BY OTHERS)
SITE OFFICE AND WELFARE FACILITIES
JET WASH AREA
DRIVE THROUGH WHEELWASH
GATE HOUSE 01
COMMON BASEMENT EXCAVATION
HOARDING LINE
Note: Do not scale this drawing, work from figured dimensions only
Rev.
Date
Description
Project
WESTFERRY
Drawing Title
PHASE E (PART) WORKS SITE LOGISTICS
Date
MAY 2017
Drawn by
T.W.
Scale
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5.5 Waste Management (criteria e)

An unavoidable by-product of construction activities is the generation of waste. Major sources of waste within the construction process are:

- Packaging - plastics, pallets, expanded foams etc.;
- Waste materials generated from inaccurate ordering, poor usage, badly stored materials, poor handling, spillage etc.; and
- Dirty water, for example from basement dewatering and site run-off containing silt

The Phase E (part) Contractor will be expected to drive-out waste from the site activities and from those of the supply chain. This can be achieved in a variety of ways:

- Using 'Lessons Learnt' reports from other projects.
- Engaging with product and materials suppliers to review value stream.
- Carrying out specific studies
- Shared Systems and Processes

The Phase E (part) Contractor will instigate a 'Site Waste Management Plan' on the project. All the relevant contractors and members of the supply chain will be required to investigate opportunities to:

- Eliminate waste at source; i.e. avoiding un-necessary packaging.
- Reducing waste; cutting back on packaging, etc.
- Maximising re-use of packaging; i.e. returning packaging to source for re-use.
- Recycling where the Phase E (part) Contractor is unable to eliminate, reduce or re-use.
- Where waste generation is unavoidable, to maximise the recycling and reuse potential of construction materials.

Wherever feasible, arisings will be dealt with in a manner that reduces their environmental impact and maximises potential re-use of materials. Recycling of materials will largely take place on-site. The destination of all waste or other materials removed from site will be notified to the relevant authority by the Phase E (part) Contractor / Construction Manager for approval.

A 'Site Waste Management Plan' (SWMP) will be maintained, compiled with the aid of the logistics and other contractors, and regularly monitored. To prove the correct depositing of excavated material and to prevent the occurrence of fly-tipping, a docket system/waste monitoring system off-site will be used. The Phase E (part) contractor and all associated trade-contractors will operate a sequentially numbered docket system, to confirm that each load is received at the approved disposal site. Copies of the dockets are to be provided to the nominated manager, and available for inspection on site. Waste targets (and the use of early indicators) will be set for each trade/trade-contractor, based on measurements taken from previous experience.

No burning of waste will be undertaken on the site.

5.6 Vehicle Laydown / Waiting Zones

Areas of the site will be designated as laydown and vehicle waiting zones (refer to the plan on page 23). These will be clearly delineated and sign posted. This will ensure that vehicles are not parked in the surrounding roads and can arrive early on site prior to closing the site entrances during the school drop off & up pick up times.

6.0 Environmental & Ground Related Issues

6.1 Site Housekeeping (criteria h)

The Phase E (part) contractor will install management and organisation system in order to implement measures to ensure that good housekeeping practices are employed on a daily, and as and when required basis, throughout the construction period. A dedicated team will be used to ensure the offices, gate houses and welfare facilities are kept in a clean, tidy and safe manner at all times. Employees located in the work zones, general compounds and storage areas will be responsible for making sure that these areas remain clean and safe on a regular basis throughout the day and before leaving the site each day.

All site roads, laydown and general vehicle movement areas will be kept free of debris and clean as required. Due to the nature of the works during this phase and the size of the site, use will be made of mechanical cleaning equipment (road sweepers, etc).

6.2 Noise & Vibration Monitoring & Management

The Phase E (part) contractor will

- Adopt high standard of environmental community liaison and management using best practices. This will include a prior consent approach to noise and vibration levels to comply with Section 61 of the Control of Pollution Act 1972.

- Demonstrate ‘Best Practicable Means’ (BPM) and create a ‘Scheme of Protective Works’ for protecting neighbours from excessive noise and vibration, as defined by Section 72 of the Control of Pollution Act 1972.

Where appropriate, the following measures to minimise noise and vibration levels should be adopted:

- Employing only modern, quiet and well-maintained equipment (all equipment must comply with the EC Directives and UK Regulations set out in BS 5228-1:2009);

- Using low impact techniques, such as hydraulically- jacked piling rigs, or, the Giken silent pile system.

