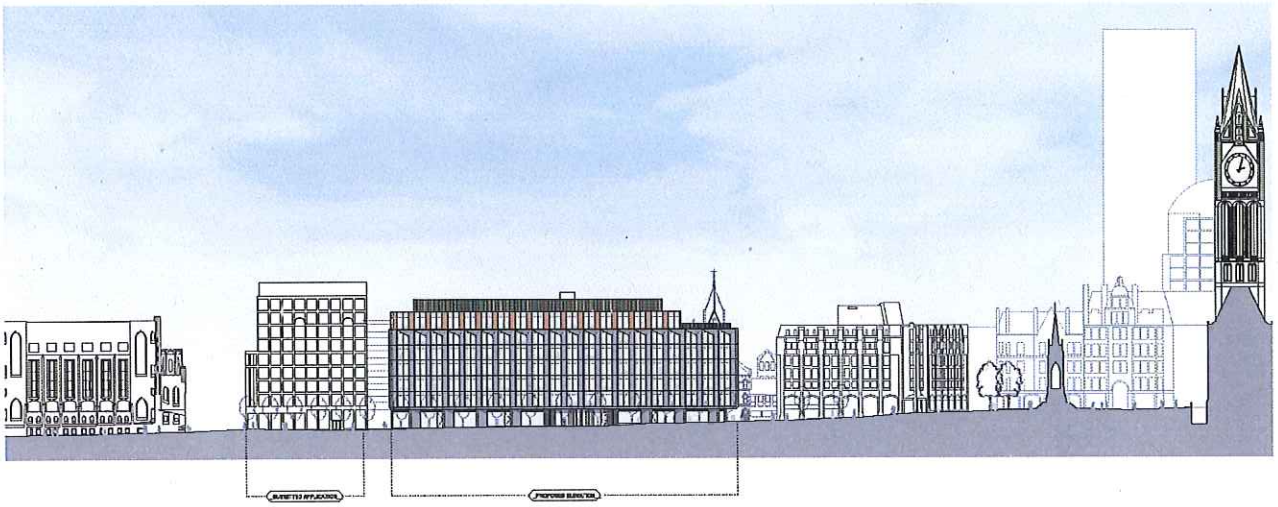
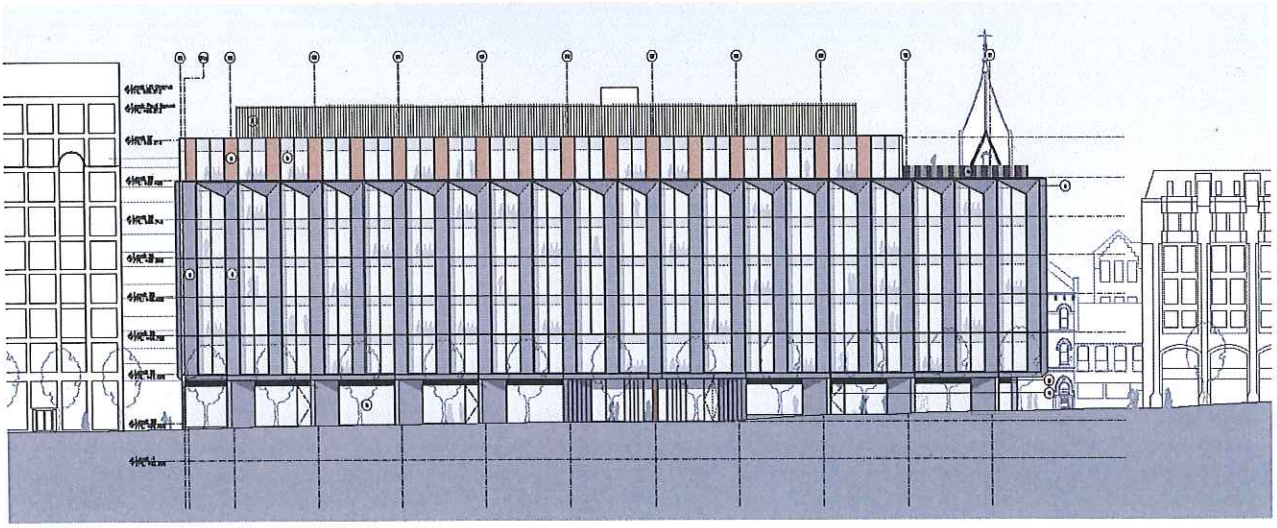
Construction Environmental Management Plan in support of the Planning Application for the new construction works to Brazennose House, Brazennose Street, Manchester Ref 111805/FO/2016/C1 - Condition 8

Revision 2 – 11/9/17





Contents:

1. Introduction
2. Construction Programme and phasing including hours of site opening/operation
3. Site logistics:

    3.1 - Traffic Management Plan

    3.2 - Parking for site operatives and visitors

    3.3 - Swept Path Analysis

    3.4 - Storage of plant and materials

    3.5 - Security hoarding and maintenance

    3.6 - Loading and unloading of plant and materials

    3.7 – External Envelope Materials

    3.8 - Detail and timing of scaffolding

    3.9 – Wheel washing

4. Environmental Considerations

    4.1 – Ecology

    4.2 – Noise and vibration assessment

    4.3 – Community Consultation Strategy

    4.4 – Site Waste Management Plan and Waste Recycling

    4.5 – Air Quality Plan

    4.6 – Human Impact Management Plan

    4.7 – Risk Assessments

1 – Introduction

This Construction Environmental Management Plan has been produced by Marshall Construction (West Yorkshire) Ltd (MCWY) for the proposed redevelopment of Brazennose House, Brazennose Street, Manchester. It details how construction operations will be planned and controlled to minimise any detrimental impact on local amenities, neighbouring residents/businesses and infrastructure. The plan provides a qualified assessment based on current information and is subject to modification during detailed construction planning.

The site is located between Deansgate and Albert Square in the centre of Manchester. The current building is accessed from the rear via Ridgefield and Mulberry Street, the front of the building is fully pedestrianised. An existing 7-storey building with basement car park currently occupies the site, this is to be demolished and redeveloped with a new 7-storey office complete with basement car parking and retail units at ground floor. The new structure will comprise of a steel frame with composite floors around a concrete core, the structure will be sat on new bored pile foundations with a façade mixture of precast feature panels and glazing. The new scheme will include of landlord areas round the main circulation core with the main office layouts complete with primary mechanical and electrical services along with suspended ceilings and raised access floors, the ground floor retail units will be shell only - the scheme is targeting a BREEAM rating of 'Excellent'

2 – Construction Programme and Phasing

The new construction works can only follow the completion of the demolition works, as there is unlikely to be any overlap due to the access required and the demolition requiring the removal of the basement slab. A separate CEMP for the demolition works will be produced and issued by the Demolition Contractor.

The structural engineer will develop a statement of the structural considerations to ensure that the portion of the existing perimeter basement walls that remain are maintained in a structurally stable condition.

The Construction programme is based on normal working hours of 0730-1800 Monday to Friday and with deliveries within the same period. The workforce may arrive 30 minutes prior to the above time but will not work outside of these times – noise during the first hour of work will be kept to a minimum.
Occasional weekend work 0800-1400 Saturday is anticipated such as moving materials within the site to create space to ease deliveries and traffic congestion on the following week days. Sunday and Bank Holiday working will be avoided; however, Sunday working may be required when erecting/dismantling the tower crane – pending final planning and discussions with Manchester City Council Highways Department.

Where works are required to be completed outside such working hours we will seek approval in advance from Manchester City Council Environmental Health Neighbourhood Services Department and provide a mail-shot to local residents and businesses explaining the need to work out of hours, the type of work to be completed and the likely duration of such works. It is considered that such instances will be limited and will include works such as tower crane erection/dismantling, along with power floating of concrete slabs which require continuous works following pouring to achieve the finish whilst the concrete cures.

A monthly newsletter will be produced and distributed to all adjacent residential and business properties updating on progress to ensure that the local community are kept up to date with the works.

The asbestos removal/demolition period (carried out by others under a separate contract) is to finalise but is anticipated at approximately 12 months to complete.

The construction programme is anticipated at just over 23 months following the completion of the demolition.

A summarised copy of the overall programme for the new construction works revision 15002/TP/01 Rev B is depicted below – should any particular section of the programme be required the summarised elements of the programme can be expanded to show the detailed content within.

MARSHALL
CONSTRUCTION GROUP

Project: Brazennose House
For: CDP Ltd
Title: DEVELOPING TENDER PROGRAMME (DRAFT)

PROG. No.: 15002/TP/01
REV. No.: B
DRAWN BY: RH DATE: 15/08/2017
REVISION NOTES:

Line	Name	Start	Duration	Finish
	CONSTRUCTION WORKS			
1	Key Dates	05/11/2018	99w	30/10/2020
2	Site Set Up	05/11/2018	2w	19/11/2018
3	Site Works	19/11/2018	1w	23/11/2018
4	Piling	26/11/2018	13w	08/03/2019
5	Pile Caps/Drainage/Retaining Walls	08/01/2019	26w 3d	17/07/2019
6	Basement Slab inc Waterproofing	09/05/2019	11w 4d	31/07/2019
7	Structural Steel/ Decking	08/07/2019	21w 4d	06/12/2019
8	FRC Floor Slabs	24/09/2019	16w	20/01/2020
9	Tower Crane & Goods Hoist	26/02/2019	65w 3d	23/06/2020
10	Scaffolding	26/03/2019	63w 2d	06/07/2020
11	Precast to External Walls (230no @ 5 per day)	26/11/2019	11w	21/02/2020
12	Glazing Installation inc. louvres (scissor lifts) - Level 1 to 6	09/12/2019	42w	16/10/2020
13	Ground Floor Cladding to Rear	14/04/2020	26w 1d	09/10/2020
14	Roof Works	13/01/2020	20w 1d	06/06/2020
15	Finishes and Services Installation	02/12/2019	46w	30/10/2020
16	Key dates	27/01/2020	16w	14/05/2020
17	Fix vertical RWP's basement to roof level	02/12/2019	8w	07/02/2020
18	Level 1	27/01/2020	33w	18/09/2020
19	Level 2	03/02/2020	33w	25/09/2020
20	Level 3	10/02/2020	33w	02/10/2020
21	Level 4	17/02/2020	33w	09/10/2020
22	Level 5	24/02/2020	33w	16/10/2020
23	Level 6	02/03/2020	30w 3d	07/10/2020
24	Ground Floor	20/01/2020	39w	23/10/2020
25	Basement	09/12/2019	39w 1d	28/09/2020
26	Stair-cores	23/03/2020	29w 3d	21/10/2020
27	Service Risers	24/02/2020	13w	28/05/2020
28	Lift Installations	15/04/2020	23w 1d	28/09/2020
29	Test & Commission M & E Services	03/07/2020	17w	30/10/2020
30	Mains Services	27/01/2020	16w	21/05/2020
31	External Works	27/04/2020	26w 2d	30/10/2020
32	Handover	30/10/2020		30/10/2020

MCWY Coding Library
Summary Bars - Main | Default | Key Date

Project Ref.: W:\Precontract Planning\2015\15002 BRAZENNOSE HOUSE, MANCHESTER\05 - Programmes\20 - CURRENT\Brazennose Developing Programme TP 01 rev B - used in CP's.pp printed 17/08/2017.
Border Ref.: H:\JOB TEMPLATE ORIGINAL\P_Planning Files\3 Programmes\MCWY Current Border Files\MCWY9.b

3 – Site Logistics Plan

The 'Site Logistics Plan' below gives an overview of the proposed arrangements, the plan highlights:

- Traffic Routes
- Tower crane position
- Security hoarding positions and gates
- On site cabins
- Loading and unloading of plant and materials
- Timing of adjacent construction works

BRAZENNOSE HOUSE
MANCHESTER
SITE LOGISITCS PLAN

REV C





NO ACCESS FOR CONSTRUCTION TRAFFIC TO SITE VIA JOHN DALTON STREET - ALL DELIVERIES FROM DEANSGATE ALONG QUEEN STREET - APPROPRIATE SIGNAGE TO BE DISPLAYED

SOLID HOARDING

SOLID HOARDING

HOARDING TO THE WESTERN ROAD TO BE AGREED WITH WORTHINGTON CONSTRUCTION WITH REGARDS TO ACCESS FOR MCWY ENVELOPE WORKS

SOLID HOARDING

LUFFING JIB TOWER CRANE

BRUNTWOOD PROPERTY

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

6NO TRIPPLE STCKED CABINS

SOLID HOARDING WITH LIGHTING

SOLID HOARDING WITH LIGHTING

KIER HOARDING REMOVED BY NOVEMBER 2018

SCAFFOLD TO HERON HOUSE REDEVELOPMENT REMOVED BY AUGUST 2018

BRUNTWOOD PROPERTY

HAMMER HEAD TO REMAIN FOR VEHICLE TURNING

DELIVERIES TO AND FROM SITE ALONG QUEEN STREET ONLY

KIER - TEMPORARY SCAFFOLD UNLOADING ZONE REMOVED BY AUGUST 2018

ROAD CLOSURE TO QUEEN STREET WITH 'ACCESS ONLY' COVERED UNDER A TTRO WITH CHAPTER 8 SIGNAGE

PARKING BAYS ALONG QUEEN STREET REPLACED WITH DOUBLE YELLOW LINES - PARKING BAY LINES REINSTATED ON COMPLETION

ENTRANCE/ EXIT GATES

LINCOLN STATUE REMOVED PRE-COMMENCEMENT AND REPOSITIONED/ REBUILT AS PART OF THE NEW EXTERNAL SCHEME - TBC

SIGNAGE TO BE FIXED TO THE SITE HOARDINGS ADVSING OF BUSINESSES OPEN AS USUAL

MCC PROPERTY

PEDESTRIAN ROUTE

BRUNTWOOD PROPERTY

PEDESTRIAN ROUTE

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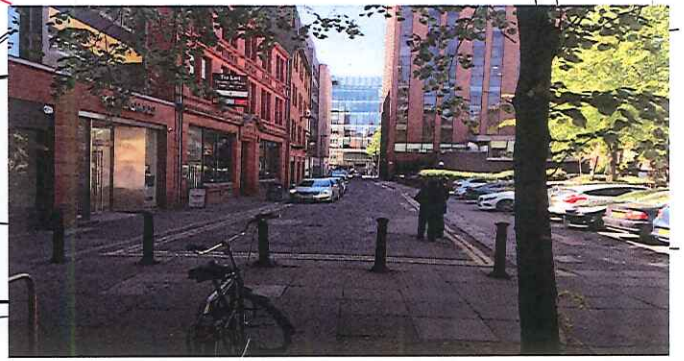
CAR PARKING BAYS AVAILABLE ALONG LLOYD STREET

CAR PARKING BAYS AVAILABLE ALONG LLOYD STREET

DELIVERIES TO THE KIER PROJECT MADE FROM LLOYD STREET - DELIVERIES TO WINGS RESTAURANT VIA HERON HOUSE COURTYARD





The access point for all deliveries to and from site will be made along Deansgate turning into Queen Street leading in to the delivery/unloading zone within the hoarded site boundary. This delivery route will accept all heavy goods vehicles throughout construction operations. The vehicles will be turned within the confines of the site and leave via Queen Street on to Deansgate. Access onto and around the site is quite restrictive and the co-operation of Manchester City Council Highways Department, the local community and considerate planning and liaison will be essential in order to make this a success and to minimise any disruption to all parties.

Access needs to be maintained to the existing premises and carparks surrounding the site and consideration of these accesses and services at St Mary's Church needs to be made. Deliveries to adjacent businesses i.e. Union, Dutton's, Breakout and Veeno will be maintained at all times along with access to Union's car park (once operational) along Mulberry Street. Temporary directional signage will be incorporated on the MCWY hoarding for clear direction for deliveries to Dutton's, Breakout and Veeno.

Initially following demolition (carried out by others) access onto the site area will be via a ramp from Lincoln Square, this ramp will be removed following sufficient progress to the groundworks. Eventually a Tower Crane will be provided to service the building area with a further ramp being provided from the eastern end of the building.

The above arrangement would necessitate a road closure along Queen Street for the duration of the project, a TTRO application will be made to Manchester City Council Highways Department. The existing car parking bays along Queen Street will be removed and replaced with double yellow lines, the car parking bays will be reinstated on completion of the project. It is proposed that the 1no disabled car parking bay, loading bay and Car Club parking bays in Queen Street are to be relocated in to Lloyds Street.

Pedestrian access will be maintained around the full boundary of the site with a combination of solid and heras fence to segregate them from the works and to ensure their safety. The vehicle delivery route avoids any reversing manoeuvres and keeps loading/unloading operations well away from the pedestrianised surrounding Streets.

Close liaison will be made throughout the duration of the project with St Mary's 'The Hidden Gem' Church with regards to timing of any services, weddings, funerals etc to ensure the access along Mulberry Street is maintained at all times – pedestrian access to the church will be unaffected however alternative access is also available via Tasle Alley.

Access and egress to and from site will be properly managed by the site team, who will ensure that all vehicles and pedestrians associated with the works are managed safely and in accordance with the agreed Traffic Management Plan. Access to Centurion House car park will be maintained at all times throughout the road closure.

3.1 - Traffic Management Plan

The separate document below describes how traffic in and around the proposed development will be managed – this document has been reviewed and approved by Veronica Wong of Manchester City Council Highway Department:

MARSHALL

CONSTRUCTION GROUP

PROPOSED REDEVELOPMENT

BRAZENNOSE HOUSE, BRAZENNOSE STREET, MANCHESTER

TRAFFIC MANAGEMENT PLAN

Revision Record:

Revision:	*Date:*	By:	*Summary of Changes:*
-	18 July 2017	RH	Draft initial issue for comment/approval.
1	1 August 2017	RH	Draft initial issue to MCC HD for comment/approval
2	22 August 2017	RH	Updated following review with MCC HD

Contents

1.0 Introduction 1
1.1 Introduction and Purpose 1
1.2 Site Location 1
1.3 Scope of Works 1
2.0 Key Staff 2
2.1 Roles and Responsibilities 2
3.0 Traffic Management Plan 2
3.1 Proposed Site Access/Egress 2
3.2 Planned Road Closures and Temporary Traffic Regulation Orders (TTRO's) 4
3.3 Contractors Parking 4
4.0 Vehicle Routes 4
4.1 Proposed Delivery Route 4

Appendix A – Site Logistics Plan

Appendix B – Swept Path Analysis Drawings

Appendix C – Adjacent Business Schedule

Appendix D – Proposed Traffic Management Plan

Appendix E – Site Delivery Route

1.0 Introduction

1.1 Introduction and Purpose

1.1.1 This Construction Traffic Management Plan has been produced by Marshall Construction (West Yorkshire) Ltd (MCWY) for the proposed office and retail development at Brazennose House Manchester.

1.1.2 The scheme approved under planning application ref: **111805/FO/2016/C1** comprises the demolition of Brazennose House & associated structures and development of a new office building with ground floor retail along with basement car parking.

1.1.3 The purpose and aim of this plan is to demonstrate how construction traffic will be planned and controlled to minimise any disruption to neighbouring properties and the local road network.

1.1.4 The plan will layout intended delivery routes along with anticipated closures to facilitate the construction process and to ensure the continued safe movement of traffic/pedestrians throughout.

1.2 Site Location

The site is located between Deansgate and Albert Square in the centre of Manchester. The current building is accessed from the rear via Ridgefield and Mulberry Street, the front of the building is fully pedestrianised.

1.2.1 Site address: Brazennose House, Brazennose Street, Manchester M2 6LW

1.3 Scope of Works

1.3.1 Demolition of Brazennose House & associated structures (by others) and development of a new office building with ground floor retail along with basement car parking:

- Demolition (TMP to be issued under separate cover by others)
- Substructure works (piling, foundations and basement excavation)
- Superstructure works
- Roof structure and coverings
- External envelope
- Internal finishes
- Fit out

1.3.2 Construction works are due to commence on site in November 2018 and take 2 years to complete.

2.0 Key Staff

2.1 Roles and Responsibilities

2.1.1 **Table 1** (below) identifies MCWY personnel associated with the works:

Table 1: MCWY Personnel

Name:	*Role:*	*Email:*
Paul Stokes	Contracts Manager	pstokes@mcwy.co.uk
T.B.A.	Project Manager	
T.B.A.	Safety Manager	
T.B.A.	Traffic Marshal	
Richard Haley	Planning	rhaley@mcwy.co.uk

3.0 Traffic Management Plan

3.1 Proposed Site Access/Egress

3.1.1 Details of the proposed access/egress arrangements are depicted on the Site Logistics Plan (**Appendix A**).

3.1.2 The access point for all deliveries to and from site will be made along Deansgate turning into Queen Street leading in to the delivery/unloading zone within the hoarded site boundary. This delivery route will accept all heavy goods vehicles throughout construction operations. The vehicles will be turned within the confines of the site and leave via Queen Street on to Deansgate – all vehicle movements will be forward facing along Queen Street (with no reversing manoeuvres)

3.1.3 The above arrangement would necessitate a road closure along Queen Street for the duration of the project, a TTRO application will be made to Manchester City Council Highways Department. The existing car parking bays along Queen Street will be removed and replaced with double yellow lines, the car parking bays will be reinstated on completion of the project. It is proposed that the 1no disabled car parking bay, loading bay and Car Club parking bays in Queen Street are to be relocated in to Lloyds Street – this subject to agreement with Manchester City Council Highways Department.

