United Utilities
Water for the North West

How to contact us:

United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone: 0370 7510101

[redacted]

Sutcliffe Projects Ltd

18-20
Harrington Street,
Liverpool,
L2 9QA

FAO:

Your Ref: 33716LG/10069
Our Ref: UUPS-ORD-530886
Date: 14/11/2023

Dear Sirs

Location: Cheetham Hill Manchester M8 0TJ

I acknowledge with thanks your request dated 13/11/2023 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. http://www.unitedutilities.com/work-near-asset.aspx .

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please contact us .

Yours Faithfully,

[redacted]

Karen McCormack
Property Searches Manager

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

Water for the North West

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

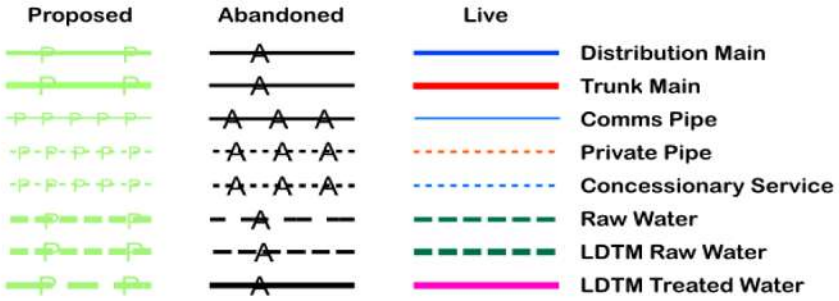
TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

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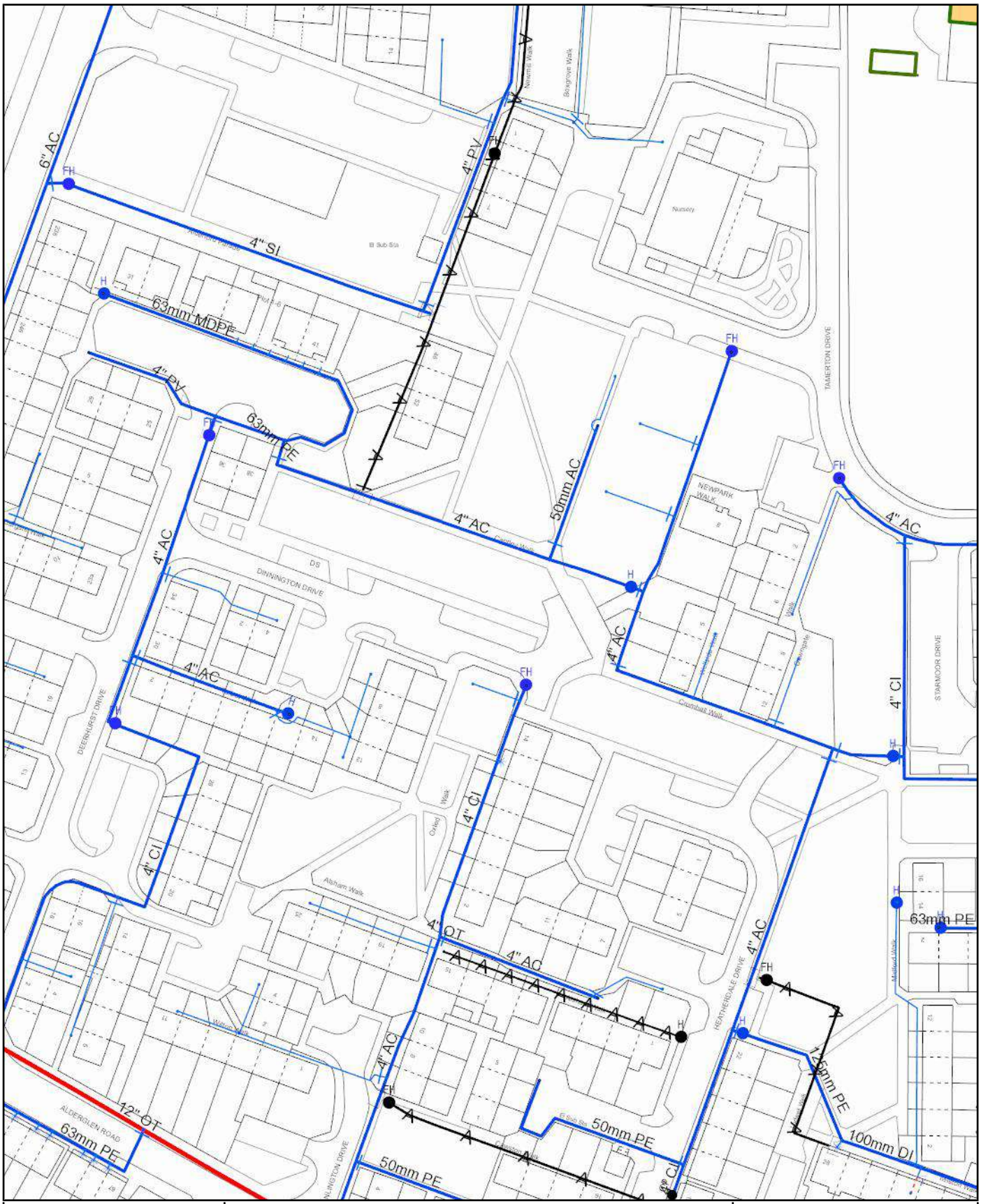
United Utilities
Water for the North West

Clean Water Symbology





Symbology for proposed assets is the same as above, but shown in green
Symbology for abandoned assets is the same as above, but shown in black



Scale:	1:1268
Date:	14/11/2023

WATER MAINS RECORDS

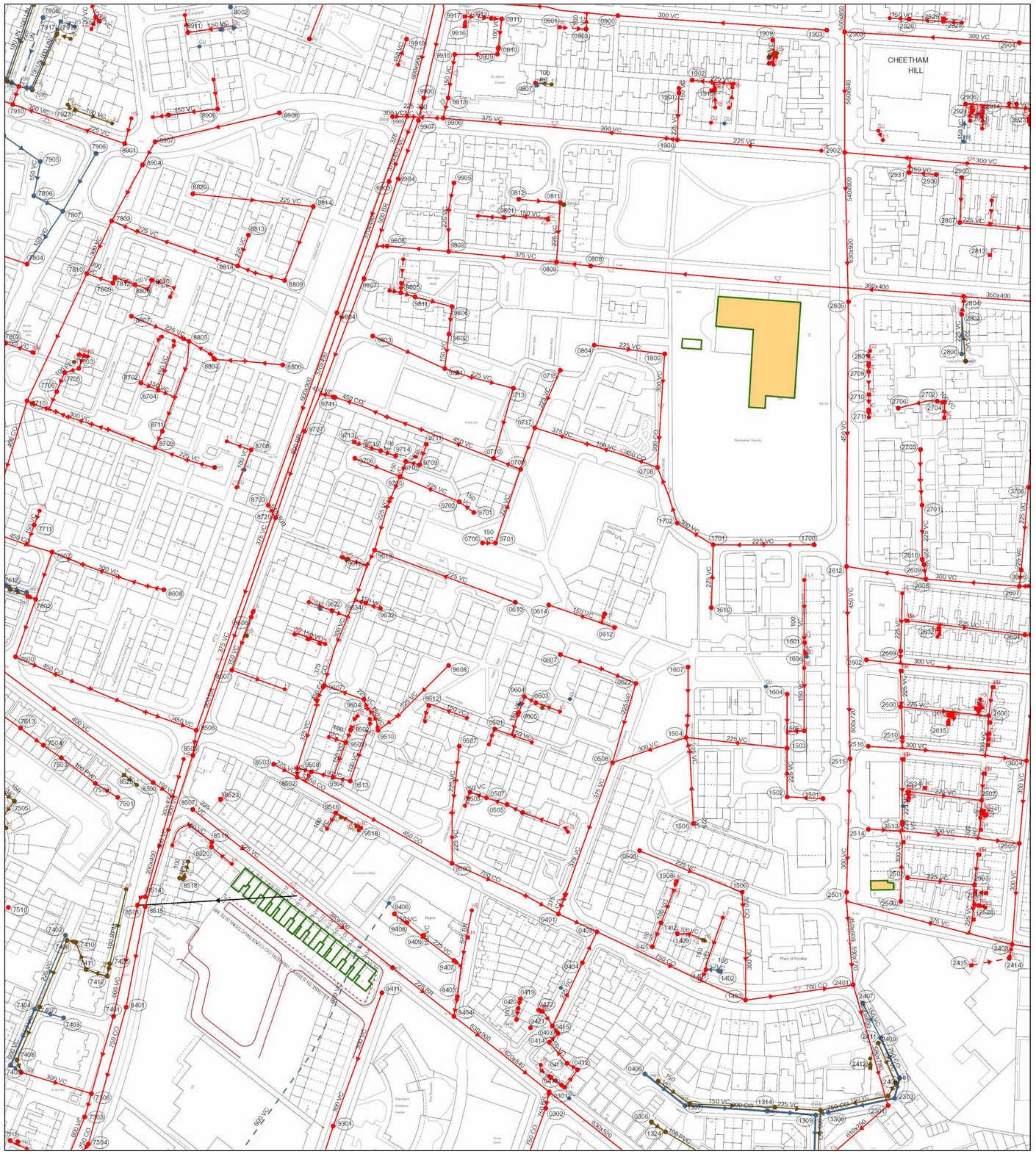
Address or Site Reference: Cheetham Hill Manchester M8 0TJ

