NEW VICTORIA PHASE 2: OFFICE DEVELOPMENT

Construction Management Plan

Revision: 8

Date: 2nd May 2023

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1.0 Site Establishment and Logistics

1.1 Project Description

The proposed scheme intends to replace the consented office block with a contemporary 12 storey-office building

The scheme has been designed in accordance with national, regional and local planning guidance as well as Building Regulations. It will be delivered to new environmental standards, targeting a BREEAM 'Outstanding' rating through exceptional design and quality, promoting the health and well-being of the occupants.

1.2 Location

The works are located on the New Victoria site on Corporation Street adjacent Manchester Victoria station.

Corporation Street

Manchester

M3 1NX

1.3 Site constraints

Noted below are a number of site constraints identified as part of the ongoing design development process:

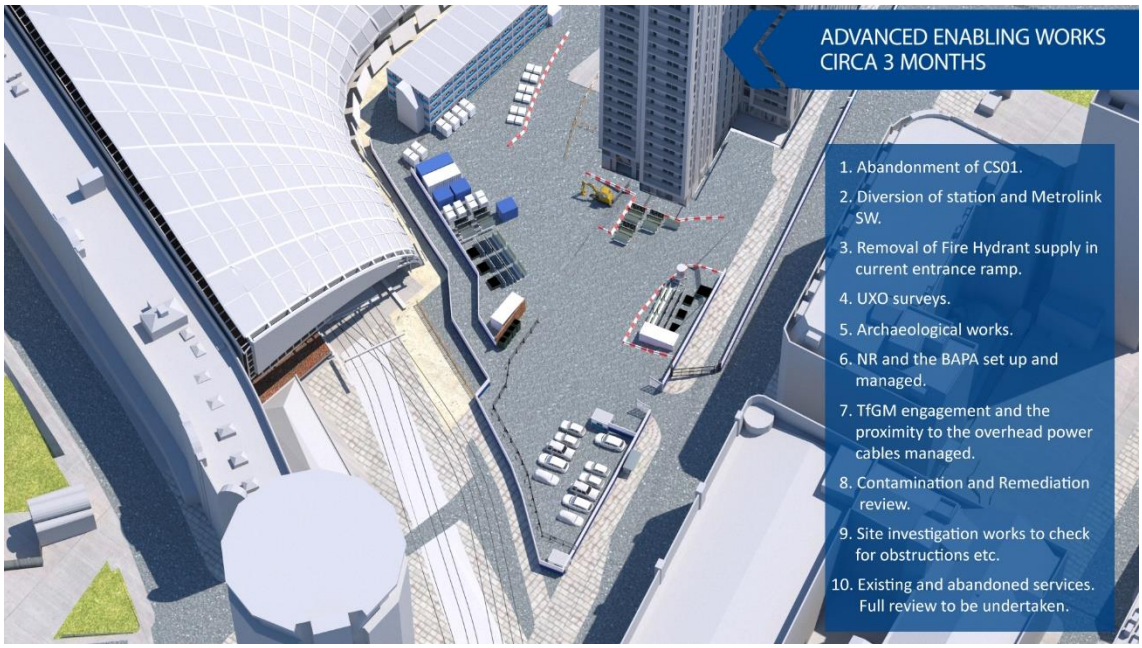
- The site is bordered to the south-west by Metrolink Tram tracks, and Victoria Station's PTFE roof to the north-west.
- There is the River Irk culvert that runs to the north of the site, where an 8m wide notifiable zone has been stipulated by Network Rail.
- There is a cycle route to the South-West of the site, running along Long Millgate towards the proposed TFGM cycle hub at the back of the site. The office development facilitates this route.

1.4 Programme

The proposed draft outline construction programme for the development is as follows:

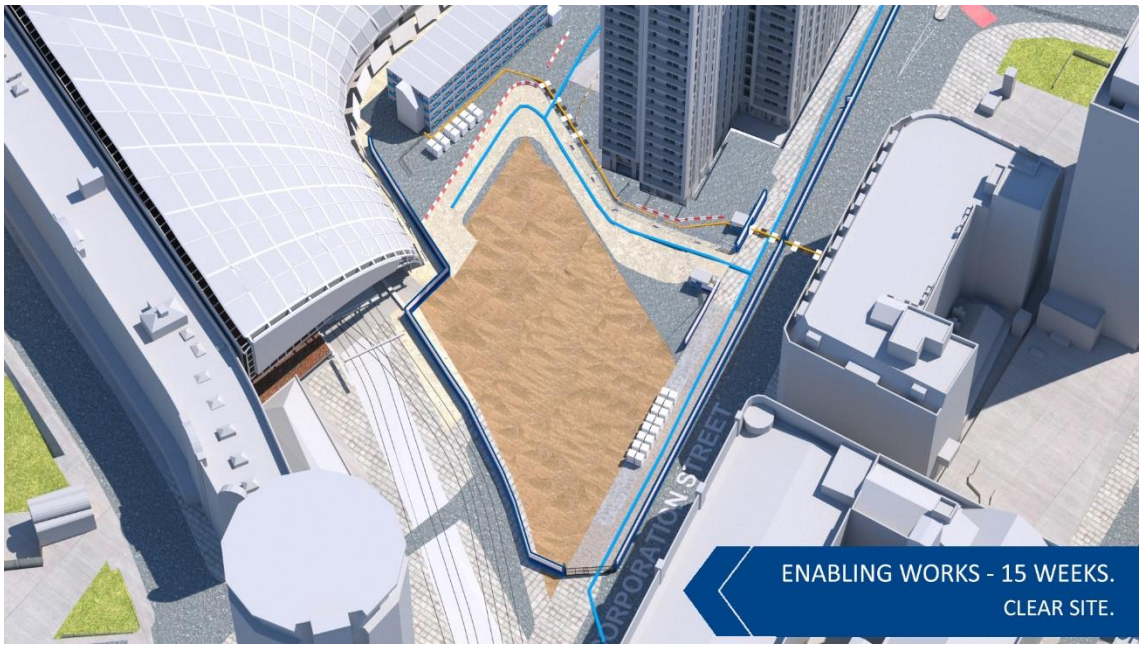
- Pre-enabling works – 3 months prior to start on site
- Enabling works – Q4 2023.
- Main contract – Q4 2023 – Q4 2025.

Enabling Works



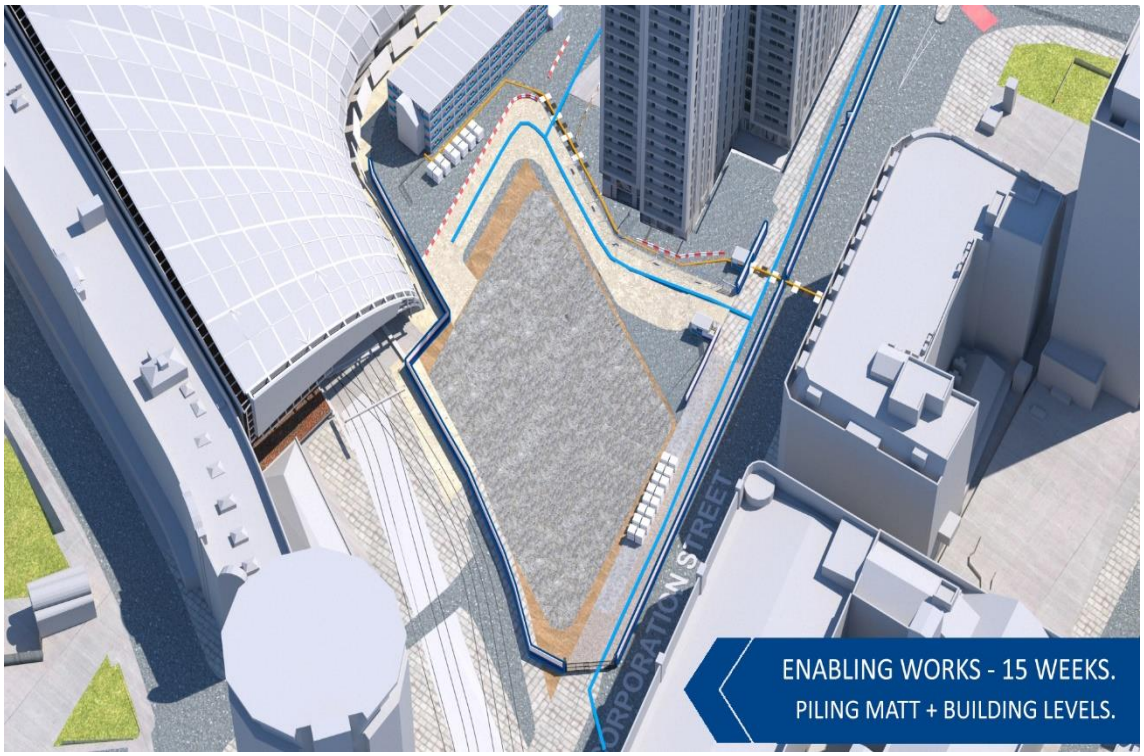
Note – All works are completed within the existing site boundary established for the New Victoria Residential scheme. Relevant emergency contact numbers will be located on the external face of the site hoarding.

