

22nd February 2023

F.A.O. Barry Jefcoate
Marshall CDP Ltd
c/o Booth King Partnership
Tollgate House,
9C Bridge Street,
Ramsbottom.
BL0 9AB

Dear Sirs

RE: NXBID 406 – PROPOSED GEOENVIRONMENTAL SCOPE OF WORKS – LAND AT ONE CITY ROAD, MANCHESTER CITY CENTRE

Development proposals

It is understood that the investigation works are required to inform the development of 2no multi-storey office building with associated access roads, parking and limited landscaped areas.

Geology and Ground Conditions

Geology

A phase 1 desk study has been developed by NX Consulting and established that BGS maps shows the site to be underlain by up to 3m of made ground on to Glacial Sheet deposits (sand/sand and gravel) over Sherwood Sandstone Formation of Permian-Triassic Age.

Weathered sandstone bedrock is likely to be present from depths circa 7.00mbgl to 9.50mbgl.

We consider that our scope of works should provide sufficient information to allow the abnormal costs associated with the development to be assessed and to provide sufficient information to allow preliminary foundation design and preliminary remedial measures to be established and recommendations for any further works.

Objectives

We understand that the investigation works are required to address the following issues:

- Environmental assessment of the site including; sampling and analysis, to address possible concerns over contamination of the ground beneath the site and potential costs associated therewith.
- Preliminary Geotechnical assessment of the site to determine foundation conditions for structures, roads, car parks and hardstanding areas.

Scope of Works

A preliminary geotechnical and contamination risk assessment will comprise a review of existing Phase 1 desk study information and available public records. The purpose of the preliminary

NXBid 406 One City Road, Manchester

risk assessment is to review the site history in order to assess the likely ground conditions and hence the potential for poor ground to be present in relation to foundation engineering, or contaminated ground resulting from former site uses. A walkover survey will allow an inspection of any obviously contaminated areas of the site, basic geomorphological assessment, and consideration of any constraints that could affect access for investigation plant.

The following data sources will be reviewed as part of the preliminary risk assessment: Historic Ordnance Survey mapping Local Authority records (Environment departments) Landmark Groundsure Database including Environment Agency records (pollution incidents, abstraction licences, discharge consents, landfill register), British Geological Survey records (base geology and landfill register), and records of current and former industrial landuse.

The preliminary risk assessment will be used to further refine the Conceptual Model for the site and hence further design the scope of the Phase 2 physical investigation works based on potential contaminated areas resulting from former site uses.

Phase 2

The Phase 2 investigation will provide data on the actual ground conditions underlying the site.

- Break out and hand excavate service location pits for all exploratory boreholes
- In-situ geotechnical testing
- Recovery of contamination samples for subsequent chemical testing of soils and groundwater.
- Installation of gas/groundwater monitoring and sampling wells.
- 6no. ground gas monitoring visits.
- Hand pitting to allow in-situ probing to establish CBR values for pavement design.
- 2no rotary cored boreholes to 22.50m depth with rock testing for pile design purposes.
- 3 days window sampling boreholes (12no) to maximum depths of 5.00m bgl.
- JCB excavator hire and breaker to allow trial pits and soakaway tests to be formed to establish the presence of obstructions and deeper made ground.
- Barriers to protect the public from the drilling activities.
- Clean up and reinstate borehole locations.

Site works will be supervised by a suitably qualified engineering geologist/environmental scientist who will be responsible for directing the investigation, logging exploratory holes, in-situ testing and sampling. Exploratory holes will be backfilled with arisings on completion.

Samples taken from the exploratory holes will be sent to approved laboratories for geotechnical and chemical analysis. The geotechnical testing suite will be scheduled once the nature of the strata have been determined.

Testing will be performed to provide data on basic classification and engineering properties. The chemical testing suite will take account of previous potentially contaminative uses of the site. A PID monitor will be used to establish the potential presence of volatile and semi-volatile compounds within soil and groundwater, to target soils and groundwater sampling.

On completion of the laboratory testing we will prepare a report detailing the work carried out and giving our recommendations for foundation design and contamination remediation, if required. Our reporting will include basic Tier 1 risk assessment, comparing measured contaminant values against published guidance levels.

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Programme.

The investigation will take approximately 6 to 8 days on site. On completion of the investigation fieldwork, two weeks should be allowed for laboratory testing on completion of which a further week should be allowed for reporting. Overall a five-week programme should be allowed. However, we will aim to provide an interim report on completion of the fieldworks and communicate our progress throughout.

At this stage we have allowed for 6no ground gas monitoring visits. Local authorities require a minimum of 6no visits over a 3month period and based on the presence of landfills within close proximity of the site may require further monitoring. If additional gas monitoring visits are required as a condition of planning an interim report will be provided and the results of the gas monitoring will follow on as an addendum report.