3.1.4 A series of swept path analysis drawings have been produced by Ramboll Consulting Engineers showing the various vehicle sizes entering and leaving the site, these are enclosed within the Traffic Management Plan **(Appendix B)**

3.1.5 Pedestrian access will be maintained around the full boundary of the site with a combination of solid and heras fence to segregate them from the works and to ensure their safety. The vehicle delivery route avoids any reversing manoeuvres and keeps loading/unloading operations well away from the pedestrianised surrounding Streets.

3.1.6 Deliveries to adjacent businesses at the rear of the site along Mulberry Street i.e. Union, Dutton's, Breakout and Veeno will be maintained at all times along with access to Union's car park (once operational) Temporary directional signage will be incorporated on the MCWY hoarding for clear direction for deliveries to Dutton's, Breakout and Veeno.

3.1.7 Close liaison will be made throughout the duration of the project with St Mary's 'The Hidden Gem' Church with regards to timing of any services, weddings, funerals etc to ensure the access along Mulberry Street is maintained at all times – pedestrian access to the church is also available via Tasle Alley.

3.1.8 We have engaged with the business along Queen Street and have reviewed the deliveries and access requirements, see the attached schedule – **Appendix C.**

3.1.9 Access and egress to and from site will be properly managed by the site team, who will ensure that all vehicles and pedestrians associated with the works are managed safely and in accordance with the agreed Traffic Management Plan.

3.1.10 Routes for emergency services will be kept clear at all times.

3.1.11 The local fire service will also be notified of the works prior to commencement on-site.

3.1.12 Although there is disruption to the businesses along Queen Street we feel that access to the site via Queen Street is the least disruptive with regards to existing residents along Mulberry Street (St Mary's The Hidden Gem Church, Union Building, Dutton's, Breakout and Veeno) consideration has also been made with regards to adjacent developments currently in progress and access agreements in place with Manchester City Council Highways Department. We are also conscious of the tram ways and traffic regulations/restrictions along John Dalton Street and the various closures that take place on this road for carnivals, parades etc.

3.2 Temporary Traffic Regulation Orders (TTRO's)

3.2.1 A TTRO application will be made to Manchester City Council Highways Department for the closure of Queen Street for the duration of the project, the existing car parking bays along Queen Street will be removed and replaced with double yellow lines, the car parking bays will be reinstated on completion of the project. Access to Centurion House car park will be available at all times.

3.2.2 With access/egress to site along Queen Street no other long term TTRO's will be required.

3.2.3 Discussions will be held with both Manchester City Council Highways Department and the Police to agree suitable times and routes for the movement of any abnormal loads.

3.2.4 MCWY will, so far as is reasonably practicable, implement measures to mitigate any disruption to the local road network and take due cognisance of pedestrians, cyclists and other road users as appropriate.

3.2.5 MCWY will endeavour to maintain private accesses affected by the temporary traffic management schemes. Pedestrian access to neighbouring properties will be maintained at all times.

3.2.6 All traffic management works will be completed by trained and competent personnel from a specialist subcontractor – Chapter 8 signage will be displayed as depicted on the attached UDP Ltd drawing – **Appendix D.**

3.3 Contractors Parking

3.3.1 Due to the limited space available, there will be no provision for contractors parking on-site. However, the site is well served with public transport links. In addition, there are numerous pay and display car parks within the local vicinity.

4.0 Vehicle Routes

4.1 Proposed Delivery Route

4.1.1 As part of our subcontract orders we will stipulate that all deliveries to and from site will be made via the A57(M) Mancunian Way leaving at the Chester Road roundabout following the A56 on to Deansgate and into site via Queen Street – refer to **Appendix E**.

4.1.2 To minimise disruption to the local road network during peak periods, the delivery of materials to site will be between 0900 hours and 1600 where practicable.

4.1.3 Wherever possible, deliveries will be scheduled to evenly spread the volume of construction traffic throughout the programme, so that any peaks are avoided.

4.1.4 Our site management will implement a robust scheduling system. Each subcontractor will be required to schedule deliveries well in advance of their arrival on-site.

4.1.5 Delivery planning will also form a key part of discussions held within subcontractors' progress meetings.

4.1.6 Detailed instructions on delivery arrangements and vehicle routing will be issued to all site personnel, subcontractors and supplies involved with the project.

Appendix A

BRAZENNOSE HOUSE MANCHESTER SITE LOGISITCS PLAN

REV C





NO ACCESS FOR CONSTRUCTION TRAFFIC TO SITE VIA JOHN DALTON STREET - ALL DELIVERIES FROM DEANSGATE ALONG QUEEN STREET - APPROPRIATE SIGNAGE TO BE DISPLAYED

JOHN DALTON STREET

TASLE ALLEY

SOLID HOARDING

SOLID HOARDING

HOARDING TO THE WESTERN ROAD TO BE AGREED WITH WORTHINGTON CONSTRUCTION WITH REGARDS TO ACCESS FOR MCWY ENVELOPE WORKS

SOLID HOARDING WITH LIGHTING

LUFFING JIB TOWER CRANE

BRUNTWOOD PROPERTY

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

6NO TRIPPLE STCKED CABINS

SOLID HOARDING WITH LIGHTING

SOLID HOARDING WITH LIGHTING

KIER HOARDING REMOVED BY NOVEMBER 2018

SCAFFOLD TO HERON HOUSE REDEVELOPMENT REMOVED BY AUGUST 2018

BRUNTWOOD PROPERTY

HAMMER HEAD TO REMAIN FOR VEHICLE TURNING

DELIVERIES TO AND FROM SITE ALONG QUEEN STREET ONLY

KIER - TEMPORARY SCAFFOLD UNLOADING ZONE REMOVED BY AUGUST 2018

HERON HOUSE

MCC PROPERTY

ENTRANCE/ EXIT GATES

ROAD CLOSURE TO QUEEN STREET COVERED UNDER A TTRO WITH CHAPTER 8 SIGNAGE

PARKING BAYS ALONG QUEEN STREET REPLACED WITH DOUBLE YELLOW LINES - PARKING BAY LINES REINSTATED ON COMPLETION

LINCOLN STATUE REMOVED PRE-COMMENCEMENT AND REPOSITIONED/ REBUILT AS PART OF THE NEW EXTERNAL SCHEME - TBC

SIGNAGE TO BE FIXED TO THE SITE HOARDINGS ADVSING OF BUSINESSES OPEN AS USUAL

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

CAR PARKING BAYS AVAILABLE ALONG LLOYD STREET

CAR PARKING BAYS AVAILABLE ALONG LLOYD STREET

LLOYD STREET

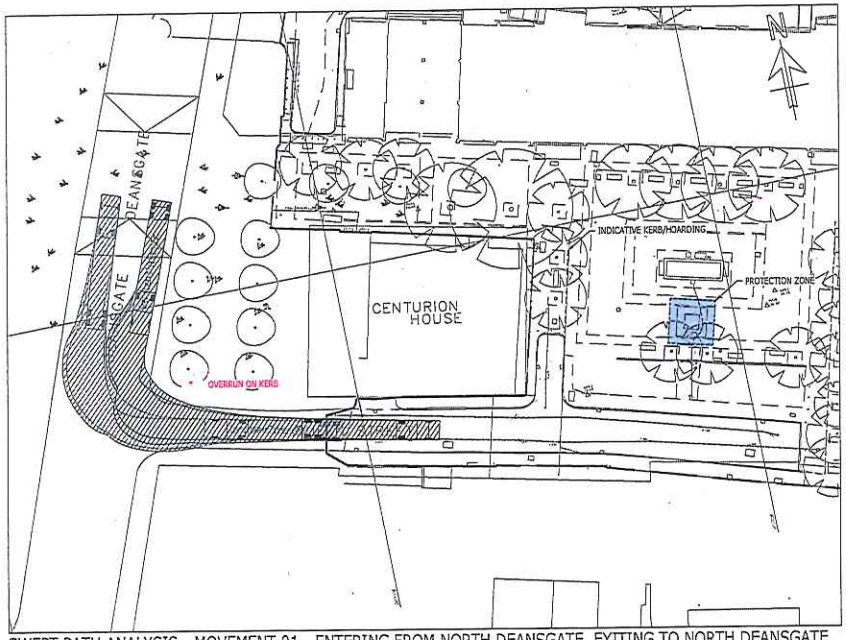
JACKSON'S ROW

DELIVERIES TO THE KIER PROJECT MADE FROM LLOYD STREET - DELIVERIES TO WINGS RESTAURANT VIA HERON HOUSE COURTYARD

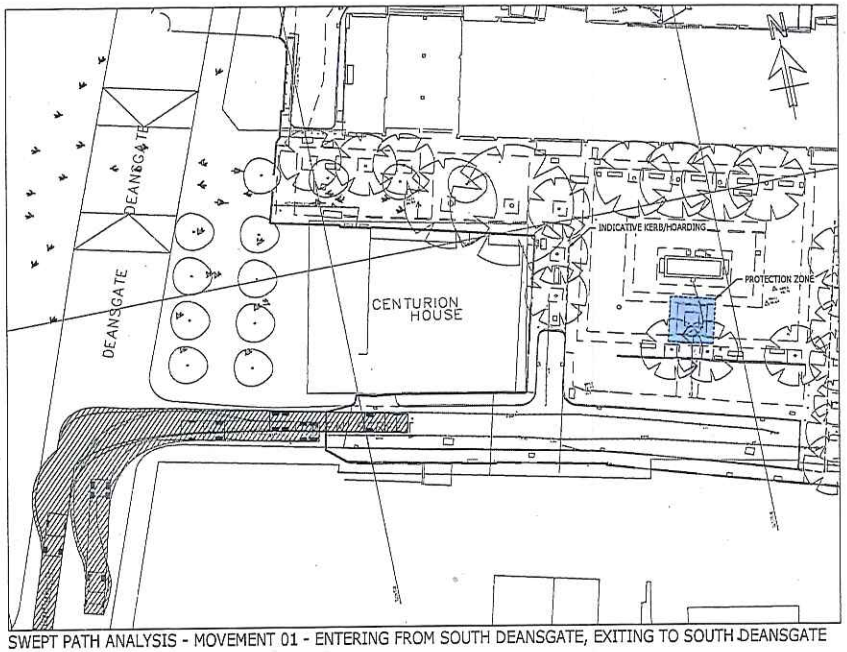




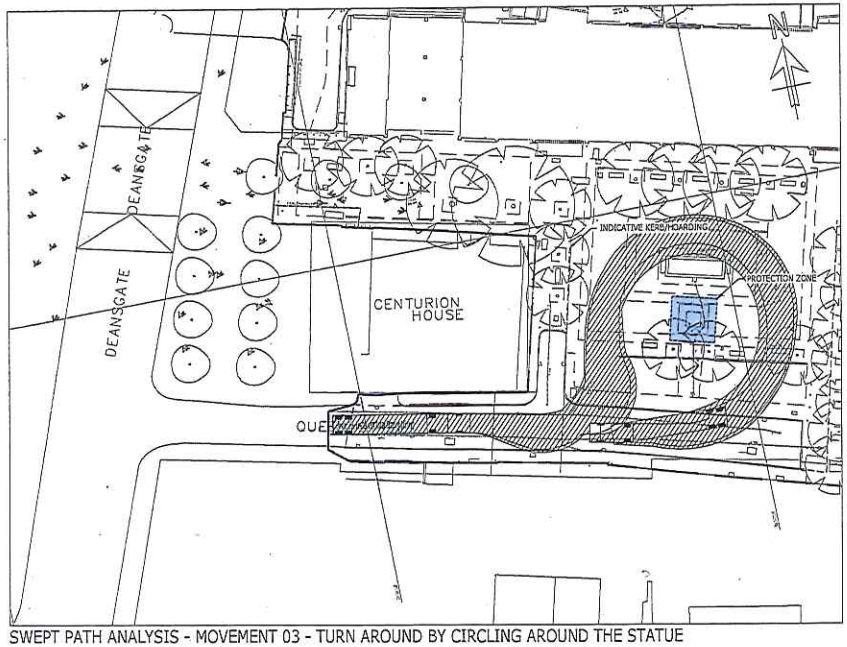
Appendix B



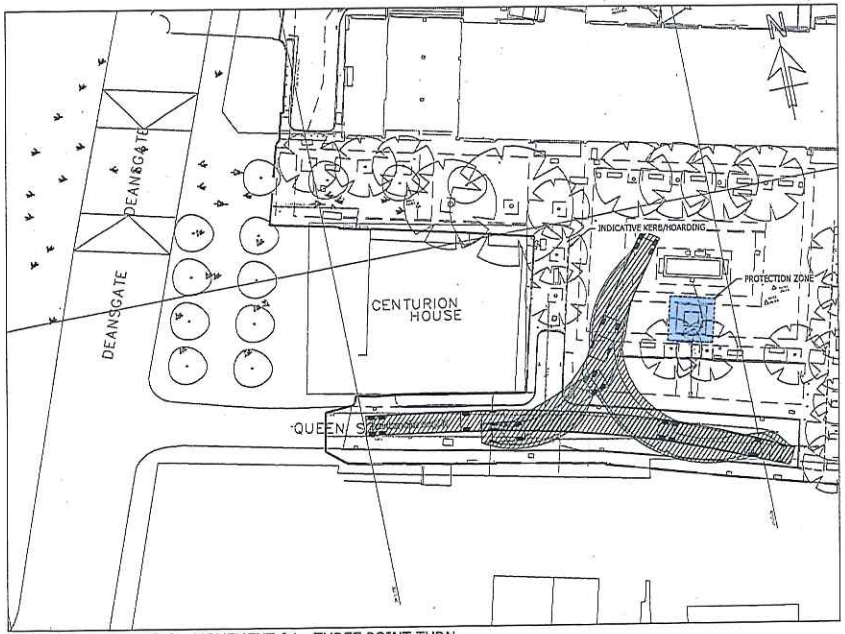
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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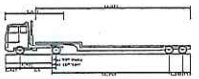
Notes

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE MILLIMETRES U.N.O.
3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

VEHICLE USED FOR SWEPT PATH



Generic Low Loader with Trailer Steering (10.0m)

Overall Length	12.910m
Overall Width	2.540m
Overall Body Height	3.908m
Min Body Ground Clearance	0.333m
Max Track Width	2.522m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.150m

Rev	Description	Date	Drn	App
P01	PRELIMINARY ISSUE	31AUG 2017	HH MG	

PRELIMINARY

BRAZENNOSE HOUSE

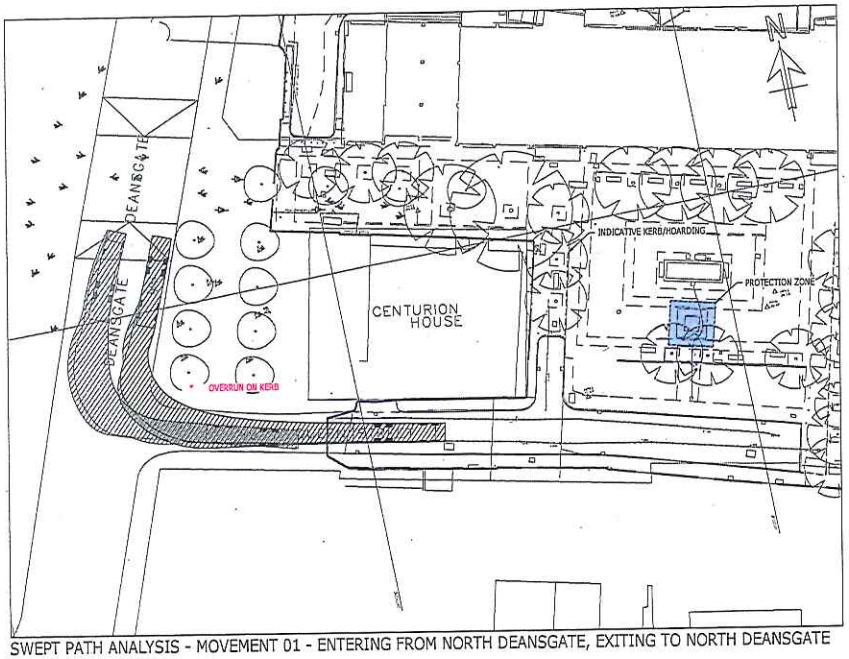
RAMBOLL
tel 01244 313853 chester@ramboll.co.uk
www.ramboll.co.uk

SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(LOW LOADER)

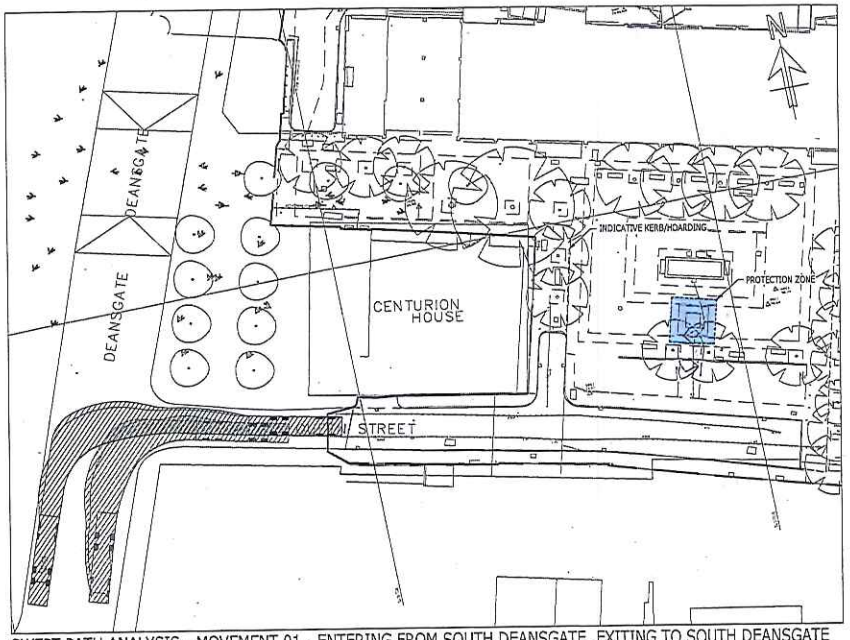
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00109 Rev: P01

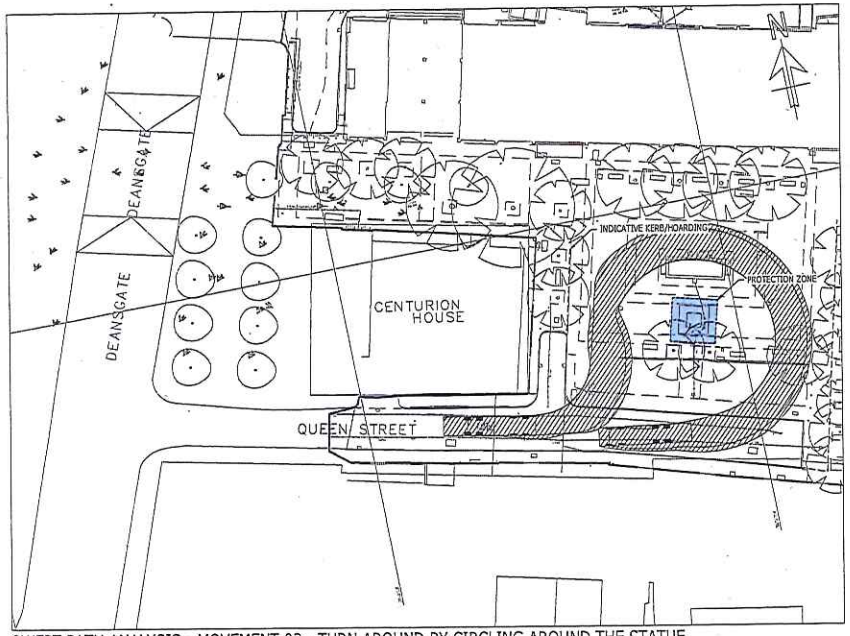
31/08/2017 12:31:23



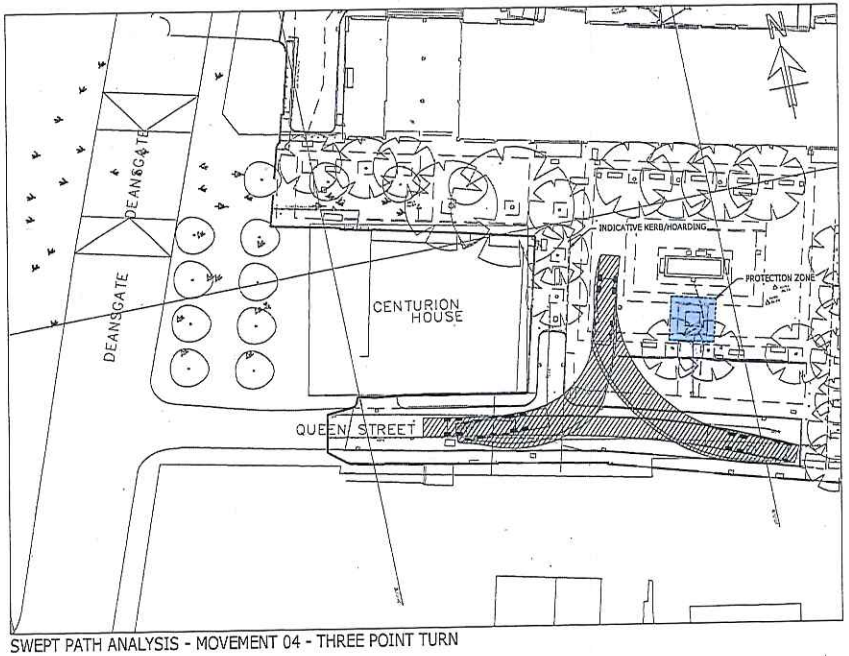
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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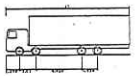
VEHICLE USED FOR SWEPT PATH