- Careful planning of the sequence of work in order to minimise the transfer of noise/vibration to neighbours;

- Careful handling of materials & waste such as lowering rather than dropping items;

- Erection of safety scaffolding with acoustic screens if appropriate

- Avoidance of unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) by effective site management.

Where control at source is not practicable or adequate, the distance between noise/vibration sources and sensitive neighbours would be maximised and the transmission path interrupted, with options considered in the order of source-pathway-receptor. Where practical this can be achieved by:

- Siting of stationary plant and loading/unloading areas;

- The use of temporary structures, and cutting of transmission pathways for vibration.

Prior to commencing works on site the Phase E (part) contractor will be required to agree the location of real time monitors / receptors around the perimeter of the site, install these and take base readings. Following this, trigger levels are to be agreed and continuous or regular readings taken. If trigger levels are exceeded then the contractor will need to take the appropriate measures in order to resolve the situation. If the issue continues to exist, the contractor will be instructed to cease the site operation until a suitable resolution can be made.

6.3 Air pollution & dust control (criteria o & p)

The Phase E (part) contractor will demonstrate 'Best Practicable Means' (BPM) and create a 'Scheme of Protective Works' for protecting neighbours from air pollution and dust, as defined by Section 72 of the Control of Pollution Act 1972.

It is recognised that air quality can be significantly affected by the dust generated during the excavation phase on building sites which, in turn, can result in poor health of workers as well as residents close by. With good management the impact of this can be considerably reduced.

All works will be executed in accordance with the Considerate Constructor's Scheme Standards and have regard to the GLA Supplementary Planning Guidance (SPG) The Control of Dust and Emissions During Construction and Demolition (2014).

Prior to commencing works on site the Phase E (part) contractor will be required to agree the location of real time monitors / receptors around the perimeter of the site, install these and take base readings. Following this, trigger levels will be agreed and continuous or regular readings taken. If trigger levels are exceeded then the contractor will need to take the appropriate measures in order to resolve the situation. If the issue continues to exist, the contractor will be instructed to cease the site operation until a suitable resolution can be made.

The potential for dust generation and its transport to sensitive receptors is highest during dry and windy conditions. The employment of Best Practicable Means (BPM) by the contractor would minimise the risk of adverse effects from construction dust and will reduce the risk of causing nuisance to local residents and adjacent neighbours.

6.4 Unexploded Ordnance

A Desktop Study related to Unexploded Ordnance (UXO) Study was carried out by Dynasafe in 2016 culminating in the issue of a report in September 2016. The report concluded that the whole site, with the exception of a small area in the south-west corner, was considered to be a "Medium-High Risk Zone" and made the following recommendations be implemented:

Site Wide

- Explosive Ordnance Safety and Awareness Briefings to all personnel conducting intrusive works
- The Provision of Unexploded Ordnance Site Safety Instructions

Medium Risk Zone only (Approximately 95% of the Site)

- An Explosive Ordnance Disposal (EOD) Engineer be present on site to supervise all open excavations
- An Intrusive Magnetometer Survey of all pile locations / boreholes down to the maximum bomb penetration depth be carried out

The Phase E (part) contractor will be provided with a copy of the report and instructed implement these recommendations.

6.5 Asbestos Survey and Removal

The UXO Study referred to above highlighted that the docklands region was a prime bombing target area during WWII and that the site received a number of direct ordnance hits, leading to the destruction of a number of buildings. These, and replacement buildings (subsequently demolished prior to the construction of the Printworks) were often clad in materials containing asbestos fibres. It is therefore probable that significant levels of asbestos will be found in the made up ground covering most of the site.

During the early stages of the Phase E (part) works and prior to the excavation of the common basement additional surveys will be carried out in order to identify the location and extent of the contamination. These "hot spots" will be excavated and disposed of in advance of the main dig, in accordance with regulatory requirements.

Continuous monitoring and sampling of the soil arisings will be carried out during the excavation of the basement. If asbestos is found, or suspected, the arisings will be stored in a quarantine area and further tests conducted. Only when the results are known will the arisings, be removed from site to the appropriate tips.

6.6 Ground Water Treatment & Disposal

Best practice for water pollution prevention will be followed by the Phase E (part) contractor to prevent the accidental contamination. All appropriate guidance issued by the Environment Agency shall be considered, and all works will be subject to the Control of Hazardous and Harmful Materials Regulations during their storage, transportation and use to control the exposure to employees and others from substances hazardous to their health.