Printed by: Property Searches

United Utilities
Water for the North West

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9411	55.91	CO	52.18	300			VC	78.77182	1 in 50
7804		CO	0	150			VC	64.51357	
0811	63.06	CO	60.22	225			VC	33.06055	1 in 37
2507	60.24	CO	58.66	300			VC	21.13024	
9741	61.15	CO	56.54	450			CO	4.123106	
1314	57.66	FO	53.93	225			VC	25.32591	1 in 281
8807	62.18	CO	58.91	225			VC	30.46309	
9502		CO		150			VC	7.458262	
2610	62.45	CO	60.72	225			VC	3.162278	
8608	59.01	CO	58.17	300			VC	9.219544	
0506	57.99	CO	56.32	225			VC	61.46544	1 in 108
8702		CO		150			VC	10.17122	
7802		CO	0	225			VC	22.92693	
1500	58.79	CO	55.67	300			CO	15.0333	
9409	56.1	CO	55.19	150			VC	1	
0912		CO		100			VC	5.683122	
9410		CO		150			CO	2.220056	
1502	59.68	CO	58.12	225			VC	27	1 in 96
1503	59.93	SW	57.6	939			CO	2.185136	1 in 7
1700	62.01	CO	59.89	225			VC	28	
8810		CO		100			VC	13.50287	
2804	65	CO	61.4	360			BR	103.4239	1 in 93
9710		CO		150			VC	9.041082	
2606	61.13	CO	59.67	300			VC	22.11398	
7304	51.11	CO	46.64	750			CO	5	1 in 66
1504	59.21	CO	56.74	300			VC	43.32436	
0504		CO		150			VC	9.690201	
9613	59.69	CO	56.38	300			VC	8.944272	
2703	63.58	CO	62.26	225			VC	17	
2516	60.74	CO	0	300			VC	65.19988	
9510	58.48	CO	56.45	225			VC	5.09092	
7403		SW		150			VC	16.86739	
2505	59.72	CO	56.79	300			VC	56.14267	1 in 64
9612		CO		150			VC	9.947223	
7808	62.32	SW	60.65	225			UN	40.50521	1 in 56
8903		CO		150			VC	5.711701	
7711		CO	0	150			VC	11.7047	
8709		CO	0	300			VC	27.85678	
9806		CO		150			VC	15.42079	
0715	61.43	CO	59.71	225			VC	34.9285	1 in 25
1313	57.07	FO	54.42	150			VC	47.27432	1 in 103
7313		CO		300			VC	1.606357	
0404	56.95	CO	54.49	225			VC	18.9646	1 in 61
2301	58.8	CO	52.38	610			BR	39.68068	58
7612	59.12	SW	57.72	939			CO	1.726952	
2606		CO	0	225			VC	68.18413	
3504	60.73	CO	57.68	300			VC	46.17358	1 in 53
8507	56.93	CO	54.67	225			VC	71.21797	1 in 62
8503	57.5	CO	55.63	225			VC	14.76482	1 in 78
0900	63.57	CO	60.37	300			VC	88.60757	1 in 111
9504		CO		150			VC	12.37993	
0909		CO		150			VC	23.67227	
8608	63.79	CO	61.55	225			VC	70.83079	1 in 148
8813	62.01	CO	60.5	225			VC	18.02776	1 in 25
7705		SW		150			PE	11.51762	
7807		SW	0	150			VC	35.51669	
7604	59.12	FO	57.52	150			VC	10.48065	1 in 48
2411	59.04	SW	56.04	750			CO	24.65848	1 in 247
7606	59.12	SW	57.72	939			CO	10.29339	1 in 86
9801	61.28	CO	58.85	225			VC	15.85813	
9607	58.2	CO	55.76	450			CO	4.472136	
2926		CO		225			VC	10.7348	
9408	56.18	CO	55.12	150			VC	1	
1702	61.24	CO	58.9	300			VC	16.76305	1 in 88
7802		CO	0	225			VC	13.0384	
0407	56.74	FO	54.58	150			VC	21.71614	1 in 136
2702		CO		225			VC	22.14948	
0622	59.2	CO	56.73	225			VC	45.88028	1 in 72
1306	58.02	SW	55.71	225			VC	7.111567	1 in 142
0401	57.04	CO	54.29	750			CO	23.63024	1 in 215
9706	60.61	CO	58.57	225			VC	26.92582	1 in 22
0809	62.42	CO	59.12	375			VC	60.29526	1 in 126
9603	62.69	CO	58.75	370			VC	160.9752	1 in 73
8514		CO	0	300			VC	7.845171	
2408	58.71	SW	55.94	750			CO	11.52477	1 in 192
0406	56.7	SW	54.18	900			CO	28.22433	1 in 282
1701	61.55	CO	58.95	300			VC	23.32381	1 in 167
0810	63.08	FO	60.94	150			VC	2.236068	1 in 3
9711		CO		100			VC	12.04836	
9608	59.19	CO	56.88	225			VC	39.59798	
7501		CO		100			PVC	14.80688	
7809		CO	0	300			VC	15.29392	
0420		CO		100			VC	6.178284	
8711	60.27	CO	59.06	300			VC	9.848858	
2303	58.56	SW	55.88	750			CO	37.72635	1 in 222
2701	63.29	CO	61.98	225			VC	30	1 in 24
9911		CO		0			VC	46.89734	
9711		CO		100			VC	7.85445	
9508		CO		150			VC	8.185156	
0717	60.87	CO	58.09	450			VC	24.35159	1 in 72
1401	58.08	CO	56.88	150			VC	6.708204	
9814	62.73	CO	60.57	225			VC	44.01136	1 in 102
0306		FO		100			PVC	9.595848	
8707	59.99	CO	58.68	225			VC	15.52417	
0501		CO		150			VC	9.008646	
7915		SW		150			PVC	6.912858	
7505		FO		150			VC	11.98342	
7602	59	CO	56.4	450			CO	33.87917	1 in 106
9908	63.15	CO	59.95	300			VC	5.718455	1 in 18
9803	61.41	CO	59.63	225			VC	43.82611	1 in 58
2807		CO	0	225			VC	56.27216	
8520		CO		100			VC	2.700115	
0411		CO		150			VC	12.24889	
7921		SW		150			UN	9.345955	
9906	63.16	FO	59.55	375			VC	7.895984	1 in 61
7406		FO		150			VC	40.15991	
9815	62.26	CO	58.62	375			VC	34.1321	1 in 100
8808		CO		150			VC	11.58777	
8502		CO		150			VC	8.640698	
0808	62.47	CO	59.21	375			VC	19.10497	1 in 273
1503	59.88	CO	57.82	225			VC	56.32051	1 in 53
2607	62.5	CO	59.61	300			VC	52.15362	1 in 121
7315		CO		225			VC	21.68141	
2902	64.75	CO	60.61	540			BR	41.01219	1 in 98
1610	60.72	CO	0	225			VC	35.01428	
7812		CO		100			VC	3.383295	
2602	61.33	CO	59.21	300			VC	93.34782	1 in 156
0603		CO		150			VC	7.243403	
8814	61.74	CO	59.74	225			VC	25.29822	
9909	63.17	CO	55.15	600			BR	115.9193	
8515		CO	0	750			CO	56.87462	
7603	58.95	CO	57.3	450			CO	4.742682	1 in 5
8505	57.9	CO	54.17	900			VC	88.17603	
9516		CO		100			PVC	9.900384	
9707	60.77	CO	55.05	900			BR	50.59644	1 in 174
8820	62.82	CO	60.73	225			VC	67.36468	1 in 449
2608	62.26	CO	59.16	300			VC	44.55334	1 in 165
7303	51.46	CO	46.77	600			VC	65.9242	1 in 57
9705	60.52	CO	57.33	225			VC	13	
7600	58.16	CO	56.04	450			CO	24.50094	
9904	62.61	CO	55.04	900			BR	56.00108	
2409	59.03	FO	56.34	150			VC	24.21166	1 in 151
0419		CO		100			VC	5.31208	
0710	61.07	CO	57.59	450			VC	43.08132	
7410		FO		100			RPM	5.038257	
9513		CO		150			VC	9.77043	
0415		CO		150			VC	5.261834	
0507		CO		150			VC	9.566492	
1903	64.68	CO	61.56	300			VC	116.2755	1 in 99
8720	60.33	CO	54.76	900			BR	139.7856	1 in 245
9804	61.68	CO	55.55	600			BR	113.5473	1 in 140
1505		CO		150			VC	9.474747	
8809	61.71	CO	60.12	225			VC	16.49242	
8803	61.29	CO	58.98	225			VC	3.605551	
1501	60.15	CO	58.48	225			VC	20.02498	1 in 59
2603	61.52	CO	60.2	225			VC	7	
2510	60.83	CO	59.51	225			VC	6	
1403	58.14	CO	53.84	750			CO	29.102	1 in 416
1324				100			PVC	47.50373	
0604		CO		150			VC	9.347063	
0413		CO		150			VC	15.42992	
7911		CO		100			VC	13.93401	
2515	60.68	CO	55.98	600			BR	37.01351	1 in 97
3616	62.74	CO	61.32	225			VC	9.055386	1 in 45
7401	53.31	CO	49.34	600			VC	44.64905	1 in 23
2500		CO	0	300			VC	39.09791	
7916		FO		150			PVC	7.773227	
0708	61.08	CO	58.32	450			CO	20.24846	
9507	57.85	CO	56.12	225			VC	19.10497	
9702	60.82	CO	58.07	225			VC	35.8469	1 in 50
9913		CO		150			VC	11.62876	
9900		CO	0	900			BR	12.80219	
2800	64.43	SW	63.54	225			VC	22	1 in 12
1506	58.83	CO	57.25	225			VC	40.04997	
8800	61.21	CO	59.38	225			VC	21.09502	
7411		FO		100			RPM	16.14389	
7613		SW		150			VC	21.2716	
7607	59.72	CO	56.6	450			CO	27.91209	1 in 140
9802		CO		150			VC	19.22532	
7703		CO		100			PE	8.264755	
0409		CO		150			VC	7.282881	
7710	60.12	CO	57.48	450			CO	75.28612	1 in 114
1307	57.57	SW	54.08	900			CO	45.75411	1 in 158
1800	62.24	CO	59.6	300			VC	31.06445	1 in 55
2900	65.27	CO	0	225			VC	25.01999	
1309	57.93	SW	53.7	1050			CO	21.30391	1 in 304
0804	61.99	CO	60.41	225			VC	39.31921	1 in 50
2502	59.56	CO	58.47	225			VC	37.21559	1 in 124
1604	60.52	CO	59	225			VC	30	1 in 26
9604	58.44	CO	56.39	225			VC	23.4094	1 in 57
2407	59.06	SW	57.34	150			VC	21.84976	1 in 17
8607		CO		150			VC	31.34425	
0709	61.14	CO	57.73	450			VC	16.15549	1 in 135
0911		CO		100			VC	16.01208	
2612	62.14	CO	57.75	450			VC	53.00943	1 in 61
8805	61.35	CO	58.73	300			VC	32.29005	
1308	57.63	SW	53.75	1050			CO	26.88994	1 in 538
2401	59.01	CO	53.61	590			BR	32.61613	1 in 53
0612		CO		150			VC	38.65279	
8401	53.5	CO	49.52	750			CO	78.84795	1 in 94
8500	57.23	CO	54.16	100			VC	13.60147	
1402	58.34	SW	57.59	100			VC	4.123106	1 in 37
8907	63.36	CO	61.05	225			VC	14.76482	1 in 134
1900	63.85	CO	60.88	225			VC	5.662763	
0508	58.45	CO	56.07	375			VC	77.49194	
0700	60.49	CO	59.58	150			VC	7	1 in 5
2925		CO		150			VC	19.06035	
7806		SW	0	150			VC	18.2338	
8904	63.01	CO	60.93	225			VC	35.35534	1 in 21
9807	61.97	CO	55.11	900			BR	91.19935	1 in 2280
1607	60.23	CO	0	225			VC	27	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
8703	60.33	CO	54.74	610			VC	8.062256	
8708		CO		100			VC	14.14284	
9701	61.09	CO	59.77	150			VC	10	1 in 30
2403	58.76	CO	54.96	375			VC	95.08066	
0301	56	CO	50.83	620			BR	4.123106	1 in 69
9808	62.17	CO	58.27	375			VC	6	
9622		CO		150			VC	9.440051	
2410	58.7	FO	56.18	150			VC	8.268784	1 in 118
9634		CO		150			VC	6.116944	
2805	64.22	CO	59.66	450			VC	147.0034	1 in 78
7906		SW	0	150			VC	36.95408	
0414		CO		150			VC	6.894876	
2806	64.47	CO	63.36	225			VC	26.07681	
9905	62.61	CO	59.95	225			VC	15.29706	
9505		CO		150			VC	8.101833	
7810		CO	0	300			VC	78.17454	
0701	60.47	CO	58.24	225			VC	43.32436	1 in 140
9907	63.17	CO	55.26	900			BR	36.9765	1 in 185
9301	54.25	CO	50.57	300			VC	88.23265	1 in 58
8502	57.38	CO	55.17	450			CO	98.48858	1 in 179
2513	60.09	CO	58.78	225			VC	5	
8519		CO		100			VC	31.82705	
1901	63.9	CO	61.98	225			VC	26.01922	1 in 24
0910		CO		150			VC	3.6321	
2501	59.6	CO	54.12	450			BR	30.07476	
2514	60.07	CO	57.07	300			VC	18.02776	
9915		CO		150			VC	10.31888	
0613		CO		100			VC	5.417421	
3706	64.15	CO	62.32	225			VC	46.17358	1 in 47
1315	57.94	SW	53.84	225			VC	26.57863	1 in 204
7905		SW	0	150			VC	19.31206	
2904	65.74	CO	62.6	300			VC	97.18539	1 in 74
0607	59.11	CO	57.48	225			VC	24.35159	
2903	64.86	CO	60.91	560			BR	67	1 in 231
7922		FO		150			VC	7.091063	
9406	56.26	CO	54.76	225			VC	42.01743	1 in 150
2909	62.37	CO	60.73	225			VC	8.062258	1 in 47
8901	63.31	CO	60.35	225			VC	45.0631	1 in 40
8506	57.82	CO	54.31	450			VC	14.14214	
9405	56.28	CO	52.39	225			VC	43.41659	1 in 32
2304	58.56	FO	56.11	150			VC	38.47259	1 in 110
7803	61.97	CO	59.22	300			VC	32.31981	
7706		CO		100			VC	10.67829	
9404	56.08	CO	51.02	630			BR	34.20526	1 in 428
9407	56.16	CO	54.46	225			VC	5	1 in 6
3601	62.09	CO	60.45	225			VC	7	
8704		CO		150			VC	10.15544	
9503		CO		150			VC	20.55692	
7402		SW		225			VC	44.60165	
0412		CO		150			VC	6.743621	
9403	56.07	CO	51.15	675			VC	5.09902	1 in 85
0610		CO	0	225			VC	83.21658	
9810		CO		150			VC	8.230654	
0605		CO		150			VC	4.673532	
9500	56.82	CO	54.6	700			CO	44.77723	
1601		CO		150			VC	49.00393	
8906		CO		150			VC	27.37118	
2900	61.16	CO	60.14	225			VC	49.25444	1 in 107
7909	62.58	CO	59.63	225			VC	10.58953	1 in 23
2902	64.62	CO	61.66	225			VC	6.082763	
0505		CO		150			VC	12.03697	
7910	62.8	CO	58.63	300			VC	22.68803	1 in 30
0713	61.28	CO	58.38	225			VC	40.5216	1 in 74
7306		CO	47.41	600			CO	13.59183	1 in 21
0302	55.89	CO	50.69	750			CO	75.61085	1 in 98
2704		CO		100			VC	4.219636	
0801		CO		150			VC	14.69403	
8501	55.05	CO	51.7	600			VC	63.16896	1 in 58
2503	59.22	CO	58.16	225			VC	27.27287	
7409		CO		300			VC	40.6054	
7412		FO		100			RPM	12.19335	
7426		FO		100			RPM	7.129699	
9610		CO		150			VC	11.4568	
2931		CO		150			VC	7.923566	
8911		CO		150			VC	9.833817	
1412		CO		150			VC	14.13685	
2930		CO		150			VC	15.00765	
7407		FO		150			VC	31.96539	
0812	62.7	CO	60.86	225			VC	23.08679	1 in 38
7405		SW		0			UN	0.2906765	
8606		CO		150			VC	31.2522	
7404		SW		600			VC	33.84821	
0403	56.36	CO	54.74	225			VC	38.95205	1 in 156
9715		CO		100			VC	6.858638	
7408		FO		150			VC	7.287098	
0903		CO		100			VC	9.046039	
0405	57.13	CO	54.18	750			CO	90.9181	1 in 284

