

MAG T3 Security Search Area Re-Provision Geoenvironmental Desk Study

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MAG T3 Security Search Area Re-Provision Geoenvironmental Desk Study

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1. Introduction

1.1 Background

Jacobs have been appointed by Manchester Airport Group (MAG) to undertake a Geoenvironmental desk study for the Manchester Airport Terminal 3 (T3) Security Search Area Re-Provision project.

MAG Airport Ltd are delivering a Group Future Security Regulations programme of works to meet the DfT Future Security Regulation June 2024, this will include Computed Tomography (CT), Automated Tray Return Systems (ATRS), Directive Search (DS), Central Image Processing (CIP), body scanners and shoe screening. A programme of works has been established, group wide, to upgrade the existing security facilities (passenger and non-passenger) to accommodate these new requirements.

1.2 Development Proposals

The proposed project is to construct an extension located over Stand 18 that adjoins the existing T3 security facility to facilitate the installation of new security equipment as detailed above and potentially all associated security requirements, not limited to, a screening room, server room and welfare facilities. This new structure will link into, and encompass, the existing security hall and passengers will exit the facility via a new walkway into the main terminal.

The proposed works include the development of a new raised building to accommodate outbound security at T3 appropriate for future security requirements, the footprint of which lies partially within the existing T3 building and partially on the airport apron.

After reviewing a number of layout options for the proposed security facility, which are detailed in the Royal Institute of British Architects (RIBA) Stage 1 Design Report [1], MAG opted for option 1C, as outlined within Appendix A, Drawings MAN1004262-MAN.TL3.00.SE-PWL-A-GA-BLDSTR-4510.

1.3 Purpose of this Report

The purpose of this report is to fulfil the requirements of a desk based Preliminary Risk Assessment, as set out in the Environment Agency online Land Contamination Risk Management guidance (LCRM)¹, in order to support the planning application process for the proposed development and to allow the scope of a ground investigation to be defined with due consideration of potential land contamination.

1.4 Sources of Information

The following data sources have been reviewed:

- British Geological Survey (BGS) geology maps (paper maps and digital mapping available on GeoIndex).
- British Geological Survey GeoIndex borehole records.
- DEFRA mapping, showing aquifer designations.
- Groundsure Enviro+GeoInsight Report No. GSIP-2022-12646-9985 dated 26 April 2022.
- Groundsure Cheshire Salt Search Report No. GS-8753844 dated 17 May 2022.
- Environment Agency mapping, showing landfills, flood zones and pollution incidents.
- Zetica website, with unexploded ordnance risk maps.
- Satellite imagery and OS mapping.
- Historical ground investigation factual reports and technical memorandums provided by MAG.

¹ <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

1.5 Limitations

The purpose of this report and the associated services performed by Jacobs is to understand the land contamination related risks and constraints associated with the proposed Manchester Airport Terminal 3 (T3) Security Search Area Re-Provision project in accordance with the scope of services set out in the contract from Jacobs.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate, or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report for the purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Jacobs for use of any part of this report in any other context.

All distances quoted are approximate.

This report has been prepared on behalf of, and for the exclusive use of Jacobs' client Manchester Airport Group (MAG), and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and MAG. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

2. Site Description

2.1 Site Location and Description

The site is located at T3, Manchester Airport. The site lies airside of T3 on the airport apron with a small section partially within the existing T3 building. The approximate British National Grid reference for the site is 382036, 384932. The site location is illustrated in Appendix A, Figure A1.

The site lies within an active airport zone and interacts with the T3 baggage hall. The site lies on an area of hard standing beneath aircraft stand 18 and is bounded to the north by T1 and the east by T3. To the west and south of the site are further aircraft stands 17 and 41 in addition to the aircraft taxiway.

The ground level of the site is relatively flat with elevations ranging between 74.1m AOD and 73.1 m AOD dipping very slightly to the northwest.

2.2 Site History

A review of historical mapping provided within the Groundsure Enviro+GeoInsight report [2] has been undertaken and the information summarised in Table 1. Maps from 1872 to 2022 have been reviewed (see Appendix B for copy of the Groundsure Enviro+GeoInsight report).

Table 1. Historical development of the site

Year	Map Scale	Key Developments
1872 - 1877	1:2,500	The site is predominantly made up of small buildings with a small pond in the south east corner. A small orchard is located along the western boundary of the site. Yewtree Lane runs from east to west across the northern half of the site. A small orchard is present adjacent to the east of the site with Firtree Farm beyond. Multiple circular features are present within the vicinity of the site and interpreted to be ponds. The surrounding area appears to be mainly agricultural with some areas of woodland.
1898	1:2,500	Section of small orchard has reduced in size on the western boundary and an additional small building is now present. A small pond is present approximately 20m west of the site.
1897 - 1899	1:10,560	No significant changes are apparent.
1909	1:2,500	No significant changes are apparent.
1907 - 1910	1:10,560	No significant changes are apparent.
1938	1:10,560	No significant changes within the site boundary. One large and two small buildings are now present approximately 100m west of the site boundary. Agricultural fields and woodland to the south and south west of the site now appear to be cleared with no notation as to the current land use (probably indicative of the establishment of a military airfield in the area).
1954	1:10,560	The on-site buildings and Firtree farms (and associated buildings) are no longer present on the mapping and an additional three small buildings are present within the site boundary. Small pond is no longer present. Additional large and small buildings are also now present within 100m of the site. The parcel of land to the south and south west of the site is now labelled as Ringway Airport with annotated runways/ taxiways.
1960 - 1963	1:1,250	The site boundary is omitted from the provided mapping. Extensive development has taken place to the north of the site. A large building is present within 100m of the site to the north west, with associated car parks present beyond. Other small buildings are present to the north east. Outwood Lane is present approximately 100m north east of site with buildings present beyond.

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Year	Map Scale	Key Developments
1967	1:10,560	The site boundary is omitted from the provided mapping. No significant changes are noted to the north of the site.
1967 - 1969	1: 2500	A gantry/ pier is present in a north south orientation across the site annotated as Domestic Pier. Large buildings to the east of the site are now annotated as hangars. Road infrastructure has undergone further development with multiple new roadways and a roundabout present to the north of site. An electricity transformer is present approx. 100m north east of site.
1970	1:2,500	No significant changes are apparent.
1974 and 1976	1:1,250	The site boundary is omitted from the provided mapping. No significant changes are noted to the north of the site.
1976 - 1977	1:10,000	No significant changes are apparent.
1987	1:1,250	No significant changes are apparent on site. A feature annotated as a tank is present approximately 170m east of the site alongside a further electric substation.
1989	1:10,000	No significant changes are apparent.
1990 - 1992	1:1,250	Gantry/ pier is no longer present through the site. A new building is present adjacent to the eastern boundary of the site running north to south.
1993 - 1995	1:1,250	The site boundary is omitted from the provided mapping. No significant changes are apparent to the north of the site.
1995	1:10,000	The site boundary is omitted from the provided mapping. No significant changes are apparent to the north of the site.
2001	1:10,000	No significant changes apparent within the site boundary. The hangars previously present to the east of site are now gone and have been replaced by a large building annotated as Terminal 3 (from 2003 map onwards) and forms part of the buildings that immediately border the site to the east and north. The terminal building and multistorey car park to the north are now combined as one large building annotated as Terminal 1.
2003	1:1,250	No significant changes are apparent.
2010 - Present	1:10,000	No significant changes are apparent.

In summary, the site is located in what was historically a largely agricultural area until the development of Ringway Airport c.1930s and subsequent expansion into what is now the Manchester Airport site.

3. Environmental Setting

3.1 Published Geology

3.1.1 Made Ground

BGS mapping [3] [4] does not record any artificial (made) ground across the site. However, made ground in the form of airport pavement is present across much of the site associated with the current use as an aircraft stand. Based on aerial photography this is expected to be rigid pavement comprised of concrete slabs, which are likely to be supported on an engineered granular fill. Foundations may be present beneath the pavement associated with the airport buildings or historical building developments noted from mapping data.

3.1.2 Superficial Ground

The superficial geology is recorded as glaciofluvial deposits and glacial till [3] [4] and is shown on Figure A2, Appendix A. The easternmost extent of the site is underlain by glaciofluvial deposits comprising sand and gravel, locally with lenses of silt, clay or organic material [5]. The rest of the site is underlain by glacial till comprising a heterogeneous mixture of clay, sand, gravel and boulders varying widely in size and shape (diamicton) [5].

3.1.3 Bedrock Geology

BGS mapping [3] records the underlying bedrock geology of the site as the Bollin Mudstone Member comprising an upper part of dominantly laminated reddish-brown and greenish-grey mudstone with siltstones and a lower part of structureless and laminated, dominantly reddish-brown mudstone [5]. The Bollin Mudstone Member is part of the Sidmouth Mudstone Formation and ultimately the Mercia Mudstone Group (previous names of the unit include Lower Keuper Marl).

Within the top of the Bollin Mudstone Member, three no. halite beds up to 1 m in thickness have been recorded and crystals of gypsum are present. In a number of boreholes at the airport these halite bands have been dissolved forming collapsed beds less than 1 m in thickness [6]. Collapse breccias have been mapped on the Manchester Airport west apron to the west of the site and there may potentially be further unmapped collapse breccia in the vicinity of the site.

The bedrock geology is illustrated on Figure A3, Appendix A.

The bedrock is expected to dip shallowly ($\sim 5^\circ - 10^\circ$) to the south [7].

3.1.4 Structural Geology

BGS mapping [3] [7] records a series of faults to the east, west and south of the site orientated north north west to south south east. Two no. normal faults are recorded approximately 750 m east of the site dipping to the west. One no. fault is recorded approximately 650 m to the west dipping east, this fault joins an additional normal fault ~ 800 m south of the site dipping west. The site appears to lie within a fault trough. Wilson [6] describes a number of additional faults, one of which lies 12 m to the west of the site. This north north west to south south east orientated fault is named the Station Fault, has an offset of 25 m and is downthrown to the east. The structural geology is illustrated on Figure A3, Appendix A.

3.1.5 Available BGS Borehole Records

The BGS [3] record a large number of exploratory holes across the airport site associated with the construction of new structures. Where exploratory hole logs are available they have been summarised in Table 2. Confidential reports and exploratory holes greater than 250 m from the site have not been included. Three no. exploratory holes within the 250 m site buffer have not been included as no logs are available, these are SJ88NW570, SJ88NW574 and SJ88NW578.

Table 2. Available BGS Borehole Records

GeoIndex reference	Exploratory Hole ID	Year	Easting	Northing	Ground elevation (m AOD)	Approx. distance/ direction from site.	Depth (m)	Superficial deposits (m below ground level (bgl))	Bedrock (m bgl)	Groundwater
SJ88NW26/1	Ringway Airport 1	N/A	381935	385045	N/A	150 m NW	1.52	0 – 0.81: Sand with clinker inclusions 0.81 – 1.04: Grass, soil and stones 1.04 – 1.52: Grey clay > 1.52: Brown clay	N/A	N/A
SJ88NW26/2	Ringway Airport 2	N/A	381865	385045	N/A	200 m NW	1.52	0 – 0.61: Sandy soil and fill 0.61 – 0.76: Soil and turf 0.76 – 0.91: Stony brown clay 0.91 – 1.52: Hard brown clay	N/A	N/A
SJ88NW26/3	Ringway Airport 3	N/A	382007	385042	N/A	110 m N	2.03	0 – 0.25: Brown clay 0.25 – 0.38: Brown sandy clay 0.38 – 0.76: Light brown sand 0.76 – 1.01: Dark brown sand 1.01 – 2.03: Hard dry red clay >2.03: Powdery dry red clay	N/A	N/A

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GeoIndex reference	Exploratory Hole ID	Year	Easting	Northing	Ground elevation (m AOD)	Approx. distance/ direction from site.	Depth (m)	Superficial deposits (m below ground level (bgl))	Bedrock (m bgl)	Groundwater
SJ88NW26/4	Ringway Airport 4	N/A	381862	385140	N/A	275 m NW	1.52	0 – 0.25: Hard sandy topsoil 0.25 – 0.52: Light grey sand 0.52 – 0.76: Red sand 0.76 – 1.52: Hard dry red clay >1.52: Powdery hard dry red clay	N/A	N/A
SJ88NW26/5	Ringway Airport 5	N/A	381932	385137	N/A	230 m NNW	1.65	0 – 0.20: Stiff sandy clay 0.20 – 0.38: Brown sand 0.38 – 0.61: Stiff dry light grey to reddish clay 0.61 – 1.07: Hard dry red clay 1.07 – 1.65: Powdery hard dry red clay	N/A	N/A
SJ88NW26/6	Ringway Airport 6	N/A	382005	385135	N/A	215 m N	1.52	0 – 0.30: Sandy clay topsoil 0.30 – 0.61: Brown sand 0.61 – 1.22: Dry light brown sandy clay 1.22 – 1.52: Dry light grey sandy clay >1.52: Wet soft brown clay with sand	N/A	N/A

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GeoIndex reference	Exploratory Hole ID	Year	Easting	Northing	Ground elevation (m AOD)	Approx. distance/ direction from site.	Depth (m)	Superficial deposits (m below ground level (bgl))	Bedrock (m bgl)	Groundwater
SJ88SW206	T1 EAST MANCHESTER AIRPORT R2	1995	382090	384760	73.82	175 m S	14	N/A (Shell and auger log not provided)	8.00 – 9.00: Red brown slightly weathered MUDSTONE weak with thinly spaced 10-degree bedding (gypsum veins noted) 9.00 – 10.50: Red brown slightly weathered MUDSTONE weak to moderately weak with very thin beds and inclusions of grey siltstone with thinly spaced 10 degree bedding 10.50 – 10.60: GYPSUM 10.60 – 12.77: Red brown moderately weathered MUDSTONE very weak to weak 12.77 – 14.00: Red brown slightly weathered MUDSTONE moderately weak with thinly spaced 10 degree bedding	N/A

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GeoIndex reference	Exploratory Hole ID	Year	Easting	Northing	Ground elevation (m AOD)	Approx. distance/ direction from site.	Depth (m)	Superficial deposits (m below ground level (bgl))	Bedrock (m bgl)	Groundwater
SJ88SW207	T1 EAST MANCHESTER AIRPORT R4	1995	382110	384870	74.34	100 m SE	15.86	N/A (Shell and auger log not provided)	9.70 – 15.86: Red brown moderately to slightly weathered MUDSTONE weak to moderately weak (rotary open-hole borehole) (N- values between 220 – 375 recorded)	1) Piezometer installed to 7.50 m, water standing at 8.55 m before and 7.08 m after installation 2) Readings: between 2.27 – 2.60 m (taken between "4/2" and "9/2")

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SJ88SW208	T1 EAST MANCHESTER AIRPORT R8	1995	382230	384930	74.50	175 m E	13.7	N/A (Shell and auger log not provided)	7.60 – 8.60: Grey moderately weathered, thinly to thickly laminated in places, SILTSTONE moderately weak with thinly spaced 10 degree bedding many open with infilling of soft clay and gravel. 8.60 – 10.60: Grey slightly weathered thinly to thickly laminated SILTSTONE moderately weak with thinly spaced 10 degree bedding some open and infilled with fine to medium gravel (records shattered core 9.27 – 9.35) 10.60 – 12.70: Thinly interbedded and interlaminated slightly weathered grey SILTSTONE and red brown MUDSTONE moderately weak with thinly spaced 10 degree bedding. Fractures noted. 12.70 – 13.70: Red brown slightly weathered MUDSTONE moderately weak with thinly spaced 0-5 degree slightly open bedding	N/A
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GeoIndex reference	Exploratory Hole ID	Year	Easting	Northing	Ground elevation (m AOD)	Approx. distance/ direction from site.	Depth (m)	Superficial deposits (m below ground level (bgl))	Bedrock (m bgl)	Groundwater
SJ88NW1163	T1 EAST MANCHESTER AIRPORT R12	1995	382240	385050	75.08	240 m ENE	15.55	N/A (Shell and auger log not provided)	9.40 – 10.90: Grey moderately to completely weathered SILTSTONE weak 10.90 – 12.40: Red brown moderately weathered MUDSTONE weak 12.40 – 15.55: Grey moderately to slightly weathered SILTSTONE weak to moderately weak (rotary open-hole borehole) (N- values between 217 – 347 recorded)	N/A

3.2 Recent Ground Investigations

Details of two no. ground investigations (GI) have been provided by MAG for review, summarised below:

- Geotechnical Engineering Ltd. (GEL) conducted one phase of ground investigation at the site of the Drop & Go and Terminal 3 Meet & Greet car parks located approximately 320m north-east of the site between November 2017 and March 2018.
- Socotec Ltd. conducted two phases of ground investigation at the site of the T1 Arrivals Carpark located approximately 300m north-north-west of the site between February and March 2018.

Jacobs have been provided with the following documents by MAG, relevant to the above phases of ground investigation:

- Geotechnical Engineering Ltd (2018). Manchester Airport Above Plan Car Parks, Factual Report on Ground Investigation. Report Ref: 33596 [8].
- AECOM (2018). Manchester Airport T1 Arrivals Car Park, Geotechnical and Geo-environmental Technical Note. Project No.: 60551844 [9].
 - Supporting information for the desk study included:
 - Rotary borehole engineering logs for BH02A and BH03A,
 - Rotary core photographs for BH02A and BH03A,
 - Soil geo-environmental lab results for WS01, WS02, WS04 and WS05,
 - BRE Suite test results for WS01, WS02, WS04 and WS05,
 - Leachate test results for WS03 and WS05.
- The following information was not provided:
 - Ground investigation factual reports,
 - Ground gas monitoring data,
 - Window sample engineering logs or locations.

The ground investigations are summarised below.

GI conducted by Geotechnical Engineering Ltd (2018) consisted of:

- One no. hand dug inspection pit terminated on concrete obstruction at 0.6 m bgl,
- Six no. dynamic sampling holes to a maximum depth of 9.19 m bgl
- Three no. dynamic sampling holes with rotary core follow on to a maximum depth of 19.7 m bgl.
- Standard penetration testing in nine no. exploratory holes,
- Standpipe installation in nine no. exploratory holes with four rounds of groundwater monitoring and three rounds of gas monitoring.

GI conducted by Socotec over two phases consisted of:

- Four no. windowless sampling boreholes to a maximum depth of 5.44 m bgl (engineering logs have not been provided for these boreholes).
- Two no. dynamic sampling boreholes with rotary core follow on to a maximum depth of 15.70 m bgl.
- Standard penetration testing in all exploratory holes.
- Standpipe installation in three no. exploratory holes (BH03A, WS01 and WS04) with one round of groundwater monitoring.

No visual or olfactory evidence of contamination was noted during the ground investigations. Headspace readings (measured with a photo-ionisation detector (PID)) for each ground investigation is summarised as follows:

- The ground investigation conducted by GEL on the Drop & Go car park reported a peak headspace reading of 3.8 parts per million (ppm) in BHA2-3 at 0.6m bgl (made ground). Headspace readings were observed between <0.1 and 0.5ppm within natural deposits.
- The ground investigation conducted by Socotec on the T1 arrivals car park reported headspace readings of <0.1ppm in the two rotary boreholes logs provided. Borehole logs for the four window sampling boreholes were not made available for review at the time of this technical memorandum.

The 2018 ground investigation works at the T1 Arrivals Carpark (300m north-north-west of the site), included the laboratory analysis of seven soil samples, of which two were scheduled for leachability analysis. AECOM compared the total soil analytical results against commercial/industrial generic assessment criteria (GAC). No human health soil exceedances were identified by AECOM as part of their assessment. Asbestos (chrysotile lagging) was identified in a single soil sample collected from WS3 at 0.7m (made ground). AECOM considered that any potential pathways to end users from asbestos in soils would be removed by the placement of hardstanding as part of the car park development, with appropriate health & safety measures recommended for construction and maintenance staff to reduce risk/exposure. AECOM compared the soil leachability results against published Drinking Water Standards and identified a single exceedance of benzo(a)pyrene. Given the presence of low permeability clay deposits underlying the site, AECOM considered it unlikely that the recorded concentrations in soils would represent a risk to controlled waters.

The AECOM technical note includes a ground profile summary, suggested geotechnical parameters, indicative pile capacities and conclusions and recommendations on foundations and floor slabs, concrete aggressivity and ground and groundwater contamination. This information may be viewed as indicative of the potential ground conditions for the schemes but is remote from the site and was prepared for a different structure and is hence not reported further.

3.3 Geological Ground Model

Geological long sections are shown in Appendix A, Figure A5. The conceptual geological ground model is shown in Table below.

Table 3. Conceptual Geological Ground Model

Material	Depth of stratum top ¹ (m bgl)	Level of stratum top ¹ (m AOD) ¹	Proven Thickness ¹ (m)	General Description
Made Ground- Pavement or Slab	0	74.1 -73.1	Unknown	Airport pavement construction
Made Ground	Varied across the airport.			Varied across the airport. Typically sandy gravel or gravelly sand with crystalline, concrete, brick, limestone and flint gravel.
Glaciofluvial Deposits				Typically dense, brown or grey frequently slightly clayey, slightly gravelly to gravelly SAND with interbedded soft slightly sandy to sandy, slightly gravelly to gravelly clay. (Anticipated to be encountered across the North East portion of the site, unless replaced by Made Ground).
Glacial Till				Typically soft to stiff, brown or grey, slightly sandy, slightly gravelly CLAY with occasional low cobble content.
Weathered Bollin Mudstone Member (Residual Soil)	~0.5 – 6.0	~73.5 – 68.0	~1.0 – 7.5	Typically firm to very stiff, reddish brown slightly sandy to sandy, slightly gravelly to gravelly CLAY with mudstone lithorelicts. Occasional weathered siltstone typically recorded as very dense, thinly laminated bluish grey, slightly sandy, very gravelly SILT.

Material	Depth of stratum top ¹ (m bgl)	Level of stratum top ¹ (m AOD) ¹	Proven Thickness ¹ (m)	General Description
Bollin Mudstone Member (Mudstone/Siltstone)	~5.0 – 15.0	~69.0 - 58.0	Not proven	Extremely weak to moderately weak (moderately weathered to slightly weathered), thinly laminated to mediumly bedded, reddish-brown MUDSTONE or, Very weak to weak, thinly laminated, bluish grey SILTSTONE

¹Depths and thicknesses are estimated from previous ground investigation more than 100m from site and therefore may not be representative of the T3 Security Search Area Re-Provision site.

3.4 Hydrology

The Groundsure Enviro+GeolInsight report did not record any surface watercourses within 250 m of the site. However, the site is located within the catchment area of the River Bollin. Cotterill Clough Brook, a tributary to the River Bollin, is located approximately 960m south-west of the site at its nearest point.

As of 2019, the River Bollin (River Dean to Ashley Mill) has been assigned an overall rating of “Moderate” as defined by the Environment Agency (EA) under the Water Framework Directive (WFD) [10]. The ecological rating is “Moderate”. The chemical rating was reduced from “Good” (2016) to “Fail” (2019) based on observed concentrations of Mercury and its compounds and Polybrominated Diphenyl Ethers (PBDE).

There are no current or historical licensed surface water abstraction licenses within 2km of the site [2].

The site is in flood zone 1 and has a low probability of flooding [11].

3.5 Hydrogeology

The following aquifer designations are assigned to the geological units discussed in Sections 3.1.2 and 3.1.3 [12]:

- Glaciofluvial Deposits: Secondary A Aquifer: “Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers”.
- Glacial Till: Secondary (undifferentiated): A secondary A or B aquifer designation cannot be assigned to this deposit. This is likely due to the material being designated as a minor aquifer or non-aquifer in different locations due to the variable characteristics of the material.
- Bollin Mudstone Member: Secondary B Aquifer: “Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering”.

BGS borehole SJ88SW207, within 50 m of the proposed development, has a recorded standing groundwater level at 8.55 m bgl which rose to 7.08 m bgl. following installation of a piezometer at 7.5 m bgl, subsequent groundwater level monitoring recorded groundwater levels between 2.27 and 2.60 m bgl. Installation and monitoring occurred in February 1995. Information on targeted aquifer is not included within the available borehole log.

Three groundwater monitoring wells were installed within natural superficial deposits during the AECOM ground investigation for T1 arrivals car park, located approximately 300m north of the proposed development. One round of groundwater level gauging was completed and observed groundwater levels were recorded between 2.01 – 3.54 m bgl in February 2018 [9]. Groundwater flow direction could not be inferred from the available information. Based on the information included in Section 3.4, it is anticipated that regional groundwater flows west and south-west towards the River Bollin.

The site does not lie within a Groundwater Source Protection Zone [12]. There are no current or historical licensed groundwater abstraction licenses within 2km of the site. [2] As of 2019, The Weaver and Dane Quaternary Sand and Gravel Aquifer beneath the site has been assigned an overall groundwater quality rating of “Poor” as defined by the EA under the Water Framework Directive (WFD) [13].

The EA's Simplified Groundwater Vulnerability Map shows that the site is located in an area where groundwater vulnerability to pollution is Medium – Low.

3.6 Ground related hazards

The potential ground related hazards detailed in the Groundsure Enviro+GeolInsight report [2] are summarised below:

- Negligible to low risk of shrinking or swelling clays,
- Very low risk of running sands,
- Negligible risk of compressible deposits (defined as very soft materials that may compress if loaded, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations),
- Very low risk of collapsible deposits,
- Very low risk of landslides,
- Negligible risk of ground dissolution of soluble rocks.

3.7 Mining

No mining is recorded within 250 m of the site [3].

3.8 Brine Subsidence

The Groundsure Cheshire Salt Report [14] shows that the site is within a Cheshire Brine Subsidence Compensation District. In summary the report states the following:

- The site is not within a Consultation Area,
- No Prescribed Notice of Damage has been filed in respect to the site since 8th January 1959,
- There has been no commutation of claims in connection with the site,
- No historic brine wells or shafts are located within 20 m of the site,
- No areas, lines or points of weakness relating the historic brine pumping or natural dissolution have been recorded within 50 m of the site,
- There are no existing or proposed uncontrolled brine pumping sites within three kilometres of the site,
- There is no existing planning consent for brine excavation by controlled methods within 200 m of the site,
- The Cheshire Brine Compensation Board does not possess any records of abandoned rock salt underground mining within 90 m of the site,
- The site is not within the GS7 planning policy area, and,
- There is no existing planning consent for rock salt mining within 120 m of the site.

3.9 Unexploded Ordnance Risk

To determine the potential risks at the site from unexploded ordnance (UXO), an unexploded bomb risk map has been obtained from Zetica [15]. The map shows that the site is generally low risk however an area of medium risk is located less than 100 m east of the site. A Luftwaffe target is marked on Ringway Road within 250 m, east of the site, likely to be associated with Ringway Airport.

Previous correspondence from Zetica dated 21st August 2015 confirms the site is likely to have a low UXO hazard level. This report is summarised below:

- No military activity on or affecting the site, strategic targets, bombing or interwar activity on or affecting the site was identified during World War I.
- No military activity on or affecting the site was identified during World War II (WWII), RAF Ringway was constructed adjacent to the site during 1939 but was never within the airfield boundary.
- The following strategic targets were identified at Manchester Airport:
 - RAF Ringway.
 - Military Establishments, including Special Operations Executive based on the outskirts of the airfield.
 - Army accommodation camps; and
 - Anti-Aircraft and anti-invasion defences.
- One no. WWII bombing decoys was located within five km of the site.

- During WWII the site was located in the Rural District of Bucklow which officially recorded 247 no. High Explosive bombs with a low regional bombing density of 5.6 bombs per 405 hectares, no readily available records have been found indicating that the High Explosive bombs fell on or in close proximity to the site.
- One no. aircraft crash is recorded within approximately 0.5 km of the site.
- No post WWII military activity on or affecting the site was identified.

Considering the extensive development over time of the area in and around the site existing information regarding the management and risk posed by unexploded ordnance is expected to be available and held by the Client. CIRIA publication C785 includes a staged risk assessment process of Hazard Screening, Preliminary Risk Assessment and Detailed Risk Assessment. In the absence of equivalent assessment information, it is recommended that this process be developed so far as necessary to understand the UXO hazard present, if any, and that this should be completed before intrusive ground works are undertaken.

3.10 Cotterill Landfill Sites

There are no recorded waste or historical landfill sites with 1km of the site. [2]

3.11 Contaminated Land Designations

The Groundsure Enviro+GeoInsight report [2] did not identify any sites designated as Contaminated Land under Part IIA of the Environmental Protection Act 1990 within 250 m of the site.

3.12 Environmental Permits and Pollution Incidents

The Groundsure Enviro+GeoInsight report [2] did not identify any Pollution Incidents or active Environmental Permits within 250 m of the site.

Other site specific information on any known leaks or spills to ground or fires on the airport apron within or adjacent to the site area was not available from MAG at the time of this report.

3.13 Environmentally Sensitive Sites

The Groundsure Enviro+GeoInsight report [2] did not identify any environmentally sensitive sites within 1000 m of the site.

Cotterill Clough is designated as a Site of Special Scientific Interest located approximately 1,200 m south west of the site.

4. Preliminary Conceptual Site Model and Risk Assessment

4.1 Assessment Framework

The UK takes a risk-based and suitable for use approach for dealing with land contamination. A guidance framework for risk assessment and management is set out in the EA online Land Contamination: Risk Management guidance (LCRM) [16].

Risks presented by contaminated land depend not only on the nature or the potential contaminants, but also on the receptors/targets at risk of pollution or harm, and the pathways by which contaminants may reach such receptors. The primary purpose of the preliminary risk assessment is to develop an initial Conceptual Site Model (CSM) to identify potential contaminant linkages based on the information available at this stage.

The contaminant linkage concept relies on the identification of the following:

- Source: a potential contaminant in on or order the land at a concentration likely to have the potential to cause pollution or harm;
- Receptor: living organisms, ecological systems or property which could be adversely affected by the contaminant; and
- Pathway: a route by which the contaminant can reach or come in contact with the receptor.

Where all three are present, "potential contaminant linkages" could be identified that may require further investigation or assessment to help determine whether or not they represent potentially significant unacceptable risks.

A preliminary risk assessment has been undertaken for the proposed development to identify the main potential contamination risks based upon a review of the site history and environmental setting assuming the continued use of the site as an airport. The method for risk evaluation has been based on guidance in CIRIA 552 'Contaminated land risk assessment - a guide to good practice' [17] which includes a qualitative method of interpreting the risks based on the magnitudes of both the potential consequence (severity) and the probability (likelihood) of risk occurrence.

4.2 Potential Sources of Contamination

The following potential sources of contamination have been identified as part of the desk study and have been principally derived from the historical use of the site, as outlined in Section 2.2 and the current use of the site as an airport and associated activities (with reference to the DoE Industry Profile for Airports [18]) [18].

- Made ground associated with potentially infilled ponds, the development of the apron and adjacent terminal building. Given the historical development of the site there is potential for asbestos containing materials to be present.
- Potential contamination from fuels and chemicals from re-fuelling operations.
- Potential contamination from de-icing salts and compounds.
- Potential contamination from oils and chemicals from aircraft servicing/ maintenance.
- Potential contamination from fire control operations at the site.
- Potential contamination from weed killers sprayed on paved areas of the site.

The list below details the potential contaminants of concern associated with historical and current use of the site. It should be noted that the chemical compounds and other materials listed generally reflect those associated with the specific activity and which have the potential to contaminate the ground. The list is not exhaustive; neither does it imply that all these substances are present not that they have caused contamination.

- Heavy metals.
- Organic/ inorganic compounds.
- Hydrocarbons.
- Polycyclic Aromatic Hydrocarbons (PAHs).
- Volatile and Semi-Volatile Organic Compounds (VOCs/ SVOCs);
- Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS).
- Herbicides.
- Glycols.

4.3 Potential Receptors

The presence of impacted soils and waters within the site may present a risk to one or more of a range of receptors / targets under the proposed development, which include the following:

- Human Receptor - Construction and maintenance workers during re-development
- Human Receptor –Site employees
- Human Receptor – other site users/visitors could include airport passengers such as the young and elderly. However, exposure durations, frequencies and the potential long-term risks to such receptors are likely to be considerably lower than airport employees and have therefore not been considered further as part of this assessment.
- Controlled Waters – Groundwater resources from underlying superficial Secondary A and Undifferentiated Aquifers and Bedrock Secondary B Aquifer. The site is not located within a groundwater source protection zone and no licensed abstractions have been identified within 2km of the site. Whilst it is considered unlikely that groundwater will be abstracted in the immediate vicinity of the site in the near future, groundwater beneath the site may contribute to base flow to surface waters with which it is in hydraulic continuity.
- Controlled Waters – Surface water resources. The nearest surface water course to the site is Cotterill Clough Brook which is located approximately 960m south west and is a tributary of the River Bollin.
- Property – Future redevelopment of the site is likely to include the construction of a new security facility. New and existing foundations and services will therefore be present. It is considered appropriate that any potential effects of ground contamination on building materials should be identified and taken into consideration at the building design stage.

4.4 Potential Pathways

The pathways through which contaminants may reach receptors are in part dependent on the nature and behaviour of the contaminant. Natural attenuation such as dilution, volatilisation and bio / photo degradation will tend to alter the nature of the contaminants and or reduce the contaminant concentrations at distance from the source. The following potential pathways for the associated development have been identified below:

- Human Receptors:
 - Direct contact with contaminated material (soil and/or groundwater) via dermal adsorption and ingestion of contaminated material;
 - Inhalation of harmful vapours and/or fugitive dust; and
 - Breakdown of contaminants and migration of hazardous gases/vapours via permeable strata into enclosed spaces and service/utility trenches.
- Controlled Waters:
 - Leaching of contaminants from site soils and vertical migration via permeable unsaturated strata to shallow and/ or deep groundwater;
 - Downward migration of contaminants in shallow ground water (dissolved and immiscible phases) to the underlying aquifer; and
 - Lateral migration of contaminants in shallow groundwater (dissolved and immiscible phases) providing base flow to surface waters.

- Property (structures and foundations)
 - Direct contact with buildings and building materials; and
 - Breakdown of contaminants generating gaseous phase products (e.g. carbon dioxide & methane) creating potentially explosive environment within confined spaces.

4.5 Preliminary Risk Assessment

4.5.1 Classification of Risk

An initial qualitative assessment of the risk has been undertaken for the site to identify the main potential contaminant linkages based upon a review of the site history, ground conditions and environmental setting. The method for risk evaluation has been based on guidance by CIRIA [17], in which a qualitative method of interpreting the risks, based on the magnitudes of both the potential consequence (severity) and the probability (likelihood) of the risk occurring, is presented.

The risk matrices presented in Table 4 to Table 8 below have been used to estimate a qualitative risk rating for each potential pollutant linkage.

Table 4. Consequence of Occurrence or Severity

Classification	Human Health	Controlled Waters	Property
Severe	Short-term (acute) risk to human health. Concentrations present are <u>likely</u> to result in "significant harm" as defined by Part 2A of the Environmental Protection Act 1990.	Substantial pollution of sensitive water resources	Catastrophic damage to buildings, structures or the environment, including building collapse
Medium	Chronic damage to human health. Concentrations present that <u>could</u> result in significant harm.	Pollution of sensitive water resources or small-scale pollution of sensitive water resources	Significant damage to buildings, structures or the environment making it unsafe to occupy, or damage that may impair a scheduled ancient monument
Mild	Slight short-term health effects to humans. Exposure to human health is <u>unlikely</u> to lead to significant harm.	Pollution to non-sensitive water resources	Minor damage to sensitive buildings, structures, services or the environment
Minor	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc.)	Insubstantial pollution to non-sensitive water resources	Easily repairable effects of damage to buildings or structures

Table 5. Estimation of Probability (likelihood)

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollutant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period that such an event would take place, and is even less likely in the shorter term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Table 6. Risk based on Comparison of Likelihood and Severity

Risk matrix		Consequence of occurrence (severity)			
		Severe	Medium	Mild	Minor
Probability (likelihood)	High likelihood	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Table 7. Risk Description

Classification	Definition
Very High	There is a high likelihood of the event occurring and having severe consequences. If the risk is realised it is likely to result in a substantial liability.
High	Likely that an event with medium or even severe consequences could arise. If the risk is realised it may result in a substantial liability.
Moderate	It is possible that an event could occur, and it is either unlikely and consequences may be severe or if it were to occur it is likely that consequences would be relatively mild. Investigation would normally be required to clarify the risk and determine the potential liability.
Low	It is possible that an event could occur, but it is likely that the consequences would be at worst mild.
Very Low	It is unlikely that an event could occur, and if it happened the consequences are likely to be at worst mild.

4.5.2 Potential Contaminant Linkages

A preliminary risk assessment for the proposed scheme has been completed and presented in Table . The level of risk is determined based on the current known condition of the site, and the risk categories represent the level of risk as it is currently understood from the information available at this time.

Table 8. Potential Contaminant Linkages

Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
Made ground from historical development and infilled pond.	Heavy metals, organic/ inorganic compounds, asbestos	Construction and Maintenance Workers	Dermal contact with impacted soils and groundwaters	Medium	Low likelihood	Moderate/ Low	The potential for localised ground contamination within the made ground beneath the site cannot be discounted at this stage. AECOM GI 300m north reported asbestos in soil.	Undertake ground investigation works and subsequent risk assessment to determine the quality of underlying soil and groundwater and potential risks to construction workers. Potential risks to contractors undertaking intrusive works should be managed via appropriate Health and Safety measures.
			Ingestion of impacted soils and groundwater	Medium	Low likelihood	Moderate/ Low		
			Inhalation of fugitive dust	Medium	Low likelihood	Moderate/ Low		
			Inhalation of vapours	Medium	Low likelihood	Moderate/ Low		
			Build-up of ground gas within confined space	Medium	Low likelihood	Moderate/ Low		
		Nearby site employees during construction (commercial)	Dermal contact with impacted soils and groundwaters	Medium	Unlikely	Low	Potential ground contamination is considered likely to be localised in extent, therefore site employees are considered unlikely to be directly exposed during construction activities.	Undertake ground investigation works and subsequent risk assessment to determine the quality of underlying soil and groundwater and potential risks to site employees. Potential risks to nearby site users should be managed by appropriate earthworks management and Health and Safety procedures.
			Ingestion of impacted soils and groundwater	Medium	Unlikely	Low		
			Inhalation of fugitive dust	Medium	Unlikely	Low		
			Inhalation of vapours	Medium	Unlikely	Low		
			Build-up of ground gas within confined space	Medium	Unlikely	Low		
		Site employees (commercial)	Dermal contact with impacted soils and groundwaters	Medium	Unlikely	Low	Intended end use is ongoing commercial with hardstanding limiting potential direct contact pathways to receptor. Made ground presents the possibility of ground gas	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying soil and groundwater, characterise the ground gas regime and any potential requirement for gas
			Ingestion of impacted soils and groundwater	Medium	Unlikely	Low		
			Inhalation of fugitive dust	Medium	Unlikely	Low		

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Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
			Inhalation of vapours	Medium	Unlikely	Low	generation which could lead to sub slab collection/ build-up of gases.	mitigation measures within new development.
			Build-up of ground gas within confined space	Medium	Low likelihood	Moderate/ Low		
		Groundwater (Glaciofluvial Deposits (Secondary A aquifer), Glacial Till (Secondary undifferentiated aquifer), and Bollin Mudstone Member (Secondary B aquifer))	Leaching of contaminants from site soils.	Mild	Low likelihood	Low	The site is not located within a Source Protection Zone and no licensed groundwater abstractions have been identified within 2km of the site. The superficial deposits are unlikely to transmit large quantities of water and may provide some attenuation.	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying groundwater and potential risks to controlled waters.
			Downward migration of contaminants in ground water	Mild	Low likelihood	Low		
		CotterilCotterill Clough Brook (tributary to River Bollin)	Leaching of contaminants from site soils	Medium	Unlikely	Low	Cotterill Clough Brook is approx. 960m south-west of the site at its nearest point. Given the distance from the potential source and potentially low transmissivity of the aquifer the risk to the surface water receptor is considered to be low.	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying groundwater and potential risks to controlled waters.
			Lateral migration of contaminants in shallow groundwater	Medium	Unlikely	Low		
		Future buildings and infrastructure	Build-up of ground gas within confined space	Medium	Low likelihood	Moderate / Low	Made ground presents the possibility of ground gas generation at the site.	Undertake ground investigation / monitoring works to characterise the ground gas regime and any potential requirement for gas mitigation measures within new development.