Personnel

This project will be carried out under the direction of Mark Newton with other staff providing support as required.

I trust that we have correctly interpreted your requirements. Please do not hesitate to call if you have any queries.

Yours sincerely
for and on behalf of NX Consulting Limited

A handwritten signature in blue ink, appearing to read 'Mark Newton', written over a light blue grid background.

Mark Newton
(Managing Director)
Enc. Conceptual model & proposed exploratory hole location plan



Key	
	Approximate Site Boundary
	Denotes Significant Former Developments
	Denotes Subordinate Former Developments
	Denotes Former Roads
	Former Electricity Station
1	Former Gaythorn Gas Works
2	Former Dunlop Rubber Works
3	Former Engineering Works and Bus Depot
4	Former Works/Warehouse

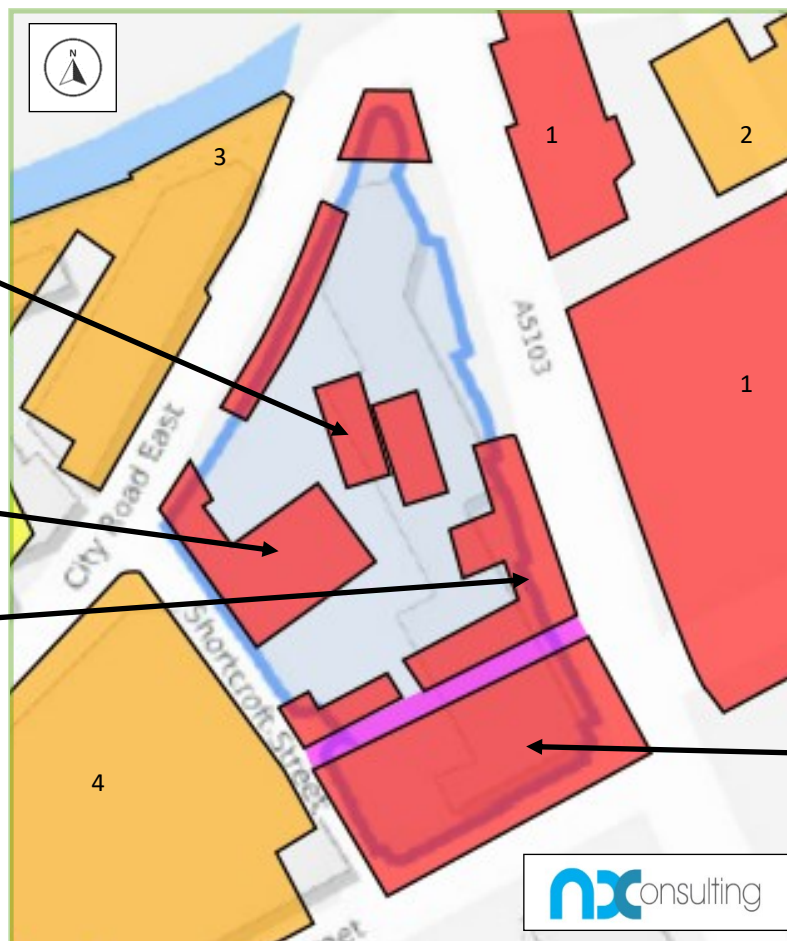
Ref: NX406 Figure 2 - Plate 1

Project:
No. 1 City Road, Manchester, M15 5PN

Title:
Conceptual Site Plan

Buildings associated to former Saw Mill development on site (northwards of former road).

Buildings associated to former Saw Mill hosting former incinerator/ chimney.