LEGEND

Abandoned | Foul | Surface Water | Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

Cheetham Hill Manchester M8 0TJ,

Scale: 1:1250 **Date:** 14/11/2023

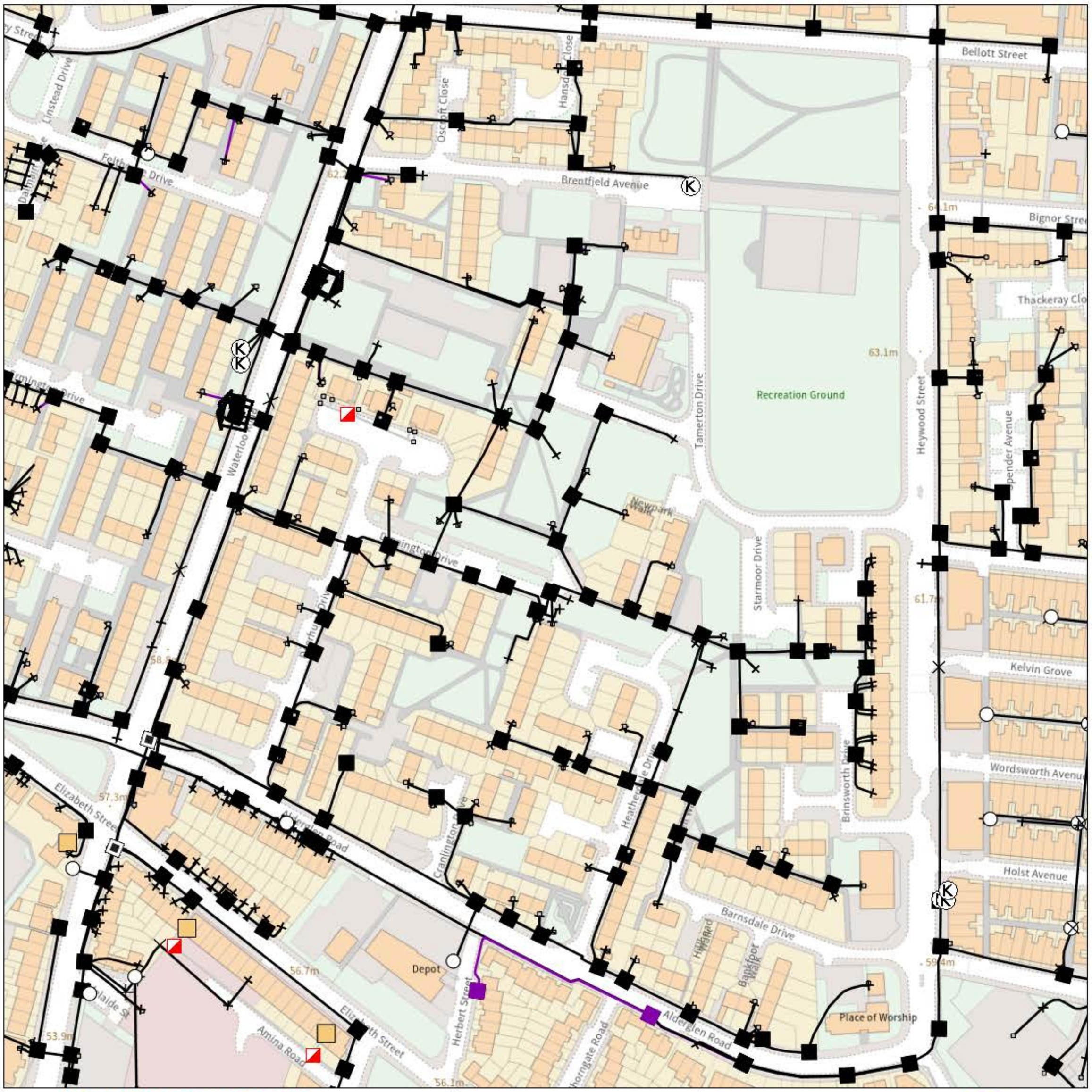
Sheet: 1 of 1

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

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KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+	Hatchings	
Split Coupling	×	Built	
Duct Tee	▲	Planned	
Building		Inferred	
Kiosk	K	Duct	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : PDS11104R
Map Reference : (centre) SD8403000690
Easting/Northing : (centre) 384030,400690
Issued : 13/11/2023 11:11:12

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Appendix D – Detailed Site Historical Review

Appendix D – Detailed Historical Maps Review		
Date/Scale	Features On-site	Features Off-site
1848 1:10,560 1850 1:1,056	The site is located within field land and segmented by fencing and possible shrubbery.	The site is surrounded by field land and ponds. Ponds are noted 40m south-east, 65m east, 65m north, 75m north, 80m west and 180m east of the site. Buildings including a school and places of worship are noted 250m north-east and beyond.
1890 1:500 1893 1:2,500 1894 1:10,560	Terraced houses and roads are noted in the western section of the site and partially in the eastern section of the site.	All the ponds noted previously, apart from the one noted 180m east of the site, are no longer mapped. Terraced houses are noted immediately west and south of the site, and partially north of the site. A reservoir is noted 40m east of the site. An area of Brick Works with multiple reservoirs is noted 260m south-west of the site. A clay pit is noted 285m south of the site.
1908 1:2,500 1909 – 1910 1:10,560	The entirely of the site is now occupied by terraced houses and several roads.	Terraced houses now completely surround the site in all directions. The pond noted 180m east and the reservoir noted 40m east of the site are no longer mapped. Brickfields associated with Brick Works are noted 195m south-west, 210m south and 380m south-east of the site.
1923 1:10,560	No significant changes.	Further residential expansion is noted 115m east of the site.
1931 – 1933 1:10,560 (Site situated in 1931 map) 1933 1:2,500	No significant changes.	Brickfield noted 210m south of the site is no longer mapped.
1938 1:10,560	No significant changes.	No significant changes.

Appendix D – Detailed Historical Maps Review		
Date/Scale	Features On-site	Features Off-site
1949 – 1952 1:1,250 (Most of site in 1950 map, NW part of site in 1952 map) 1951 – 1953 1:1,250 (Most of site in 1951 map, NW part of site in 1953 map)	A Clothing Factory is noted to encroach onto the northern boundary of the site.	A Raincoat Factory and Textile Works are noted 20m south and 90m east of the site. An industrial area with workshops, Clothing Works and Printing Works are noted 340m south-west of the site.
1956 1:10,000	No significant changes.	No significant changes.
1965 – 1969 1:2,500 (Site situated in 1965 map) (Partial coverage) 1966 – 1968 1:10,000 (Site situated in 1966 map) (Partial coverage)	No significant changes.	No significant changes.
1958 – 1976 1:1,250 (Most of site in 1975 map, NW part of site in 1968 map) 1975 1:25,000	It appears that the terraced houses have been knocked down and new buildings have been erected across the site in their place.	The terraced houses that surrounded the site are also no longer mapped and have been replaced by new buildings.

Appendix D – Detailed Historical Maps Review		
Date/Scale	Features On-site	Features Off-site
1978 – 1984 1:1,250 (Site is situated in 1984 map) 1983 – 1988 1:1,250 (Most of site in 1985 map, NW part of site in 1988 map) (Partial Coverage) 1980 – 1986 1:10,000 (Site situated in 1986 map)	A pub, possibly with a cellar, is noted in the north-western tip of the site.	An electricity substation is noted immediately north of the site.
1973 – 1989 1:1,250 (Most of site in 1989 map, NW part of site in 1975 map)	No significant changes.	Residential buildings are noted 95m east of the site.
1992 1:1,250	A few buildings in the western section of the site are no longer mapped.	Slight changes to surrounding buildings.
1992 – 1993 1:1,250 (Most of site in 1993 map, NW part of site in 1992 map) 1993 – 1995 1:1,250 (Site situated in 1995 map) (Partial Coverage)	More buildings in the western section and also buildings in the southern section of the site are no longer mapped.	Slight changes to surrounding buildings.
1999 1:10,000	No significant changes.	No significant changes.

Appendix D – Detailed Historical Maps Review		
Date/Scale	Features On-site	Features Off-site
2000 Aerial Photography	All buildings on-site are no longer mapped. Grass, several trees and footpaths now cover the site.	No significant changes.
2006 1:10,000	No significant changes.	No significant changes.
2023 1:10,000	Rectangular feature in north-western end of the site, likely the gated area noted at present day.	Slight changes to the surrounding buildings.

Appendix E – Coal Mining Report (Report Ref.: 51003388325001)

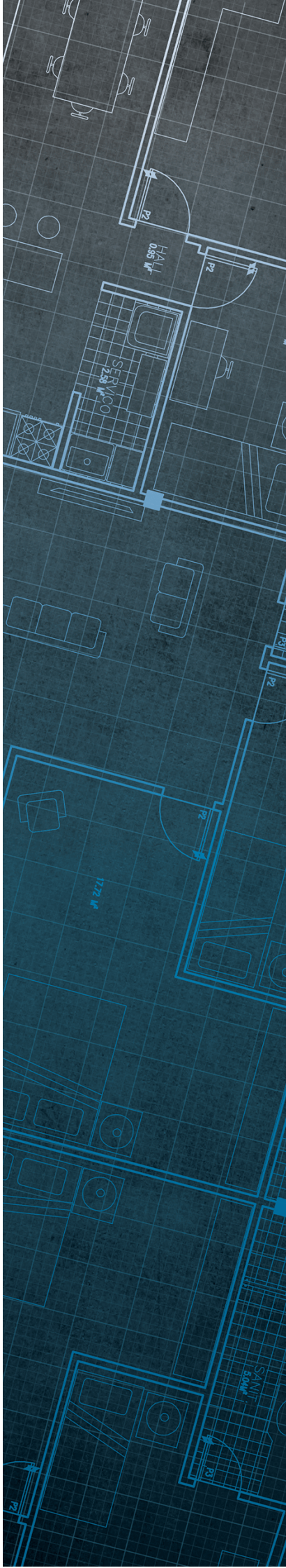
The Coal Authority

Consultants

Coal Mining Report

Cheetham Hill
Manchester
Lancashire
M8 0TJ

Date of enquiry:	**9 November 2023**
Date enquiry received:	**9 November 2023**
Issue date:	**9 November 2023**
Our reference:	**51003388325001**
Your reference:	**324056629_3**



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

NLIS Hub

Enquiry address

Cheetham Hill
Manchester
Lancashire
M8 0TJ



Approximate position of property

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NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining
No past mining recorded.

