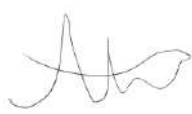
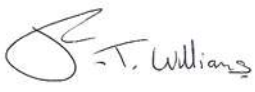


Basement Impact Assessment & Ground Investigation Report

Site: YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG

Client: YMCA London City and North

Report Reference: GWPR7122/SIR/July 2026			Status: Final
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V1.01			
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1.0	INTRODUCTION	4
1.1	General	4
1.2	Aims of the Investigation	4
1.3	Conditions and Limitations	4
1.4	Technical Glossary	4
1.5	Additional Reports	4
2.0	SITE SETTING	6
2.1	Site Location	6
2.2	Site Description	6
2.3	Historical Map Review	6
2.4	Nearby Assets and Subterranean Developments	7
2.5	Proposed Development	8
2.6	Geology	8
2.7	Hydrogeology and Hydrology	8
2.8	BGS Borehole Records	8
2.9	Flooding	8
2.10	Radon	9
2.11	Unexploded Ordnance Review	9
3.0	BASEMENT IMPACT ASSESSMENT	10
3.1	Scoping	10
4.0	SITE WORKS	12
4.1	Scope of Works	12
4.2	Sampling Procedures	12
5.0	ENCOUNTERED GROUND CONDITIONS	13
5.1	Soil Conditions	13
5.2	Foundation Exposures	13
5.3	Roots Encountered	14
5.4	Groundwater Conditions	14
5.5	Obstructions	14
6.0	IN-SITU AND LABORATORY TESTING	15
6.1	In-Situ Strength Testing	15
6.2	Geotechnical Laboratory Testing	15
7.0	ENGINEERING CONSIDERATIONS	17
7.1	Soil Characteristics and Foundation Considerations	17
7.2	Bearing Capacity Analysis	17
7.3	Geotechnical Analysis	18
7.4	Retaining Walls, Excavations and Stability	21
7.5	Sub-Surface Concrete Design	23
7.6	Roads and Hardstanding Design	23

7.7	Hydrogeological Effects, Flooding and Surface Water Disposal	24
7.8	Discovery Strategy	25
7.9	Waste Disposal	26
7.10	Duty of Care	27
FIGURES		28
APPENDIX A: Conditions and Limitations		A
APPENDIX B: Technical Glossary		B
APPENDIX C: Existing and Proposed Development Information		C
APPENDIX D: Trial Hole Logs		D
APPENDIX E: Laboratory Testing Results		E
APPENDIX F: Soil Displacement Assessment		F

1.0 INTRODUCTION

1.1 General

Ground and Water Limited were instructed by YMCA London City and North (the “client”) on the 22nd July 2026 to produce a Basement Impact Assessment and undertake two groundwater measurements and a soil displacement assessment on the site referred to as YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG (the “site”). The scope of the investigation was detailed within the Ground and Water Limited fee proposal (reference: QU-2715).

1.2 Aims of the Investigation

The aim of the investigation was understood to be to supply the client and their designers with information regarding the ground conditions underlying the site to assist them in preparing an appropriate scheme for development.

The investigation was to be undertaken to provide parameters for the design of foundations by means of in-situ and laboratory geotechnical testing undertaken on soil samples recovered from trial holes.

The proposed development includes a basement. A Basement Impact Assessment, including screening and detailed comment on surface water flooding/management or combined flooding (sourced from SFRA or similar sources) was part of the remit of the report. The requirements of the following reports were reviewed with respect to this project:

- The Strategic Flood Risk Assessment for the London Borough of Haringey, produced by JBA Consulting in February 2015;
- The Surface Water Management Plan for the London Borough of Haringey, produced by the Greater London Authority and Drain London in August 2011 (reference: CS/046913);
- The Basement Development Supplementary Planning Document, produced by Haringey Borough Council in June 2012.

In addition, a Ground Movement Assessment for the impact of the proposed development on surrounding properties and assets was not within the remit of the report.

The techniques adopted for the investigation were chosen considering the requirements of the client, anticipated ground conditions, and bearing in mind the nature of the site, limitations to site access and other logistical limitations.

1.3 Conditions and Limitations

This report has been prepared based on the terms, conditions and limitations outlined within Appendix A.

1.4 Technical Glossary

Generic technical terms can be viewed within the glossary provided within Appendix B.

1.5 Additional Reports

This report should be read in conjunction with

- Phase 1 Desk Study Report (Reference: GWPR7007/DS/April 2026)

- Phase 2 Site Investigation Report (Reference: GWPR7007/SIR/July 2026).
-

2.0 SITE SETTING

2.1 Site Location

The site comprised a ~2,000m² irregular-shaped plot of land. The site was located along the north-western side of Tottenham Lane, along the north-eastern side of Rosebery Gardens and along the south-western side of Elmfield Avenue. The site was located in the eastern portion of Crouch End, north London. The national grid reference for the centre of the site was approximately TQ 30297 88692. A site location plan is given within Figure 1.

2.2 Site Description

At the time of the site walkover, 31st March 2026, the site was occupied by the property known as the YMCA Hostel London City and North.

An up-to-five storey building was noted in the southern section of the site, parallel to Tottenham Lane, and comprised 155 single occupancy bedrooms with communal areas (including meeting rooms, storage areas and a canteen with adjacent kitchen). The finished floor level at ground level was between ~41.26 – 41.84m AOD. Two small basement levels were noted below the south-western extreme of the property and the north-eastern centre of the property, with finished floor levels of ~38.83 – 38.93m AOD and ~39.48 – 40.64m AOD respectively.

The northern section of the site comprised a three storey fitness centre known as Crouch End Fitness Centre, with finished floor levels at ground level of between 40.77 – 40.81m AOD.

A courtyard is present in the central north of the site used as carparking and bin storage facilities.

The property is accessed via Rosebery Gardens and the site was generally flat and level with no noticeable slope onsite. A very small soft landscaping area was present along the northern boundary.

Locally, the site was on a eastern facing slope, decreasing in gradient from Highgate/Hampstead Heath to the west, towards the River Lea to the east.

Existing plan views and section views have been provided within Appendix C.

2.3 Historical Map Review

Please see below a tabulated summary of the history of the site and surrounding site environs.

Environmental Significance of Data from Historical Maps		
Date	Site	Environs
1864	The site comprised a part of an undeveloped open plot of land, likely agricultural land/fields. A farm road was present intersecting the middle of the site running in a northwest to southeast direction.	The site environs generally comprised undeveloped agricultural land/fields. Tottenham Lane is present in its modern day setting immediately along the southeast boundary of the site. South of the site residential developments with private gardens are present. Approximately 200m west and east higher density residential developments are present. National School is present 120m northeast.
1864 - 1896	No significant change recorded.	A well is present 90m northeast of the site. Higher density residential housing is present 100m southeast and west of the site.

Environmental Significance of Data from Historical Maps		
Date	Site	Environs
1896 – 1914	The western portion of the site was developed to include seven terraced residential houses with private gardens.	The immediate site environs to the northwest and west have undergone residential terraced housing developments. Rosebery Graden is present in its modern day setting southwest of the site. Residential terraced housing is present within the further environs west, south and east of the site.
1914 – 1935	The remainder of the site has been developed the YMCA building being constructed in the eastern portion of the site. The residential housing to in the west of the site is still present.	Further terraced residential housing has been constructed immediately north of the sites boundary. Elmfield Avenue is constructed in its modern day setting. Northeast of the site a school has been constructed. South of the site over Tottenham, Lane, a S.A Citadel, printing works and cinema is present. All nearby roads are in their modern day setting with residential housing covering the majority of the sites environs in a 250m radius.
1935 – 1954	The residential terraced houses onsite have been demolished with the western portion of the site now vacant..	A garage is present on the corner of Tottenham Lane and Elmfield Ave. The last of the clear land 150m north of the site has been turned into residential housing. Further building have been constructed 100m northwest of the site at the Rokesly Junior School. The cinema south of the site has been turned into a Engineering works.
1954 - 1972	The YMCA building has been extended into the western portion of the site to its moder day setting.	One of the large high street buildings south of the site was labelled as a garage.
1972 – 1979	The northwestern portion of the building was converted into a youth and community centre, the rest of the building was labeled the YMCA Hostel	No significant changes
1979 – 1991	No significant changes	The garage east of the site was turned into a petrol station.
1991 – 1995	No significant changes	Further residential development 150m north of the site following the demolition of Rokesly School Kitchens
1995 – 2003	No Significant changes	No Significant changes

2.4 Nearby Assets and Subterranean Developments

No railway cuttings were noted within a 250m radius of the site. No London Underground tunnels were noted within a 250m radius of the site. The site is not in close proximity to any National Rail lines. The site was considered to be not sufficiently close to underground transport services, in order for these to affect the property and there are no approved proposals for any TfL services in the vicinity that would affect the development.

Properties to the west of the site along Rosebery Gardens comprise three-storey terraced residential properties along the northern side of the road, and two-storey terraced residential properties with an additional lower ground floor level along the southern side of the road. Properties to the south of the site along Tottenham Lane comprise mixed use terraced properties as many as four stories high. To the north of the site was Rokesly Infant and Nursey School, a one-storey detached property, as well as a Texaco petrol station, both along the north-eastern side of Elmfield Avenue. Further north-west along Elmfield Avenue were two-storey terraced residential properties.

No listed properties were noted in close proximity to the site.

2.5 Proposed Development

The proposed development comprised the demolition of the existing property facilitating the development of an improved hostel facility with ancillary office, training and communal facilities within a part four to part six storey building. This comprises a new build scheme providing 174 bedrooms, with the fitness centre omitted from the scheme. The proposed finished floor level at ground level was ~40.850 – 41.750m AOD.

A part footprint basement is proposed below the centre of the superstructure. The proposed finished floor level at basement level was ~38.150m AOD. Allowing for an assumed slab build-up of 0.50m, the formation level of the basement was anticipated to be ~37.65m AOD.

The proposal will increase the soft landscaping cover to 268m², with a remaining area of 1,770m² of built area and hard landscaping. Tree canopy cover will increase from 16m² to 60m² in the proposal.

Proposed plan views and section views have been provided within Appendix C.

2.6 Geology

The British Geological Survey Solid Map revealed that the site was underlain by bedrock deposits of the London Clay Formation. No areas of Made Ground/Reworked Ground or superficial deposits were noted within a 250m radius due to their likely absence.

2.7 Hydrogeology and Hydrology

A study of the aquifer maps on the DEFRA website revealed the site was underlain by Unproductive Strata comprising bedrock deposits of the London Clay Formation. No superficial deposits were listed due to their likely absence.

No surface water features were present within a 250m radius of the site. The nearest surface water feature was a pond in Stationers Park located ~600m southeast.

From analysis of hydrogeological and topographical maps, groundwater was anticipated at depth, below the cohesive, relatively impermeable soils of the London Clay Formation; however, some amounts of perched water may be present within particularly sandy/silty lenses of the London Clay Formation and/or within the shallow surface soils (i.e. Topsoil, Made Ground etc.), especially after periods of prolonged or intense rainfall. It was considered that groundwater was flowing in a north-easterly in line with the local topography.

2.8 BGS Borehole Records

A BGS borehole (TQ38NW303) located ~270m east of the site revealed a 0.20m capping of Topsoil over Made Ground consisting of sandy gravelly clay and brick to 3.1m bgl followed by a firm to stiff brown fissured slightly silty clay to 8.0m bgl. A stiff fissured grey silty clay with thin lamina structure and small pyrite nodules was then noted for the remainder of the borehole, a depth of 15.00m bgl. No groundwater was noted.

2.9 Flooding

A summary of the risk of various flooding types has been summarised in the following table.

Summary of Flood Risk		
Type of Flooding	Figure Reference	Risk
Rivers and Seas	Figure 4	The site and surrounding area was classified as Flood Zone 1 (i.e. an area at low risk from flooding from rivers and seas). The site and surrounding area also not anticipated to be at risk based on the 2070 – 2125 projection.
Reservoir	N/A	Flooding from reservoirs was unlikely on site and within the surrounding area.
Surface Water Flooding	Figure 5 and 6	The site itself was classified as being at very low risk from surface water flooding, both for current day and based on the 2040 – 2060 projection; however, the surrounding area was noted to increase to high risk.
Groundwater and Throughflow Flooding	N/A	The site is not within a groundwater flood alert area.
Sewer Flooding	N/A	Given their subterranean position, basements can be susceptible to flooding from sewers.
Critical Drainage Areas/Local Flood Risk Areas	Figure 7	The site was located in the south-western extreme of the “North of Hornsey High Street and West of the Mainline Railway” CDA (Group4_055)

2.10 Radon

A review of the freely available UK Health Security Agency radon database, UK Radon, indicated that the site was located within a 1km grid square, where the maximum radon potential of less than 1% was recorded for above ground structures. Basic radon protection measures are required in areas where more than 3% of houses are at or above the Action Level. The site was in an area where a risk assessment was not required.

2.11 Unexploded Ordnance Review

A detailed Unexploded Ordnance Risk Assessment carried out by 1st Line Defence on the 13th August 2025 referenced DA22141-00, found there to be a medium risk to the site from German and anti-aircraft UXOs. According to the official home office bombing statistics the borough of Hornsey sustained an overall high density of bombing with 355 items of ordnance within the 2,872acre borough, an average of 123.6 items per 1,000 acres. The report recommended site supervision and downhole support which was carried out during the site works onsite. The full report can be seen in Appendix F.

3.0 BASEMENT IMPACT ASSESSMENT

3.1 Scoping

A screening and scoping assessment was undertaken for the proposed development based on the supplementary planning document (SPD) for the London Borough of Haringey. This stage should identify any areas of concern and therefore focus efforts on further investigation. There are areas of concerns that the Screening process have highlighted.