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Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
		In ground structures and foundations	Direct contact with buildings and building materials	Mild	Low likelihood	Low	The presence of made ground presents the possibility of substances that can aggressively attack building materials and structures such as sulphates, fuels and oils.	Undertake ground investigation works to determine the quality of underlying soil and groundwater and potential risks to in-ground structures. Any potential effects of ground contamination on building materials should be identified and taken into consideration at the building design stage.
Potential contamination arising from Airport activities.	Heavy metals, organic/ inorganic compounds, hydrocarbons, PAHs, VOC, SVOC, PFAS, herbicides, glycols	Construction and Maintenance Workers	Dermal contact with impacted soils and groundwaters	Medium	Likely	Moderate	Given the use of the site as an airport apron and associated refuelling/maintenance activities, together with the presence of an underground fuel line within the site boundary, there is an increased potential for ground contamination caused by accidental releases from the below ground fuel lines and surface spillages. Whilst the presence of hardstanding and drainage infrastructure may have reduced the impact to underlying soils and groundwaters from surface releases, the potential for soil and groundwater impacts beneath the site cannot be discounted at this stage.	Undertake ground investigation works and subsequent risk assessment to determine the quality of underlying soil and groundwater and potential risks to construction workers. Potential risks to maintenance workers undertaking intrusive works should be managed by appropriate Health and Safety procedures
			Ingestion of impacted soils and groundwater	Medium	Likely	Moderate		
			Inhalation of fugitive dust	Medium	Likely	Moderate		
			Inhalation of vapours	Medium	Likely	Moderate		
			Build-up of ground gas within confined space	Medium	Likely	Moderate		

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Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
		Nearby site employees during construction (commercial)	Dermal contact with impacted soils and groundwaters	Medium	Unlikely	Low	Potential ground contamination is considered likely to be localised in extent, therefore site employees are considered unlikely to be exposed during construction activities.	Undertake ground investigation works and subsequent risk assessment to determine the quality of underlying soil and groundwater and potential risks to site employees. Potential risks to nearby site users should be managed by appropriate earthworks management and Health and Safety procedures
			Ingestion of impacted soils and groundwater	Medium	Unlikely	Low		
			Inhalation of fugitive dust	Medium	Unlikely	Low		
			Inhalation of vapours	Medium	Unlikely	Low		
			Build-up of ground gas within confined space	Medium	Unlikely	Low		
		Site employees (commercial)	Dermal contact with impacted soils and groundwaters	Medium	Unlikely	Low	Intended end use is ongoing commercial with hardstanding limiting potential direct contact pathways to receptor. Localised chemical/ fuel spills could lead to sub slab collection/ build-up of vapours.	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying soil and groundwater, characterise the ground gas / vapour regime and any potential requirement for gas / vapour mitigation measures within new development.
			Ingestion of impacted soils and groundwater	Medium	Unlikely	Low		
			Inhalation of fugitive dust	Medium	Unlikely	Low		
			Inhalation of vapours	Medium	Likely	Moderate		
			Build-up of ground gas within confined space	Medium	Low Likelihood	Moderate/ Low		
	Groundwater (Glaciofluvial Deposits (Secondary A aquifer), Glacial Till (Secondary undifferentiated aquifer), and Bollin Mudstone Member (Secondary B aquifer))	Leaching of contaminants from site soils.	Downward migration of contaminants in ground water	Mild	Likely	Moderate/ Low	Given the use of the site as an airport apron and associated refuelling/maintenance activities, together with the presence of an underground fuel line within the site boundary, there is an increased potential for ground contamination caused by accidental releases from	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying groundwater and potential risks to controlled waters.

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Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
							the below ground fuel lines and surface spillages. Whilst the presence of hardstanding and drainage infrastructure may have reduced the impact to underlying soils and groundwaters from surface releases, the potential for soil and groundwater impacts beneath the site cannot be discounted at this stage. However, the site is not located within a Source Protection Zone, no licensed groundwater abstractions have been identified within 2km of site. The presence of low permeability till may have limited infiltration to the aquifer.	
		Cotterill Clough Brook (tributary to River Bollin)	Leaching of contaminants from site soils	Medium	Low Likelihood	Moderate/ Low	Cotterill Clough Brook is approx. 960m south-west of the site at its nearest point. Given the distance from the potential source and potentially low transmissivity of the aquifer the risk to the surface water receptor is considered to be low.	Undertake ground investigation / monitoring works and subsequent risk assessment to determine the quality of underlying groundwater and potential risks to controlled waters.

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Source	Potential Contaminants	Receptor	Pathway	Consequence of occurrence	Likelihood of occurrence	Potential Risk	Discussion	Next Steps and Potential Mitigation
			Lateral migration of contaminants in shallow groundwater	Medium	Low Likelihood	Moderate/ Low		
		Future buildings and infrastructure	Build-up of ground gas within confined space	Medium	Low likelihood	Moderate/ Low	Localised chemical/ fuel spills could lead to sub slab collection/ build-up of vapours.	Undertake ground investigation / monitoring works to assess the potential risks from soils vapours and any potential requirement for vapour mitigation measures within new development.
		In ground structures and foundations	Direct contact with buildings and building materials	Mild	Low likelihood	Low	Based on the potential contaminants associated with the current use of the site as an airport, substances have been identified that can aggressively attack building materials and structures such as sulphates, fuels and oils.	Undertake ground investigation works to determine the quality of underlying soil and groundwater and potential risks to inground structures. Any potential effects of ground contamination on building materials should be identified and taken into consideration at the building design stage.

5. Data Gap Analysis

Following a review of the available information, Jacobs have identified a number of potential data gaps to allow a full assessment of risks to human health or the environment. The following information is not available for the site:

- Ground investigation and Geo-environmental data / reports.
- Confidential BGS GeoIndex records.
- Design, construction and as-built information for the existing structures in the vicinity.
- Health and safety files.
- Utility information.
- Information on known leaks or spills to ground or fires on the airport apron; and
- Information on unexploded ordnance or policy for management at Manchester Airport.

6. Conclusions and Recommendations

The site is located in what was historically a largely agricultural area until the development of Ringway Airport C.1930s and subsequent expansion into what is now the current Manchester Airport site.

The published geological maps show the site to be predominantly underlain by superficial deposits consisting of glacial till, which has been classified as Secondary (undifferentiated) Aquifer, the eastern boundary of the site is underlain by superficial deposits consisting of glaciofluvial deposits classified as a Secondary A Aquifer. Underlying the superficial deposits, the solid/bedrock geology beneath the site is identified as the Bollin Mudstone Member which has been classified as a Secondary B Aquifer. The site is not located within a Groundwater Source Protection Zone and no licensed groundwater abstractions have been identified within 2km of the site. The overall groundwater quality beneath the site has been classified as "Poor" in 2019 by the Environment Agency under the Water Framework Directive.

The nearest surface watercourse to the site is Cotterill Clough Brook approximately 960m south-west of the site and is a tributary of the River Bollin. The River Bollin received an overall rating of "Moderate" by the Environment Agency in 2019 under the Water Framework Directive.

Following a review of the available information, potential sources of contamination have been identified, primarily associated with the current use of the site as an airport and associated activities, including aircraft re-fuelling, servicing and maintenance, de-icing and fire control operations.

In the absence of any ground investigation data for the site, there is currently insufficient information to determine the risks to future users of the security facility or the environment from the potential sources of contamination. Therefore, in order to address the uncertainties, confirm the soil and groundwater conditions and establish the presence of any soil and/or groundwater impacts beneath the site, intrusive ground investigation works is recommended.

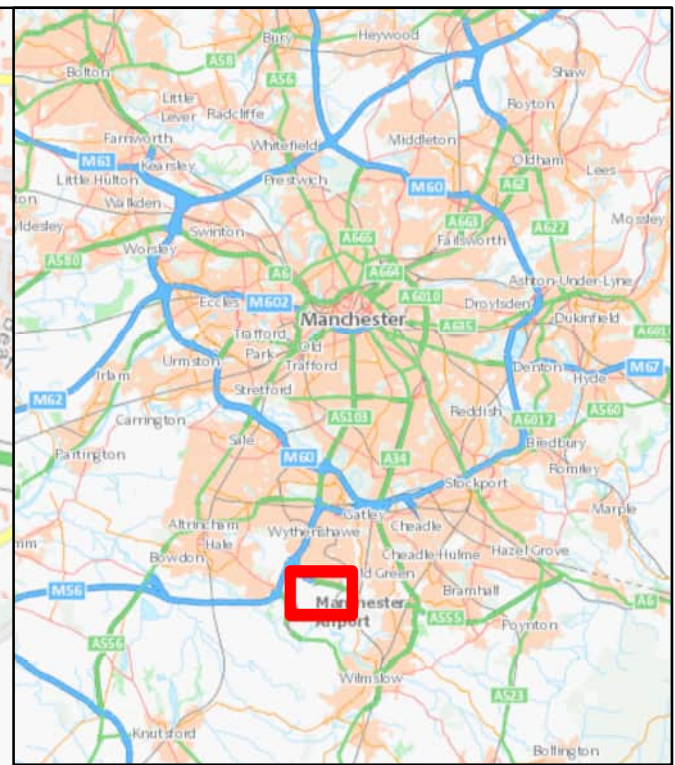
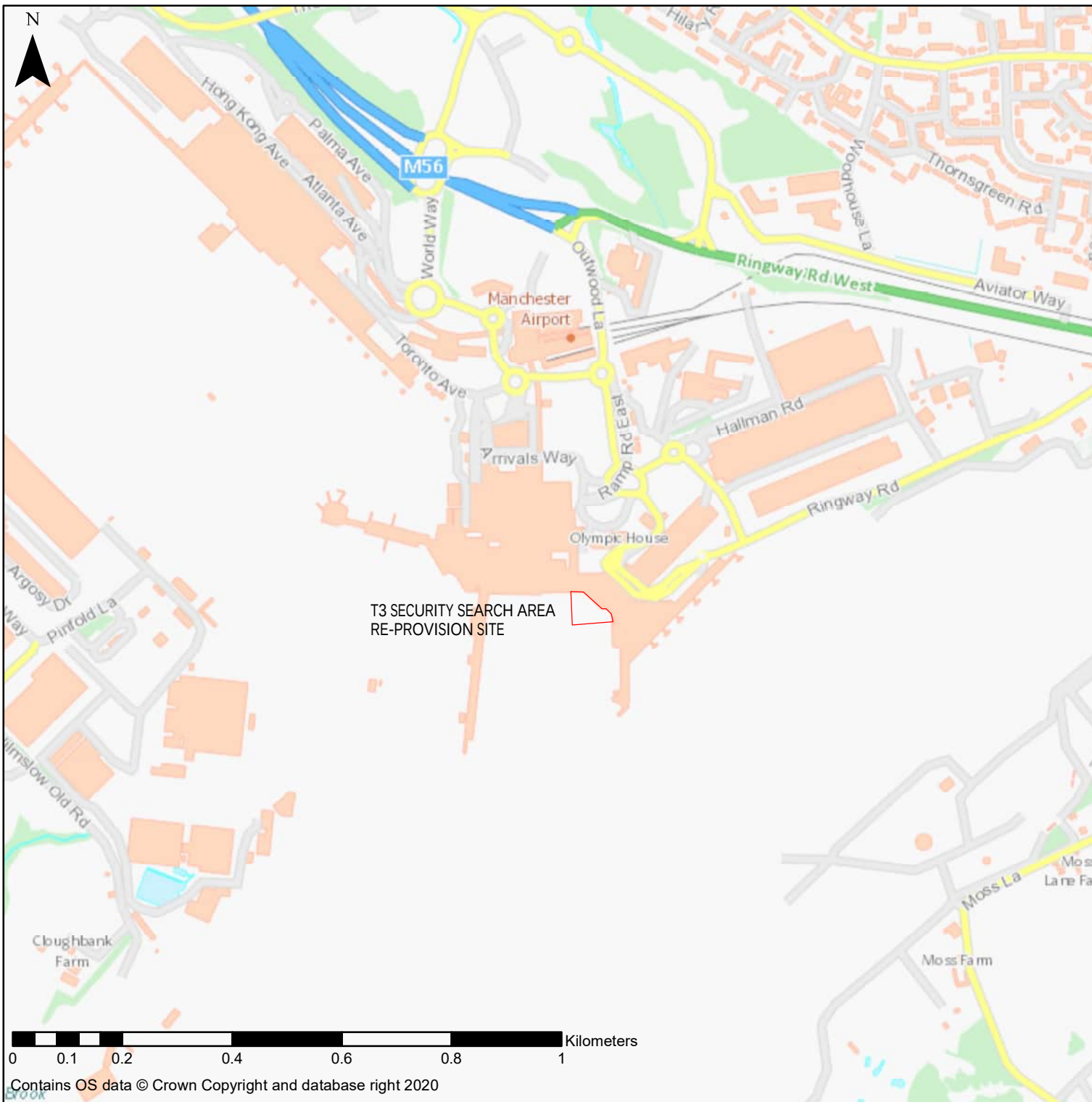
The ground investigation is anticipated to consist of cable percussive boreholes with rotary core follow on, window samples and a number of inspection trenches to determine the extent of the foundations beneath the baggage hall in the northeast corner of the site. In situ testing will be carried out in the boreholes and geotechnical and geo-environmental testing should be undertaken on samples recovered. Groundwater and ground gas monitoring instruments should be installed, and a programme of monitoring devised.

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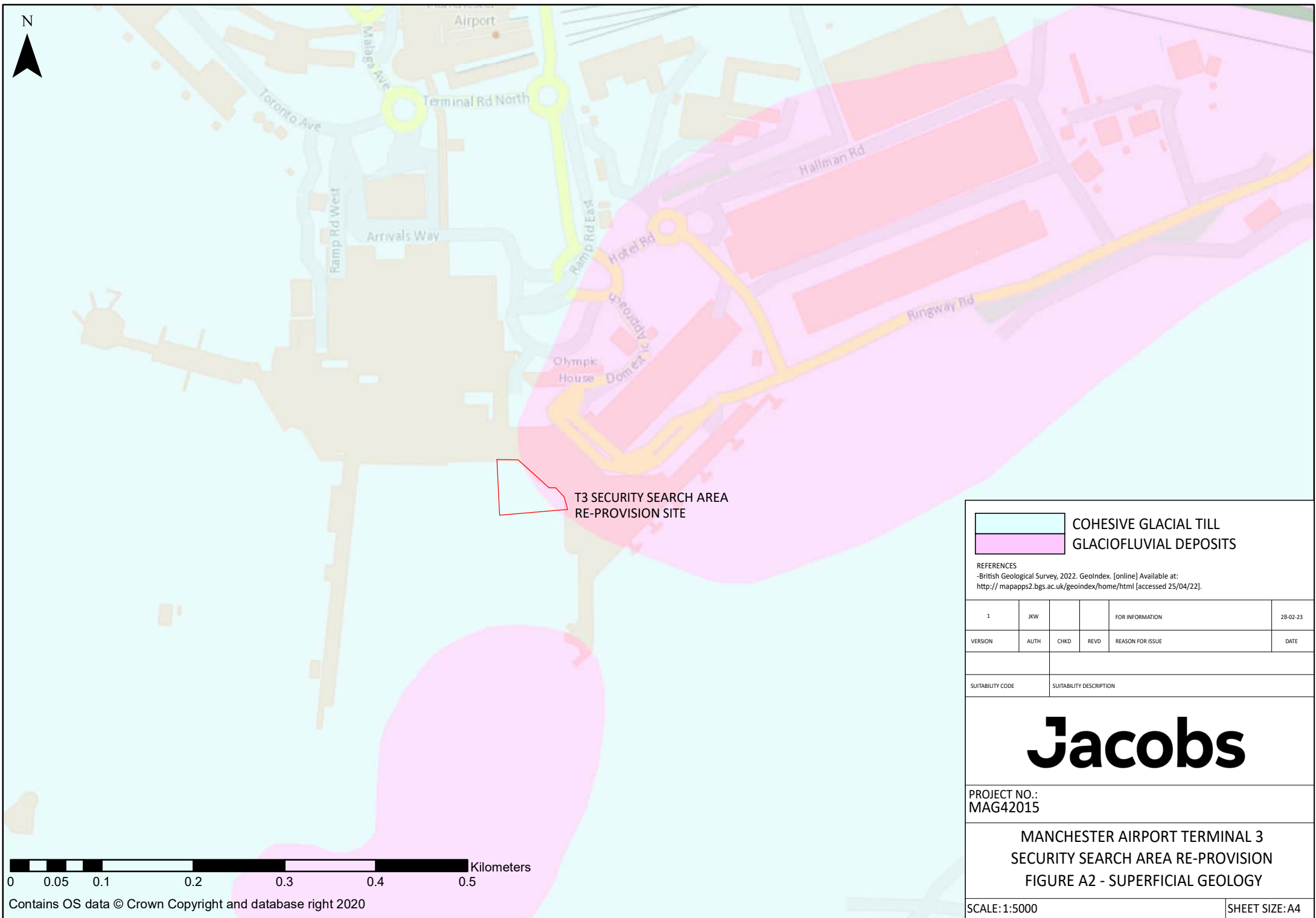
Appendix A. Drawings / Figures

Figure A1	Site Location Plan
Figure A2	Superficial Geology Plan
Figure A3	Bedrock and Structural Geology Plan
Figure A4	Geological Long Section Location Plan
Figure A5	Geological Long Sections



T3 SECURITY SEARCH AREA
RE-PROVISION SITE

1	JKW			FOR INFORMATION	28-02-23
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
SUITABILITY CODE		SUITABILITY DESCRIPTION			
Jacobs					
PROJECT NO.: MAG42015					
MANCHESTER AIRPORT TERMINAL 3 SECURITY SEARCH AREA RE-PROVISION FIGURE A1 - SITE LOCATION PLAN					
SCALE: 1:10000				SHEET SIZE: A4	



COHESIVE GLACIAL TILL

GLACIOFLUVIAL DEPOSITS

REFERENCES
-British Geological Survey, 2022. Geolindex. [online] Available at:
<http://mapapps2.bgs.ac.uk/geolindex/home/html> [accessed 25/04/22].

1	JKW			FOR INFORMATION	28-02-23
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

SUITABILITY CODE	SUITABILITY DESCRIPTION
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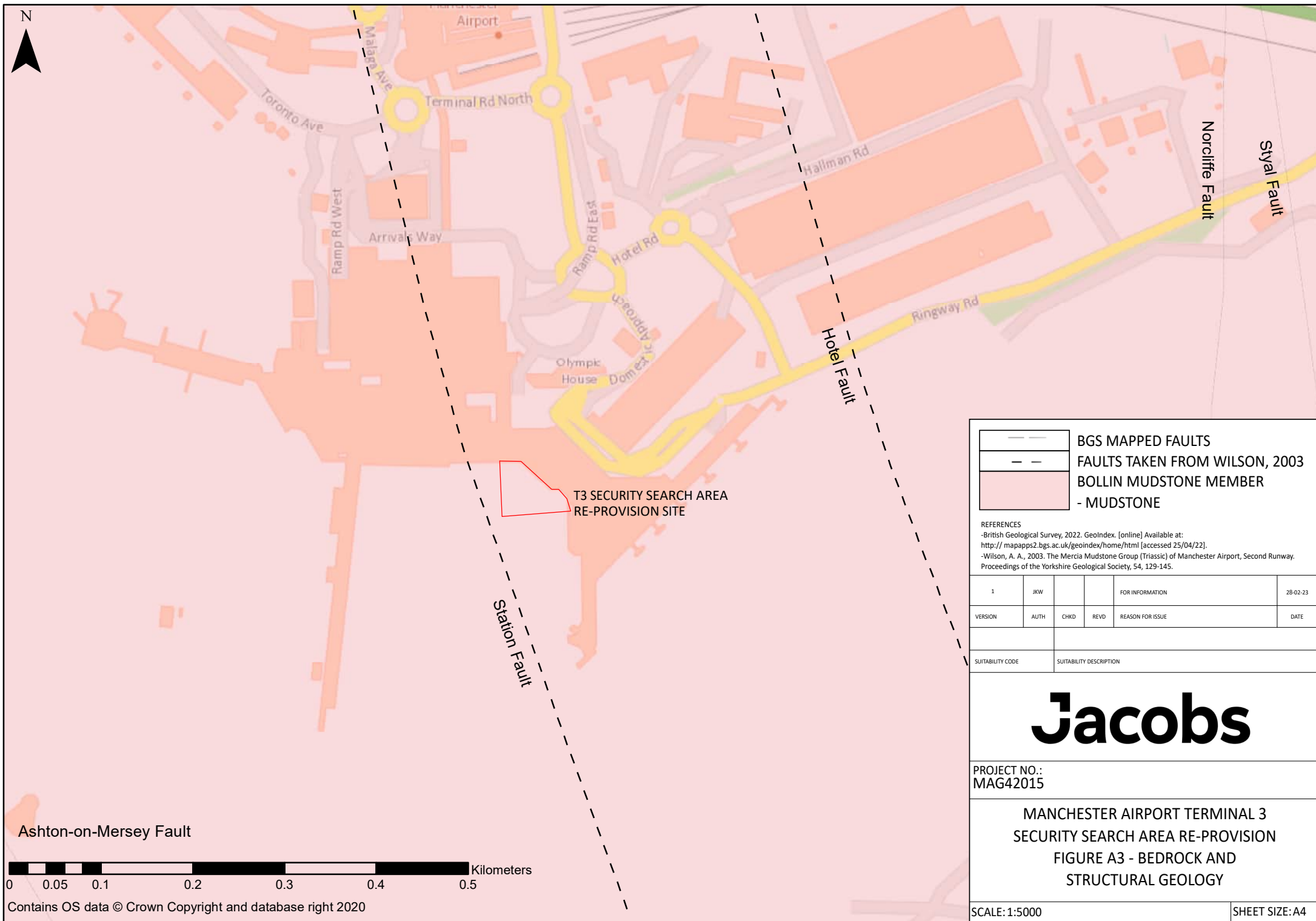
Jacobs

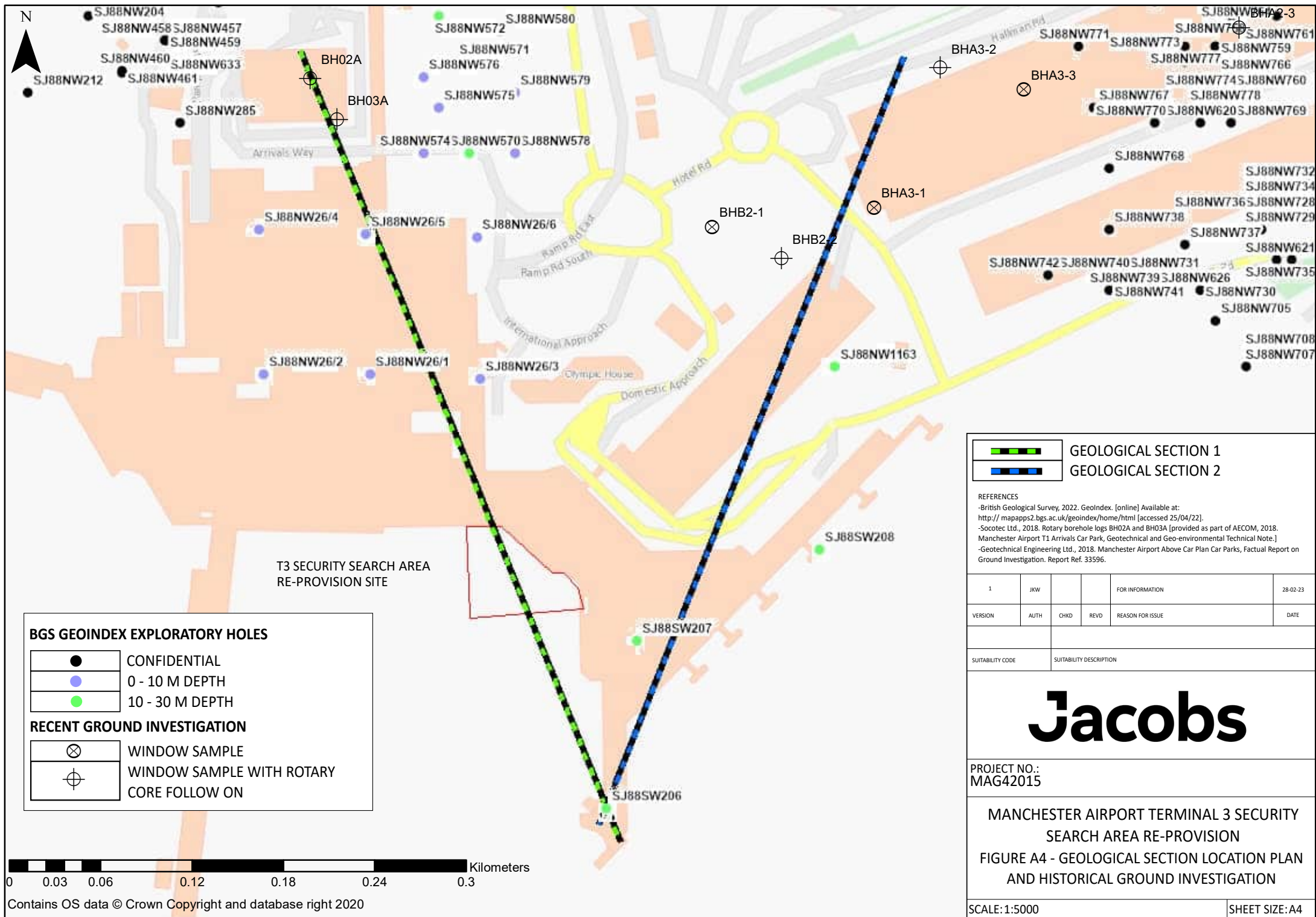
PROJECT NO.:
MAG42015

MANCHESTER AIRPORT TERMINAL 3
SECURITY SEARCH AREA RE-PROVISION
FIGURE A2 - SUPERFICIAL GEOLOGY

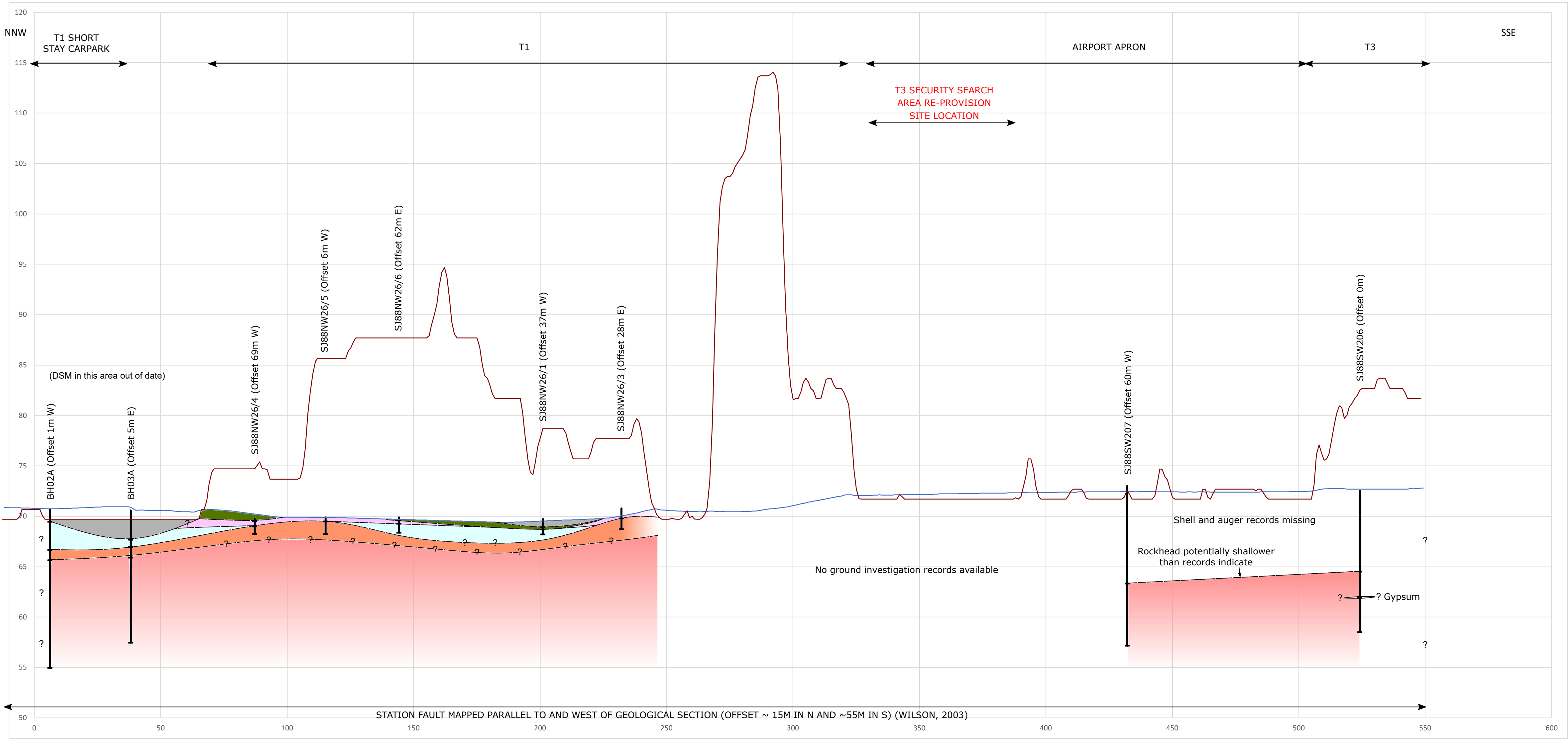
SCALE: 1:5000

SHEET SIZE: A4

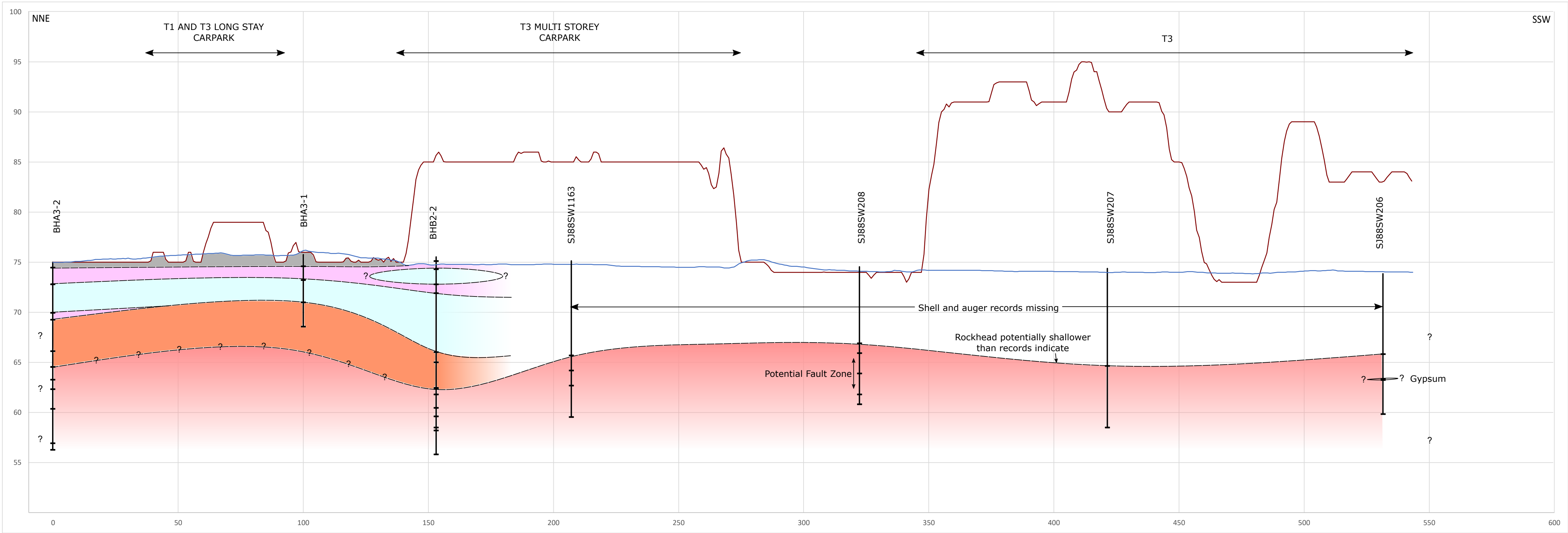




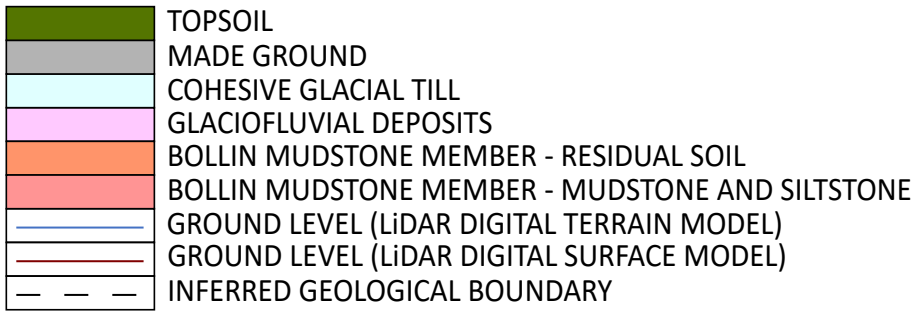
GEOLOGICAL LONG SECTION 1



GEOLOGICAL LONG SECTION 2



PROFILES
SCALE H 1:1000
SCALE V 1:250
(VERTICAL EXAGGERATION: 4)



GEOLOGICAL CROSS SECTION NOTES:
1) EXPLORATORY HOLE DATA OBTAINED FROM BGS GEOINDEX (2022) AND GROUND INVESTIGATION REPORTS SUPPLIED BY MANCHESTER AIRPORT GROUP (SOCOTEC, 2018 AND GEOTECHNICAL, 2018).
2) BEDROCK DEPTH UNKNOWN.
3) EXISTING GROUND PROFILES BASED ON LIDAR DATA DATED 2020.
4) NO GROUNDWATER STRIKES HAVE BEEN RECORDED IN THE EXPLORATORY HOLES REVIEWED.
5) EXPLORATORY HOLES HAVE BEEN PROJECTED TO THE CLOSEST SECTION CHAINAGE. THIS MAY LEAD TO EXPLORATORY HOLES NOT BEING REPRESENTATIVE OF THE GEOLOGY AT THIS LOCATION. PLEASE USE GEOLOGICAL SECTION LOCATION PLAN AND HISTORICAL GROUND INVESTIGATION (FIGURE A4) IN CONJUNCTION WITH GEOLOGICAL SECTIONS.
6) THE LOCATION OF EXISTING STRUCTURES ARE APPROXIMATE AND SHOULD NOT BE TAKEN AS THE EXACT LOCATION.
7) BOREHOLES PRECEDED BY SJ88SW ARE MISSING SHELL AND AUGER RECORDS THEREFORE ROCKHEAD MAY POTENTIALLY BE SHALLOWER THAN THAT SHOWN ON THE GEOLOGICAL SECTIONS.

REFERENCES
-Socotec Ltd., 2018. Rotary borehole logs BH02A and BH03A [provided as part of AECOM, 2018. Manchester Airport T1 Arrivals Car Park, Geotechnical and Geo-environmental Technical Note.]
-British Geological Survey, 2022. Geoindex. [online] Available at: <http://mapapps2.bgs.ac.uk/geoindex/home/html> [accessed 25/04/22].
-Geotechnical Engineering Ltd., 2018. Manchester Airport Above Car Plan Car Parks, Factual Report on Ground Investigation. Report Ref. 33596.
-Wilson, A. A., 2003. The Mercia Mudstone Group (Triassic) of Manchester Airport, Second Runway. Proceedings of the Yorkshire Geological Society, 54, 129-145.