Site Clearance

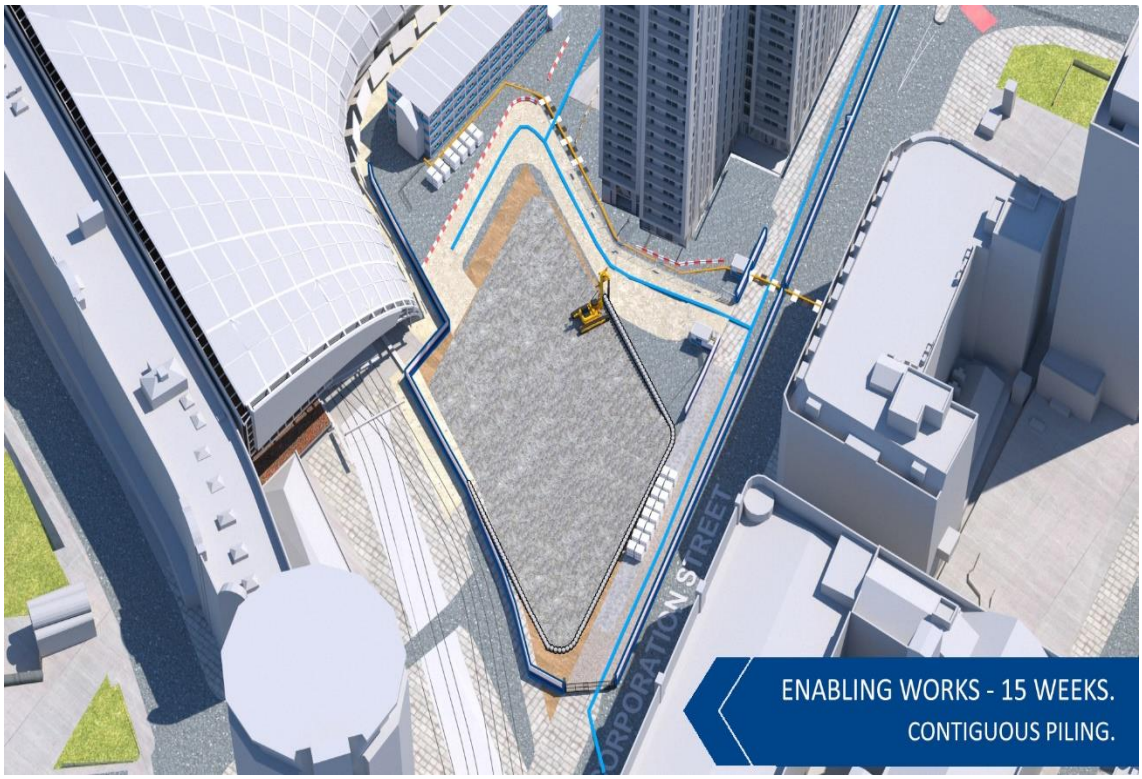


Hoarding line discussed with MCC highways and the footpath closure application will default with the rail replacement bus stop becoming redundant. Discussions ongoing with Network Rail and TfGM regarding potential re-location.

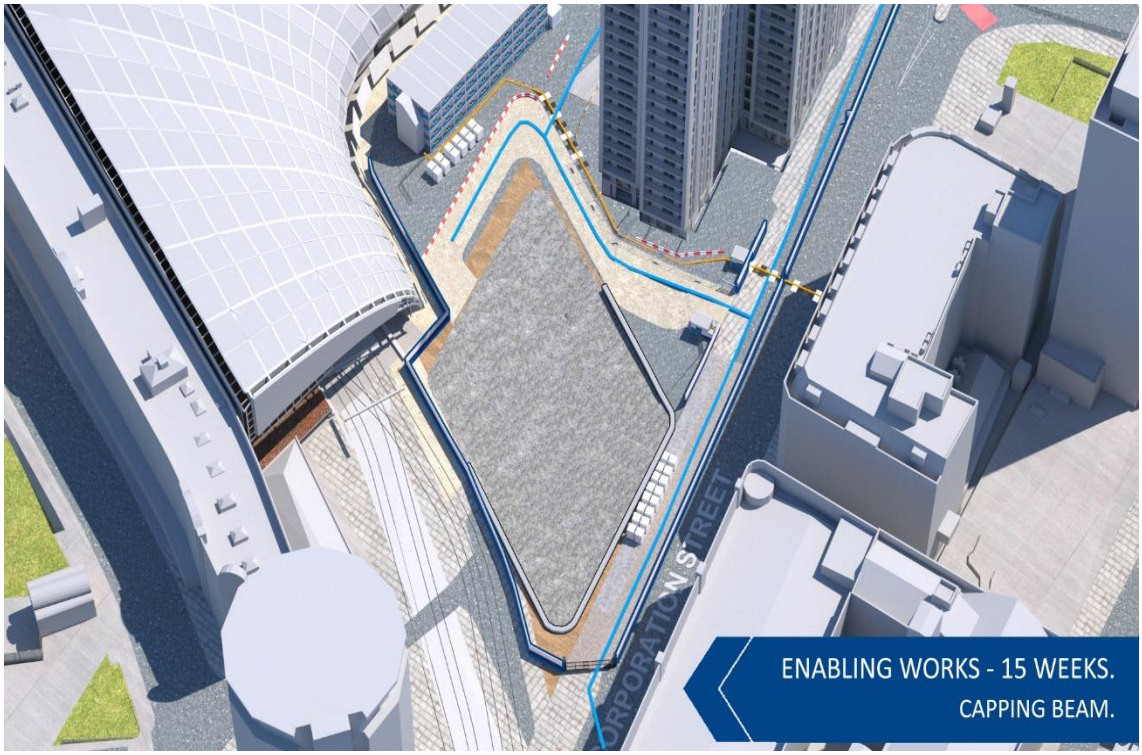
Piling mat install



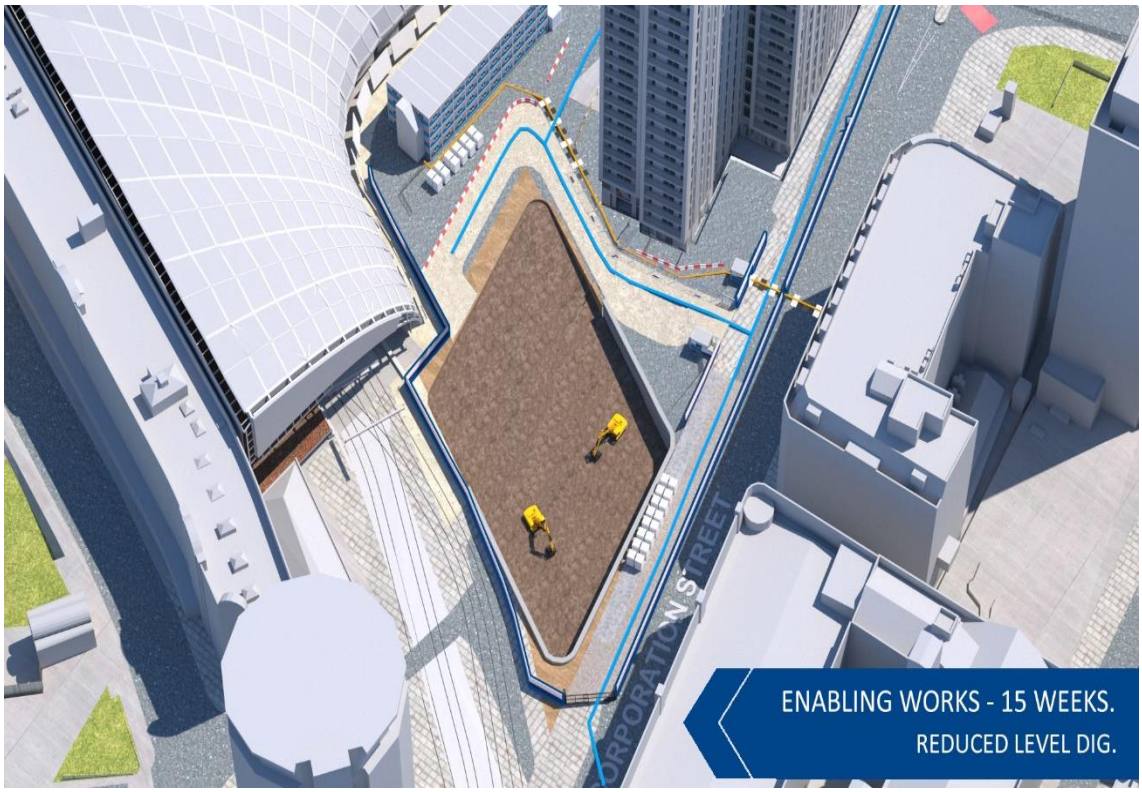
Contig Piling Works



Capping Beam installation



Reduce Level Dig



1.5 Operating Hours:

The works will be programmed based on a Monday to Friday and a Saturday morning working week. Official site working hours would be:

- Mon – Fri: 7:30am – 6:00 pm,
- Sat: 8:30am – 2:00pm
- Sunday/Bank Holidays: No Work

If required to work outside the above hours, an online application will be submitted to the local authority for consideration.

1.6 Site Logistics Plan

2.0 The site is located off the city centre ring road (A556). Deliveries will follow the ring road to Shudehill and approach the site on the north bound carriage of Corporation Street. Please refer to Fig 1 below for more details.