Probable unrecorded shallow workings
None.

Spine roadways at shallow depth
No spine roadway recorded at shallow depth.

Mine entries
None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers
None available.

Outcrops
No outcrops recorded.

Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

Opencast mines
None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips
None recorded within 500 metres of the enquiry boundary.

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Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

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Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

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Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

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Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

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Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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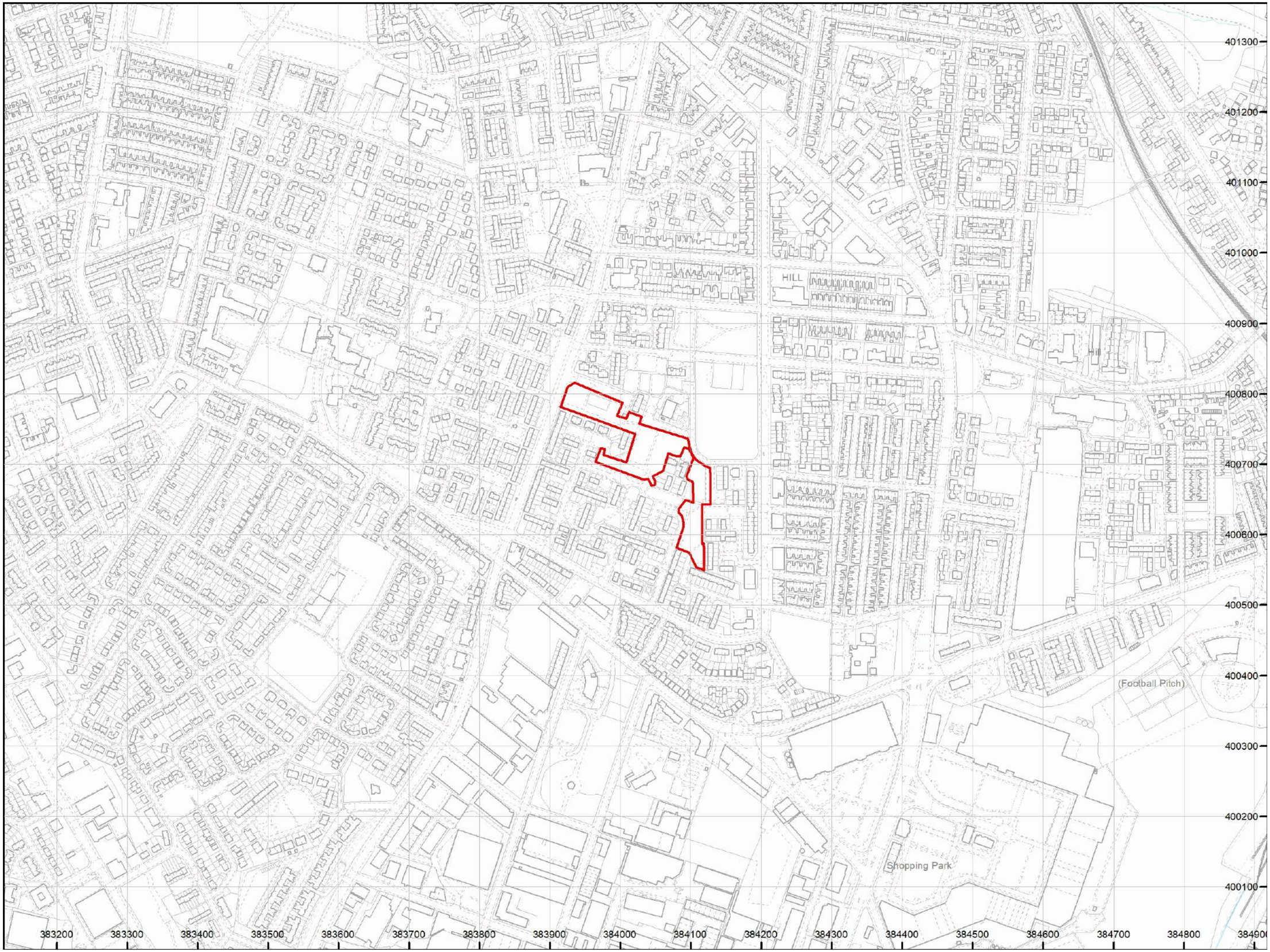
Summary of findings

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Map data

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown



How to contact us
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+44 (0)1623 637 000 (International)
www.groundstability.com

Appendix F – Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment (Project Ref.: 10910)

Landmark Information

6 alpha ASSOCIATES



Cheetham Hill

324056629_1

33716LG

Detailed Unexploded Ordnance (UXO) Threat and Risk Assessment with Risk Mitigation Strategy

Meeting the requirements of the United Kingdom's
Construction Industry Research and Information Association's
Unexploded Ordnance Risk Management Framework:
"Unexploded Ordnance (UXO) – A Guide for the Construction Industry" (C681)
and in compliance with the Construction (Design and Management) Regulations 2015

6 Alpha Associates Ltd

Project No.: 10910

17th November 2023

V1.0

Using This Report

This Detailed UXO Threat and Risk Assessment with Risk Mitigation Strategy is designed to inform the reader whether military related Unexploded Ordnance (UXO) is likely to pose a hazard at the Study Site and if so, calculate the level of risk generated by proposed or likely ground intrusive operations at the Site. The assessment is intended to meet with the requirement of Stages 2 and 3 of the *Health and Safety Executive* endorsed *CIRIA C681 UXO Risk Management Framework* – for which *6 Alpha* were the lead technical author.

There are two prospective outcomes of this report; either the risk level requires a Risk Mitigation Strategy (Stage 3 of the *CIRIA C681* framework) aimed at reducing UXO risks As Low As Reasonably Practicable (ALARP) in accordance with the Project's minimum legal responsibility; or that no further action is required. In the former instance *6 Alpha* will provide a Risk Mitigation Strategy consisting of proactive and/or reactive risk mitigation measures aimed at reducing the identified risks to ALARP.

Document Control

Version	Author(s)	Reviewed By	Recipient
1.0	Beth Skoulding	Ben Wilkinson	33716LG

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Web: www.6alpha.com

Executive Summary

Document Scope

6 Alpha Associates Limited (6 Alpha) has been commissioned in partnership with the *Landmark Information Group* to provide a UXO Threat and Risk Assessment with Risk Mitigation Strategy, for the Site described as "Cheetham Hill, Manchester, M8 0TJ". The Study Site is centred on *British National Grid Reference* 384040, 400710.

UXO Threat Assessment Summary

The output of *6 Alpha*'s UXO Threat Assessment is summarised at Table I:

UXO Threat Assessment Summary			
Threat Source		**Result**	**Comments**
	Was the Site or its vicinity considered a primary bombing target during WWII?	✗	*Luftwaffe* aerial photography did not identify any primary bombing targets within 1,000m.
	Was the Site or its vicinity bombed during WWII?	✓	*ARP* records identified 39 HE bomb strikes within 1,000m, with the closest five recorded between 100m to the north-west and 205m to the south of the Study Site.
	Was the Site or its vicinity damaged by bombing during WWII?	✓	Official bomb damage mapping identified "Damaged Buildings" located 175m to the south-west and "Demolished Buildings" located 250m to the south-west of the Study Site.
	Has any *British* military activity been identified in the area?	✗	None recorded within 1,000m.
	Has ordnance been manufactured and/or stored at the Site or its vicinity?	✗	None recorded within 1,000m.
	Does UXO contamination pose a potential hazard at the Study Site?	✓	Given that bombing and bomb damage were recorded within a close proximity to the Site, it is possible that UXO might be encountered.

Table I: UXO Threat Assessment Summary

UXO Threat Items

Given the evidence presented at Table I, *6 Alpha* consider it reasonably foreseeable that a UXO encounter could occur at this Site. The most probable UXO threat items are *German* HE bombs and IBs. *British* AAA projectiles may also pose a residual threat.

Potential UXO Burial Depth

Given the likely ground conditions at the Study Site, the average WWII bomb penetration depth has been calculated as 7m below WWII ground level at this Study Site. Although larger UXBs could be present below this depth (potentially up to 16m), they were deployed infrequently during WWII and are highly unlikely to be encountered.

UXO Risk Pathways

The Study Site has undergone significant post-WWII developed particularly since all structures were cleared from the Study Site in 2006, after which the Study Site has remained as an area of undeveloped greenspace. Consequently, it is considered unlikely (but not impossible) for a UXO risk pathway to be generated by proposed works within ground that has been disturbed since WWII.

Nonetheless, a limited UXO risk pathway could be generated by intrusive works within any remaining area(s) of ground that has not been disturbed **since the time it might have been contaminated with UXO**.

UXO Risk Assessment

A Semi-Quantitative UXO Risk Assessment has been undertaken and the UXO risk rating is assessed to be:

MEDIUM

Such risks may pose harm to human health and damage any equipment involved in intrusive activities. Whilst the level of risk posed is relatively limited, the former risk to human health is intolerable. Therefore, such intolerable risks will require mitigating to ALARP, through the implementation of a risk mitigation strategy (see below, and Part III of the report).

Risk Mitigation Strategy

6 Alpha recommends that the UXO risk to the proposed intrusive works is reduced ALARP, through the implementation of both proactive and reactive UXO risk mitigation measures.

Recommended UXO Risk Mitigation Measures

There following risk mitigation measures summarised at Table II, are recommended as a minimum in order to reduce risks ALARP during intrusive works in **all previously undisturbed ground**.

UXO Risk Mitigation Measures Overview							
Proposed Intrusive Works		Emergency Response Plan	Safety and Awareness Briefings	On-Call EOD Engineer	UXO Watching Brief	Non-Intrusive UXO Survey	Intrusive UXO Survey
Open Works	Trial Pits	✔	✔	✔	✘	✘	✘
	Excavations	✔	✔	✔	✘	✘	✘
Blind Work	Window Sampling	✔	✔	✔	✘	✘	✘
Residual UXO Risk Rating		ALARP					

Table II: UXO Risk Mitigation Measures Overview

Recommended Next Steps

We recommend that the Client's next steps are focused upon phase four of the UXO Risk Management Framework namely, the detailed designs of the recommended proactive UXO risk mitigation measures as outlined above. The design ought to be finalised and the UXO risk mitigation measures are to be executed in advance of the GI and/or construction phases of work, in order to warrant and to evidence that UXO risks can be mitigated and reduced to ALARP.

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Appendix 2 – Site Boundary

Appendix 3 – Modern Aerial Photography

Appendix 4 – WWII High Explosive Bomb Density

Appendix 5 – WWII Bomb Strikes

Acronyms and Abbreviations

AAA	Anti-Aircraft Artillery	**NEQ**	Net Explosive Quantity
ALARP	As Low As Reasonably Practicable	**NGR**	National Grid Reference
ARP	Air Raid Precaution	**OS**	Ordnance Survey
AXO	Abandoned Explosive Ordnance	**PoW**	Prisoner of War
BDO	Bomb Disposal Officer	**RAF**	Royal Air Force
bgl	Below Ground Level	**RMS**	Risk Mitigation Strategy
BGS	British Geological Survey	**RN**	Royal Navy
BH	Borehole	**SAA**	Small Arms Ammunition
BPD	Bomb Penetration Depth	**SQRA**	Semi-Quantitative Risk Assessment
CIRIA	Construction Industry Research and Information Association	**TA**	Territorial Army
CS	County Series	**TARA**	Threat and Risk Assessment
EOD	Explosive Ordnance Disposal	**TNT**	Trinitrotoluene
HE	High Explosive	**UK**	United Kingdom
HSE	Health and Safety Executive	**UN**	United Nations
IB	Incendiary Bomb	**USAAF**	United States Army Air Force
kg	Kilogram	**UXB**	Unexploded Bomb
km	Kilometre	**UXO**	Unexploded Ordnance
LCC	London County Council	**V Weapons**	*Vergeltungswaffen* – Vengeance Weapons
LSA	Land Service Ammunition	**WWI**	World War One
m	Metre	**WWII**	World War Two

Part I: Introduction

1 Document Overview

1.1 Scope of Work

6 Alpha Associates Limited (6 Alpha) has been commissioned in partnership with the *Landmark Information Group* to provide an Unexploded Ordnance (UXO) Threat and Risk Assessment with Risk Mitigation Strategy, for the Site described as "Cheetham Hill, Manchester, M8 0TJ".