1	JKW			FOR INFORMATION	28-02-23
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

SUITABILITY CODE	SUITABILITY DESCRIPTION
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Jacobs

PROJECT NO.:
MAG42015

MANCHESTER AIRPORT TERMINAL 3 SECURITY SEARCH
AREA RE-PROVISION
FIGURE A5 - GEOLOGICAL LONG SECTIONS 1 & 2

SCALE:
1:1000 / 1:250

SHEET SIZE:
A1

Appendix B. Groundsure Report

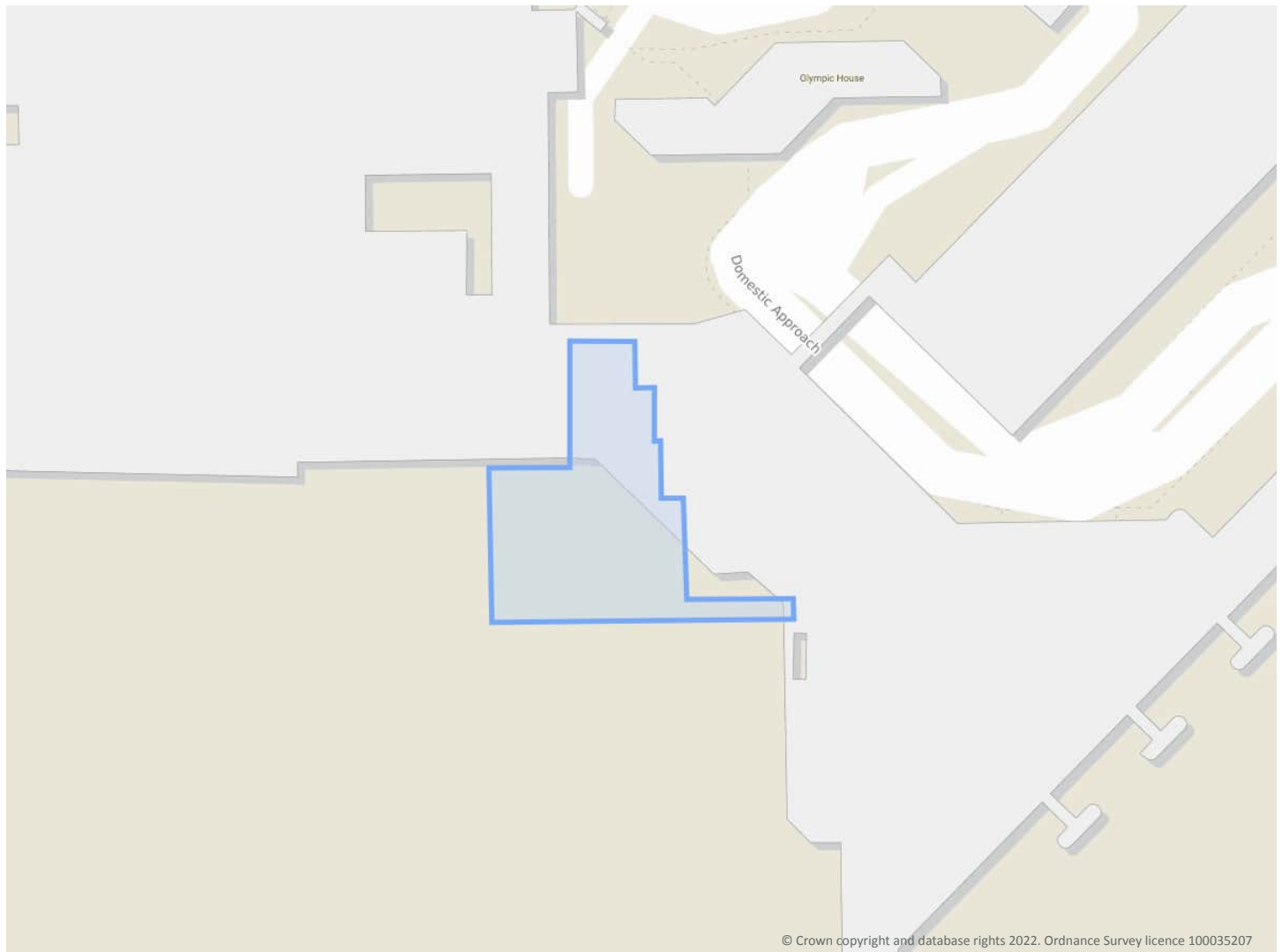
Manchester Airport

Order Details

Date: 26/04/2022
Your ref: Manchester Airport
Our Ref: GSIP-2022-12646-9985
Client: Jacobs U.K. Limited

Site Details

Location: 382034 384940
Area: 0.29 ha
Authority: [Manchester City Council](#)



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Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	6	0	7	8	-
15	1.2	<u>Historical tanks</u>	0	0	6	10	-
16	1.3	<u>Historical energy features</u>	0	0	8	14	-
17	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	<u>Historical garages</u>	0	0	1	6	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
19	2.1	<u>Historical industrial land uses</u>	7	1	8	10	-
21	2.2	<u>Historical tanks</u>	0	0	11	17	-
22	2.3	<u>Historical energy features</u>	0	0	17	31	-
24	2.4	Historical petrol stations	0	0	0	0	-
24	2.5	<u>Historical garages</u>	0	0	2	13	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
26	3.1	Active or recent landfill	0	0	0	0	-
26	3.2	Historical landfill (BGS records)	0	0	0	0	-
27	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
27	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
27	3.5	Historical waste sites	0	0	0	0	-
27	3.6	Licensed waste sites	0	0	0	0	-
27	3.7	<u>Waste exemptions</u>	0	5	12	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
30	4.1	<u>Recent industrial land uses</u>	0	1	4	-	-
31	4.2	<u>Current or recent petrol stations</u>	0	0	0	1	-
31	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
32	4.5	Sites determined as Contaminated Land	0	0	0	0	-



32	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
32	4.7	Regulated explosive sites	0	0	0	0	-
32	4.8	Hazardous substance storage/usage	0	0	0	0	-
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
33	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
33	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	0	2	-
33	4.12	Radioactive Substance Authorisations	0	0	0	0	-
34	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	1	0	-
34	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
34	4.15	Pollutant release to public sewer	0	0	0	0	-
34	4.16	List 1 Dangerous Substances	0	0	0	0	-
35	4.17	List 2 Dangerous Substances	0	0	0	0	-
35	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
35	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
36	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
38	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
40	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
42	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
42	5.5	Groundwater vulnerability- local information	None (within 0m)				
43	5.6	Groundwater abstractions	0	0	0	0	0
43	5.7	Surface water abstractions	0	0	0	0	0
43	5.8	Potable abstractions	0	0	0	0	0
43	5.9	Source Protection Zones	0	0	0	0	-
44	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
45	6.1	Water Network (OS MasterMap)	0	0	0	-	-



45	6.2	Surface water features	0	0	0	-	-
46	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
46	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
47	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	None (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
51	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	<u>Groundwater flooding</u>	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	0	2
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
56	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	5
56	10.8	Biosphere Reserves	0	0	0	0	0
57	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	<u>Green Belt</u>	0	0	1	0	3
57	10.12	Proposed Ramsar sites	0	0	0	0	0



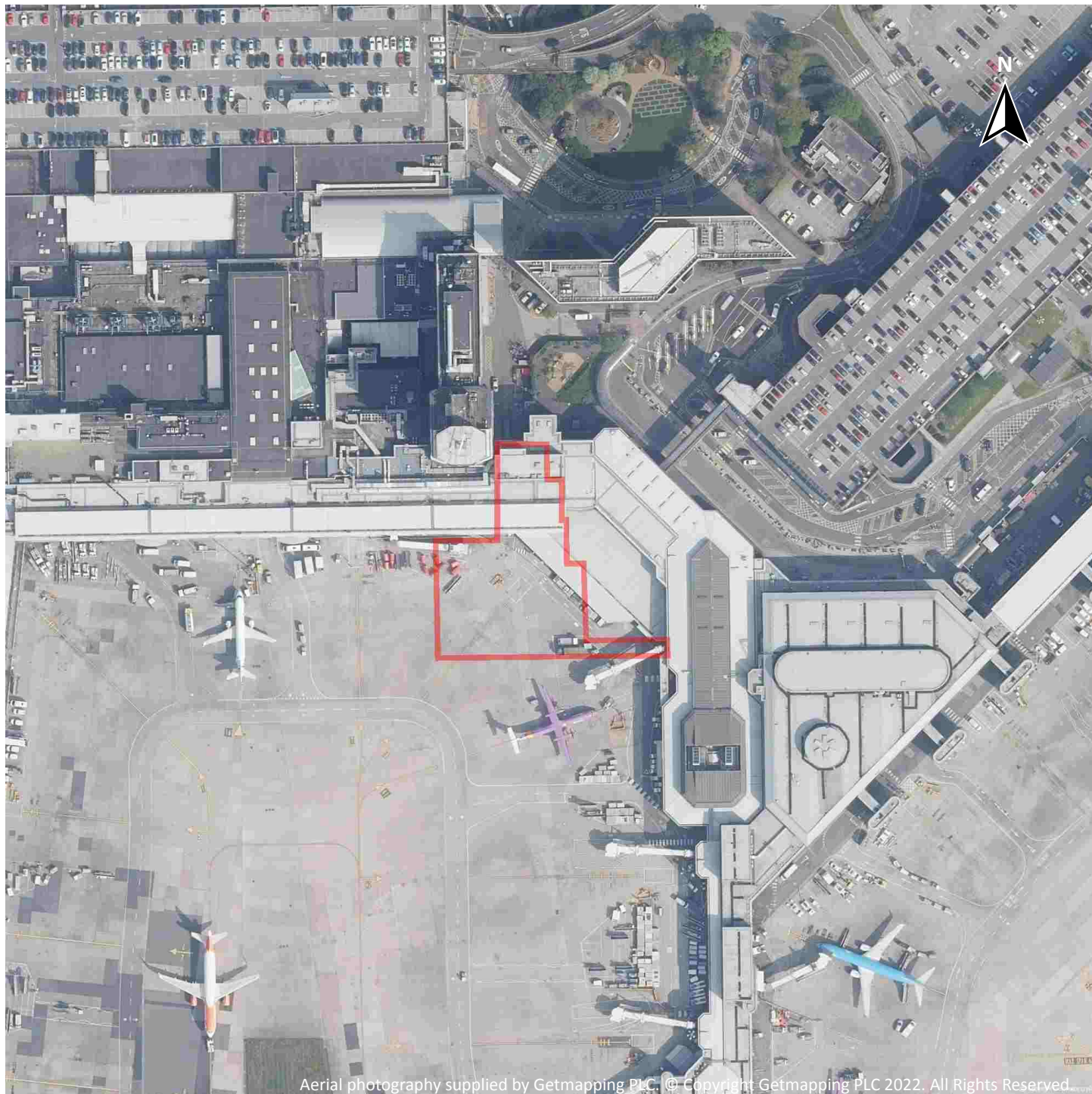
58	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
59	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
60	<u>10.18</u>	<u>SSSI Units</u>	0	0	0	0	2
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	11.1	World Heritage Sites	0	0	0	-	-
62	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
62	11.3	National Parks	0	0	0	-	-
62	11.4	Listed Buildings	0	0	0	-	-
63	11.5	Conservation Areas	0	0	0	-	-
63	11.6	Scheduled Ancient Monuments	0	0	0	-	-
63	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
64	<u>12.1</u>	<u>Agricultural Land Classification</u>	Grade 3 (within 250m)				
65	12.2	Open Access Land	0	0	0	-	-
65	12.3	Tree Felling Licences	0	0	0	-	-
65	12.4	Environmental Stewardship Schemes	0	0	0	-	-
65	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
66	13.1	Priority Habitat Inventory	0	0	0	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
67	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
68	14.2	Artificial and made ground (10k)	0	0	0	0	-
69	<u>14.3</u>	<u>Superficial geology (10k)</u>	2	2	1	0	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	14.5	<u>Bedrock geology (10k)</u>	1	1	0	0	-
72	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	15.1	<u>50k Availability</u>	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	15.4	<u>Superficial geology (50k)</u>	2	0	1	0	-
76	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	15.8	<u>Bedrock geology (50k)</u>	1	0	0	0	-
78	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
78	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
79	16.1	<u>BGS Boreholes</u>	0	1	13	-	-
Page	Section	Natural ground subsidence					
81	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
83	17.2	<u>Running sands</u>	Very low (within 50m)				
85	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
86	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
87	17.5	<u>Landslides</u>	Very low (within 50m)				
89	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
91	18.1	Natural cavities	0	0	0	0	-
92	18.2	BritPits	0	0	0	0	-
92	18.3	<u>Surface ground workings</u>	0	0	6	-	-
92	18.4	Underground workings	0	0	0	0	0
93	18.5	Historical Mineral Planning Areas	0	0	0	0	-



93	18.6	Non-coal mining	0	0	0	0	0
93	18.7	Mining cavities	0	0	0	0	0
93	18.8	JPB mining areas	None (within 0m)				
93	18.9	Coal mining	None (within 0m)				
94	18.10	<u>Brine areas</u>	Identified (within 0m)				
94	18.11	Gypsum areas	None (within 0m)				
94	18.12	Tin mining	None (within 0m)				
94	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
95	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
96	20.1	<u>BGS Estimated Background Soil Chemistry</u>	3	6	-	-	-
96	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
97	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
98	21.1	Underground railways (London)	0	0	0	-	-
98	21.2	Underground railways (Non-London)	0	0	0	-	-
98	21.3	Railway tunnels	0	0	0	-	-
98	21.4	Historical railway and tunnel features	0	0	0	-	-
98	21.5	Royal Mail tunnels	0	0	0	-	-
99	21.6	Historical railways	0	0	0	-	-
99	21.7	Railways	0	0	0	-	-
99	21.8	Crossrail 1	0	0	0	0	-
99	21.9	Crossrail 2	0	0	0	0	-
99	21.10	HS2	0	0	0	0	-

Recent aerial photograph

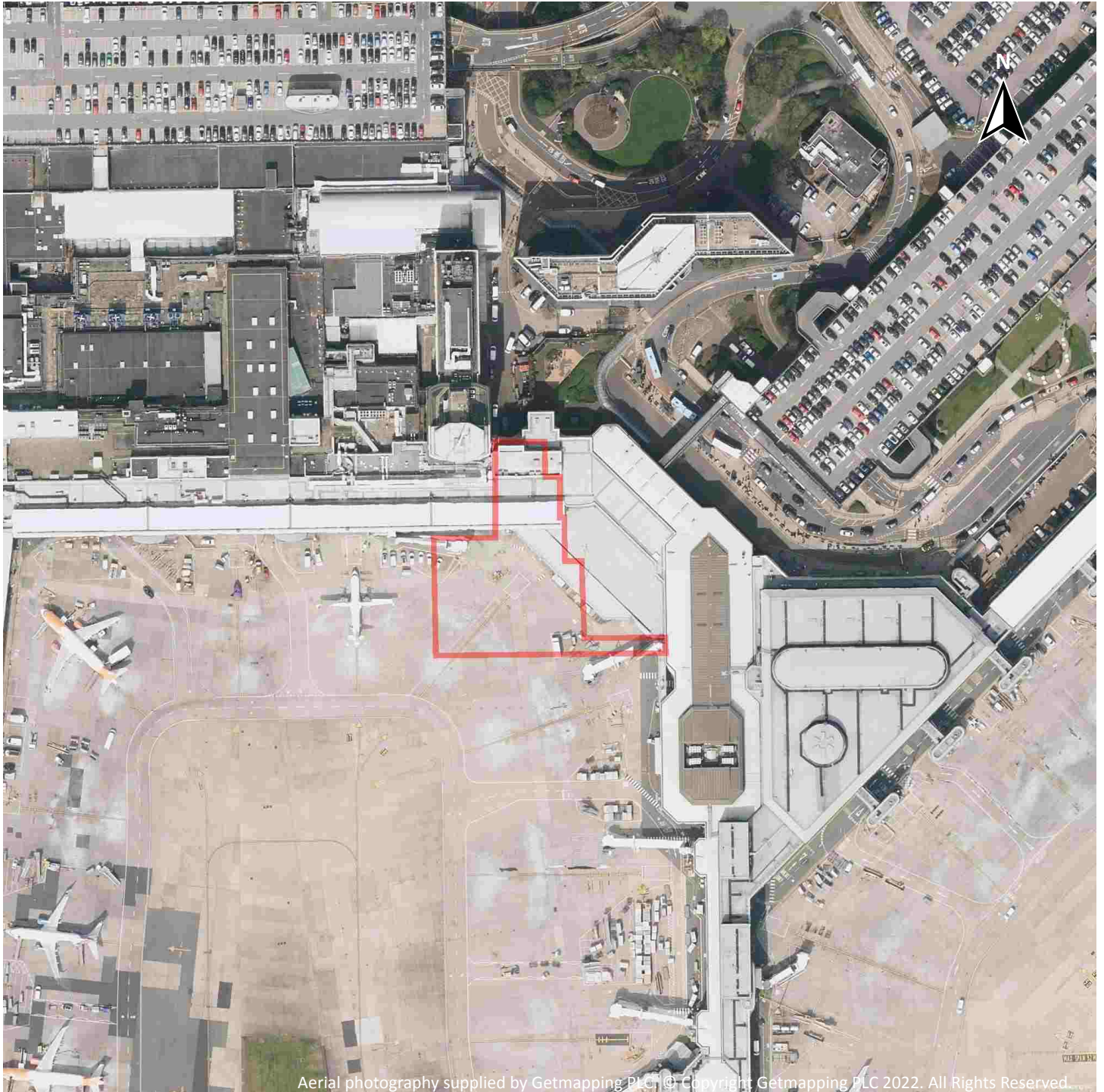


Capture Date: 22/04/2019

Site Area: 0.29ha



Recent site history - 2016 aerial photograph



Capture Date: 21/04/2016

Site Area: 0.29ha



Recent site history - 2010 aerial photograph

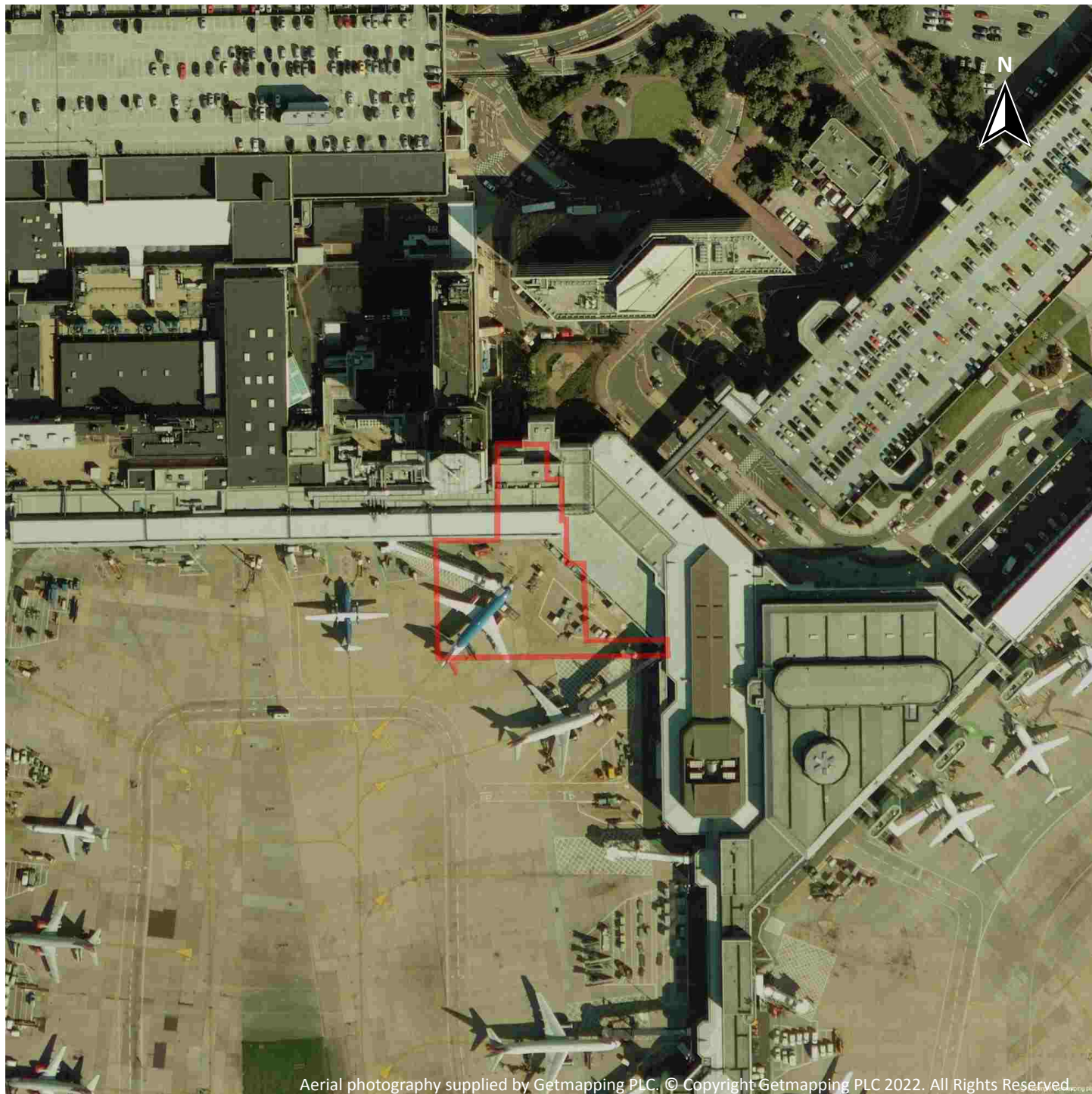


Capture Date: 17/10/2010

Site Area: 0.29ha



Recent site history - 2005 aerial photograph



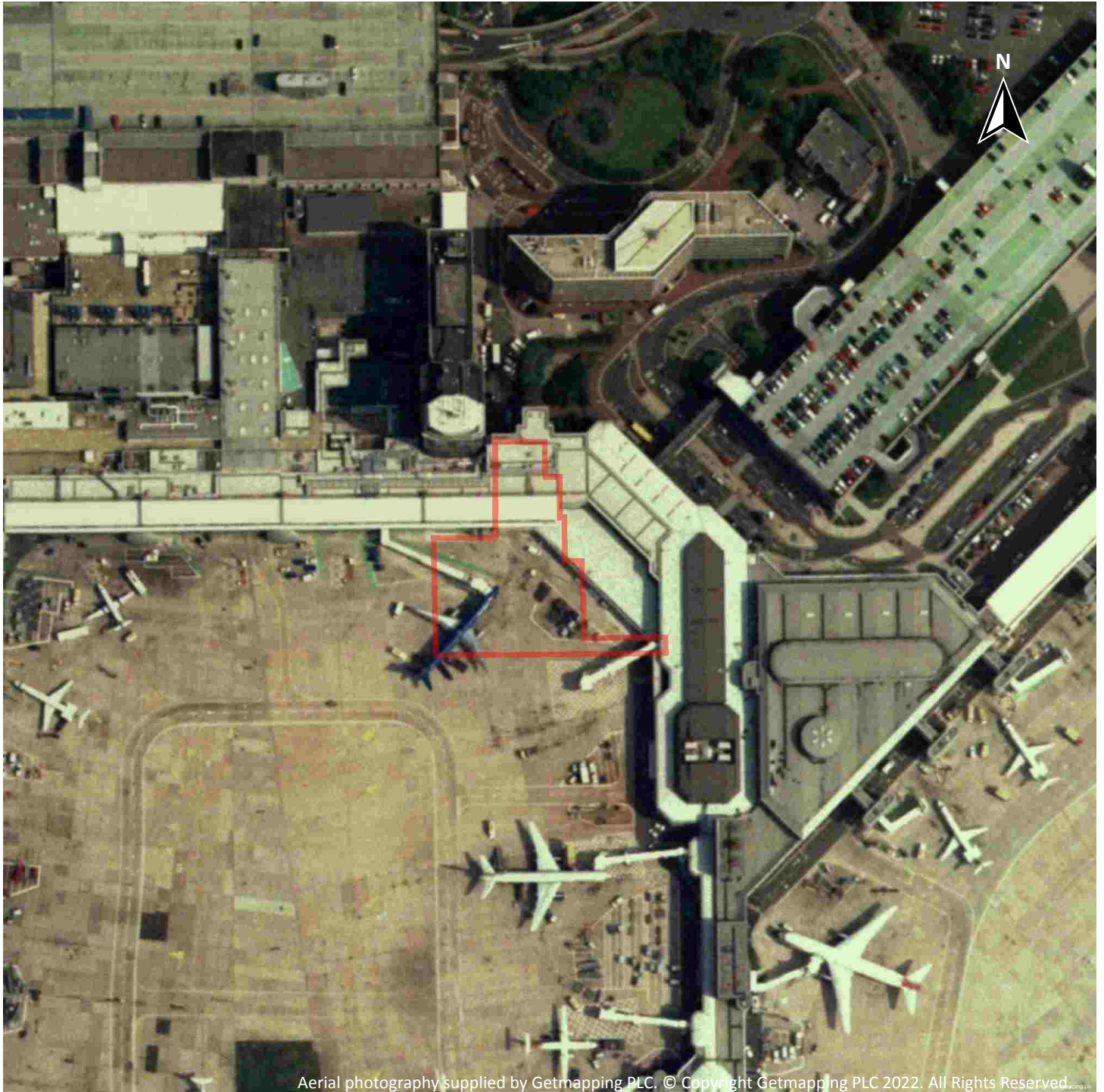
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 02/09/2005

Site Area: 0.29ha



Recent site history - 2000 aerial photograph

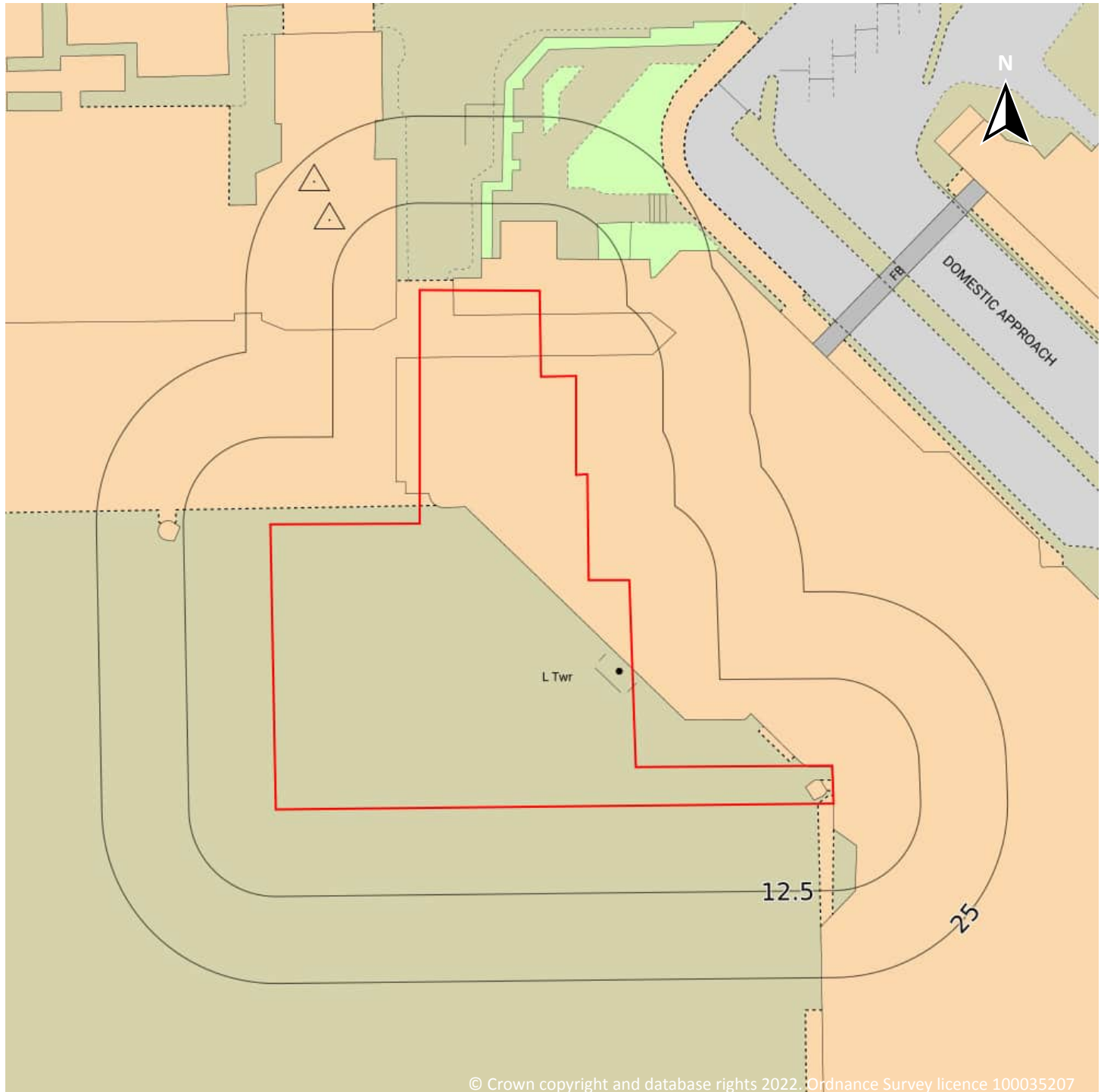


Capture Date: 27/06/2000

Site Area: 0.29ha



OS MasterMap site plan

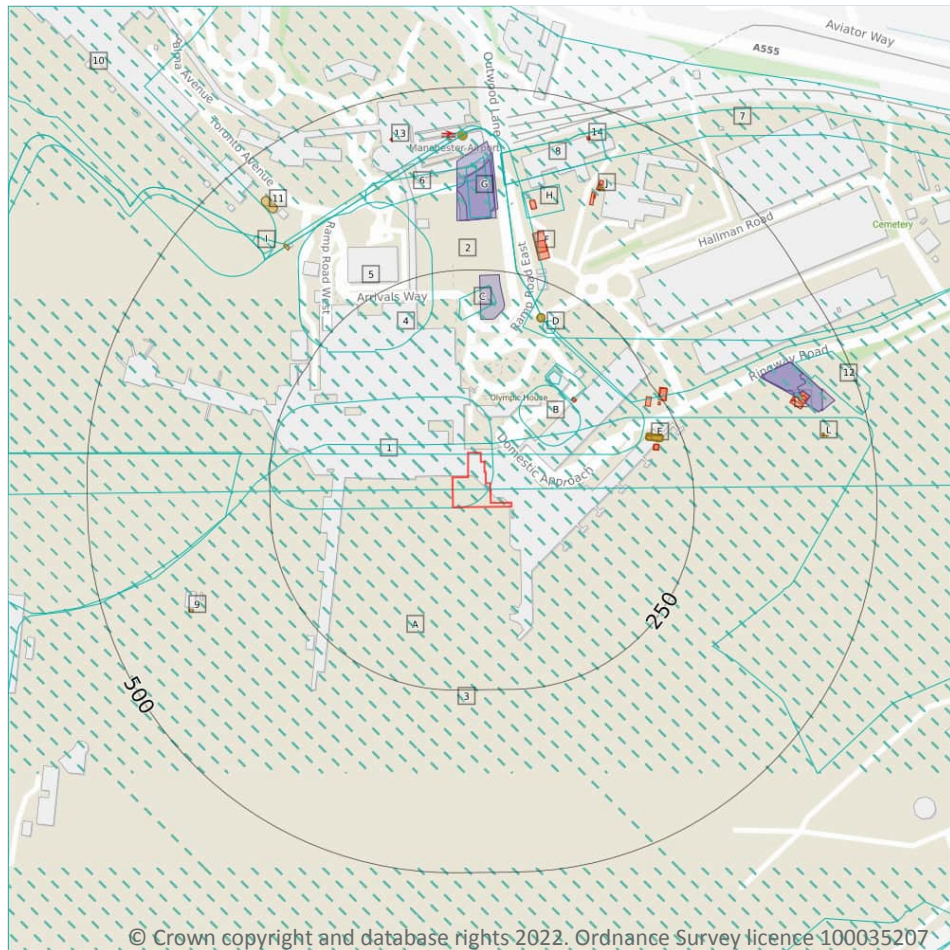


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Site Area: 0.29ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

21

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Terminal	1995	827995



ID	Location	Land use	Dates present	Group ID
2	On site	Airport	1995	845359
3	On site	Airport	1953	989364
4	On site	Airport	1967	844689
A	On site	Airport	1989	878654
A	On site	Airport	1974 - 1975	897813
B	72m NE	Police Station	1995	832620
B	136m NE	Unspecified Heap	1967	804030
B	136m NE	Police Station	1989	832619
5	173m NW	Bus Station	1989 - 1995	936129
C	181m N	Unspecified Heap	1967	804028
D	187m NE	Unspecified Heap	1967	804029
D	199m NE	Unspecified Tank	1967	825438
G	321m N	Service Station	1975	842335
H	327m N	Electric Substation	1989 - 1995	876134
6	355m N	Unspecified Station	1995	843727
7	368m N	Cuttings	1907 - 1995	943455
8	368m N	Railway Sidings	1995	794639
10	383m NW	Terminal	1995	827993
I	387m NW	Unspecified Tanks	1995	815434
12	433m NE	Unspecified Warehouse	1989 - 1995	866586

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

16

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**



ID	Location	Land use	Dates present	Group ID
D	197m NE	Unspecified Tank	1959	135623
D	197m NE	Unspecified Tank	1960	125156
E	204m NE	Unspecified Tank	1987	124268
E	204m NE	Unspecified Tank	1990 - 1992	144681
E	205m NE	Unspecified Tank	1996	143136
E	207m NE	Unspecified Tank	1993 - 1996	133938
I	371m NW	Unspecified Tank	1995 - 1998	136454
9	382m W	Unspecified Tank	1987	114875
J	395m NE	Unspecified Tank	1993 - 1998	148843
J	396m NE	Unspecified Tank	1987 - 1990	148990
11	422m NW	Tanks	1993 - 1998	125549
L	435m E	Unspecified Tank	1992	122227
L	435m E	Unspecified Tank	1992	122228
L	435m E	Unspecified Tank	1987	122241
L	435m E	Unspecified Tank	1989	122242
L	440m E	Unspecified Tank	1987	114876

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

22

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
B	144m NE	Electricity Substation	1987	61806
B	144m NE	Electricity Transformer	1967 - 1976	73801



ID	Location	Land use	Dates present	Group ID
E	207m E	Electricity Substation	1969 - 1996	65102
E	208m E	Electricity Substation	1968	64603
E	226m NE	Electricity Substation	1976	61805
E	241m NE	Electricity Transformer	1976	63785
E	245m NE	Electricity Substation	1987 - 1990	82633
E	246m NE	Electricity Substation	1993 - 1998	68599
F	275m N	Electricity Substation	1996	67126
F	284m N	Electricity Substation	1995 - 1998	77465
H	340m N	Electricity Substation	1987 - 1998	79368
J	371m NE	Electricity Substation	1998	66055
J	381m NE	Electricity Substation	1996	75108
J	393m NE	Electricity Substation	1976	61804
J	402m NE	Electricity Substation	1987 - 1998	80774
K	405m E	Electricity Substation	1967 - 1976	79649
K	408m E	Electricity Transformer	1976	63786
K	416m E	Electricity Substation	1987 - 1990	74436
K	416m E	Electricity Substation	1993 - 1998	65485
K	421m E	Electricity Substation	1967 - 1976	67749
13	438m N	Electricity Substation	1998	61815
14	453m N	Electricity Substation	1996 - 1998	83787

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m

7

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
C	183m N	Garage	1967 - 1976	24996
G	318m N	Garage	1993	23682
G	318m N	Service Station	1976	20612
G	318m N	Garage	1987 - 1990	24455
K	381m NE	Garage	1987 - 1993	25504
K	384m NE	Garage	1967 - 1976	25752
K	386m NE	Garage	1993 - 1996	25495

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

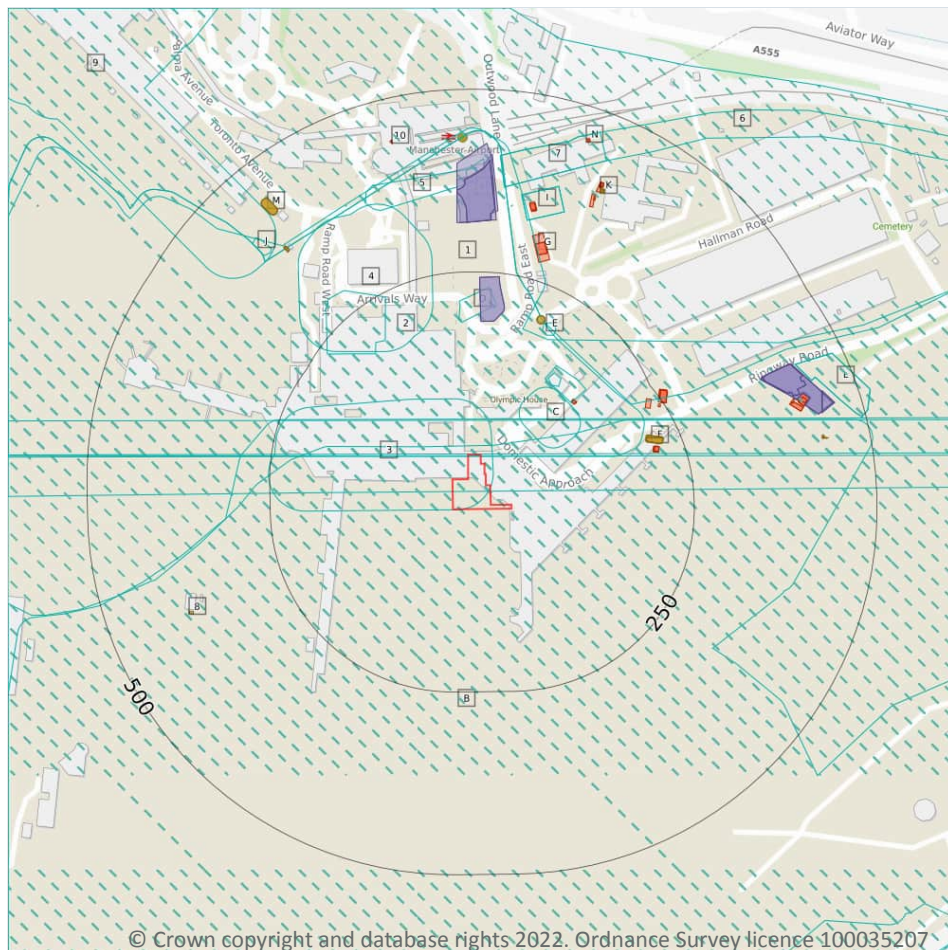
Records within 500m

0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

26

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
1	On site	Airport	1995	845359
2	On site	Airport	1967	844689
3	On site	Terminal	1995	827995



ID	Location	Land Use	Date	Group ID
A	On site	Airport	1989	878654
B	On site	Airport	1953	989364
B	On site	Airport	1989	878654
B	On site	Airport	1974	897813
A	1m N	Airport	1975	897813
C	72m NE	Police Station	1995	832620
C	136m NE	Unspecified Heap	1967	804030
C	136m NE	Police Station	1989	832619
4	173m NW	Bus Station	1989	936129
D	181m N	Unspecified Heap	1967	804028
E	187m NE	Unspecified Heap	1967	804029
A	187m NW	Bus Station	1995	936129
E	199m NE	Unspecified Tank	1967	825438
H	321m N	Service Station	1975	842335
I	327m N	Electric Substation	1995	876134
I	327m N	Electric Substation	1989	876134
5	355m N	Unspecified Station	1995	843727
6	368m N	Cuttings	1995	943455
7	368m N	Railway Sidings	1995	794639
9	383m NW	Terminal	1995	827993
J	387m NW	Unspecified Tanks	1995	815434
L	433m NE	Unspecified Warehouse	1995	866586
L	433m NE	Unspecified Warehouse	1989	866586

This data is sourced from Ordnance Survey / Groundsure.