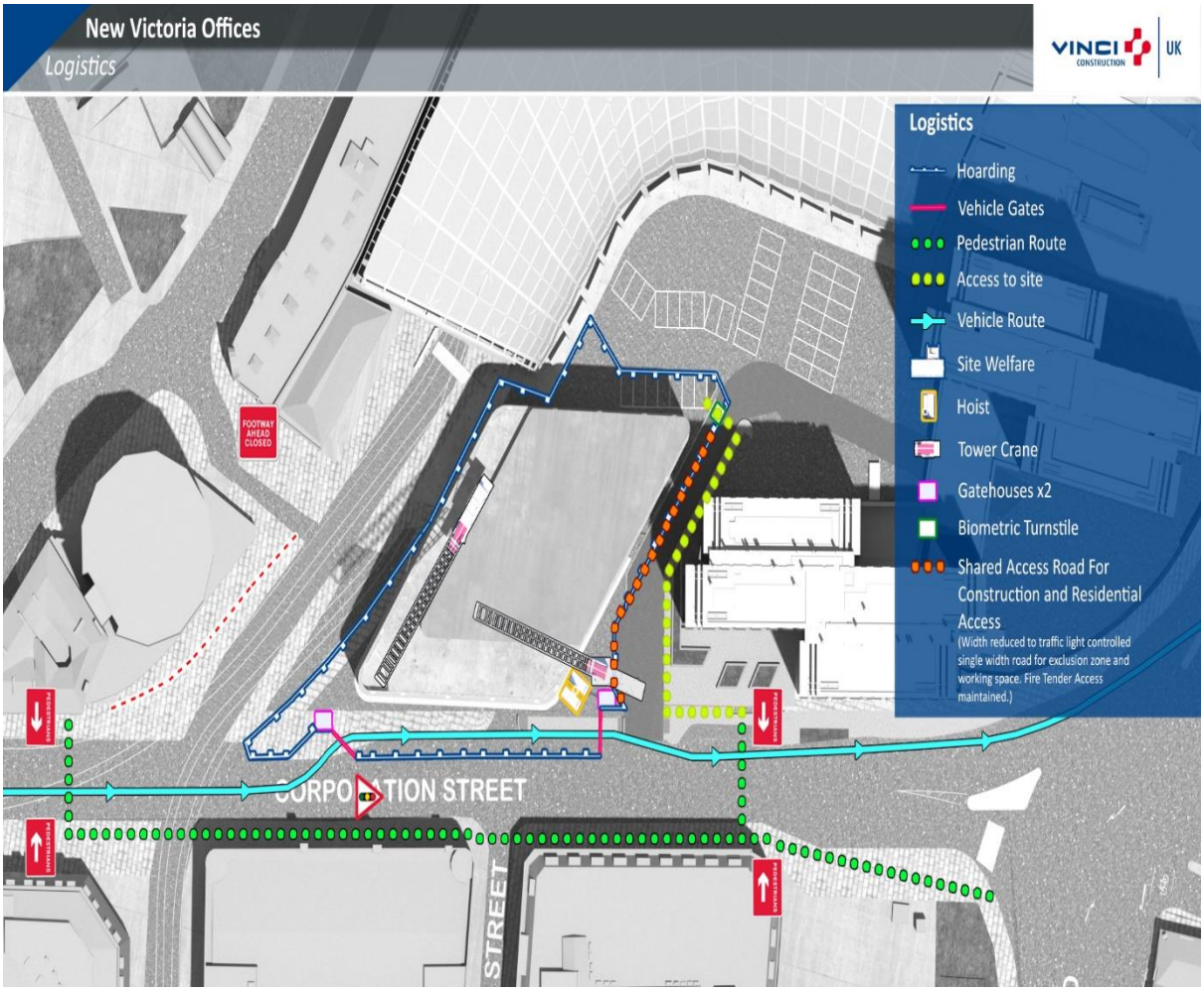


Fig. 1

Additionally, given the neighbouring residential scheme will become operational during the course of the Office scheme, Fig 2 has been provided to demonstrate that in the event of an emergency, a Fire Tender can access the Residential scheme via the service road.

Fig. 2 – Tracked Fire Tender Route into Residential Scheme

2.1 Cranes

Two tower cranes will be required for the works. The second crane will be installed using the first crane. Indicative proposal outlined in Fig 3.

The following mitigation measures will be applicable for the usage of cranes next to Network Rail and TfGM assets.

- The tower crane foundation designs factor of safety will be increased by 33%
- The cranes will be de-rated by 75% capacity
- Anti-collision will be installed and demonstrated to third parties before putting into use.
- Slew restrictions will be installed and demonstrated to third parties before putting into use.
- Cam block will be installed to both cranes

Please refer to section 1.16 TfGM Interface, for details regarding crane activities.

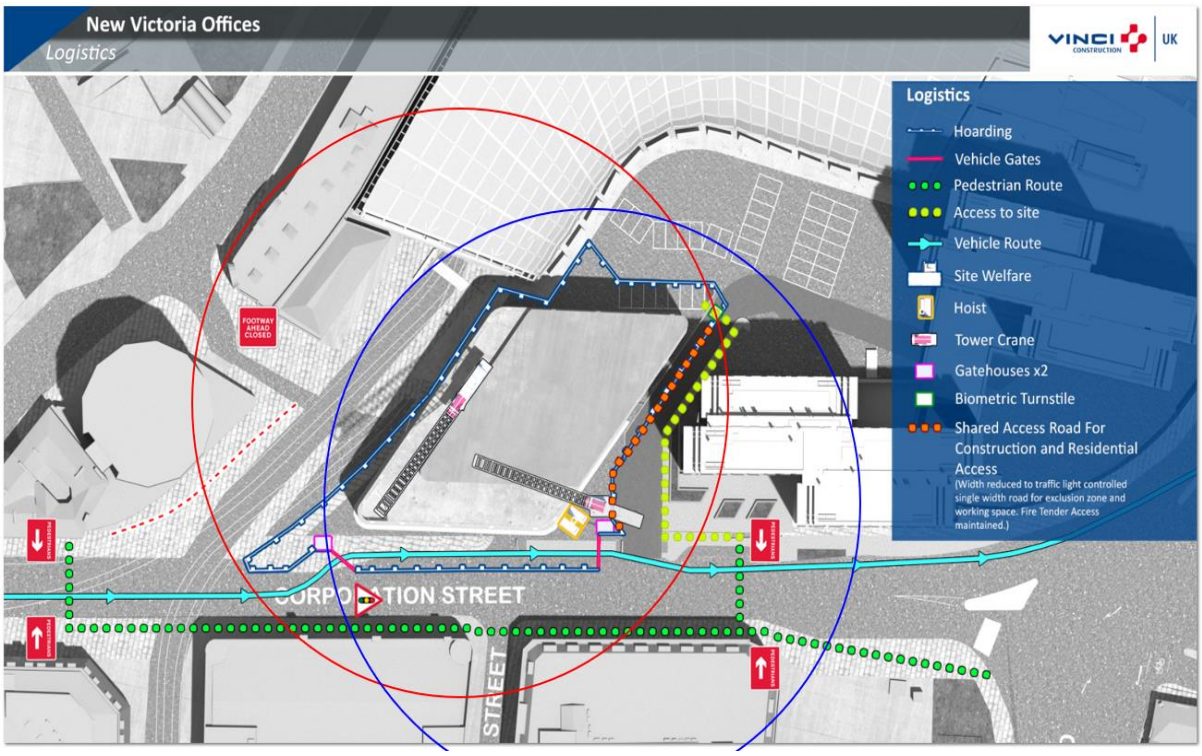


Fig 3.

1.8 Hoarding

The hoarding will be constructed using the Hoard-It System which negates the need for penetrating the ground and uses a ballast system. Entry onto site will be via a turnstile with face recognition software. A Site Boundary Check Sheet will be used to check the Site Boundary on a daily basis.

1.9 Car Parking

There will be no provision for parking on site. Staff and visitors must use one of the many car parks in the area or use public transport.

1.10 Deliveries, Timings and Access

All deliveries will be required to be booked in on the Contractors delivery management system. Access onto the site will be via Corporation Street.

Vehicles delivering to site will be monitored for compliance with the Contractors site rules. The Contractor will work with any non-complying supplier to help them identify the noncompliance and rectify.

1.11 Storage of materials

Where possible, material deliveries will be made on a just in time basis to minimise the amount of material stored on site.

1.12 Traffic Management and Road Closures

A full road closure of Corporation Street will be required for the installation and removal of TC1. Engagement with MCC will be made 12 weeks minimum to obtain the relevant permissions and permits.

1.13 Temporary Lighting

It is anticipated that low level bulkhead type lighting will be provide to the perimeter of the hoarding line to reduce the effects of any dark spots caused by the erection of the hoarding.

Task lighting required during the construction phase, will where possible, be designed to minimise effects beyond the site boundary.

1.14 Security

The boundary of the site will be secured with a mix of security hoarding and heras fencing with access gates. The main access to the site will be off Corporation Street. The security gates will be locked out of hours, no personnel will be allowed on site without authorisation from the Contractor.

The boundary fence will be erected by a specialist contractor, who will design and install the boundary security hoarding and heras fencing. All security hoarding will be controlled through the temporary works register.

The Contractor will engage with MCC to obtain the relevant permits associated to the installation of the hoarding.

1.15 TfGM Interface

Reference is made to the Metrolink document, Working Safely near Metrolink, with particular refence being made to the Metrolink Hazard Zone, as shown in Fig 3.

Authorisation is needed for any of the following activities before starting work near Metrolink:

- Any work where part of the site, tools, materials, machines, suspended loads or persons could enter the Metrolink Hazard Zone.
- Any work which could force pedestrians to be diverted into the Metrolink Hazard Zone.
- Piling, using a crane, excavating more than two metres or erecting and dismantling scaffolding within four metres of the Metrolink Hazard Zone.
- Any excavation within three metres of any pole supporting overhead lines.
- Any work on sites near Metrolink where vehicles fitted with cranes, tipping bodies or skip loaders could come within the Metrolink Hazard Zone when the equipment is in use.

– Any work on sites above Metrolink tunnels or underneath structures carrying Metrolink.

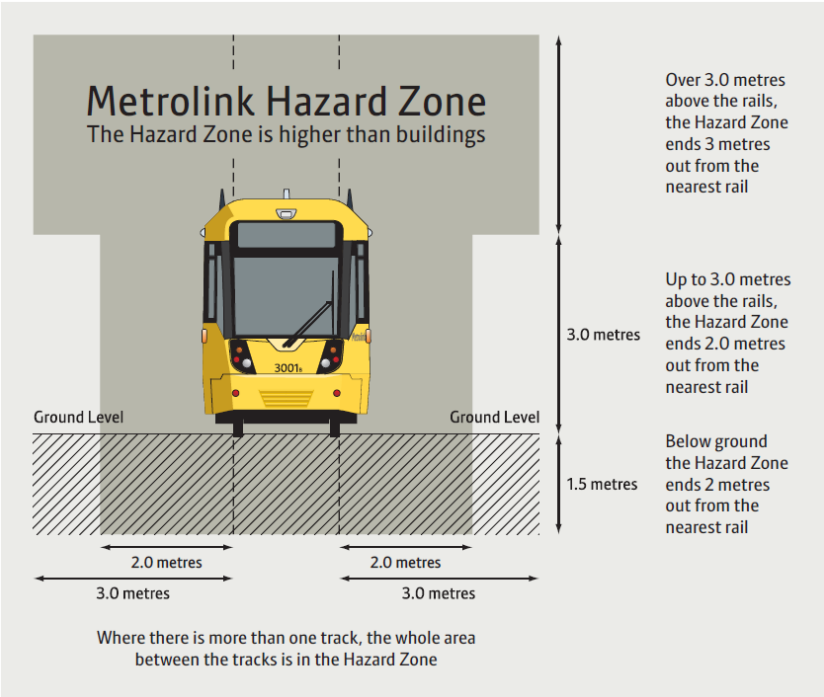


Fig 3.

