

DANTZIC STREET, MANCHESTER - SITE INVESTIGATION SCOPE

Reference: LKC 18 1306

Date: October 2019

Local Authority: Manchester City Council

1.0 Introduction

LKC have been instructed to carry out a Phase 2 geo-environmental investigation at the above site associated with the redevelopment of the site for mixed residential and commercial use (planning ref: 114860/FO/2016). Current and proposed development plans are enclosed.

A Ground Conditions Desk Study was undertaken by Hydrock (ref: R/151819/G001, dated: December 2015).

Based on the finding of the desk (summarised in Section 2) a site investigation has been designed and is detailed in Section 3. The PRA should be read in conjunction with this site investigation scope.

2.0 Summary of Preliminary Risk Assessment

The Desk Study report produced by Hydrock, Ref: R/151819, dated December 2015 is summarised in Table 2-1.

Site Location	North side of Dantzic Street, Manchester. Centred at approximate NGR 384630E 399431N.
Site Area	Approximately 0.77 hectares.
Current Land Uses	At the time of the site walkover it was noted the site is split into three sections; the eastern and south eastern part was owned by a waste management and skip hire company, the main part of the site was owned and used by a sign making company and the north west corner was being used for as a welfare compound for a nearby construction site.
Proposed Development	Residential and commercial development – erection of part 6, part 10, part 15 and part 24 storey building to comprise residential apartments with commercial floor space with associated car parking, public realm, hard and soft landscaping and other associated works.
Historical Land Uses	Originally the site was occupied by residential properties but following this it has been subject to several phases of industrial development including a bolt works, rubber works, an asphalt works and more recently as a waste transfer station. Potentially contaminative land use in the surrounding area includes a former gas works to the south, a dye/chemical works to the west and railway sidings to the south.
Geology	Superficial: Glacial Till Deposits. Bedrock: Chester Pebble Beds sandstone. Made ground is expected given the former development of the site.
Hydrogeology	Superficial: Unproductive Strata. Bedrock: Principal Aquifer. Site is not within a Source Protection Zone.
Hydrology	The River Irk is located 40m to the northwest of the site and flows south east.
Contamination Risks	Low to moderate contamination risk for a redeveloped site confirmed by appropriate site investigation.

Table 2-1: Summary of Phase 1 Report.

LKC recently carried out a site reconnaissance. The site was similar to the description of the site in the original desk study report, no further sources of contamination were identified.

3.0 Proposed Scope of Works

A sketch plan is included which shows the proposed site investigation locations.

BS10175¹ recommends a sampling density of 1 sample per 10-25m square centres for a detailed investigation and 1 sample per 25-50m square centres for an exploratory investigation.

The scope provided includes 16no. investigation locations (8no. boreholes and 8no. trial pits) and will allow a sampling density of 1 sample per 15-20m square centres.

If significant contamination is identified or unusual / unexpected ground conditions are encountered further investigation work may be required.

LKC propose to carry out trial pitting using a mechanical excavator, window sample boreholes and rotary boreholes to assess deeper ground conditions (details below).

Window Sample Boreholes

5no. window sample boreholes will be drilled to 5-6mbgl or refusal. In-situ geotechnical testing in the form of shear vanes and / or Standard Penetration Tests (SPTs) will be undertaken in the natural strata at 1m intervals.

Material will be logged to BS14688-1² and soil samples (bulk and disturbed) will be collected for analysis. Groundwater strikes where encountered will be recorded.

All the boreholes will be fitted with monitoring installations to allow for gas monitoring and groundwater sampling, if required.

Trial Pits

8no. trial pits will be excavated to 3-4m using a mechanical excavator. Hand shear vane readings will be undertaken on any cohesive deposits encountered. Material will be logged to BS14688-1 and bulk and disturbed soil samples will be collected for analysis.

Rotary Boreholes

Due to the nature of the development and assumed shallow depth to bedrock, rotary boreholes are proposed to collect core samples for logging and rock testing. Rotary boreholes will be cored to depths of between 15mbgl and 30mbgl.