2.2 Historical tanks

Records within 500m

28

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
E	197m NE	Unspecified Tank	1959	135623
E	197m NE	Unspecified Tank	1960	125156
F	204m NE	Unspecified Tank	1990	144681
F	204m NE	Unspecified Tank	1987	124268
F	205m NE	Unspecified Tank	1996	143136
F	205m NE	Unspecified Tank	1992	144681
F	206m NE	Unspecified Tank	1990	144681
F	206m NE	Unspecified Tank	1987	124268
F	207m NE	Unspecified Tank	1995	133938
F	207m NE	Unspecified Tank	1993	133938
F	207m NE	Unspecified Tank	1996	133938
J	371m NW	Unspecified Tank	1998	136454
J	372m NW	Unspecified Tank	1995	136454
8	382m W	Unspecified Tank	1987	114875
K	395m NE	Unspecified Tank	1995	148843
K	395m NE	Unspecified Tank	1998	148843
K	395m NE	Unspecified Tank	1993	148843
K	395m NE	Unspecified Tank	1996	148843
K	396m NE	Unspecified Tank	1990	148990
K	396m NE	Unspecified Tank	1987	148990
M	422m NW	Tanks	1995	125549
M	422m NW	Tanks	1993	125549
M	422m NW	Tanks	1998	125549



ID	Location	Land Use	Date	Group ID
L	435m E	Unspecified Tank	1992	122227
L	435m E	Unspecified Tank	1992	122228
L	435m E	Unspecified Tank	1989	122242
L	435m E	Unspecified Tank	1987	122241
L	440m E	Unspecified Tank	1987	114876

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

48

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
C	144m NE	Electricity Substation	1987	61806
C	144m NE	Electricity Transformer	1967	73801
C	144m NE	Electricity Transformer	1976	73801
F	207m E	Electricity Substation	1990	65102
F	207m E	Electricity Substation	1987	65102
F	208m E	Electricity Substation	1968	64603
F	208m E	Electricity Substation	1969	65102
F	209m E	Electricity Substation	1996	65102
F	209m E	Electricity Substation	1992	65102
F	226m NE	Electricity Substation	1976	61805
F	241m NE	Electricity Transformer	1976	63785
F	245m NE	Electricity Substation	1990	82633
F	245m NE	Electricity Substation	1987	82633
F	246m NE	Electricity Substation	1995	68599
F	246m NE	Electricity Substation	1998	68599



ID	Location	Land Use	Date	Group ID
F	246m NE	Electricity Substation	1993	68599
F	246m NE	Electricity Substation	1996	68599
G	275m N	Electricity Substation	1996	67126
G	284m N	Electricity Substation	1995	77465
G	284m N	Electricity Substation	1998	77465
I	340m N	Electricity Substation	1995	79368
I	340m N	Electricity Substation	1998	79368
I	340m N	Electricity Substation	1993	79368
I	340m N	Electricity Substation	1996	79368
I	342m N	Electricity Substation	1987	79368
K	371m NE	Electricity Substation	1998	66055
K	381m NE	Electricity Substation	1996	75108
K	393m NE	Electricity Substation	1976	61804
K	402m NE	Electricity Substation	1995	80774
K	402m NE	Electricity Substation	1998	80774
K	402m NE	Electricity Substation	1993	80774
K	402m NE	Electricity Substation	1990	80774
K	402m NE	Electricity Substation	1987	80774
K	402m NE	Electricity Substation	1996	80774
L	405m E	Electricity Substation	1967	79649
L	405m E	Electricity Substation	1976	79649
L	408m E	Electricity Transformer	1976	63786
L	416m E	Electricity Substation	1990	74436
L	416m E	Electricity Substation	1987	74436
L	416m E	Electricity Substation	1995	65485
L	416m E	Electricity Substation	1998	65485
L	416m E	Electricity Substation	1993	65485
L	416m E	Electricity Substation	1996	65485

ID	Location	Land Use	Date	Group ID
L	421m E	Electricity Substation	1967	67749
L	421m E	Electricity Substation	1976	67749
10	438m N	Electricity Substation	1998	61815
N	453m N	Electricity Substation	1998	83787
N	453m N	Electricity Substation	1996	83787

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	15
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Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
D	183m N	Garage	1967	24996
D	183m N	Garage	1976	24996
H	318m N	Garage	1993	23682
H	318m N	Service Station	1976	20612
H	318m N	Garage	1990	24455
H	318m N	Garage	1987	24455
L	381m NE	Garage	1990	25504
L	381m NE	Garage	1987	25504

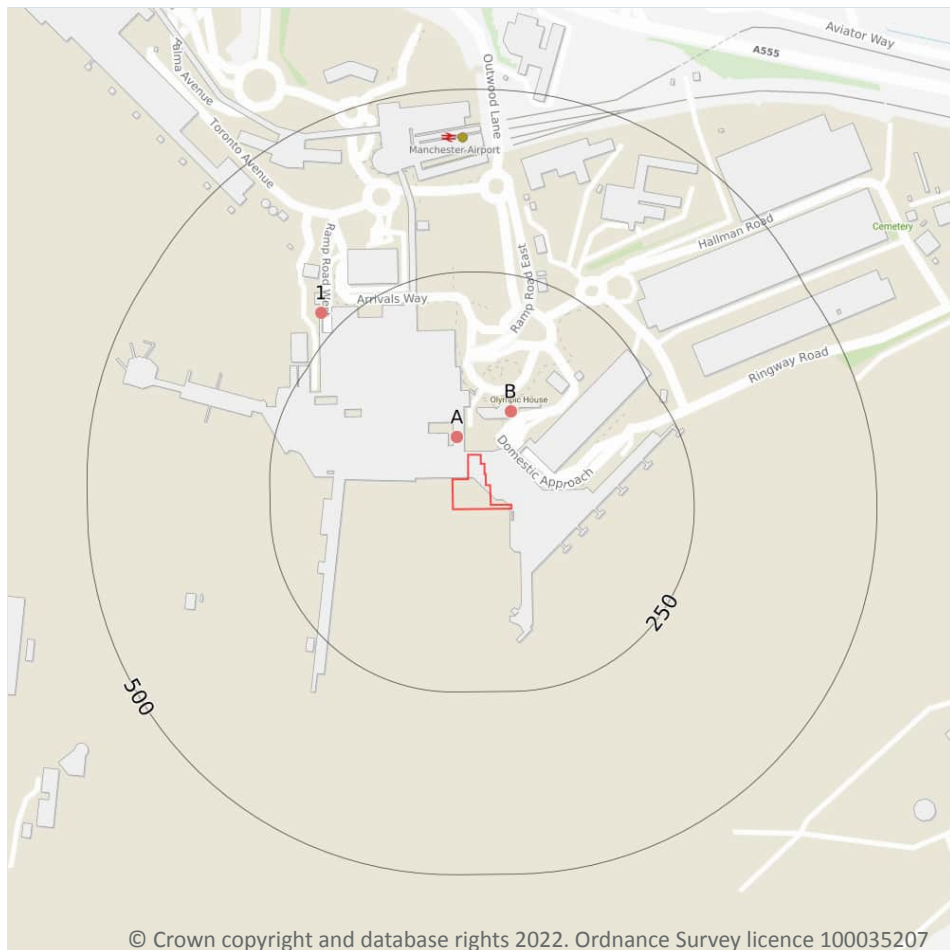


ID	Location	Land Use	Date	Group ID
L	384m NE	Garage	1967	25752
L	384m NE	Garage	1976	25752
L	386m NE	Garage	1996	25495
L	386m NE	Garage	1993	25495
L	443m E	Garage	1993	25504
L	444m E	Garage	1987	25504
L	444m E	Garage	1989	25504

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m**0**

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m**0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m**18**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 26**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	28m NW	Environment Department Olympic House MANCHESTER M90 1QX	EPR/CF0833DC /A001	Treating waste exemption	Non- Agricultura l Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	28m NW	Environment Department Olympic House MANCHESTER M90 1QX	EPR/CF0833DC /A001	Using waste exemption	Non- Agricultura l Waste Only	Use of waste in construction
A	28m NW	Environment Department Olympic House MANCHESTER M90 1QX	EPR/CF0833DC /A001	Using waste exemption	Non- Agricultura l Waste Only	Use of mulch
A	28m NW	Environment Department Olympic House MANCHESTER M90 1QX	EPR/CF0833DC /A001	Using waste exemption	Non- Agricultura l Waste Only	Spreading of plant matter to confer benefit
A	28m NW	Environment Department Olympic House MANCHESTER M90 1QX	EPR/CF0833DC /A001	Using waste exemption	Non- Agricultura l Waste Only	Use of waste for a specified purpose
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Using waste exemption	Not on a farm	Use of waste in construction
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Using waste exemption	Not on a farm	Use of waste derived biodiesel as fuel
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Using waste exemption	Not on a farm	Use of waste for a specified purpose
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Using waste exemption	Not on a farm	Use of mulch
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
B	71m NE	OLYMPIC HOUSE, MANCHESTER AIRPORT, MANCHESTER, M90 1QX	WEX239845	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising

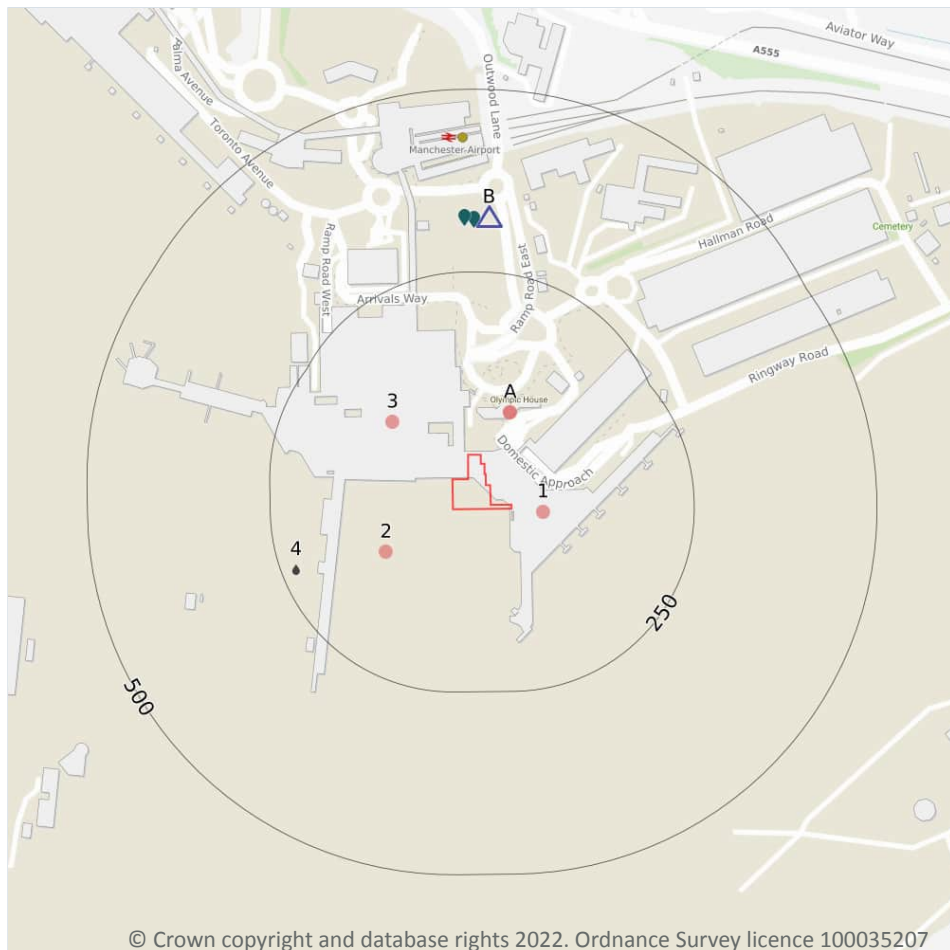


ID	Location	Site	Reference	Category	Sub-Category	Description
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Using waste exemption	Not on a farm	Use of waste derived biodiesel as fuel
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Using waste exemption	Not on a farm	Use of waste in construction
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Using waste exemption	Not on a farm	Use of mulch
B	71m NE	532, MANCHESTER, M60 2LA	WEX095174	Using waste exemption	Not on a farm	Use of waste for a specified purpose
1	279m NW	Manchester Airport Custody, Manchester Airport, Terminal 1, Manchester, M90 3EX	WEX175898	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ◆ Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Company	Address	Activity	Category
1	43m E	Excess Baggage Company	Terminal 3 Pier Level A-P9 Manchester Airport, Ringway Road, Manchester, Greater Manchester, M90 1QX	Container and Storage	Transport, Storage and Delivery
A	71m NE	Manchester International Airport	Olympic House, Manchester Airport, Manchester, Greater Manchester, M90 1QX	Airports and Landing Strips	Air



ID	Location	Company	Address	Activity	Category
A	71m NE	Turkish Airlines	Room 1012, Olympic House, Manchester Airport, Manchester, Greater Manchester, M90 1QD	Airlines and Airline Services	Transport, Storage and Delivery
2	108m SW	Manchester Airport	Greater Manchester, M90	Airports and Landing Strips	Air
3	113m NW	Lost Property Within Manchester Airport	Lost Property Office, Terminal 1, Manchester Airport, Manchester, Greater Manchester, M90 1QX	Container and Storage	Transport, Storage and Delivery

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Company	Address	LPG	Status
B	326m N	TEXACO	30, Outwood Lane, Terminal Road East, Manchester Airport, Manchester, Greater Manchester, M90 3WR	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

2

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Address	Details	
B	322m N	Terminal 1 Petrolstop, 30 Outwood Lane, Manchester Airport, M90 3WR	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	324m N	Airport Terminal 1 Petrol Service Station, Terminal 1 Petrol Stop, 30 Outwood Lane, Manchester Airport, M90 3WR	Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

1

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Address	Details	
4	229m W	JOINT AIRPORT STORAGE, MANCHESTER AIRPORT, ALTRINCHAM, GREATER MANCHESTER	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: 016992056 Permit Version: 1 Receiving Water: RIVER BOLLIN	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: - Effective Date: 11/11/1986 Revocation Date: 08/02/1996

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**0**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m**0**

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

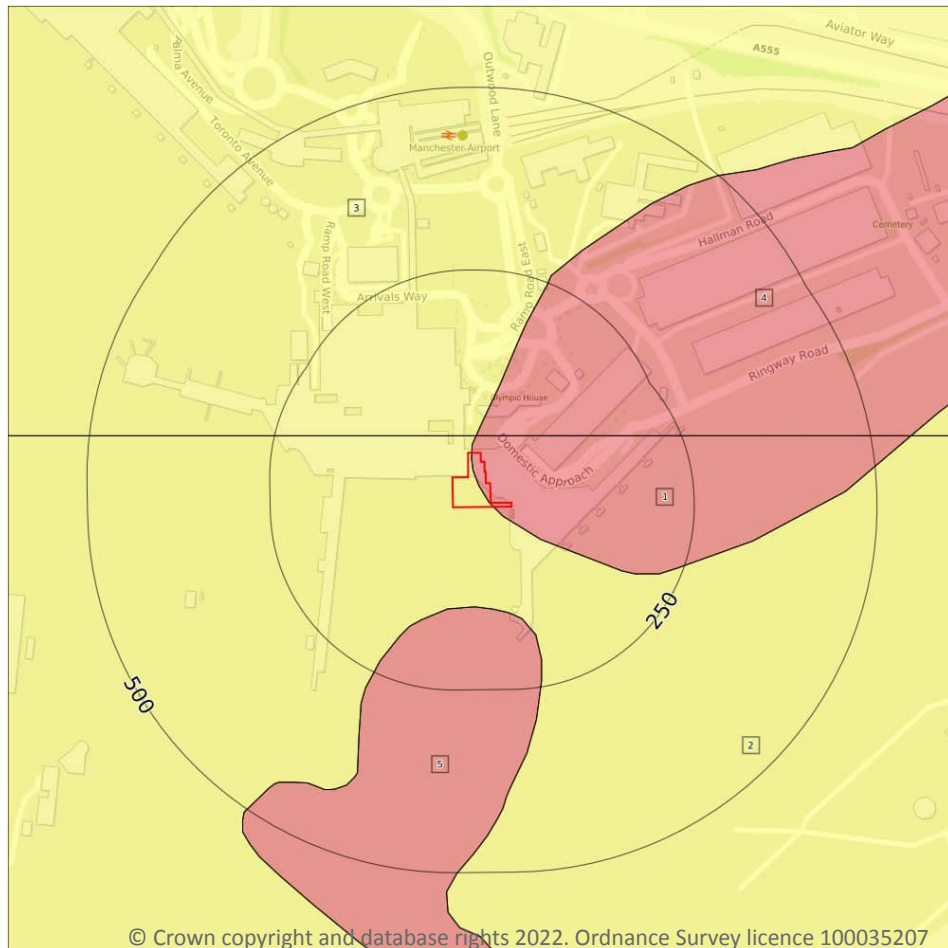
Records within 500m**0**

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

5

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 36**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

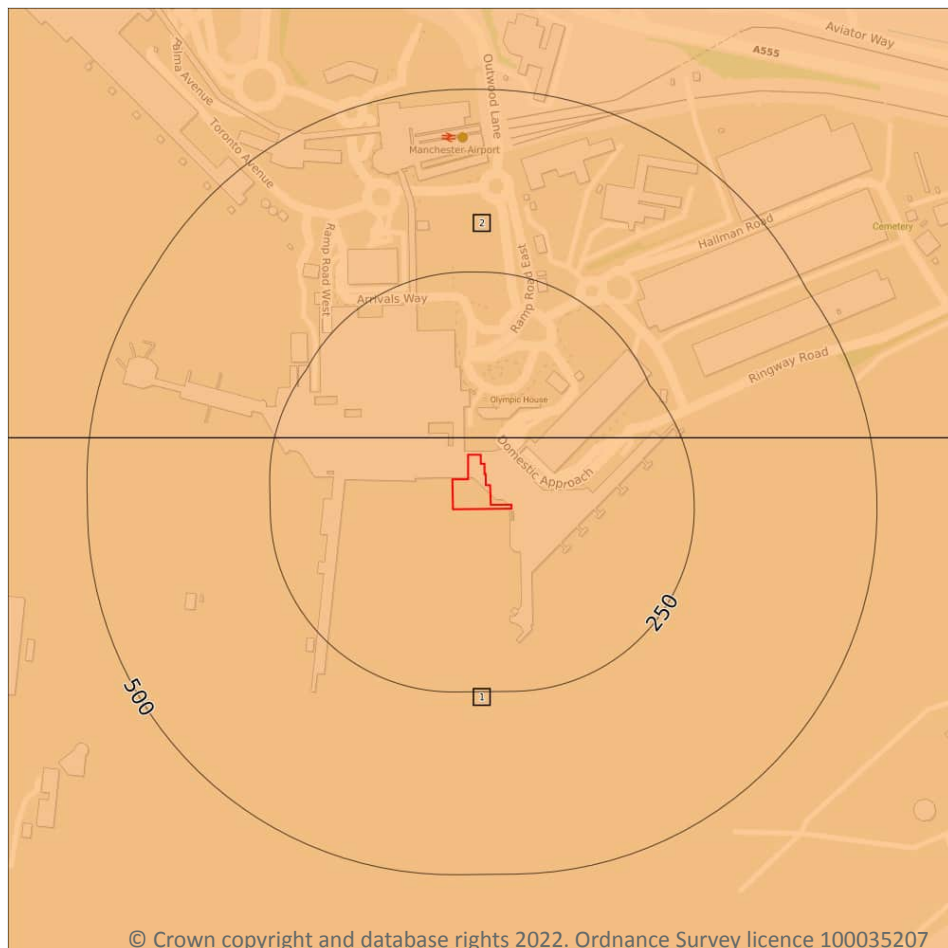


ID	Location	Designation	Description
3	23m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	23m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	137m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 38**

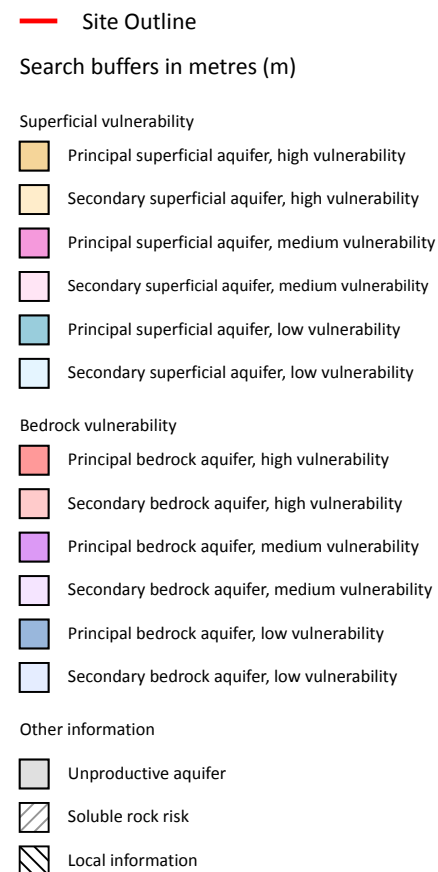
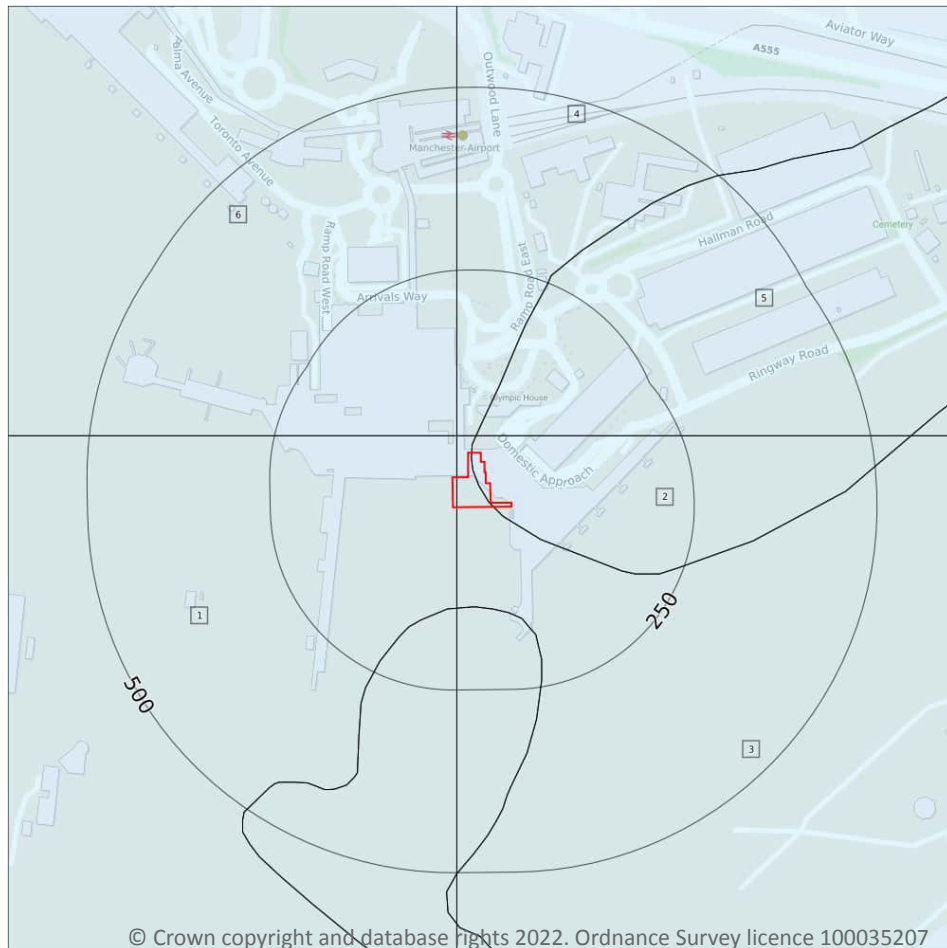
ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	23m N	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

6

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid.

Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 40**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
4	23m N	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
5	23m N	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
6	27m NW	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site

0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones

5.6 Groundwater abstractions

Records within 2000m	0
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Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	0
----------------------	---

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0
----------------------	---

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0
---------------------	---

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 45**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Bollin (River Dean to Ashley Mill)	GB112069061381	Bollin Dean Mersey Upper	Mersey Upper

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 45**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	962m SW	River	Bollin (River Dean to Ashley Mill)	GB112069061381	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 45**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Weaver and Dane Quaternary Sand and Gravel Aquifers	<u>GB41202G991700</u>	Poor	Poor	Good	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m**0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

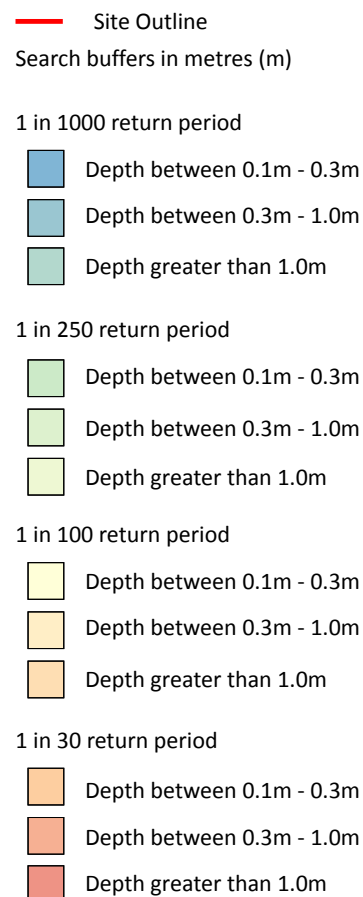
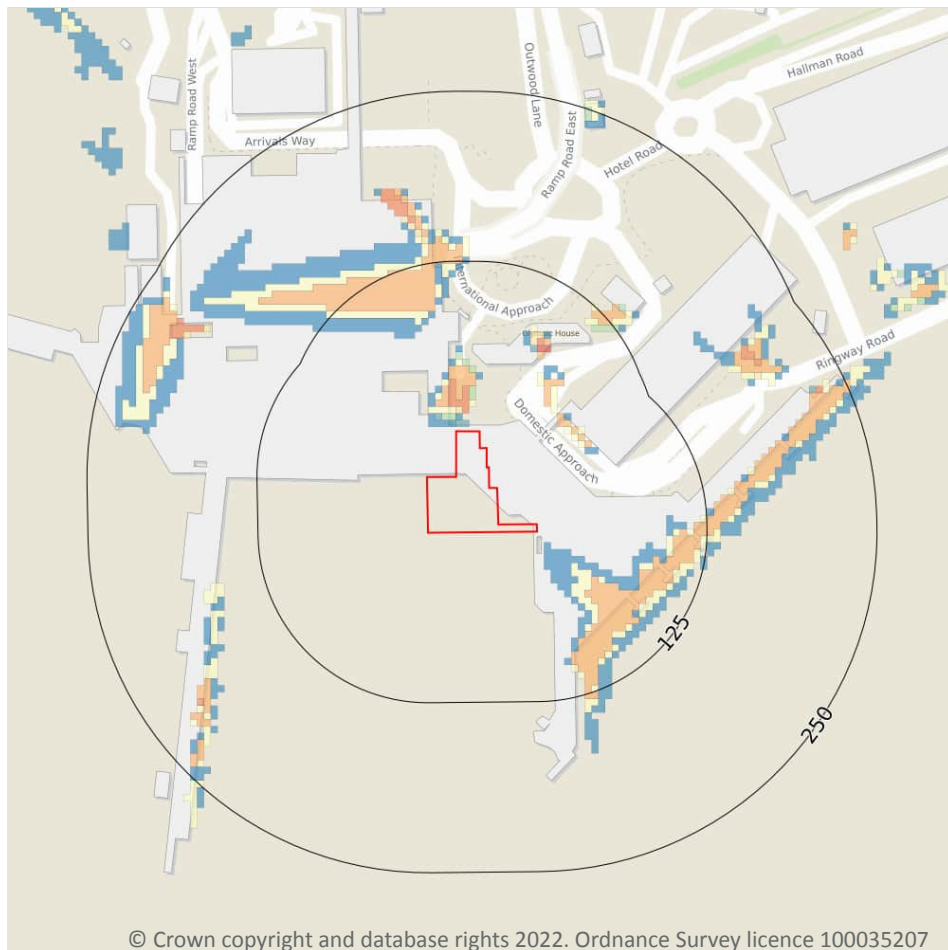
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 51**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

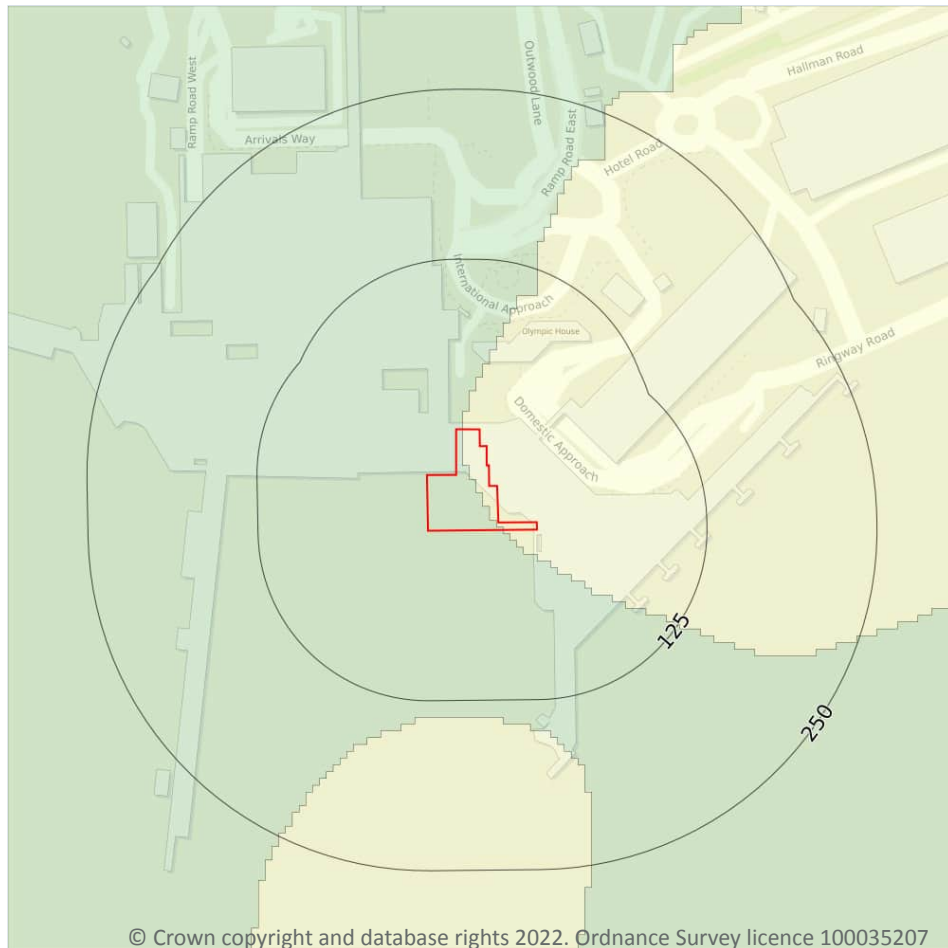
a site. The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

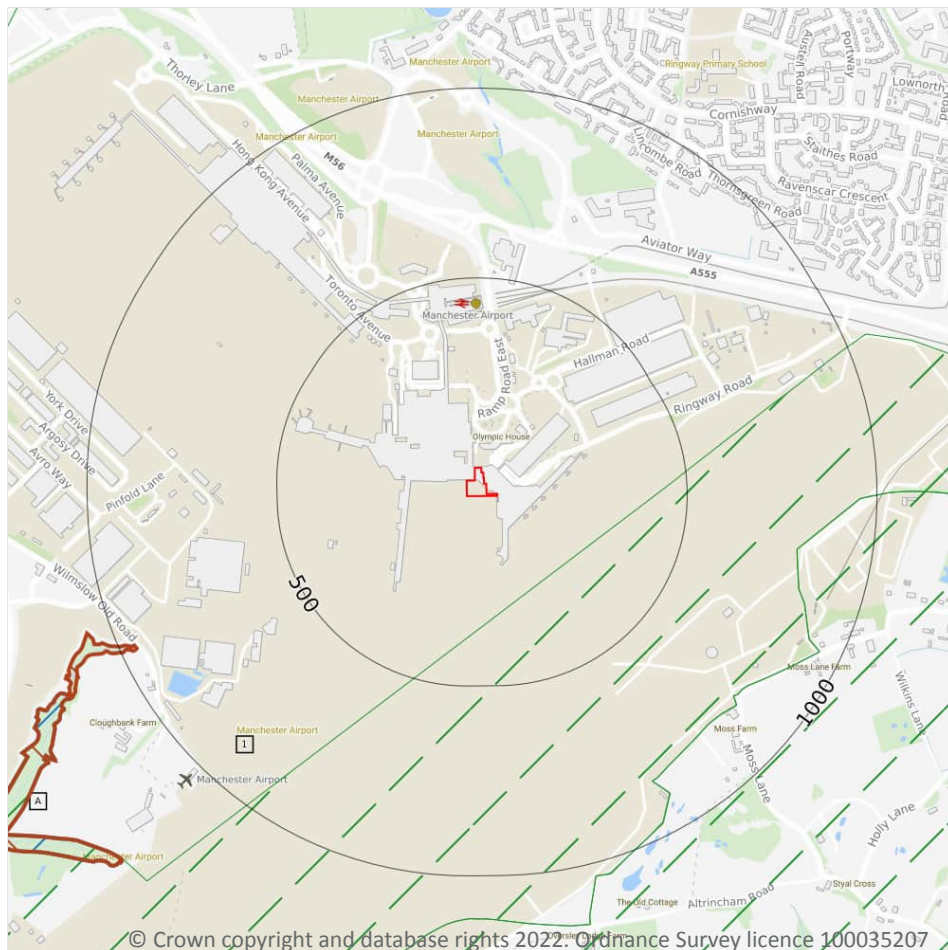
Moderate

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 53**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

2

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Data source
A	1173m SW	Cotteril Clough	Natural England



ID	Location	Name	Data source
-	1561m SW	Cotteril Clough	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0
-----------------------------	----------

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0
-----------------------------	----------

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0
-----------------------------	----------

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0
-----------------------------	----------

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

5

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Woodland Type
A	957m SW	Cotterill Clough	Ancient & Semi-Natural Woodland
-	1257m S	Oversley Farm Wood	Ancient & Semi-Natural Woodland
-	1561m SW	Cotterill Clough	Ancient & Semi-Natural Woodland
-	1679m W	Sunbank Wood	Ancient & Semi-Natural Woodland
-	1751m NW	Davenport Green Wood	Ancient & Semi-Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m**0**

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m**4**

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Local Authority name
1	250m SE	Merseyside and Greater Manchester	Manchester
2	802m E	Merseyside and Greater Manchester	Cheshire East
-	1612m W	Merseyside and Greater Manchester	Trafford
-	1975m NE	Merseyside and Greater Manchester	Manchester

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m**0**

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.



10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

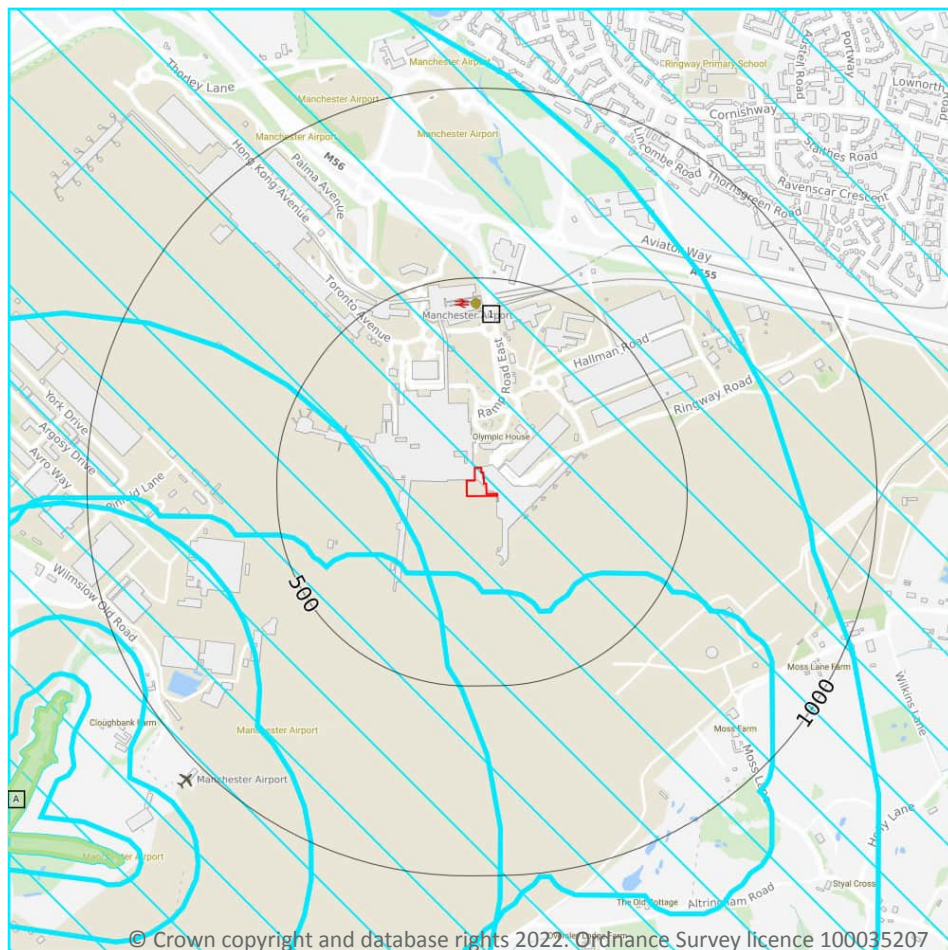
Records within 2000m**0**

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	2
-----------------------------	----------

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

ID: A
 Location: 1173m SW
 SSSI name: Cotteril Clough
 Unit name: Eastern Woodland
 Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
 Condition: Favourable
 Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	13/06/2013
Wet woodland	Favourable	13/06/2013



ID: -
Location: 1561m SW
SSSI name: Cotteril Clough
Unit name: Western Woodland
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	30/05/2014
Wet woodland	Favourable	30/05/2014

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

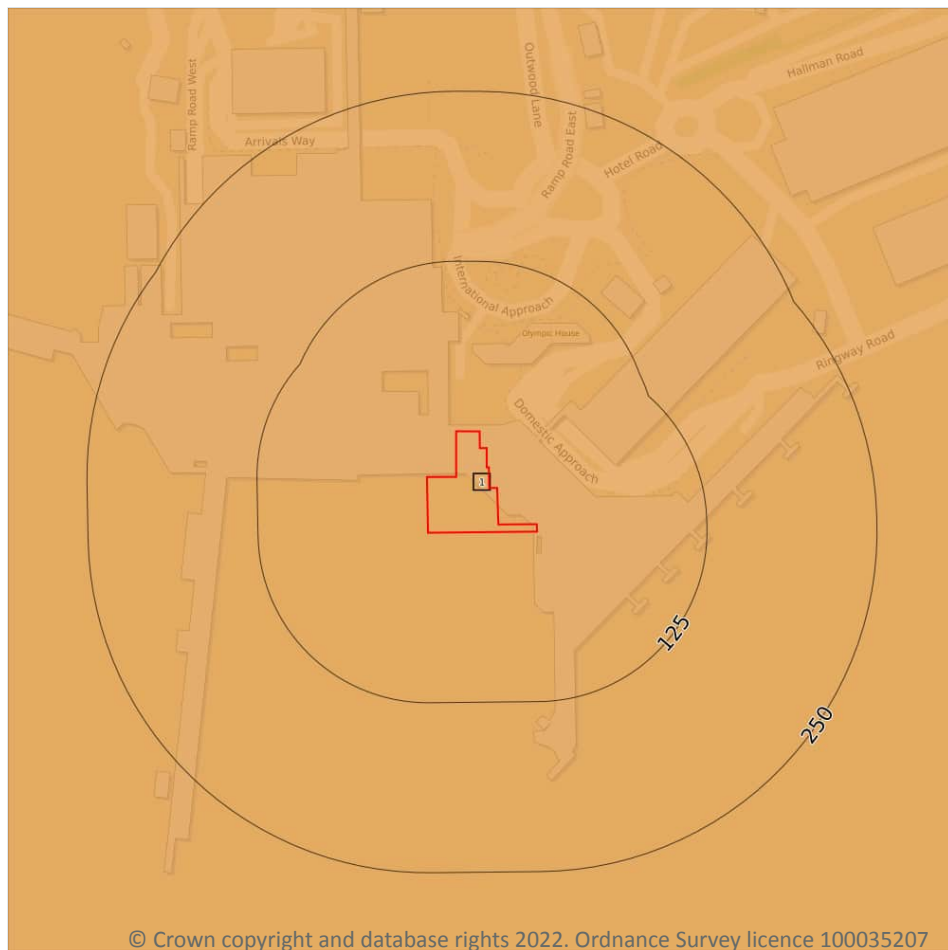
Records within 250m

0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



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- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 64**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m**0**

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m**0**

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m**0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m**0**

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m**0**

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m**0**

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m**0**

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

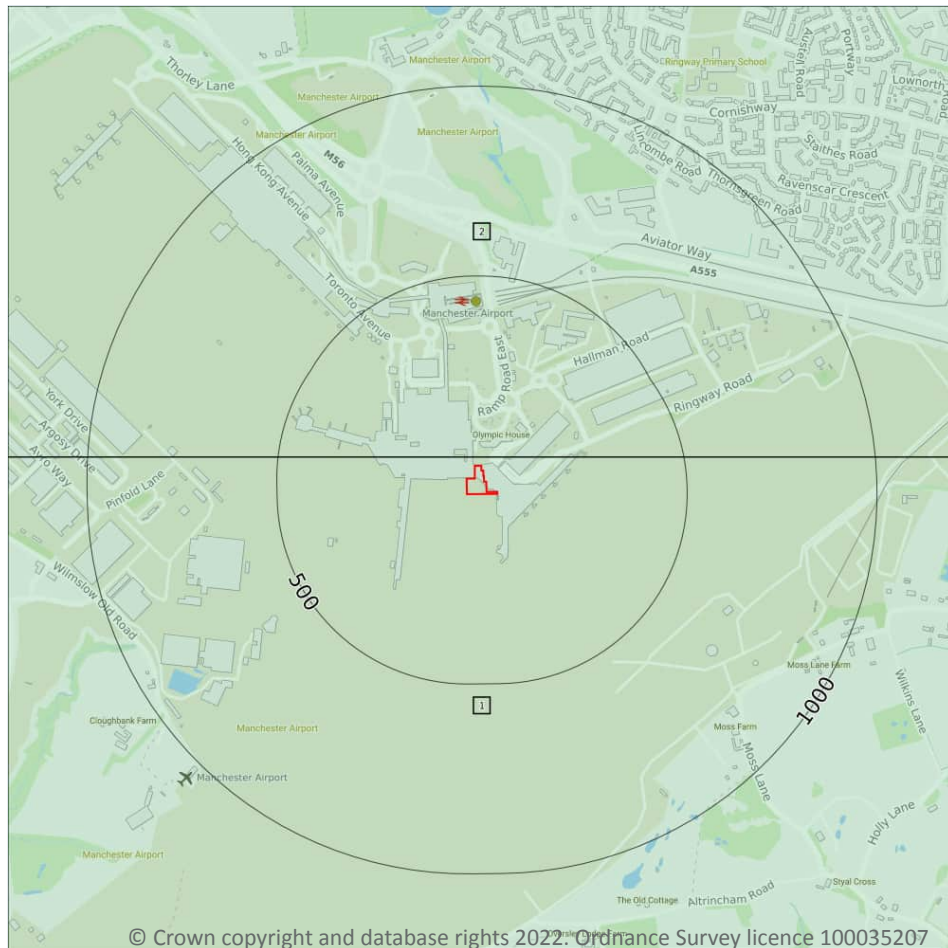
Records within 250m**0**

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme. Features are displayed on the Geology 1:10,000 scale - Availability map on **page 67**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SJ88SW
2	23m N	No coverage	Full	Full	No coverage	SJ88NW