The Phase E (part) contractor will be obliged to undertake measures for all deleterious liquid materials such as oils and hydrocarbon to be stored and utilised (where possible) in bounded /contained designated areas. Pollution of surface runoff can be caused by rainfall washing away solids and/or liquids accumulated on the ground (from excavation, wheel washing and concrete deliveries) or by deliberately hosing down a spill.

The Phase E (part) contractor will be expected to explore methods to mitigate against this pathway by restricting the potential for spillages at source both by preventing contamination of the ground surface by suitable delivery, storage and usage procedures, and by treating the runoff using interceptors, settlement tanks or filters before discharge to an acceptable foul drain (subject to the consent of the sewerage undertaker). In addition, Just in Time deliveries may be utilised to prevent the build-up of any stored deleterious materials, and consequentially avoid the materials causing possible blockages to the local drainage system.

The moderate risk of ground contamination, post asbestos removal, will also be further investigated and managed as necessary by the contractor to ensure that any remedial strategies, such as soil washing are undertaken with due skill and care to minimise the effects of the contaminants entering into the pathway and affecting sensitive receptors.

Potential methods to prevent water pollution include:

- Promote the travel of all tracked vehicles in straight lines wherever possible when moving around site;
- Encourage tracked vehicles to change direction at a limited number of locations, perhaps on prepared surfaces;
- Avoid unnecessary slewing of tracked vehicles and turning of large site plant. This will avoid excessive soil structure damage and will reduce the amount of material available for entrainment in site water; and
- Place silt fences of geo-fabric or similar material around open or exposed ground and stockpiles.

The Phase E (part) contractor will be expected to maintain a tidy site and provide site signage to clearly identify the bounded/designated areas, as well as providing all site operatives with well-informed Tool Box Talks, and training to raise awareness and understanding for the prevention of water pollution.

6.7 Dewatering

The Phase E (part) works finish below the existing ground water level and thus dewatering operations will be required. Borehole records indicate the ground water level as being at approximately +2.0m AOD (approximately 2.6m below ground level).

As there is a significant risk of finding ground water at a fairly shallow depth, excavation will only commence once the basement sheet pile wall is completed in full, thus creating ground water cut off and the ground water level has been reduced to the required level.

To achieve this, we have assumed that the Phase E (part) contractor will:

- Form a series of strategically positioned sump pits to a pre-determined level to allow the ground water to be lowered below the first Phase E (part) dig level of +0.6m AOD.

- Install and operate the dewatering system: Dewatering sump pumps will discharge into a network of hoses which will be connected to silt busters (or similar system) to remove suspended particles prior to discharging the water into the existing surface water sewer system or directly into the dock (either method of discharging the water will necessitate obtaining the required permissions, permits and licences).

- The Phase E (part) contractor will be required to produce and gain approval of the dewatering method he will be using. This will need to include: operating times (normal or 24/7), and associated personnel levels; noise and pollution control; emergency and back up plans associated with plant and equipment failures; etc.

- Part of the dewatering system will be retained for operation on an “as and when basis” to cater for rainwater removal and until Phase E (final) is complete.

6.8 Excavation and Laying the Piling Mat

These works will proceed once the ground water has been lowered to the required level. We have assumed that the Phase E (part) contractor will carry out the works using the following process:

- Carry out dig operations from the existing ground level (as left following the demolition phase) of approximately +4.8m AOD. Use large back acting excavators to dig down to the +0.6m AOD level, and load directly into the waiting muck away trucks. We have also assumed that the dig operation will proceed on a broad front from the east to west.

- Cut down the exposed existing piles and laying the piling mat operations. These works will follow closely behind the dig (approx. 10m to 20m behind the excavation work front). During this operation we have assumed that the contractor will install one or two rubble ramps which will allow trucks, dozers and compaction plant to gain access into the hole to enable operations to be carried out at the +1.5m level (trucks will drive over previously installed sections of the mat to gain access to the current work front).

7.0 Neighbours & Commercial Occupiers (criteria q)

7.1 Liaison

Westferry Developments Limited have appointed a community liaison company to manage the important process of maintaining good relationships with the neighbouring residents and community. The Phase E (part) contractor will work in conjunction with them, with the company acting as a first point of contact.