No crane oversailing of the tracks is permitted and track vibration monitoring will be deployed all in accordance with Metrolink / TFGM requirements.

Additionally, it is noted that:

- There is a potential for isolations.
- The de-rating of cranes is likely to be a consideration.
- A crane erection/dismantling methodology is to be agreed with Metrolink.

2.0 Environmental Considerations

2.1 Site Waste Management Plan

Our project teams will collaborate to minimise, reuse or recycle waste emanating from the project through improved specification, efficient trade interfaces and use of standardised and pre-fabrication products. Our site waste management strategy will be recorded in the Site Waste Management Plan with delivery managed by our on-site waste management team.

The procurement of specialist contractors and associated processing plants is to be undertaken by the appointed Contractor. It can be noted that within the Manchester area there are a number of suitable processing facilities that will be available to the scheme that will take all of the anticipated types of the waste that are expected to be generated by the project.

2.2 Air Quality

The most significant risk to air quality from the construction works is during the ground works period of the development from the process and the equipment used to carry out the works. Dust generated through all work activities will be controlled at source, so far as is reasonably practicable, by a recognised method and in line with legislative duties.

2.3 Dust and Dirt Control

Dust and dirt protection will be incorporated and controlled at source, so far as is reasonably practicable, by a recognised method and in line with legislative duties. It is expected that such measure will remain in place for the duration of the demolition and construction works. Anticipated measures are expected to include specialist dust suppression plant, static misting systems and wheel washing systems.

In general site generated dust will be controlled by eliminating or reducing the potential for release at all times. This will be achieved by a series of measures to be employed at the different stages of the works.

2.3.1 Site Enabling (incl site clearance, removal of obstructions, working platform installation)

During this time, it is expected that the existing hard standing external to the building footprint will be retained for as long possible to reduce the source of dust and to help maintain a clean and tidy site. Dust suppression in the form of damping down haul routes will be utilised during earthworks activities (bulk excavation and import of engineered fill). Vehicles carrying loose aggregate and workings, will be sheeted when required. Stockpiles of soils and materials will be located away from Corporation Street and the tram lines, taking account of prevailing winds. Air quality monitoring will be undertaken using monitors around the perimeter of the site. These will also be checked for asbestos.

2.3.2 Piling, Bulk Excavation and Substructure works

The piling operation will generate smaller amounts of arisings. During dry periods the working platform will be damped down to prevent wind borne dust. Dust suppression in the form of damping down haul routes will be utilised during earthworks activities (bulk excavation and import of engineered fill). Vehicles carrying loose aggregate and workings, will be sheeted when required. Stockpiles of soils and materials will be located away from Corporation Street and the tram lines, taking account of prevailing winds. Air quality monitoring will be undertaken using monitors around the perimeter of the site. These will be checked for the presence of asbestos. During deep excavation the bedrock anticipated hardness will allow removal by toothed excavator thereby minimising dust generation. The surface areas of stockpiles will be minimised (subject to health and safety and visual constraints regarding slope gradients and visual intrusion) to reduce the area of surfaces exposed to wind pick-up. All hardstanding areas and vehicle routes will be cleaned using a road sweeper to minimise dust and dirt leaving site.

Piling can result in risks to potable supplies. To mitigate this we will undertake the following control measures

- Communicate site-specific requirements to all operatives on site
- The Environmental Emergency Response Plan to include spillages

- Check location of discharge of drainage interceptors
- Fuel/Oil storage to be sufficiently bunded, secure and spill kits available
- Establish, test and monitor water quality
- Site inspections
- Compliance obligations are Land Drainage Act 1991; Water Industry Act 1991, Control of Pollution Regulations, Environmental Damage Regulations 2009; Trade Effluents Regulations; Control of pollution Regulation 2001; Groundwater Regulations 2009; Water Resources Act Regulations 2009; Environmental Permitting Regulations 2016

An Environmental Piling Risk Assessment has been undertaken by GRM (please see appendices) with the conclusions summarised below :

"Based on the above, it is considered that the use of CFA or rotary bored piles will not create or cause further impact upon the controlled waters receptor from the contamination present within the made ground.

It is recommended that a method statement is prepared by the appointed piling contractor which should include more detailed information on the piling methodology."

2.3.3 Main works (frame construction, envelope etc)

All hardstanding areas and vehicle routes will be cleaned using a road sweeper to minimise dust and dirt leaving site. Working lifts will be kept clean and dust free by damping down prior to sweeping.

Additionally, the Miller Goodall Air Quality Assessment report dated 5th April 2022 outlined recommended mitigation measures that will be taken cognisance of during the works. Please refer to the Appendices of this report for details of the recommended measures.

2.4 Noise and Vibration

The appointed Contractors will be required to produce a Noise and Vibration Management Plan that will consider the effects of it's operations upon on site and immediate vicinity of the site boundary.

The Noise and Vibration Management Plan will be produced by the contractor in accordance with section 61 of the Control of Pollution Act 1974 and once will be submitted to the local authority for review.

The Noise and Vibration Management Plan will define the measures that will be implemented to control and limit noise emissions and vibration levels at key receptors around. The Contractor will be required to undertake an assessment of noisy activities prior to works commencing.

The Noise and Vibration Management Plan will include the following:

- The identification of the noisiest activities and who the work may impact (identification of receptors),
- Duration of these activities,

- Site wide noise and vibration mitigation measures with reference to BPM to be adopted on site specifically for the noisier or more intrusive activities,

- The maximum site noise level and vibration levels at the site boundary particularly during the nosier activities,

- Details of monitoring, details of machinery and equipment to be used and their expected noise levels,

- Details of what action is taken where the maximum site noise and / or vibration levels (once agreed) are approached or breached (i.e. work will cease until the cause of the exceedance has been established and alternative methods of work adopted where necessary).

- Confirmation of the procedures in place to consider reducing or stopping operations to avoid serious noise pollution.

- A procedure for engaging with neighbours to minimise their concerns and respond to complaints.

The key receptors are:

- The Indigo Hotel
- Victoria Station (Metrolink and Network Rail)
- Offices located opposite the site on Corporation Street

2.4.1 Noise and vibration monitoring

Monitoring needs to reflect the actual or potential impact on the local community. An Operator monitoring plan will be developed that will to assess the impact of site activities and also confirm how effective installed controlled measures are.

It is expected that to verify compliance with the agreed noise management plan, monitoring will consist of ongoing site boundary monitoring to continually measures on site conditions to ensure disturbance from dust (PM10 or PM2.5), vibration (PPV)and noise (LAeq) is minimised on and off site. Additionally, in periods of peak activities, particularly those in the vicinity of the site boundary, handheld monitoring will be implemented to measure dust (PM10 or PM2.5), vibration (PPV)and noise (LAeq).

In general, given the anticipated methods of construction, the noise levels generated are considered to be relatively low. For instance, bulk excavation will be carried out using toothed excavators based on the anticipated rock hardness. Piling is expected to be caried out by CFA piling methods, which is a low vibration method and does not generate significant noise levels (approx. 72dB). Frame construction utilises traditional RC frame construction methods which do not generate high levels of noise. The envelope is proposed to be a unitised system which is a pre-fabricated unit manufactured off site and hung off the frame which will not generate significant noise levels.

2.5 Considerate Construction

The site will be registered with the Considerate Constructors Scheme. The intention is to communicate to local stakeholders through letter drops and communication boards with the primary personnel contact details on the perimeter of the site and details of how to raise any concerns the local community may have during construction. All site staff and contractors will receive a site induction which will include a section on reducing the impact on the local community.

A Community Engagement Plan will be developed at pre-construction stage and will be fully implemented through the construction phase and beyond, with a strong proactive attitude being encouraged.

All stakeholders and neighbours will be informed of works both prior to start and they will also be updated as works progress. This will be via letter drop, regular meetings (typically every 2weeks) will be held with key stakeholders (NR, TfGM/KAMetrolink etc) to ensure that they understand what works are coming up and to give them opportunity to inform the project of any events or planned works that may impact our project as well as to raise any concerns, complaints, or comments.

A complaints and comments book will be held in the site gatehouse and it is anticipated that an electronic version of the complaints and comments book will be held online, accessible via a QR code displayed on the site noticeboard to allow access to members of the public to the website and online comments register.

Complaints will be responded to within a 12-hour period.

Network Rail Engineering Assurance procedures require the project to appoint key personnel as the responsible engineers (CRE) for specific disciplines of work and someone to undertake the role of Contractors Engineering Manager (CEM) to manage and oversee this process. As such the appointed Contractor will be requested to nominate a 3rd Parties interface manager. Further appointments for the construction phase (civil and structural), temporary works (design) and permanent works (design) will be made where required as identified in collaboration with Network Rail's Asset Protection team.

APPENDICIES

3.1 IAQM Dust Assessment Mitigation

xx Highly Recommended x Desirable

Measures relevant for demolition, earthworks, construction and trackout

Mitigation Measure	Low Risk
Communications	
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	xx
Display the head or regional office contact information.	xx
Develop and implement a Dust Management Plan (DMP)	x
Site management	
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	xx
Make the complaints log available to the local authority when asked.	xx
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.	xx
Monitoring	

Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.	x
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	xx
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	xx
Preparing and maintaining the site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	xx
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	xx
Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.	x
Avoid site runoff of water or mud.	xx
Keep site fencing, barriers and scaffolding clean using wet methods.	x
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	x
Cover, seed or fence stockpiles to prevent wind whipping.	x
Operating vehicle/machinery and sustainable travel	
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.	xx
Ensure all vehicles switch off engines when stationary - no idling vehicles.	xx
Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	xx
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	x
Operations	

Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	xx
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using nonpotable water where possible and appropriate.	xx
Use enclosed chutes and conveyors and covered skips.	xx
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	xx
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	x
Waste management	
Avoid bonfires and burning of waste materials	xx

Measures specific to construction.

Mitigation Measure	Low Risk
Avoid scabbling (roughening of concrete surfaces) if possible.	x
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	x

Measures specific to trackout.