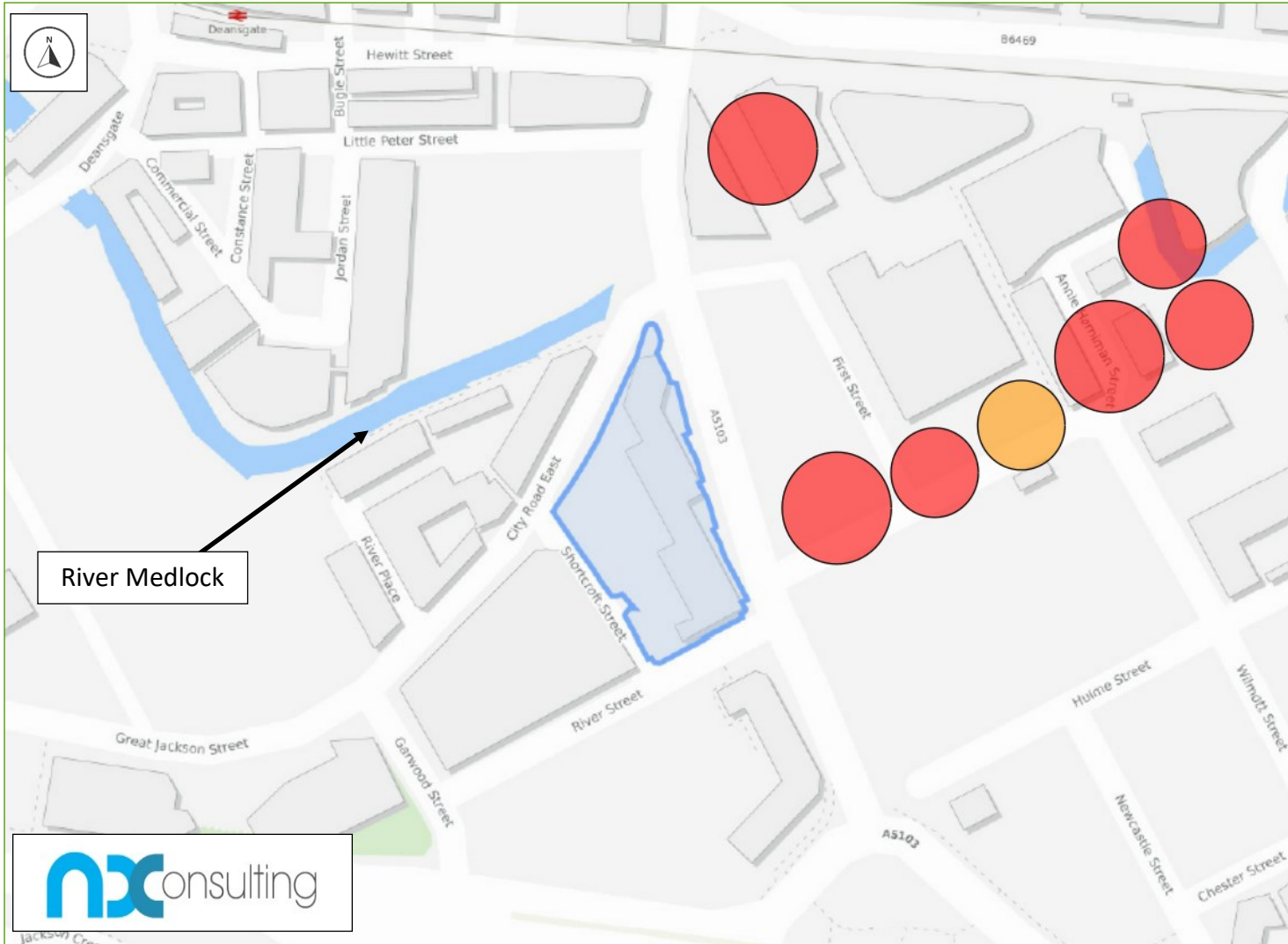
Buildings associated to former Timber Yard development within the southern area of the site.

Key	
	Approximate Site Boundary
	Denotes Significant Former Developments
	Denotes Subordinate Former Developments
	Denotes Former Roads
	Former Electricity Station
1	Former Gaythorn Gas Works
2	Former Dunlop Rubber Works
3	Former Engineering Works and Bus Depot
4	Former Works/ Warehouse