The liaison company will conduct a high level of public consultation which will provide information on the pre-construction methods, programme and project, using information provided by the demolition contractor. The strategy will include the contact details and programme for engagement in order to maintain a dialogue and information exchange with the local residents, the sailing club, commercial organisations, community facility providers, schools and churches. As part of the strategy, the Phase E (part) contractor will be expected to apply appropriate liaison and consultation approaches to minimise the environmental impact on neighbours, for example through providing a briefing/presentation of the proposal to local community groups, businesses and other individuals identified. Briefings may include:

- Details of the 'Scheme of protective Works' in a readily understandable form;
- Formal presentation, question and answer session or drop in sessions;
- Communications with key neighbours will be set up in the form of meetings, newsletter, there will also be a live website set up to keep all interested parties informed;
- Contact details for enquiries; and
- Complaints Procedure.

The community liaison company will establish a system and procedure for dealing with enquiries and complaints from the public, which will require a designated complaints/incidents logbook or register covering:

- The nature of the complaint;
- The cause; and, where appropriate; and

- The remedial action taken.

The responsibilities of resident liaison will be transferred to the Main contractor when they are appointed to the project.

8.0 Water Freight (criteria c)

8.1 Earlier Study related to the Demolition Phase.

In response to planning permission LBTH: PA/15/02216/A1 and GLA ref: D&P/3363/JF condition 13c a feasibility study was carried out which focused on the potential use of water freight related to demolition arising generated during the removal of the existing printing works building and associated ground slab and pile caps. This culminated in the production of the report entitled "Water Freight Usage Review for the Demolition of the Westferry Printworks, 235 Westferry Road, London, E14 Rev A".

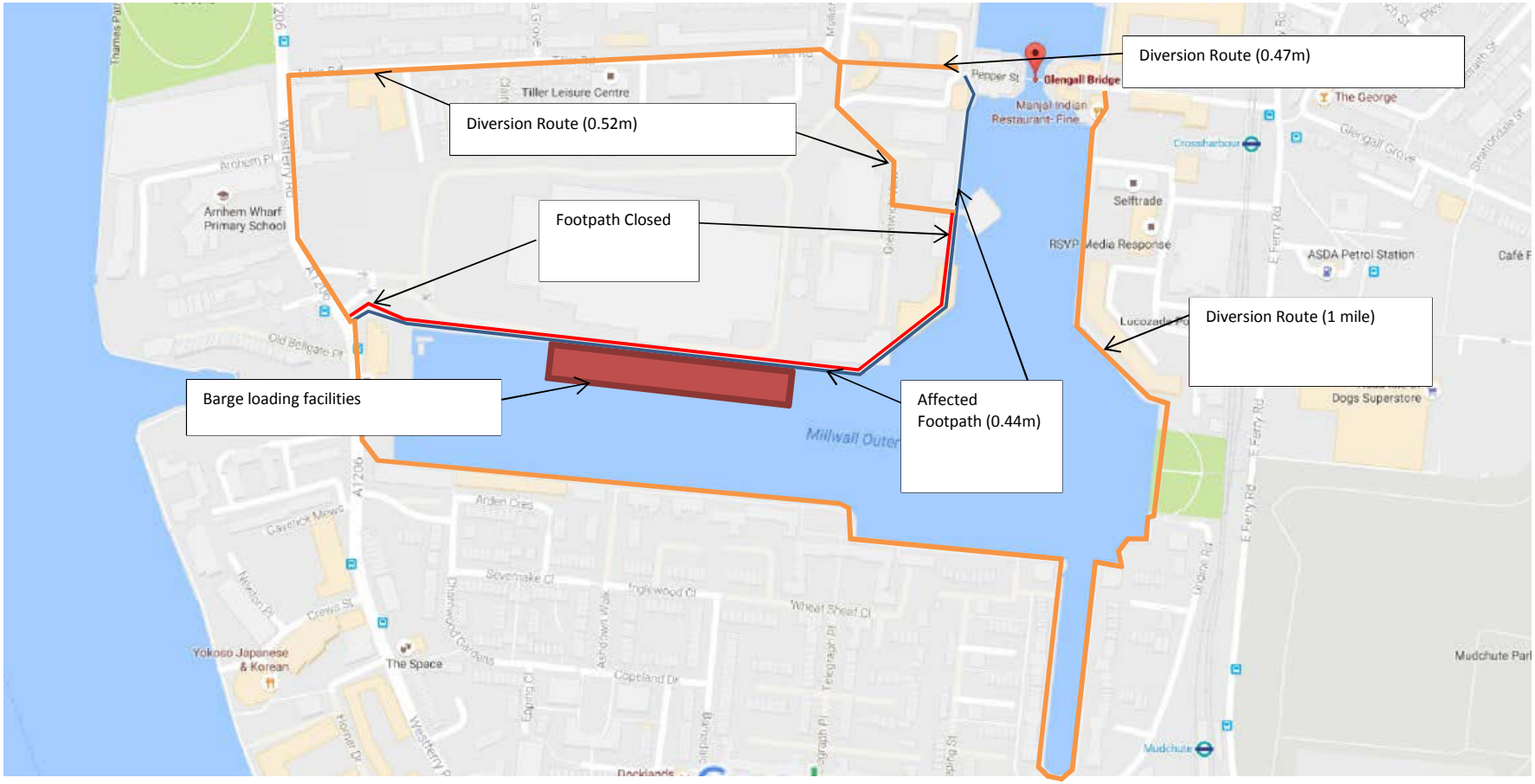
For reference, Condition 13c outlined the purpose of the study as follows:
"A Water Freight Feasibility Study to assess the potential for the waterborne transportation of waste and bulk materials, and to maximise its use should it be deemed economically feasible and viable". The same criteria stated within Condition 13 is used in Condition 14 as noted in the Executive Summary.