Rigid Truck	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.035m
Min Body Ground Clearance	0.412m
Track Width	2.271m
Lock-to-lock time	6.00
Curb to Curb Turning Radius	11.900m

Rev	Description	Date	Dr Chr	App
P01	PRELIMINARY ISSUE	31/08 2017	WD	BH

PRELIMINARY

BRAZENNOSE HOUSE

RAMBOLL
tel 01244 311010 chester@ramboll.co.uk
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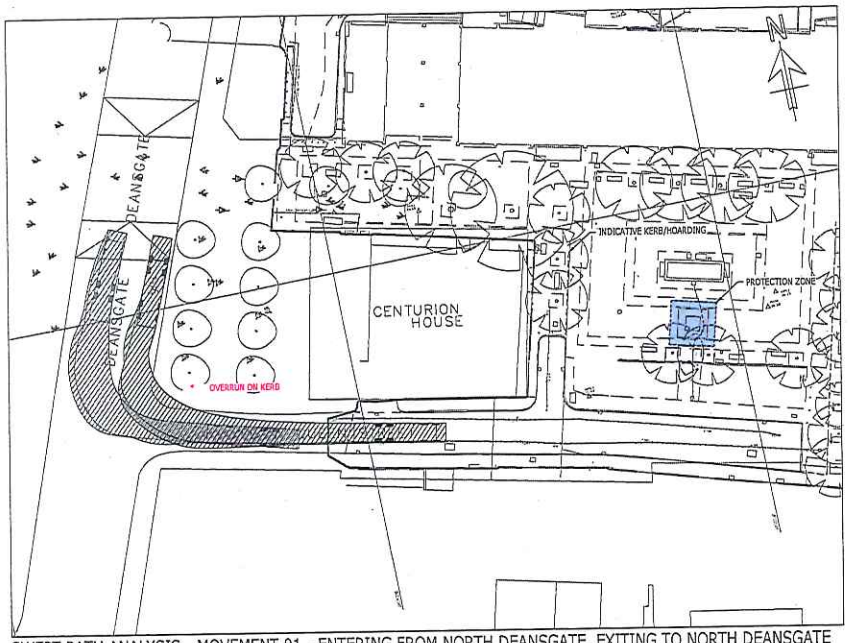
SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(RIGID TRUCK)

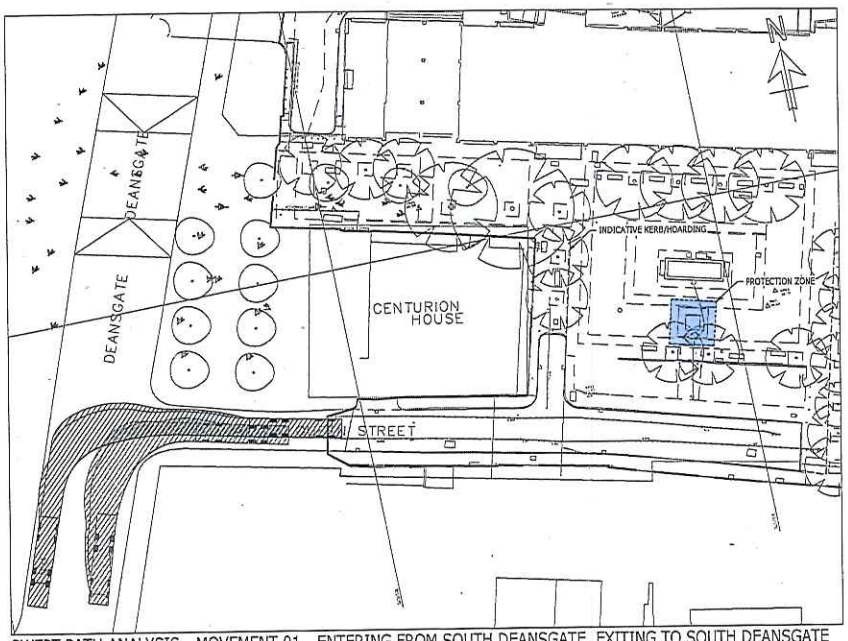
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00108 Rev: P01

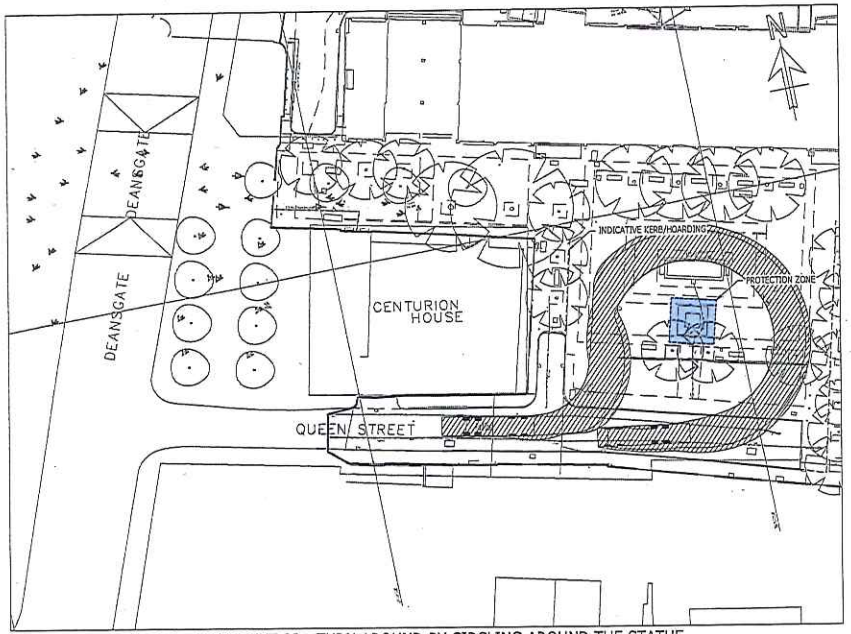
31/08/2017 12:51:23



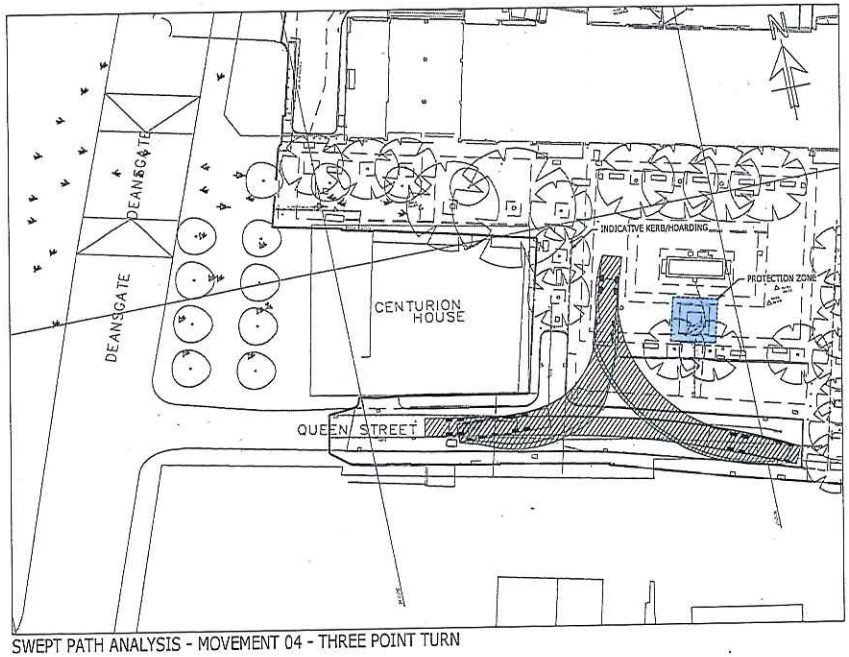
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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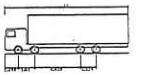
VEHICLE USED FOR SWEPT PATH



Rigid Truck	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.420m
Min Body Ground Clearance	0.412m
Track Width	2.497m
Lock-to-lock time	6.0s
Curb to Curb Turning Radius	11.000m

Rev	Description	Date	Drn	App
P01	PRELIMINARY ISSUE	31/08/2017	HH	RC

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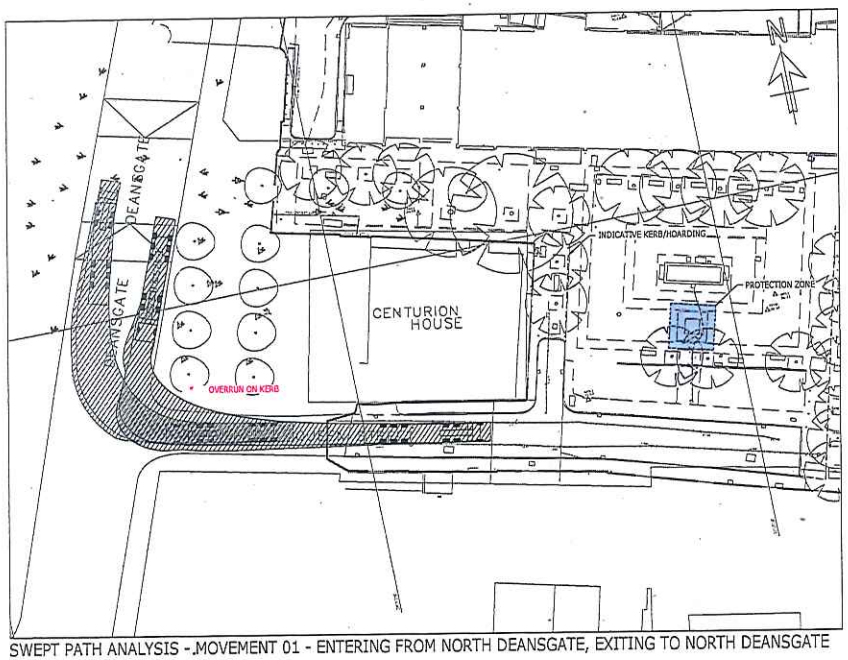
SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(RIGID TRUCK)

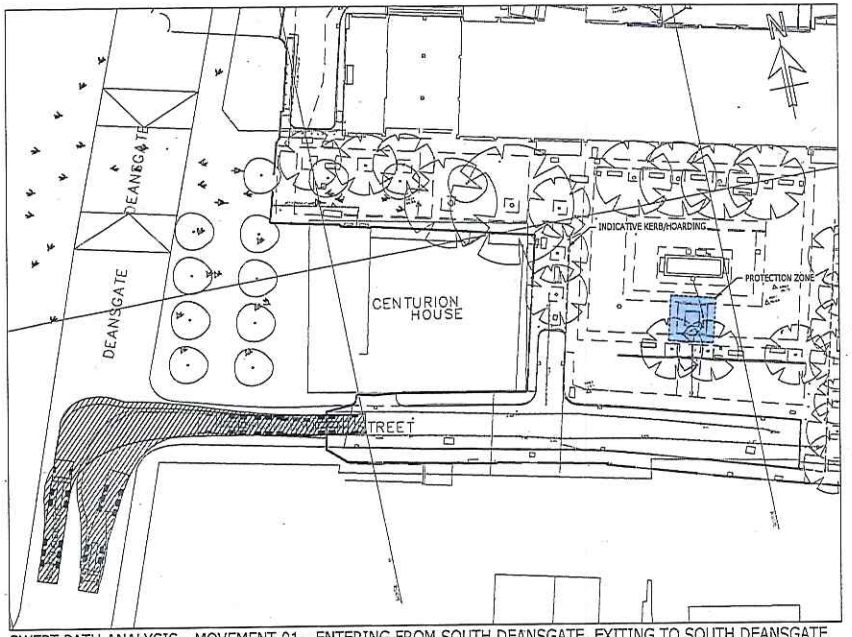
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00108 Rev: P01

31/08/2017 12:31:23



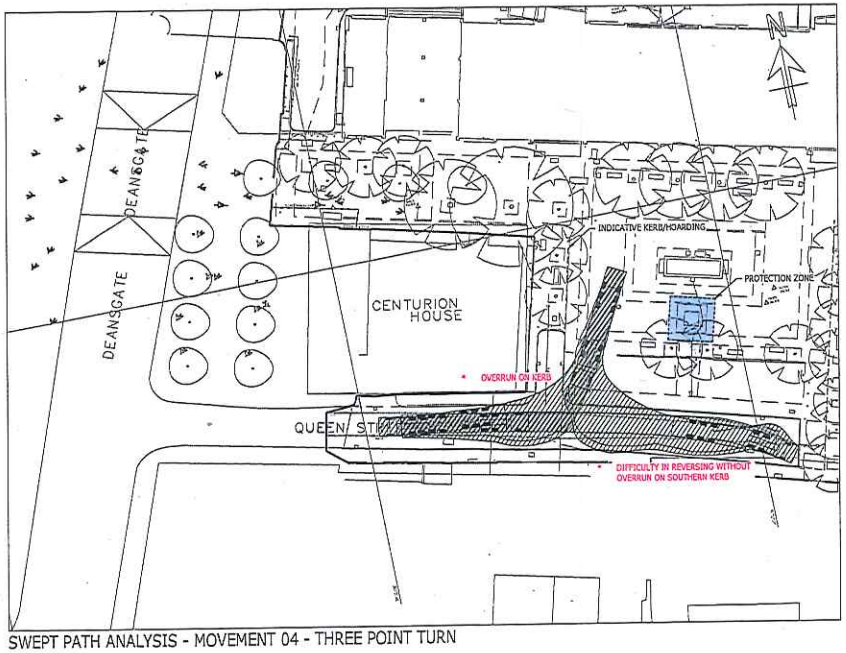
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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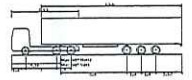
VEHICLE USED FOR SWEPT PATH



Max Legal Length (UK) Articulated Vehicle	(16.5m)
Overall Length	16,500m
Overall Width	2,550m
Overall Body Height	3,681m
Min Body Ground Clearance	0.411m
Max Track Width	2,500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6,530m

Rev	Description	Date	By / Chk	App
P01	PRELIMINARY ISSUE	31/08 2017	JHL / RG	

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SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(MAX LEGAL ARTIC)

Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No:	Rev:
RAM-XX-00-SK-CR-00106	P01

31/08/2017 12:51:03

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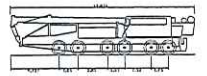
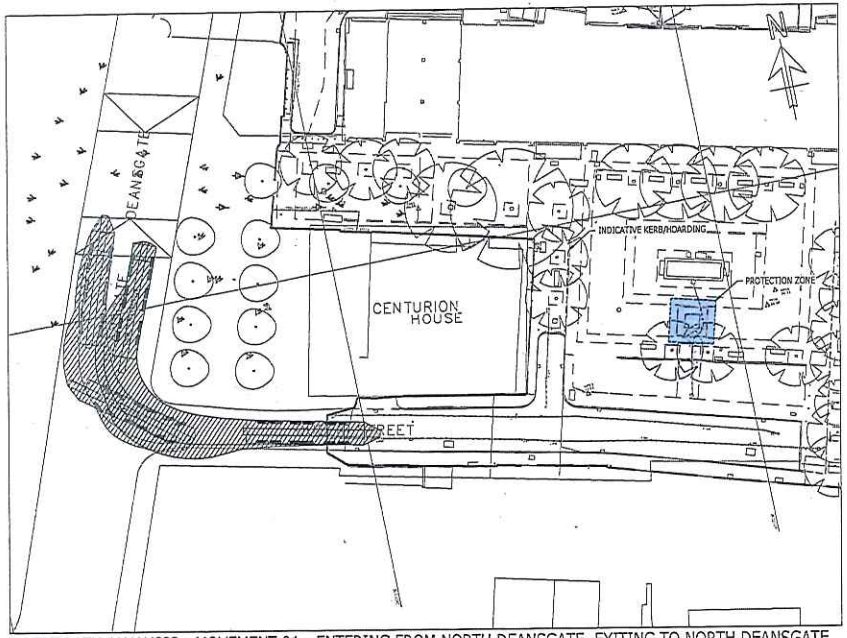
VEHICLE USED FOR SWEPT PATH

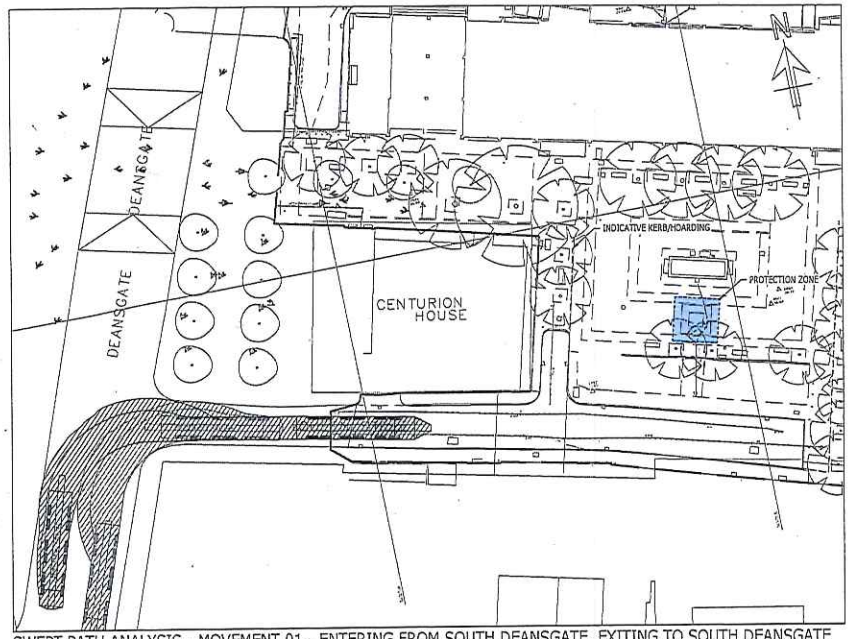


Liebherr LTH 1250-6.1 Mobile Crane

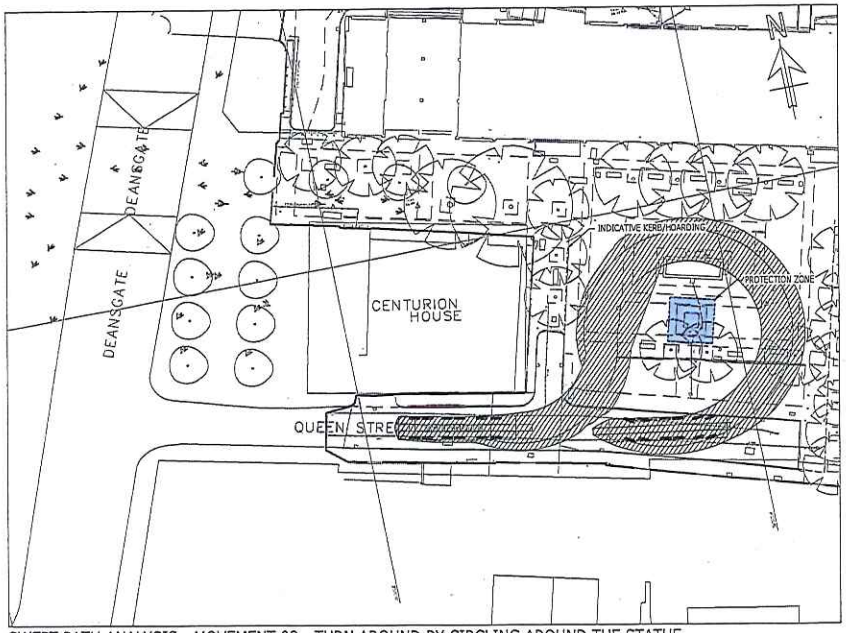
Overall Length	17.825m
Overall Width	3.000m
Overall Width Height	4.000m
Min Body Ground Clearance	0.330m
Track Width	3.000m
Lock-to-lock time	4.0s
Curb to Curb Turning Radius	11.624m