Material will be logged to BS14688-1 and soil samples (bulk and disturbed) will be collected for analysis. Groundwater strikes where encountered will be recorded.

Selected boreholes will be installed with monitoring wells to allow for groundwater monitoring.

¹ British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice." BS10175:2017

² British Standards (2002) Geotechnical investigation and testing – Identification and Classification of Soil. Part 1: Identification and description. BS EN ISO 14688-1:2002.

Soil Sampling

Soil samples will be collected from all the intrusive locations. A photoionisation detector (PID) will be used to screen soils for total volatile organic compounds (TVOCs) on site.

Representative soil samples will be sent to an approved laboratory and tested for the following contaminants:

- » 18no. samples: asbestos screen (ID and quantification if present), arsenic, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate, pH, speciated PAH and organic matter.
- » If TVOCs detected or visual / olfactory evidence of solvents: SVOCs and VOCs.
- » If TVOCs detected or visual / olfactory evidence of petroleum hydrocarbons: TPHCWG and BTEXs.

Water Sampling

Groundwater sampling may be required if evidence of significant mobile contamination is identified in the soils.

If required, samples will be tested for similar contaminants to the soil comprehensive suite (subject to ground conditions encountered and soil test results).

Monitoring

A low risk has been identified with respect to the gas risk and further action is only recommended if a source of gas is identified on site. Gas monitoring will be undertaken, or precautionary gas protection measures will be recommended if a significant depth of organic / putrescible made ground or organic natural strata is identified.

4.0 Reporting

A Phase 2 Geo-Environmental Risk Assessment and Remediation Strategy Report will be produced and will include:

- » Summary of PRA.
- » Summary of site works undertaken, including sample location plans.
- » Details of ground conditions including borehole logs, depth of any in ground obstructions and depth to competent strata and / or rockhead.
- » Geotechnical assessment including estimates of allowable bearing pressures and outline foundation options.
- » A Generic Quantitative Risk Assessment (GQRA) will be undertaken. Soil, groundwater (if required) and gas concentrations (if required) will be compared with current appropriate published guidelines, in relation to identified receptors from the conceptual model.
- » Revised Conceptual Site Model.
- » Initial Waste Assessment (to determine the classification of soils for offsite disposal).
- » Recommendations for further investigation work (if required).
- » Remediation Strategy.

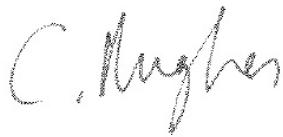
With regards to the soil risk assessment LKC will use the following assessment criteria hierarchy:

- Category 4 Screening Levels (C4SLs)^{3, 4}.
- LQM Suitable 4 Use Levels (S4ULs)⁵.
- ATRISK Soil Screening Values (SSVs) and CL:AIRE Generic Assessment Criteria (GACs)⁶.

As the most sensitive use of the site will be residential apartments with soft landscaping, 'residential without plant uptake' assessment criteria will be used.

The scope of works detailed here has been based on the findings of the PRA and I trust that the information present is sufficient to approve the proposed Phase 2 Ground Investigation at the study site,