During the assessment a number of important stakeholders were consulted which included: The Docklands Sailing and Watersports Centre; Canal and River Trust, Erith Contractors Limited (Demolition Contractor), GPS Marine Contractors Ltd, Development Managers and Mace Developments.

The findings of the study concluded the following.

8.1.1 Loading onto Barges from Site

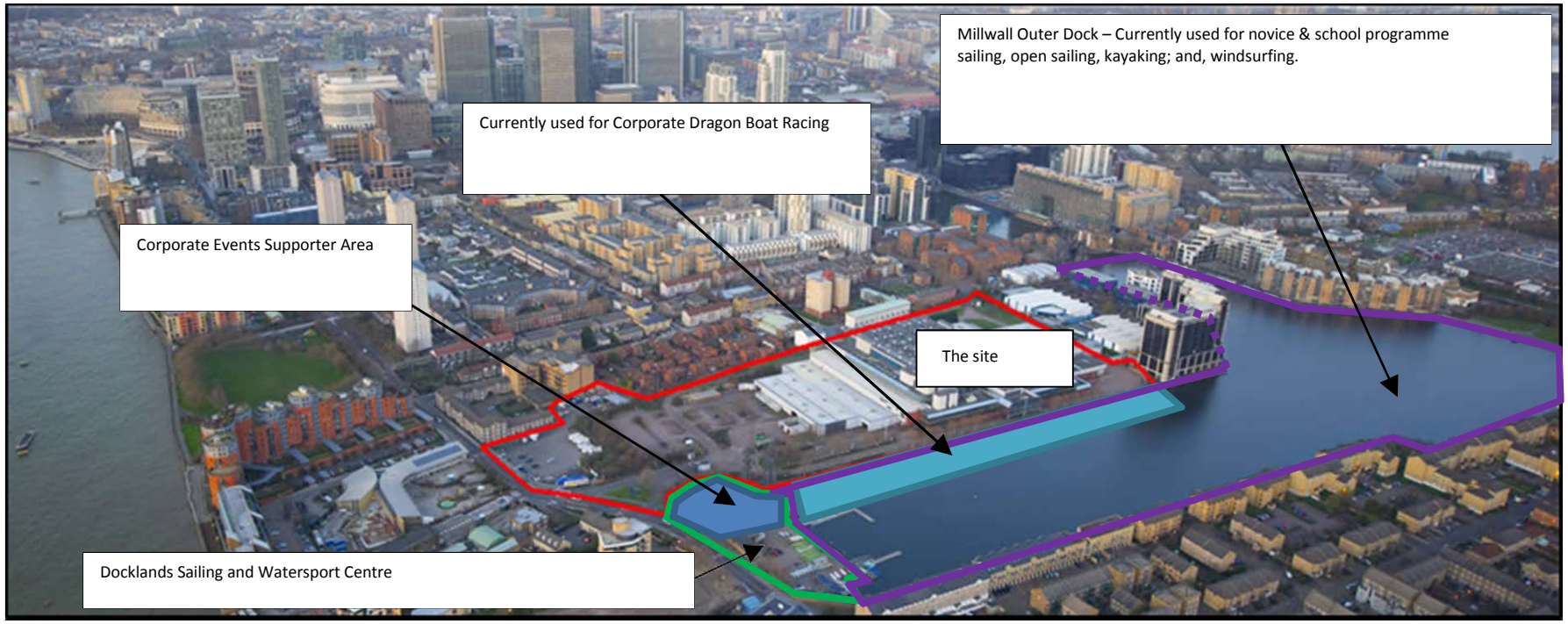
- This would have to be on the on the south of the site
- For reasons of safety the footpath adjacent to the dock would have to be closed
- The dock was built in 1868 and is 149 years old. Surveys would have to be carried out to assess if strengthening would be required.
- The space requirements during the time when the barges arrive at, and, leave the berth is significant and would impact the DSWC use of the dock. Less space would be available in the Dock when swapping barges.