- **Perched Water and Groundwater:** Whilst groundwater was anticipated at depth, below the cohesive, relatively impermeable soils of the London Clay Formation, some amounts of perched water may be present within particularly sandy/silty lenses of the London Clay Formation and/or within the shallow surface soils (i.e. Topsoil, Made Ground etc.), especially after periods of prolonged or intense rainfall. Given the proposed basement depth, it was possible that the basement may encounter perched water during construction. **This is to be taken forward for further assessment through a ground investigation and the installation of a monitoring well.**
- **Seasonal Soil Moisture and Volume Change Potential:** Anticipated geology considered the presence of mainly cohesive soils of the London Clay Formation which are likely to be subject to subsidence due to shrinkage-swelling. **The depth and volume change potential of the underlying soils should be investigated.**
- **Pressure Induced Settlement and Heave:** Given the overburden pressure release following excavation of soil, as well as the loading of retaining wall foundations, the pressure across the basement is likely to cause differential settlement and heave. **Regarding the bulk basement construction, care will need to be taken to ensure that the slab is protected through accommodating heave (primarily) and any seasonal if applicable.**
- **Retaining Wall Design:** Given the design of basements, retaining walls should be appropriately designed to withstand the horizontal pressure of adjacent strata. **Retaining walls should be appropriately designed.**
- **Instability During Excavation:** Stability issues may arise during the excavation through natural soils and Made Ground. **Specific measures to be undertaken throughout excavation and construction will be discussed within this report, and more specifically the construction method statement.**
- **Ground Movement and Nearby Assets:** Various buildings and structures were noted in close proximity to the site, with some having basements/lower ground floors evident, and others not; therefore, differential foundation depths would cause potential damage to the walls of nearby buildings, due to soil displacement following the excavation/installation of the basement. This may also cause damage to nearby roads, pavements and utilities. **A Ground Movement Assessment (GMA) could be undertaken to assess the soil displacement and damage to nearby buildings, roads, pavements and utilities; however, this was not included within the remit of this project.**

- **Sub-Surface Concrete in Aggressive Ground Conditions:** Concrete may corrode if unsuitable concrete is used. A suitable concrete class should be used for all sub-surface concrete used for all foundations, based on the levels of sulphates and the pH within the ground it is being constructed on/through. **Testing in accordance with BRE Special Digest is required to be undertaken and a concrete specification is to be provided.**
- **Surface Water Flooding and Site Drainage:** The site itself was classified as being at very low risk from surface water flooding, both for current day and based on the 2040 – 2060 projection; however, the surrounding area was noted to increase to high risk. The proposal will increase the soft landscaping cover to 268m², with a remaining area of 1,770m² of built area and hard landscaping. **The effect the proposed development will have on surface water flooding and the requirements to prevent surface water flooding and site drainage is to be discussed further within this report.**
- **Groundwater Flooding and Flow:** As perched water may be present, there was considered to be a risk of flooding from groundwater/perched water; however, this is considered to be low as a result of the anticipated cohesive nature of the soils. The basement may also obstruct subsurface water flow paths. **A groundwater monitoring well should be installed as part of the site investigation, as well as groundwater dip measurements following the site works, to investigate groundwater levels.**
- **Sewer Flooding:** Given their subterranean position, basements can be susceptible to flooding from sewers. **The effect the basement will have on the risk of sewer flooding and the requirements to prevent sewer flooding is to be discussed further within this report.**

A site-specific ground investigation has been undertaken to inform design, including provision of information on the existing foundations. The results of this investigation and subsequent engineering considerations are provided within this report.

The submission of a drainage scheme will likely be required. It is understood this will form part of the overall Structural Scheme and will be included in the Structural Engineers report.

A qualified arboriculturist should be consulted for advice on the impact of nearby trees to the construction of the basement.

4.0 SITE WORKS

4.1 Scope of Works

Site works were undertaken on 22nd May to 4th June 2026 and comprised the drilling of 2No. Cable Percussion Boreholes (BH1- BH2) to a depth of 20.45 – 40.45m bgl. Standard Penetration Tests were carried out at 1.00m intervals within boreholes, alternating with UT100 samples, from 5.00m the intervals changed to every 1.50m. A combined ground-gas/groundwater monitoring standpipe, with an internal diameter of 50mm, was installed to 10.00m bgl within both boreholes, with a response zone between 1.00 – 10.00m bgl.

2No. Foundation Exposures (TP2 – TP3) were hand excavated to 1.20m bgl, to expose the foundations of the existing building. A further two foundation exposure trial pits (TP1 and TP4) were attempted but due to service obstructions, the locations were unable to be progressed.

The location of the trial hole locations can be seen within Figure 8.

Prior to commencing the ground investigation, a walkover survey was carried out to identify the presence of underground services and drainage. Where underground services/drainage were suspected and/or positively identified, the exploratory position was relocated away from these areas.

As a further precautionary measure, the borehole was hand excavated to 1.20m below the local ground level (bgl) and scanned with a Cable Avoidance Tool (CAT scanner) to minimise the risk to services.

Upon completion of the drilling works, the trial holes were backfilled and made good, in relation to the surrounding area.

4.2 Sampling Procedures

Small disturbed samples were recovered from the trial holes at the depths shown on the trial hole records. Soil samples were generally retrieved from each change of strata and/or at specific areas of concern. Samples were also taken at approximately 0.5m intervals during broad homogenous soil horizons.

A selection of samples were despatched to a UKAS accredited laboratory for both geotechnical and chemical testing purposes.

5.0 ENCOUNTERED GROUND CONDITIONS

5.1 Soil Conditions

The trial holes were logged by a Ground and Water Limited representative, generally in accordance with BS EN 14688 'Geotechnical Investigation and Testing – Identification and Classification of Soil' and BS 5930 'Code of Practice for Ground Investigations'.

The ground conditions encountered within the trial holes constructed on the site did generally conform to that anticipated from examination of the geology map. A capping of Made Ground was noted to overlie bedrock London Clay Formation.

The succession of conditions and description of soils encountered in the trial holes in descending order is tabulated below.

Summary of Strata Encountered			
Strata	Top Depth (m bgl)	Base Depth (m bgl)	Thickness (m)
ASPHALT: (BH1-BH2)	GL	0.05	0.05
CONCRETE: (TP2-TP3)	GL	0.20 – 0.30	0.20 – 0.30
MADE GROUND: Brown gravelly SAND. Sand is fine to coarse; gravel is angular, fine to coarse, concrete, brick and mortar (TP2, BH1).	0.05 – 0.20	0.15 – 0.70	0.10 – 0.50
MADE GROUND: Brown grey sandy GRAVEL to Grey GRAVEL, Gravel is angular, fine to coarse type 1 gravels, boulder sized concrete and fine rounded flint. (TP3, BH1, BH2).	0.05 – 0.30	0.40 – 1.00	0.35 – 0.70
MADE GROUND: Soft dark grey silty CLAY (BH2)	0.70	1.30	0.60
MADE GROUND: Soft to firm brown sandy gravelly CLAY. Sand is fine, Gravel is angular, fine to coarse brick fragments and some roots. (BH1-BH2)	0.40	0.70 – 0.90	0.30 – 0.50
LONDON CLAY FORMATION: Soft to firm brown CLAY (BH1)	0.90	6.45	5.55
LONDON CLAY FORMATION: Firm to stiff brown CLAY (BH1 – BH2).	1.30 – 6.45	>20.45 – >40.45	>14.00 – >39.15

For details of the composition of the soils encountered at particular points, reference must be made to the individual trial hole logs within Appendix E of this report. A trial hole location plan can also be viewed within Figure 8.

5.2 Foundation Exposures

The hand excavation of 2No. Foundation Exposures (TP2 – TP3) were undertaken around the existing building onsite. The final depth of the foundations were unable to be located due to basement structure and service obstructions. A tabulated summary showing the depth and width of each foundation can be viewed below, as well as the bearing stratum.

Summary of Foundations Encountered			
Trial Hole	Depth of Foundation Exposure Pit (m bgl)	Width at the Base of Foundation (mm)	Bearing Stratum
TP2 (External Wall)	0.70	Did not encounter the base of the foundations due to the presence of basement.	Made Ground

Summary of Foundations Encountered			
Trial Hole	Depth of Foundation Exposure Pit (m bgl)	Width at the Base of Foundation (mm)	Bearing Stratum
TP3 (External Wall)	1.00	Did not encounter the base of the foundations due to the presence of basement.	Made Ground

5.3 Roots Encountered

Roots were noted to a proved depth of 0.90m bgl within BH1. Roots were not encountered within any other borehole or trial pit onsite. It must be noted that the chance of determining actual depth of root penetration through a narrow diameter borehole is low. Roots may be found to greater depths at other locations on the site, particularly close to trees and/or trees that have been removed both within the site and its close environs.

5.4 Groundwater Conditions

No groundwater strikes were encountered during the intrusive investigation. It should be noted that groundwater strikes may have been obscured by the drilling process.

Changes in groundwater level occur for a number of reasons including seasonal effects and variations in drainage. The investigation was undertaken in May - June 2026 when groundwater levels are likely to be approaching their annual minimum (lowest elevation). Exact groundwater levels may only be determined through long term measurements from monitoring wells installed on-site.

Two groundwater monitoring rounds are to be undertaken in late July/early August 2026. The results of this monitoring are to be provided within an updated version of the report.

5.5 Obstructions

No obstructions were noted in the drilling process within the cable percussion boreholes. TP1 and TP4 were attempted but due to service obstructions, the locations-were unable to be progressed.

6.0 IN-SITU AND LABORATORY TESTING

6.1 In-Situ Strength Testing

Standard Penetration Tests (SPTs) were undertaken as part of the site investigation.. The results of the SPT's have not been amended to consider hammer efficiency, rod lengths and overburden pressure in accordance with Eurocode 7. The test results are presented on the borehole logs within Appendix E. An interpretation of the in-situ geotechnical testing results is given in the table below. Soft spots are highlighted in red.

Interpretation of In-situ Geotechnical Testing Results				
Strata	SPT "N" Blow Counts	Equivalent Undrained Shear Strength (Cu) (kPa)	Soil Type Cohesive (Cu)	Trial Hole/s
London Clay Formation	6	30	Low	BH1/1.20 – 1.65m bgl
	10 – 15	50 – 75	Medium	BH1/2.00– 6.45m bgl BH2/3.00 – 5.45m bgl
	16 – 30	80 – 150	High	BH1/7.50– 18.45m bgl BH2/8.00 – 20.45m bgl
	31 – 50	155 – 250	Very High	BH1/19.50– 40.45m bgl

It must be noted that field measurements of undrained shear strength (Cu) are dependent on a number of variables including disturbance of sample, method of investigation and also the size of specimen or test zone.

6.2 Geotechnical Laboratory Testing

A programme of geotechnical laboratory testing, scheduled by Ground and Water Limited and carried out by an accredited geotechnical testing laboratory was undertaken on samples recovered. Details of the specific tests used in each case are given below.

Standard Methodology for Laboratory Geotechnical Testing		
Test	Standard	Number of Tests
Atterberg Limit Tests	BS1377:2016:Part 2:Clauses 3.2, 4.3 & 5	27
Undrained Triaxial Compression Test	BS1377:2016:Part 7:Clause 8	10
Water Soluble Sulphate and pH Test	BS1377:2018:Part 3:Clause 5	2
BRE Special Digest 1 Tests	BRE Special Digest 1 "Concrete in Aggressive Ground (BRE, 2005).	3

6.2.1 Atterberg Limit Testing

A précis of Atterberg limit testing undertaken can be seen tabulated below. The test results are presented within Appendix F.

Atterberg Limit Tests Results Summary							
Stratum	Moisture Content (%)	Passing 425 µm sieve (%)	Modified PI (%)	Soil Class	Consistency Index (Ic)	Volume Change Potential	
						BRE	NHBC
London Clay Formation	24.4 – 30.4	100	33-55	CH - CV	Stiff	Medium – High	Medium – High
- NP – Non-plastic - BRE Volume Change Potential refers to BRE Digest 240 (based on Atterberg results)							

Atterberg Limit Tests Results Summary							
Stratum	Moisture Content (%)	Passing 425 μm sieve (%)	Modified PI (%)	Soil Class	Consistency Index (Ic)	Volume Change Potential	
						BRE	NHBC
- Soil Classification based on British Soil Classification System. - Consistency Index (Ic) based on BS EN ISO 14688-2:2018.							

6.2.2 Moisture Deficit Assessment

The results of the Atterberg Limit tests were analysed to determine the Liquidity Index of the samples, to give an indication as to whether the samples recovered showed a moisture deficit as well assessing their degree of consolidation. Liquid Limit analyses were undertaken to assess whether there were any potentially significant moisture deficits within the samples tested. A potential moisture deficit, caused by lithology was noted within BH1 at 1.20m, 4.50m, 19.50m, 24.00m, 25.90m, 38.00m bgl and BH2 at 2.45m, 17.00m, 20.00m bgl.

6.2.3 UT100 Triaxial Testing

A précis of the results of Undrained Triaxial Compression Tests undertaken on 12No UT100 samples recovered from the London Clay Formation can be seen tabulated below.