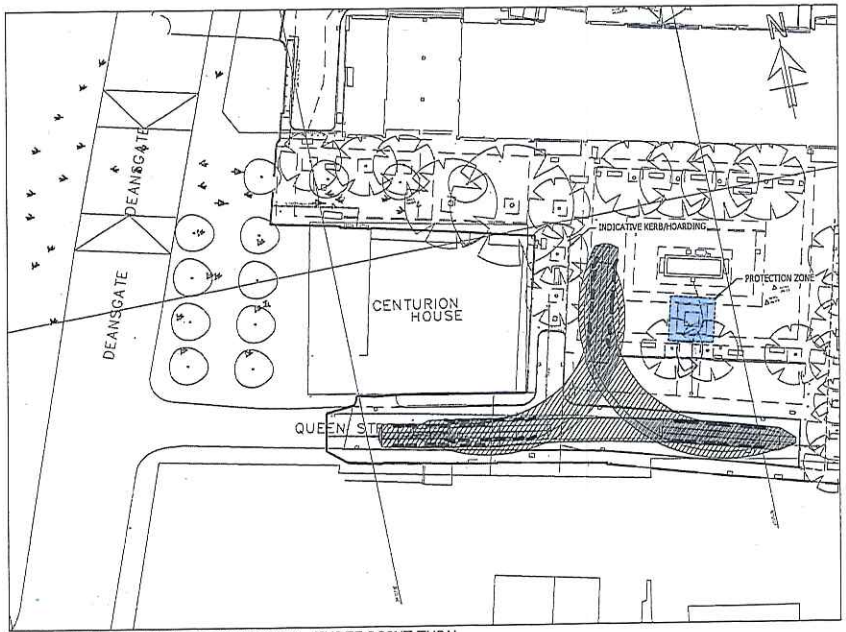
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

Rev	Description	Date	Drn	App
P01	PRELIMINARY ISSUE	31/08/2017	BH	RCS

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BRAZENNOSE HOUSE

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SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(MOBILE CRANE)

Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00105 Rev: P01

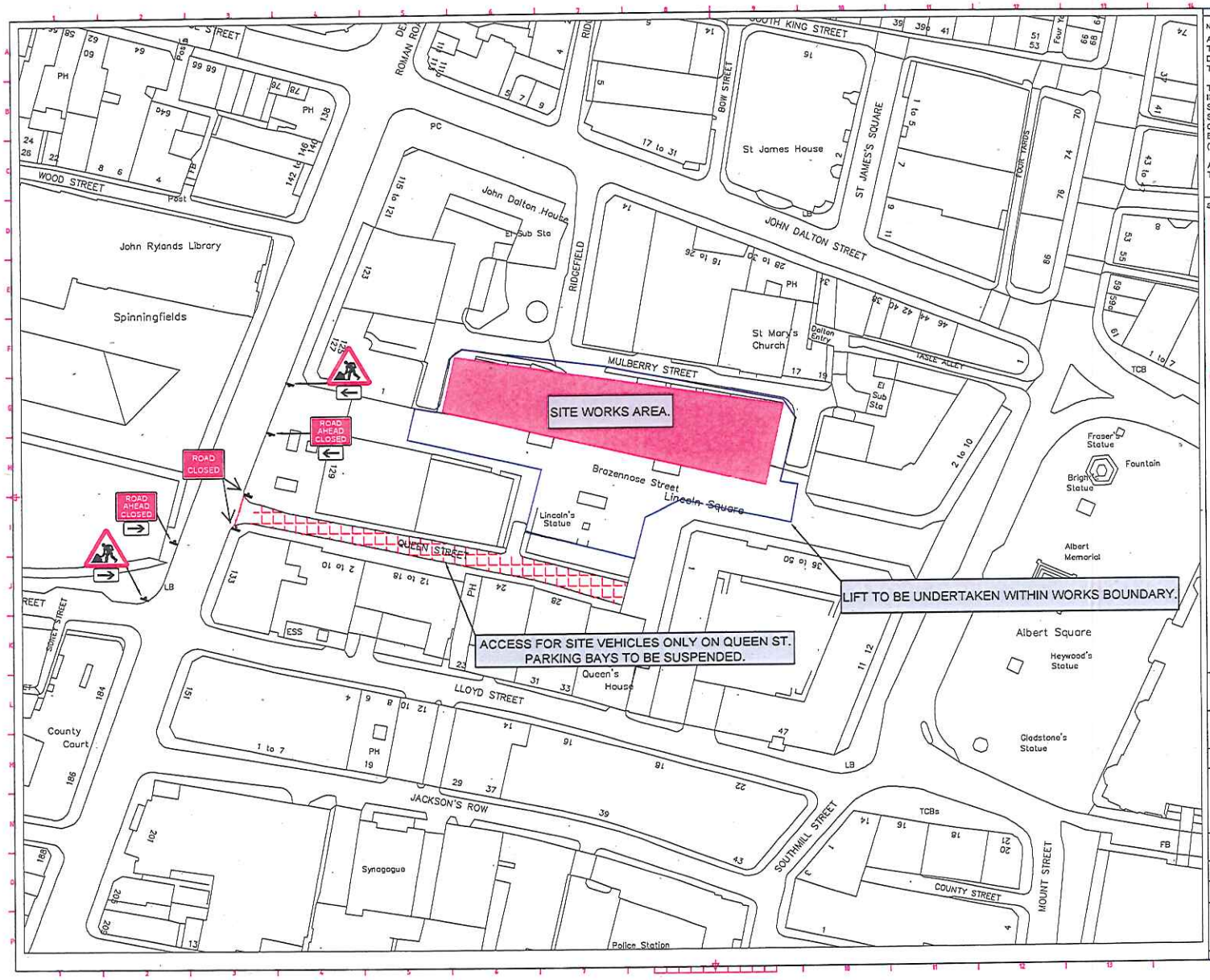
31/08/2017 12:50:55

Appendix C

Brazennose House Manchester - Adjacent Businesses

Business	Building	Contact	Building Owner/Management	Date visited	Deliveries/Car Parking	Comments	Letter issued
	Queens House		Workman FM Mr Peter Houghton 07590 976765 0161 828 5444 Workman FM				
Toni & Guy	Ground floor	Debbie Tate & John		23 August 2017	Drop off along Lloyd Street and bring through the covered walkway adjacent Heron House	Don't use the car parking spaces along Queen St - neither staff or visitors	06 September 2017
E3Creative	4th Floor	Jess Meecham jess.meecham@e3creative.co.uk 0161 228 2630		05 September 2017	Minor deliveries - Drop off along Lloyd Street and bring through the covered walkway adjacent Heron House	The staff don't use the car parking spaces along Queen Street	06 September 2017
Firecask	6th Floor	Alex Moss Alex@firecask.com 07743 870210		05 September 2017	Minor deliveries - Drop off along Lloyd Street and bring through the covered walkway adjacent Heron House	The staff don't use the car parking spaces along Queen Street	06 September 2017
	All other floors not occupied						
	28 Queen Street Alexandra Building						
David Rozman	Ground Floor	David Rozman	0161 832 0179 hair@davidrozman.co.uk	24 August 2017	Deliveries along Queen Street	Concerns at the potential loss of business due to the new construction works and proposed hoarding lines and no customer parking - MCWY advised signage can be fixed to the hoarding to let passing pedestrians know the business is open as usual - parking available along Lloyd Street	06 September 2017
Same Day Doctor	1st Floor	Amanda Okunola	0161 827 7868	05 September 2017	Minor deliveries along Queen Street - Staff do not use the parking along Queen Street - some patients do use Queen Street for parking but can use Lloyd Street as an alternative	Happy with alternate deliveries and car parking on Lloyd Street	06 September 2017
ISIS Insurance	2nd Floor	Eddie Johnson	07968 897290	05 September 2017	Minor deliveries along Queen Street - Staff do not use the parking along Queen Street	No staff members use the car parking along Queen Street - no issues with the project however did say the demolition on the Worthington Project was noisy	06 September 2017
Arnold Stansby	3rdFloor	No name given	Info@arnoldstansby.com	05 September 2017	Staff do not use the parking along Queen Street	Didn't want to discuss the scheme just want to be included on the scheme news letter	06 September 2017
Empty	4th Floor						
	24 Queen Street	Sellick Ltd	Sellick Ltd				
	Queens Court	Karen Hogan					
Ground Floor	Manchester Building Society			23 August 2017		NI issues with the proposed construction works and hoarding lines	06 September 2017
1st Floor	AMS Accountants		Tennant of Sellick		AMS park at the rear of the building	Letter to be issued to Sellick for distribution to the tenants	06 September 2017
2nd Floor	AMS Accountants		Tennant of Sellick		AMS park at the rear of the building	Letter to be issued to Sellick for distribution to the tenants	
3rd Floor	Sellick Partnership	Karen Hogan		23 August 2017	Car park at the rear of the building accessed from Lloyd Street		
4th Floor	Sellick Partnership	Karen Hogan		23 August 2017	Car park at the rear of the building accessed from Lloyd Street		
	Rising Sun Pub						
Rising Sun Pub		Gary Smith	Gary Smith 0161 834 1193	24 August 2017	Beer delivery once a week along Queen Street - small artic vehicle delivers early in the morning and reverses up Queen Street	Residential for the Landlord - no concerns over any early morning starts however did not want any Sunday working - MCWY advised of the working hours within the Planning Permission document	06 September 2017
	Cotton House						
Ground Floor		Helen Willcock	Bruntwood	05 September 2017	Integral car park at the rear of the building access from Lloyd Street	Letter to be sent to Bruntwood for issue to their tenants	06 September 2017
1st Floor		07801 666635					
2nd Floor							
3rd Floor							
4th Floor							
5th Floor							
	St Johns House						
Ground Floor		Building Manager	WHR	05 September 2017	Integral car park at the rear of the building access from Lloyd Street	Letter to be sent to the Landlord for issue to their tenants	06 September 2017
1st Floor							
2nd Floor		079046 199583					
3rd Floor							
4th Floor							
5th Floor							
6th Floor							
7th Floor							
	Centurion House						
		Helen Willcock	Bruntwood	05 September 2017	Access available to their car park at all times along Queen Street	Letter to be sent to Bruntwood with revised logistics plan	06 September 2017
		07801 666635					
	St Mary's Church			23/08/2017 and 5/9/2017		Parish Priest away on holiday - due to return on 4th September 2017, meeting to be arranged thereafter - called again on 5/9/17 but the Priest was not available	06 September 2017
	Wings Restaurant				Deliveries into Heron House courtyard via Lloyd Street		06 September 2017
	Venoo				Deliveries via Mulberry Street		06 September 2017

Appendix D



NOTES

ALL SIGNAGE SHOULD COMPLY WITH THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS (TSRGD) 2002 AND SUBSEQUENT TRAFFIC ADVISORY LEAFLETS (TAL'S)

TRAFFIC MANAGEMENT SCHEMES SHOULD BE INSTALLED IN ACCORDANCE WITH THE TRAFFIC SIGNS MANUAL CHAPTER 8 PART 1 AND 2, THE SAFETY AT STREET WORKS AND ROAD WORKS COP (THE BURGUNDY BOOK) AND THE DOT BOOKLET ON VA PORTABLE TRAFFIC SIGNALS (THE PINK BOOK).

ANY ROAD MARKINGS MUST COMPLY WITH THE TRAFFIC SIGNS MANUAL CHAPTER 5 2003.

SPECIAL SIGNS

ROAD CLOSED	X 1
ROAD AHEAD CLOSED	X 2
	X 2
	X 4

CONTRACT
MARSHALL CONSTRUCTION

TITLE
BRAZENNOSE, MANCHESTER

PLANNER

CIVIL ENGINEERING & TRAFFIC MANAGEMENT CONSULTANCY
UDP LTD
Cobden House
33 Cobden Street
Salford
M6 6WF

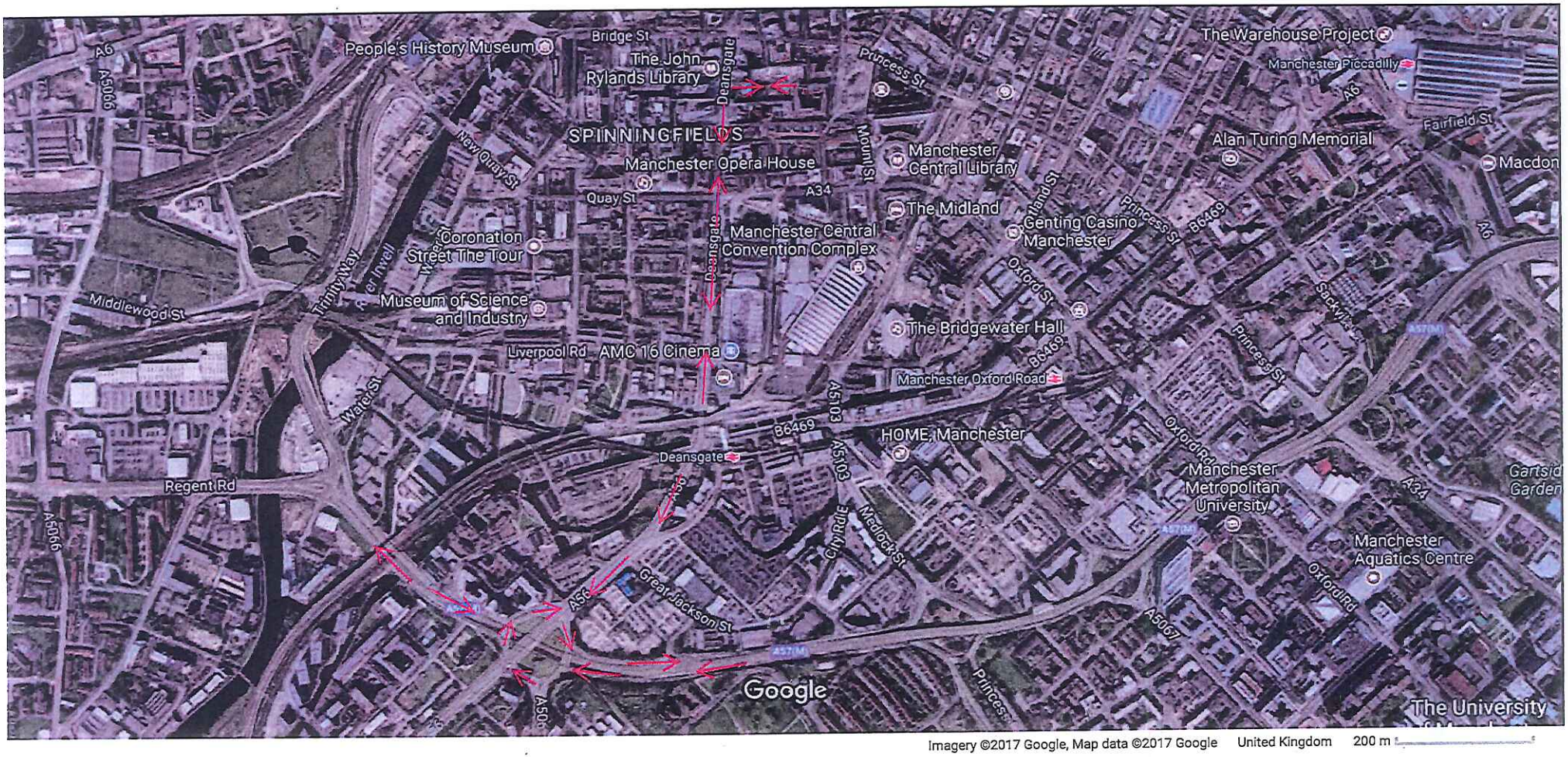
Drawing Status

Drawn By | Checked By
Date | Scale @A0

Drawing NO
UDP-S13

Appendix E

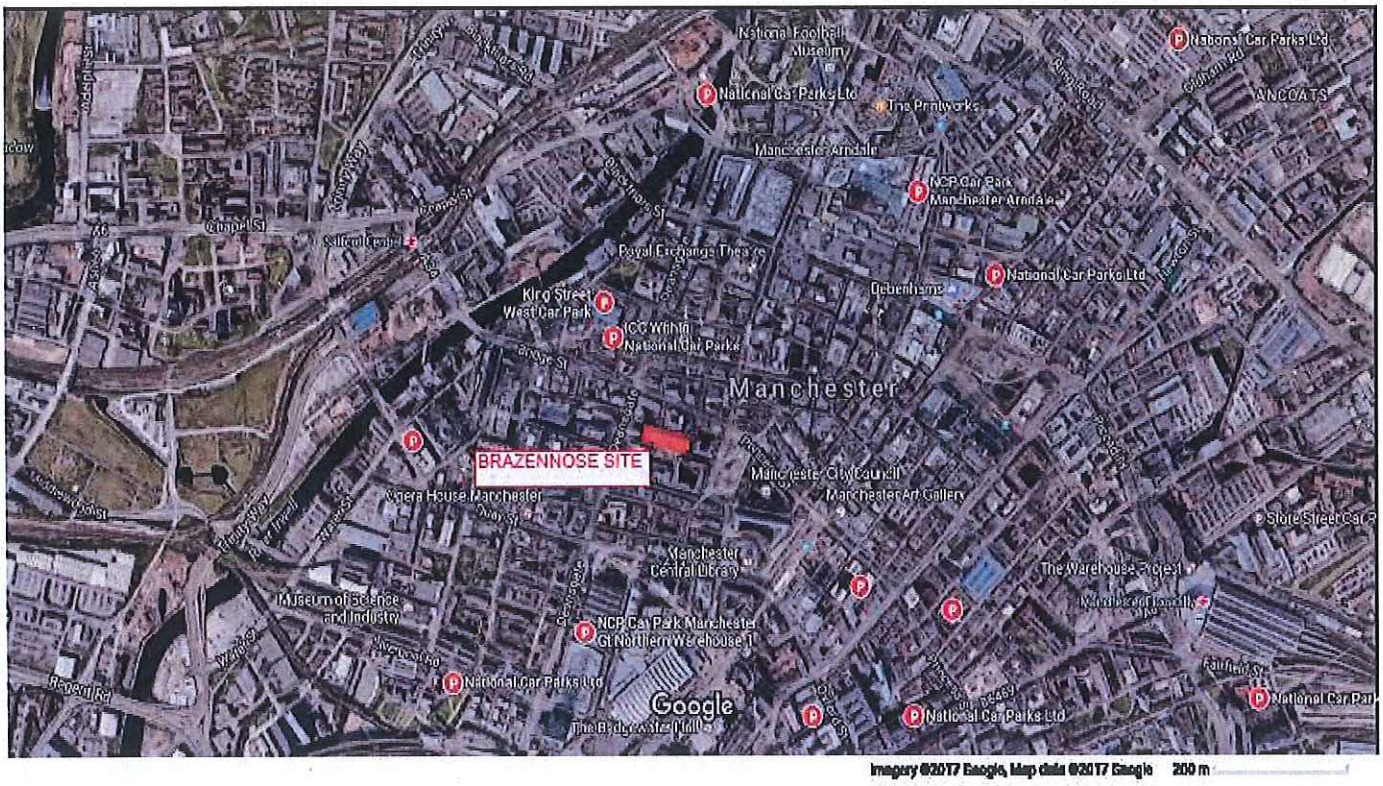
Google Maps Brazennose St



3.2 - Parking for site operatives and visitors:

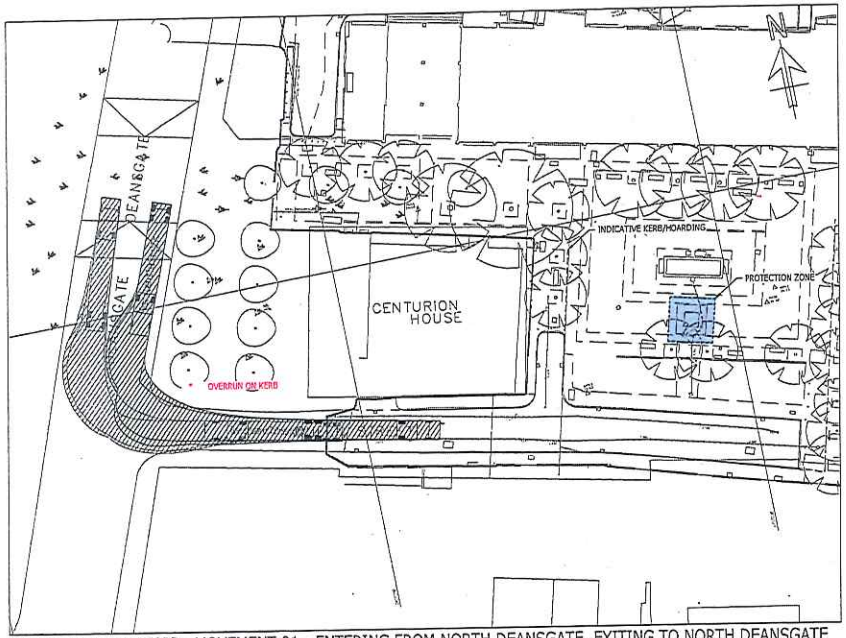
There will be no parking available on site for operatives/site management or visitors, it is envisaged that operatives/site management and visitor parking will generally be located off-site. The plan below illustrates the public car parks in and around the vicinity of the site. Where vehicles are parked off-site, drivers will be instructed to park courteously and with due consideration to local businesses and amenities. Whenever possible, operatives will be encouraged to car share to further reduce the number of vehicles. The site will also promote the use of the Park and Ride facilities along with displaying relevant information such as tram and bus routes and frequencies.