8.1.2 Impact on the Docklands Sailing and Watersports Club (DSWC)

- The centre's activities take place all year round during the day and on weekends
- Novice sailing takes place twice a week all year round. For safety reasons a physical barrier would have to be erected between the works area and the sailing area

- The high season for Dragon racing is between July and Mid-September (most evenings and Friday afternoon). This attracts between 300 and 600 participants (these events account of approx. 60% of the DSWC's revenue). The Centre generally uses the north side of the Dock as this offers sufficient space for participants, spectators and supporters in the premises and along the footpath. Occasionally the south side is used for smaller events. If the Dragon racing was moved to the south side this could have a detrimental effect on customer experience as there is not enough space for large numbers of supporters. This could negatively affect the number of returning supporters and subsequently the Centre's revenue.



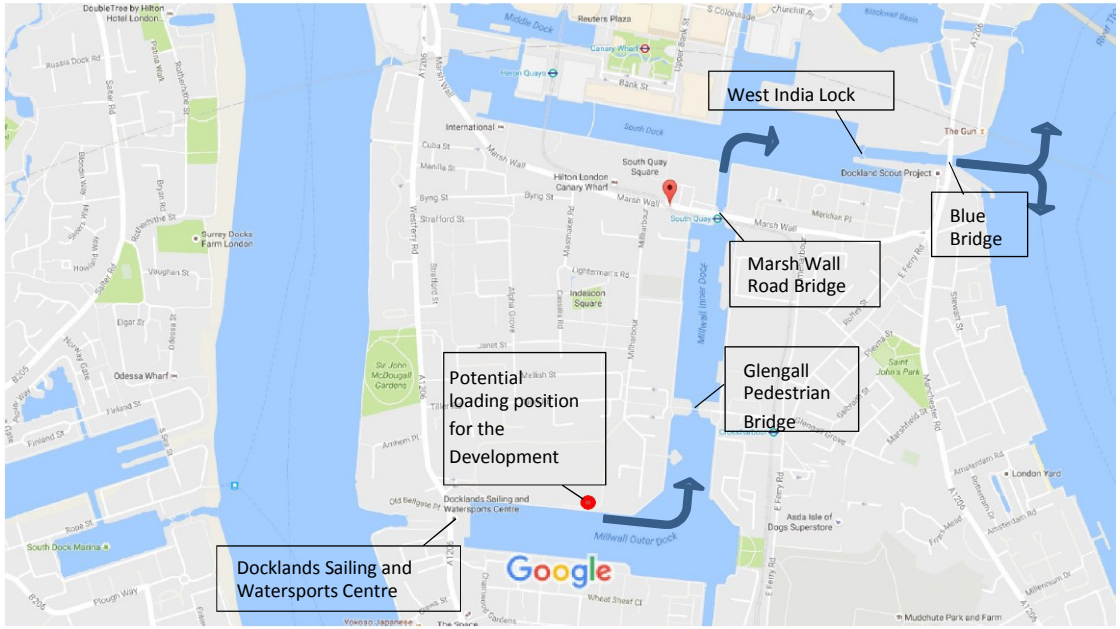
8.1.3 Access to Millwall Outer Dock

- There are two road bridges (Marsh Wall and Blue) and one pedestrian bridge (Glengall) between the barge berth location and the river Thames. Opening and closing these can lead to 15 to 20 minute traffic delays.

- The docks can be accessed from the Thames one hour either side of low tide due to the depth of the access channel. This means that two hours out of every 12 hours the access channel is not navigable by the required barges and tugs.