Summary of Undrained Triaxial Compression Testing Results						
Sample	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Mode of Failure	Shear Strength (kPa)	Classification
London Clay Formation BH1 at 3.00-3.45m (Brown silty CLAY)	31	1.88	1.49	Compound	68	Medium
London Clay Formation BH1 at 10.00-10.45m (Brown silty CLAY)	30	1.91	1.47	Brittle	89	High
London Clay Formation BH1 at 15.00-15.45m (Brown silty CLAY)	27	1.94	1.53	Compound	138	High
London Clay Formation BH1 at 21.00-21.45m (Brown silty CLAY)	27	1.93	1.51	Compound	154	Very High
London Clay Formation BH1 at 25.50-25.95m (Brown silty CLAY)	25.8	1.97	1.56	Brittle	145	High
London Clay Formation BH1 at 34.50-34.95m (Brown silty CLAY)	26	1.95	1.55	Brittle	308	Extremely High
London Clay Formation BH2 at 2.00-2.45m (Brown silty CLAY)	33	1.86	1.40	Plastic	69	Medium
London Clay Formation BH2 at 6.50-6.95m (Brown silty CLAY)	29	1.92	1.49	Compound	114	High
London Clay Formation BH2 at 9.50-9.95m (Brown silty CLAY)	33	1.97	1.48	Compound	110	High
London Clay Formation BH2 at 12.50-12.95m (Brown silty CLAY)	32	2.00	1.52	Compound	142	High
London Clay Formation BH2 at 12.50-12.95m (Brown silty CLAY)	27.8	1.98	1.55	Brittle	120	High
London Clay Formation BH2 at 18.50-18.95m (Brown silty CLAY)	51	1.94	1.28	Compound	172	Very High

7.0 ENGINEERING CONSIDERATIONS

7.1 Soil Characteristics and Foundation Considerations

A summary of the soil characteristics following the intrusive site investigation and laboratory testing and the relevant foundation considerations has been provided below. The following information from the ground investigation was considered pertinent to the design of foundations.

- Foundations should be taken through any Made Ground/Topsoil and either into, or onto a suitable underlying natural stratum of adequate bearing characteristics.
- Foundations should be designed in accordance with soils of medium volume change potential.
- The design and construction of the basement and associated structural elements would need to take into account the volume change potential of the respective soils.
- The loads of proposed foundations should not exceed the allowable bearing capacity of the soils they are founding upon.
- Foundations must not be placed within fresh root penetrated and/or desiccated soils with volume change potential. It is recommended that foundations are taken at least 300mm into non-fresh root penetrated strata if the soils have volume change potential, or into soils of no volume change potential.
- The influence of trees on or surrounding the site will need to be taken into account in final design (NHBC Standards Chapter 4. 2) (tree rings).
- Any water ingress must be prevented from entering foundation trenches and excavations must be kept dry and either concreted or blinded as soon after excavation as possible. If water were allowed to accumulate within the excavation for even a short period of time, an increase in heave occur. The shear strength will also be reduced, resulting in lower bearing capacities, resulting in increased settlements. Instability issues may arise within the foundation trenches, in case of perched water being present.
- Final designs for the foundations should be carried out by a suitably qualified Engineer based on the findings of this investigation and with reference to the anticipated loadings, serviceability requirements for the structure and the developments proximity to former, present, and proposed trees.

7.2 Bearing Capacity Analysis

For basement foundations, the ground level at the nearest borehole (BH2) is ~41.55m AOD. With the proposed basement formation level antiquated to be ~37.65m AOD, the basement would be founded 3.90m below ground level of the location of BH2. Based on the borehole log, this would be into the London Clay Formation, on competent soils and at a moisture stable depth. A recommended maximum allowable bearing capacity of 150kPa is recommended for foundations at 37.65m AOD. Soil displacement upon construction is likely to be moderate to high.

For any new foundations remote from the basement, they should bypass any Made Ground/Topsoil and soft spots of the London Clay Formation and found onto competent, moisture stable soils of the London Clay Formation. Foundations should also extend 300mm below any fresh root penetration and take into account NHBC tree rings. Based on this, foundations are recommended to extend to ~1.50m bgl and be based on a maximum allowable bearing capacity of 100kPa at ~37.65m AOD Soil

displacement upon loading is likely to be moderate to high.

7.3 Geotechnical Analysis

This section of the report states suitable geotechnical parameters for the soils encountered as well as analysis the bearing capacity of the soils. A settlement/heave analysis was also undertaken following the construction of the proposed development using Pdisp from Oasys.

7.3.1 Geotechnical Parameters for Modelling

Following a literature review from well documents publications, the short-term and long-term Young's Modulus (E short term and E') has been produced. The parameters, shown below, were used when undertaking the settlement/heave analysis within Pdisp.

Summary of Geotechnical Parameters								
Geological Strata	Depth (m bgl)		Short-term Young's Modulus (E_u short term) (kPa)		Long-term, Young's Modulus (E' long term) (kPa)		Poisson's Ratio	
	Top	Base	Top	Base	Top	Base	Short Term	Long Term
Made Ground	GL	1.30	10,000.00	10,000.00	10,000.00	10,000.00	0.45	0.20
London Clay Formation	1.30	28.78	23,579.50	100,000.00	17,684.62	75,000.00	0.45	0.20
	28.78	40.00	100,000.00	100,000.00	75,000.00	75,000.00	0.45	0.20

Made Ground

Made Ground was modelled between ground level and 1.30m bgl.

A short-term Young Modulus (E_u) of 10MPa was suitable and on the conservative side, regarding Made Ground encountered on site.

It was considered suitable for the long-term Youngs Modulus (E') and E_u to be equal, given that these soils are more permeable and to limit the level of anticipated Young Modulus at a representative value.

A short-term Poisson's Ratio of 0.45 and a long-term Poisson's Ratio of 0.20 was considered suitable for these soils, given their variable nature.

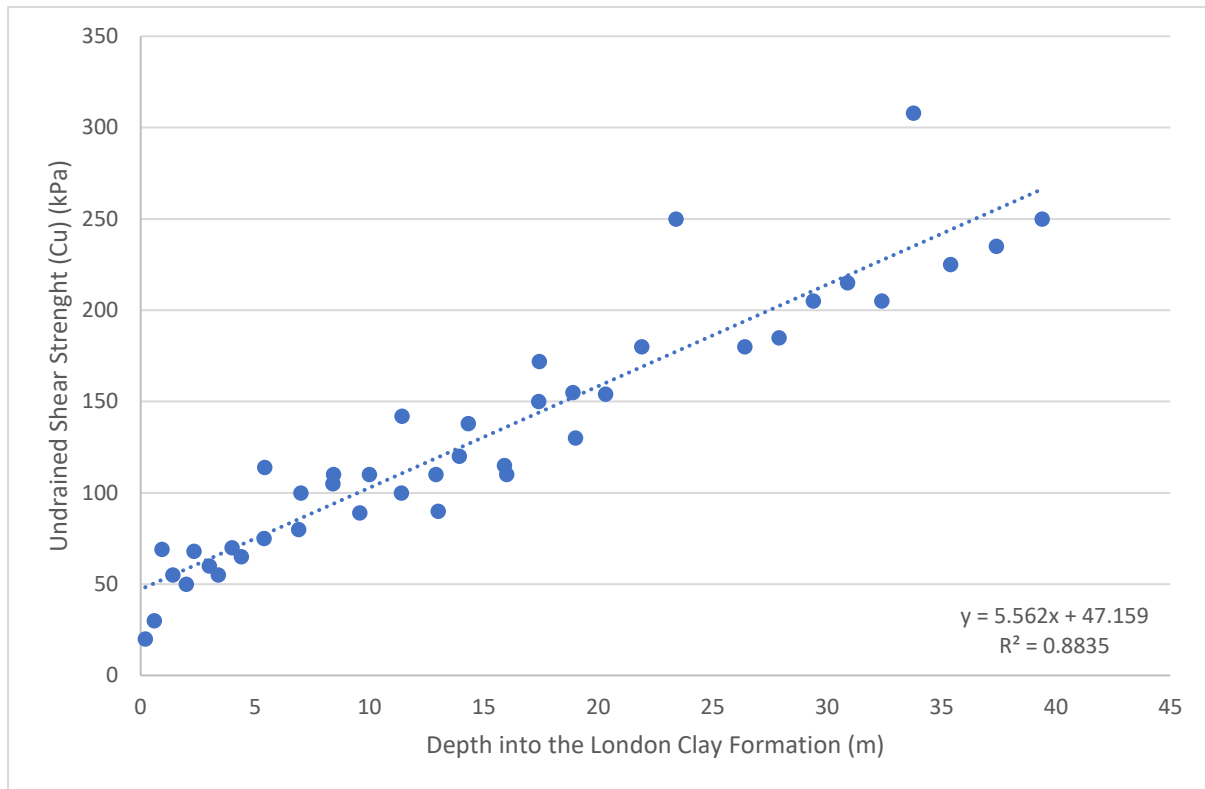
London Clay Formation

Cohesive soils of the London Clay Formation were modelled between 1.30 – 40.00m bgl.

Where SPT "N" Values were undertaken, the Undrained Shear Strength (C_u) could be calculated by multiplying by 5, as stated by Stroud (1974).

A graphical plot was produced assessing how the undrained shear strength increased with depth into the London Clay Formation. The equation using site specific data was: $C_u = (5.562 \times \text{depth into the LCF}) + 47.159$. The Rsquared value of 0.8835 indicated that the correlation was strong and that this equation was suitable for the relatively homogenous soils of the London Clay Formation, which are known to uniformly increase in undrained shear strength with depth. The plot can be seen below. This was similar to the design line from "Burland JB, Standing, JR, and Jardine, FM (2001) Building response

to tunnelling, case studies from construction of the Jubilee Line Extension CIRIA Special Publication 200": $C_u = (\text{depth into the LCF} \times 8) + 50$.



It is considered likely that once a C_u of 200kPa is found within the London Clay Formation, it is unlikely that it will increase further. Therefore, using the site specific equation for C_u , it was calculated that the C_u would reach 200kPa at ~27.48m into the London Clay Formation, which equates to a level of 28.78m AOD. Below 28.78m AOD, the C_u of the London Clay Formation was considered to be uniform, until its base at 0.00m AOD.

The relationship between E_u and C_u is generally dependent on strain levels. For small strains, a ratio of 500 can be adopted based on well documented publications. This is also reflected for the London Clay Formation, after extensive research, within graphs depicting strains and E_u/C_u ratios included in "Burland JB, Standing, JR, and Jardine, FM (2001) Building response to tunnelling, case studies from construction of the Jubilee Line Extension CIRIA Special Publication 200".

A ratio of E' to E_u of ~0.75 was considered a sensible approach for this stage in the design, for cohesive soils.

A short-term Poisson's Ratio of 0.45 and a long-term Poisson's Ratio of 0.20 was considered suitable for these soils, given their cohesive nature.

7.3.2 Settlement/Heave Analysis

Analyses of vertical ground movements, using the Mindlin analysis method within Pdisp software, was undertaken to assess the potential movements resulting from changes of net vertical pressure changes. Geotechnical parameters noted in the previous section of this report were used for the model. A rigid boundary at depth was considered at 0.00m AOD., for calculation purposes. The inputs

and outputs of this analysis can be viewed within Appendix I.

Five representative stages of construction, in terms of the net change in vertical pressure, have been modelled. These were considered to adequately approximate the movements rising from the basement construction.

- **Stage 1:** Excavation of the retaining wall voids, with short-term conditions;
- **Stage 2:** Loads associated with the construction of the retaining walls, with short-term conditions;
- **Stage 3:** Stage 2 loads and loads associated with the mass excavation of the basement footprint, with short-term conditions;
- **Stage 4:** Stage 3 loads, as well as loads associated with the construction of the basement slab, with short term conditions. The basement is fully constructed from this stage onwards;
- **Stage 5:** Stage 4 loads, for long-term conditions.

The overburden pressure release following the excavation and removal of soils was based on a specific weight of soil of 19kN/m. Based on a proposed excavation of 3.90m of soil, an overburden pressure release of 74.10kN/m². The overburden pressure release was modelled at 3.90m bgl.

Retaining wall loads were modelled as extending 1.00m towards the centre of the basement and as having a representative uniform load of 30.00kN/m² throughout construction, increasing to 60.00kN/m² once the basement slab is cast and all foundations are fully loaded. This was selected in order not to underestimate the heave and overestimate any settlement. The load of the basement slab was unknown at the time of reporting and was assumed to be 10kN/m². All loads were modelled at 3.90m bgl.

A tabulated summary of all applied loads, at each stage/model, can be viewed below.

Summary of Net Bearing Pressure Changes for PDisp Analysis				
Description	Applied Load (+ive)/ Load Removal (-ive) (kN/m ²)			
	Stage 1	Stage 2	Stage 3	Stage 4 and 5
Excavation of Retaining Wall Voids	-74.10			
Construction of Retaining Walls		30.00	30.00	60.00
Mass Excavation Void			-74.10	-74.10
Construction of Basement Slabs				10.00

The method stated above was considered to comprise a comprehensive and reasonably conservative approach, in order to estimate the maximum potential heave and settlements.

A tabulated summary concluding the amount of soil displacement shown at the basement depth within the contour plots can be viewed below. It should be noted that the soil displacement between models are not cumulative values; therefore, the amount of soil displacement between models should not be added together as each model shows each construction stage individually.

Settlement/Heave Analysis	
Model	Soil Displacement
Model 1	4.35mm maximum heave. No settlement.

Settlement/Heave Analysis	
Model	Soil Displacement
Model 2	1.76mm maximum settlement. No heave.
Model 3	12.80mm maximum heave. No settlement.
Model 4	10.60mm maximum heave. Negligible settlement.
Model 5	18.80mm maximum heave. Negligible settlement.
Diagrammatic representation can be viewed within Appendix I. Please note that the above figures should not be added together (or be superimposed) and that they represent anticipated movements at different accumulated stages of construction, in order to approach and test all expected combinations of loading regimes (models).	

A maximum amount of heave was noted following the mass excavation of the basement void (Model 3), and was noted to be the maximum amount of heave during the construction phases. Once constructed, the maximum amount of heave increased between short term conditions (Model 4) and long term conditions (Model 5); therefore, the highest risk of movement will likely occur during the construction of the basement and later through long-term heave of the constructed basement.

7.3.3 Buoyancy

Given the soil is constructed through cohesive soils and the potential for significant amounts of groundwater is low, buoyancy does not need to be accounted for in structural design.

7.3.4 Additional Comments

Regarding the bulk basement construction, care will need to be taken to ensure that the slab is protected through accommodating heave. Heave protection measures will need to be incorporated.