car parking brazennose street manchester

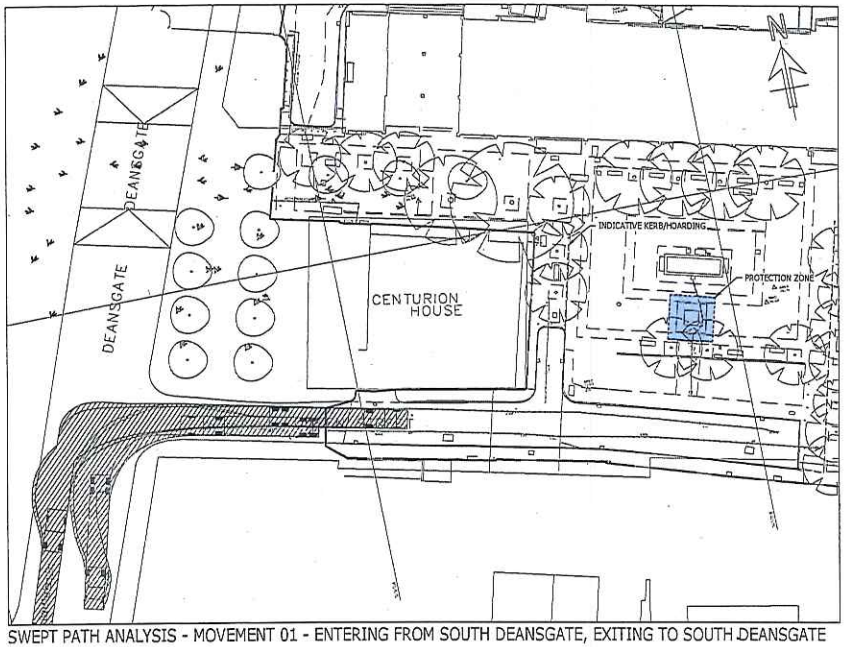


3.3 - Swept Path Analysis

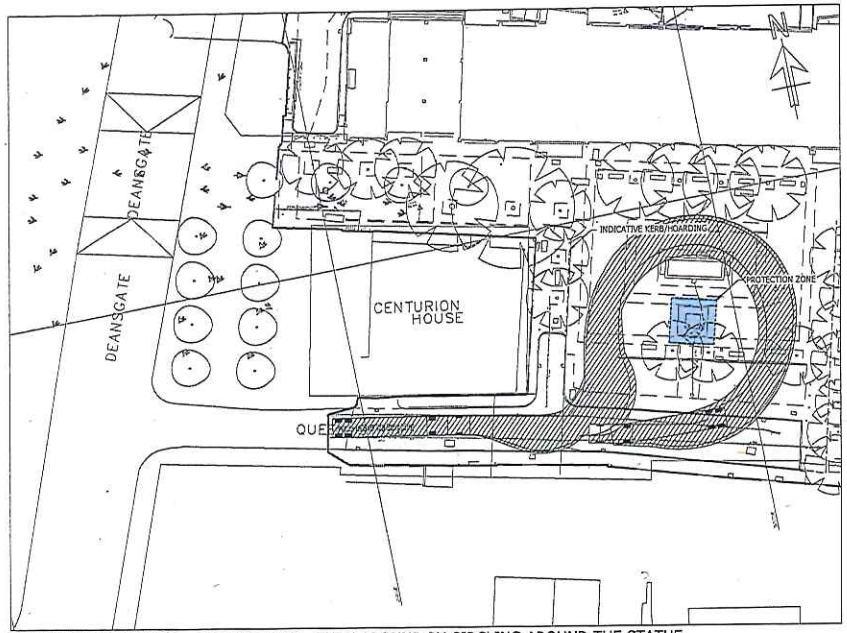
Swept Path Analysis drawings have been produced by Ramboll Consulting Engineers to demonstrate the various vehicle types anticipated to visit the site:



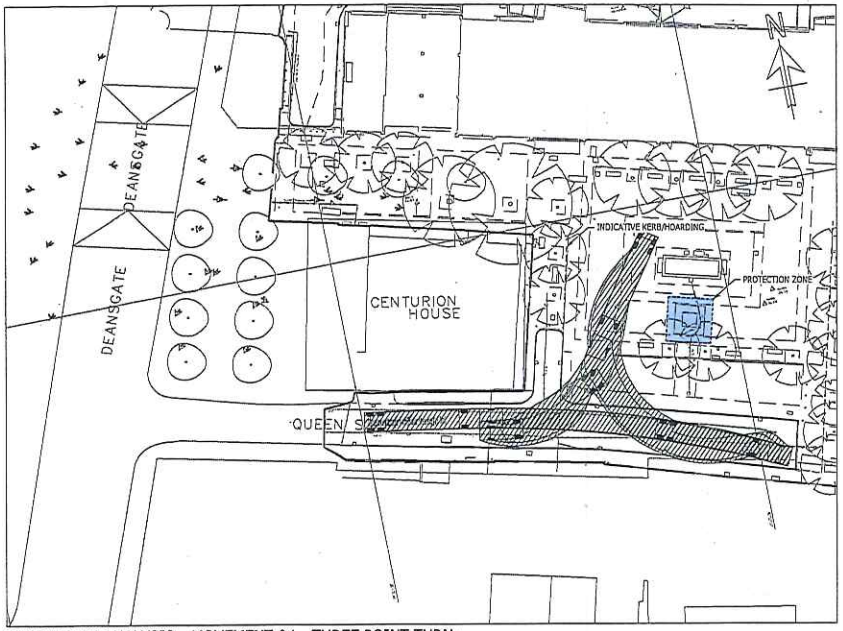
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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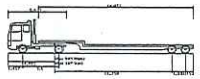
VEHICLE USED FOR SWEPT PATH



Generic Low Loader with Trailer Steering (18.0m)

Overall Length	17.918m
Overall Width	2.540m
Overall Body Height	3.408m
Min Body Ground Clearance	0.400m
Max Track Width	2.550m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	8.350m

Rev	Description	Date	By	App
P01	PRELIMINARY ISSUE	31/08/2017	BH	RO

PRELIMINARY

BRAZENNOSE HOUSE

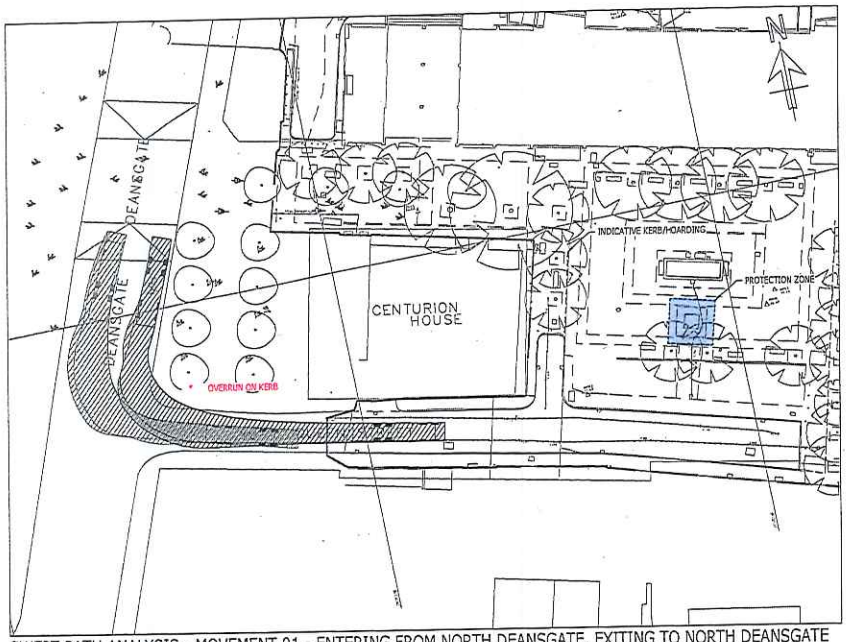
RAMBOLL
tel 01244 311935 chester@ramboll.co.uk
www.ramboll.co.uk

SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(LOW LOADER)

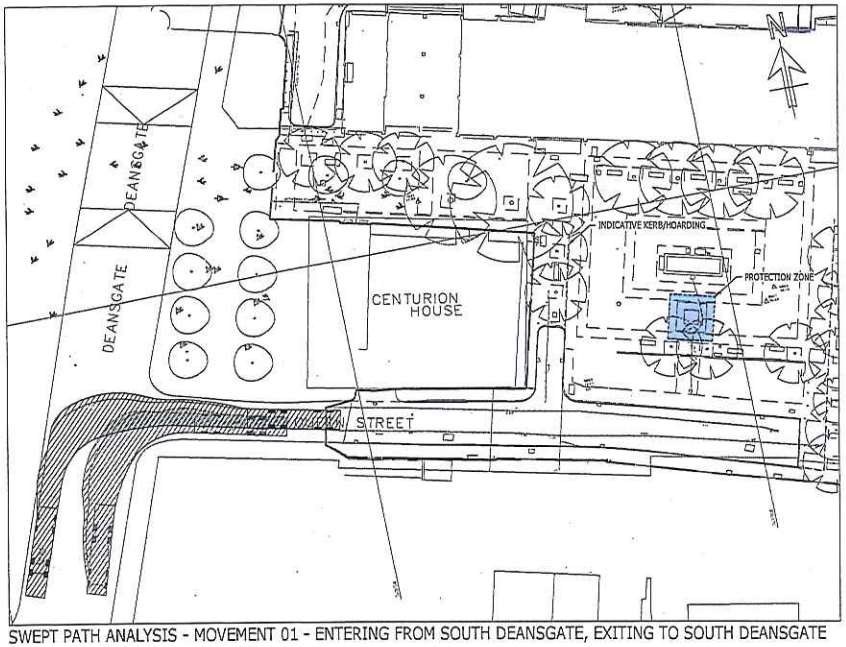
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00109 Rev: P01

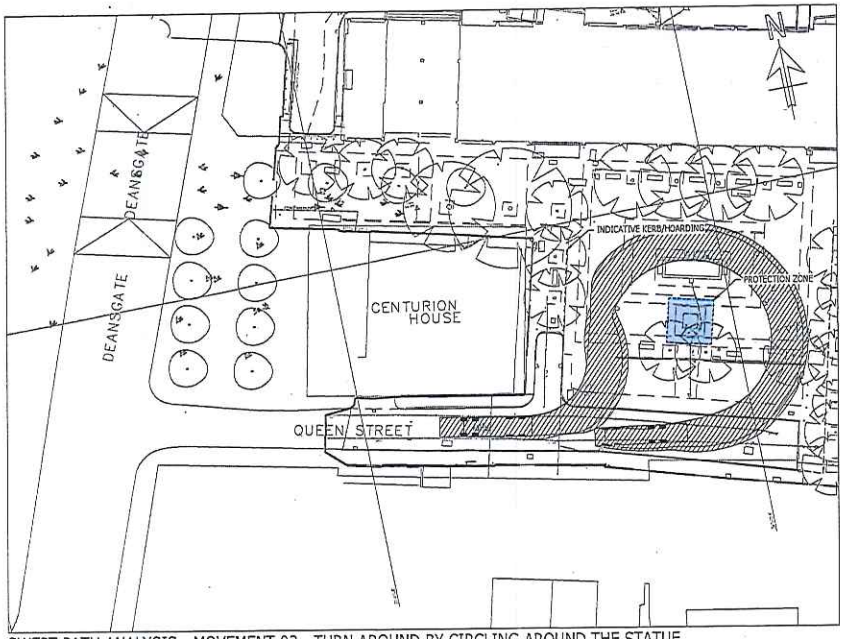
31/08/2017 12:51:23



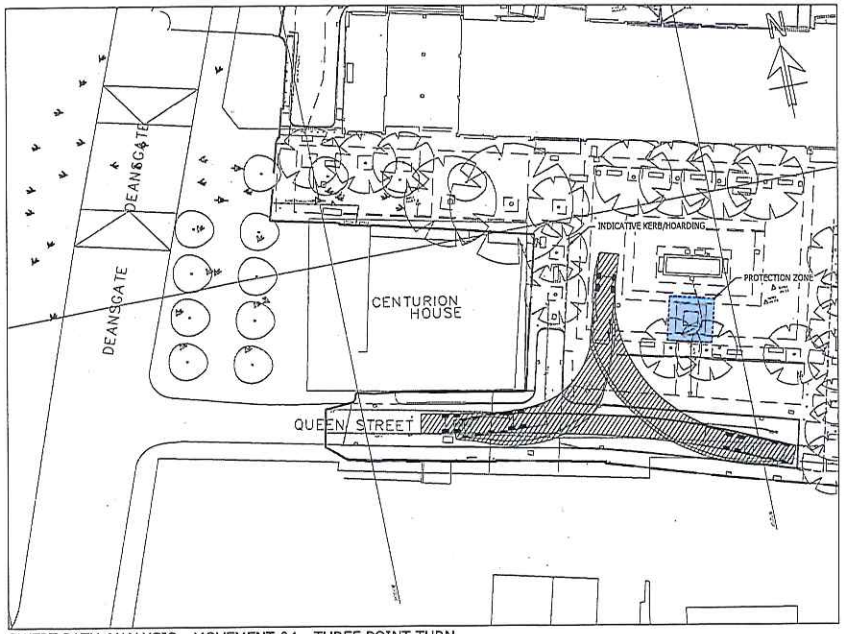
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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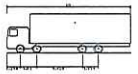
VEHICLE USED FOR SWEPT PATH



Rigid Truck	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	11.900m

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PRELIMINARY

BRAZENNOSE HOUSE

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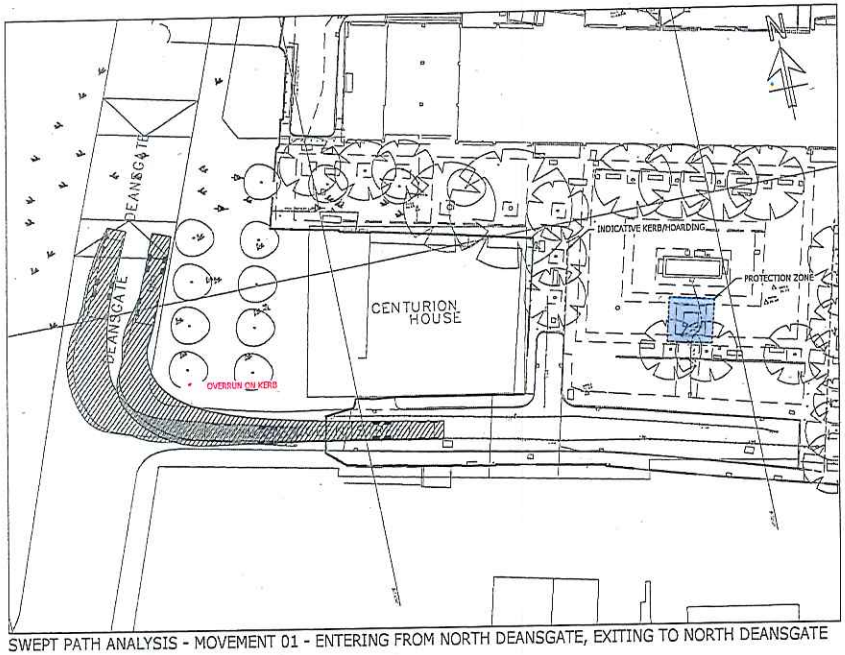
SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(RIGID TRUCK)

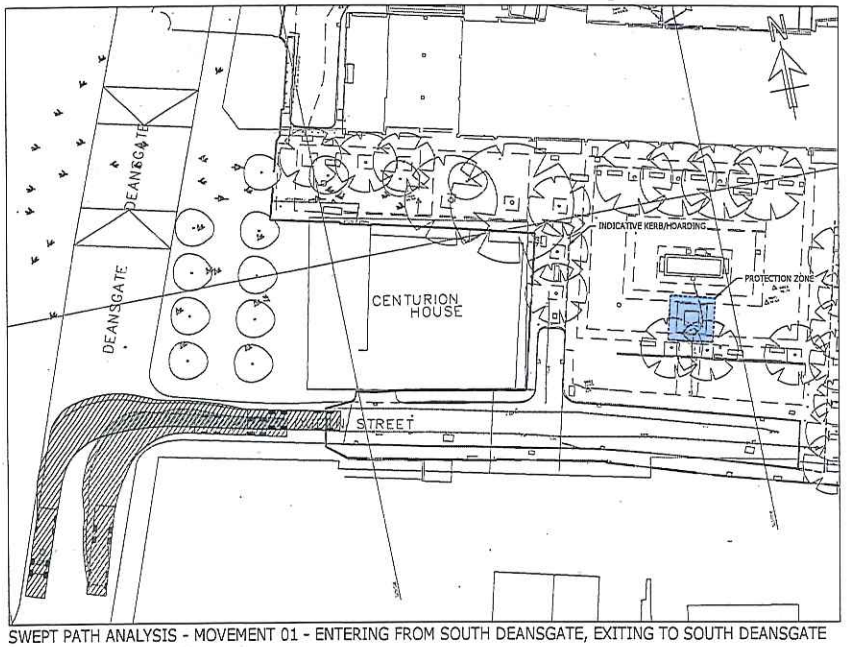
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00108 Rev: P01

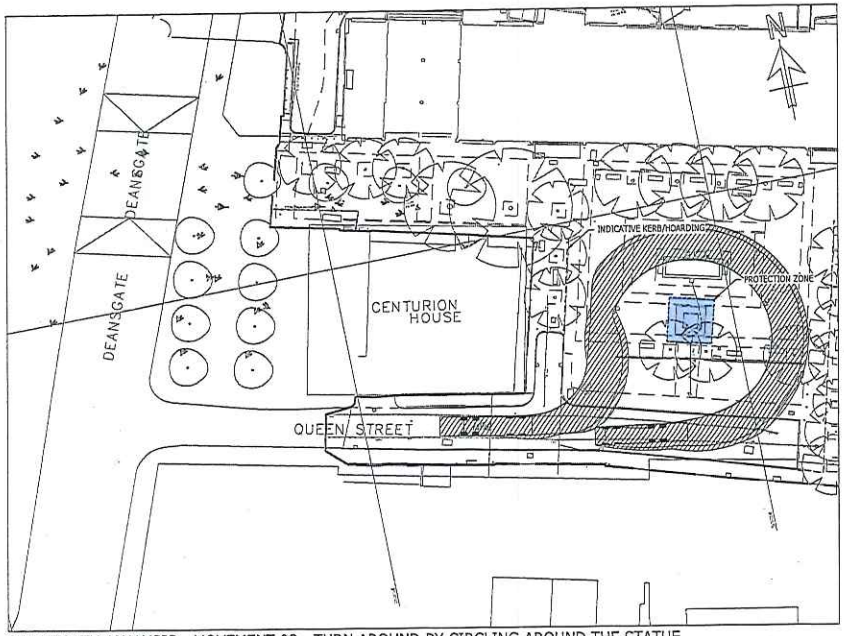
31/03/2017 12:51:22



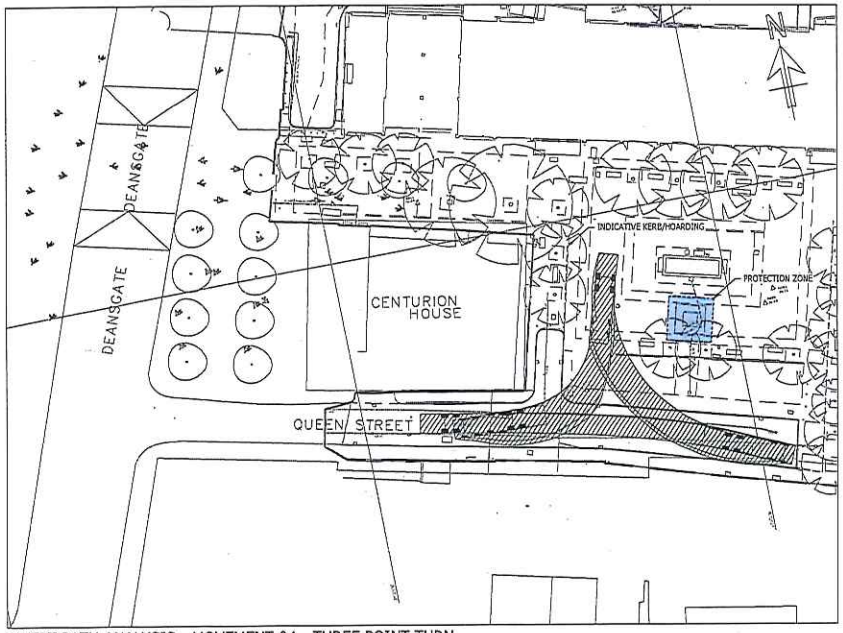
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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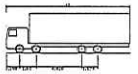

Rigid Truck	
Overall Length	12,000m
Overall Width	2,500m
Overall Body Height	3,925m
Min Body Ground Clearance	0,412m
Track Width	2,497m
Lock-to-lock time	6,00s
Curb to Curb Turning Radius	11,000m