Mitigation Measure	Low Risk
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use	x
Avoid dry sweeping of large areas.	x
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	x
Record all inspections of haul routes and any subsequent action in a site log book	x
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	x

3.2 GRM Environmental Piling Risk Assessment

NEW VICTORIA OFFICE BLOCK, MANCHESTER

ENVIRONMENTAL PILING RISK ASSESSMENT FOR ALAN JOHNSTON PARTNERSHIP LTD ON BEHALF OF MORGAN CAPITAL

Project Ref:
GRM/P10056/PRA.1

Date:
February 2023

Prepared for:
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This report has been prepared in accordance with GRM's Accredited Quality Procedures

If you have any queries regarding this report please contact the project manager in the first instance.

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When required in-house geological, geotechnical, environmental, structural and civil staff helped to produce this document.		
Issue	Description of Revision	Signature

Constructionline
Silver Member

AGS

British Assessment Bureau
UKAS MANAGEMENT SYSTEMS 8289
ISO 9001
QUALITY MANAGEMENT

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1 INTRODUCTION

1.1 PREAMBLE

GRM Development Solutions Limited (GRM) has been instructed by Alan Johnston Partnership Ltd (Client's Agent), on behalf of Morgan Capital (Client), to produce an Environmental Piling Risk Assessment for the commercial development at 'New Victoria Office Block, Manchester'.

The risk assessment has been prepared with reference to the Environment Agency (EA) document *'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'*, May 2001. GRM standard limitations of reporting are provided in Appendix A of this report.

The following reports have been used in the preparation of this document:

- VertaseFLI Ltd – New Victoria Manchester, Phase 2 – Phase 1 Preliminary Environmental Assessment – Ref: 1946AJP-001, dated May 2022. This formed Phase I of the assessment and allowed the geotechnical and geo-environmental setting of the site to be determined.

- GRM, August 2022, Phase II Site Appraisal Report – Ref: GRM/P10056/PIISAR.1.

- GRM, December 2022, Gas Addendum Letter Report – Ref: P10056/GAL.

- GRM, December 2022, Remediation Method Statement – Ref: GRM/P10056/RMS.1.

It should be noted that the following information is a summary, and for full details reference should be made to the original reports.

The development proposals for the site comprise the construction of a new office building within the wider New Victoria residential development. The office building comprises 13 accessible levels including a basement and mezzanine. Soft landscaping as part of the development will be restricted to three separate areas around the new office building. The proposed development layout plans provided by the Client, on which this report is based, are presented in Appendix B.

1.2 OBJECTIVES OF THE SITE APPRAISAL

The principal aims of this document are as follows:

a) Assess the existing information relating to the soil and groundwater conditions within the area of the site.

b) Provide an overall picture of the groundwater and surface water conditions for the proposed development.

c) To ensure that the proposed piling method will not have an adverse impact by creating new pathways for the migration of potential contamination, primarily in relation to the protection of water resources.

Whilst every effort has been made to pre-empt the likely requirements of the Local Authority and the Environment Agency, they are likely to have specific requirements that will need to be discussed and addressed at a later date.

2 SUMMARY OF SITE CONDITIONS

2.1 BACKGROUND

A summary of the desk study information for the site, based on the information within the GRM 'Phase II Site Appraisal' (Ref: GRM/P10056/PIISAR.1, dated August 2022), is presented below.

- The site is located on land off Corporation Street (adjacent to Victoria Railway Station) in Manchester. The National Grid Reference (NGR) for the approximate centre of the site is SJ840989. A Site Location and Boundary Plan is provided in Appendix C.
- The site covers an area of approximately 0.21ha and is situated within the construction compound for an adjacent residential development. The northern site boundary is constrained by the Network Rail owned culvert, the eastern boundary is constrained by the new residential development, the southern boundary is constrained by the Corporation Street adopted highway, and the western boundary is constrained by the Metrolink tram lines with Victoria Station beyond.
- From the earliest OS mapping (1850), Long Millgate (road) was shown running through the middle of the site with commercial buildings on either side. The site was surrounded by primarily commercial and industrial premises, with the River Irk located just to the north of the site along with Victoria Station beyond. By 1908, the northern half of the site was shown as being part of Victoria Station. Land to the north and west of the site was now entirely occupied by Victoria Station, with the River Irk in a culvert. By the 1980s, the site no longer contained any buildings (with Victoria Station scaled back) although Long Millgate was still present with car parking either side. By 2020/2021, the construction compound occupied the site area.
- The geology comprises granular made ground overlying the Chester Formation (gravelly sand / sandy gravel of sandstone overlying reddish brown, variably fine to coarse sandstone with pebbles and interbedded mudstone laminations).
- The Chester Formation is recorded as a Principal Aquifer. There are no recorded groundwater / potable water abstraction licences within 250m of the site. The closest abstractions relate to operations at Strangeways Brewery approximately 350m north west of the site. The site is not recorded to be within a Groundwater Source Protection Zone.
- The only surface water feature in close proximity to the site area was the culverted River Irk, which was present close to the northern site boundary. As the River Irk is culverted, it will not be at risk.
- The primary controlled waters receptor for this site has been identified as the underlying Principal Aquifer (Chester Formation). The primary pathways are infiltration and vertical migration to the aquifer.

2.2 ENVIRONMENTAL SETTING

- An initial phase of ground investigation was conducted by AEG in April 2016 over a much greater area than the site (and included two boreholes located within the site area). Additional investigation was conducted by GRM during July 2022 and comprised a total of twenty exploratory holes. A more detailed discussion on the ground conditions and contamination can be referred to in the GRM Phase II report and Remediation Method Statement.
- It is understood that site levels will remain roughly as current due to all the interfaces with surrounding landowners. Within the footprint of the new building (see development proposals in Appendix B), the vast majority of the made ground will be removed except for the area closest to the River Irk culvert.
- Made ground was encountered in all of the exploratory holes undertaken and the depth generally varied between 1.0m and 7.5m begl, with a general thickness recorded (where proven) of 3.3m.
- The Chester Formation was recorded beneath the made ground, initially comprising gravelly sand / sandy gravel of sandstone, and then becoming reddish brown, variably fine to coarse sandstone with pebbles and interbedded mudstone laminations. The bedrock deepens from south to north, and varies from between 1.5m and 3.0m begl in the south of the site to 6.0m to 7.5m begl in the north of the site.
- The only visual evidence of potential contamination observed within the made ground was the occasional presence of clinker, asphalt/tarmacadam or slag. Olfactory evidence of petroleum hydrocarbon contamination was not encountered during the fieldwork.
- Twenty-five representative samples of the made ground were analysed for a general suite of contaminants including banded TPHCWG plus asbestos screening. The recorded concentrations of all the contaminants were below the relevant TAC for a commercial / industrial end use, except for lead in two samples only. The sample analysis did not reveal elevated concentrations of either aliphatic or aromatic hydrocarbons in excess of the relevant TAC for human health. No asbestos has been detected in any of the samples.
- The site has been assessed as ‘Characteristic Situation 1’ for ground gases as outlined in BS8485:2015+A1:2019. Accordingly, gas protection measures for methane or carbon dioxide are not required for the proposed commercial development. In addition, no radon gas protection measures are required either.
- Based upon the data available, no groundwater was present within the made ground. A deeper groundwater table (based on groundwater strikes within the rotary cored boreholes) has been confirmed at depths of between 16.0m and 16.5m begl.
- Based upon the above, as the majority of the made ground will be excavated (except for the area closest to the River Irk culvert) and removed as part of the construction works, there is a lack of groundwater at shallow depths within the made ground and there will only be limited soft landscaping, the risk posed to the underlying Principal Aquifer is considered negligible.

3 PROPOSED DEVELOPMENT AND FOUNDATION SOLUTION

The development proposals for the site comprise the construction of a new office building within the wider New Victoria residential development. The office building comprises 13 accessible levels including a basement and mezzanine. Soft landscaping as part of the development will be restricted to three separate areas around the new office building.

The presence of variable thicknesses of made ground is considered unsuitable as a bearing stratum and all new foundations should be carried down through it to found on the more competent Chester Formation.

Due to the made ground and the loads imposed by the proposed development, it is considered that a mixed solution of pile foundations, as well as pad foundations, is likely to prove cost-effective and practical, with the bearing strata being the sandstone of the Chester Formation.

For the pile foundations, it is suggested that allowance is made for Continuous Flight Auger (CFA) piles or rotary bored piles (which allow for greater diameters for carrying high structural loads). However, a piling specialist will need to be approached to provide advice regarding the most appropriate type of pile, as well as pile dimensions and safe pile capacities.

At this stage, the following discussion considers the acceptability of CFA or rotary bored piles as the foundation technique at the subject site.

The EA guidance identifies six priority pollution scenarios which should be considered when selecting the founding technique to be used at a contaminated site.

1. Creation of pathway by breach of aquitard or cap

Based upon the proven ground conditions and the groundwater conditions encountered, it is considered that groundwater is not present within the made ground. A deeper groundwater table within the sandstone bedrock has been confirmed and it is considered to be unconfined. The presence of granular made ground above the granular weathered rock strata means there is an existing pathway present, with infiltration and vertical migration to the sandstone aquifer.

Therefore, a continuous aquitard is not present across the site.

It is considered the proposed pile type does not create a new pathway or affect the existing pathway for the migration of contamination where the groundwater is locally in continuity.

2. Creation of pathway to allow gas or vapour migration

The ground gas monitoring programme undertaken by GRM has demonstrated that neither the made ground or underlying natura strata is a source of ground gas, and that

gas protection measures are not required. Therefore, the use of piles will not introduce pathways for ground gas or vapour migration.

3. Direct contact with contaminated soils arising from piling

The vast majority of the made ground will be excavated and removed as part of the construction works (to allow for the basement construction), except for the area closest to the River Irk culvert.

Any remaining made ground arisings from the piles will be representative of the made ground across the site. From the contamination risk assessment undertaken, the made ground is not significantly contaminated and the risk posed to end users or construction workers will be negligible. Therefore, the potential risk posed to end users or construction workers is not being increased by the arisings resulting from a piled foundation solution. However, the general comments outlined in Appendix A (vii) should be considered when site specific risk assessments are completed. The use of suitable PPE should be enforced during the ground works stage of construction.

No arisings will be re-used on-site. If unexpected contamination is present, arisings can be stockpiled and subject to chemical analysis to determine the potential waste disposal options.