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

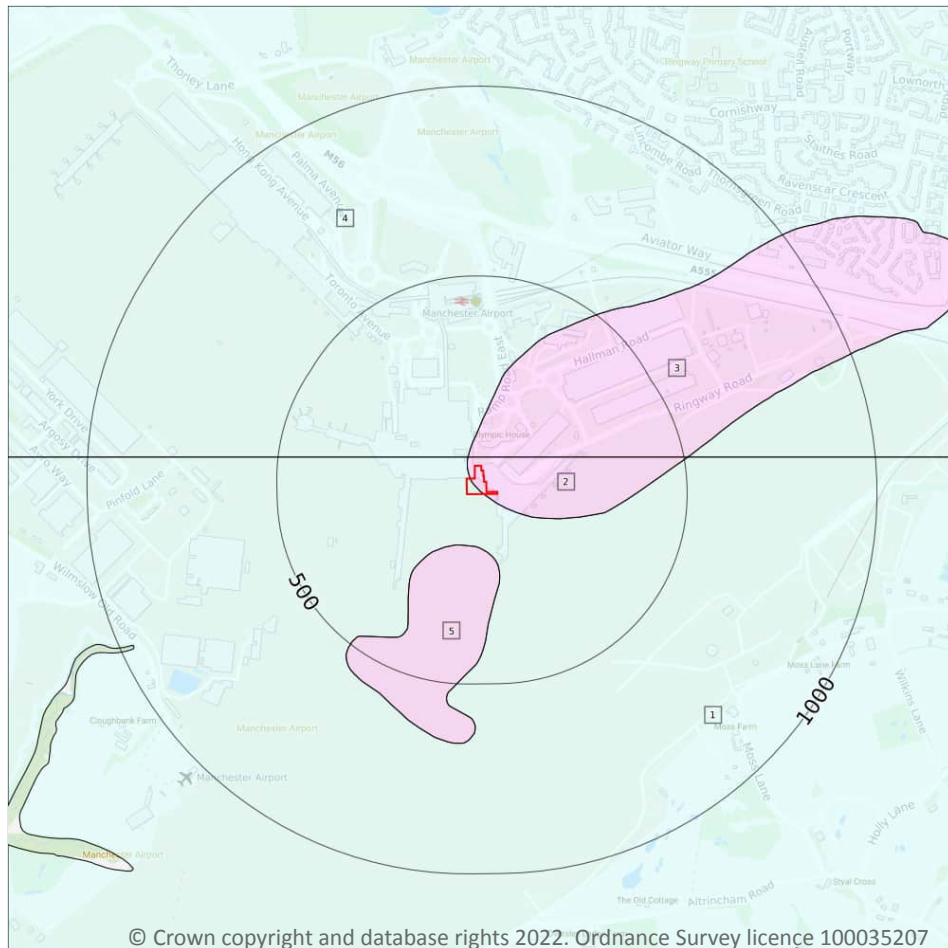
0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

5

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 69**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	On site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	23m N	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	29m NW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
5	135m S	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

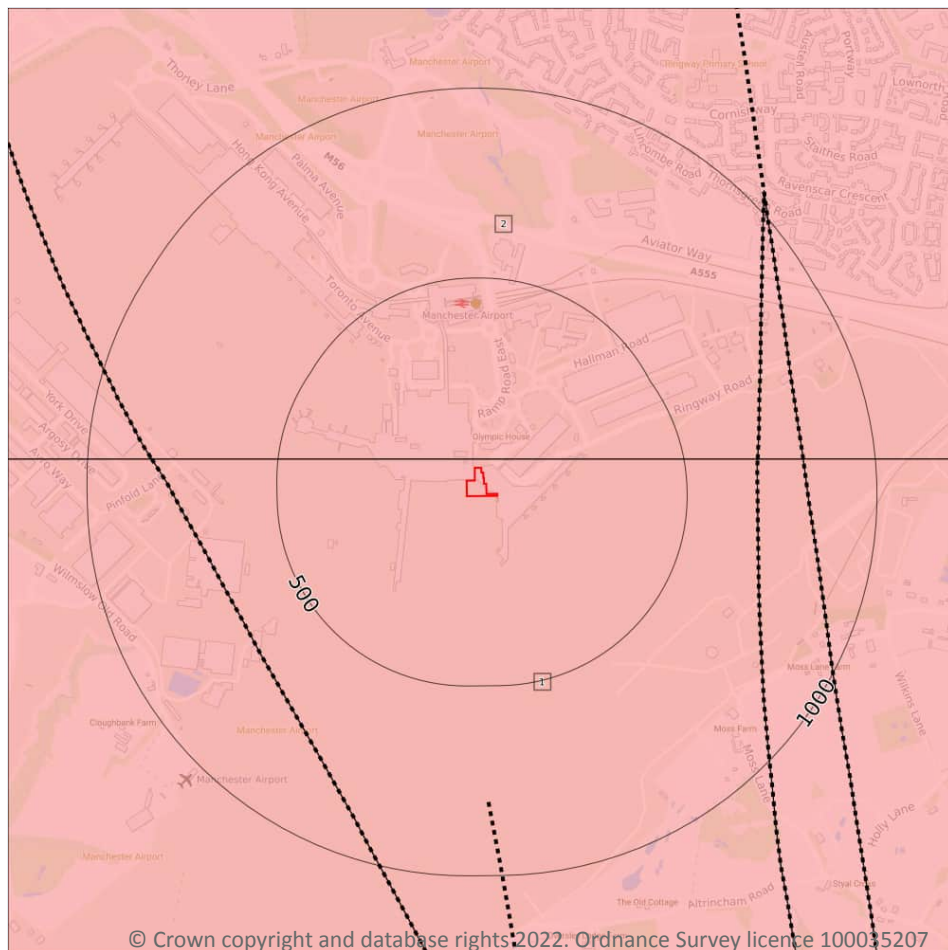
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

---- Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

2

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

ID	Location	LEX Code	Description	Rock age
1	On site	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age
2	23m N	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW098_stockport_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

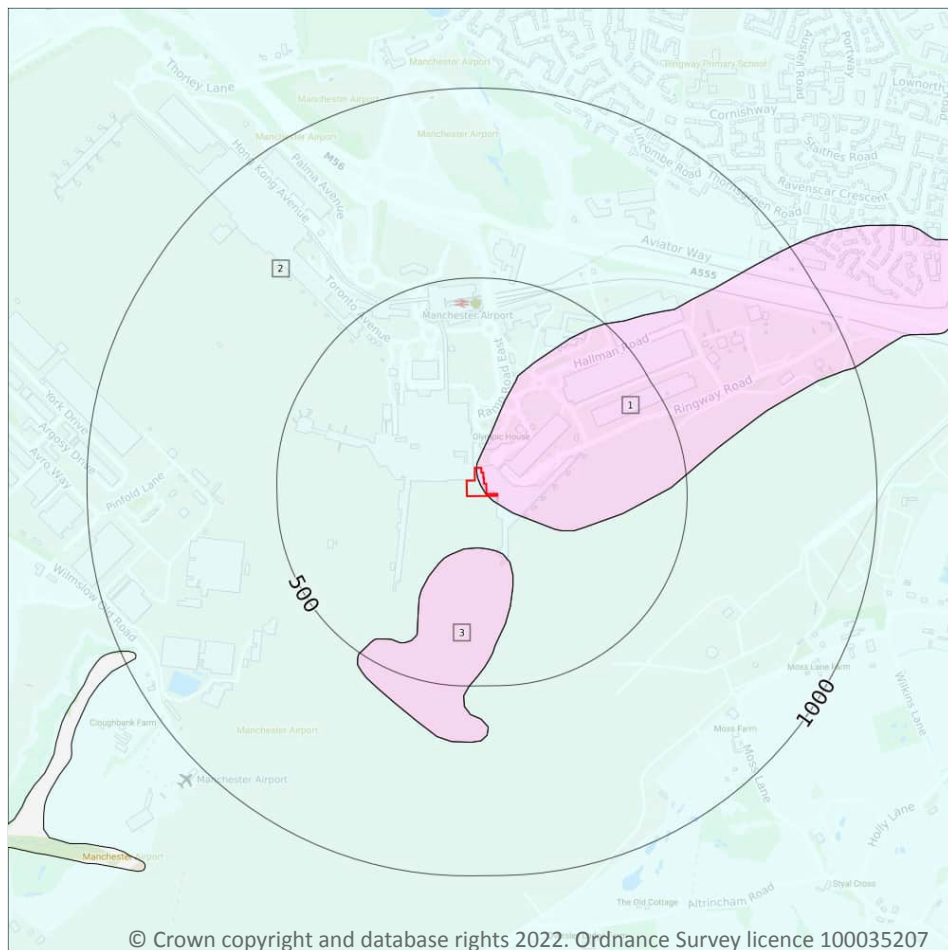
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

3

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	137m S	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL



This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

4

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Very High	High
On site	Mixed	High	Low
23m NE	Intergranular	Very High	High
23m N	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



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15.8 Bedrock geology (50k)

1

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	On site	BOM-MDST	BOLLIN MUDSTONE MEMBER - MUDSTONE	ANISIAN



15.9 Bedrock permeability (50k)

Records within 50m

2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Low
23m N	Fracture	Low	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

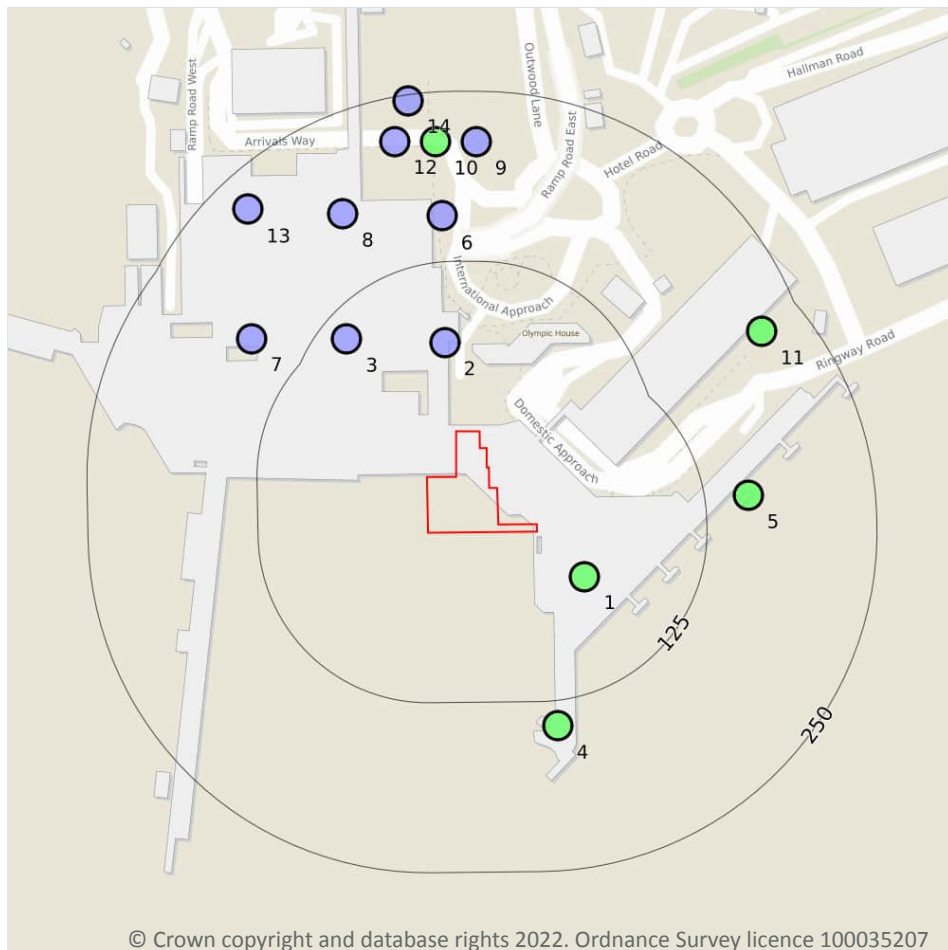
0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

14

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 79**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	48m SE	382110 384870	T1 EAST MANCHESTER AIRPORT R4	15.86	N	15629928
2	66m N	382007 385042	RINGWAY AIRPORT 3	2.03	N	914680

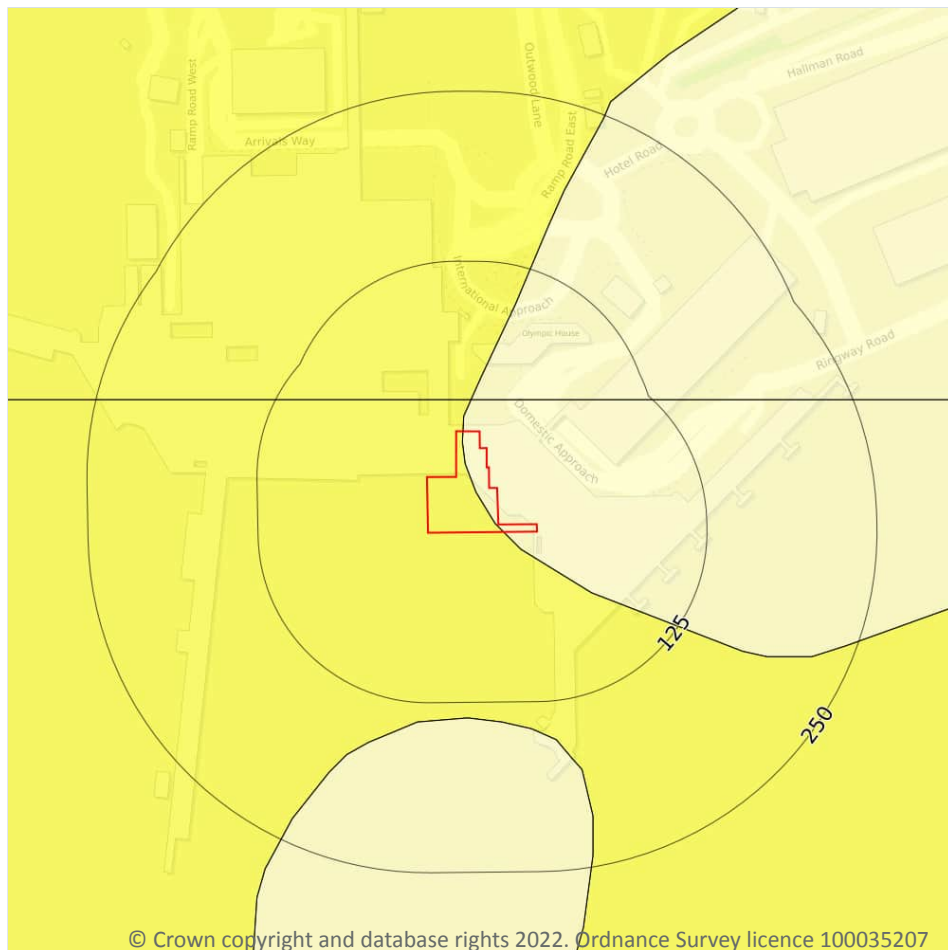


ID	Location	Grid reference	Name	Length	Confidential	Web link
3	106m NW	381935 385045	RINGWAY AIRPORT 1	1.52	N	914678
4	144m S	382090 384760	T1 EAST MANCHESTER AIRPORT R2	14.0	N	15629927
5	157m E	382230 384930	T1 EAST MANCHESTER AIRPORT R8	13.7	N	15629929
6	159m N	382005 385135	RINGWAY AIRPORT 6	1.52	N	914683
7	164m NW	381865 385045	RINGWAY AIRPORT 2	1.52	N	914679
8	181m NW	381932 385137	RINGWAY AIRPORT 5	1.65	N	914682
9	213m N	382030 385190	MANCHESTER AIRPORT 10	5.0	N	915259
10	214m N	382000 385190	MANCHESTER AIRPORT 1	30.0	N	915251
11	218m NE	382240 385050	T1 EAST MANCHESTER AIRPORT R12	15.55	N	15629930
12	218m N	381970 385190	MANCHESTER AIRPORT 5	4.0	N	915255
13	224m NW	381862 385140	RINGWAY AIRPORT 4	1.52	N	914681
14	246m N	381980 385220	MANCHESTER AIRPORT 6	5.0	N	915256

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

4

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 81**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
23m N	Very low	Ground conditions predominantly low plasticity.

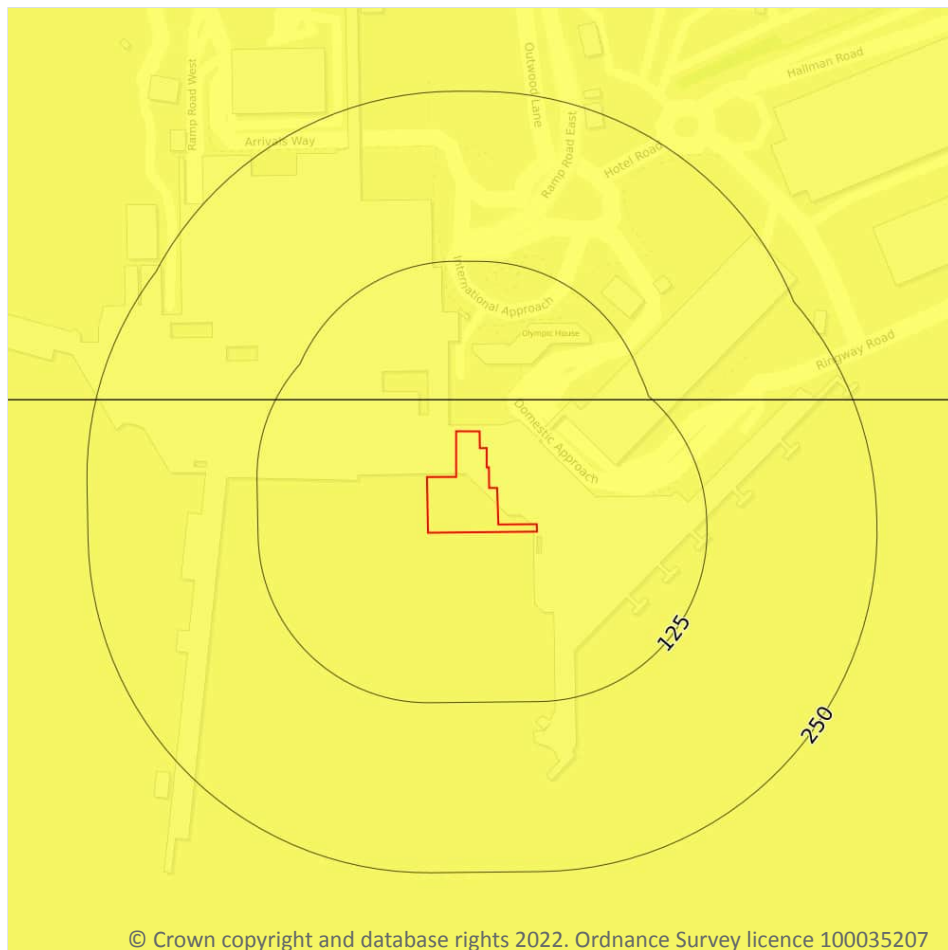


Location	Hazard rating	Details
23m N	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 83**

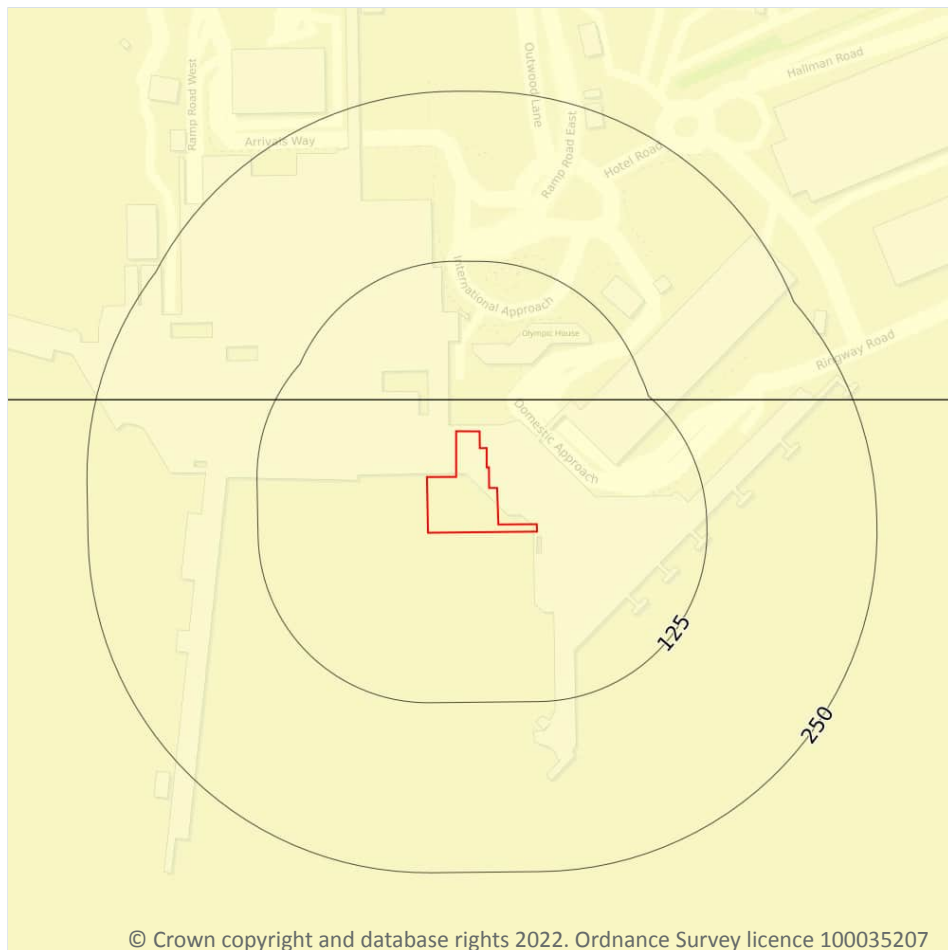
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
23m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

2

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

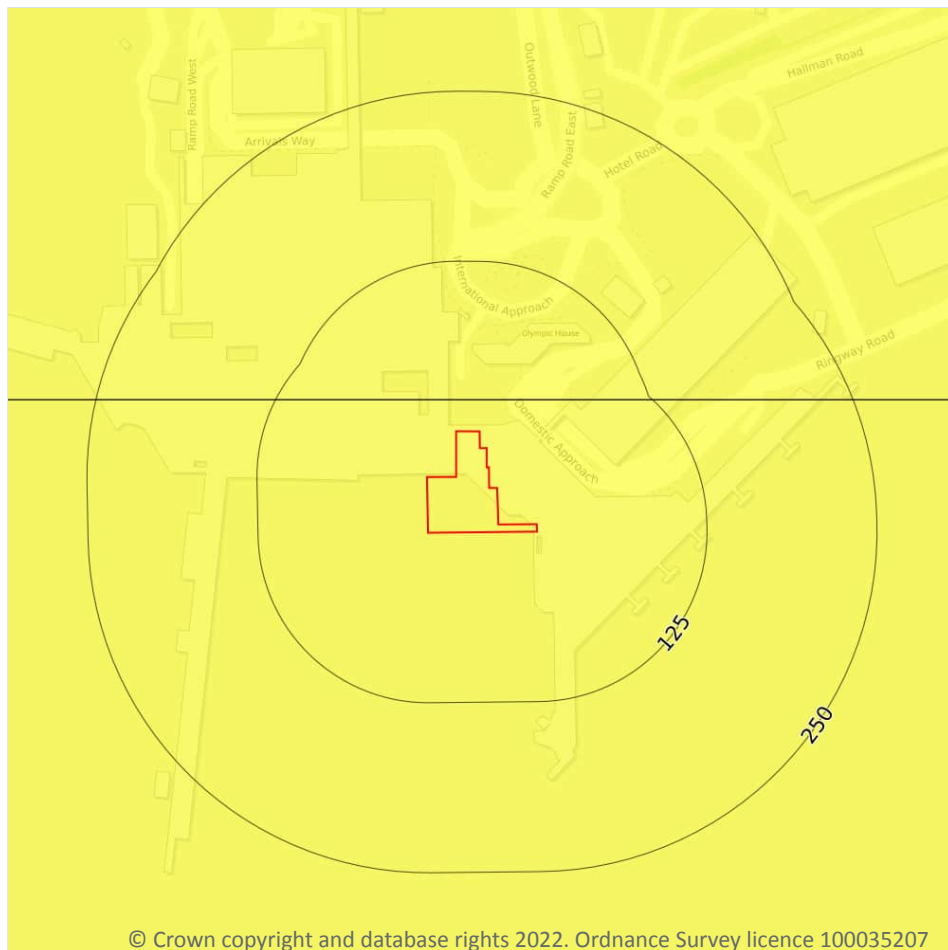
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 85**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
23m N	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



- Site Outline**
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

2

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

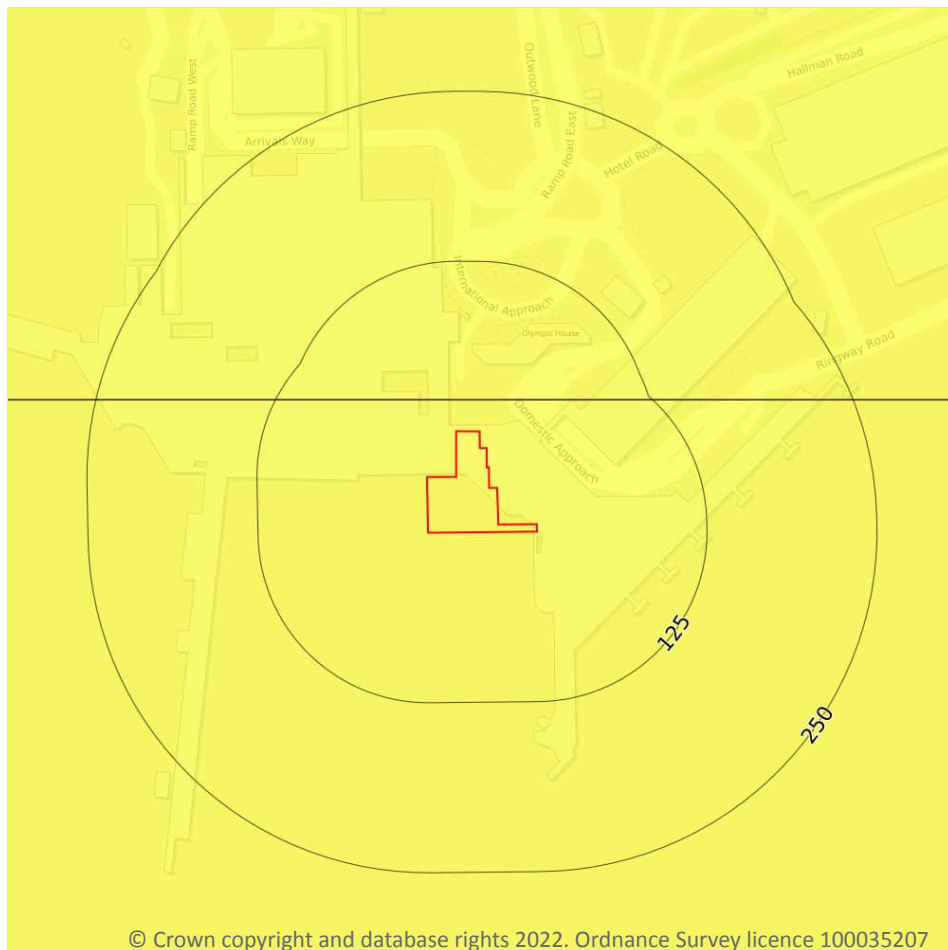
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 86**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
23m N	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.5 Landslides

Records within 50m

2

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 87**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

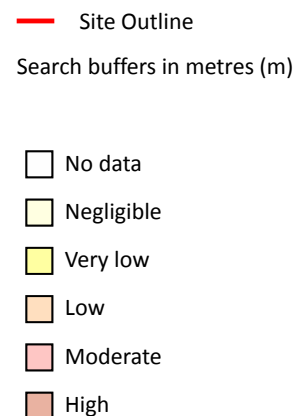
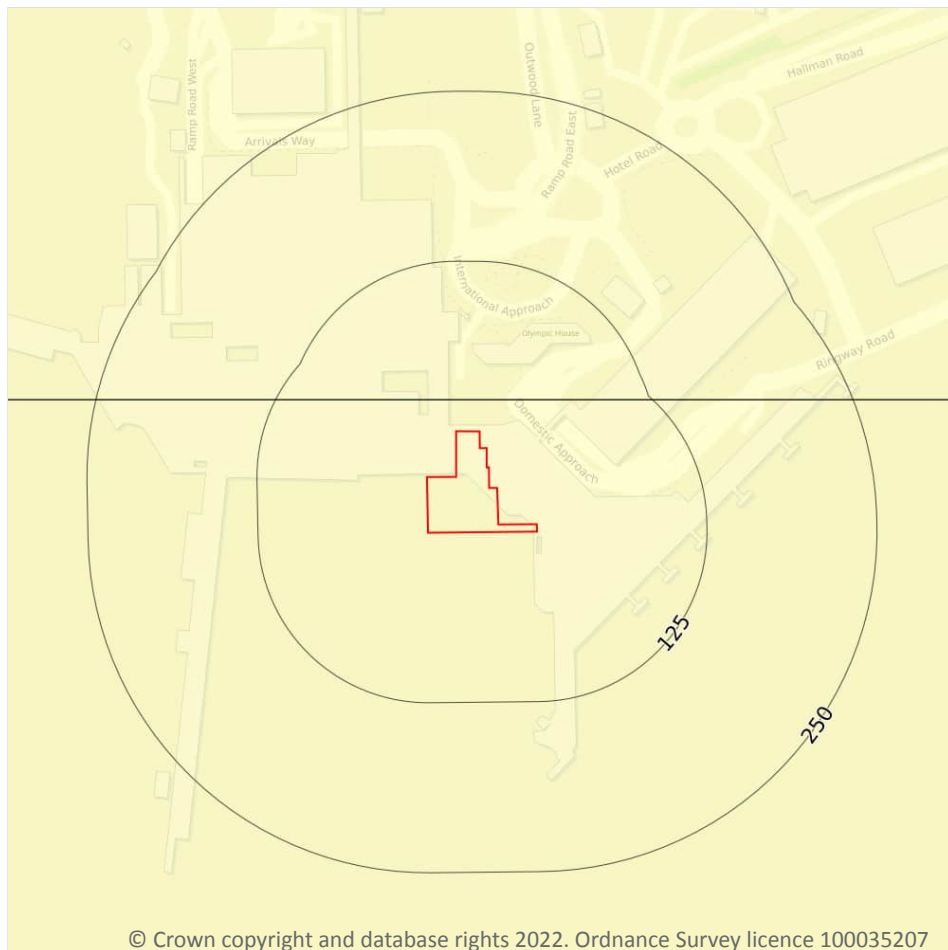


Location	Hazard rating	Details
23m N	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

2

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 89**

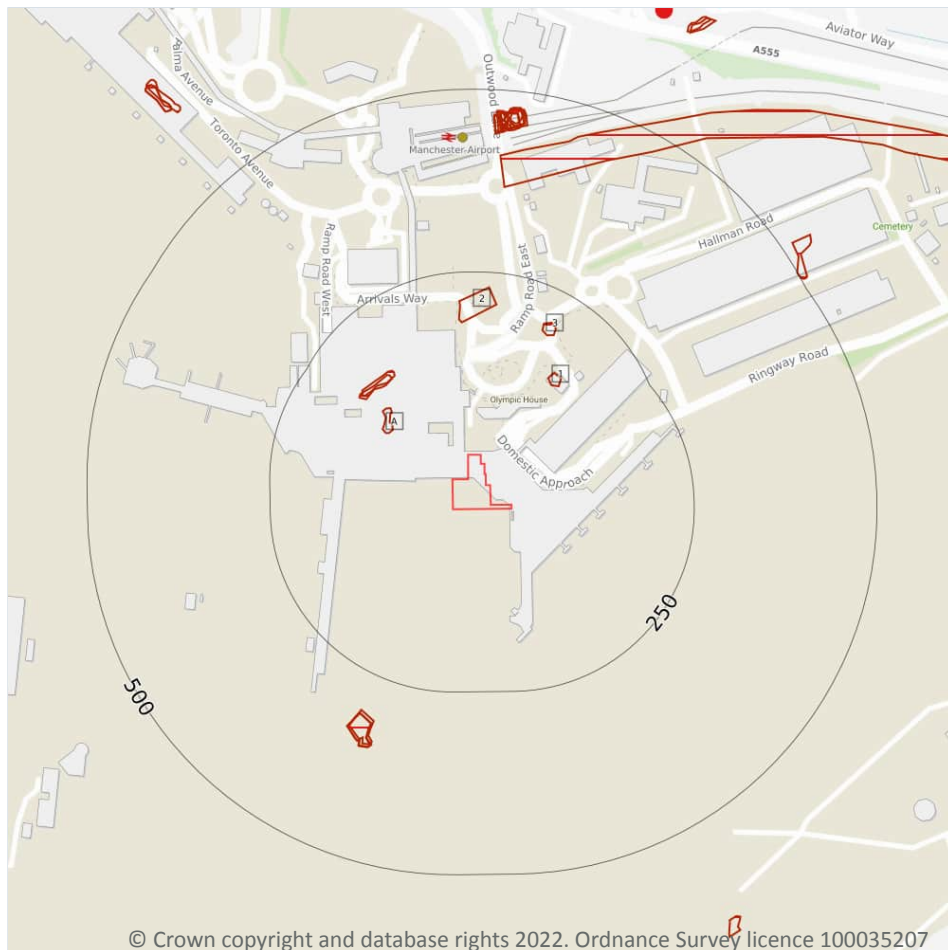
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

Location	Hazard rating	Details
23m N	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

6

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Land Use	Year of mapping	Mapping scale
A	106m NW	Ponds	1910	1:10560
1	136m NE	Unspecified Heap	1967	1:10560
A	147m NW	Ponds	1899	1:10560
A	148m NW	Ponds	1910	1:10560
2	181m N	Unspecified Heap	1967	1:10560
3	187m NE	Unspecified Heap	1967	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.



18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.



18.10 Brine areas

Records on site	1
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

Location	Details
On site	The site is located within the Cheshire Brine Compensation District. The extraction of brine over many years has caused some properties within the Cheshire area to be at risk of subsidence. This subsidence can occur a considerable distance from the location of the extraction and further assessment is recommended. A Cheshire Salt search can be obtained direct from Groundsure or your preferred search provider.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

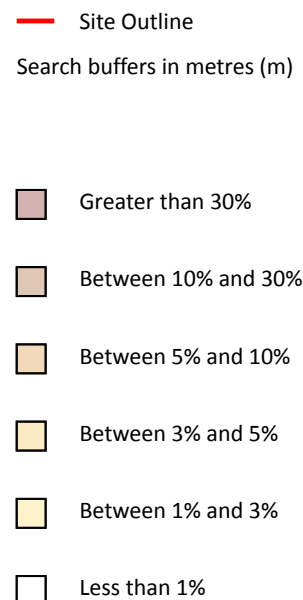
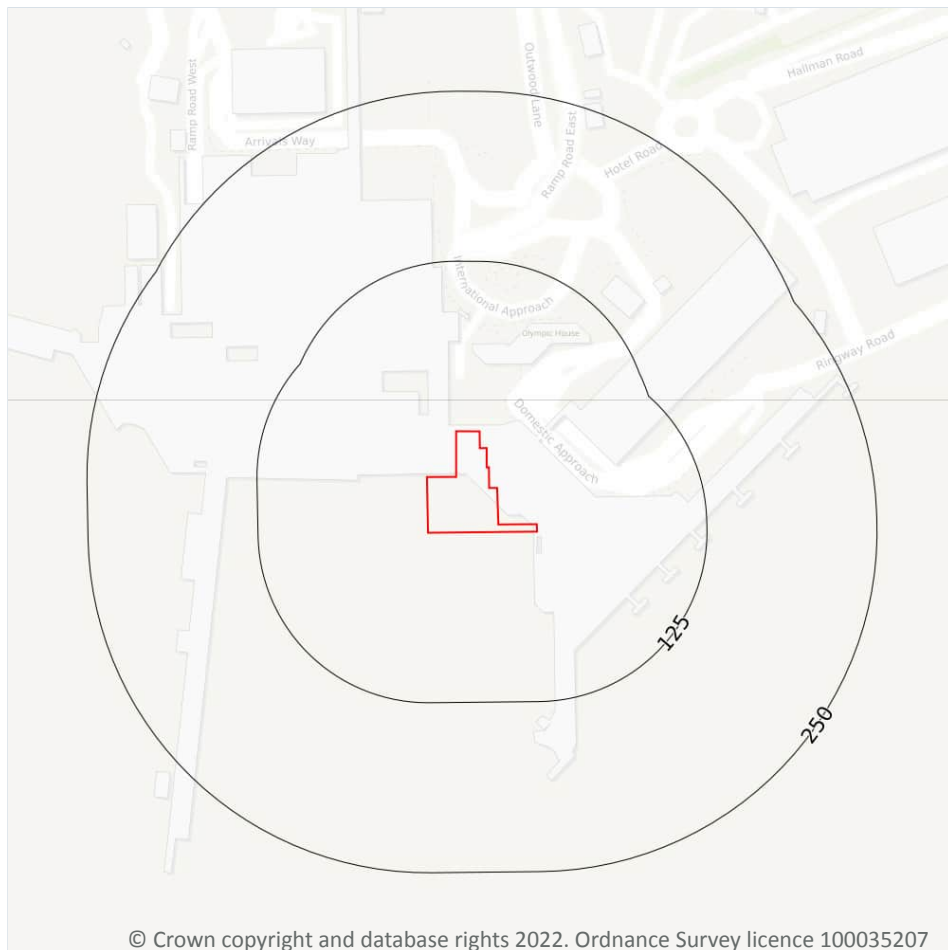
Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 95**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

9

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
23m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
23m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
23m NE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
23m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
28m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
28m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.



20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0
---------------------	---

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0
---------------------	---

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0
---------------------	---

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0
---------------------	---

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0
---------------------	---

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.