Rev	Description	Date	By Chk	App
P01	PRELIMINARY ISSUE	31/03/2017	BH MD	

PRELIMINARY

BRAZENNOSE HOUSE

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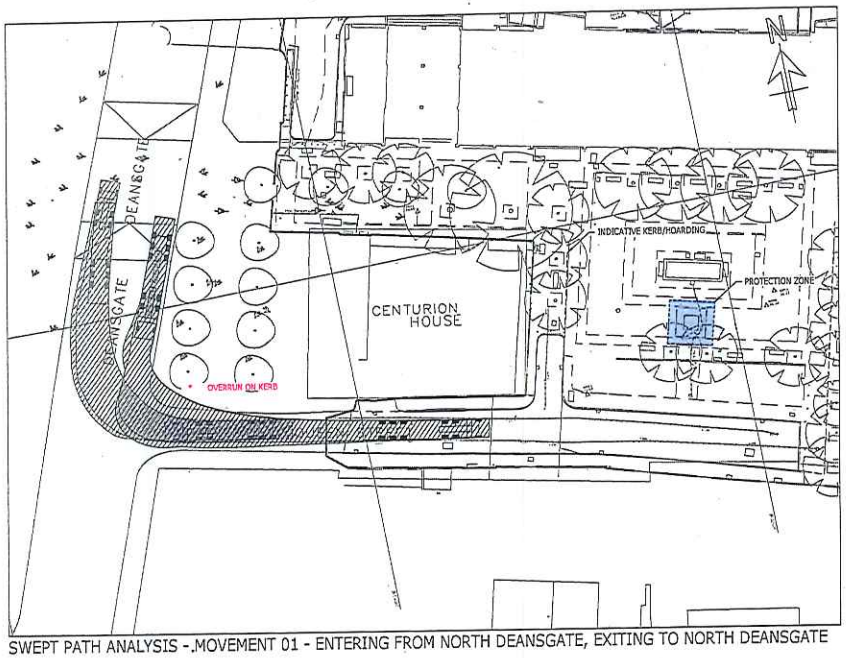
SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(RIGID TRUCK)

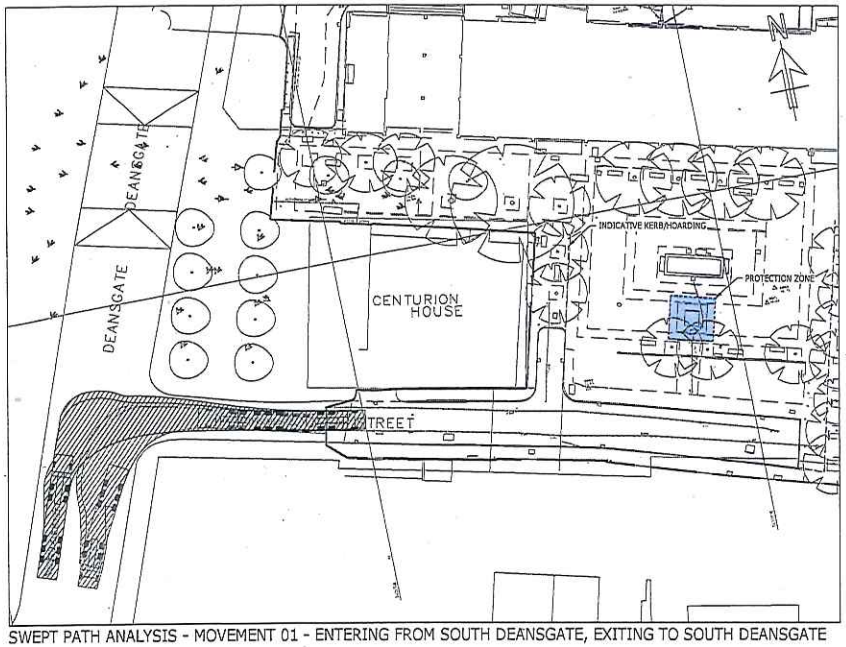
Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00108 Rev: P01

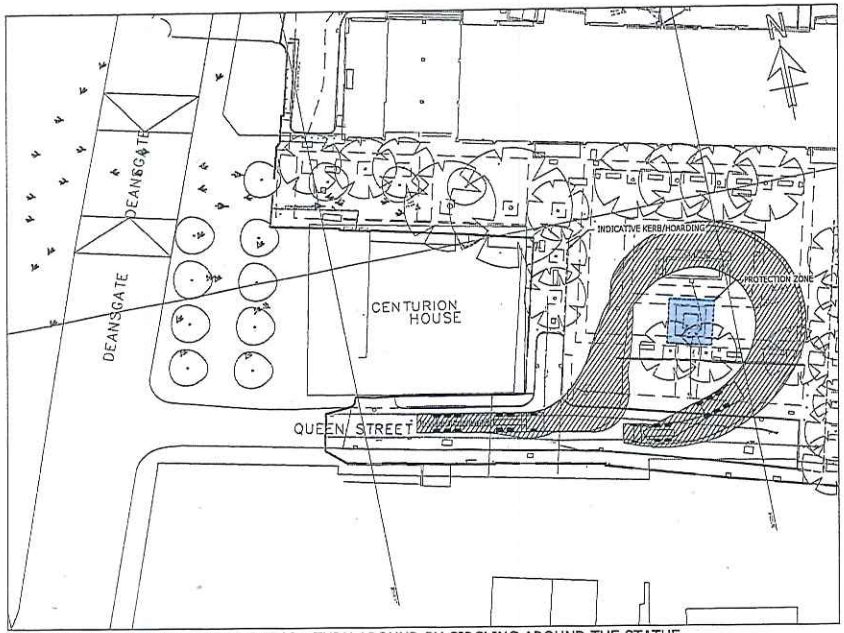
31/03/2017 12:51:23



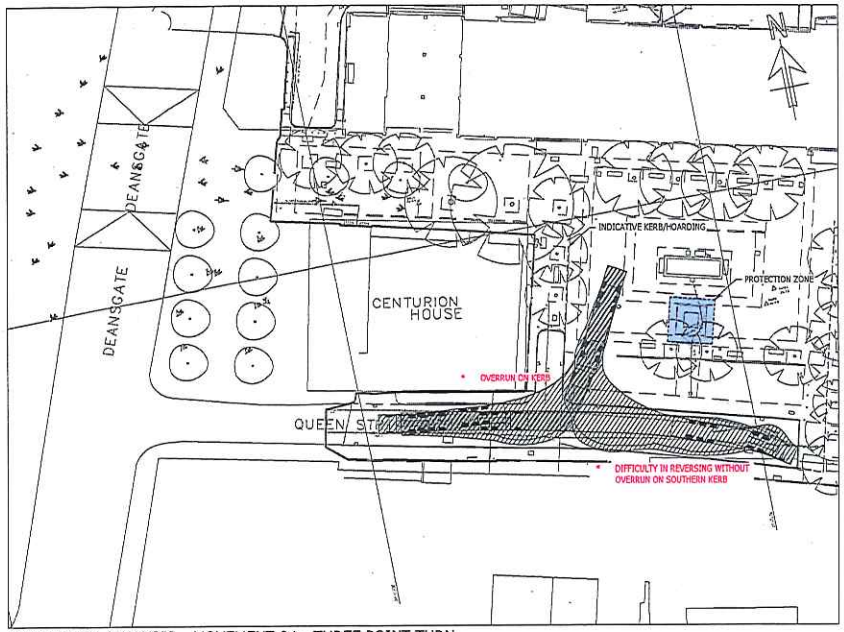
SWEPT PATH ANALYSIS -.MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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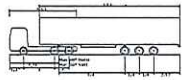
VEHICLE USED FOR SWEPT PATH



Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.681m
Min Body Ground Clearance	0.911m
Max Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.350m

Rev	Description	Date	By	App
P01	PRELIMINARY ISSUE	31/05/2017	BH	WG

PRELIMINARY

BRAZENNOSE HOUSE

RAMBOLL
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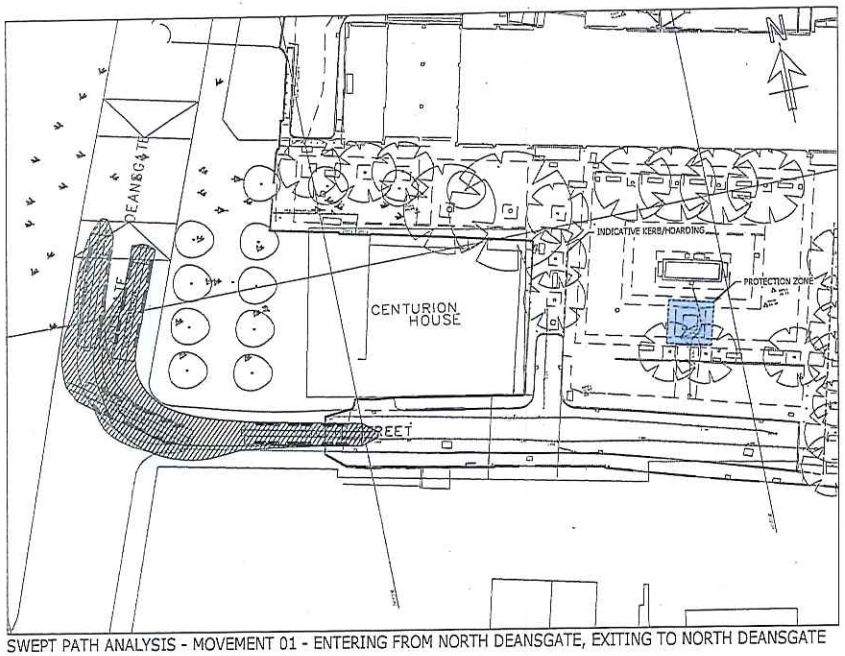
SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(MAX LEGAL ARTIC)

Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

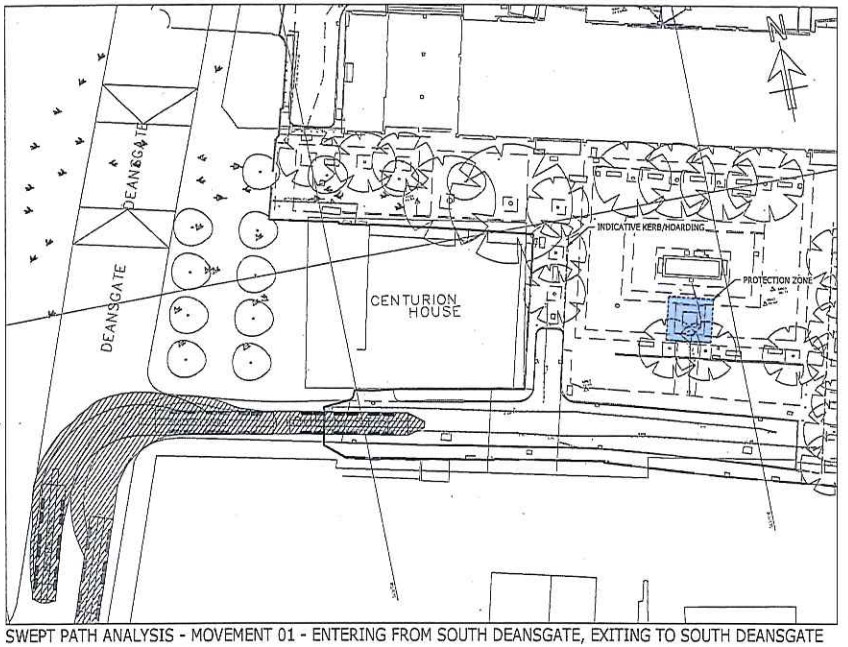
Drawing No: RAM-XX-00-SK-CR-00106

Rev: P01

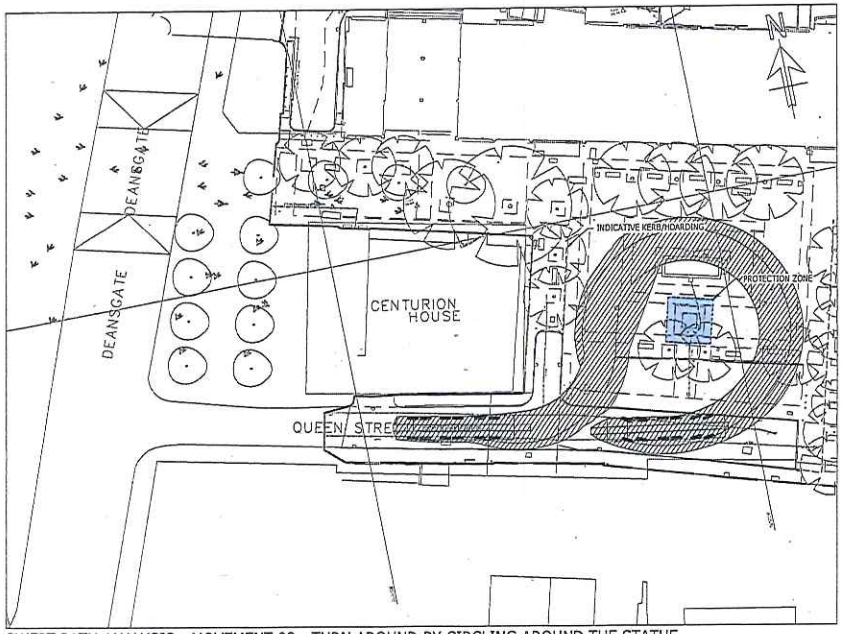
31/05/2017 12:51:03



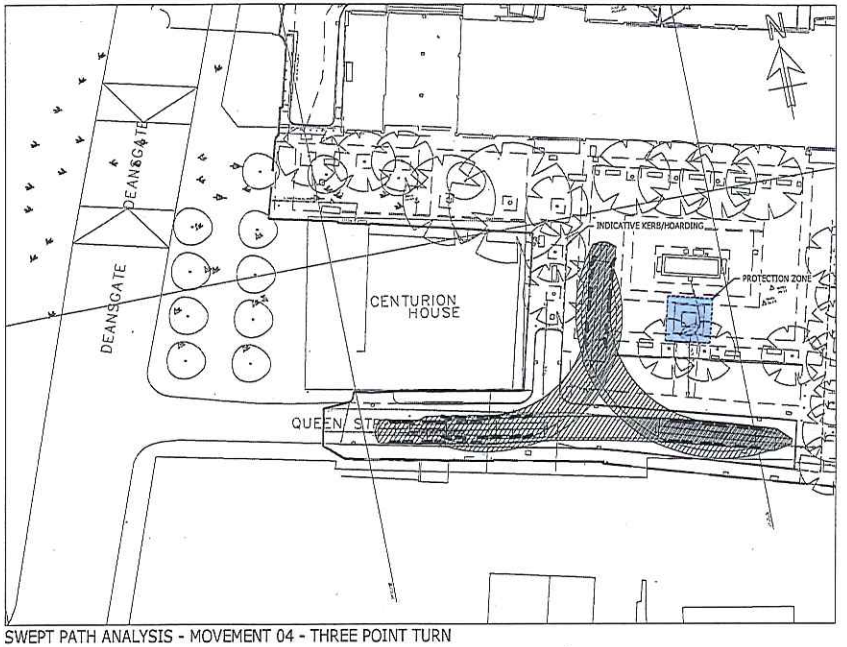
SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM NORTH DEANSGATE, EXITING TO NORTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 01 - ENTERING FROM SOUTH DEANSGATE, EXITING TO SOUTH DEANSGATE



SWEPT PATH ANALYSIS - MOVEMENT 03 - TURN AROUND BY CIRCLING AROUND THE STATUE



SWEPT PATH ANALYSIS - MOVEMENT 04 - THREE POINT TURN

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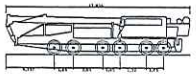

Liebherr LTM 1250-6.1 Mobile Crane	
Overall Length	17.835m
Overall Width	3.000m
Overall Body Height	4.000m
Min Body Ground Clearance	0.230m
Track Width	3.000m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.824m

Rev	Description	Date	By	Chk	App
P01	PRELIMINARY ISSUE	31/08 2017	BH	RO	

PRELIMINARY

BRAZENNOSE HOUSE

RAMBOLL
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SWEPT PATH ANALYSIS
SITE ENTRY AND EGRESS
(MOBILE CRANE)

Project No:	Scale (@A1):	Drawn:	Date:
162000899	NTS	BH	AUG 17

Drawing No: RAM-XX-00-SK-CR-00105 Rev: P01

3.4 - Storage of Plant & Materials

In order to maximise the available space, materials and plant will only be scheduled for delivery when required and on appropriately sized vehicles to suit the restricted access and working space. Materials will be either stored for a limited period on site, or where practicable, taken immediately to the point of use. No storage of materials will be permitted outside the site boundary. Large bulky items will have designated 'lay-down' areas near the point of use. In all cases, material deliveries will be scheduled to fit with the programme to avoid inundating the site. Also, refer to the site logistics and Traffic Management Plan for delivery procedures to site.

3.5 – Security Hoardings and Maintenance

At the site boundary, there will be a 2.4m high solid hoarding along with entrance/exit gates to the delivery/loading zones, these gates will be managed at all times by our dedicated logistics supervisors. The perimeter hoardings and gates will be inspected on a daily basis by our logistics supervisors and any maintenance required will be carried out the same day.

Sections of the hoarding along Mulberry Street will be located on concrete blocks to allow removal and replacement as and when required for plant to access the envelope of the building.

24-hour manned security will be in place throughout the duration of the project.

3.6 – Loading and unloading of plant and materials

A strict delivery procedure will be implemented to ensure that the roads surrounding the site are not overrun with delivery and site vehicles. Our banksmen will ensure that traffic flow is maintained on and around the site at all times. The loading and unloading of all plant, equipment and materials will be undertaken within the confines of the site area on temporary hard-core/concrete surfaces. No offloading will be permitted along or from the public highway.

Unloading arrangements will be planned well in advance of all deliveries and will be detailed in the orders provided to suppliers. Subcontractors unloading will also be planned and agreed prior to any deliveries, so that the necessary provisions can be implemented. 'Stacking' of deliveries will not be permitted along any of the roads in the vicinity of the site and any unplanned deliveries will not be accepted.

Vehicles will usually be expected to provide integrated loading/unloading facilities i.e. ramps for plant access or mechanical 'hi-ab' for materials. Marshall Construction (West Yorkshire) will have teleporter facilities on site which will be used to off-load agreed deliveries only when integrated loading/unloading methods are unavailable. We will also have use of a tower crane for lifting plant and materials directly from the delivery vehicle to the active work fronts.

It is proposed to illuminate the site with 4no flood lights fitted to all four sides of the tower crane mast.

Clearly marked traffic routes and offloading/storage zones will be provided, with all traffic being directed to these locations by our site management and the gateman. These site rules will be included within the subcontract orders and will be reviewed in detail at the pre-start meetings. Vehicle routes will be marked and controlled to ensure that vehicles offload in the designated areas, accessed via the prescribed routes. All vehicles entering and leaving the site will be travelling forwards. Vehicles will not reverse on to the carriageway.

We anticipate at the peak of the works there will be in the region of 8 to 10 managed deliveries per day these will be directed/banked in to the unloading zone.

All subcontractors and suppliers will be required to give 48 hours' notice of deliveries. The movement of materials on site will also be controlled by the road Marshall.

3.7 – External Envelope Materials

Pre-cast Concrete Panels

The external pre-cast concrete cladding contractor specialise in the design, manufacture and installation of architectural precast concrete products. Due to the bespoke nature of the product and the need to ensure client satisfaction, comprehensive systems and procedures are in place during all stages of design, manufacture, transport and installation to ensure high standards are achieved.

Once a mix and finish have been agreed, the aggregates and cement are carefully stored internally and batched to ensure consistent finishes to the panels. There are rigorous quality procedures adhered to during the manufacture process. The manufacturers quality management system is based upon the requirements of ISO 9001:2008 and their quality manual ensures compliance with this and also to comply with the relevant EN regulations of the CE Mark. Once products are complete they are loaded on to specially designed trailers to reduce the number of loads required and the use GPS tracking on delivery trailers to ensure "Just in Time" deliveries which assists in avoiding congestion on site. Whilst loads are maximised, there is no compromise of safety in any way.

Erection on site is carried with use of the tower crane, the panels are fixed by means of access from internal floor slabs which eliminates the need for scaffolding on site and reduces the number of personnel required as opposed to traditional methods of building. During the design and manufacture stage, fixings are designed and installed based on the panels size and composition. The risk of damage to panels during handling is minimised as they are installed directly from the trailer onto the building and not stored on site. On occasion, panels may need to rotated prior to installation and this is carried out utilised specialised lifting equipment and craneage. By its nature, the product does not require packaging and this

reduces waste on site. The contractor employs excellent site managers and erection teams and these, coupled with the quality procedures detailed above, ensure the maintenance of the appearance and quality of the products at all times.

Curtain Walling:

Our curtain walling facade fabricator has over 25 years' experience designing, fabricating and installing architecturally pleasing high quality glazing systems in a range of low, mid and high-rise buildings. They are the longest standing fabricator in the UK for the current specified curtain walling system delivering buildings that clients can be proud of.

The proposals for system section sizes, bracketry and fixings etc would be fully engineered by a structural engineer. Any other calculations/tests required would be undertaken before design commences. All materials would be designed in conjunction with the system house recommendations and tests and can be vetted and approved by the design department of the system house for further client comfort. When ordered, all materials would be fully checked under the system house ISO9001: 2008 quality management system. They would arrive at the production facility where they would be checked under another ISO9001: 2008 quality management system which would carry on throughout the full manufacturing process and beyond.

All materials would be pre-fabricated thus allowing reduced on-site wastage.