Tides	8	9	10	11	12	13	14	15	16	17
High Tide at 12:00										
Low Tide at 12:00										
High Tide at 16:00										
Low Tide at 16:00										

Restricted Hours for open bridge | Bridge to be opened | Channel not Navigable



8.2 Comparison based on the removal of excavated material

- The total quantity of excavated material is (76,369m3) 137,463 tonnes
- Of this, we have made an allowance of 6,873 tonnes for contaminated soil, which will be defined when the results of the Geo-environmental surveys are known. These works are currently programmed to be carried out in a 4 week period in advance of the main dig. Should further, smaller amounts of contaminated soil be discovered (not previously identified in the survey), the surrounding area will be quarantined and the affected soil will be removed following prescribed procedures.
- The 130,590 tonnes of the main (un-contaminated) dig is currently programmed to be carried out in a 26 week period. The average rate of extraction, and consequently removal from site = 5,023 tonnes per week.
- On this basis, there would be a need for one barge and two attendant tugs throughout the soil transport period and two barges and four attendant tugs during the peak period transport time. This would have a significant impact on the DSWC activities and increased disruption to local traffic, pedestrians and residents.

8.3 Conclusion

The conclusions reached from the previous assessment (for demolition material removal) remain relevant for soil removal.

- The site can be accessed by water by reasonably substantial tugs and barges of between 400t to 700t in size. There are companies which competitively supply barges and tugs, although GPS have both on a large enough scale to meet the needs of the project.
- There are water facilities which accept spoil within a reasonable travel distance, although there are some limitations in terms of leaving and entering West India Docks such as tides and restrictions for opening the Blue Bridge.
- For reasons of safety the footpath adjacent to the dock would have to be closed
- The dock was built in 1868 and is 149 years old. Surveys would have to be carried out to assess if strengthening would be required.
- The space requirements during the time when the barges arrive at, and, leave the mooring is significant and would impact the DSCS use of the dock. Less space would be available in the Dock when swapping barges.
- There will be large social impacts, including significant disruption to the Docklands Sailing and Watersport Centre's (DSWC) activities, closing the local dock wall footpath, increase in noise, disruption to traffic due to more regular lifting of the bridges.
- Besides disruption to the DSWC activities, significant risks are introduced in mixing large motorised and non-motorised vessels with relatively small, manually operated vessels in a relatively small and confined place.
- As corporate Dragon boat races currently takes place on the north side of the dock, and this activity accounts for a significant source of the DSWC's revenue, moving this activity would potentially be financially detrimental to the centre's operations, both in the short and long term.

- Although the movement of materials by water transport produces less CO2 locally when compared with road, once the cargo handling at the destination wharf and local standing traffic waiting for bridges, is taken into account, the overall water activity CO2 emissions value would be greater, than using road.

It is therefore concluded that, overall, the use of water freight transport would not generate a sustainable advantage for the transportation of soil arising from the Development and it's use would not only impose additional transport and operational costs on the Phase E (part) works but would also have financial implications on the DSWC, and, be a significant disruption to local social and sports activities and to the community as a whole.

9.0 Vehicle Movements

9.1 Calculations / Peaks (criteria l)

The attached spreadsheet shows the estimated one way vehicle movements during the main basement excavation activities of:

- removal of contaminated excavated material (assessed as 5%) during a 4 week period, and
- removal of the un-contaminated excavated material (95%) during a 26 week period (post contaminated excavated material removal)

The average daily, one way vehicle movement during the removal of the contaminated ground is 25 with a peak of 38
The average daily, one way vehicle movement during the removal of the non-contaminated ground is 61 with a peak of 92

The above figures include an additional 10% to cater for other vehicles which may visit during these working periods (e.g. maintenance trucks, plant trucks, office & welfare supply vehicles, etc).

Wesferry Phase E - Soil Transfer by Water

Common Basement	Overall Excavation Totals			
	GEA (m2)	Dig Depth (m)	Volume (m3)	Weight Tonnes (at 1.8 t per m3)
Totals	18,183	4.2	76,369	137,463

Contaminated Total (5%)	Barge Jouneys	Journey Time (Hrs)	Total Journey Days	Total Journey Weeks	Nr of Barges Req'd	Dur (Wks)
Tonnes (t)	400 to 700t Capacity use 400t	Based on 16 Hrs Cycle Time	Divide by 24	Divide by 5		
6,873	17	275	11	2	1	2

Un-contaminated Total (95 %)	Barge Jouneys	Journey Time (Hrs)	Total Journey Days	Total Journey Weeks	Nr of Barges Req'd	Dur (Wks)
Tonnes (t)	400 to 700t Capacity Use Av 550t	Based on 16 Hrs Cycle Time	Divide by 24	Divide by 5		
130,590	237	3,799	158	32	2	16

Wesferry Phase E (Part) - Soil Transfer by Road

Common Basement	Overall Excavation Totals			
	GEA (m2)	Dig Depth (m)	Volume (m3)	Weight Tonnes (at 1.8 t per m3)
Totals	18,183	4.2	76,369	137,463