The final design of the basement structure will also need to take into account environmental factors, such as ventilation/protection against ground gas; however, investigation into this was not included within the scope of this report.

Final designs for the foundations should be carried out by a suitably qualified Engineer based on the findings of this investigation and with reference to the anticipated loadings, serviceability requirements for the foundations. A Structural Engineer will also need to review the anticipated ground movements and assess their potential impact on the existing structure and neighbouring properties. It must be noted that finalised construction will aid the structural stability of the neighbouring walls, reducing the risk of the seasonal movements noted during the structural works.

7.4 Retaining Walls, Excavations and Stability

Shallow excavations in the Made Ground are likely to be marginally stable at best. Long, deep excavations, through these strata and into the underlying London Clay Formation are likely to become unstable.

Appropriate propping and support should be incorporated during construction of the basement.

The excavation of the basement must not affect the integrity of the adjacent structures beyond the boundaries. The excavation must be supported by suitably designed retaining walls. It is considered unlikely that battering the sides of the excavation, casting the retaining walls and then backfilling to the rear of the walls would be suitable given the close proximity of neighbouring walls.

The retaining walls for the basement will need to be constructed based on the soils encountered with an appropriate angle of shear resistance (Φ') and effective cohesion (C') for the ground conditions encountered, regarding long-term considerations, as well using an appropriate undrained shear strength C_u for short-term considerations.

The overlying Made Ground needs to be considered in the design of the basement. A conservative value of C_u will need to be considered.

Based on the ground conditions encountered within the boreholes the following parameters tabulated below could be used in the design of retaining walls, for a long-term consideration. These have been designed based on the in-situ strength testing profile recorded, results of geotechnical classification tests and reference to literature.

Retaining Wall/Basement Design Parameters					
Strata	Unit Volume Weight (kN/m ³)	Cohesion Intercept (c') (kPa)	Angle of Shearing Resistance ($^\circ$)	K_a (Rankine)	K_p (Rankine)
Made Ground	~19	0	12	0.66	1.52
Cohesive London Clay Formation	~20 – 22	0 – 5	24	0.42	2.37

It should be noted that the K_a and K_p values presented in the table, are shown for guidance and they are derived from the Rankine theory for soil pressures. The values for angles of internal friction provided are considered to be characteristic values of the soils encountered.

According to C760, a design method (e.g. EC7) should be adopted and followed through the whole design process. In addition, the following considerations should be considered during the design process:

- Appropriate consideration of groundwater levels.
- Surcharge pressure equivalent to the pressures of any adjacent buildings.
- Surcharge pressures from potential piling work platforms and heavy plant traffic.

Unsupported earth faces formed during excavation may be liable to collapse without warning and suitable safety precautions should therefore be taken to ensure that such earth faces are adequately supported before excavations are entered by personnel.

Ground Instability Recommendations

No significant instability issues related with soils are expected and no instability issues were observed during the ground investigation. Specific measures should be included in a competent Construction Method Statement for the works on this site by the structural engineer and the contractor. If instability is noted, the following could be applied for good workmanship and mitigation of any risk. It should be noted that these are indicative.

- Where soft/loose spots are encountered, trench sheets should be left in. Alternatively, a back prop with precast lintels or sacrificial boards should be installed. If the soil support to the ends of the lintels is insufficient, brace the ends of the PC lintels with 150x150 C24 timbers

and prop with Acrows diagonally back to the ground.

- Where voids are present, trench sheeting with 75mm diameter holes should be installed, to allow the concrete to flow behind the trench sheeting thereby filling any voids encountered in soils behind.
- Prior to casting, a layer of DPM should be installed between trench sheeting (or PC lintels) and new concrete. The lintels should be cut into the soil by 150mm either side of the pin. A site stock of a minimum of 10 lintels should be present to prevent delays due to ordering.

7.5 Sub-Surface Concrete Design

Concrete to be placed in contact with soil or groundwater must be designed in accordance with the recommendations of Building Research Establishment Special Digest 1, 2005, 'Concrete in Aggressive Ground' considering the pH of the soils. For the classification given below, the "mobile" and "brownfield" case was adopted given the geology encountered and the residential use of the site. This assessment was based on the results of laboratory testing summarised within Section 5, specifically relating to sulphates, pH and other water soluble chemicals.

Made Ground

The water-soluble sulphates in the Made Ground were noted to be 76 – 960mg/l, with a pH of 7.5 – 11.9, from chemical laboratory testing.

According to BRE Special Digest 1, 2005, 'Concrete in Aggressive Ground' a Sulphate Design Class of DS-2 should be used for sub-surface concrete in contact with the Made Ground. Table C1 of the Digest indicated an ACEC (Aggressive Chemical Environment for Concrete) classification of AC-1s.

London Clay Formation

According to Box C6 of BRE Special Digest 1, 2005, 'Concrete in Aggressive Ground', the London Clay Formation fell within a list of UK geological formations known to contain pyrite. It was therefore required to consider the levels of total potential sulphate in the classification process.

The water-soluble sulphates in the London Clay Formation were noted to be 490 - 6100mg/l, with a pH of 7.7 – 9.1, from chemical laboratory testing. The total potential sulphate (3x total sulphur) was 0.681 – 1.719%.

According to BRE Special Digest 1, 2005, 'Concrete in Aggressive Ground' a Sulphate Design Class of DS-5 should be used for sub-surface concrete in contact with the London Clay Formation. Table C1 of the Digest indicated an ACEC (Aggressive Chemical Environment for Concrete) classification of AC-4.

It is prudent to note that pyrite nodules may be present within the London Clay Formation. Pyrite can oxidise to gypsum and this normally only occurs in the upper weathered layer, but excavation allows faster oxidation and water-soluble sulphate values can rapidly increase during construction. Therefore, rising sulphate values should be considered should ferruginous staining/pyrite nodules be encountered within the London Clay Formation.

7.6 Roads and Hardstanding Design

This section provides information relating to the construction of roads and hardstanding, for each strata encountered. All materials should be proof rolled and compacted during installation.

Made Ground

Where roads and hardstanding are to be founded on Made Ground, a CBR value of 1% should be adopted, as a result of the variable nature of Made Ground in terms of consistency, strength and compressibility.

London Clay Formation

Roads and hardstanding constructed on the cohesive London Clay Formation should be designed based on a CBR value of 2.5%. This is based on reference to Table C1 of TRL1132 and average construction conditions. Based on wet conditions a CBR of 2.0% should be adopted, with dry conditions a CBR of 2.5% being applicable. These clay-based soils (poorly drained) with plasticity indexes generally greater than 20% are likely to be non-frost susceptible.

7.7 Hydrogeological Effects, Flooding and Surface Water Disposal

Basements have potential to greatly impact hydrological and hydrogeological regimes. Numerous comments and considerations reflecting on the relationship between the basement and groundwater/surface water have been discussed below.

7.7.1 Basement Construction

If the construction works take place during the winter months, when the groundwater level is expected to be at its higher elevation, water could accumulate thus dewatering could be required to facilitate the construction and prevent the base of the excavation blowing before the slab was cast. **The lower ground floors must be suitably tanked to prevent ingress of groundwater and also surface water run-off. A dewatering or permitting grout contingency plan should be included within the Construction Method Statement and considered in the final design. As there will be potential for groundwater to collect behind the retaining walls, the basement should be waterproofed and designed to withstand hydrostatic pressures in accordance with BS8102:2009: Code of Practice for the Protection of Below Ground Structures against Water from the Ground.**

Should groundwater/perched water be encountered across the site, dewatering from sumps introduced into the floor of the excavation may be required. Consideration could be given to creating a coffer dam using contiguous piled or sheet piled walls to aid construction below the perched water table if groundwater becomes a significant issue. **The advice of a reputable dewatering company should be sought.**

7.7.2 Site Drainage

The majority of new developments are encouraged to use Sustainable Urban Drainage Systems (SUDS) to manage surface water drainage. This ensures that any volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the proposed development unless specific off-site arrangements are made and result in the same effect.

The principles of SUDS and the requirements of the London Plan Policy 5.13 Sustainable Drainage should be applied to reduce the risk of flooding from surface water ponding and collection associated with the construction of the basement.

In accordance with the London Plan Policy 5.13 Sustainable Drainage the surface water run-off should be managed as close to its source as possible in line with the following drainage hierarchy.

- Rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
- Rainwater infiltration to ground at or close to source
- Rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
- Rainwater discharge direct to a watercourse (unless not appropriate)
- Controlled rainwater discharge to a surface water sewer or drain
- Controlled rainwater discharge to a combined sewer.

Drainage should be designed and implemented in ways that deliver other policy objectives of this Plan, including water use efficiency and quality, biodiversity, amenity and recreation.

Soakage testing in accordance with BRE365 was beyond the scope of this investigation.

Any soakaways should be located sufficiently away from buildings and infrastructure, in order to prevent undermining of foundations. Additional drainage may be considered should significant amounts of water be encountered.

The submission of a Sustainable Urban Drainage Scheme (SUDS) is likely to be required for this site due to the proposed development increasing the amounts of hardstanding.

Consultation with the Environment Agency must be sought regarding any use that may have an impact on groundwater resources, abstractions and surface water features/watercourses.

7.7.3 Additional Comments

The site itself was situated on Unproductive Bedrock Strata associated with the London Clay Formation, and therefore the actual water table was anticipated to be at depth; however, perched water may be encountered at shallower depths, specifically within sandy/silty bands of the London Clay Formation, or perched on top of the London Clay Formation, especially after periods of prolonged or intense rainfall. **This should be considered in final design.**

Due to the relatively low permeability rates of the cohesive soils, groundwater is more likely to flow through the more permeable capping soils, be it Made Ground or Topsoil. As the proposed basement will bypass these soils and extend into the London Clay Formation, there will be a lateral barrier for perched water flow; however, given the limited quantity of the perched water anticipated and encountered, no adverse effect on groundwater flow was anticipated.

Given their subterranean position, lower ground floors can be susceptible to flooding from sewers. In order to minimise the risk of sewer flooding to the development, all subterranean development must be connected to the sewerage network, installed with a positively pumped non-return valve device.

Consultation with the Environment Agency must be sought regarding any use that may have an impact on groundwater resources, abstractions and surface water features/watercourses.

7.8 Discovery Strategy

A full contamination assessment was beyond the scope of this investigation, where targeted sampling was not undertaken. There may be areas of contamination that have not been identified during the course of the intrusive investigation (e.g. underground storage tanks). Such occurrences may be

discovered during the construction phases for the redevelopment of the site.

Groundworkers should be instructed to report to the Site Manager any evidence for such contamination; this may comprise visual indicators, such as fibrous materials within the soil, discolouration, or odours and emission. Upon discovery advice must be taken from a suitably qualified person and then the Local Authority will need to be informed.

7.9 Waste Disposal

The excavation of foundations and other soils is likely to produce waste which will require classification and then recycling or removal from site.

Under the Landfill (England and Wales) Regulations 2002 (as amended), prior to disposal, all waste must be classified as either: Inert; Non-hazardous; or Hazardous.

The Environment Agency's Hazardous Waste Technical Guidance (WM3) document outlines the methodology for classifying wastes. Once classified the waste can be removed to the appropriately licensed facilities, with some waste requiring pre-treatments prior to disposal.

Following the investigation, 6No. samples were submitted to the analytical laboratory to undergo a suite of testing for contamination testing, as discussed in the previous sections. Sampling depths were chosen to reflect the receptor of concern, human health, and typically comprised a surface or near surface sample and periodically to 1.00m bgl. Any horizon where olfactory or visual evidence of contamination was present was also sampled.

Based on a risk phase analysis of the chemical laboratory test results, in accordance with EC Hazardous Waste Directive and undertaken by Ground and Water Limited, all soil samples of Made Ground encountered on-site were NON-HAZARDOUS with the exception of BH2/0.30m which had a Hazardous classification due to having a high pH of 11.9 and elevated Zinc. The results of the assessment are given within Appendix H.

Soils containing asbestos are considered HAZARDOUS if the level of asbestos in the Made Ground is above the threshold of 0.1% or visual fragments can be observed. As quantification of the asbestos in the sample recovered from TP2/0.20m bgl was <0.001% (less than 0.1%) the Made Ground with asbestos detected in was NON-HAZARDOUS with respect to waste classification.

It is important to note that whilst we consider our in-house assessment tool to be an accurate interpretation of the requirements of WM3, therefore producing an initial classification in accordance with the guidance, this method classifies soils as either non-hazardous or hazardous and landfill operators have their own assessment tools and can often come to different conclusions. As a result, some landfill operators could refuse to take apparently suitable waste. It is recommended that the receiving landfill views the results of this assessment and the chemical laboratory results to determine their own classification.

In addition to the samples described above, 2No. samples were scheduled to undergo Waste Acceptance Criteria (WAC) testing with single batch leachate. The results indicate that 1No. sample of Made Ground conformed to the Inert Waste Classification (BH1/0.30-0.50) and 1No. sample of Made Ground (BH2/0.30 – 0.50) was classified as not-inert waste as a result of high concentrations of

antimony.

It should be noted that the receiving landfill may see the presence of Made Ground within the soils to be indicative of a non-hazardous classification despite the presence of the WAC testing certificates indicating that it is inert. Therefore, it should be considered that all Made Ground is classified as Non-hazardous, subject to finalising with the receiving landfill.

Where contaminated soils are to be removed, they should be placed on an impermeable membrane (visqueen or similar) to ensure that no cross-contamination of soils occurs.