Deliveries would be fully programmed and scheduled with the main contractor to suit the site requirements and logistics. All packing of materials, deliveries, off-loading and site distribution would be in accordance with our risk assessments and method statements which would be fully approved by the main contractor's management team before commencement on site.

To assist with the installation, the use of MEWPS for labour access and mobile micro-cranes and glass lifters to assist in the lifting and positioning of heavier glass items. All operators would be fully trained on the use of the machines and all machines would be fully certified from the hiring company.

Installation of the glazing facade would be carried out by fully trained and competent installation teams fully supervised by fully trained contracts managers and directors.

All installed items are fully inspected by and signed off prior to hand over to the main contractor as complete. As with design, the in-house system offers an on-site service where they will also inspect areas of installation and provide report of compliance with the recommendations.

3.8 – Detail and Timing of Scaffolding

There is minimal scaffold on the project the majority of the scaffold with be leading edge and internal edge protection/handrails. The external precast panels frame will be erected from within the building footprint using pre-erected handrails and 'life-line restraints' along with platforms and podium steps (the provisional method statement from our specialist subcontractor is available if required) Glazing will be carried out from scissor lifts/access booms at ground level around the perimeter of the building.

3.9 – Wheel Washing

Measures will be put in place to ensure that all vehicles leaving the site will as far as practical have their wheels free from mud etc. a jet wash machine will be installed adjacent to the gate house to enable the wheels to be cleaned if required. The vehicles will be checked for debris before leaving the confines of the site boundaries.
A road sweeper will be engaged as and when required to clean the highway should the need arise during excavation works.
Site Roads to be regularly brushed and kept free from mud and dust.

4.0 – Environmental Considerations

All applicable environmental legislation will be identified in a register held on site, this to ensure that all documents are put in place in order to comply with legal requirements. As part of our ISO 14001 Environmental Management System all registers will be updated on a regular basis. This will be audited both internally and externally.

4.1 – Ecology Appraisal

The site is a city centre location. An Ecological Appraisal has been carried out by WSP dated October 2015 this was submitted within the supporting information to the Planning Application, a further copy can be provided if required - No significant ecological value found on the site.

The removal/retention of the existing trees within Lincoln Square will be covered under a separate Planning Application for the Public Realm works in and around Brazennose House.

4.2 - Control of Noise/Vibration

Noise and Vibration – A Noise and Vibration assessment on the proposed construction works has been produced by Ramboll below. Where possible the 'Best Practice Means' will be adopted throughout the construction works.

BRAZENNOSE HOUSE:
CMP NOISE & VIBRATION INPUT

Job **Brazennose House**
Memo no. **04 A**
Date **08/08/2017**
To **Marshall Construction**
From **Ramboll**

1. Introduction

The construction noise and vibration levels for the proposed redevelopment at Brazennose have been calculated. These predictions have been used to inform text and mitigation measures for the Construction Management Plan (CMP). Both the criteria, calculated levels and provisional text for the CMP have been outlined in this technical note.

2. Criteria / Threshold Values for Assessment

2.1 Noise

The construction noise thresholds are typically assessed in line with the '2-5dB change method' given in BS5228-1:2009+A1 2014. This assesses the construction noise against the existing noise climate. The existing ambient noise levels are typically 58-60dB L_{Aeq}. Table 1 is therefore derived from this method with less than a 5dB change being not significant, 5-10dB change being potentially significant and >10dB being significant.

Based on the offices having a nominal sound insulation performance of Rw 30dB as a minimum; ≤75dBA of construction noise at the office facades would result in an internal ambient noise level of <45dBA, which is considered suitable for an office-based environment as given in BS8233:2014.

Sound pressure level	Significance
<65dBA	Not significant
65-75dBA	Potentially significant
>75dBA	Significant

Table 1 **Magnitude of Impact against which construction noise assessed**

Date 08/08/2017

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United Kingdom

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Prepared by: Camilla Fletcher
Checked by: Phil Mudge
Approved by: Raf Orlowski

Ramboll UK Limited
Registered in England & Wales
Company No: 03659970
Registered office:
240 Blackfriars Road
London
SE1 8NW

2.2 Vibration

The vibration has been assessed in term of Peak Particle Velocity. Table 2 provides a semantic description of demolition and construction vibration impacts on human receptors based on BS5228-2.

PPV mm/s	Description	Magnitude of Impact
0.14	Vibration might be just perceptible in the most	Very Low
0.3	Vibration might be just perceptible in residential environments	Low
1.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents	Medium
10	Vibration is likely to be intolerable for any more than a very brief exposure to this level	High

Table 2 **Magnitude of Impact against which construction vibration assessed**

3. Noise sensitive receptor locations

The nearest noise sensitive receptors (office spaces) are shown in blue on Figure 1 below. The closest of these are at 10m distance. The site boundary is outlined in red.



Figure 1 **Site and receptor locations**

4. Assessment methodology

4.1 Noise

Construction activities will involve the use of a variety of working methods, for which an estimate of the expected noise levels over a representative period has been prepared, in accordance with industry best practice.

Noise levels from the construction works experienced by a receptor will vary over time as the type of construction activities change.

Construction noise predictions have been based on the methodology contained within BS5228:2009-1. This enables predictions to be made of the noise emissions from the construction activities for given distances from the site boundary. The noise predictions have been used to determine whether the construction phase works will result in significant effects at the surrounding noise sensitive receptors. The full calculations are given in Appendix 1.

The significance criteria outlined in section 2 have been used to assess the noise effect during the construction phase. This provides methods for deriving reasonable thresholds for construction related noise levels based upon pre-existing ambient noise levels at the noise sensitive receptors.

Where satisfactory noise levels cannot be achieved at the surrounding noise sensitive receptors, additional mitigation may be required.

4.2 Vibration

Piling is considered to be the activity likely to generate the highest levels of vibration. Data from the proposed piling equipment has been provided by the contractor. This has been used to predict levels of vibration at the nearest noise sensitive receptors.

5. Assumptions

The following table gives the plant items used for each activity and the percentage on-times (i.e. the duration that the plant will be operational onsite relative to the site working hours). This will be used to calculate the construction noise at the nearest noise sensitive receptors.

Activity		Plant	Source data ref (BS5228 -1)	Typical Noise level at 10m for one Plant item operating dB(A)	Percentage on time
Site Establishment	Site Establishment and Enabling Works	Mobile crane (80t)	C4.39	77	10
		Articulated Lorries/Fork lift trucks	D.7.96	77	30
		Lorry	C6.21	80	20
		Generator	C4.76	61	100
		Small excavator	C2.24	73	40
		Hammer	C1.19	69	50
		Nail gun	C4.95	73	50

Activity		Plant	Source data ref (BS5228 -1)	Typical Noise level at 10m for one Plant item operating dB(A)	Percentage on time
		Dump truck	C2.30	79	30
Site Preparation	Site Preparation	Mini hydraulic breaker	C.1.7	93	70
		Hydraulic munchers/breaker	C.1.5	72	40
		Six wheeler waggon (23t)	C.6.32	75	30
		Tracked excavator	C2.2	77	30
		Wheeled loader	C.2.26	79	50
		Dump truck	C2.30	79	50
		Lorry	C6.21	80	50
		Vibratory roller	C.2.39	74	10
		Rollers/compactors	C.2.39	74	50
		Road sweepers	C.4.90	76	20
Substructure Works	Piled foundations (CFA)	Crawler mounted rig	C3.21	79	80
		Tracked excavator (22t)	C.2.21	71	80
		Concrete mixer	C4.18	75	80
		Dump truck	C2.30	79	20
	R.C. concrete beams and bases	Tracked excavator	C2.2	77	40
		Dump truck	C2.30	79	50
		Concrete pump	C3.25	78	10
		Concrete mixer	C4.18	75	20
		Poker vibrator	C4.33	78	30
		Road sweepers	C.4.90	76	10
Superstructure Works	Frame, envelope and primary plant installation	Mobile telescopic crane	C4.46	67	5
		Tower crane	C4.49	77	100
		Lifting platform	C4.57	67	10
		Lorry	C6.21	80	20
		Tracked excavator	C2.2	77	30
		Generator	C4.76	61	100
		Concrete pump	C3.25	78	20
		Concrete mixer	C4.18	75	20
		Poker vibrator	C4.33	78	20
		Handheld Plant	C3.21	73	50
		Installing Scaffolding	D.7.1	80	5
		Compressor	C5.5	65	10

Activity		Plant	Source data ref (BS5228 -1)	Typical Noise level at 10m for one Plant item operating dB(A)	Percentage on time
		Road sweepers	C.4.90	76	5
Cladding	Windows and glazing, Brick Façade, Roof construction, External canopy installation, Major MEPH plant and riser installation, Lift installation	Mobile cranes/Tower cranes	C4.46	67	100
		Articulated Lorries/Fork lift trucks	D.7.96	77	75
		External scaffold	D.7.2	72	10
		Road sweepers	C.4.90	76	5
		MEWPs	C.4.57	67	50
Infrastructure Works	Site access roads, footways, car parks and secondary service installations	Dozer	C5.12	77	30
		Tracked excavator	C5.5	80	50
		Dismantling Scaffolding	D.7.1	80	5
		Articulated dump truck	C5.16	81	30
		Lorry	C6.21	80	20
		Vibratory roller	C5.20	75	40
		Asphalt paver + tipper lorry (18t)	C5.31	77	10
		Circular saw	C4.72	79	80
		Road sweepers	C.4.90	76	10

- No hoarding has been assumed as the nearest noise sensitive receptors will still have line of sight above a 2.4m high standard hoarding.
- The site works will be spread across the site. Therefore, activities to the north and south will experience lower levels of noise as the traverse distance is greater.

6. Results

6.1 Noise

The calculated noise levels during each site activity are given in Table 3.

Activity	Predicted noise level at the receptors to north and south / dB L_{Aeq}	Predicted noise level at the receptors to east and west / dB L_{Aeq}
Site establishment	71	77

Activity	Predicted noise level at the receptors to north and south / dB L_{Aeq}	Predicted noise level at the receptors to east and west / dB L_{Aeq}
Site preparation	84	89
Substructure works (CFA piling)	73	78
Substructure works (RC beams etc.)	72	77
Superstructure works	72	77
Cladding	69	74
Infrastructure	74	79

Table 3 **Calculated construction noise levels for each activity**

For receptors to the north and south the threshold criteria of 75dB is only exceeded during site preparation. Therefore, the predicted impact at the northern and southern receptors is considered to be **potentially significant**.

For the eastern and western office blocks the calculated impact is considered to be **significant**, with the exception of the cladding stage.

6.2 Vibration

Measurements from the proposed piling equipment have been taken at previous sites (data provided by the contractor). These have been used to extrapolate the likely PPV at 10m i.e. the nearest sensitive receptors as shown in red in Table 4. This looks realistic and compares well to the historic data provided in BS8233-2: 2009+A1:2014; however it should be noted that local ground conditions may mean different levels of vibration are experienced onsite.

Distance (m)	Soilmec SR75 (PPV mm/s)	Soilmec R625 CFA mode (PPV mm/s)
1	2.98	2.41
2	2.64	2.29
3	1.91	1.02
4	1.85	1.65
5	1.64	1.27
10	1.02	0.94

Table 4 **Extrapolated peak particle velocity of proposed piling rigs**

The predicted level of vibration falls into the medium magnitude of impact category meaning that it is likely that vibration of this level will be noticeable, but can be tolerated if prior warning and explanation has been given to residents.

7. Construction Management Plan

Marshall Construction is required to produce a Construction Management Plan (CMP). The following guidance and control measures are recommended for inclusion in the CMP so as to limit noise and vibration levels; and minimise risk of complaint from nearby noise and vibration sensitive receptors.

7.1 Best Practice Means

Best Practicable Means (BPM) as defined by the Control of Pollution Act 1974, would be implemented as part of the working methodology. A range of good site practices would be adopted by the contractor in order to mitigate construction phase noise and vibration. It is assumed that the contractor would follow best practicable means to reduce the noise and vibration impact on the local community, and would include:

i. fixed and semi-fixed ancillary plant such as generators, compressors etc. which could be located away from receptors to be positioned so as to cause minimum noise disturbance. If necessary, acoustic barriers or enclosures could be provided for specific items of fixed plant;

ii. use of site boundary acoustic barriers/hoarding to screen neighbouring receptors;

iii. all plant used on site would comply with the EC Directive on Noise Emissions for Outdoor Equipment (2000/14/EC), where applicable;

iv. operation of plant in accordance with the manufacturer's instructions;

v. selection of inherently quiet plant where appropriate. All major compressors to be 'sound reduced' models fitted with properly lined and sealed acoustic covers which are kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools to be fitted with mufflers or silencers of the type recommended by the manufacturers;

vi. all plant used on site would be regularly maintained, paying particular attention to the integrity of silencers and acoustic enclosures;

vii. machines in intermittent use to be shut down in the intervening periods between work or throttled down to a minimum;

viii. drop heights of materials from lorries and other plant would be kept to a minimum;

ix. adherence to the codes of practice for construction working and piling given in BS 5228:2009+A1:2014 and the guidance given therein for minimising noise and vibration emissions from the site;

x. provision of rest periods during any prolonged noisy activities;

xi. prohibition of the use of stereos and radios on site;

xii. prescribed hours of work would be agreed with Manchester City Council (MCC). It is envisaged that, in general 08:00-19:00 Monday to Friday, 08:00-13:00 on Saturdays, with no working on Sundays or bank holidays would be the hours of work. In the event

of work being required outside of these hours, MCC would be notified prior to these works taking place, wherever possible; and

xiii. keeping local residents informed and provision of a contact name and number for any queries or complaints.

7.2 Control of noise

Construction noise monitoring can be implemented if required. The precise nature of this monitoring would need to be agreed with the contractor, local authority and client.

All verification measurements must be taken in dry weather with wind speeds of <5m/s.

If a trigger event is observed, the Contractor's Environmental Representative will discuss the event with the site manager and identify the associated on-site activity as soon as possible. The Contractor's Environmental Representative will then discuss the noisy activity with the Site Manager and wider contractor team to determine whether alternative (quieter) plant or methods may be used or if alternative programming will be adopted to address the issue.

Where escalation occurs it may be necessary as a result of the resulting discussion with the stakeholders to revise the thresholds; this would be done by agreement with the Contractor's Environmental Representative and the local authority.

7.3 Control of vibration

CFA piling will be adopted across the site and local offices residents informed of periods when vibration levels are expected to be moderate (during piling).

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Appendix 1: Construction noise calculations

Site establishment

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result L_p	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Mobile crane (80t)	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	10	0.01	56.03	
Articulated Lorries/Fork lift trucks	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	30	0.02	60.80	
lorry	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	20	0.02	62.04	
Generator	89	10	28.0	0	0.0	50	28.0	28.0	61.0	100	10	10.00	0.08	100	0.08	60.03	
Small excavator	101	10	28.0	0	0.0	50	28.0	28.0	73.0	100	10	10.00	0.08	40	0.03	58.05	
Hammer	97	10	28.0	0	0.0	50	28.0	28.0	69.0	100	10	10.00	0.08	50	0.04	55.02	
Nail gun	101	10	28.0	0	0.0	50	28.0	28.0	73.0	100	10	10.00	0.08	50	0.04	59.02	
Dump truck	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	30	0.02	62.80	
															Total	68.4	71.4

Site preparation

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result L_p	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Mini hydraulic breaker	121	10	28.0	0	0.0	50	28.0	28.0	93.0	100	10	10.00	0.08	70	0.06	80.48	
Hydraulic munchers/breaker	100	10	28.0	0	0.0	50	28.0	28.0	72.0	100	10	10.00	0.08	40	0.03	57.05	
Six wheeler waggon (23t)	103	10	28.0	0	0.0	50	28.0	28.0	75.0	100	10	10.00	0.08	30	0.02	58.80	
Tracked excavator	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	30	0.02	60.80	
Wheeled loader	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	50	0.04	65.02	
Dump truck	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	50	0.04	65.02	
Lorry	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	50	0.04	66.02	
Vibratory roller	102	10	28.0	0	0.0	50	28.0	28.0	74.0	100	10	10.00	0.08	10	0.01	53.03	
Rollers/compactors	102	10	28.0	0	0.0	50	28.0	28.0	74.0	100	10	10.00	0.08	50	0.04	60.02	
Road sweepers	104	10	28.0	0	0.0	50	28.0	28.0	76.0	100	10	10.00	0.08	20	0.02	58.04	
															Total	80.9	83.9

Substructure works (CFA piling)

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result L_p	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Crawler mounted rig	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	80	0.06	67.06	
Tracked excavator (22t)	99	10	28.0	0	0.0	50	28.0	28.0	71.0	100	10	10.00	0.08	80	0.06	59.06	
Concrete mixer	103	10	28.0	0	0.0	50	28.0	28.0	75.0	100	10	10.00	0.08	80	0.06	63.06	
Dump truck	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	20	0.02	61.04	
															Total	69.6	72.6

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Substructure works (RC beams etc)

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result Lp	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Tracked excavator	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	40	0.03	62.05	
Dump truck	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	50	0.04	65.02	
Concrete pump	106	10	28.0	0	0.0	50	28.0	28.0	78.0	100	10	10.00	0.08	10	0.01	57.03	
Concrete mixer	103	10	28.0	0	0.0	50	28.0	28.0	75.0	100	10	10.00	0.08	20	0.02	57.04	
Poker vibrator	106	10	28.0	0	0.0	50	28.0	28.0	78.0	100	10	10.00	0.08	30	0.02	61.80	
Road sweepers	104	10	28.0	0	0.0	50	28.0	28.0	76.0	100	10	10.00	0.08	10	0.01	55.03	
															Total	68.8	71.8

Superstructure works

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result Lp	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Mobile telescopic crane	95	10	28.0	0	0.0	50	28.0	28.0	67.0	100	10	10.00	0.08	5	0.00	43.02	
Tower crane	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	100	0.08	66.03	
Lifting platform	95	10	28.0	0	0.0	50	28.0	28.0	67.0	100	10	10.00	0.08	10	0.01	46.03	
Lorry	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	20	0.02	62.04	
Tracked excavator	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	30	0.02	60.80	
Generator	89	10	28.0	0	0.0	50	28.0	28.0	61.0	100	10	10.00	0.08	100	0.08	50.03	
Concrete pump	106	10	28.0	0	0.0	50	28.0	28.0	78.0	100	10	10.00	0.08	20	0.02	60.04	
Concrete mixer	103	10	28.0	0	0.0	50	28.0	28.0	75.0	100	10	10.00	0.08	20	0.02	57.04	
Poker vibrator	106	10	28.0	0	0.0	50	28.0	28.0	78.0	100	10	10.00	0.08	20	0.02	60.04	
Handheld Plant	101	10	28.0	0	0.0	50	28.0	28.0	73.0	100	10	10.00	0.08	50	0.04	59.02	
Installing Staffolding	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	5	0.00	56.02	
Compressor	93	10	28.0	0	0.0	50	28.0	28.0	65.0	100	10	10.00	0.08	10	0.01	44.03	
Road sweepers	104	10	28.0	0	0.0	50	28.0	28.0	76.0	100	10	10.00	0.08	5	0.00	52.02	
0	0	10	28.0	0	0.0	50	28.0	28.0	-28.0	100	10	10.00	0.08		#VALUE!	0.00	
															Total	68.8	71.8

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Cladding

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result Lp	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Mobile cranes/Tower cranes	95	10	28.0	0	0.0	50	28.0	28.0	67.0	100	10	10.00	0.08	100	0.08	56.03	
Articulated Lorries/Fork lift trucks	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	75	0.06	64.78	
External scaffold	100	10	28.0	0	0.0	50	28.0	28.0	72.0	100	10	10.00	0.08	10	0.01	51.03	
Road sweepers	104	10	28.0	0	0.0	50	28.0	28.0	76.0	100	10	10.00	0.08	5	0.00	52.02	
MEWPs	95	10	28.0	0	0.0	50	28.0	28.0	67.0	100	10	10.00	0.08	50	0.04	53.02	
															Total	65.9	68.9

Infrastructure

Plant Type	Lw dB(A)	Dist. (m)	Dist. Attn. hard Kh	Barrier Attn	Dist. Attn. soft Ks	% soft ground	Grnd. Attn.	Total Attn.	Result Lp	trav'se dist.	Min. dist. dmin	Dist. Ratio ltr/dmin	Corrn Factor F	Act'vty Dur. Tt	Corr Ontime tc	Noise Level $L_{Aeq,1h}$	Façade $L_{Aeq,1h}$
Dozer	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	30	0.02	60.80	
Tracked excavator	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	50	0.04	66.02	
Dismantling Scaffolding	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	5	0.00	56.02	
Articulated dump truck	109	10	28.0	0	0.0	50	28.0	28.0	81.0	100	10	10.00	0.08	30	0.02	64.80	
Lorry	108	10	28.0	0	0.0	50	28.0	28.0	80.0	100	10	10.00	0.08	20	0.02	62.04	
Vibratory roller	103	10	28.0	0	0.0	50	28.0	28.0	75.0	100	10	10.00	0.08	40	0.03	60.05	
Asphalt paver + tipper lorry (18t)	105	10	28.0	0	0.0	50	28.0	28.0	77.0	100	10	10.00	0.08	10	0.01	56.03	
Circular saw	107	10	28.0	0	0.0	50	28.0	28.0	79.0	100	10	10.00	0.08	80	0.06	67.06	
Road sweepers	104	10	28.0	0	0.0	50	28.0	28.0	76.0	100	10	10.00	0.08	10	0.01	55.03	
															Total	70.6	73.6

4.3 - Community Consultation Strategy

General public:
Brief details of the scheme will be contained within an A4 flyer that will be available to the general public at locations on the hoardings around the site, this will give details of the scheme being undertaken and project timescales.