The Study Site is centred on *British National Grid* reference 384040, 400710 and is depicted at Appendices 1 and 2.

1.2 Study Site Location

The Study Site is situated within the *Town of Cheetham Hill* and totals an area of 1.3 ha. The Study Site is located within a densely developed urban area, though the Study Site itself predominantly consists of undeveloped ground.

Aerial photography of the Study Site is presented at Appendix 3.

1.3 Aims and Objectives

This document has the following aims and objectives:

1.3.1 Aims

The document aims to assess and evidence the nature and scope of the UXO risks to people, plant, equipment and/or the environment at this Study Site. In the event that an intolerable UXO risk is identified, a recommended UXO risk mitigation strategy will also be articulated.

1.3.2 Objectives

The document has the following objectives:

- To assess the nature and scope of potential UXO contamination at the Study Site;
- To assess whether any UXO contamination generated at the Site is likely to remain extant;
- To consider whether the proposed intrusive works will generate a viable UXO risk pathway;
- To identify those sensitive receptors likely to be impacted by an inadvertent UXO encounter during the proposed intrusive works;
- To assess the UXO risk to those sensitive risk receptors during intrusive works;
- To outline proportional risk mitigation measures that are consistent with a coherent overarching risk mitigation strategy, in order to effectively manage the UXO risk ALARP.

2 Introduction to UXO Risk Management

2.1 Definition of UXO

For the purposes of this risk assessment, *6 Alpha* have adopted the definition of UXO outlined in the undermentioned *CIRIA C681* guide, as follows:

"Explosive ordnance that has been primed, fuzed, armed, or otherwise prepared for use and used in an armed conflict. It may have been fired, dropped, launched or projected and should have exploded but failed to do so…UXO also refers to explosive ordnance that has not been used during an armed conflict, that has been left behind or dumped by a party to an armed conflict, and which is no longer under control of the party that left it behind or dumped it..."

2.2 Generic UXO Threats

There are multiple factors which may have contributed to the UXO contamination of a construction site in the *UK* but generally, UXO contamination is likely to result from the warfighting activity associated with WWI and WWII, the military occupation and use of land such as airfields, camps and training areas; and the manufacture of munitions to support the armed forces.

For example, *WWII Bomb Census* data from the *Ministry of Home Security* calculated that approximately 10% of bombs dropped on *Britain* during WWII failed to function as designed. If the bomb did not detonate when it was dropped, the force of impact enabled the Unexploded Bomb (UXB) to penetrate the ground. Whilst efforts were made to locate and render safe those UXBs that were observed entering the ground (or left behind clear evidence of having done so) during WWII, evidence of such UXBs was readily obscured by bomb damage debris, vegetation and a lack of footfall in some settings – thus, ensuring that an unquantifiable number of UXBs were left *in situ* below the surface of the ground.

Additionally, it has been estimated that at least 20% of the *UK's* land surface area has been used for military training activities or has otherwise been requisitioned for military use historically. Therefore, *British* Abandoned Explosive Ordnance (AXO), Land Service Ammunition (LSA), Small Arms Ammunition (SAA) and aerially delivered ordnance is also commonly encountered in areas that were formerly occupied by military forces (such as *Royal Air Force* (RAF) airfields, military camps and/or military training areas). Conventional and chemical munitions dumping was also prevalent in these periods with little consideration given to future safety implications. There was also widespread unrecorded dumping of LSA and SAA below the ground that was rarely recorded because the activity was often perceived to be inconsequential.

2.3 Generic UXO Risks

The explosive or chemical fill within UXO rarely becomes inert or loses its effectiveness with age, but the explosive fill may change or crystallise over time – increasing the high explosive's sensitivity to a physical shock or an impact. Trigger mechanisms and fuses, which may have failed, may corrode and deteriorate over time, becoming more sensitive to detonation. It is therefore possible that a significant impact on the UXO case, and the resultant effect upon the fuse, may cause its inadvertent detonation.

2.4 UXO Industry Best Practice

In the absence of specific legislation concerning the management of UXO risks during construction projects, the *UK*'s *Construction Industry Research and Information Association* (CIRIA) has published a best practice guide for the assessment and management of UXO risk in the construction industry (*CIRIA* document reference C681). The *CIRIA C681* guide has been judged and recognised by the *Health and Safety Executive* (HSE) as a minimum standard of good practice, that satisfies the law when applied in an appropriate manner.

6 Alpha were *CIRIA's* lead technical author for their *C681* publication and as such, are in a unique position to ensure that Client's manage UXO risk in a safe, cost-effective and time-efficient manner.

2.5 UXO Risk Management Strategic Framework

At Section 5 of *CIRIA's* C681 guide, a framework for the management of UXO risk is articulated and consists of four key stages. These correspond with the framework employed by *6 Alpha*, as presented at Table 1.

6 Alpha Risk Management Framework	UXO Risk Management Phase	CIRIA C681 Risk Management Framework	Delivered within Report? (✔/✘)
UXO Threat Assessment	**STAGE ONE**	Preliminary Risk Assessment	✔
UXO Risk Assessment	**STAGE TWO**	Detailed Risk Assessment	✔
Risk Mitigation Strategy	**STAGE THREE**	Risk Mitigation	✔
Implementation	**STAGE FOUR**	Implementation	✘

Table 1: 6 Alpha and CIRIA UXO Risk Management Frameworks

3 UXO Threat and Risk Assessment Methodology

3.1 Source – Pathway – Receptor Risk Model

The source-pathway-receptor model is a conceptual risk model employed by *6 Alpha* across all projects that informs how UXO risks are assessed. The model also helps to explain the link between the separate sections of this report and the UXO risk assessment at Section 7. The components of the model are as follows:

3.1.1 UXO Sources

The nature and scope of the UXO threat is summarised in the UXO threat assessment (at Section 4) and it forms the source element of the source-pathway-receptor model.

3.1.2 UXO Pathways

The UXO pathways are the routes by which the sources can reach the receptors. UXO pathways are likely to be either by contact and/or through soil energy transfer, through which the resulting shock wave (generated by a UXO source, or sources) may reach potential receptors. Nonetheless, surface events may also generate a through-air risk pathway in which blast and fragmentation from the UXO sources may also reach the receptors.

UXO risk pathways may be generated by a variety of operations that interact with the ground. Therefore, likely operations have been assessed and summarised (at Section 6), to demonstrate the potential risk pathway elements of the model.

3.1.3 UXO Receptors

Receptors are defined as anything which might be adversely affected by the consequences of an inadvertent detonation of any UXO source through an identified pathway. The proximity, robustness, and sensitivity of such receptors is essential in determining their capacity to withstand such high explosive effects and defining what degree of UXO risk might be tolerated (if any).

3.2 Semi-Quantitative Risk Assessment Methodology

The assessment of UXO risk is a semi-quantitative measure of the probability of UXO encounter and initiation and the consequence of an inadvertent UXO initiation; the former being a function of the identified hazard and proposed development methodology and the latter being a function of the type of hazard and the proximity of personnel (and/or other sensitive receptors) to the hazard.

UXO risk is calculated using the following formula:

Risk **(R)** = Probability **(P)** x Consequence **(C)**

3.3 Information Sources

Significant archive research associated with the Study Site has been undertaken to corroborate and to highlight, any and all potential sources of UXO contamination as well as to assess their likelihood of encounter. For the production of this report, *6 Alpha* have reviewed information from the following sources:

- Information gathered from the *National Archives* at *Kew*, including but not limited to:
  - *Ministry of National Security WWII Bomb Census* statistics;
  - *Air Raid Precaution* (ARP) written records and associated bomb strike mapping;
  - Official WWII bomb damage mapping;
- *Ministry of Defence* (MoD) *Abandoned Bomb Register*;
- *Former 33 Engineer Regiment* (Explosive Ordnance Disposal) records at *Carver Barracks, Wimbish*;
- Post-WWII *RAF* aerial photography;
- *County Series* (CS) and *Ordnance Survey* (OS) mapping.

3.3.1 Azimuth© UXO Threat Database

The above list is not exhaustive, and *6 Alpha's Azimuth*© database has also been heavily drawn upon to deliver the UXO threat assessment element of this report. The *Azimuth*© database contains digitised historic charts, aerial photographs and other extensive analogue records from an exhaustive range of additional national, regional and global archives and/or data sets that have been digitised.

3.4 Constraints

This UXO threat and risk assessment is constrained and limited by that information which is reasonably available to *6 Alpha* at the time of writing, as well as that UXO information that is reasonably accessible in a variety of archives, which *6 Alpha* have digitised and georeferenced or have otherwise summarised in written form.

This document may also require updates and changes, especially wherever and whenever the circumstances and factors associated with assessing UXO risk change. For example, if UXO threats are subsequently discovered and they are different from those that have been anticipated, and/or if proposed intrusive operations are significantly changed.

In such circumstances, risks may require re-evaluation and any such changes are to be made by *6 Alpha*, to ensure the continued technical veracity and risk management efficacy of this document.

Part II: UXO Threat & Risk Assessment

4 UXO Threat Assessment

4.1 WWII Aerial Bombing

Manchester's importance to the *British* war economy as an inland port, industrial centre, and aircraft manufacturer, meant the city and surrounding area represented a significant bombing target for the *Luftwaffe*. The first air raids occurred during August 1940 and continued until 1942. Many of these small-scale raids were across the city's suburbs causing damage to properties and minimal casualties.

The *Luftwaffe* bombing campaign of *Manchester* peaked between the 22nd and the 24th December 1940 (the *Manchester,* or *Christmas, Blitz* as it was known) and involved over 400 aircraft delivering more than 460 tons of HE bombs and 37,000 IBs.

Manchester continued to be bombed throughout the war and on the 24th December 1944, *V1* rockets were launched towards the city. The rockets failed to meet their intended targets with one stray bomb impacting *Oldham*, killing 27 civilians.

4.1.1 WWII HE Bomb Density

The Study Site was located within *Manchester County Borough,* as presented at Appendix 4. This region recorded six HE bomb strikes per 100 hectares, a "very low" level of bombing. However, further site-specific data has been considered regarding the potential bombing of the Site during WWII.

4.1.2 WWII Luftwaffe Bombing Targets

Luftwaffe aerial reconnaissance photography did not identify any primary bombing targets on-site nor within a 1,000m radius.

4.1.3 WWII HE Bomb Strikes

During WWII, *ARP* wardens and other local officials compiled detailed logs of bomb strikes across their respective districts that were then often consolidated and mapped at the end of WWII. These records identified 39 HE bomb strikes within a 1,000m radius of the Study Site, with the closest recorded 100m to the north-west of the Site between *Felthorpe Drive* and *Dudley Street*. Additionally, two unexploded bombs (UXBs) were identified 265m to the south and 450m to the north-east of the Study Site.

Furthermore, whilst IBs may have fallen within the Study Site, they were dropped in large clusters and accurate record keeping was often either non-existent or perfunctory. Nonetheless, ARP records identified 56 IB strikes within a 1,000m radius, with the closest recorded 30m to the south of the Site on the far side of *Dinnington Drive*.

In addition to IBs and HE bomb strikes, during the latter stage of WWII, when more conventional aerial bombardment of the *UK* had significantly declined, the main threat came from *V* type weapons. *V1*

and *V2* rockets were thin-skinned, unmanned and inaccurate weapons and generally exploded upon impact and thus, are less likely to pose a UXO threat. There is also no evidence to suggest that the Study Site (or its immediate vicinity) was subjected to rockets strikes during WWII.