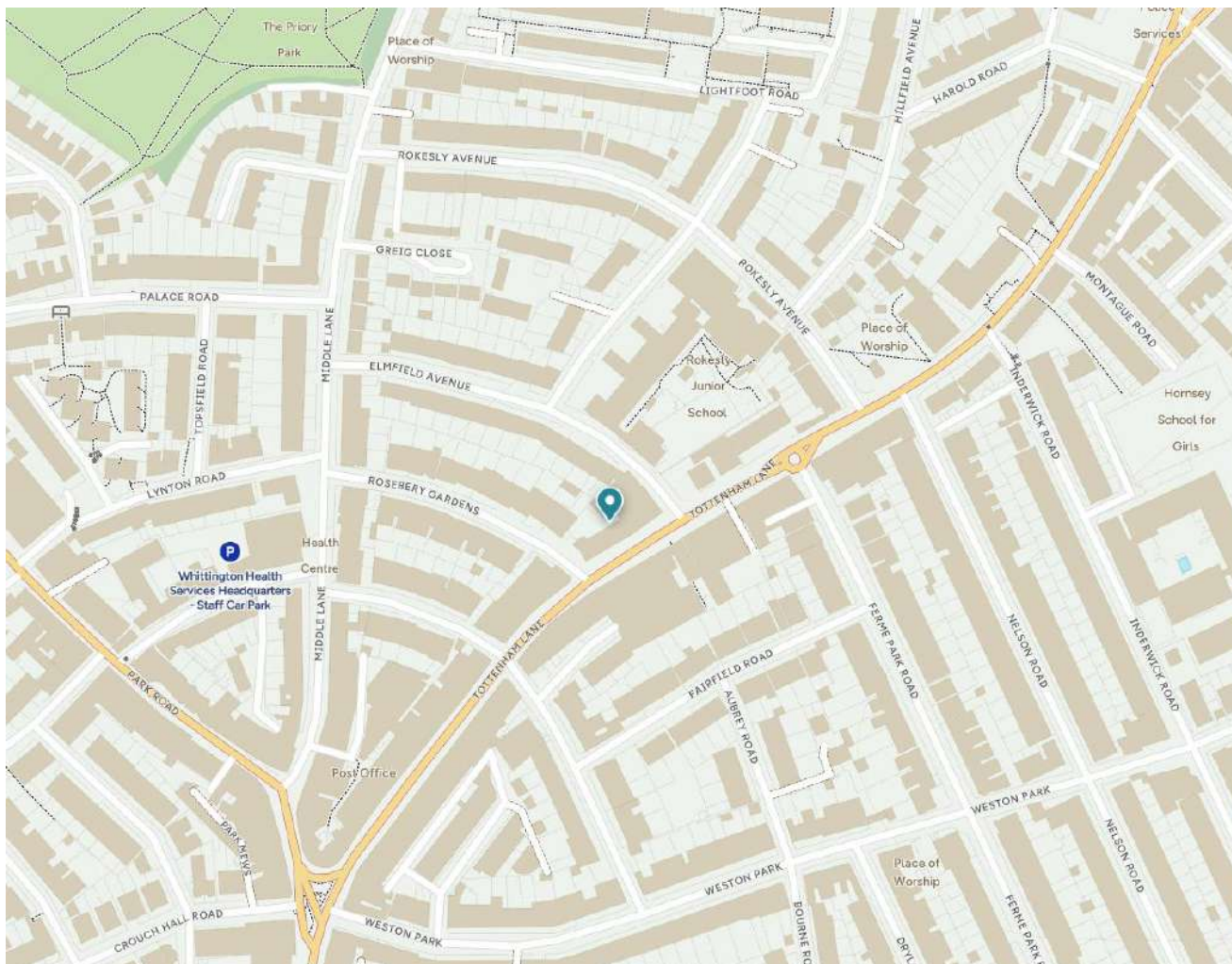
7.10 Duty of Care

Groundworkers must maintain a good standard of personal hygiene including the wearing of overalls, boots, gloves and eye protectors and the use of dust masks during periods of dry weather.

To prevent exposure to airborne dust by both the general public and construction personnel the site should be kept damp during dry weather and at other times when dust would be generated as a result of construction activities.

The site should be securely fenced at all times to prevent unauthorised access. Washing facilities should be provided and eating restricted to mess huts.

FIGURES



 Site Location

Not to Scale

YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG

YMCA London City and North

July 2026

Figure 1: Site Location Plan

GWPR7122





 Site boundary

Not to Scale

YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG

YMCA London City and North

July 2026

Figure 2: Site Development Area

GWPR7122





Site boundary

Not to Scale

YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG

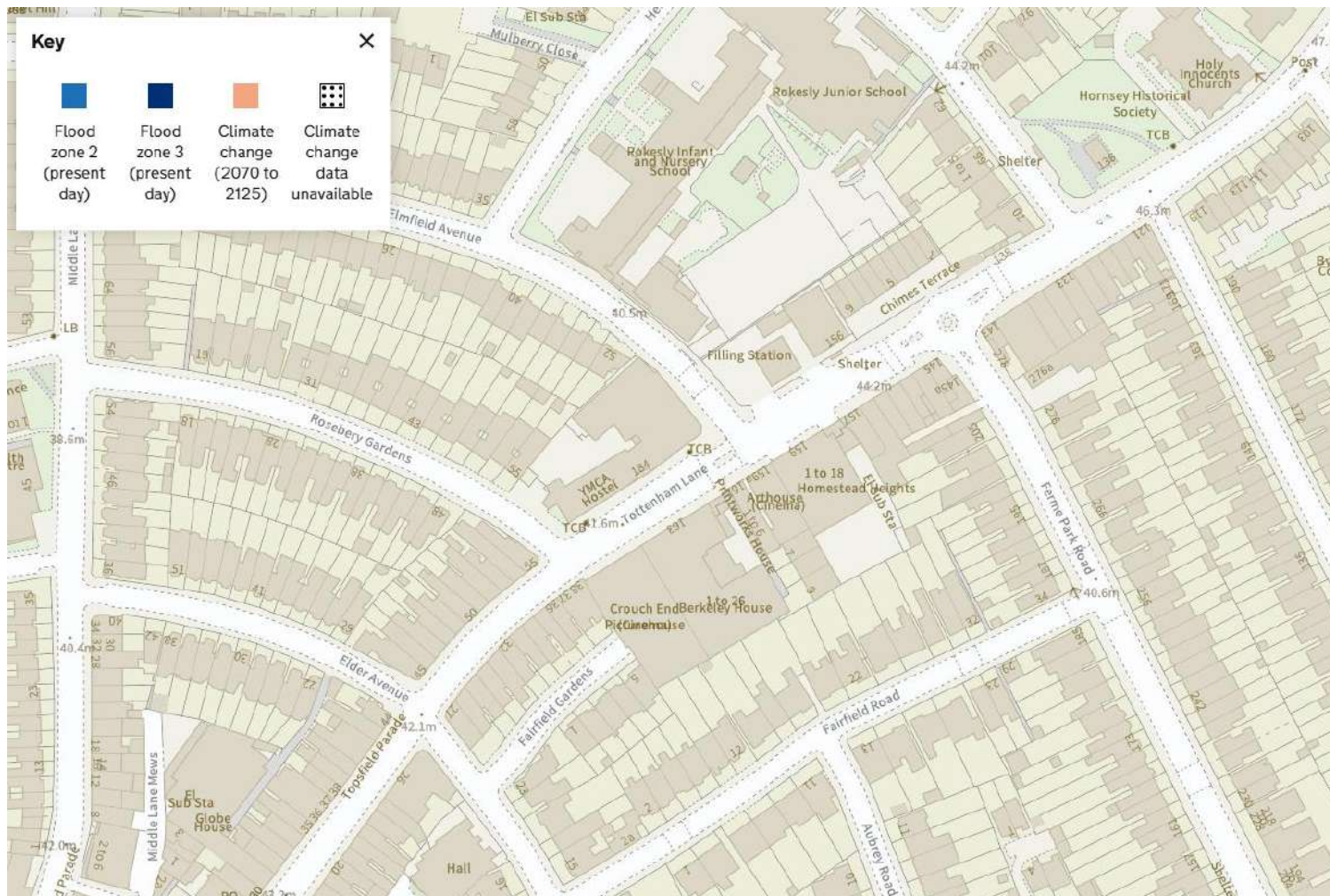
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Figure 3: Aerial View of the Site

GWPR7122





Not to Scale

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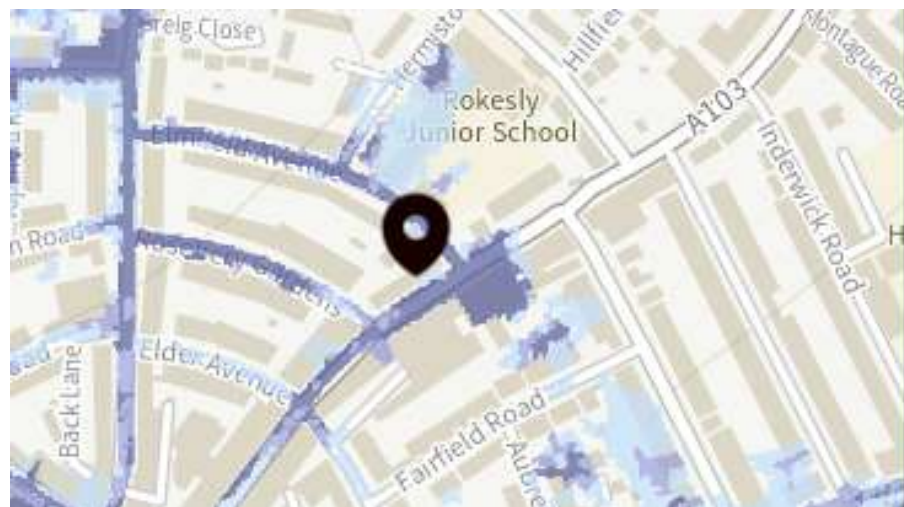
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Figure 4: Flood Map For Planning

GWPR7122





Yearly chance of flooding



Not to Scale

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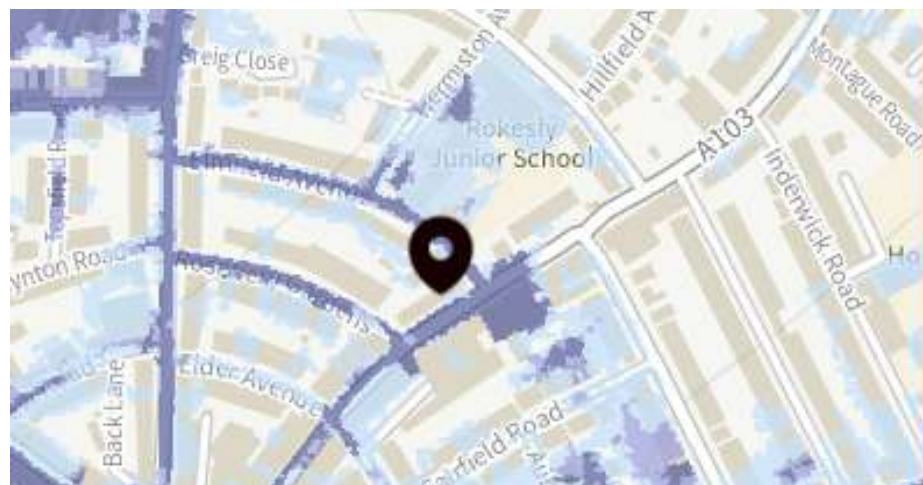
YMCA London City and North

July 2026

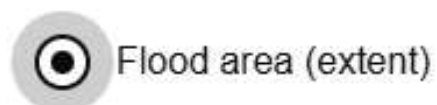
Figure 5: Surface Water Flood Risk Map (Current Day)

GWPR7122





Yearly chance of flooding between 2040 and 2060



- High chance
- Medium chance
- Low chance

Not to Scale

YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG

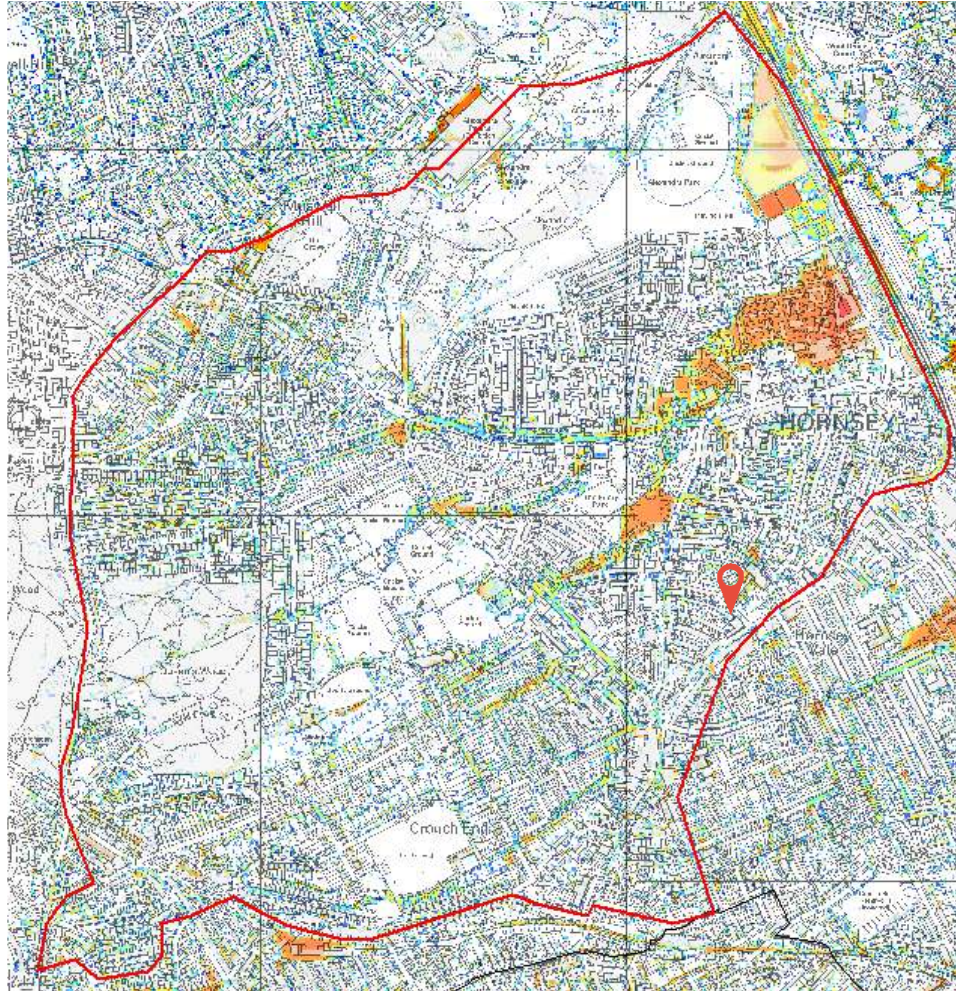
YMCA London City and North

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Figure 6: Surface Water Flood Risk Map (2040 – 2060
Projection)