Ref: NX406 Figure 2 - Plate 2

Project:
No. 1 City Road, Manchester, M15 5PN

Title:
Conceptual Site Plan



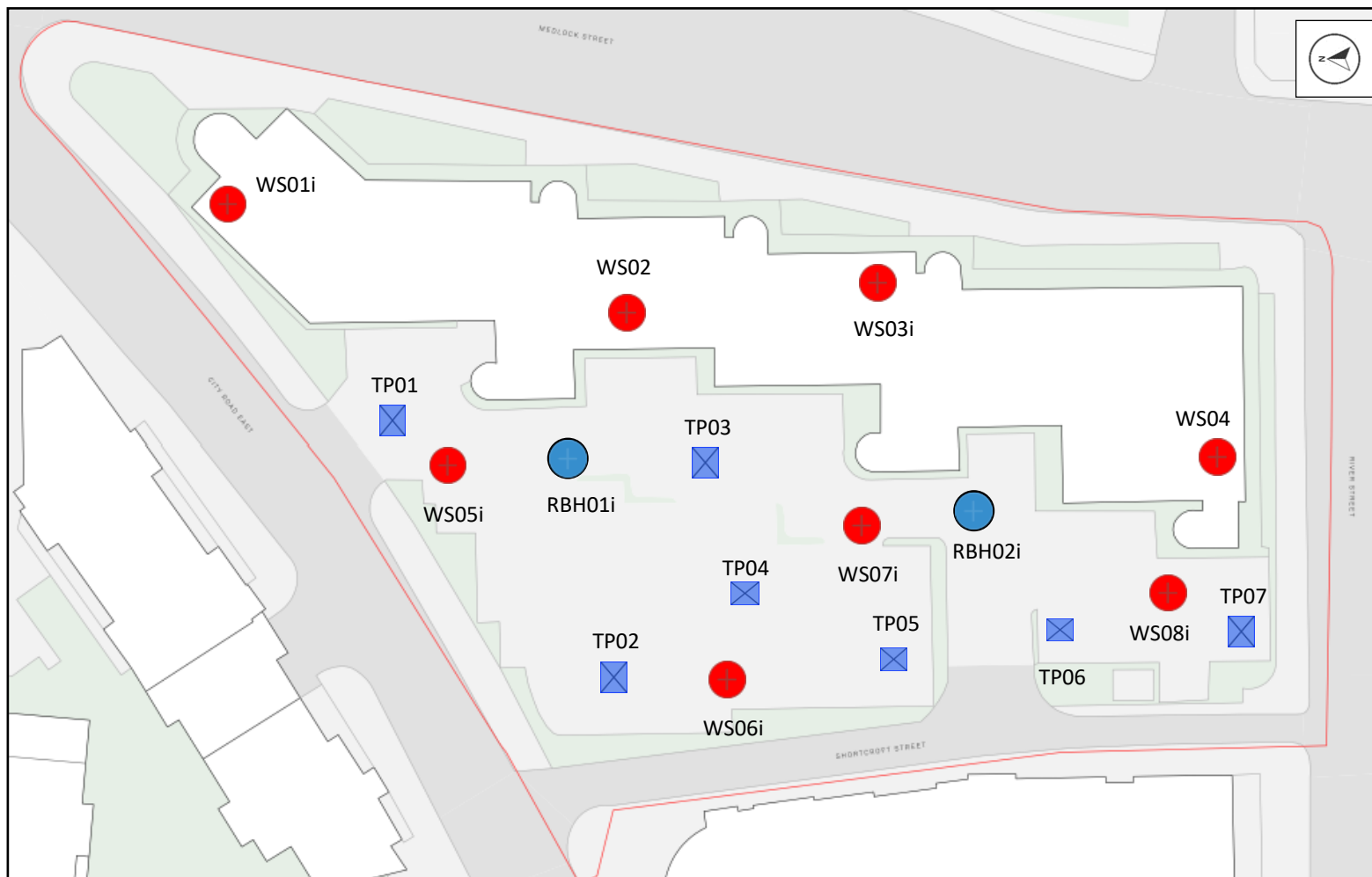
Key	
	Approximate Site Boundary
	Denotes Significant Former Gaythorn Gas Works Gas Cylinders
	Denotes Former Gaythorn Gas Works Tank

Gaythorn Gas Works initially appears on historical mapping in 1891. The five cylinders and the tank appear visible in 1893 mapping, and the large one to the north of site in 1908. Prior to the gas works the land previously accommodated: Finch Street Size Works, Street Dye Works and a Cotton Mill.

Ref: NX406 Figure 2 - Plate 3

Project:
No. 1 City Road, Manchester, M15 5PN

Title:
Conceptual Site Plan



Key	
	Approximate Site Boundary
	NX Consulting Handheld Window Sampler Boreholes (WS)
i	Denotes NX groundwater/gas installation
	NX Machine Excavated Trial pit (TP)
	NX Consulting Rotary Core Boreholes to 22.00m bgl (RBH)



Ref: NX406 Figure 3 - Plate 1

Project:

No. 1 City Road, Manchester, M15 5PN

Title:

Proposed Exploratory Hole Location Plan



WS and TP exploratory holes within the centre of the site. Areas of investigation comprise former Saw Mill hosting former incinerator/chimney.

RBH1 & 2 under centre of 2no. proposed building footprints which should highlight any contaminant plume migration from the adjacent gas works

WS and TP exploratory holes within the south of the site. Areas of investigation comprise former road and timber yard.

Due to the development history which has occurred on the site and surrounding area, NX Consulting will obtain upstream and downstream water samples of the River Medlock water at two sample locations.

The samples are to be taken to determine whether any potential contaminant migration from site to the nearby water course.

Proposed sample locations are to be taken from up and downstream for comparison purposes.



Ref: NX406 Figure 3 - Plate 3

Project:

No. 1 City Road, Manchester, M15 5PN

Title:

Proposed Exploratory Hole Location Plan