This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1872-1877

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1872
 Revised 1872
 Edition N/A
 Copyright N/A
 Levelled N/A

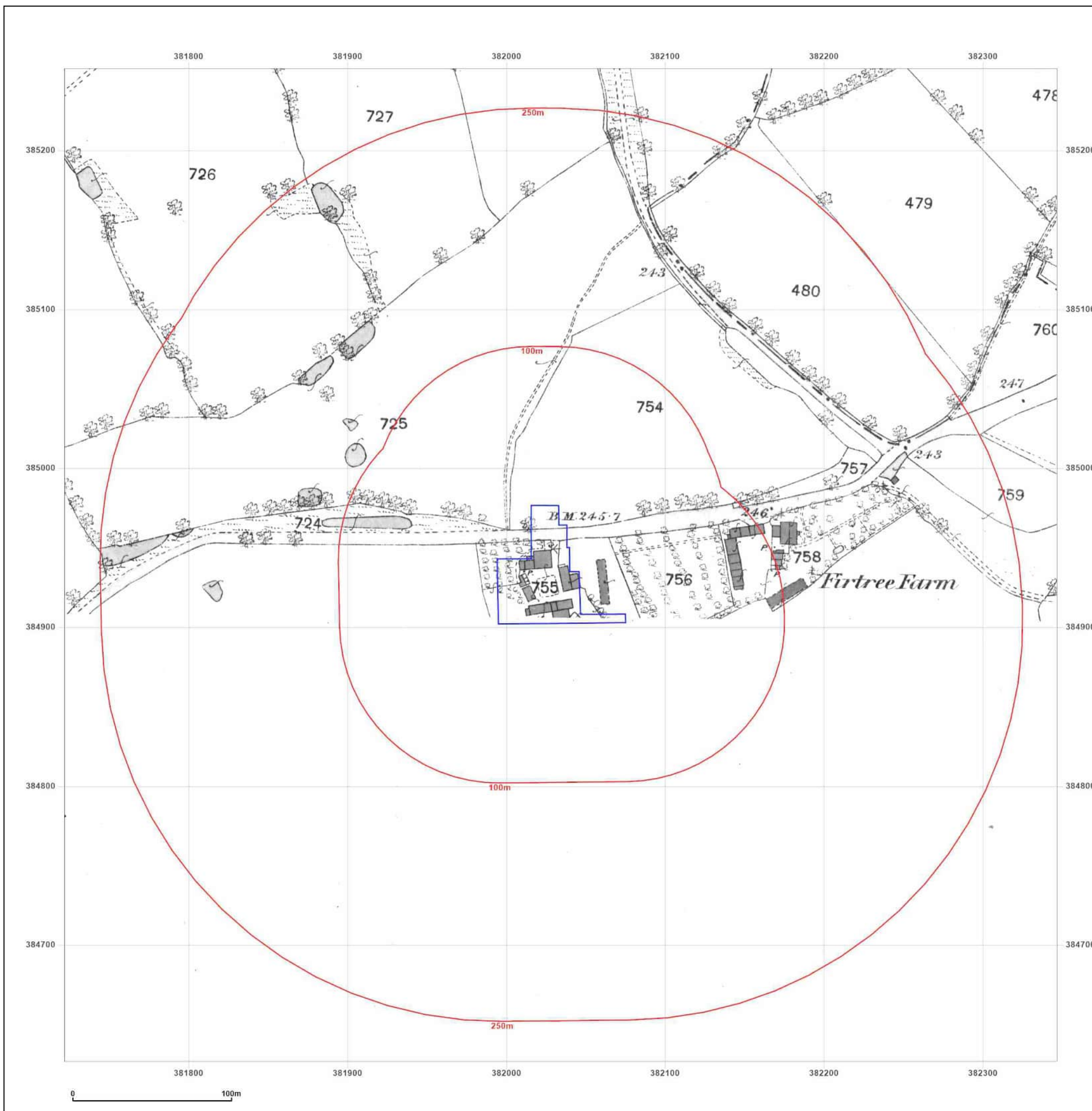


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

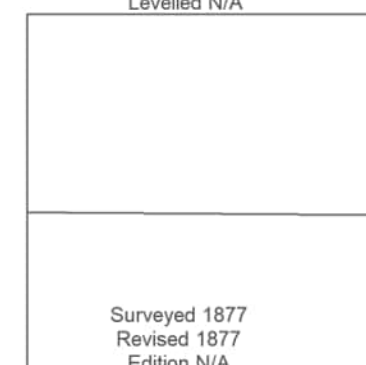
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Scale: 1:2,500

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 Revised 1877
 Edition N/A
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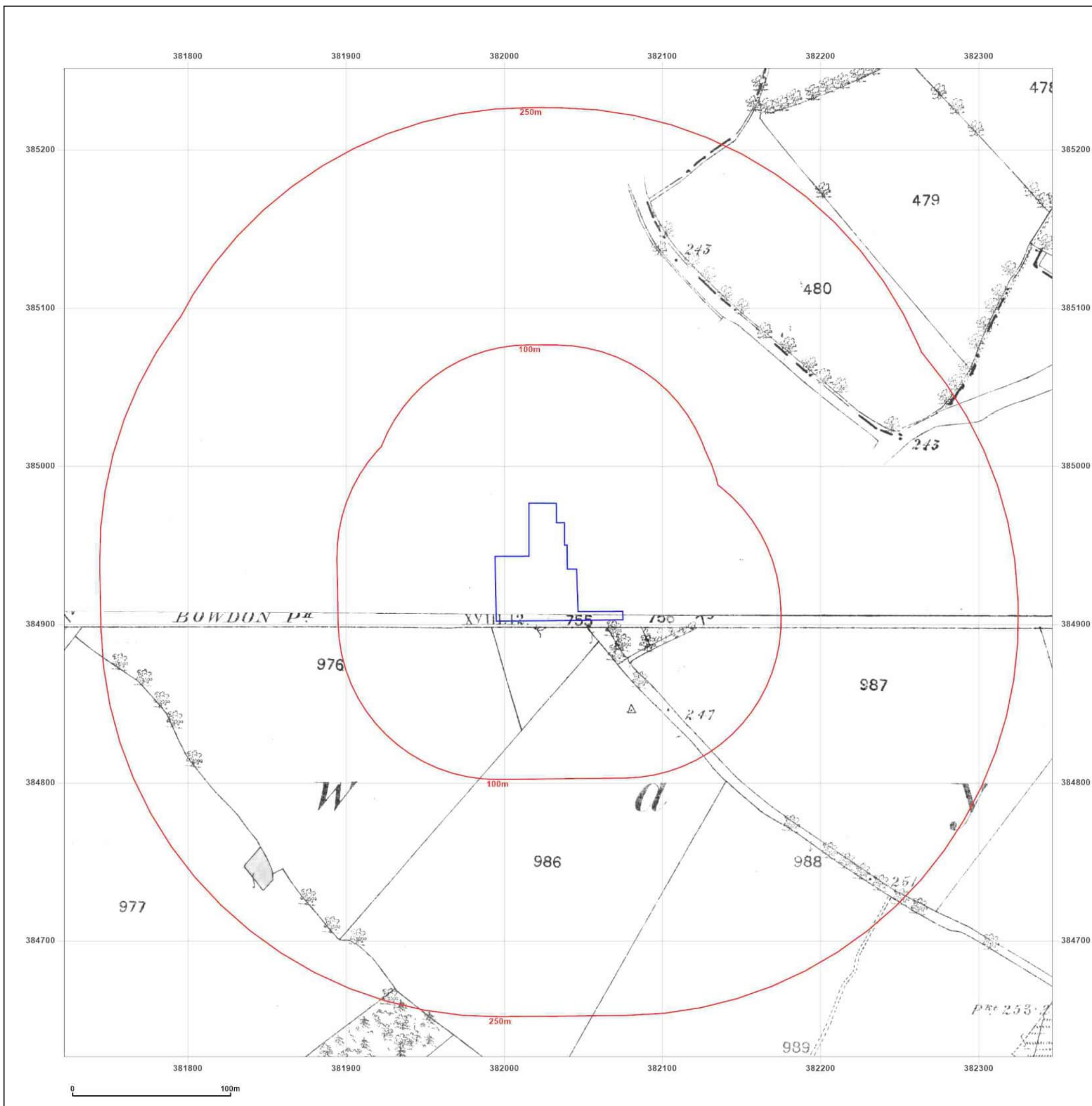


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



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 Edition 1898
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Surveyed 1877
 Revised 1897
 Edition 1898
 Copyright N/A
 Levelled N/A

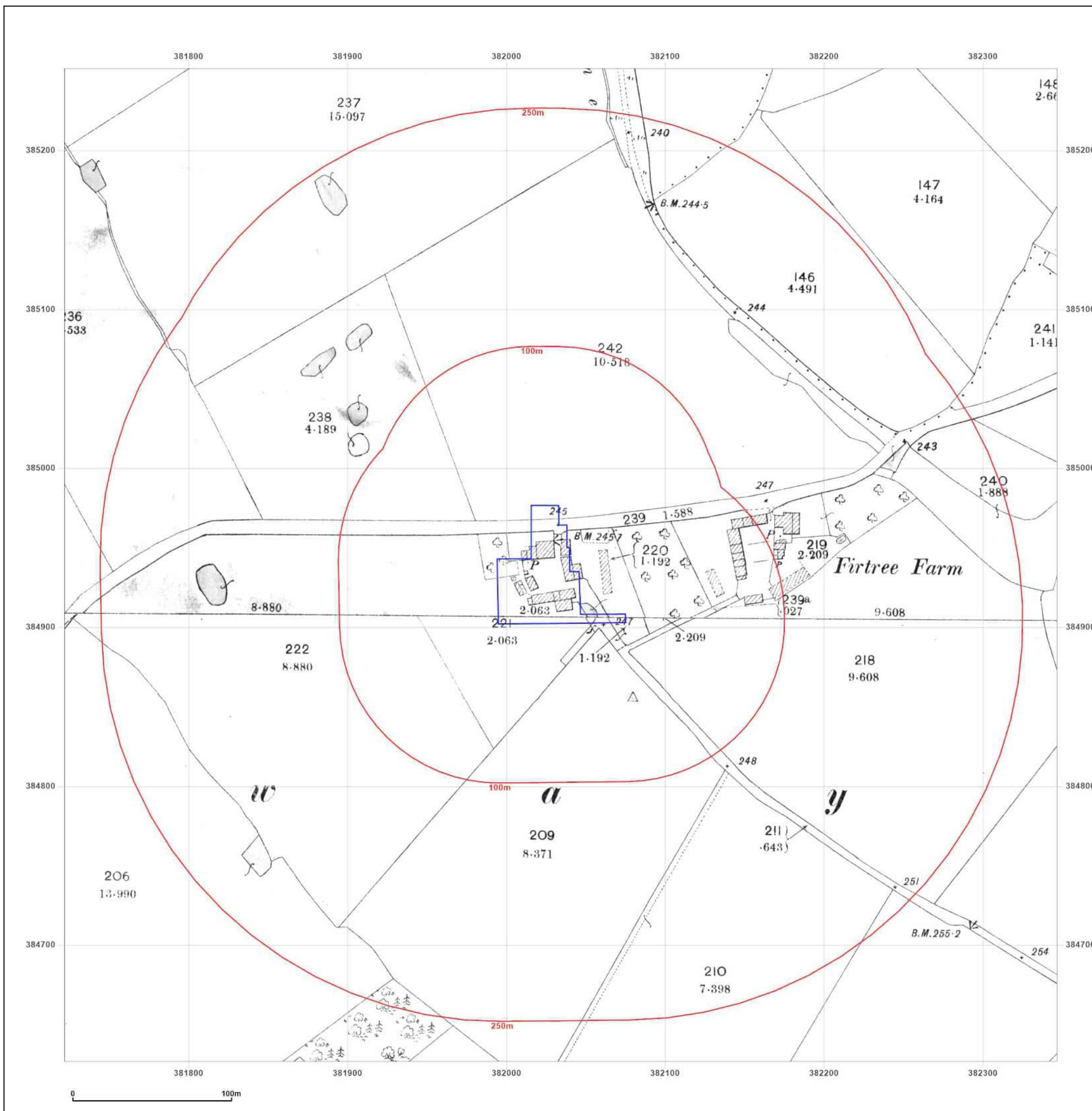


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1909

Scale: 1:2,500

Printed at: 1:2,500



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 Revised 1908
 Edition 1909
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 Levelled N/A

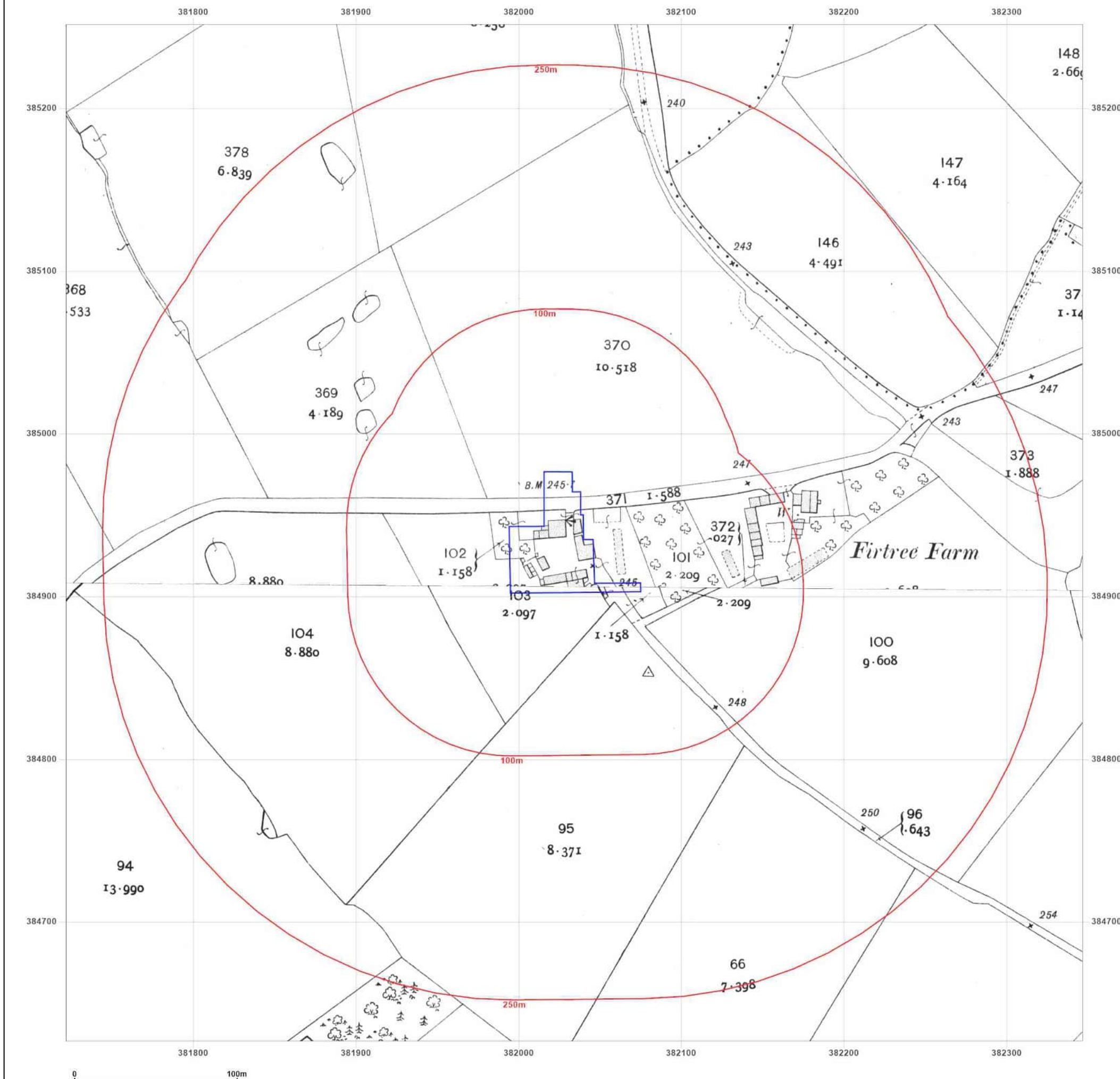


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Site Details:

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Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1960-1963

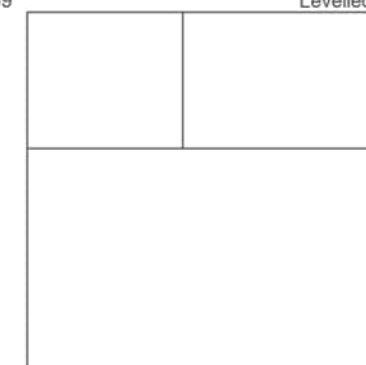
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Surveyed 1959
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 Edition N/A
 Copyright 1960
 Levelled 1949

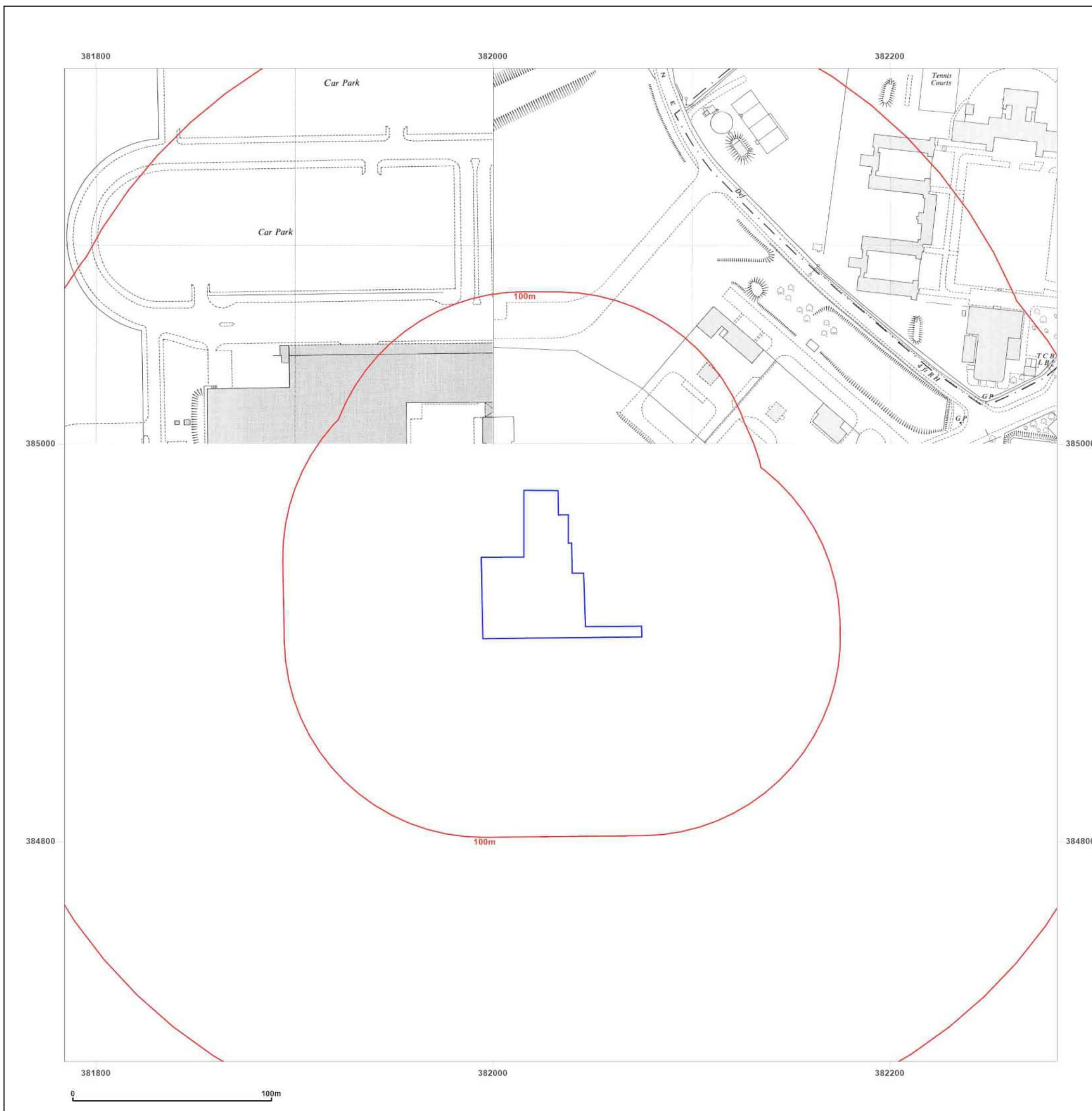


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Site Details:

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Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

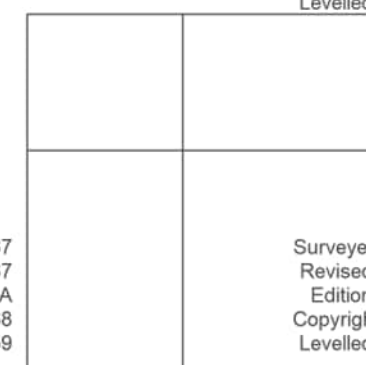
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Scale: 1:1,250

Printed at: 1:2,000



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 Revised 1966
 Edition N/A
 Copyright 1967
 Levelled 1959



Surveyed 1967
 Revised 1967
 Edition N/A
 Copyright 1968
 Levelled 1959

Surveyed 1968
 Revised 1968
 Edition N/A
 Copyright 1969
 Levelled 1959

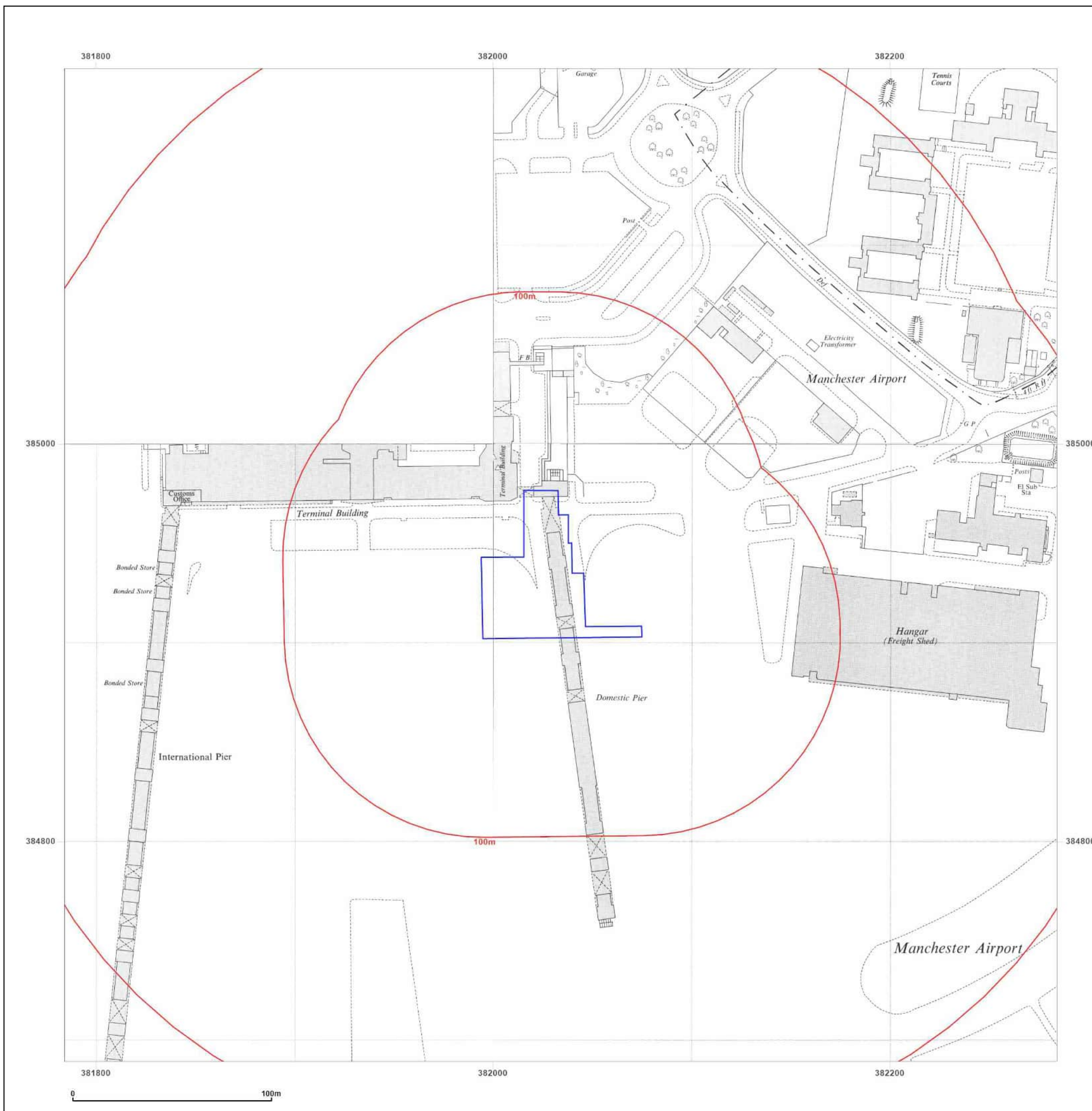


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Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1961-1969

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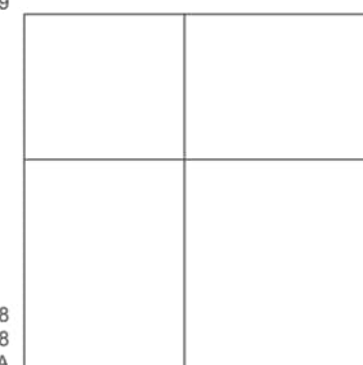
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 Revised 1963
 Edition 1964
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 Edition 1961
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Surveyed 1968
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 Copyright 1969
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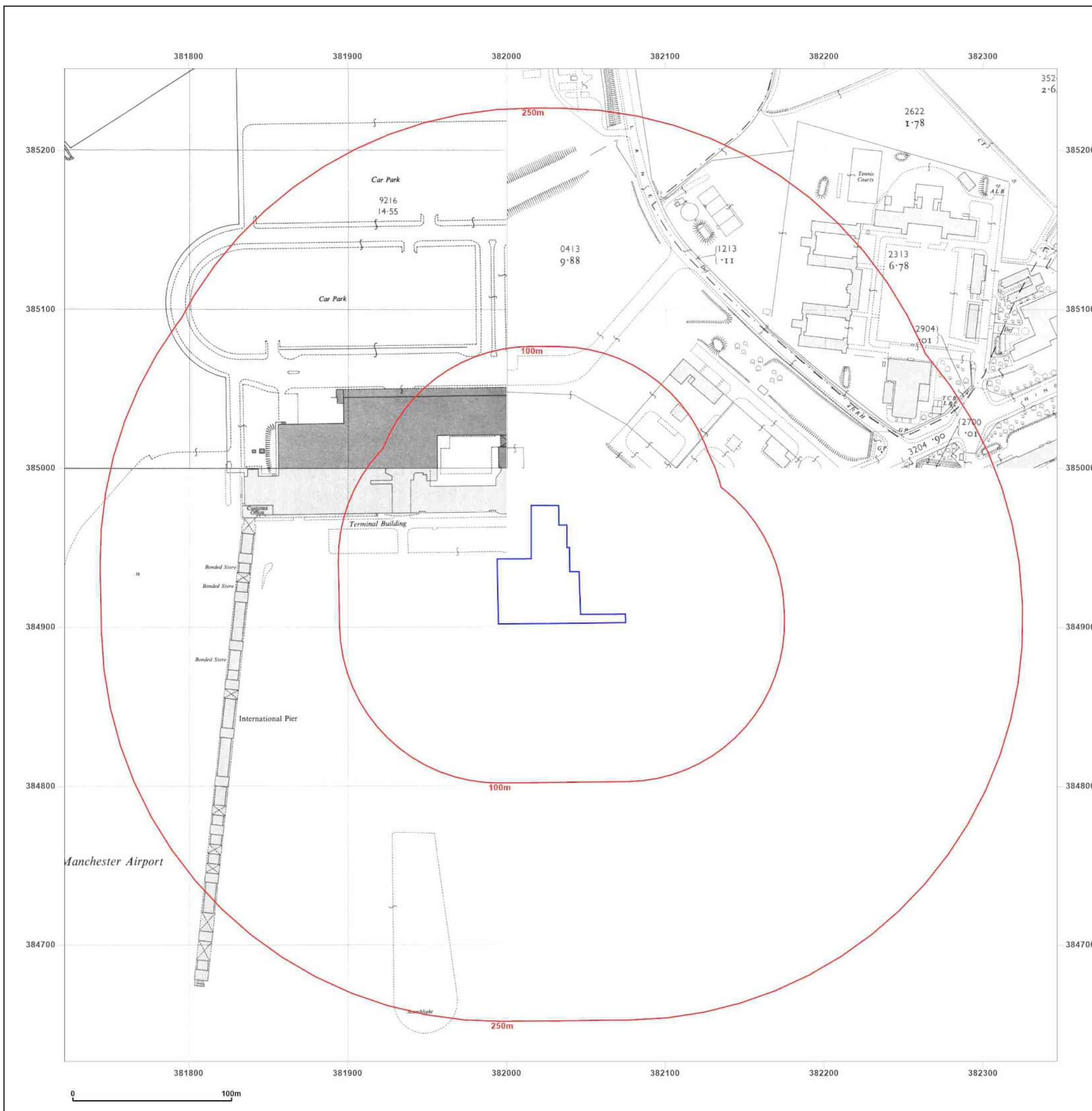


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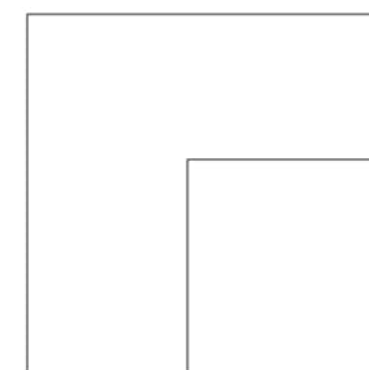
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Grid Ref: 382034, 384939

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Scale: 1:2,500

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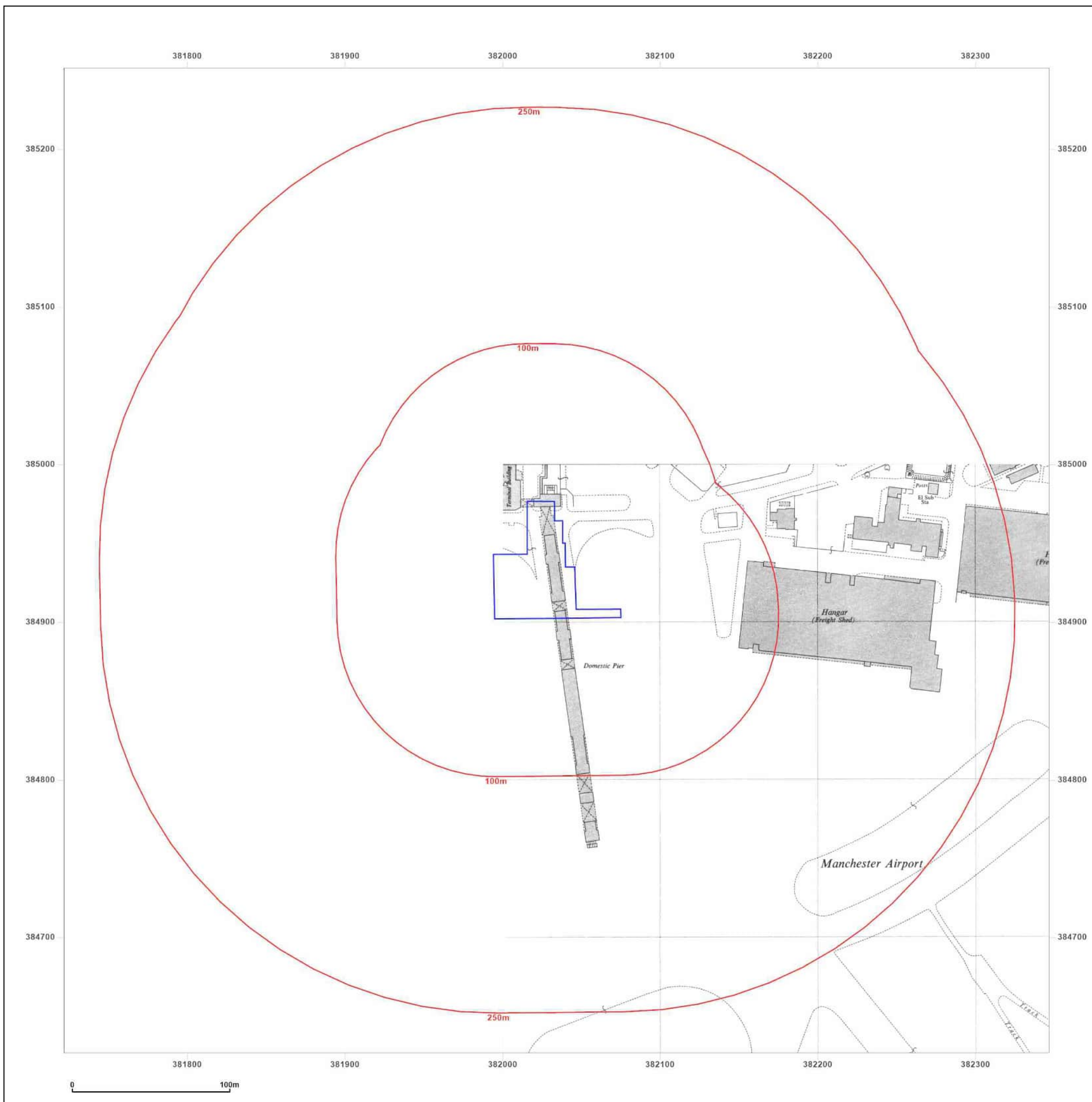


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Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1974

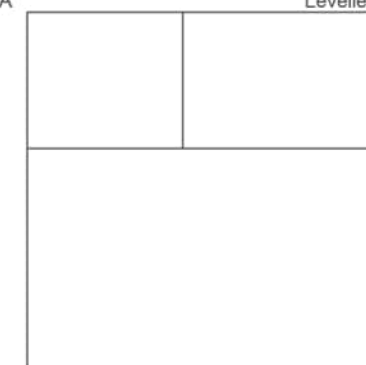
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 Revised N/A
 Edition N/A
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 Levelled N/A

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 Edition N/A
 Copyright 1974
 Levelled N/A

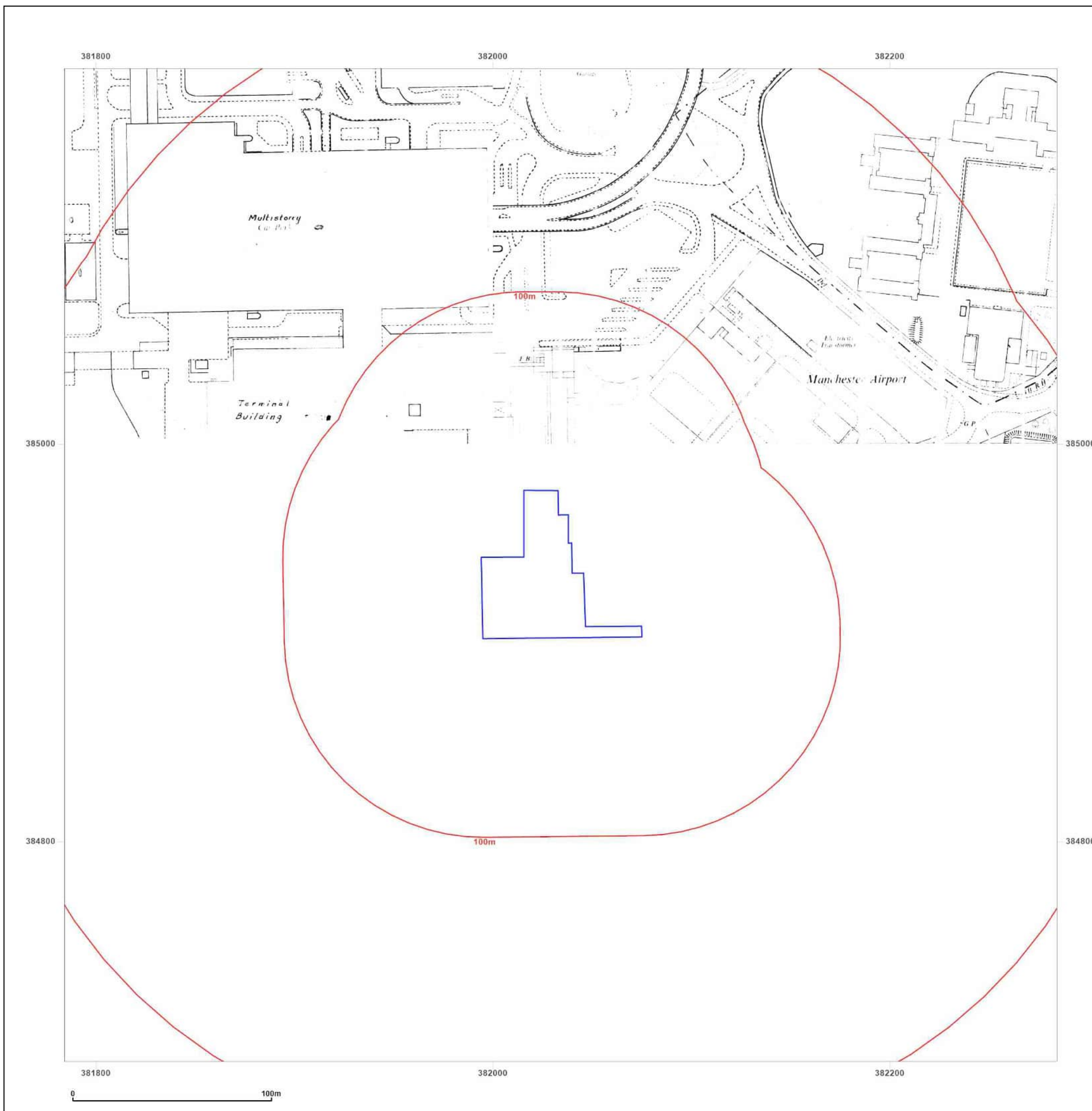


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Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1976

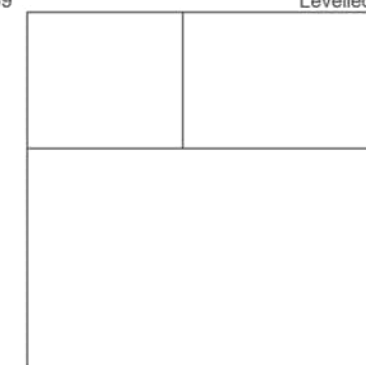
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Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1987

Scale: 1:1,250

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 Revised 1987
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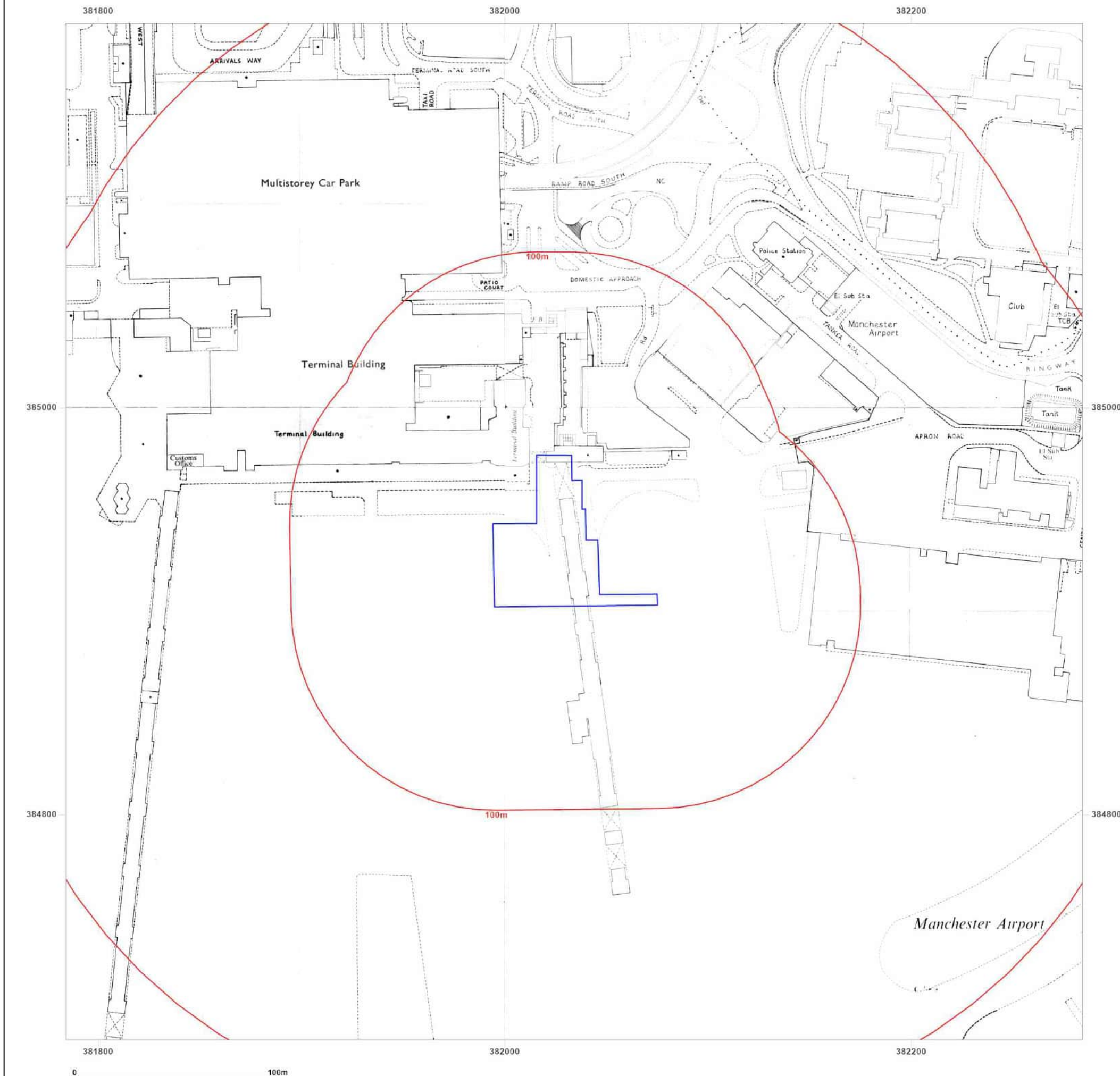