GWPR7122





 Site Location

Not to Scale

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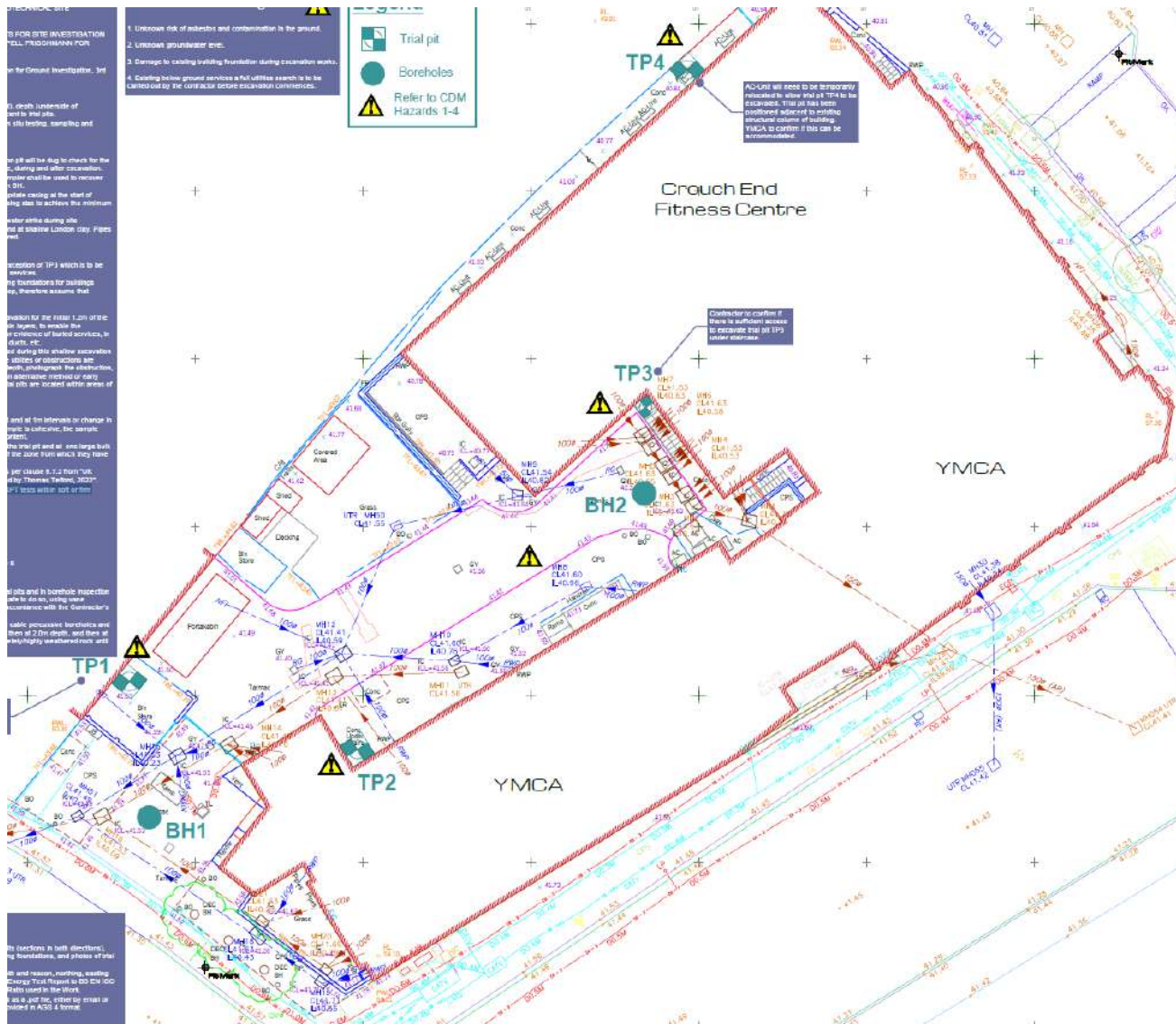
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Figure 7: Critical Drainage Area Map

GWPR7122





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YMCA London City and North

July 2026

Figure 8: Trial Hole Location Plan

GWPR7122



APPENDIX A: Conditions and Limitations

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The report has been prepared on the basis of information, data and materials which were available at the time of writing. Accordingly, any conclusions, opinions or judgements made in the report should not be regarded as definitive or relied upon to the exclusion of other information, opinions and judgements.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief; as such these do not necessarily address all aspects of ground behaviour at the site. No liability is accepted for any reliance placed on it by others unless specifically agreed in writing.

Any decisions made by you, or by any organisation, agency or person who has read, received or been provided with information contained in the report ("you" or "the Recipient") are decisions of the Recipient and we will not make, or be deemed to make, any decisions on behalf of any Recipient. We will not be liable for the consequences of any such decisions.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

Any Recipient must take into account any other factors apart from the Report of which they and their experts and advisers are or should be aware. The information, data, conclusions, opinions and judgements set out in the report may relate to certain contexts and may not be suitable in other contexts. It is your responsibility to ensure that you do not use the information we provide in the wrong context.

This report is based on readily available geological records, the recorded physical investigation, the strata observed in the works, together with the results of completed site and laboratory tests. Whilst skill and care has been taken to interpret these conditions likely between or below investigation points, the possibility of other characteristics not revealed cannot be discounted, for which no liability can be accepted. The impact of our assessment on other aspects of the development required evaluation by other involved parties.

The opinions expressed cannot be absolute due to the limitations of time and resources within the

context of the agreed brief and the possibility of unrecorded previous in ground activities. The ground conditions have been sampled or monitored in recorded locations and tests for some of the more common chemicals generally expected. Other concentrations of types of chemicals may exist. It was not part of the scope of this report to comment on environment/contaminated land considerations.

The conclusions and recommendations relate to YMCA London City and North, 184 Tottenham Lane, Crouch End, London N8 8SG.

Trial hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sampler borehole implies the specific technique used to produce a trial hole.

The depth to roots and/or of desiccation may vary from that found during the investigation. The client is responsible for establishing the depth to roots and/or of desiccation on a plot-by-plot basis prior to the construction of foundations. Where trees are mentioned in the text this means existing trees, recently removed trees (approximately 15 years to full recovery on cohesive soils) and those planned as part of the site landscaping.

Ownership of copyright of all printed material including reports, laboratory test results, trial pit and borehole log sheets, including drillers log sheets, remain with Ground and Water Limited. Licence is for the sole use of the client and may not be assigned, transferred or given to a third party.

Only our client may rely on this report and should this report or any information contained in it be provided to any third party we accept no responsibility to the third party for the contents of this report save to the extent expressly outlined by us in writing in a reliance letter addressed from us to the third party.

Recipients are not permitted to publish this report outside of their organisation without our express written consent.

APPENDIX B: Technical Glossary

TECHNICAL GLOSSARY

The list of possible definitions within the report may be seen below. Please note that some definitions may not be relevant to this report.

HYDROGEOLOGY:

A **Principal Aquifer** is a layer of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary (A) Aquifers consist of deposits with 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.

Secondary (B) Aquifers consist of deposits with predominantly lower permeability layers with may stoke and yield limited amounts of groundwater due to localised features such as fissures, think permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Secondary Aquifers (Undifferentiated) are assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both a minor aquifer and non-aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata are rock layers with low permeability that have negligible significance for water supply or river base flow. These were formerly classified as non-aquifers.

FLOOD ZONES:

Environment Agency Flood Zone 2, defined as; land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.

Environment Agency Flood Zone 3 shows the extent of a river flood with a 1 in 100 (1%0 or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year.

Environment Agency Flood Zone 3 area that benefits from flood defences, defined as; land and property in this flood zone would have a high probability of flooding without the local flood defences. These protect the area against a river flood with a 1% chance of happening each year, or a flood from the sea with a 0.5% chance of happening each year.

GROUNDWATER SOURCE PROTECTION ZONES (SPZS):

Inner Zone (SPZ1): This zone is 50 day travel time of pollutant to source with a 50 metres default minimum radius.

Outer Zone (SPZ2): This zone is 400 day travel time of pollutant to source. This has a 250 or 500 metres minimum radius around the source depending on the amount of water taken.

Total Catchment (SPZ3): This is the area around a supply source within which all the groundwater ends up at the abstraction point. This is the point from where the water is taken. This could extend some distance from the source point.

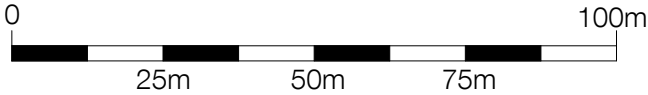
Zone of Special Interest (SPZ4): This zone is where local conditions require additional protection.

IN-SITU STRENGTH GEOTECHNICAL TESTING:

Windowless Sample and/or Cable Percussion and/or Rotary Boreholes provide samples of the ground for assessment but they do not give any engineering data. The standard penetration test (SPT) is an in-situ dynamic penetration test designed to provide information on the geotechnical engineering properties of soil. The test uses a thick-walled sample tube, with an outside diameter of 50mm and an inside diameter of 35mm, and a length of around 650mm. This is driven into the ground at the bottom of a borehole by blows from a slide hammer with a weight of 63.5kg falling through a distance of 760mm. The sample tube is driven 150mm into the ground and then the number of blows needed for the tube to penetrate each 75mm up to a depth of 450mm is recorded. The sum of the number of blows is termed the "standard penetration resistance" or the "N-value".

Dynamic Probing involves the driving of a metal cone into the ground via a series of steel rods. These rods are driven from the surface by a hammer system that lifts and drops a 63.5kg (SHDP) hammer onto the top of the rods through a set height, thus ensuring a consistent energy input. The number of hammer blows that are required to drive the cone down by each 100mm increment are recorded. These blow counts then provide a comparative assessment from which correlations have been published, based on dynamic energy, which permits engineering parameters to be generated. (The Dynamic Probe 'Super Heavy' (SHDP) Tests were conducted in accordance with BS 1377; 1990; Part 9, Clause 3.2).

APPENDIX C: Existing and Proposed Development Information



Notes

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Key:

- Site Boundary
- Ownership Boundary

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			M
P01	02.07.26	For Information	JW/B
			M

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Project name			

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Drawing number	Rev
4079 - LB - ZZ - 00 - D - A - 101000	P02

Drawing

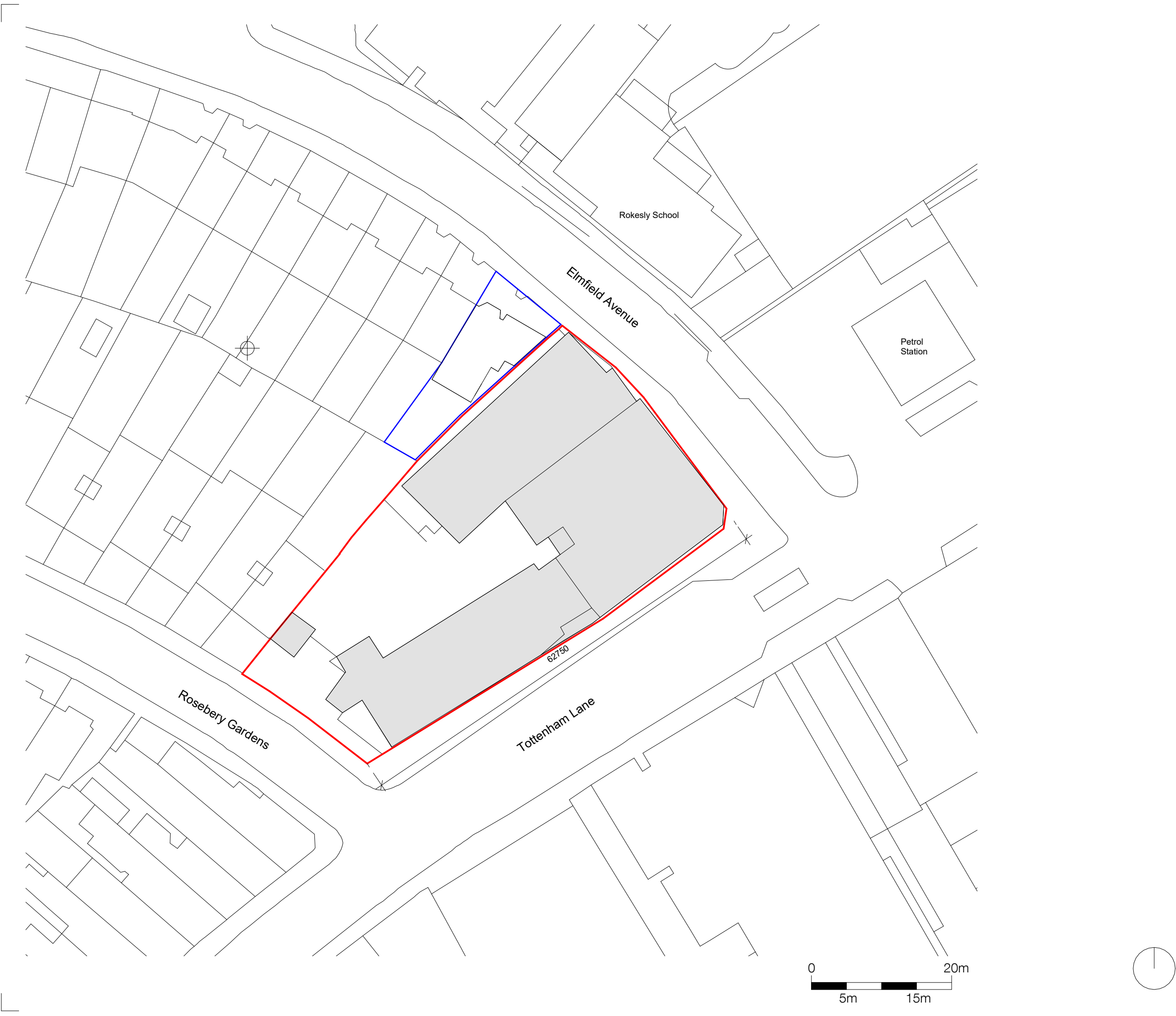
Location Plan

Purpose of issue	
For Information	
Scale	First issue date
1 : 1250 @ A3	07/01/26
Client	
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Drawing