On behalf of LK Consult
Yours sincerely



CHRIS HUGHES
PRINCIPAL GEO-ENVIRONMENTAL CONSULTANT

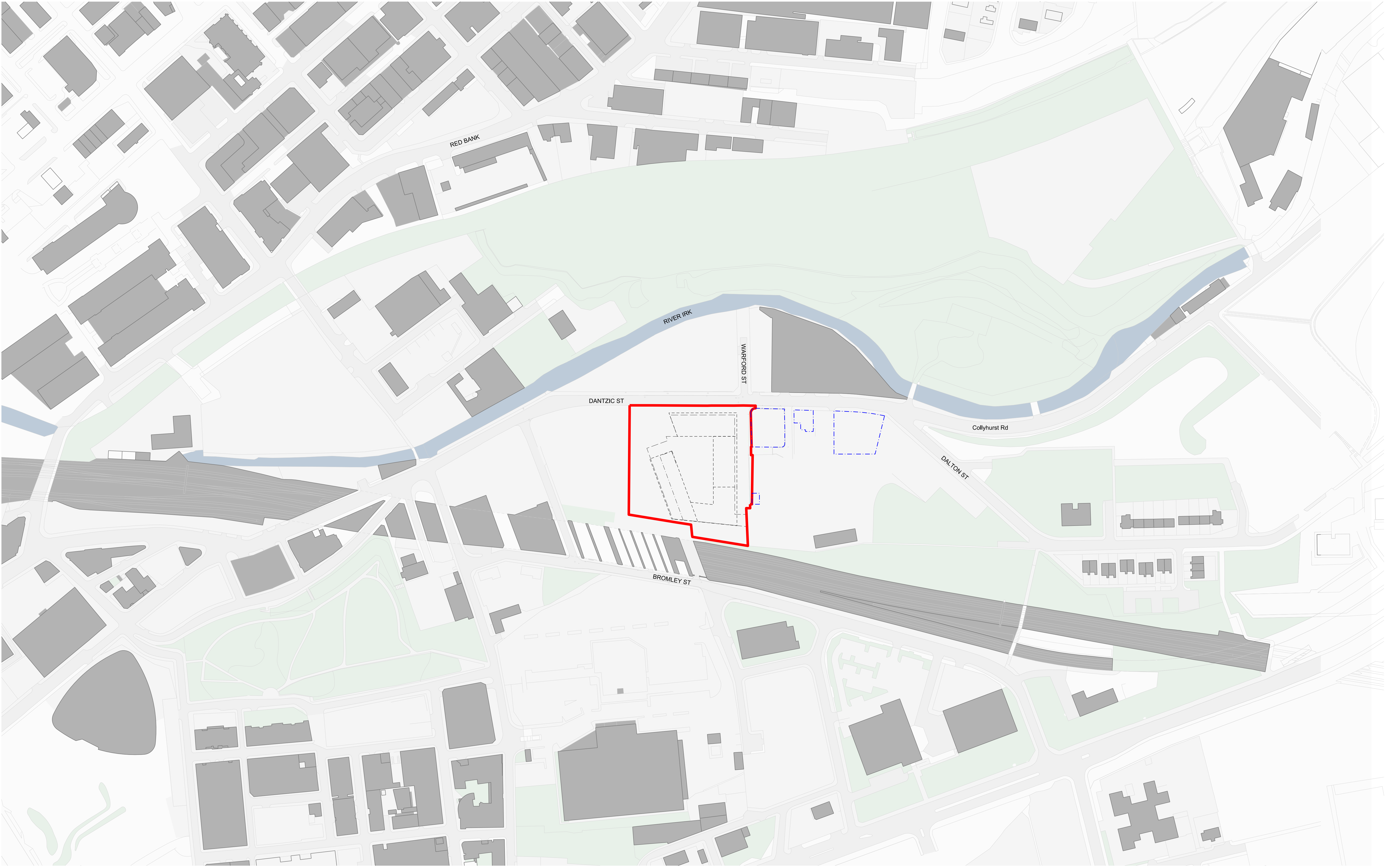
Enc:
Site Location and Boundary Plan
Proposed Development Plan.
Proposed Site Investigation Location Plan Sketch.

³ Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

⁴ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

⁵ LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

⁶ CL:AIRE (2009). "The Soil Generic Assessment Criteria for Human Health Risk Assessment."



-  North View Planning Boundary
-  Adjoining ownership
-  North View Proposed Massing