4. Degradation caused by contact between pile / foundation materials and contaminants

Testing for pH and water soluble sulphate has been undertaken in the made ground. A total of twenty-five samples were analysed by GRM.

Based on the recorded water soluble sulphate and pH levels in the made ground soils below the site and assuming mobile groundwater conditions for the site, in accordance with the requirements of BRE Special Digest 1 (2005), 'Concrete in Aggressive Ground', the Design Sulphate Class for buried concrete at the site should be assumed as DS-2 and the ACEC Class as AC-2 (FND2 concrete), due to the elevated levels of sulphates in the made ground.

The use of the appropriate concrete grade in the CFA or rotary bored pile will prevent degradation of the pile. No contaminants were found to be present at concentrations which will affect the pile.

5. Carriage of contaminated solids into the Aquifer

The downward movement of any potentially contaminated material is restricted since the CFA or rotary bored pile is a replacement and not displacement pile type.

6. Contamination of controlled waters by concrete, cement paste etc.

The CFA or rotary bored pile method does not require the pile bore to be supported by bentonite. The application of concrete is a controlled process by the piling specialist,

therefore the loss of pile concrete into surrounding soil (if present) is considered to be minimal and the effect on controlled waters is negligible.

4 CONCLUSIONS

Based on the above, it is considered that the use of CFA or rotary bored piles will not create or cause further impact upon the controlled waters receptor from the contamination present within the made ground.

It is recommended that a method statement is prepared by the appointed piling contractor which should include more detailed information on the piling methodology.

APPENDIX A

GENERAL APPRAISAL COMMENTS

i INFORMATION SOURCES

Where available the following sources have been used for the identification and assessment of potential ground hazards:

- Relevant British Standards
- British Geological Survey (BGS) Geology Map Scale 1:10,000 for local area
- British Geological Survey (BGS) Geology Map Scale 1:50,000/1:63,320
- BGS Memoir
- BGS Borehole Records
- BGS online viewer: http://www.bgs.ac.uk/data/mapViewers/home.html
- Environment Agency Groundwater Vulnerability Maps
- Historical Ordnance Survey (OS) Maps
- Environmental Data Report
- Environment Agency Website: http://www.environment-agency.gov.uk/
- Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UKWIR, 2010.
- Coal Authority Records / Coal Mining Report
- DEFRA/Environment Agency Contaminated Land publications and DoE Industry Profiles
- BRE Guide BR211 (2015), 'Radon: Guidance on protective measures for new buildings'
- HPA-RPD-033 (2007), 'Indicative Atlas of Radon in England and Wales'
- PHE-CRCE-032 (PHE, 2017), Radon in Homes in England: 2016 Data Report
- CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings'
- BS8485:2015, 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'
- Other technical references used throughout this document are detailed in the text.

ii CONTAMINANTS OF CONCERN

The DoE Industry Profiles are normally used to assess likely contaminants from past land use and potential nearby industrial sources. For land uses where no profile is available, likely contaminants of concern are selected by GRM based on past experience of similar sites, a general screening suite of contaminants covered by CLEA and common contaminants from the Industry Profiles.

- Arsenic
- Cadmium
- Chromium
- Lead
- Mercury
- Selenium
- Copper
- Nickel
- Zinc
- Phenols
- cyanide (total)
- pH
- Water soluble sulphate
- PAH (polycyclic aromatic hydrocarbons)

Asbestos and PCBs are listed in the vast majority of profiles. PCBs are listed as the profiles expect electricity substations and switch boxes on all industrial sites. There is the potential for asbestos containing material to be mixed up with made ground, following any demolition works.

iii CONCEPTUAL MODEL METHODOLOGY

The consideration of contamination is based upon the principles of risk assessment, using the 'source-pathway-receptor' model in order to establish the presence, or potential presence, of a pollutant linkage.

To create a risk, contamination must have the potential to cause harm to susceptible targets or receptors such as humans, the water environment or the built environment. The potential for harm to occur requires three conditions to be satisfied to form a pollutant linkage:

- The presence of substances that may cause harm (SOURCE).
- The presence of a target which may be harmed (RECEPTOR).
- The existence of a plausible migration route between the source and the receptor (PATHWAY).

In the absence of a plausible pollutant linkage there is no risk. Where a potential linkage is identified in order for it not to pose a risk to the identified receptor it must be broken.

iv INTRUSIVE INVESTIGATION SAMPLING METHODOLOGY

The ground investigation (including fieldwork, sampling, monitoring and laboratory analyses) has been designed to identify and assess potential ground related problems and to allow cost effective solutions to be advised. It has been planned on the basis of the desk study, site inspection and the proposed development layout (where available). All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned and advanced to depths to determine the general ground/groundwater/gas conditions below the site. A general grid pattern has been adopted, where possible, to provide sufficient information based on the current proposed layout scheme. Some holes have been targeted at particular hazards identified in the Phase I assessment. The resultant exploratory hole density is considered to be commensurate with the complexity of the site conditions and detail of information required for this phase of the investigation.

v GROUND GAS RISK ASSESSMENT METHODOLOGY

Gas monitoring programmes undertaken by GRM are designed to broadly comply with the recommendations outlined in CIRIA Report C665 'Assessing risks posed by hazardous ground gas to buildings' (2007) and BS8576 'Guidance on Investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs) (2013).

To assess the risks posed by ground gases such as radon, carbon dioxide and methane, the relevant current guidance has been used. For radon the site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings (BR211: 2015)'. For methane and carbon dioxide the primary guidance document used to determine if protection measures are required is *BS8485:2015 Code of practice for the design of protective measures from methane and carbon dioxide ground gases for new buildings*. This uses hazardous gas flow rates (Q_{hg}), which are gas concentrations multiplied by borehole flow rates, to derive a Gas Flow Rate (GSV) for the site. The gas regime is then determined based on the GSV and other limiting factors such as gas concentrations.

Where flow is not recorded during the monitoring a default flow rate of 0.1l/hr will be used in the assessment to produce a positive result.

vi HUMAN HEALTH RISK ASSESSMENT METHODOLOGY

Guidance contained in the Environment Agency's CLEA Reports has been used to assess the risks posed to human health.

For residential developments that include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land with plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered including the consumption of home-grown vegetables.

For residential developments that do not include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land without plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered except the consumption of home-grown vegetables. For commercial/industrial developments the default Tier 1 Assessment Criteria (TAC) for 'commercial/industrial' are used, i.e. a female with a start age class of sixteen and an end age class of eighteen. All pathways are considered except the consumption of home-grown vegetables.

The TAC used by GRM include Category 4 Screening Levels (C4SLs) published by DEFRA, values calculated by GRM using the CLEA v1.071 risk assessment, and values and Suitable for Use Levels (S4UL) developed by LQM/CIEH. The TAC used in the assessment are selected based on the lowest site specific SOM values returned as part of the chemical analysis.

Where soil chemical analysis results are found to exceed the TAC, Site-Specific Risk Assessments may be undertaken using the CLEA v1.071 risk assessment software using the age classes and pathways described above.

vii RISK TO SITE WORKERS – GENERAL COMMENTS

The risks to site workers are similar to those posed to site end users, although likely to be less severe due to the site workers' shorter exposure to the identified contamination. However, site workers (particularly groundworkers) are more likely to come into direct contact with contaminated soils due to the nature of their work. On this basis ground and construction workers should be provided with basic Personal Protective Equipment based on the site's general health and safety risk assessment, but including as a minimum safety footwear, gloves and overalls.

A site specific risk assessment should be carried out for all hazards identified within the ground investigation in accordance with current health and safety legislation. This assessment should identify any measures required to further reduce risks i.e. providing further Personal Protective Equipment, welfare facilities and if necessary preventing access to certain areas.

Demolition and dismantling of existing structures on the site must be carried out to a safe and acceptable standard, in accordance with current UK guidance and best practice. Whilst not ground related, asbestos and hazardous substances surveys should be conducted prior to any demolition.

Any unusual colours, odours and suspicious ground should be reported immediately to site management and then GRM.

Whilst this appraisal has considered the long-term effects of contamination, GRM can also help during the formulation of Health and Safety documentation, if required.

viii CONTROLLED WATERS RISK ASSESSMENT METHODOLOGY

Where the desk study and fieldwork do not reveal a potential source of contamination no leachate or groundwater testing will be performed. Where a potential source is identified the testing will comprise leachate testing on the material considered most likely to pose a risk, groundwater testing will be undertaken if water is present at shallow depth.

The UK Drinking Water Standards (UKDWS) or Environmental Quality Standards (EQS) are usually adopted for comparison with the leachate/groundwater test results. When the most sensitive receptor is considered to be the aquifer (groundwater) UKDWS will be adopted as the Initial Tier 1 screening values. Where the most sensitive receptor is a surface water feature the EQS values will be used as Initial Tier I Screening values.

ix CONSTRUCTION MATERIALS RISK ASSESSMENT METHODOLOGY

The 'screening levels' adopted for the assessment of risk to construction materials are taken from the following documents:

- UK Water Industry Research (UKWIR) Contamination thresholds for sub-surface water pipes, for the protection of buried pipes.
- Building Research Establishment (BRE) Special Digest SD1 (2005), 'Concrete in Aggressive Ground', for the protection of buried concrete.

x WASTE DISPOSAL, SITE WASTE MANAGEMENT PLANS AND MATERIAL MANAGEMENT PLANS

Under current Waste Management Regulations, waste soil materials produced from the site will require characterisation to enable it to be disposed of correctly.

The chemical analysis results included in this report should be provided to the relevant landfill operators to establish the characterisation of the waste, confirm its suitability for landfill disposal and provide estimated costings. If material is classified as hazardous, then the site will need to be registered with the Environment Agency prior to the movement of the waste. Depending on the receiving landfill's current permit, further chemical analysis, incorporating Waste Acceptance Criteria (WAC) leachate analysis, may be required.

All materials removed from the site will be classified as 'waste' and therefore must be removed by a suitably licensed carrier of waste. This applies whether or not the waste is contaminated. All waste removed to landfill will attract Landfill Tax.

The developer/builder is likely to be classed as the waste producer and therefore, has a duty of care to ensure that all waste is disposed of appropriately. This includes ensuring the waste carrier is licensed and disposes of the waste to a suitably licensed landfill site. They are also required to keep a paper trail from 'cradle to grave' including copies of the waste disposal tickets.