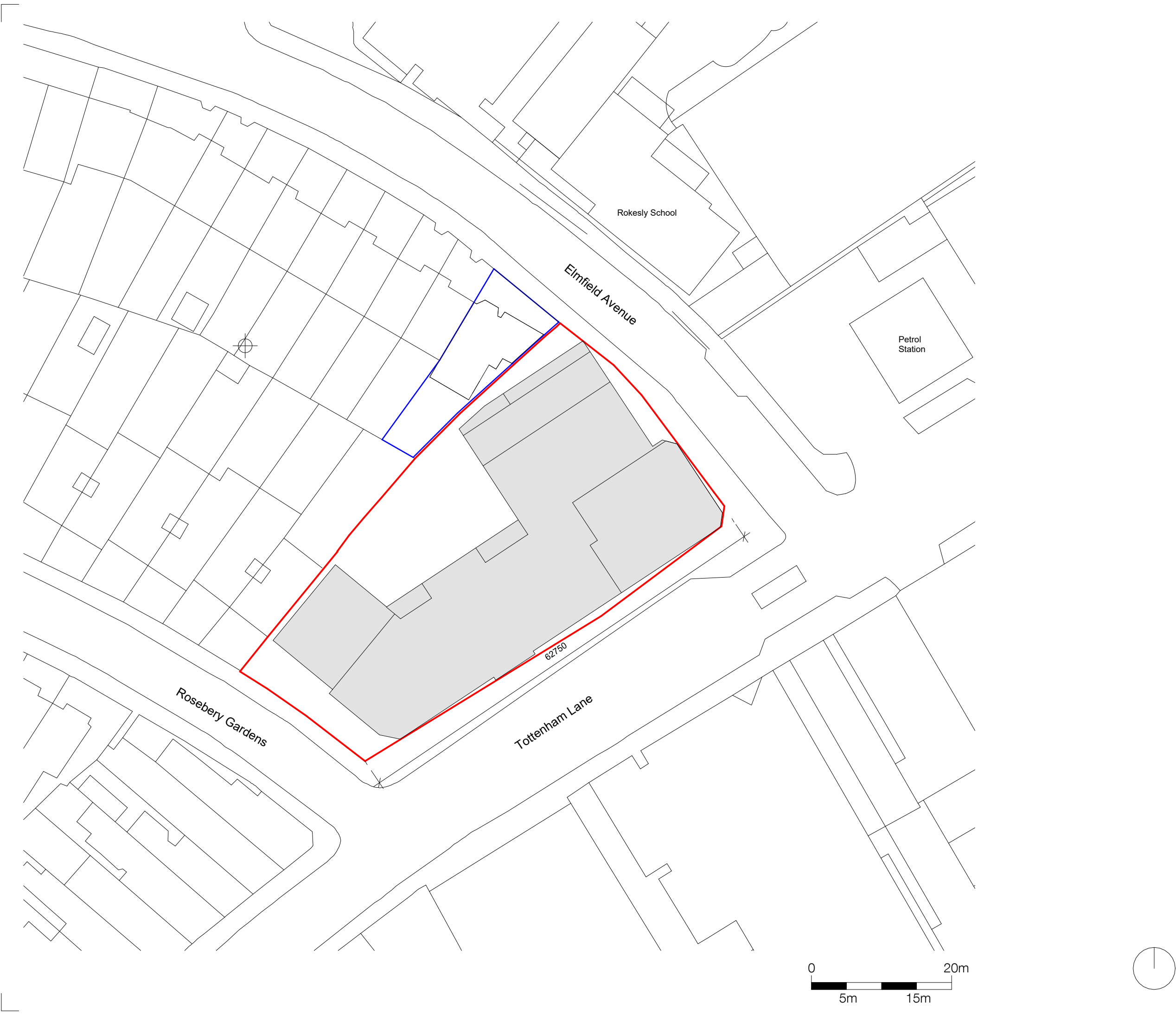
Existing Block Plan

Purpose of issue	
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- Ownership Boundary

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Drawing

Proposed Block Plan

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P03	22.05.26	STAGE 3 ISSUE	JW/KS
P02	19.03.26	Pre-app submission	KS
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane
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Drawing number Rev

4079 - LB - ZZ - -01 - D - A - 103001 **P05**

Drawing

Existing Basement Floor Plan

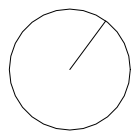
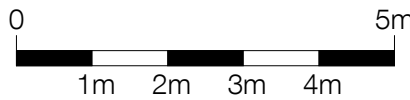
Purpose of issue
For Information

Scale First issue date
1 : 100 @ A1 12/12/2025

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Project name

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4079 - LB - ZZ - 00 - D - A - 103002 **P05**

Drawing

Existing Ground Floor Plan

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P01	12.12.25	Stage 2 Issue	KS
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4079 - LB - ZZ - 01 - D - A - 103003 **P05**

Drawing

Existing First Floor Plan

Purpose of issue
For Information

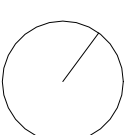
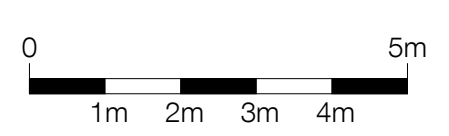
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P01	12.12.25	Stage 2 Issue	KS
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4079 - LB - ZZ - 02 - D - A - 103004 **P05**

Drawing

Existing Second Floor Plan

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Drawing number

4079 - LB - ZZ - 03 - D - A - 103005 **P05**

Drawing

Existing Third Floor Plan

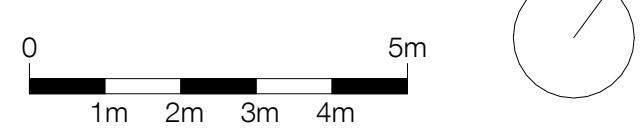
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Project name

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4079 - LB - ZZ - 04 - D - A - 103006 **P05**

Drawing

Existing Fourth Floor Plan

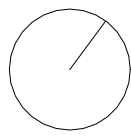
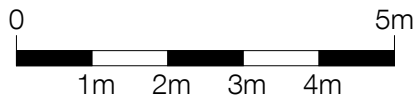
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Drawing number Rev

4079 - LB - ZZ - 05 - D - A - 103007 **P05**

Drawing

Existing Fifth Floor Plan

Purpose of issue

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P05	23.07.26	For Information	JW/BM
P04	02.07.26	For Information	JW/BM
P03	22.05.26	STAGE 3 ISSUE	JW/KS
P02	19.03.26	Pre-app submission	KS
P01	12.12.25	Stage 2 Issue	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number

4079 - LB - ZZ - 06 - D - A - 103008 **P05**

Drawing

Existing Roof Plan

Purpose of issue
For Information

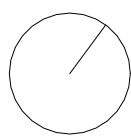
Scale
1 : 100 @ A1

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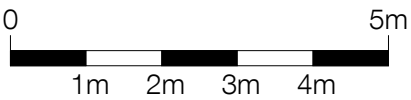
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0 1m 2m 3m 4m 5m





Tottenham Lane



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P05	23.07.26	For Information	JW/BM
P04	02.07.26	For Information	JW/BM
P03	22.05.26	STAGE 3 ISSUE	JW/KS
P02	24.03.26	Pre-application Submission	KS/BM
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 104000 **P05**

Drawing

Existing South Elevation

Purpose of issue
For Information

Scale First issue date
1 : 100 @ A1 12/12/2025

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Existing Courtyard

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P04	23.07.26	For Information	JW/BM
P03	02.07.26	For Information	JW/BM
P02	22.05.26	STAGE 3 ISSUE	JW/KS
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 104001 **P04**

Drawing

Existing North Elevation

Purpose of issue

For Information

Scale First issue date
1 : 100 @ A1 12/12/2025

Client

YMCA LCN

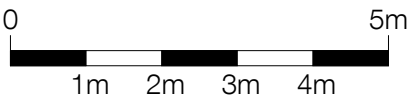
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0 1m 2m 3m 4m 5m



← Tottenham Lane Elmfield Avenue →



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P03	02.07.26	For Information	JW/BM
P02	22.05.26	STAGE 3 ISSUE	JW/KS
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 104002 **P04**

Drawing

Existing East Elevation

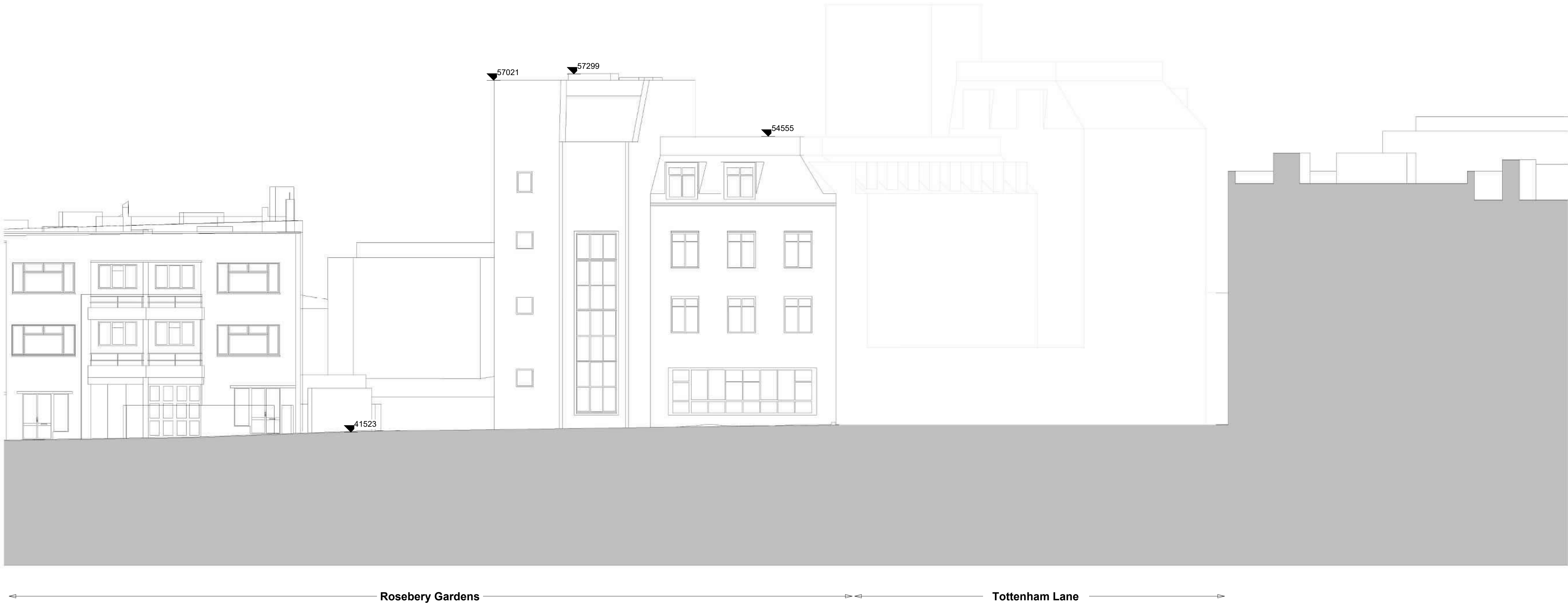
Purpose of issue
For Information

Scale	First issue date
1 : 100 @ A1	12/12/2025

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P03	02.07.26	For Information	JW/BM
P02	22.05.26	STAGE 3 ISSUE	JW/KS
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane
YMCA London City and North

Drawing number	Rev
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4079 - LB - ZZ - ZZ - D - A - 104003 **P04**