NORTH VIEW, DANTZIC STREET

MANCHESTER

Proposed Plan - Site Location

10034-A-G100-RF-099

DECEMBER 2016

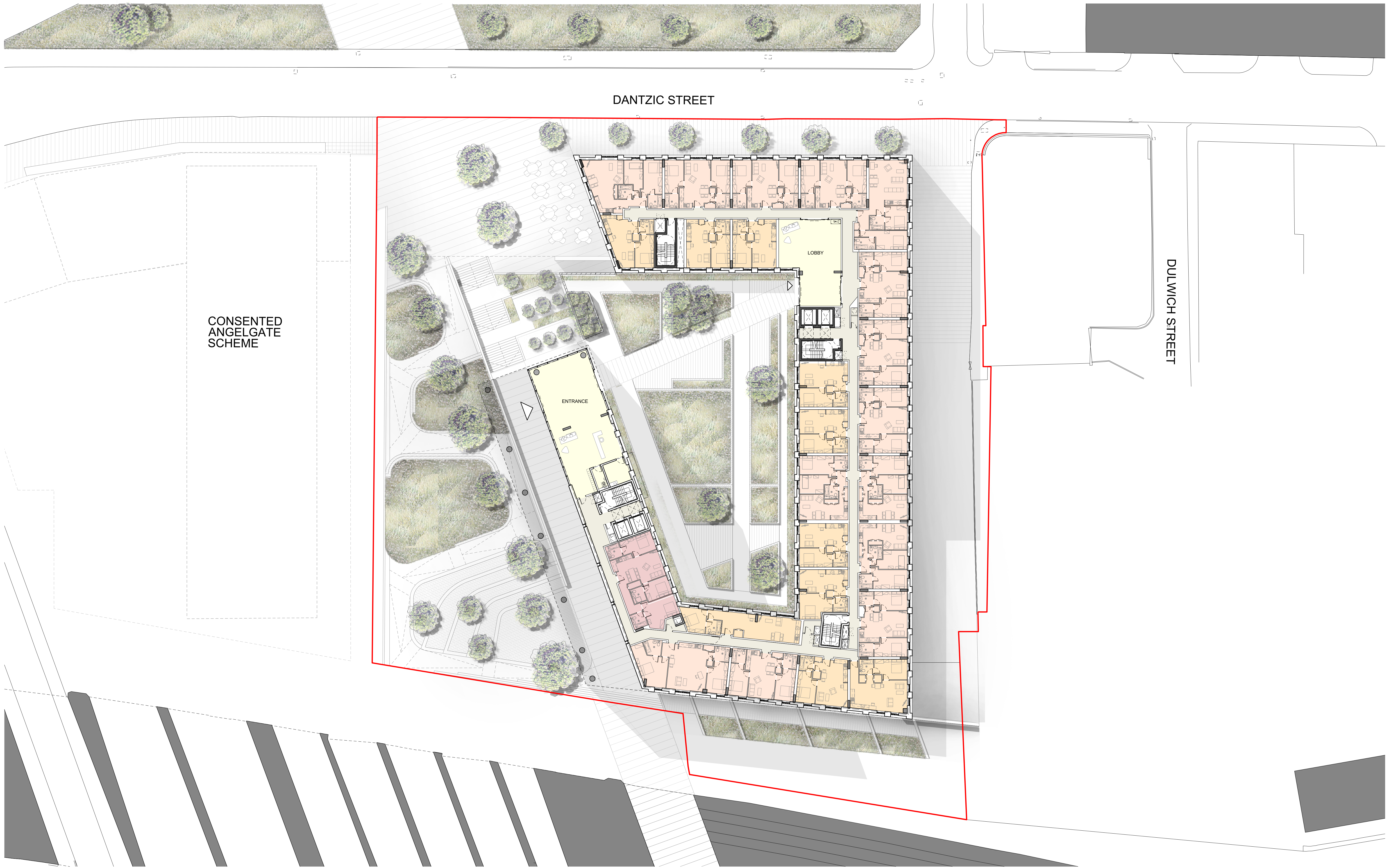
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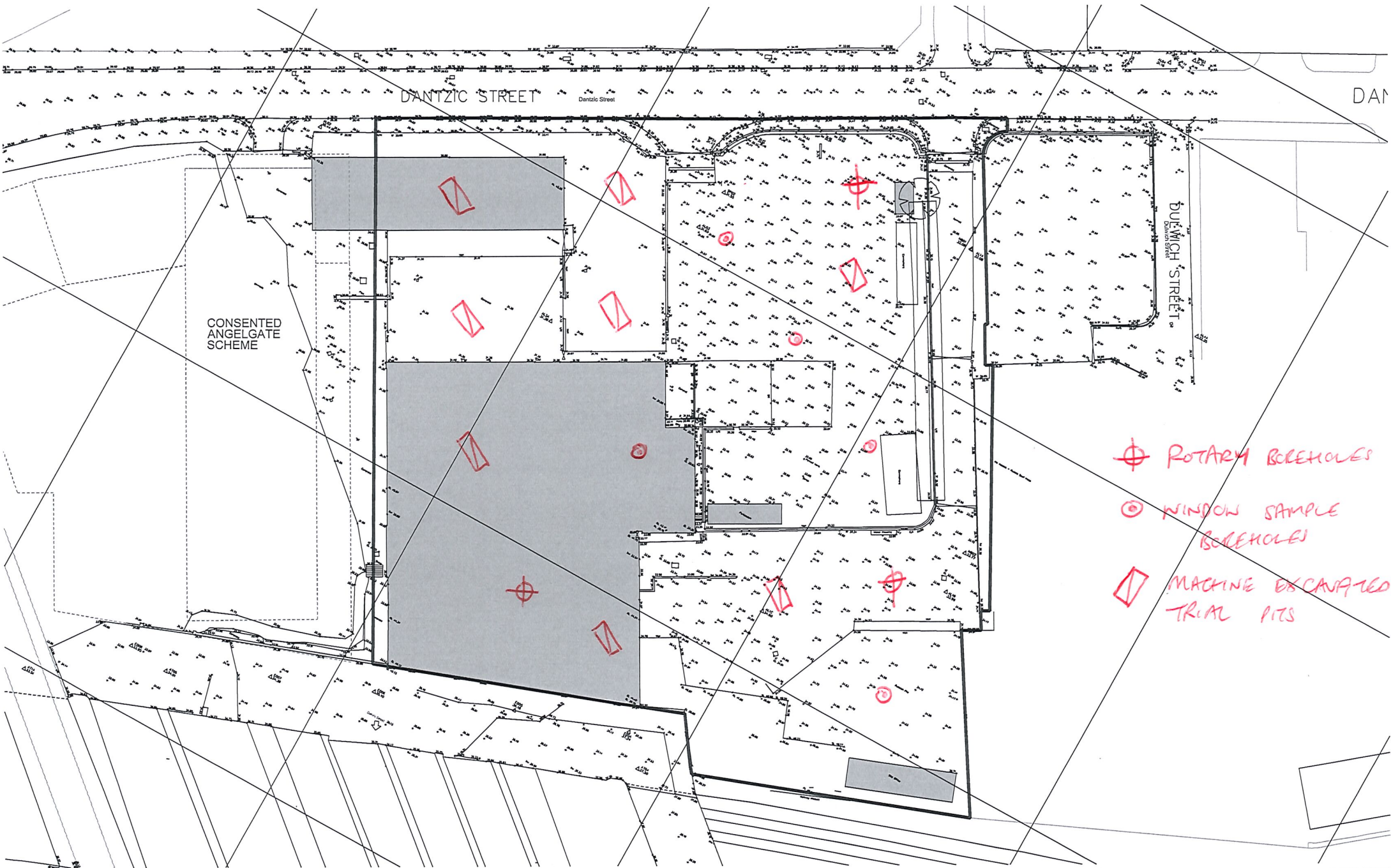
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LONDON
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 Planning Boundary	Key 1 Bed Apartment 2 Bed Apartment 3 Bed Apartment Entrance/ Lobby Gym Commercial Unit(s) Car Parking Plant Circulation	NORTH VIEW, DANTZIC STREET		10034-A-G200-P-01-099		SimpsonHaugh AND PARTNERS MANCHESTER Riverside, 4 Commercial St Manchester M15 4RQ +44 (0)161 835 2345 LONDON 5-3 Roberts Place London EC1R 0BB +44 (0)20 7549 4000
		MANCHESTER		DECEMBER 2016		
		GA Plan - Level 01		10034	1:250	



-  ROTARY BREEHOLES
-  WINDOW SAMPLE BREEHOLES
-  MACHINE EXCAVATED TRIAL PITS