The locations of WWII-era bomb strikes, in relation to the Study Site, are presented at Appendix 5.

4.1.4 WWII Bomb Damage

An analysis of official bomb damage mapping did not identify any evidence of bomb damage to structures located within the Study Site boundary. However, "Damaged Buildings" were identified 175m to the south-west of the Study Site, in addition to "Demolished Buildings" 250m to the south-west of the Site. Furthermore, an analysis of post-WWII mapping additionally indicated further evidence of bomb damage to structures formerly located 80m west of the Site on *Brompton Street*, as many structures present on mapping prior to WWII appear to have been cleared after WWII, potentially as a consequence of aerial bombing.

4.1.5 UXB Entry Holes

The CS mapping prior to WWII (1933) in addition to post-WWII mapping (1950) shows that the Study Site was located within a densely developed urban area during WWII, with the Study Site itself consisting of numerous structures. Therefore, it is likely that the Study Site would have been accessed frequently during WWII. However, since there is evidence of bombing and bomb damage within the immediate vicinity of the Study Site, it is possible that bomb damage debris may have concealed a UXB entry hole in the vicinity of the Site causing it to have gone unnoticed. Such UXBs could conceivably generate a UXO hazard at the Study Site itself due to the undermentioned J-Curve effect (at section 5.2.1).

4.2 *British* Military Activity

There is no evidence to suggest that the Study Site or its immediate vicinity has previously been occupied by military personnel. Therefore, it is considered unlikely that munitions were previously stored, located and/or fired from this Study Site. However, several defensive sites including AAA gun batteries (located 725m to the south-east and 975m to the east) and a *Rocket Projector Battery* (located 795m to the south-east) were located in the immediate vicinity of the Study Site and were likely utilised by military personnel for the defence of the city during WWII. Despite this, there is no further evidence to suggest that military activity or the storage and/or firing of munitions occurred within a closer proximity to the Site itself during WWII.

4.3 Previous UXO Encounters

An analysis of historic records did not identify any UXO encounters within the vicinity of the Study Site, as follows:

4.3.1 Abandoned Bombs

The Abandoned Bomb register was compiled from wartime records and was published in the form of a written answer to the *House of Commons* in 1996. The list initially only covered abandoned bombs in *London* but has since been released for the rest of the UK.

An examination of the *MoD*'s official abandoned bomb records has not identified any abandoned bombs either on-site or within a 1,000m radius.

4.3.2 UXO Disposal Tasks

An examination of pertinent historical records associated with the Study Site has not identified any UXO disposal tasks within a 1,000m radius.

4.4 UXO Threat Summary

Given the evidence presented above, *6 Alpha* consider it reasonably foreseeable that a UXO encounter could occur at this Site. The most probable UXO threat items are *German* HE bombs and IBs. *British* AAA projectiles may also pose a residual threat as they were likely fired in defence of the local area during WWII bombing raids.

5 UXO Burial Depths

5.1 Overview

It is important to establish the likely burial depth for threat spectrum UXO at the Study Site. The potential penetration depth of an UXB was dependent on a number of factors including but not restricted to those prior to striking the ground (e.g. velocity and orientation of the UXB), which in turn will be influenced on factors such as the release altitude from the aircraft and encounters with infrastructure during its fall; those encountered at the point of impact (i.e. was the impact on concrete, grass, water etc.) and finally, the below ground level conditions (e.g. infrastructure/services, basements, foundations, and geology).

Accordingly, the ground conditions at the Study Site must be understood in order to determine the average and maximum *German* UXB penetration depths, as well as the potential for other types of munitions to be buried. The provenance of made ground must also be considered in order to accurately determine the ground levels at the time when UXO contamination may have occurred (so as to accurately determine the average/maximum bomb penetration depths) and subsequently to inform any further recommendations.

5.1.1 Ground Conditions

The Client has described the ground conditions as follows:

- *"Devensian Till (Boulder Clay) underlain by Chester Formation (Sandstone)."*

5.2 UXB Burial Depths

Based on the ground conditions described above, the average BPD for a 250kg *German* HE bomb is assessed to be approximately 7m bgl, with the maximum BPD considered to be approximately 16m bgl.

Although it is possible that the *Luftwaffe* deployed larger bombs in the area, an analysis of WWII bomb census data clearly evidences that their deployment was infrequent. Therefore, to use such larger bombs for BPD calculations **are not justifiable under the ALARP principle and thus, CIRIA C681 guidance**.

WWII *German* bombs have a greater penetration depth when compared to IBs and AAA projectiles, which are unlikely to be encountered at depths greater than 1m bgl.

5.2.1 The J-Curve Effect

As a UXB penetrated the ground, it's velocity naturally slowed where it either came to an abrupt stop (e.g., against foundations) or would continue along a route of least resistance – which often resulted

in a curving of the trajectory back towards the surface. This is known as the “J Curve” effect and often resulted in a considerable horizontal off-set from the point of entry. This explains why UXBs have been discovered against or under the foundations of buildings which were present during WWII, or many meters from their entry holes. A diagrammatical representation of the “J Curve” effect is presented at Figure 1.

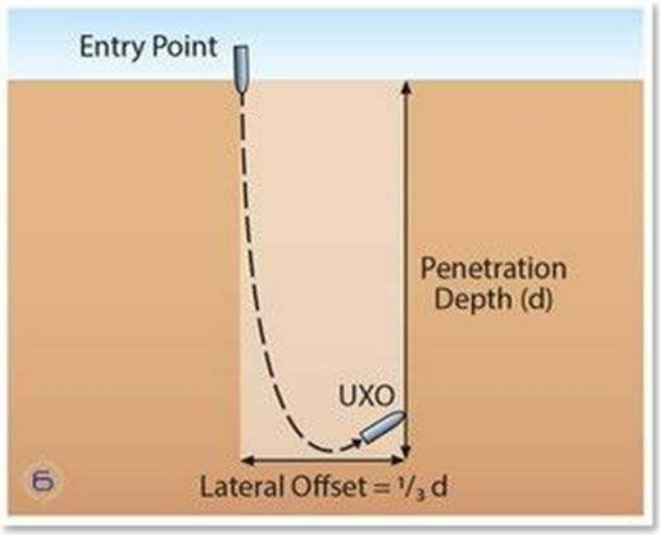


Figure 1: The “J Curve” Effect

6 UXO Risk Pathways

6.1 Overview

In order to assess whether a viable UXO risk pathway might exist at the Study Site, potential UXO contamination sources must be assessed (and have been at Section 4 of the report) and the likely depth of UXO contamination ought to be established (as per Section 5 of the report). Additionally, the Site's construction history ought to be considered to assess whether any previous intrusive works will have encountered and removed any UXO contamination present at the Site.

6.2 Study Site Construction History

From an analysis of CS and OS mapping, together with aerial photography, the following site history can be deduced:

Year	Development History
1933 CS Map	The Study Site was located within a densely developed urban area, with the Site itself consisting of numerous structures.
1950 OS Map	Whilst changes were not recorded at the Study Site itself, there is evidence of potential bomb damage as structures on *Brompton Street* (located immediately west of the Site) were cleared.
1968 OS Map	Changes were not recorded at the Study Site.
1984 OS Map	Changes were not recorded at the Study Site.
1992 OS Map	Changes were not recorded at the Study Site.
2006 OS Map	All structures were cleared from the Study Site, and the Study Site became an area of undeveloped greenspace.
2016 OS Map	Changes were not recorded at the Study Site.
2023 OS Map	Changes were not recorded at the Study Site.

Table 2: Study Site Development History

As per Table 2, it is apparent that the Study Site has undergone some post-WWII development as structures which previously occupied the Study Site space during WWII were cleared from the Site

between 1992 and 2006. After this point, the Study Site was utilised as an area of undeveloped greenspace to which it remains as to date. Consequently, it is considered likely that any UXO contamination within ground that has been disturbed since WWII would likely have been discovered and removed. Nonetheless, it is apparent that the previous intrusive works are unlikely to have disturbed the ground in all areas of the Study Site down to the likely average UXO burial depth of 7m bgl.

6.3 Proposed Works

An outline of the proposed intrusive works is also presented in order to evidence the potential UXO risk pathways that may be generated, should such work encounter those threat spectrum UXO that have been identified in Section 4.

A general overview of the scope of works for the project has been communicated to *6 Alpha* and consists of:

- *"Medium Trial Pit between 1m and 5m below ground level;*
- *Window Sampling up to 6m below ground level;*
- *Excavation depth to 6m."*

Consequently, it is apparent that the proposed works might generate a UXO risk pathway in ground that has not been previously disturbed (including any ground below post-WWII intrusive work) to a depth of 7m bgl.

If the planned methods are changed, then the risk assessment is to be reviewed and updated if necessary.

7 UXO Risk Assessment

7.1 Threat Items

The most probable sources of UXO risk at this Study Site are *German* HE bombs, whilst IBs and *British* AAA projectiles pose a residual threat. The consequences of initiating *German* HE bombs are generally more severe than initiating IBs or AAA projectiles, and thus they pose the greatest prospective risk to intrusive works.

7.2 Risk Pathways

Given the nature and scope of the prospective UXO hazard at the Study Site, all types of aggressive intrusive activities (i.e., investigative groundworks and construction methodologies) into previously undisturbed ground (including ground below any post-WWII redevelopment) to a depth of 7m bgl may generate a viable risk pathway.

7.3 Risk Receptors

The likely risk receptors include:

- Site personnel;
- Plant and equipment;
- Third-party infrastructure (utilities/services) and buildings;
- The natural environment.

Consequences of UXO initiation include:

- Injuries and/or fatalities to personnel;
- Damage to plant and equipment, nearby buildings and infrastructure;
- Rupture and damage underground utilities/services and the natural environment.

Consequences of an unexpected and unplanned UXO discovery include:

- Incurring delays and additional costs through the expenditure of additional risk mitigation resources and EOD clearance;
- Disruption to local community;
- Negative publicity.

7.4 Semi-Quantitative Risk Assessment

A semi-quantitative risk assessment has been undertaken and the results are presented at Table 4/5.

Activity	UXO Threat Item	Probability (SH+EM=P)	Consequence (D+PSR=C)	Risk (PxC=R)
Trial Pits (between 1m and 5m bgl)	Aerial Bombs	1+2=3	3+3=6	**3x6=18**
	AAA Projectiles	1+2=3	3+1=4	**3x4=12**
Window Sampling (to 6m bgl)	Aerial Bombs	1+3=4	3+2=5	**4x5=20**
	AAA Projectiles	1+3=4	3+1=4	**4x4=16**
Excavations (to 6m bgl)	Aerial Bombs	1+2=3	3+3=6	**3x6=18**
	AAA Projectiles	1+2=3	3+1=4	**3x4=12**

Table 3: UXO SQRA Results

7.4.1 SQRA Conclusions

The SRQA has determined that the proposed intrusive works may generate, as a reasonable worst-case scenario, a ***MEDIUM*** level of risk at the Study Site. Such risks may pose harm to human health and damage any equipment involved in intrusive activities. Whilst the level of risk to site personnel is relatively limited, it is intolerable and will require mitigating in accordance with the ALARP risk reduction principle, as per Part III of this report.

Part III: UXO Risk Mitigation Strategy

8 UXO Risk Mitigation Strategy

8.1 Strategic Overview

As per *CIRIA* C681 guidance, *6 Alpha* recommended that the identified UXO risks are reduced ALARP. Crucially, the ALARP principle states that if the cost of reducing a risk significantly outweighs the benefit, then the risk may be considered tolerable. This does not mean that there is never a requirement for UXO risk mitigation, but that any mitigation must demonstrate that it is beneficial. Any additional mitigation that delivers diminishing benefits and that consumes disproportionate time, money and effort are considered *de minimis* and thus unnecessary. Because of this principle, UXO risks will rarely be reduced to zero (nor need they be).

Consequently, a limited suite of reactive UXO risk mitigation measures ought to be implemented ahead of proposed intrusive operations at the Study Site in order to reduce the identified UXO risks to ALARP.