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1990-1992

Scale: 1:1,250

Printed at: 1:2,000



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 Revised 1990
 Edition N/A
 Copyright 1990
 Levelled 1959

Surveyed 1959
 Revised 1975
 Edition N/A
 Copyright 1990
 Levelled N/A

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 Edition N/A
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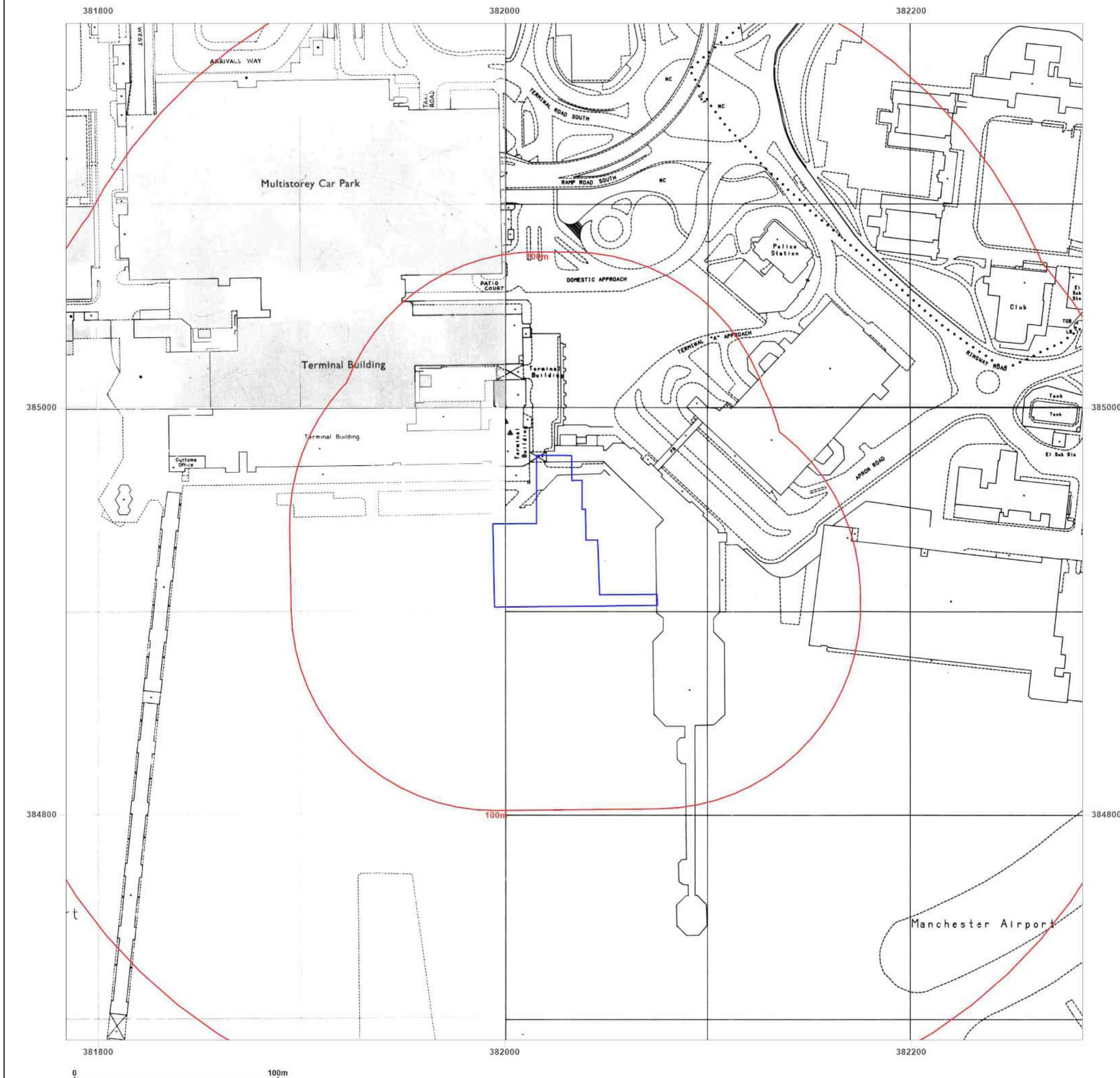


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1992

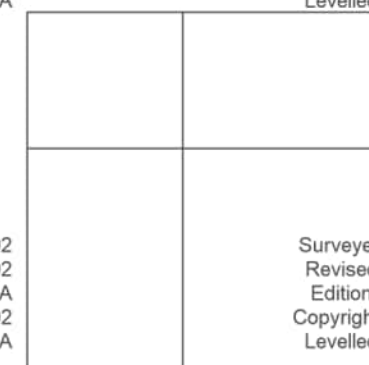
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 Edition N/A
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 Levelled N/A

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 Edition N/A
 Copyright 1992
 Levelled N/A



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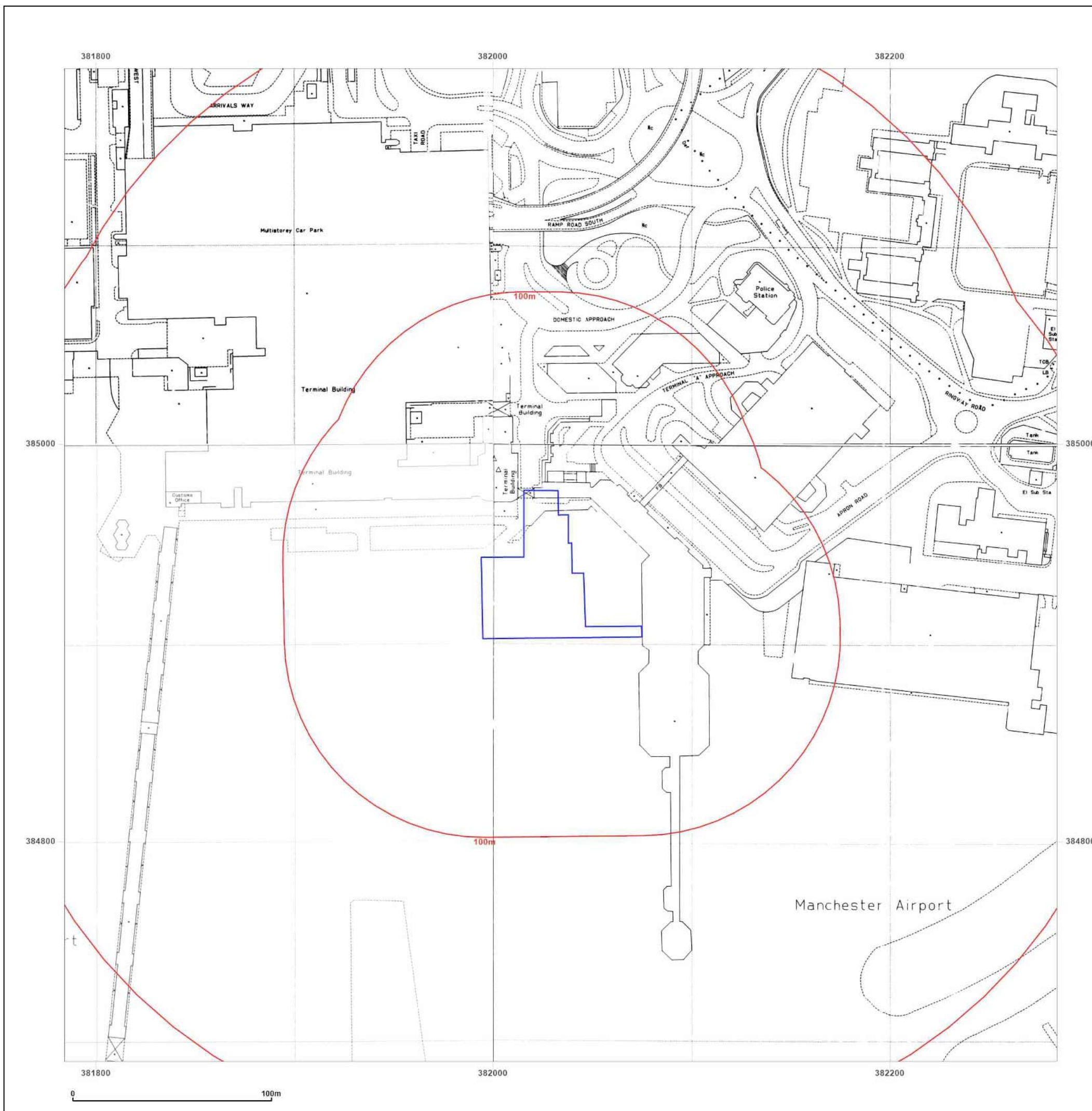


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

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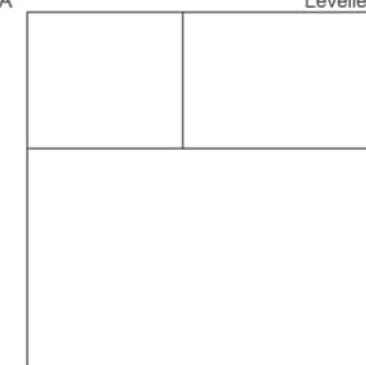
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 Edition N/A
 Copyright 1993
 Levelled N/A

Surveyed N/A
 Revised N/A
 Edition N/A
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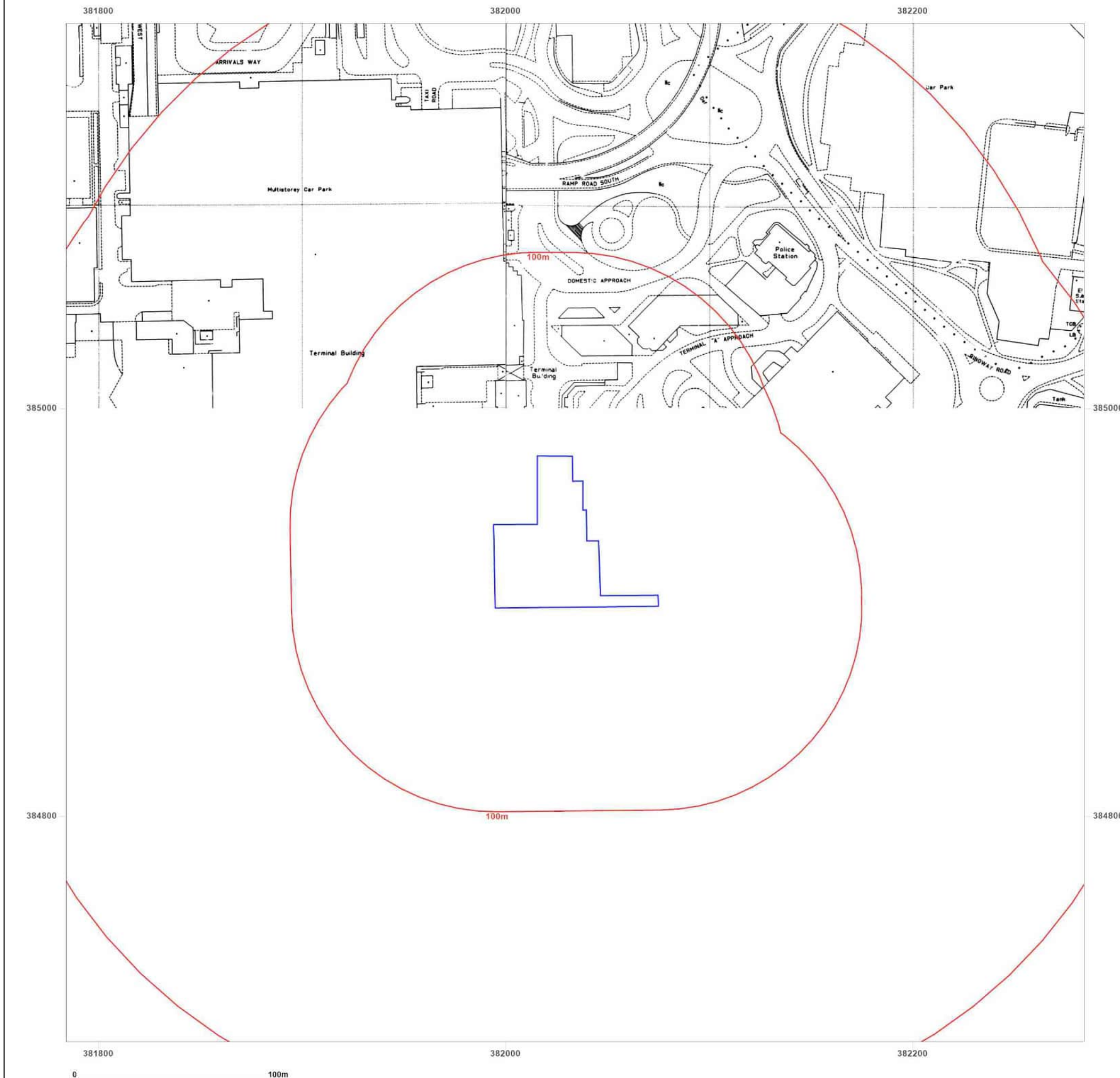


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Site Details:

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Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

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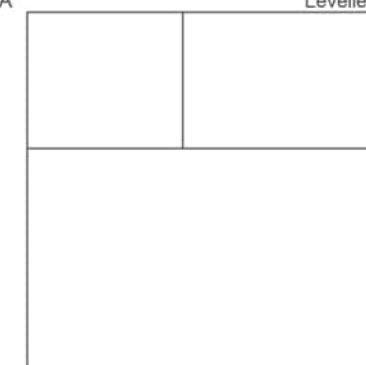
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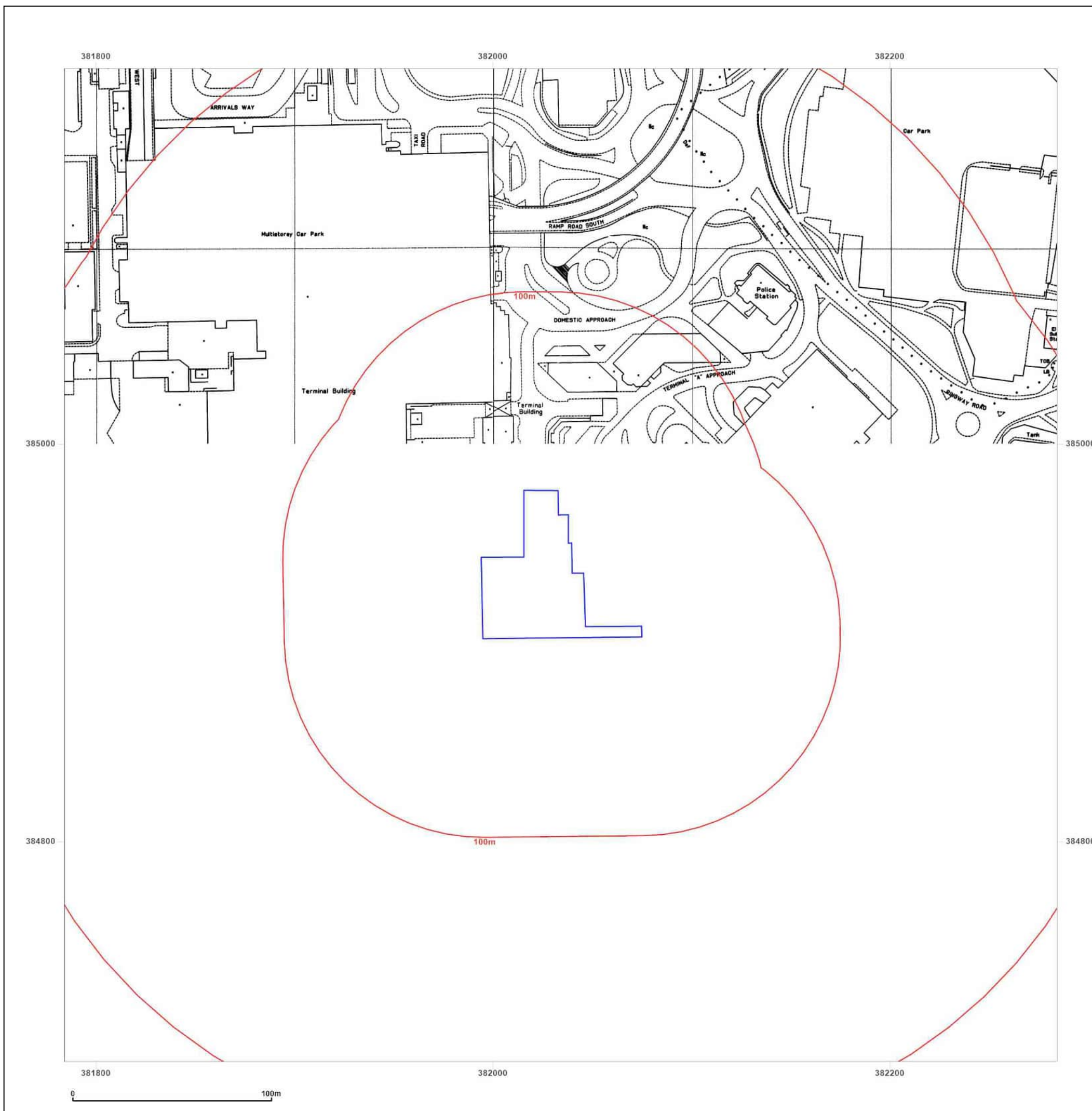


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

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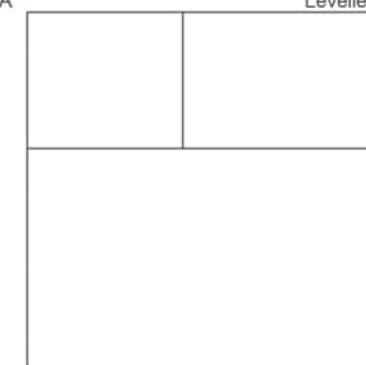
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 Revised N/A
 Edition N/A
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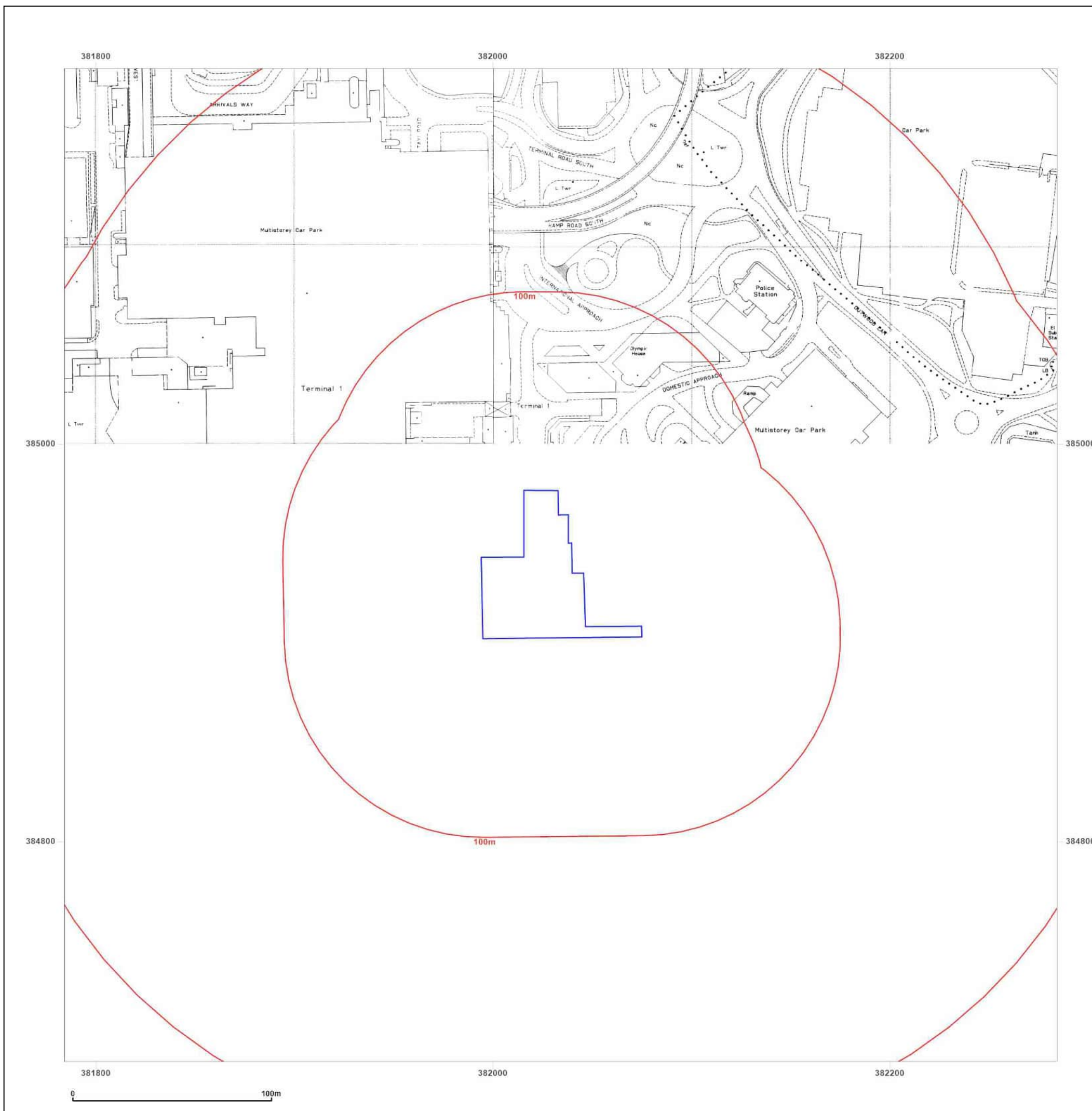


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1995

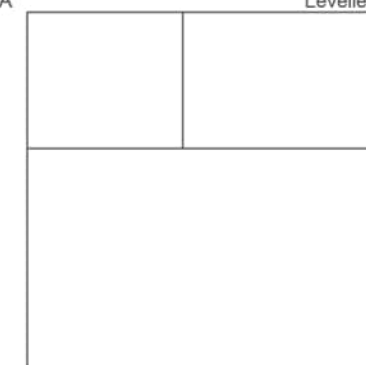
Scale: 1:1,250

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Surveyed 1995
 Revised 1995
 Edition N/A
 Copyright 1995
 Levelled N/A

Surveyed 1995
 Revised 1995
 Edition N/A
 Copyright 1995
 Levelled N/A

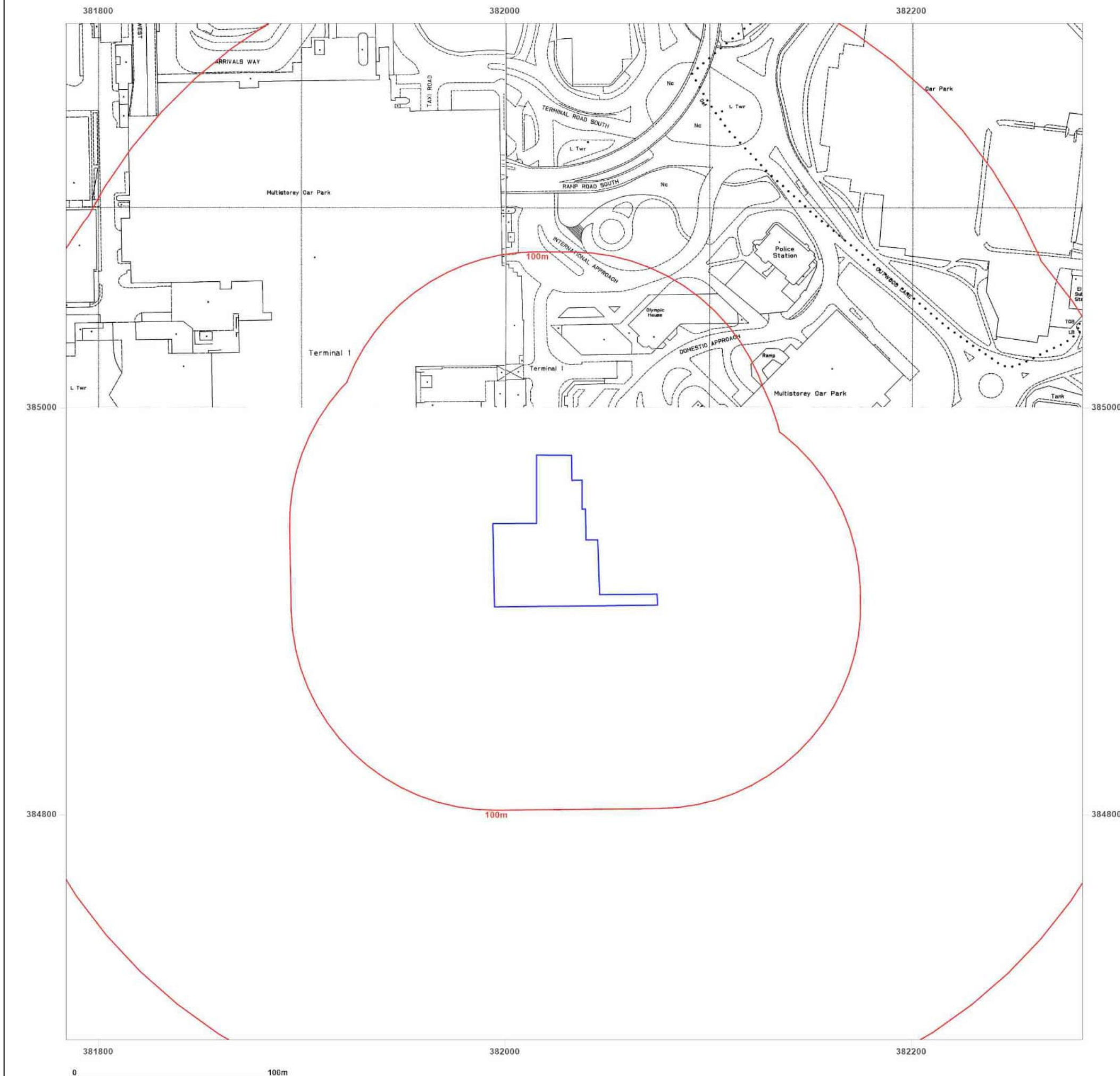


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1897-1899

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874
 Revised 1897
 Edition 1899
 Copyright N/A
 Levelled N/A

Surveyed 1872
 Revised 1897
 Edition N/A
 Copyright N/A
 Levelled N/A

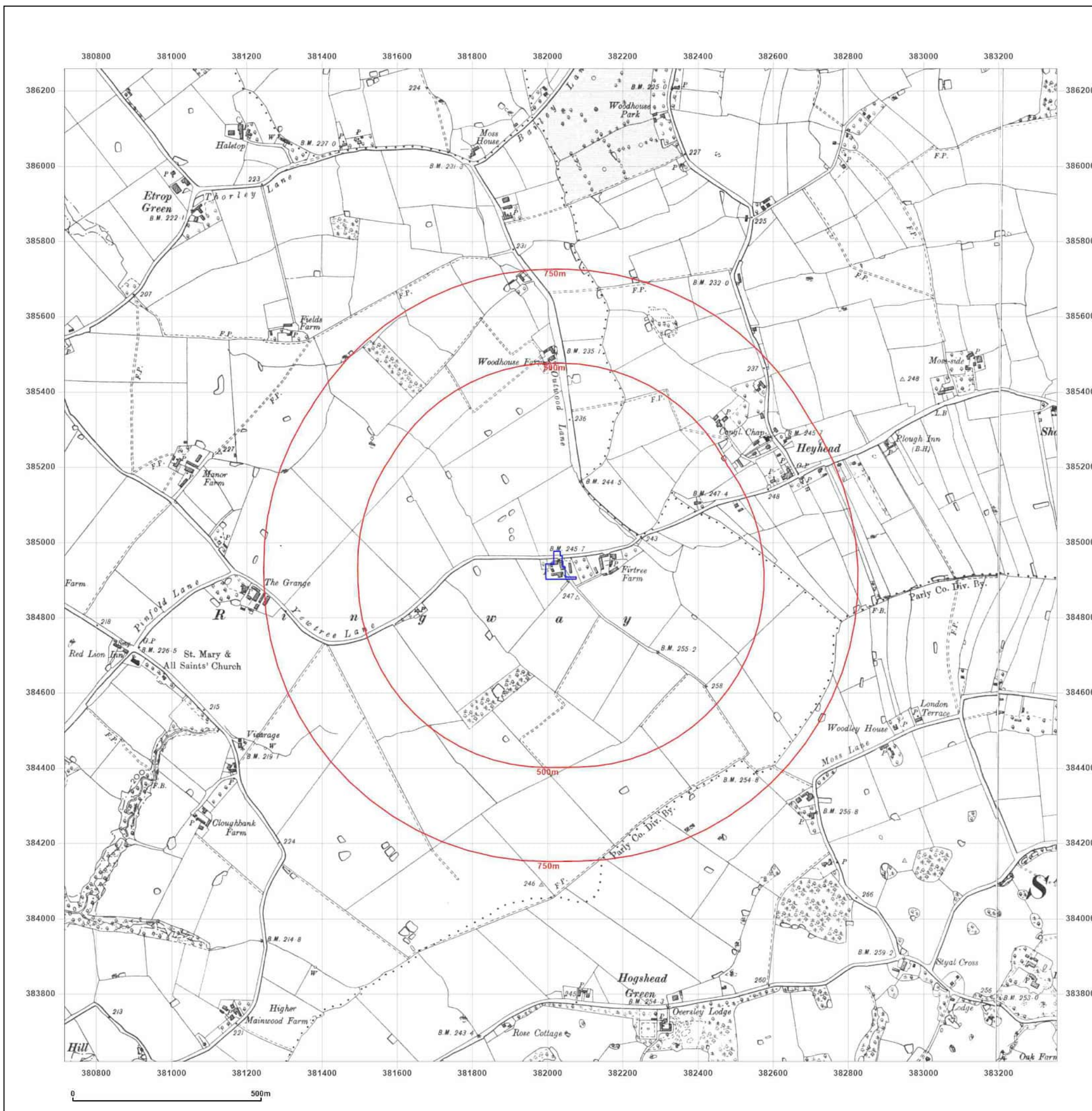


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1907-1910

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874
 Revised 1910
 Edition 1910
 Copyright N/A
 Levelled N/A

Surveyed 1872
 Revised 1907
 Edition N/A
 Copyright N/A
 Levelled N/A

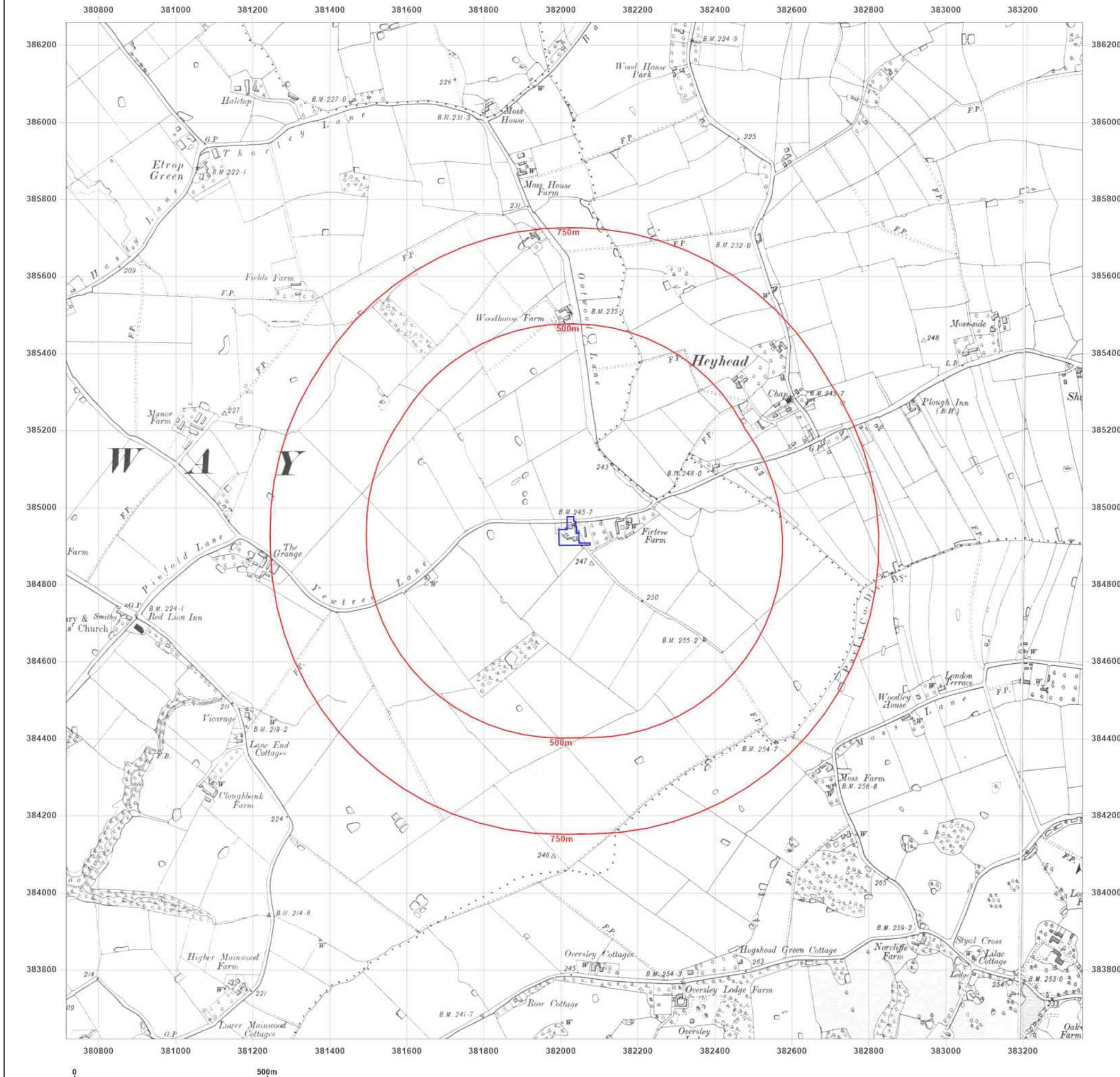


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874
 Revised 1938
 Edition 1938
 Copyright N/A
 Levelled N/A

Surveyed 1872
 Revised 1938
 Edition 1938
 Copyright N/A
 Levelled N/A

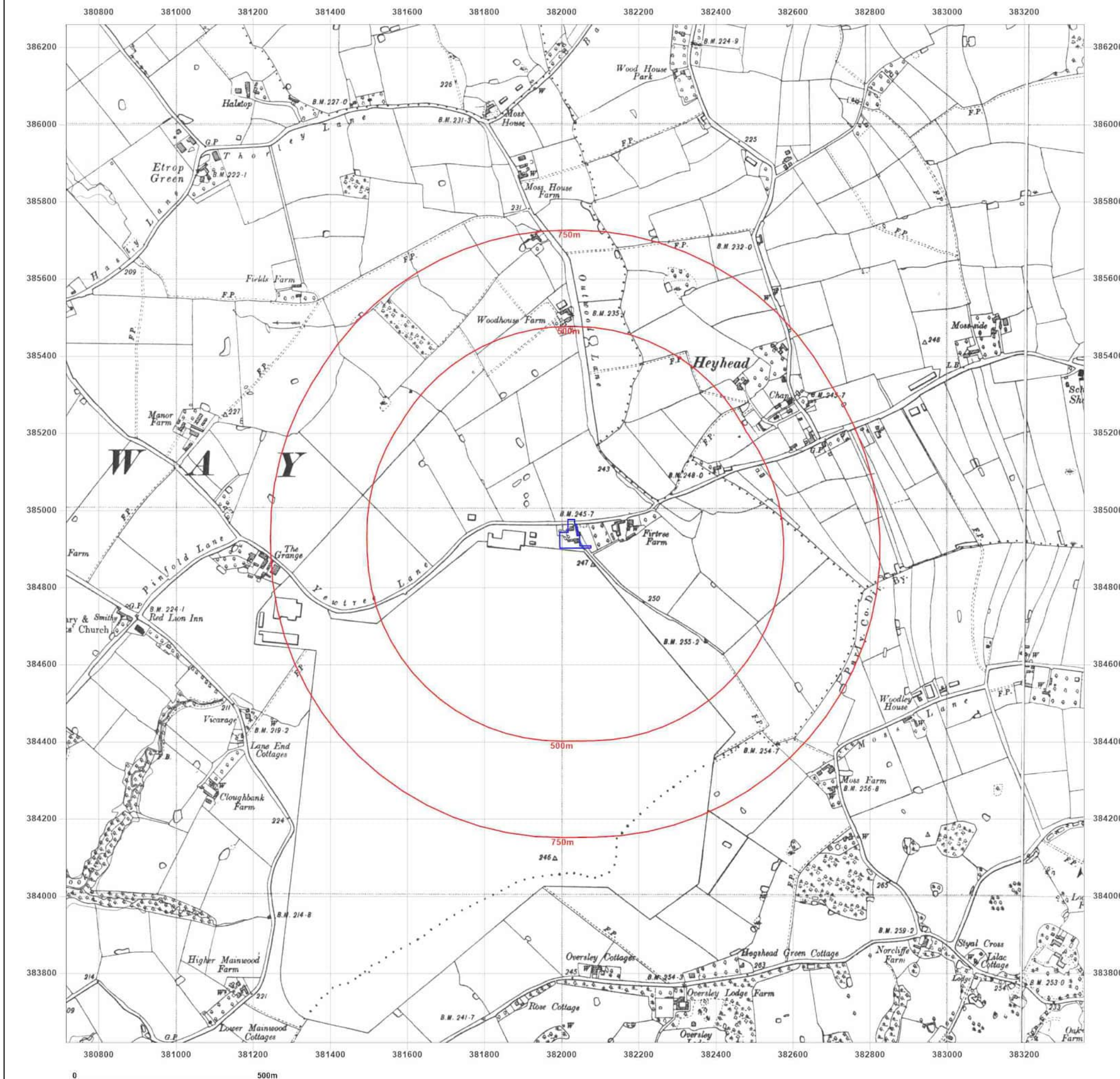


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: Provisional

Map date: 1954

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1949
 Revised 1954
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed N/A
 Revised 1953
 Edition N/A
 Copyright 1954
 Levelled N/A