Efficient materials management on site is recommended as it can lead to significant cost savings when compared to the traditional side casting or single stockpile of arisings. GRM can assist in the production of Material Management Plans under the CL:AIRE Definition of Waste: Code of Practice. The DoWCoP enables:

- The direct transfer and re-use of clean naturally occurring soil materials between sites, and
- The re-use of both contaminated and uncontaminated materials on their site of origin and between sites within defined Cluster projects.

GRM can also undertake the role of Qualified Person and submit the DoW CoP project Declaration.

Likewise making the site as volume neutral as possible will reduce the costs of development. Whilst not a statutory requirement, Site Waste Management Plans allow better waste management practices, help to reduce the amount of waste produced and identify best environmental disposal options. Implementing a Site Waste Management Plan (SWMP) can reduce costs (increasing business profits) and maximise resource efficiency.

xi GEOTECHNICAL ASSESSMENT GENERAL COMMENTS

Where finished floor levels of proposed structures have not been provided by the Client, then for the purposes of initial assessment, GRM will assume that finished levels will not vary appreciably from the existing ground levels. If the depths of any underground engineering works (i.e. sewers, pumping stations

etc.) are unknown they will not be taken in to account in the assessment and it will be assumed that any such works will not compromise foundation or ground stability.

Should the development proposals or finished levels be different from these assumptions then the comments/recommendations in the Geotechnical Assessment may require revising.

It should be noted that the results of window sampling and/or cable percussive boreholes may not give a true indication of a soils actual engineering properties (i.e. stability, mass structure etc). GRM consider that that prior to development trial pitting should be undertaken to confirm the recommendations in the Geotechnical Assessment.

xii GEOTECHNICAL ASSESSMENT – ENGINEERING GROUND TREATMENT

Near surface soils have the potential to be disturbed by weathering and site traffic. Precautions should always be taken to avoid this, as excessive disturbance may leads to more onerous floor slab designs, road cap thickness and increased amounts of off-site disposal etc.

Near surface soils may need treatment or reinforcing to allow safe movement of construction plant and labour. An assessment by the contractor should be undertaken once the type of machinery/plant needed to complete the development is known.

xiii GEOTECHNICAL ASSESSMENT – EXCAVATIONS

Excavation instability (over-break) can result in damage to existing services or structures (e.g. foundations, roads or boundary walls/fences) both on and off-site, as well as increased foundation concrete costs. In order to minimise this, all excavations deeper than 1.2m deep (or any excavation within 1.5m of any existing structure or service) should be supported. Full support should be provided to the full depth of all near vertically sided excavations in made ground, soft and very soft clays and granular soils. A reduction to intermediate support should be acceptable within firm and stiffer natural clays.

Wherever possible, man entry into excavations should be prevented; however, where this is not possible, entry to, and time spent in, excavations should be kept to a minimum.

The build program should be tailored to reflect the impact that deep excavations through potentially unstable strata can have on adjacent properties, so that they are not undermined.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times. Reference should be made to HSE construction information sheet No. 8 (Revision 1) 'Safety in Excavations'.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

If contaminated water enters excavations it should be removed and transported to an appropriate treatment facility by a suitably licensed carrier before construction begins.

xiv GEOTECHNICAL ASSESSMENT – SUBSTRUCTURES

Where practicable, existing buried construction should be fully removed; however, if this is not practicable all new foundations should be carried down to fully penetrate it and it should be broken well away from all new structures.

There may be existing structures and/or infrastructure in close proximity to the proposed development. New build foundations may be constructed next to pavements with existing underground services beneath them, or excavations may be required near existing footings associated with adjacent properties. These potential hazards need to be taken into consideration when designing foundations and the groundworker needs to be made aware of their potential impact during the redevelopment works. Foundations close to existing underground services or buildings may require alternative foundation techniques (such as piling) to protect the integrity of these structures.

The contractor for the works should carry them out in such a fashion so as to not cause excessive overbreak, concrete usage or undermine existing buildings/roads/ services that are to be retained.

xv GEOTECHNICAL ASSESSMENT – SOAKAWAYS

Soakaway testing in trial pits by GRM is broadly carried out in accordance with BRE DG 365 (2016). The testing comprises the excavation of a test pit to a suitable depth, and the placement of water into the pit. The level of water present is then monitored over time. For borehole installations, the permeability testing (falling head/rising head) is undertaken in accordance with BS5930.

If it is decided to proceed with the use of soakaway drainage, then the following general points should be noted:

- Soakaways should not be placed so that water can be discharged through potentially contaminated made ground.
- The Environment Agency may require soakaways to be sealed systems such that only roof run off falls to soakaway.
- Interceptors are likely to be required for soakaways for highway drainage. The adopting authority for the highways should be consulted at the earliest opportunity regarding the use of soakaways for highways drainage.
- Consideration of site levels and slopes should be taken into account during the design.
- The construction of all soakaways should be in accordance with the current building regulations.
- Soakaways should not be placed within 5m of a proposed building.
- Placement of soakaways needs to be considered so as to avoid ponding of water down slope.
- The base of a soakaway should not be below the highest recorded water level.
- The Environment Agency prefer 1m of dry soil to be present between the base of a soakaway and the water table to provide attenuation for contamination.

xvi GEOTECHNICAL ASSESSMENT – FOUNDATIONS

If soft or hard spots are encountered during foundation excavation then they should be replaced with suitably compacted material or the footings deepened to suitable strata, to avoid differential settlement.

If strata of differing bearing character (e.g. sand and clay) are encountered at foundation levels within the excavations for a single plot then the excavation depths should be altered as appropriate to ensure the foundations rest on a single stratum, or strata that will not induce differential settlement. Where this is impractical then GRM should be contacted to assess a reinforced concrete detail or an alternative foundation solution (e.g. piles or vibro-replacement).

NOTES ON LIMITATIONS

General

GRM Development Solutions Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement had been executed, or with whom an assignment had been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from GRM Development Solutions Limited; a charge may be levied against such approval.

GRM Development Solutions Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) the consequences of this document being used by any third party with whom an agreement has not been executed.

Phase I Environmental Audits/ Desk Studies

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, GRM Development Solutions Limited reserves the right to review such information and as considered necessary and appropriate to modify the opinions accordingly. It should be noted that any risks identified in a Phase 1 report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits (Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, and controlled waters.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as provisional only and must, in any event, be confirmed by a commercial adviser.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. Whilst exploratory testing is intended to gain an accurate representation of the site, the very nature of sampling and testing is such that it cannot ensure that all localised conditions are detected

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

Phase II Geo-environmental Investigations (Combined Geotechnical and Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environment risks together with engineering and development implications. If costs have been included in relation to site development a commercial adviser must confirm these.

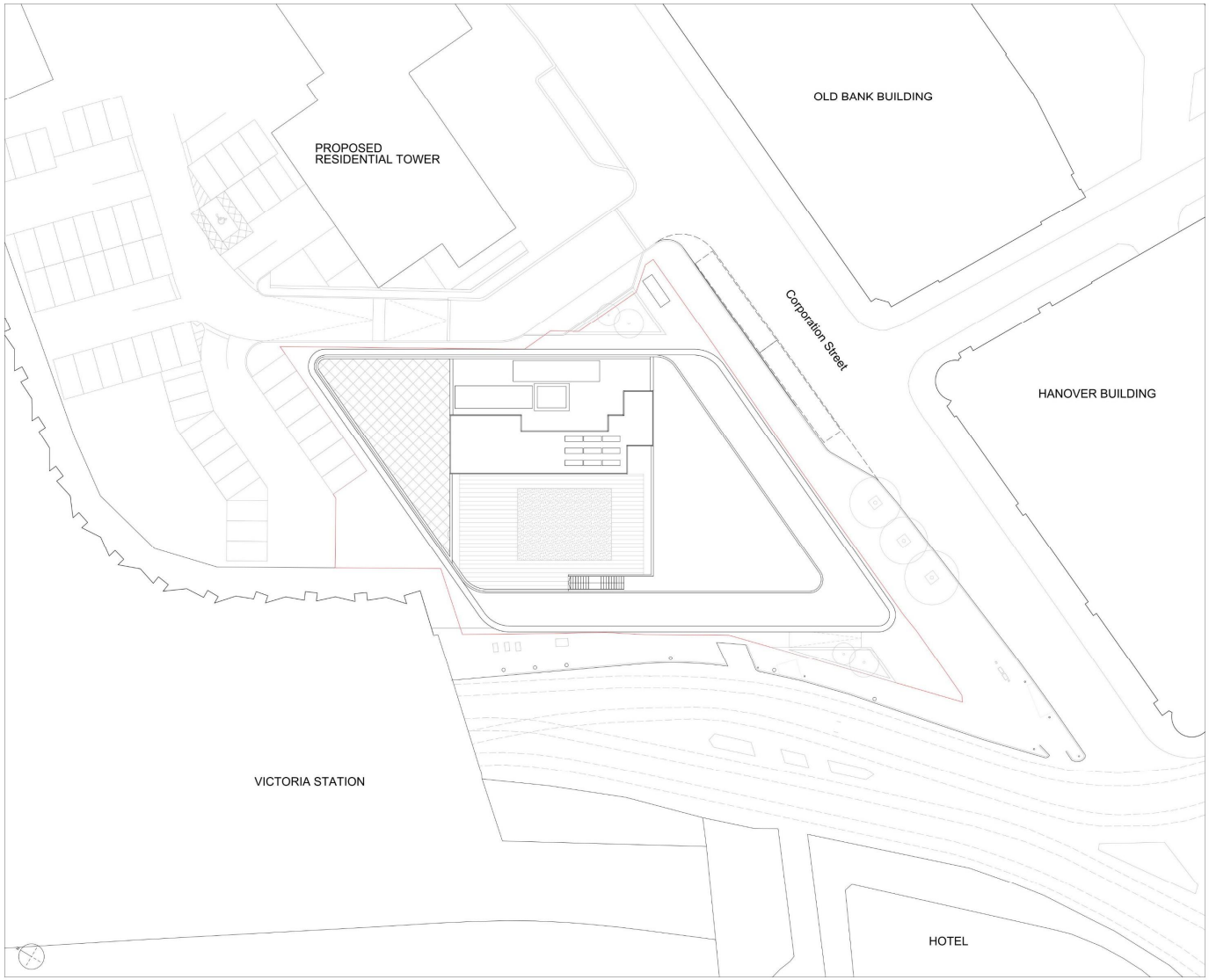
The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site for each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time the site work was conducted. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

APPENDIX B



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Key

Planning Boundary

0m 5m 20m
2.5m 10m

Rev	Date	Description
P1	31/05/22	Issued for Planning

Key Plan

Project
New Victoria, Manchester

Client
Toriview Ltd.