8.2 Proactive UXO Risk Mitigation Measures

The level of risk to the proposed works at this Study Site does not warrant the implementation of proactive UXO risk mitigation measures in the form of a geophysical UXO survey or UXO Watching Brief. The implementation of such measures at this Site would be beyond what is required under the ALARP risk reduction principle.

8.3 Reactive UXO Risk Mitigation Measures

The following reactive risk mitigation measures should be undertaken for all activities in all areas:

8.3.1 Operational UXO Emergency Response Plan

Appropriate site management documentation should be held on-site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO discovery (this plan can be supplied by *6 Alpha*).

8.3.2 UXO Safety and Awareness Briefings

The briefings are essential when there is a possibility of explosive ordnance encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the following:

- The identification of threat spectrum UXO;
- What actions they should take to keep people and equipment away from such a hazard and to alert site management.

Information concerning the nature of the UXO threat should also be held in the site office and displayed for general information on noticeboards - both for reference and as a reminder for ground workers.

The safety awareness briefing is an essential part of the *Health & Safety Plan* for the site and helps to evidence conformity with the appropriate health and safety standards and legislation.

8.3.3 On-Call EOD Engineer

An on-call EOD Engineer will be able to identify and/or advise on the appropriate course of action in the event of any suspicious and/or real UXO finds and should be implemented at this Site to mitigate the residual UXO risk associated with the proposed works. *6 Alpha* offer three tiers of immediate telephone and/or email response.

8.4 ALARP Safety Sign Off Certification

ALARP safety sign-off certification provides an independent source of evidence that a Client has followed industry best practice and has successfully managed and reduced UXO risks to ALARP. Following the execution of *6 Alpha's* UXO risk mitigation measures, we can deliver ALARP safety sign-off certification, in advance of the proposed operations.

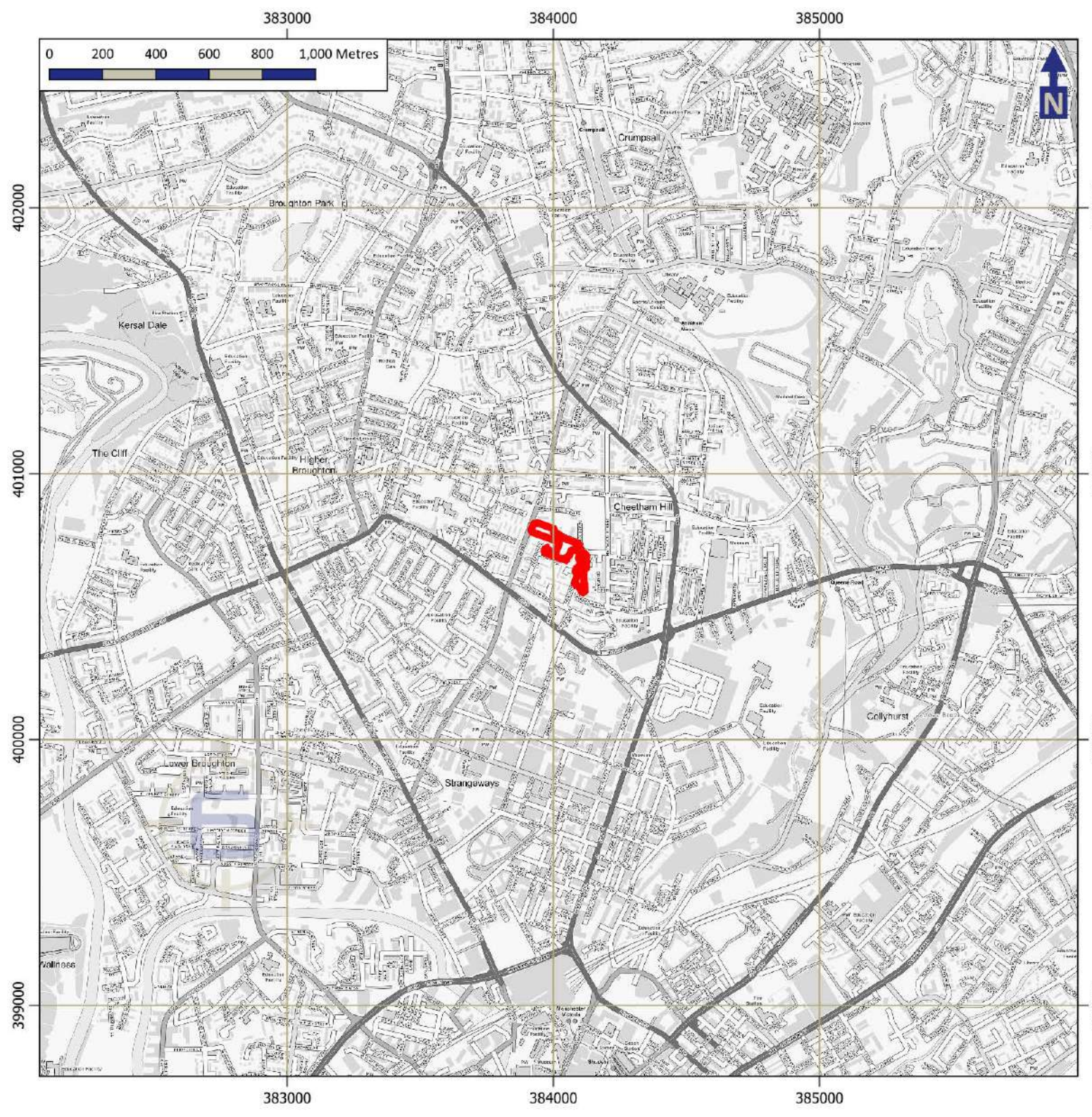
In such circumstances the project will be able to certify for the benefit of all of its stakeholders, that all reasonably practicable measures have been taken to protect contractors from UXO hazards and that the commissioning Client will have acted in compliance with industry best practice as well as the national safety legislation.

In accordance with best practice therefore, *6 Alpha* ALARP safety sign-off certification does not imply that any site is free from UXO, rather, that the necessary and appropriate UXO risk mitigation measures have been appropriately applied to evidence that UXO risks have been reduced ALARP.

8.5 Recommended Next Steps

We recommend that the Client's next steps are focused upon phase four of the UXO Risk Management Framework namely, the detailed designs of the recommended proactive UXO risk mitigation measures as outlined above. The specifications are to be delivered and the UXO risk mitigation measures are to be executed in advance of the GI and construction phases of work, in order to warrant and to evidence that UXO risks can be mitigated and reduced to ALARP.

Appendices



Site Location

BOMB SEARCH

LEGEND

Site Boundary



British National Grid

Address

Cheetham Hill, Manchester, M8 0TJ

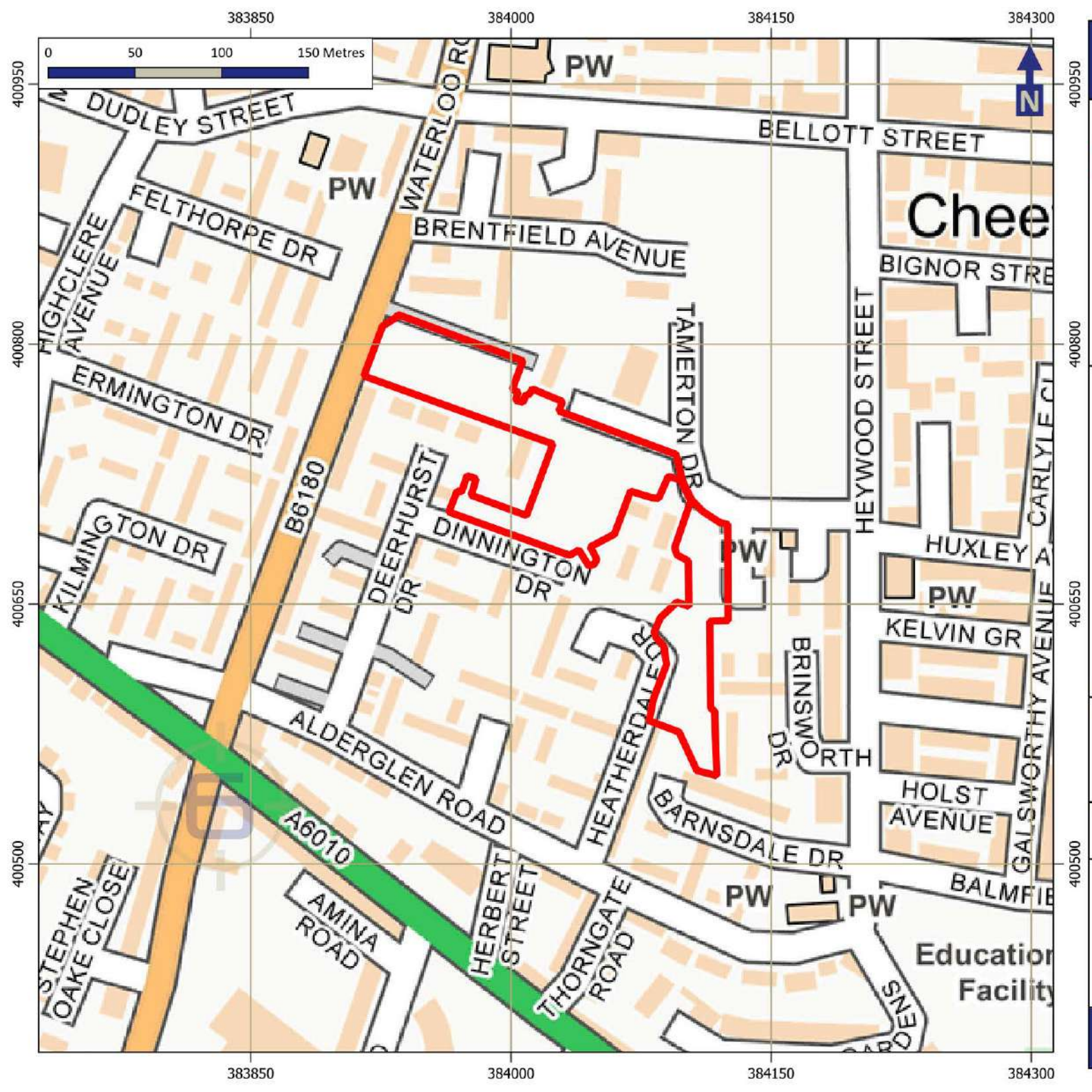
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10910	1	RT	LG	10/11/2023

alpha ASSOCIATES
special risks consultancy

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Site Boundary

BOMB SEARCH

LEGEND

Site Boundary



British National Grid

Address

Cheetham Hill, Manchester, M8 0TJ

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Modern Aerial Photography

BOMB SEARCH

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Site Boundary



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PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
10910	3	RT	LG	10/11/2023

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special risks consultancy

Map data: Google, The GeoInformation Group, Infoterra Ltd, Bluesky, Getmapping plc

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WWII High Explosive Bomb Density

BOMB SEARCH

LEGEND

Site Boundary

High Explosive Bomb Density

- Less than 15 bombs per 100 hectares
- 16-25 bombs per 100 hectares
- 26-35 bombs per 100 hectares
- 36-45 bombs per 100 hectares
- Over 46 bombs per 100 hectares