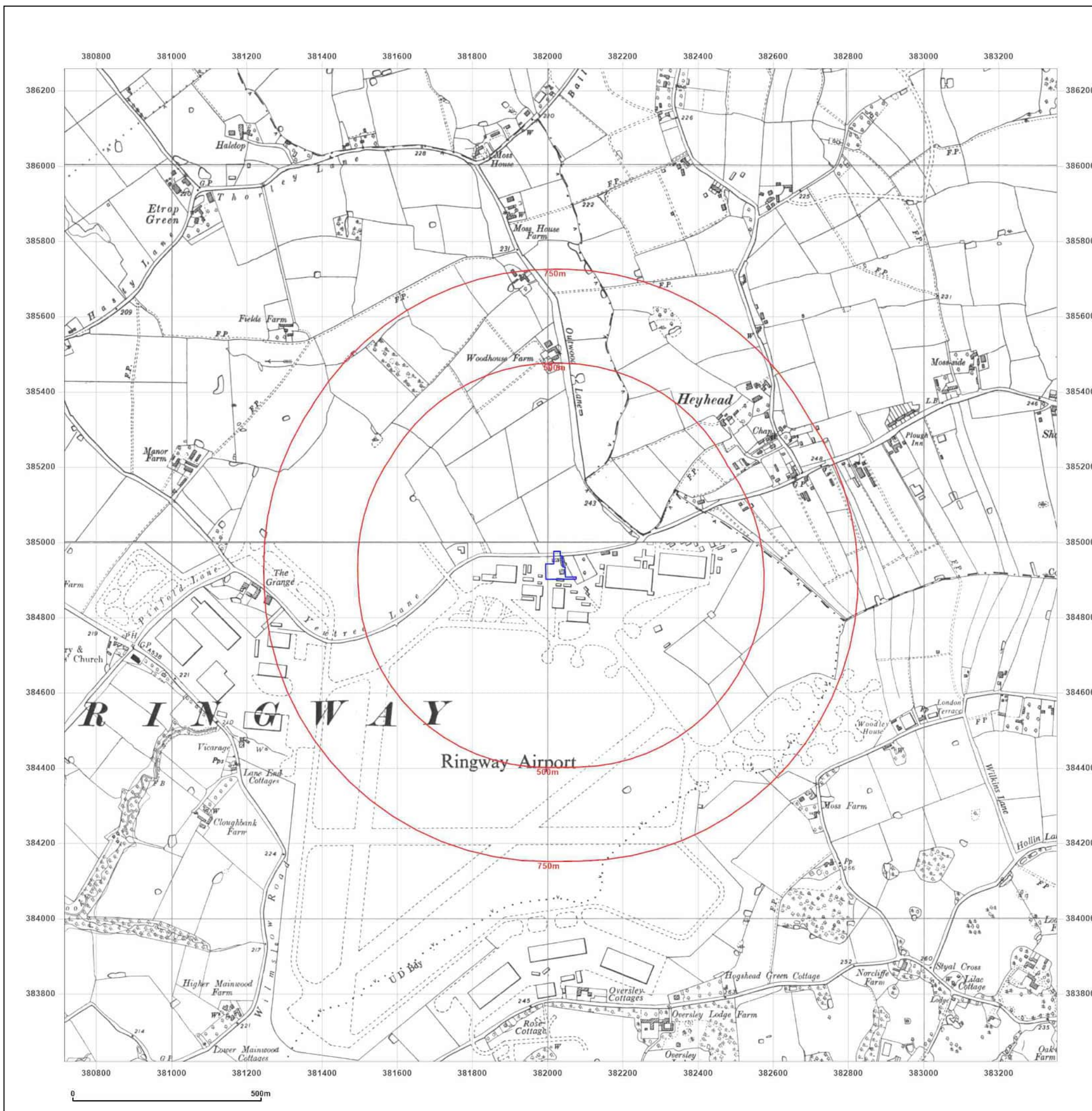


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: Provisional

Map date: 1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1967
 Revised 1967
 Edition N/A
 Copyright 1967
 Levelled N/A

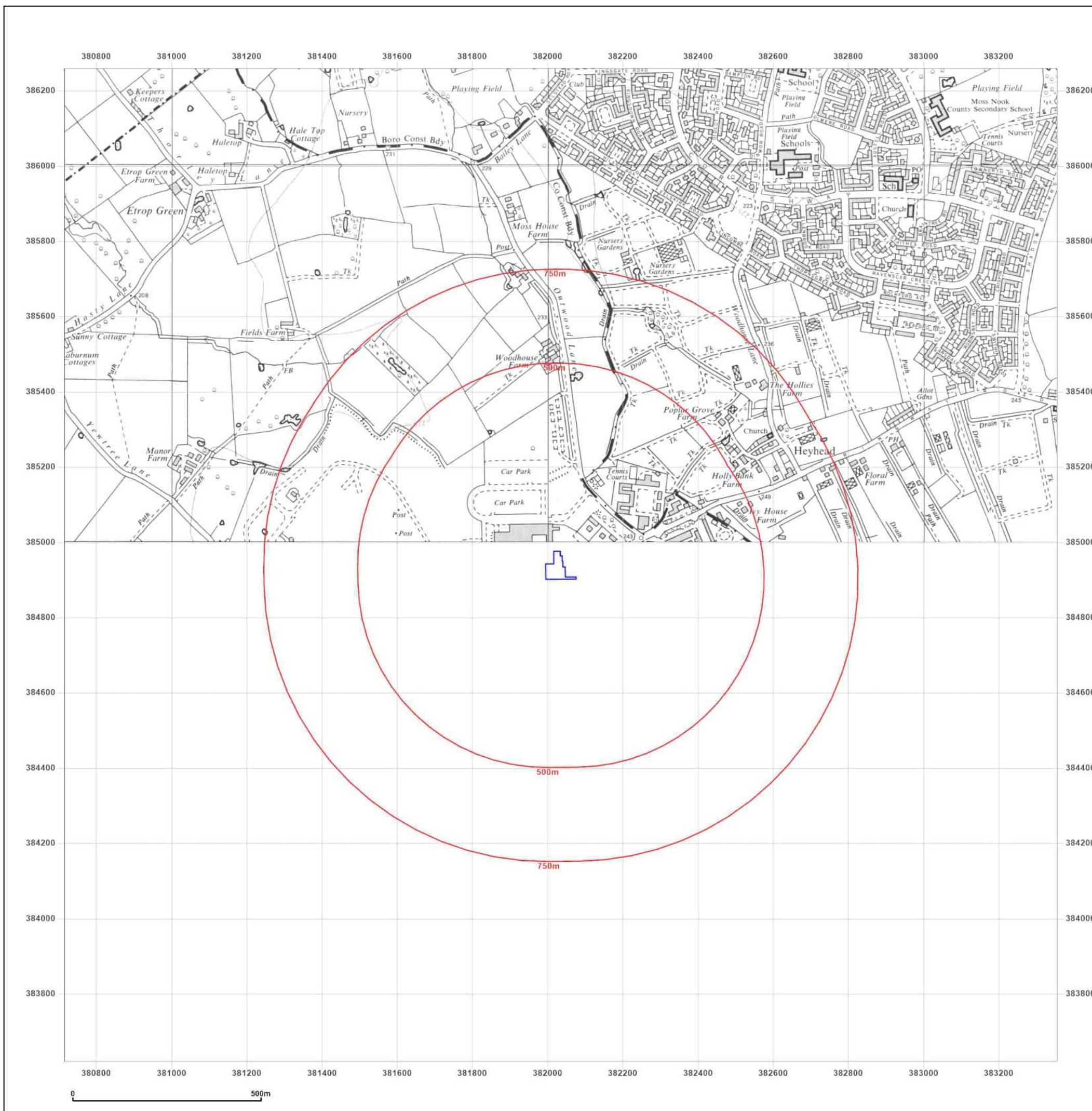


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 1976-1977

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1975
 Revised 1977
 Edition N/A
 Copyright 1977
 Levelled 1964

Surveyed 1973
 Revised 1976
 Edition N/A
 Copyright 1976
 Levelled 1977

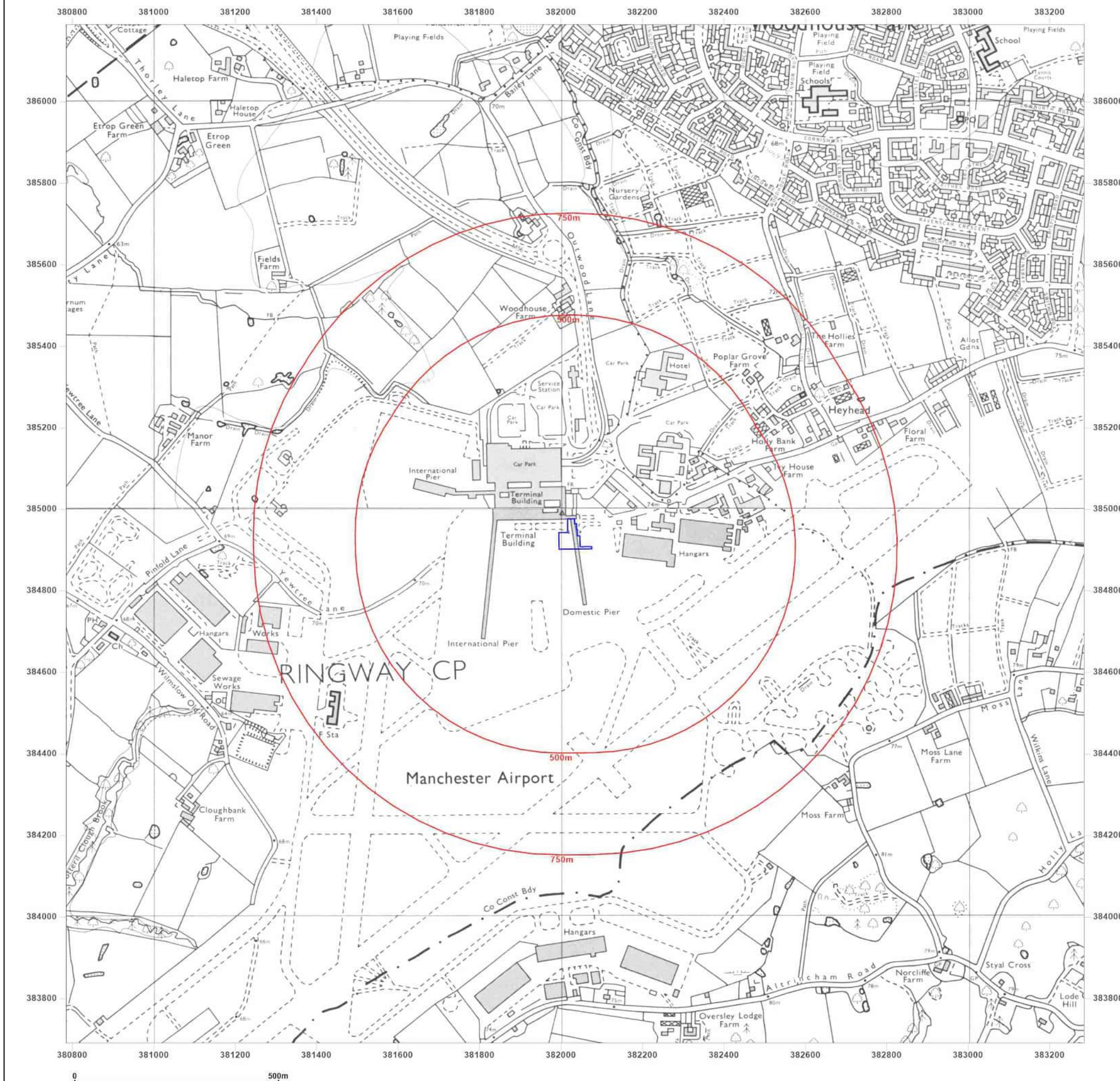


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

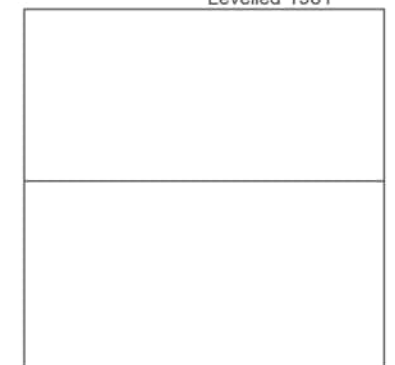
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Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1984
 Revised 1995
 Edition N/A
 Copyright 1995
 Levelled 1981

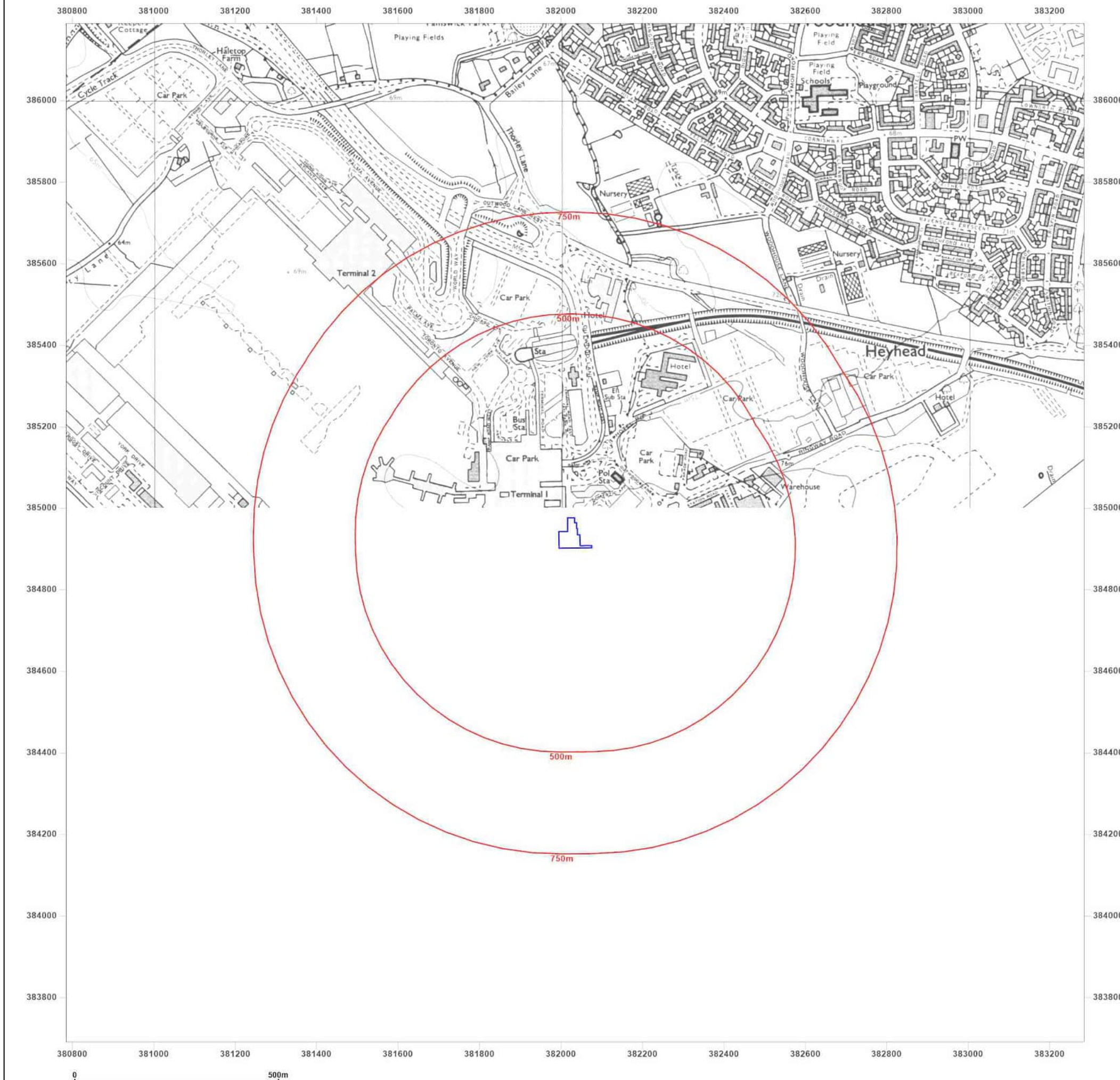


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Site Details:

Manchester Airport

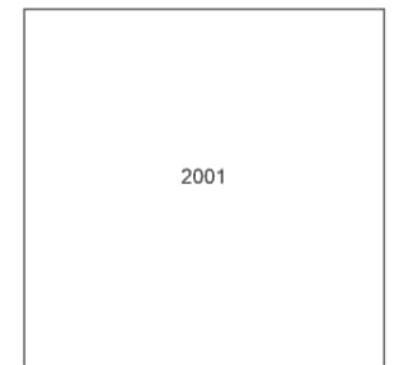
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Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

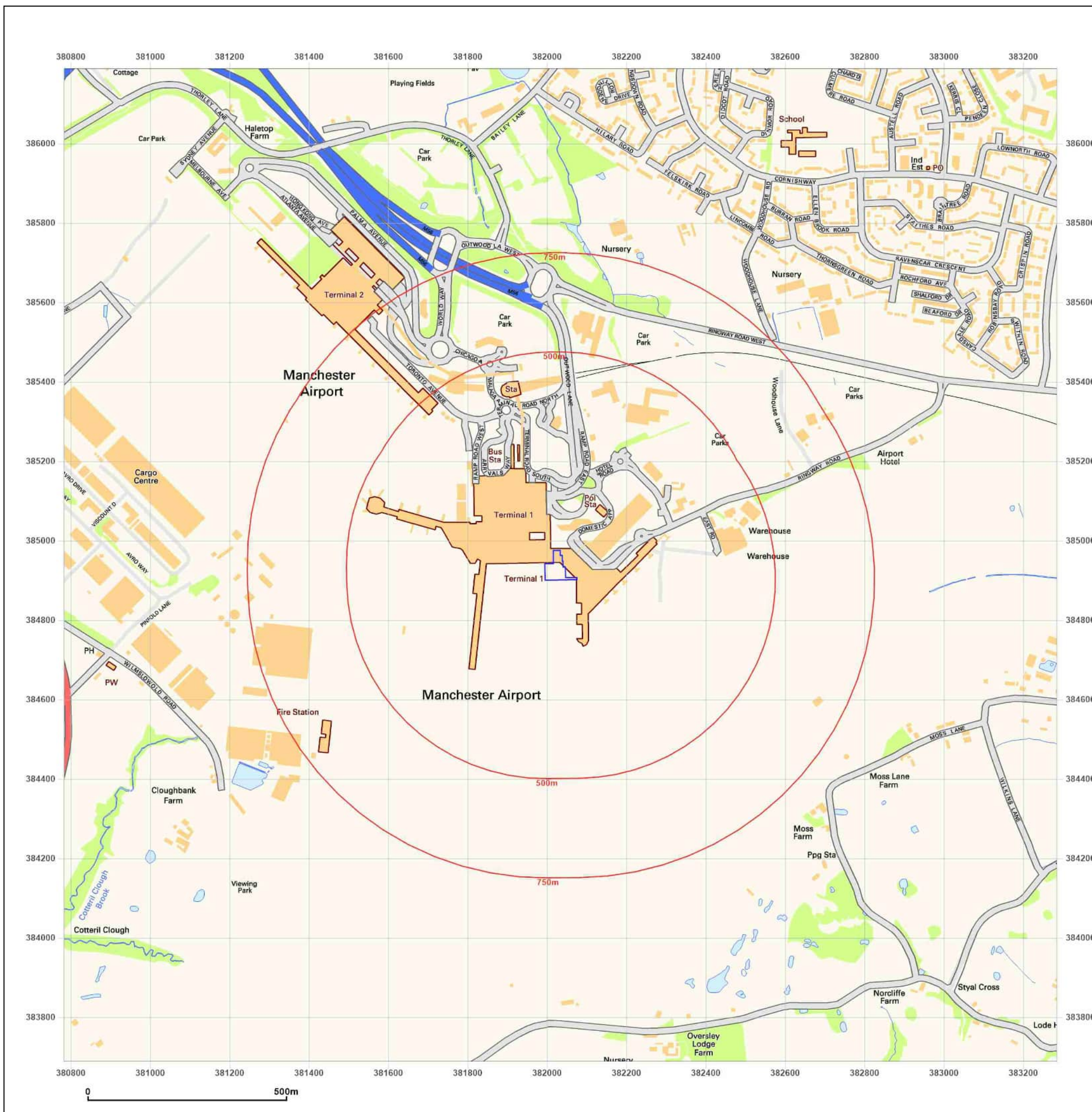


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Site Details:

Manchester Airport

Client Ref: Manchester Airport
Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

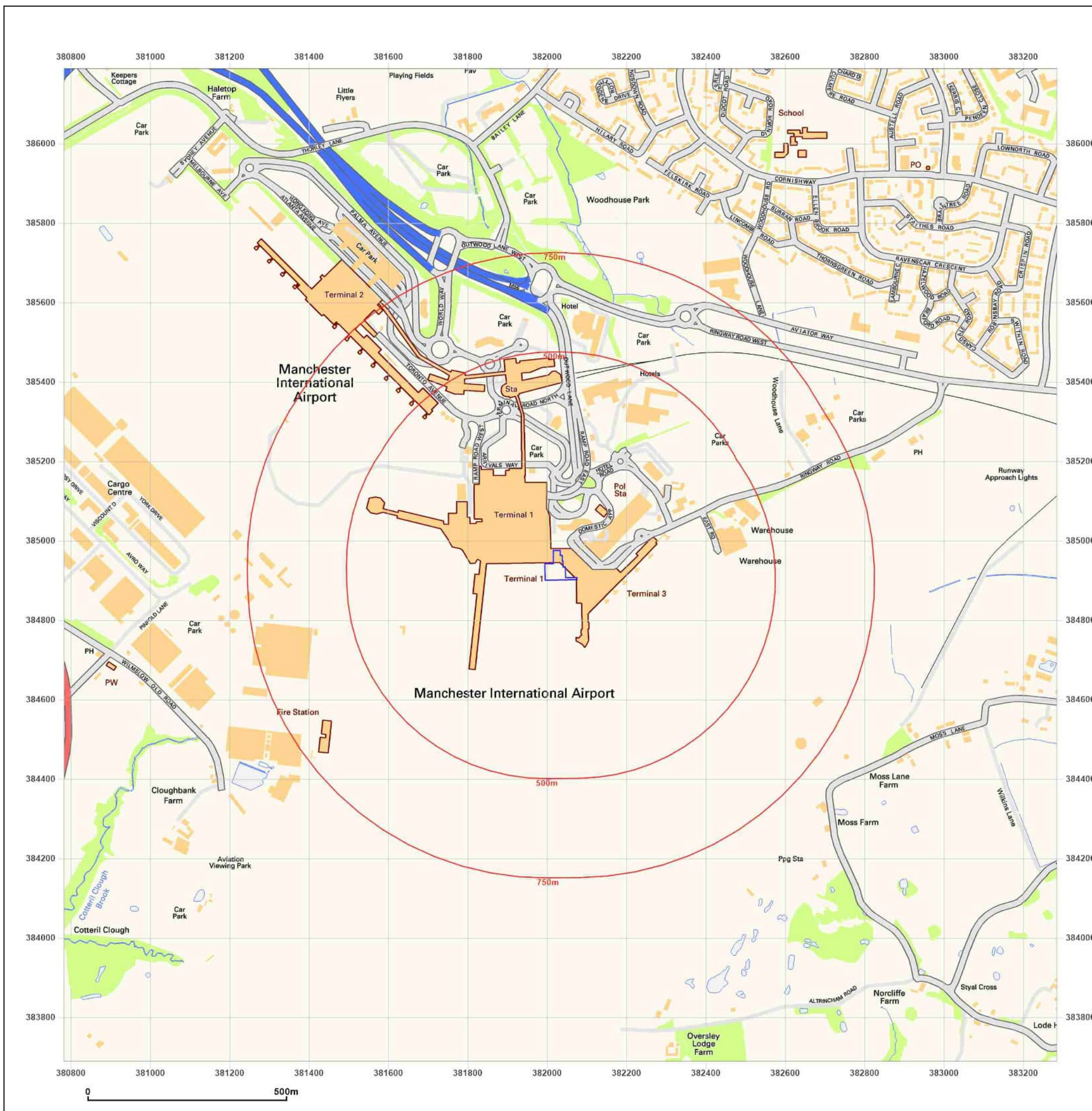


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Site Details:

Manchester Airport

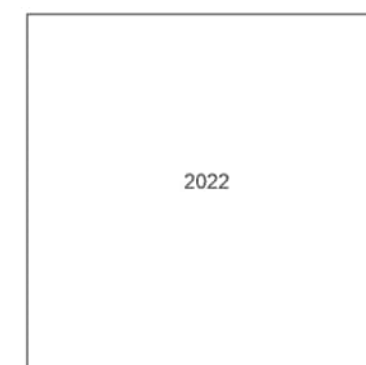
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Report Ref: GSIP-2022-12646-9984
Grid Ref: 382034, 384939

Map Name: National Grid

Map date: 2022

Scale: 1:10,000

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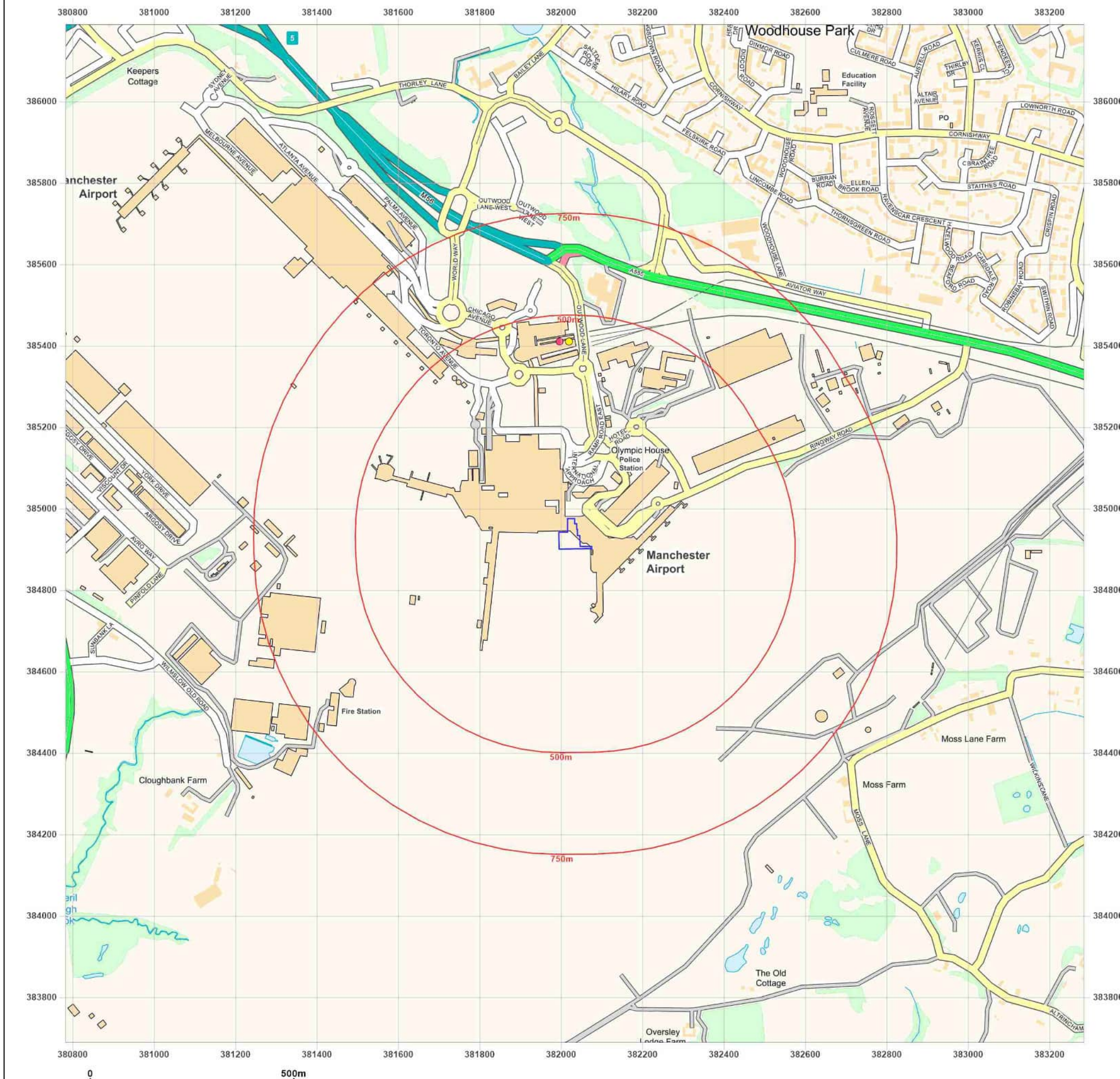


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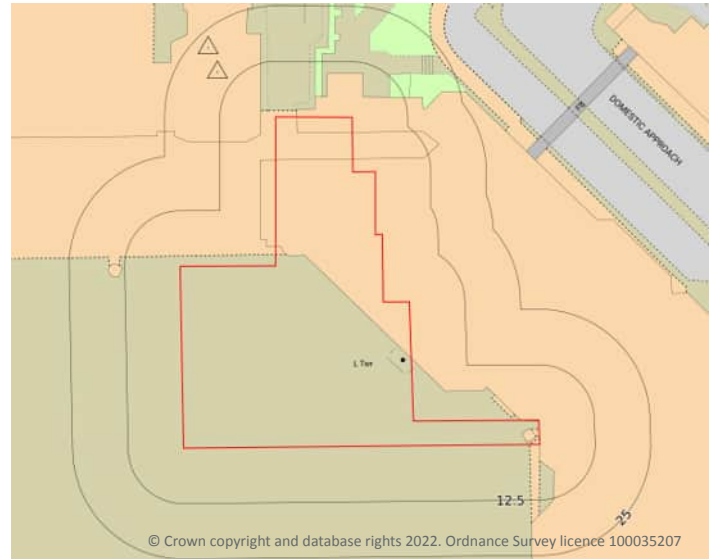


382023.3418065896, 384930.25731316546

Location plan



Site plan



Search results



Compensation District
Identified



Consultation Area
No



Notice of Damage
No



Commuted Claims
No



Future Claims Cover
Yes



Well/Shaft
No



Historical Salt Mining
No



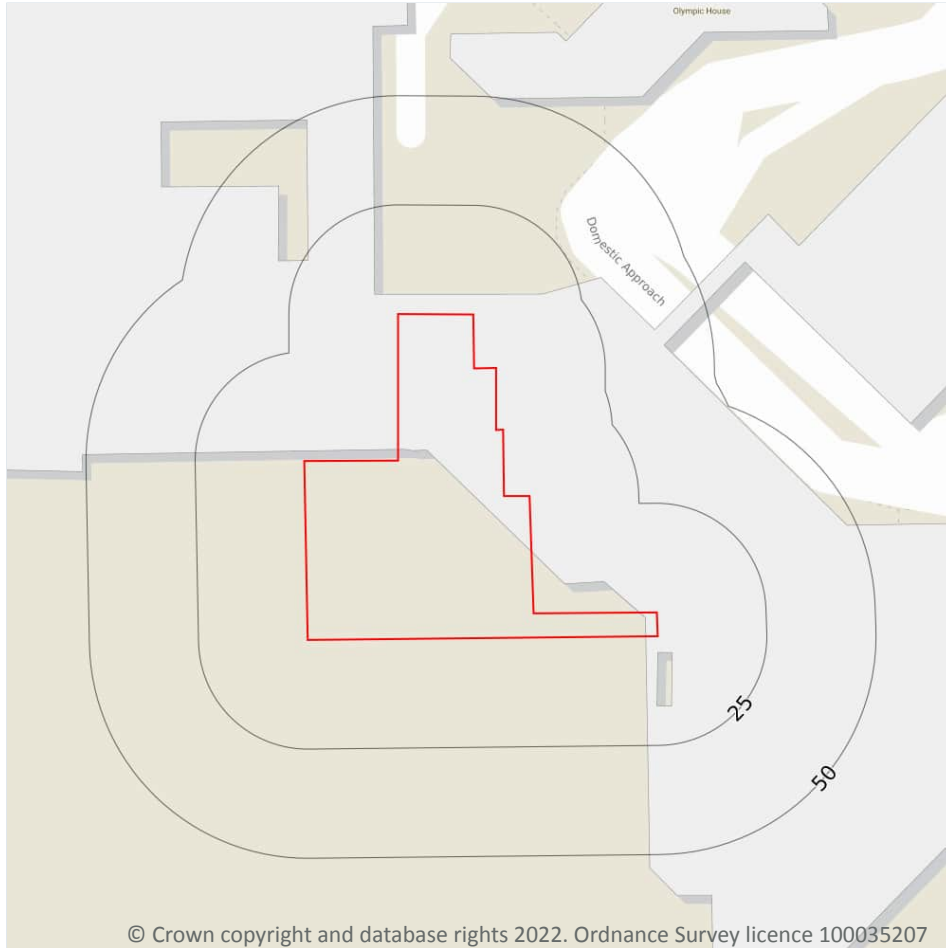
Within GS7 Planning Policy
No



Active Salt Mining
No

Based on and limited to records held by the Cheshire Brine Subsidence Compensation Board (CBSCB) at the date of search and in relation to the address details identified by the customer in the procurement process.

Search results



- Site Outline
- Search buffers in metres (m)
- Prescribed notice of damage
- Area of weakness
- Lines of weakness
- Points of weakness
- Shafts and wells

Cheshire Salt Search

This report is based on and limited to the records held by the Cheshire Brine Subsidence Compensation Board (CBSCB) in relation to this property and its environs, at the date of the search.

1. Is the property situated within the Compensation District?

The property is situated within the Cheshire Brine Subsidence Compensation District as prescribed by the First Schedule to the Cheshire Brine Pumping (Compensation for Subsidence) Act, 1952 (see note 2).

2. Is the property within a Consultation Area prescribed by the Cheshire Brine Subsidence Compensation Board under the provisions of section 38(1) of the 1952 Act?

The property is not within a Consultation Area prescribed by the Cheshire Brine Subsidence Compensation Board (the Board) under the provisions of Section 38(1) of the 1952 Act. It should be noted, however, that there are areas outside the consultation areas that could be at risk from the natural dissolution of the underlying saliferous strata.

3. Have any Prescribed Notice of Damage (PNOD) been filed in respect of the property since 08 January 1959 and, if so, was the claim accepted and discharged?

There is no record of a prescribed notice of damage having been filed in relation to the property, or part thereof since 08 January 1959.

4. Have any claims in respect of the property been commuted by a once and for all payment of compensation?

There has been no commutation of claims in connection with the property.

5. Would the compensation provisions of the 1952 and 1964 Acts apply should the property be affected at some future date by subsidence due to brine pumping?

If claims in respect of the property have not been commuted, then should the property suffer damage at some future date through subsidence due to brine pumping, the compensation provisions of the Cheshire Brine Pumping (Compensation for Subsidence) Acts 1952 and 1964 would be expected to apply to the property (see note 6).

6. Is there an historic brine well/shaft located within 20m of the property?

There are no historic brine wells/shafts located within 20m of the property (see note 7).

7. Is there a recorded area, line or point of weakness, relating to historic brine pumping or natural dissolution, within 50m of the property?

There is no area, line, or point of weakness relating to historic brine pumping or natural dissolution, within 50m of the property (see note 8).

8. Is there any current or proposed uncontrolled brine pumping within 3km of the property?

There are no current or proposed uncontrolled brine pumping sites within 3km of the property (see note 9).

9. Is there any planning consent for brine extraction by controlled methods of pumping within 200m of the property?

There is no existing planning consent for brine extraction by controlled methods within 200m of the property (see note 10).

10. Is the site within 90m of an area that could be affected by historical (abandoned) rock salt underground mining?

The Board does not possess any records of abandoned rock salt underground mining within 90m of the site (see note 11).

11. Is the site within the GS7 planning policy boundary which requires planning applications to have regard to potentially unstable rock salt mine workings?

The site is not within the GS7 planning policy area, which places conditions on development within the former mined areas (see note 12).

12. Is there any planning consent for rock salt extraction by underground mining within 120m of the property?

There is no existing planning consent for rock salt mining within 120m of the property (see note 13).

Additional remarks

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In relation to the determination of whether a damage notice has been filed in respect of the property, the boundaries of such notices have been identified by best endeavours in the absence of definitive file records and as such can only be regarded as approximate. For larger prescribed notice of damage boundaries, the subject of the notice could be remote from the subject property boundary.

Explanatory notes

1) Site Location

The area of land identified by the customer when digitising the enquiry boundary during the procurement process as shown on the attached plan. If the digitised boundary touches or overlaps with an adjoining property, then details relating to those adjoining properties will be included and may not be relevant to the enquiry property.

2) Compensation District

The geographic area prescribed by the Cheshire Brine Pumping (Compensation for Subsidence) Act, 1952 as subsequently amended, largely situated within Cheshire, but excluding Nantwich, and other areas, where redress is generally available for damage associated with the pumping of brine. This report only includes areas covered by the Cheshire Brine Compensation District. There are parts of Cheshire (and other parts of the country) where salt/brine can still pose a risk of subsidence. Further research may be necessary in these areas to determine the nature if this risk (if any).

3) Consultation Area

There is a statutory obligation to consult the Board with regard to development involving new foundations within these areas. Consultation with the Board is required at both the Planning Application and Building Control approval stages of development. As part of the development proposals, a suitable risk assessment should be prepared for submission and consideration by the Board.

4) Prescribed Notice of Damage Since 08 January 1959

A remedy for damage due to subsidence associated with the pumping of brine in Cheshire (in particular Northwich) dates back to 1891. However, a large proportion of the records relating to such damage are incomplete and a number of those properties have since been demolished. The Cheshire Brine Pumping (Compensation for Subsidence) Act 1952, introduced a more widespread means of redress for damage due to brine pumping within the identified Compensation District, see above. Regulations introduced on 08 January 1959 provided a specific format for the submission of a notice and progression of redress for damage and as such details of damage notices issued since 08 January 1959 contained in these searches have been limited to those received in accordance with the more formal procedures established on 08 January 1959. In relation to

the determination of whether a prescribed notice of damage has been filed in respect of the property, the boundaries of such notices have been identified by best endeavours in the absence of definitive file records and as such can only be regarded as approximate. For larger prescribed notices of damage boundaries, the subject of the notice could be removed from the subject property boundary.

5) Commutation

Where the damage to a property is likely to recur or exceed its market value, there is an option to discharge liability by a once and for all payment involving a commutation under cover of a deed of release. These deeds of release can extinguish any further means of redress and can contain a condition requiring future foundation designs to be approved by the Board to ensure future rights of redress. As a commutation has long term implications these will be declared in the searches back to 1891.

6) Future Liability

The provisions of the 1952 and 1964 Acts would be expected to be available for most properties, within the Compensation District, the exception being in relation to properties for which a commutation applies.

7) Brine Wells/Shafts

The location of the reported wells/shafts has been derived from source plan records of varying reliability, accordingly their locations have to be regarded as approximate.

8) Recorded Lines of Weakness

These features related to records of subsidence identified from historic plans. These features are referred to as 'subsidence hollows', 'lines of subsidence' etc and are regarded to represent areas of potential higher risk of subsidence.

9) Uncontrolled (wild) Brine Pumping

There are currently no wild brine pumping activities taking place within the Compensation District and there are unlikely to be such in the foreseeable future. Should the situation change then the search reports will thereafter be updated accordingly.

10) Planning Consent for Controlled Brine Pumping

Pumping of brine by controlled methods avoids the significant subsidence problems associated with uncontrolled pumping (wild brine pumping). Subsidence from controlled pumping is eliminated or of very low magnitudes. The current planning consent boundaries are likely to be significantly larger than the operational areas.

11) Abandoned Rock Salt mine workings

Rock Salt has been mined by underground mining techniques within the Cheshire Saltfield at various depths but typically within a depth of 90m. A number of these mines were abandoned without the mine having been stabilised and represent a significant subsidence risk. Some of the workings, in particular the bottom bed workings beneath Northwich town centre, have been the subject of a stabilisation scheme. In some instances, shaft records indicate the presence of workings the extent of which is unknown and in formulating this report it has been assumed that such unrecorded workings would lie within a 50m radius surrounding the respective shaft. As an initial sieving procedure, where the records of mine workings held by the Board indicate the presence or assumed presence of mine workings, a 90m reporting buffer has been applied to those boundaries for the purpose of these reports.

12) GS7 Planning Policy

This policy was introduced by Vale Royal Borough Council to ensure that no development takes place within the area covered by the policy until such time that the site is rendered fit for development and mitigated against the serious subsidence risk potentially associated with abandoned rock salt mines. Cheshire West and Chester Council is in the process of replacing this policy but the replacement policy is intended to include similar development constraints.

13) Planning Consent for Underground Rock Salt Mining

There is a single mine operation involving the extraction of rock salt by underground mining techniques currently taking place within the Cheshire Saltfield. This mining is subject to a number of conditions including the control of surface subsidence. The mine layouts have been designed by leading rock mechanics consultants acting for both the operator and planning authority to ensure compliance with the planning conditions.

Further details

Further details may be able to be obtained from the CBSCB in relation to the information provided herein, e.g. PNOD boundary or damage details, but such enquiries would be subject to a bespoke report and charge.

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