Contaminated Total (5%)	Weight (at 5% of Total)	Truck Journeys (at 15 tonne per Load)	Excavation Period (Work Days)	Truck Movements - One Way (Average Per Day)	Truck Movements - Peak Day One Way (Average x 1.5)
Totals (Muck Away Trucks)	6,873	458	20	23	34
Totals (Including 10% For Other Vehicles)				**25**	**38**

Non-contaminated (95%)	Weight (at 95% of Total)	Truck Journeys at 18 tonne per Load	Excavation Period (Work Days)	Daily Period Average	Truck Movements - Peak Day One Way (Average x 1.5)
Totals	130,590	7,255	130	56	84
Totals (Including 10% For Other Vehicles)				**61**	**92**

Summary

The above plan is based on good practice – however there may be variants to the choice of equipment and method of operation dependent upon the appointed contractors preferred method of construction and available plant & equipment within his organisation. The appointed Stage E (part) Contractor will carry out the works in accordance with the final approved details

Appendix A - Water Freight Usage Review for the Demolition of the Westferry Printworks, 235 Westferry Road, London, E14 Rev A

Water Freight Usage Review for the Demolition of the Westferry Printworks, 235 Westferry Road, London, E14.

Provided for Northern and Shell Investments no. 2 Ltd

Revision: Rev A

Contents

1 Executive Summary

This report sets out to objectively research the feasibility of transporting demolition waste in response to planning permission condition 13c), for the redevelopment of Westferry Printworks, Isle of Dogs. (LBTH Ref: PA/15/02216/A1 and GLA ref: D&P/3363/JF/).

During, our assessment a number of important stakeholders and specialists were consulted, including The Docklands Sailing and Watersport Centre (DSWC), Canal and River Trust, demolition specialists - Erith Contractors Limited, GPS Marine Contractors Limited and the development managers, Mace Developments.

The assessment includes;

- an assessment of materials to be transported,
- accessibility to the Millwall Outer Dock by water,
- availability of barges and tugs to carry out the works,
- financial implications to the development,
- CO_2 emissions,
- social and environmental impacts; and,
- possibly most importantly, the impacts water transportation in the Millwall Outer Dock will have on The Docklands Sailing and Watersport Centre.

The study will show conclusively that the use of water transportation for the transportation of demolition material, in this instance, is not a feasible option and offers no tangible benefits for the environment, the local community or the developer. In fact it has been found to be disadvantageous on all counts and potentially has damaging implications to the revenue streams and activities of The Docklands Sailing and Watersport Centre.

2 Introduction

2.1.1 Mace have been commissioned by Northern & Shell Investments No.2 Limited to carry out an independent assessment on the possible use of water freight transport for the collection of demolition waste arising from the re-development of the former Westferry Printworks Site located on the Northern side of the Millwall Outer Dock, Isle of Dogs London, E14. The planning consent includes a condition 13c) for demolition that requires:

"A Water Freight Feasibility Study to assess the potential for the waterborne transportation of waste and bulk materials, and to maximise its use should it be deemed economically feasible and viable;"

*"**Reason**: To safeguard the amenity of adjacent residents and the area generally in accordance with policy SP10 of the Core Strategy (2010) and policy DM25 of the Managing Development Document (2013). To ensure efficient and sustainable operation of the boroughs highway system and to safeguard pedestrian and highway safety in accordance with policies SP08 and SP09 of the Core Strategy (2010) and policies DM20 and DM21 of the Managing Development Document (2013). To prevent or reduce air pollution during demolition and construction in accordance SP03 of the Core Strategy (2010) and policy DM9 of the Managing Development Document (2013). This Condition is also required following the outcome of the Environmental Impact Assessment."*

2.1.2 This report provides an assessment to discharge condition 13c).

Figure 1.1: The Location of the Former Westferry Printworks Site

2.1.3 The building programme for the project is approximately 4.5 years, of which demolition is planned to take approximately 14 months. The indicative timeframe of the phasing, is set out in Table 2-1.

Description	Expected Duration
Demolition & Decontamination	14 Months
Site Wide Infrastructure	12 Months
Basement Construction	14 Months
Phase I Buildings	29 Months
Phase IA Buildings	21 Months
Phase IIA Buildings	24 Months
Phase IIB Buildings	27 Months

Table 2-1 Indicative Timeframe for demolition stage (Stages Overlap)

2.1.4 Chapter 3 details the assessment and chapter 4 sets out the conclusions.