Date 31.05.2022
Drawing Scale 1:200 @ A1 / 1:400 @ A3

Drawing Title
Proposed Site Plan

Drawn EZ
Checked NH
Approved NH

Drawing Status
Planning

Project	Discipline	Level	Series	Dwg No	Rev
13701	A	L11	P00	002	P1

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DO NOT SCALE

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CLIENT:
AJP / Vinci Construction (on behalf of Morgan Capital)

PROJECT:
New Victoria Office Block, Manchester

TITLE:
Proposed Development Plan – Proposed Site Layout

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN : RHC	DATE: Feb 2023
PROJECT No: P10056	DRAWING No: Figure 1a

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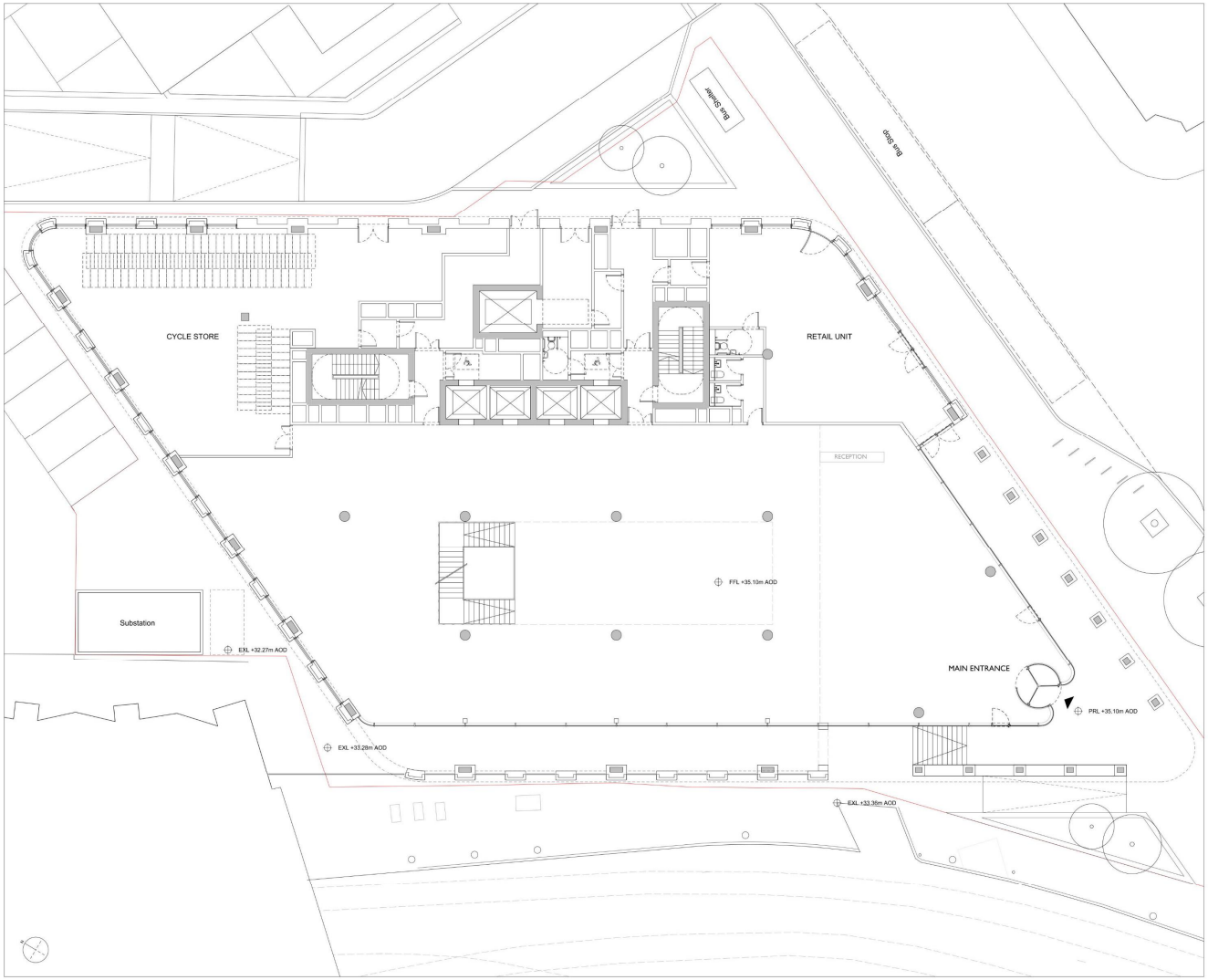

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Key

Planning Boundary

0m 1m 2.5m 5m 10m

Rev	Date	Description
P1	31.05.22	Issued for Planning
A	01.04.22	Stage 2 Issue.

Key Plan

Project
New Victoria, Manchester

Client
Toriview Ltd.

Date
31.05.2022

Drawing Scale
1:100 @ A1 / 1:200 @ A3

Drawing Title
General Arrangement
Proposed Ground Floor Plan

Drawn	Checked	Approved
EZ	NH	NH

Drawing Status
Planning

Project	Discipline	Level	Series	Dwg No	Rev
13701	A	00	P03	100	P1

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Burton-on-Trent, Staffordshire
Tel: 01283 551 249
info@grm-uk.com www.grm-uk.com

CLIENT:

AJP / Vinci Construction (on behalf of Morgan Capital)

PROJECT:

New Victoria Office Block, Manchester

TITLE:

Proposed Development Plan – General Arrangement Proposed Ground Floor

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
RHC	Feb 2023
PROJECT No:	DRAWING No:
P10056	Figure 1b

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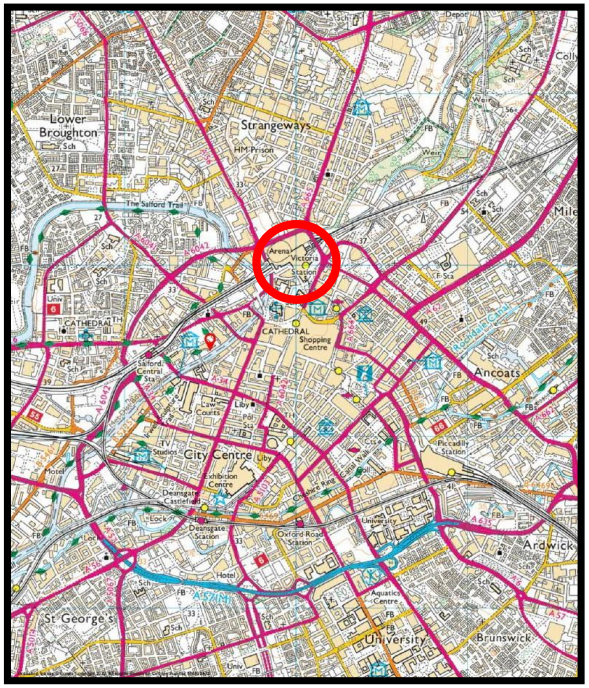
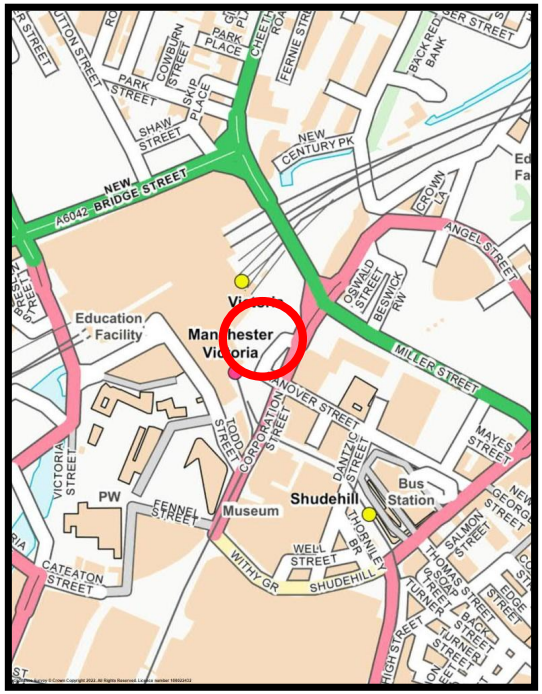
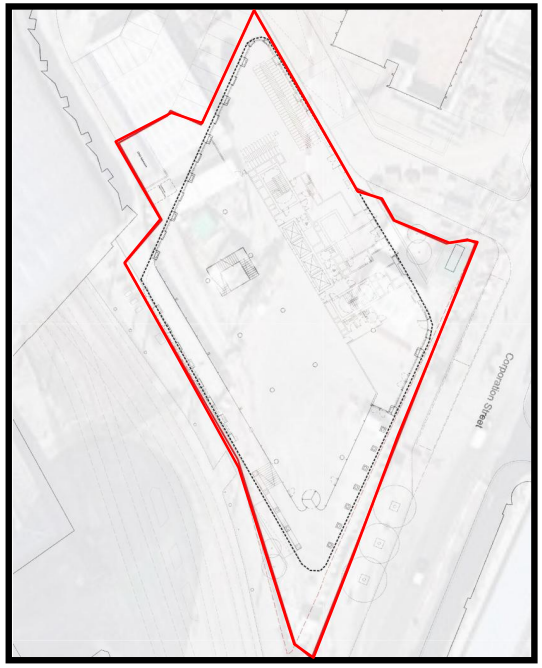
APPENDIX C







N

DO NOT SCALE

NOTES:

Approximate site location

Approximate site boundary

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PROJECT:

New Victoria Office Block, Manchester

TITLE:

Site Location and Boundary Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN : RHC	DATE: Feb 2023
PROJECT No: P10056	DRAWING No: Figure 2

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