British National Grid

Address

Cheetham Hill, Manchester, M8 0TJ

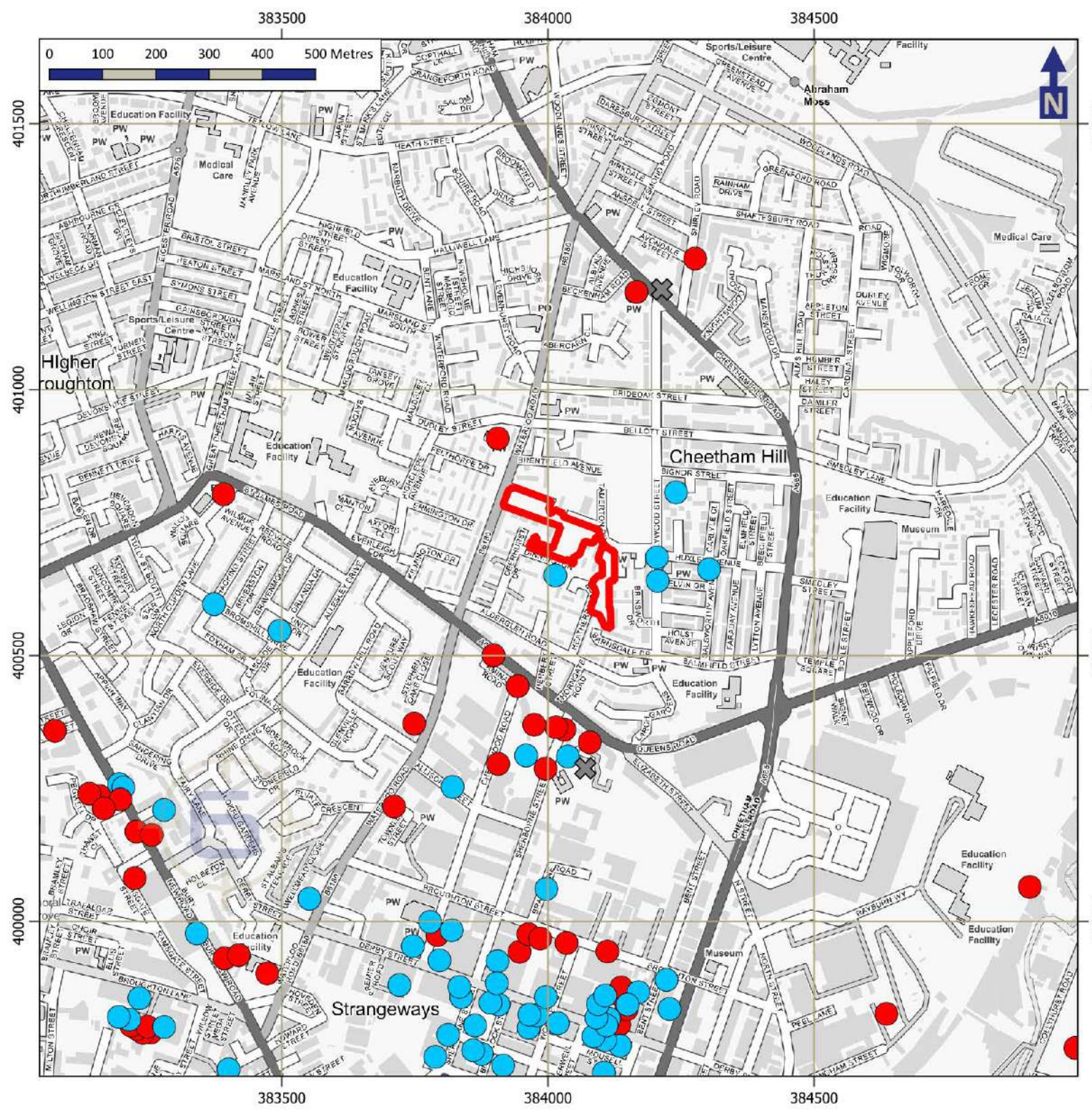
PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
10910	4	RT	LG	13/11/2023

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WWII Bomb Strikes

BOMB SEARCH

LEGEND

- Site Boundary

Consolidated Bomb Strikes

- High Explosive Bomb
- Incendiary Bomb
- Unexploded Bomb



British National Grid

Address

Cheetham Hill, Manchester, M8 0TJ

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
10910	5	RT	LG	13/11/2023

alpha ASSOCIATES
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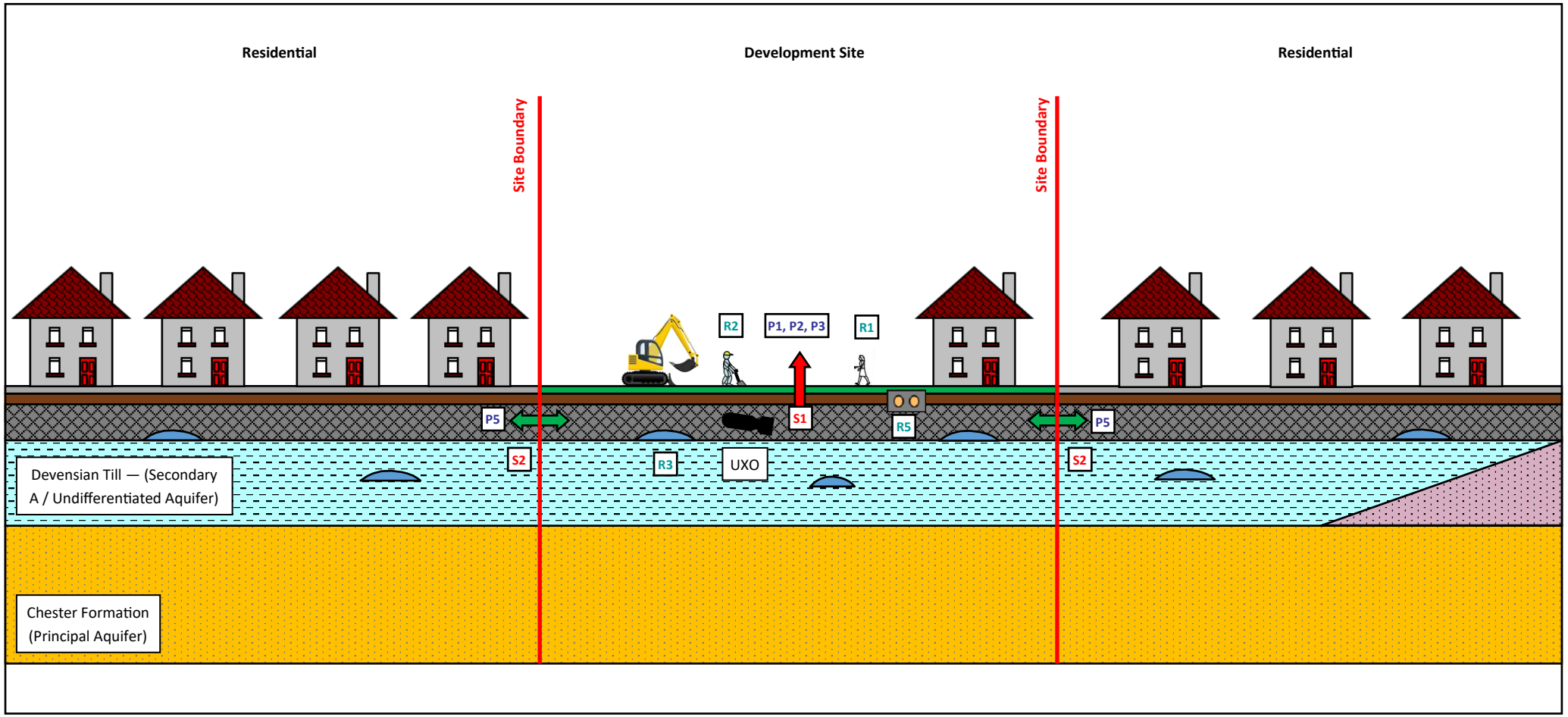
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Figure 4 – Preliminary Conceptual Site Model

Preliminary Conceptual Site Model (CSM)



Contamination Source	
S1	Made Ground / UXO
S2	Made Ground

Legend	
	Infilled / Made Ground
	Underground Services
	Inferred Water Table

Receptor	
R1	Future Site Users
R2	Construction Workers
R3	Controlled Waters
R4	Adjacent Site Users
R5	Infrastructure & Buried Services

Pathway	
	Direct Contact / Ingestion
	Leachate Migration
	Ground Gas Migration
P1	Direct Contact
P2	Ingestion
P3	Inhalation
P4	Leaching & Migration
P5	Vertical & Lateral migration of Ground Gas

Sutcliffe

Client: Mosscare St Vincent's Housing Group

Project: 33716-SUT-ZZ-00-RP-G-7101

Site: Cheetham Hill, Manchester

Preliminary Conceptual Site Model (CSM)	Draft	1	Scale (at A3): Not to scale
	Issue	1	
Issuing Office: Liverpool	Drawing number: 1		Version: A
Telephone: 0151 227 3155			

Drawing Ref.: 21-026-BSA-0001 Rev J (Bowker Sadler Architecture – May 2021)

ALDERFORD PARADE
DEERHURST DRIVE
DINNINGTON DRIVE
HEATHERDALE DRIVE
STARMOOR DRIVE
TAMERTON DRIVE
NEWPARK WALK
New Turning Head
New Shared Surface
New Road with Turning Head
Bollards
Open Space Retained
Redefining pavement and road line to increase efficiency of land use
Dual frontage aspects
Redefining pavement line to create stronger pedestrian routes through the site and to increase efficiency of land use
Dashed line indicates extent of existing road
Car parking retained with soft landscaping and pedestrian route added
Redefining pavement line to create stronger pedestrian routes through the site
Creating new parking area to reduce amount of parking spaces along Heatherdale Drive

Heatherdale Drive Accommodation Scheule:

Type A - 70m² 2b3p House	7No.
Type B - 79m² 2b4p House	3No.
Type C - 87m² 3b4p House	1No.
Type D - 96m² 3b5p House	2No.
Type E - 102m² 3b5p House 3 Storey	3No.
Type F - 61m² 2b3p Apartment @ Ground Floor + 65m² 2b3p Apartment @ First Floor	7No. 7No.
Type G - 51m² 1b2p Apartment @ Ground Floor + 56m² 1b2p Apartment @ First Floor	5No. 5No.
Type H - 108m² 4b6p House	1No.
Type I - 110m² 4b6p House	1No.
Type J - 110m² 4b6p House	1No.
Type K - 110m² 4b6p House	1No.
All to Manchester Energing Space Standards	**Total: 48No.**

Type L - 113m² 4b6p House 3 Storey	12No.
Type M - 102m² 3b5p House 3 Storey	9No.
All to Manchester Energing Space Standards	**Total: 21No.**

100% Car Parking (all in curtilage or adjacent properties)

Designs all subject to full surveys inc but not limited to Topographical, Services, Highways adoption, Phase 2 desktop.

KEY

- Natural surveillance
- Proposed tree
- Retained existing tree
- Soft Landscaped area
- Private Lawned Garden
- Existing tree removed
- Shared surface
- New parking space
- Relocated/retained existing parking space
- Underground Utilities Easement
- Underground Utilities to be Adjusted
- Current site boundary

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- Drawing not to be scaled
- Report Errors and Omissions to the Architect.
- Check all dimensions on site
- Drawing to be read in conjunction with the Health and Safety Plan and all relevant Risk Assessments

1:5
1:50 1m 2 3
1:1
1:100 1m 2 3 4 5 6

Rev.	Date	Drn.		Chkd.
J	07.11.23	AC	Plots 32-35 & 54-55 amended to 4B6P	CL
H	06.09.23	AC	Plots added by substation & front garden boundary walls shown	CL
G	26.05.23	AC	Alderford Parade site added	CL
F	23.05.23	AC	Site layout & boundary amended	CL
E	21.01.22	SW	INFC19 area reduced	CL
D	22.09.21	KS	Minor revision	CL
C	21.09.21	KS	Amended to integrate Alderford Parade site. Two properties added. Extra land boundaries added.	CL
B	13.09.21	KS	Amended to include Tamerton Drive site masterplan. Dinnington Drive site redesigned to maximise architectural coherence of the area. Numbering updated.	CL
A	30.06.21	SW	4p6p units added to Dinnington Drive Area. Detail added to all ground floor plans. Site plan updated to suit	CL

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0161 406 7333 | office@bowker-sadler.co.uk | www.bowker-sadler.co.uk

Project
Heatherdale Drive

Client
Mosscare St. Vincents

Drawing
Site Plan

Scale	Sheet Size	Drawn	Checked	Date
1 : 500	@ A1	SW	CL	27.05.21

Project No.	Originator	Zone	Level	Form	Discipline	Number	Revision
21-026 -	BSA -					**0001**	J

Status
Feasibility

P:\2021\21-026\Drawings\feasibility\arefinx - Site with Levels.rvt