Surrounding Businesses:
We have made initial contact with the businesses adjacent the site and a letter has been issued advising of the forthcoming development (letter is appended to this CEMP) a separate letter will be issued showing the site logistics plan once agreed with Manchester City Council this will also include a list of contact names for the project including levels of authority, mobile phone numbers etc. in case of any grievances about noise/vibration or for general engagement for discussions about the project. Prior to commencement on site we will arrange to make a further visit to each individual business and inform them of the scope of works to the development, we will highlight the overall construction period, the site working hours (as previously noted) along with the periods where the noise sensitive works will take place, i.e. piling, groundworks etc. We will advise the measures we are taking on site to reduce as much as possible the noise levels anticipated, this by means of acoustic barriers fixed locally to the noise related activities, along with noise reducing power tools etc.
Details will also be given to the anticipated noise and vibration activities that will be undertaken, advanced notice of any known high level noise or vibrating activity will be shared with the surrounding businesses in advance of that particular activity.

We will also issue on a regular basis a newsletter containing a progress update on the current position on site along with details of any forthcoming works that may have an impact on the surrounding businesses. We will again include contact details of our senior site manager for any queries or concerns.

4.4 - Site Waste Management Plan

As main contractor for the works Marshall Construction will also be principal contractor for the Site Waste Management Plan. Construction site impacts are covered under the monitoring, sorting and recycling of site construction waste, as stated below: -

- Monitoring and reporting energy from site activities
- Monitoring and reporting on water consumption on site
- Monitoring, sorting and recycling construction waste from site
- Adopting best practice policies for air (dust) pollution

The aim of the Site Waste Management document is for the Principal Contractor to provide information, so that they: -

- Have information on the decisions taken by the design team and client during the design phase which relate to Waste Management.
- Can provide an updated Site Waste Management Plan on behalf of the client before work commences on site.
- Can develop the Waste Management Plan, which will be a working document especially in respect of: -
  - Recording waste removed from site.
  - Regularly review the plan.
  - Record the types of waste produced and whether they have been reused, recycled, or otherwise disposed of, and the means of that disposal.
  - Can complete and review the plan at the completion of the works as required.

As part of our ISO 14001 accreditation we carry out a SWMP irrespective if the regulations apply.

Waste Management:

Waste generated during the construction phase is to be cleared on a daily basis. Each floor plate will have a designated waste area that will see bins located within it that can be emptied at the end of each shift. Waste removal may need to occur several times a day during high waste activities, this will be carried out via the hoists and as such general operatives will be employed to ensure this will occur. The waste will enter in to a designated skip zone.

Site Waste Management will be controlled by the use of separate skips for the differing types of waste generated, these being:

- Metal
- Timber
- Hardcore
- Gypsum
- General Waste

All carriers of waste will hold a valid waste transfer licence and provide certification to the main contractor for all elements of the process. Detailed below is a table depicting the envisaged construction waste generated:

Material	Disposal to	Recycled/re-use	Recycled by	To land fill
Masonry	Hardcore skip/wagon	Recycle	Off-site contractor	
Broken-out concrete	Hardcore skip/wagon	Recycle	Off-site contractor	
Timber battens	Timber skip	Recycle	Off-site contractor	
Suspended ceiling grid	Metal skip	Recycle	Off-site contractor	
Metal curtain wall system including metal panels	Metal skip	Recycle	Off-site contractor	
Glass within the curtain wall system	Glass skip	Recycle	Off-site contractor	
Plantroom metal roof and wall cladding	Metal skip	Recycle	Off-site contractor	
Steel frame and metal cladding	Metal skip	Recycle	Off-site contractor	
Plasterboard	Special skip	Recycle	Off-site contractor	
General waste	General waste skip	Part Recycle	Off-site contractor	Part Landfill
Flat roof materials	General waste skip	Part Recycle	Off-site contractor	Part Landfill
PFS Steel frame	Metal skip/wagon	Recycled	Off-site contractor	

- Hazardous Waste - Separate skips/containers will be provided for any hazardous waste such as paint tins, mastic etc.

All carriers of waste will hold a valid waste transfer licence and provide certification to the main contractor for all elements of the process.

The New Construction Works

Masonry

The layout of internal blockwork partitions has been illustrated on the floor layout plans. The intention is to show an economical layout of blockwork between returns and openings which reduces the need for cutting. The contractor is also expected to use their experience to minimise blockwork waste.

Partitions & Plasterboard

The plasterboard dry lining lightweight partitioning: it is assumed the main contractor will set out the laying of sheets to minimise waste.

Curtain Walling/Windows/doors

Curtain Walling, Windows and internal doors will all be factory made and should be subject to factory quality control and waste management procedures.

Surface Finishes

Waste from sheet flooring and wall finishes will be reduced by limiting the number of colours used in the project.

Furniture / equipment

Equipment will be grouped where possible to minimise unnecessary service runs.

Mechanical and Electrical Installations

Pipework, thermal insulation, ductwork, and electrical containment will be ordered in section lengths to suit the installations, in order to minimise off-cut waste. Any metallic off-cut waste will be recycled where practical to do so. Production of waste material will be further minimised by off-site fabrication of ductwork, flues and pipework headers.

Recycled Materials

Where possible, practicable and without compromise to the specification, encourage the use of recycled materials.

Timber from Sustainable Sources

All timber will be procured from sustainably managed sources and in line with Marshall Construction Timber Policy
We aim to use timber procured from sustainable sources on our construction sites.
Our policy forms an important part of our environmental management system
and is one of our environmental targets that have been set so all staff need to be
aware and familiar with this policy.

In order for purchased timber to be classified as sustainable timber it has to have
a chain of custody certification number. This means that the timber has been
tracked through the production process from the forest to the consumer,
including all successive stages of processing, transformation, manufacturing and
distribution.

All timber will be purchased in line with either the FSC or PEFC accredited schemes that certify the timber

Other timber may be used so long as documented evidence can be provided to
prove it is from a sustainable/legal source

Waste Licences

Waste permits, exemptions and licences will be monitored and verified throughout the development once the organisations have been identified.

4.5 - Air Quality Plan/Control of Dust

Dust emission mitigation measures will be implemented on site, a 'Dust Management Plan' as detailed below will be applied and managed on site, once good practice dust control measures are implemented on site, air quality issues are not considered to be a constraint to the planning consent.

Dust Management Plan:

The site will be kept clean and tidy at all times and will accord with any statutory requirements. Dust suppression measures will be employed as and when required which will include high pressure hoses discharging a fine water spray.

Vehicle wheels will be checked for cleanliness prior to exiting the site with wheel cleaning facilities deployed at the exit to ensure no debris migrates on to the public highway.
Vehicles delivering and removing materials of a dusty nature will be sheeted over.

Site layout will be planned, where possible, with dust minimisation a main consideration.
Site Roads to be regularly brushed and kept free from dust and mud.

Issue	Control Measure
Communications	• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site • Display the name and contact details of person(s) accountable for air quality ad dust issues on the site boundary. This may be the environmental manager / engineer or the site manager • Display the head or regional office contact information
Site management	• Record all dust and air quality complaints, identify causes(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • Make the complaints log available to the LA upon request • Record any exceptional incidents that cause dust and / or air emissions, either on or offsite, and the action taken to resolve the situation in the log book

Monitoring	• Undertake daily on-site and off-site inspection to monitor dust, record inspection results, and make the log available to the LA upon request • Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request • Increase the frequency of site inspections, when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions
Site Preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Avoid site runoff of water or mud • Damp-down as required • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used • Cover or fence stockpiles to prevent wind whipping
Operating vehicle / machinery and Sustainable travel	• Ensure all vehicles switch off engines when stationary – no idling vehicles • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable • Impose and signpost a maximum-speed-limit of 5mph on surfaced and 5mph on unsurfaced haul roads and work areas • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate • Use enclosed chutes and conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate • Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods

Waste management	• No bonfires and burning of waste materials will be permitted
Construction	• Avoid scabbling (roughening of concrete surfaces) if possible • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos
Track-out	• Use water-assisted dust sweeper on access and local roads, if required • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving site are covered to prevent escape of materials • Inspect on-site access routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable • Implement a wheel washing system

4.6 - Human Impact Management Plan

We envisage that during the works to Brazennose House there will be limited disruption to the pedestrians. The site hoardings and signage will encourage pedestrians to use the required routes around the building, these routes will be made clear by signage along with the continually manned gatehouse on the rear access road and from a certain point in time onto Queen Street.

There will be a 2.4m high solid hoarding positioned at the back of the existing footpath to the rear of the building and around the compound as depicted on the site logistics plan. This logistics plan also demonstrates the proposed site management of delivery vehicles along with associated pedestrian walkways.

Footpaths will remain in use all around the building as will foot access to adjacent properties. Clear Vehicular access will be maintained wherever possible and the traffic scheme proposed provides flexibility to try to achieve this. However, there may be instances where due to the tight nature of the rear access vehicles may be temporarily held, again this will be minimised and prevented where possible. Regular liaison with the residents/ businesses will assist in mitigating traffic issues

Any deliveries entering or leaving the site will be controlled by our gatemen and marshalled by banksmen where necessary.

Pedestrians may be held back temporarily for safety reasons using retractable barriers whilst deliveries access/leave the site. This will be onto the Queen Street entrance and will only be for a matter of minutes, as full access routes will be restored as soon as the vehicle has safely moved onto site or the highway.

All subcontractors and suppliers will be required to give 48 hours' notice of deliveries, due to the rear access road constraints, no articulated lorries will be allowed on site unless prior agreement with our site management, the sizes will be checked and assessed on a daily basis to suit the operations and the progress made.

Access to the building will generally be from within the confines of the site hoarding however there may be instances where temporary access is required and the hoarding line moved out for a short period and returned as soon as possible. This will be in full agreement with Manchester City Council Highways Department who will be consulted throughout the development.

Continual dialogue and newsletters etc. will be issued to the surrounding premises and businesses so that they are aware of the proposals throughout the scheme.

As part of our site management structure we will have a resident Liaison Officer who will be in regular contact with the surround businesses and premises keeping them informed of current progress on site along with details of any forthcoming works that may have an impact on the surrounding businesses.

Continual liaison with St Mary's Church 'The 'Hidden Gem' will be carried out and respectful consideration of the daily activities will be of paramount importance to the success of the development and site operations. At the site boundary, there will be a 2.4m high solid hoarding along with entrance/exit gates to the loading zones, these gates will be managed at all times by our dedicated logistics supervisors.

A strict delivery procedure will be implemented to ensure that the roads surrounding the site are not overrun with delivery and site vehicles. We will ensure that all deliveries to site are made after 8am and no later than 5pm (wherever possible we will arrange for deliveries to take place between 9am and 4pm) so as not to disturb the surround businesses, these stipulations will be included with the subcontractor/supplier orders, any deviation from these times will result in the delivery being turned away. No offloading will be permitted along or from the public highway. Pedestrian access will be maintained around the site at all times.

Roads around the site will be regularly brushed (and daily when conditions necessitate) and will be kept free from dust and mud.

Clearly marked traffic routes and offloading/storage zones will be provided on-site, with all traffic being directed to these locations by our site management and the gateman. Vehicle routes will be marked and controlled to ensure that vehicles offload in the designated areas, accessed via the prescribed routes. All vehicles entering and leaving the site will be travelling forwards. Vehicles will not reverse on to the carriageway.

We anticipate at the peak of the works there will generally be 8 to 10 managed deliveries per day these will be directed/banked up to the unloading zone.

All subcontractors and suppliers will be required to give 48 hours' notice of deliveries. The movement of materials on site will also be controlled by the road Marshall.

Site accommodation – due to the confines of the site a minimal number of cabins will be positioned on the site, these will predominantly be for site operative's welfare i.e. toilets, canteen drying room, the main office accommodation will be in rented premises no more than 200 meters from the site, exact location is still to be confirmed however that are multiple options available in the close vicinity of the site.

4.7 - Assessment of Envisaged Risks

Prior to commencement on site a Construction Phase Health and Safety Plan will be produced by the Principle Contractor (MCWY), the contents of this will be:

- Responsibilities
- Standards
- Continuing design development
- Safe building method
- Review of the Health and Safety plan (Pre-construction)
- Development and implementation procedure
- Information, co-ordination and co-operation
- Welfare
- Training
- Contractors Site Rules
- Monitoring
- Health and Safety File

Risk assessments and method statements for every element of the works will be produced by the individual contractor carrying out the task, these will be assessed and commented on by a qualified member of the MCWY team, controls will be implemented on each risk assessment to reduce the risks to as low as reasonably practical. The contractor carrying out the individual tasks will be responsible for carrying out the works in

accordance with their risk assessments and method statements. Any deviation or unforeseen condition from the agreed risk assessment and method statement will result in the immediate suspension of the works, the contractor will then be requested to revert back to the agreed method statement or re-submit a new proposal for assessment by MCWY.

An assessment of the envisaged Trades and Associated Risk Levels has been assembled on the schedule below:

Brazennose House Manchetser

Assessment of Trades and Associated Risk Levels

Jul-17

	Level or risk			Type of Contractor	Risk Assessment Produced by	Risk Assessment reviewed by	Responsible for actions & implementation of the RAMS	Comments
Trade	High	Medium	Low					
Site Set Up - cabins				Own labour	MCWY	MCWY	MCWY	
Perimeter Hoardings & Gates				Own labour	MCWY	MCWY	MCWY	
Temporary Electrics/Plumbing				Domestic S/C	S/C	MCWY	S/C	
Initial setting out				Own Engineering team	MCWY	MCWY	MCWY	
Piling				Specialist	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Excavation				Domestic S/C	S/C	MCWY	S/C	
Groundworks/drainage/foundations				Domestic S/C	S/C	MCWY	S/C	
Tower crane erection/dismantle				Specialist	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Steel Erection				Specialist	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Pre-cast Panels and stairs				Specialist	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Erection/dismantle of passenger/goods hoist				Plant provider	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Core drilling of service holes				Domestic S/C	S/C	MCWY	S/C	
Mechanical installation				Specialist	Specialist	MCWY	Specialist	Any high level access will be gained by mechanical lifters
Electrical installation				Specialist	Specialist	MCWY	Specialist	Any high level access will be gained by mechanical lifters
Plumbing installation				Domestic S/C	S/C	MCWY	S/C	
Stud partitions/plasterboard tape and joint				Domestic S/C	S/C	MCWY	S/C	Any high level access will be gained by mechanical lifters
Lift installations				Specialist	Specialist	MCWY	Specialist	Although categorised as high risk, controls will be implemented to reduce the risks as low as practicably practical
Fire protection/fire stopping				Domestic S/C	S/C	MCWY	S/C	Any high level access will be gained by mechanical lifters
Suspneded Ceilings				Domestic S/C	S/C	MCWY	S/C	
Riased Access Floors				Domestic S/C	S/C	MCWY	S/C	
Decoration				Domestic S/C	S/C	MCWY	S/C	
Joinery Works				Domestic S/C	S/C	MCWY	S/C	
Ceramic tiling				Domestic S/C	S/C	MCWY	S/C	
Floor finishes				Domestic S/C	S/C	MCWY	S/C	
Fixture & Fittings				Domestic S/C	S/C	MCWY	S/C	
New incoming mains electricity				Specialist	Specialist	MCWY	Specialist	
New incoming mains water				Specialist	Specialist	MCWY	Specialist	
New incoming mains gas				Specialist	Specialist	MCWY	Specialist	
New incoming telecoms				Specialist	Specialist	MCWY	Specialist	

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Venoo
14 Brazennose Street
Manchester M2 6LW

Our Ref: RH/SJC
6th September 2017

MARSHALL

CONSTRUCTION GROUP

Dear Sirs

RE – Redevelopment of Brazennose House - Manchester

We are writing to introduce ourselves as the Principle Contractor for the **new** construction of Brazennose House, Brazennose Street, Manchester. The new building will comprise of a 7-storey office complete with basement car park with retail units at ground floor. The structure will include a steel frame with composite floors around a concrete core, the building will be sat on new piled foundations with a façade mixture of precast feature panels and glazing. The new scheme will comprise of landlord areas around the main circulation core with the main office layouts complete with primary mechanical and electrical services along with suspended ceilings and raised access floors, the ground floor retail units will be shell only. The scheme also includes for the redevelopment of the external public realm areas in and around Lincoln Square with new paving and landscaping.

Strip out and demolition of the existing building is due to commence late 2017, this will be carried out by a specialist demolition contractor who will make contact nearer the time with their timings and site logistics details. The demolition works will be overseen by the Project Manager for the development, Arcadis UK, contact at Arcadis UK is Mr Marlon Chetty 0161 245 0000.

The new construction works are due to commence on site on November 2018 and are due for completion October 2020. We will strive to keep the impact of construction works to a minimum and will keep our neighbours informed during the project of any construction works we feel will have any effect to the adjacent businesses.

Initial works will include concrete piled foundations to the building perimeter and column bases followed by excavation and subsequent concreting of the foundations and retaining walls. Structural steelworks are currently envisaged to commence from June 2019. During the piling works low magnitude ground vibration will be experienced, this is normal practice for this type of work, the vibration will however be monitored during the course of the installation by a specialist consultant to ensure the vibration levels are not exceeded and fall within the British Standard Code of Practice BS 5228.

Directors:
C. R. Marshall - Chairman - M.C.I.O.B.
S. C. N. Marshall - Managing Director - B.Sc(Hons)
J. R. Marshall - B.Sc(Hons), M.R.I.C.S.
C.M. Ker
J. Booth

A member of the Marshall Holdings Group of Companies

Registered Office:
Marshall House, Huddersfield Road, Elland, West Yorkshire, England.
Company Reg. No. 1424340 England

Once the site logistics plan indicating site hoarding lines, traffic routes to and from site etc. have been agreed with Manchester City Council, a copy will be issued under separate cover.

The construction of the new development will be registered with the Considerate Constructors Scheme which is a scheme set up to improve the image of construction by working to a code of practice. This will be advertised on the site hoardings and a Site Managers name and contact number will be displayed. Should any issues arise during construction of the project this person can be contacted directly therefore allowing any issues to be addressed quickly. Also as part of our site management structure we will have a resident Liaison Officer who will be in regular contact with the surrounding businesses keeping them informed of current progress on site along with details of any forthcoming works that may have an impact. We will also issue on a regular basis a newsletter containing a progress update on the current position on site along with details of any forthcoming works that may impact on our neighbours.

Additionally, below are the contact names and numbers should any liaison be required:

Project Manager – Arcadis – Mr Marlon Chetty 0161 245 0000 (Demolition Works)
Principle contractor – Marshall Construction – Mr Richard Haley 01422 375533 (New Construction Works)

We hope that this letter provides an initial insight into the project however should any queries arise please do not hesitate to contact us.

Yours faithfully
Marshall Construction (West Yorkshire) Ltd

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Richard Haley – Senior Planner

Brazennose House Manchester - Adjacent Businesses

Business	Address
Workman FM	Mr Peter Houghton. The Observatory, Chapel Walks, Manchester. M2 1HL
Toni & Guy	Ms D Tate. Queens House, Queen St, Manchester. M2 5HT
E3Creative	Jess Meecham. 4th Floor, Queens House, Queen St, Manchester. M2 5HT
Firecask	Alex Moss. 6th Floor, Queens House, Queen St, Manchester. M2 5HT
David Rozman	Mr David Rozman. Alexandra Bldg, 28 Queen St, Manchester M2 5HX
Same-Day-Doctor	Amanda Okunola. 1st Floor Alexandra Bldg, 28 Queen St, Manchester M2 5HX
ISIS Insurance	Eddie Johnson. 2nd Floor Alexandra Bldg, 28 Queen St, Manchester M2 5HX
Arnold Stansby	3rd Floor Alexandra Bldg, 28 Queen St, Manchester M2 5HX
Manchester Building Society	Queens Court, 24 Queen St, Manchester M2 5HX
Sellick Partnership	Karen Hogan. 1st floor Queens Court, 24 Queen St, Manchester M2 5HX
Rising Sun Pub	Mr Gary Smith 22 Queen St, Manchester M2 5HX
	Ms Helen Willcock. Cotton House, 12-18 Queen Street, Manchester M2 5HS
	The Building Manager. St Johns House 2-10 Queen Street, Manchester M2 5JB
	Ms Helen Willcock. Centurion House, Queen Street, Manchester M2 5HS
	Monsignor Anthony Kay. St Mary's Presbytery, 17 Mulberry St, Manchester M2 6LN
Wings Restaurant	Heron House, 1 Lincoln Square, Manchester M2 5LN
Venoo	14 Brazennose St, Manchester M2 6LW