Drawing

Existing West Elevation

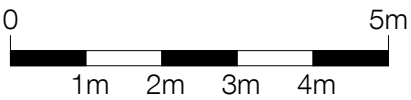
Purpose of issue
For Information

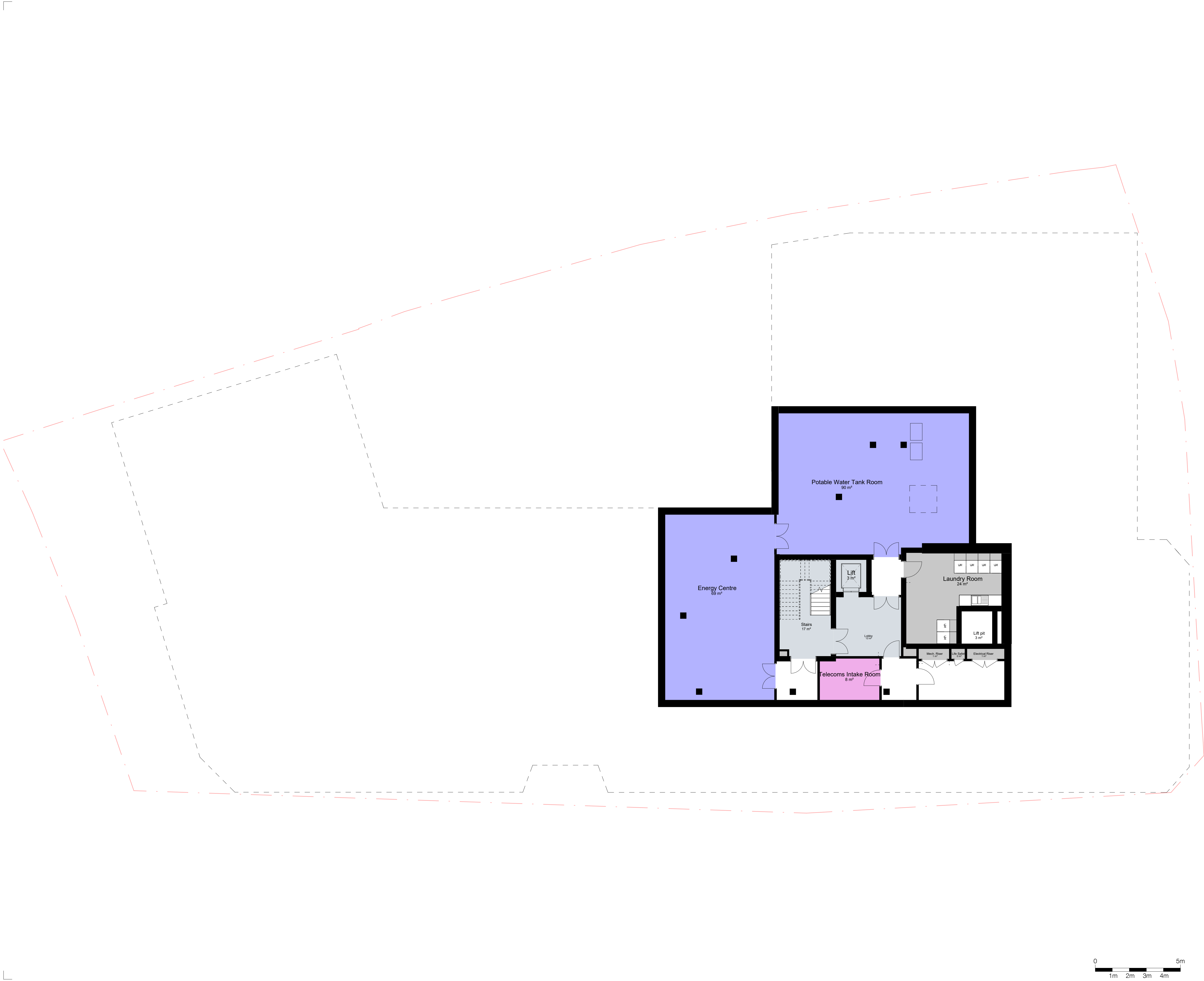
Scale	First issue date
1 : 100 @ A1	12/12/2025

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Room Name	
	Ancillary
	Core
	Mech. Plant
	Plant

P13	23.07.26	For Information	JW/BM
P12	20.07.26	For Information	JW/BM
P11	02.07.26	For Information	JW/BM
P10	22.05.26	STAGE 3 ISSUE	JW/KS
P09	20.05.26	For Information	JW
P08	10.05.26	Stage 3 Draft	KS/BM
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
P04	27.02.26	For information	KS/BM
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - -01 - D - A - 120001 **P13**

Drawing

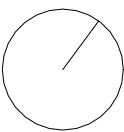
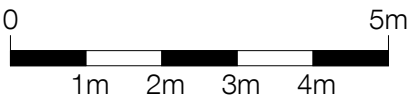
GA Basement Floor Plan

Purpose of issue
For information

Scale First issue date
1 : 100 @ A1 12/05/25

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Room Name
Admin
Ancillary
Communal Lounge
Core
Move-on Bedroom
Move-on Kitchen
Plant
Reception
Shared

P17	23.07.26	For Information	JW/BM
P16	20.07.26	For Information	JW/BM
P15	02.07.26	For Information	JW/BM
P14	19.06.26	For Information	JW/KS
P13	22.05.26	STAGE 3 ISSUE	JW/KS
P12	20.05.26	For Information	JW
P11	10.05.26	Stage 3 Draft	KS/BM
P10	17.04.26	For coordination	KS
P09	13.04.26	For coordination	KS/BM
P08	24.03.26	For information	KS/BM
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number

4079 - LB - ZZ - 00 - D - A - 120002 **P17**

Drawing

GA Ground Floor Plan

Purpose of issue
For Information

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1 : 100 @ A1

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Room Name

- 5B Cluster 1
- 5B Cluster 2
- 5B Cluster 3
- 6B Cluster 1
- 6B Cluster 2
- 6B Cluster 3
- Ancillary
- Cluster Kitchen
- Core
- Move-on Bedroom
- Move-on Kitchen

P14	23.07.26	For Information	JW/BM
P13	20.07.26	For Information	JW/BM
P12	02.07.26	For Information	JW/BM
P11	22.05.26	STAGE 3 ISSUE	JW/KS
P10	20.05.26	For Information	JW
P09	10.05.26	Stage 3 Draft	KS/BM
P08	17.04.26	For coordination	KS
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
Rev	Date	Description	Drawn / Checked

Project name

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Drawing number

4079 - LB - ZZ - 01 - D - A - 120003

P14

Drawing

GA First Floor Plan

Purpose of issue

For information

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First issue date

xx/xx/xxxx

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Room Name	
	5B Cluster 1
	6B Cluster 1
	6B Cluster 2
	6B Cluster 3
	6B Cluster 4
	6B CLuster 5
	Ancillary
	Cluster Kitchen
	Core
	Move-on Bedroom
	Move-on Kitchen

P14	23.07.26	For Information	JW/BM
P13	20.07.26	For Information	JW/BM
P12	02.07.26	For Information	JW/BM
P11	22.05.26	STAGE 3 ISSUE	JW/KS
P10	20.05.26	For Information	JW
P09	10.05.26	Stage 3 Draft	KS/BM
P08	17.04.26	For coordination	KS
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
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Drawing number

4079 - LB - ZZ - 02 - D - A - 120004

Drawing

GA Second Floor Plan

Purpose of issue
For information

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1 : 100 @ A1

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Room Name

- 5B Cluster 1
- 6B Cluster 1
- 6B Cluster 2
- 6B Cluster 3
- 6B Cluster 4
- 6B Cluster 5
- Ancillary
- Cluster Kitchen
- Core
- Move-on Bedroom
- Move-on Kitchen

P14	23.07.26	For Information	JW/BM
P13	20.07.26	For Information	JW/BM
P12	02.07.26	For Information	JW/BM
P11	22.05.26	STAGE 3 ISSUE	JW/KS
P10	20.05.26	For Information	JW
P09	10.05.26	Stage 3 Draft	KS/BM
P08	17.04.26	For coordination	KS
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
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Drawing number

4079 - LB - ZZ - 03 - D - A - 120005

P14

Drawing

GA Third Floor Plan

Purpose of issue

For information

Scale

1 : 100 @ A1

First issue date

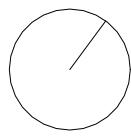
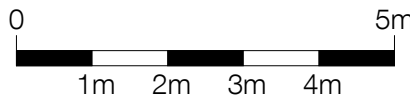
12/05/25

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Room Name	
	4B Cluster 1
	5B Cluster 1
	6B Cluster 1
	6B Cluster 2
	6B Cluster 3
	Ancillary
	Cluster Kitchen
	Core
	Move-on Bedroom
	Move-on Kitchen

P14	23.07.26	For Information	JW/BM
P13	20.07.26	For Information	JW/BM
P12	02.07.26	For Information	JW/BM
P11	22.05.26	STAGE 3 ISSUE	JW/KS
P10	20.05.26	For Information	JW
P09	10.05.26	Stage 3 Draft	KS/BM
P08	17.04.26	For coordination	KS
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
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Drawing number

4079 - LB - ZZ - 04 - D - A - 120006 **P14**

Drawing

GA Fourth Floor Plan

Purpose of issue
For information

Scale
1 : 100 @ A1

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Room Name	
	4B Cluster 1
	5B Cluster 1
	5B Cluster 2
	5B Cluster 3
	6B Cluster 5 - Kitchen
	Admin
	Ancillary
	Core
	Move-on Bedroom
	Move-on Kitchen

P14	23.07.26	For Information	JW/BM
P13	20.07.26	For Information	JW/BM
P12	02.07.26	For Information	JW/BM
P11	22.05.26	STAGE 3 ISSUE	JW/KS
P10	20.05.26	For Information	JW
P09	10.05.26	Stage 3 Draft	KS/BM
P08	17.04.26	For coordination	KS
P07	13.04.26	For coordination	KS/BM
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
Rev	Date	Description	Drawn / Checked

Project name

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Drawing number Rev

4079 - LB - ZZ - 05 - D - A - 120007 P14

Drawing

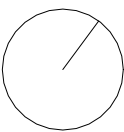
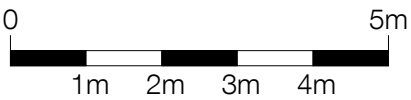
GA Fifth Floor Plan

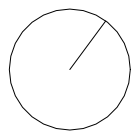
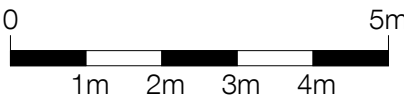
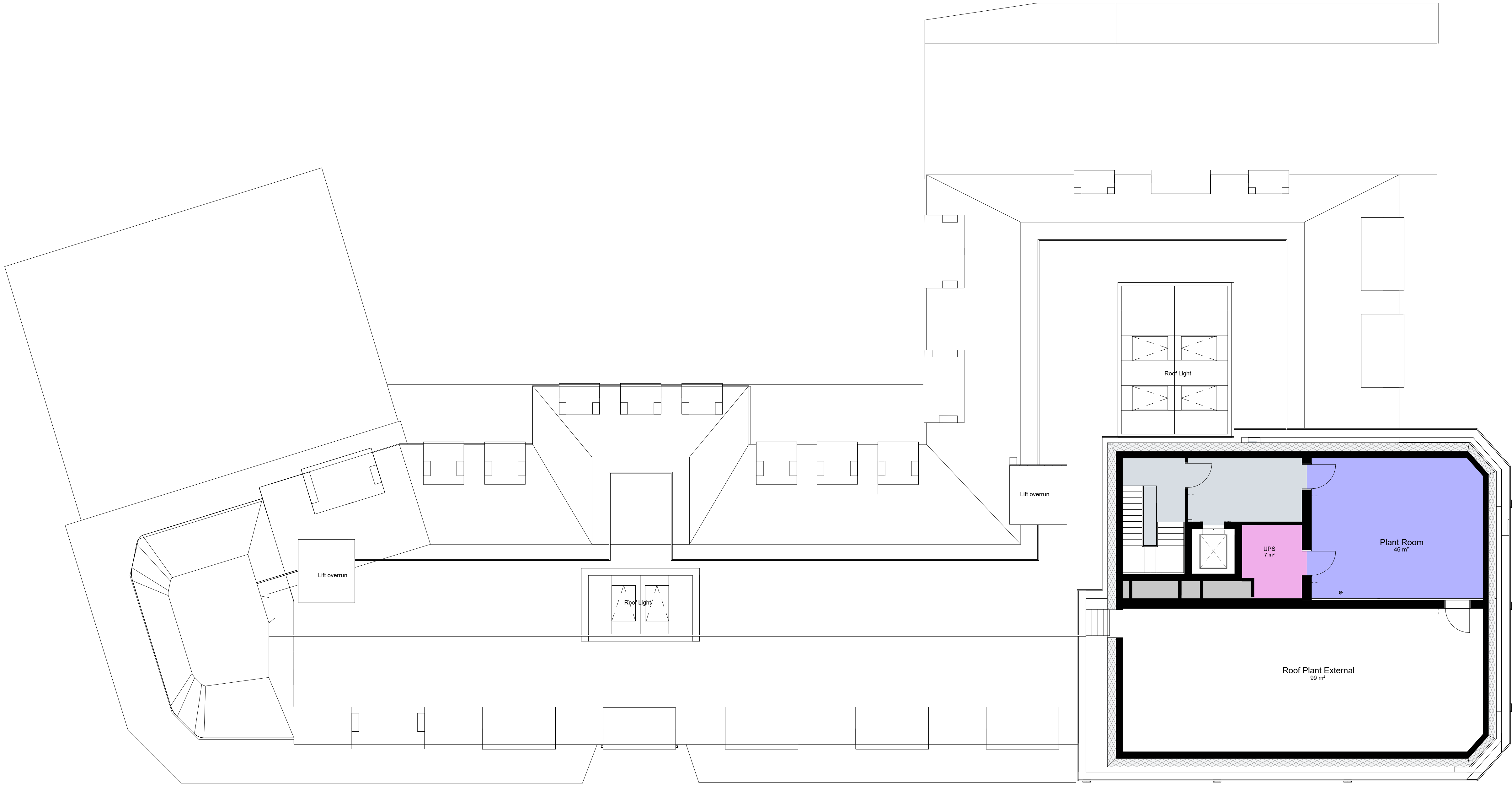
Purpose of issue
For information

Scale First issue date
1 : 100 @ A1 12/05/25

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Room Name

- Ancillary
- Core
- Mech. Plant
- Plant

P13	23.07.26	For Information	JW/BM
P12	20.07.26	For Information	JW/BM
P11	02.07.26	For Information	JW/BM
P10	22.05.26	STAGE 3 ISSUE	JW/KS
P09	20.05.26	For Information	JW
P08	10.05.26	Stage 3 Draft	KS/BM
P07	17.04.26	For coordination	KS
P06	24.03.26	For information	KS/BM
P05	19.03.26	Pre-app submission	KS
P04	03.03.26	For Coordination	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - 06 - D - A - 120008 **P13**

Drawing

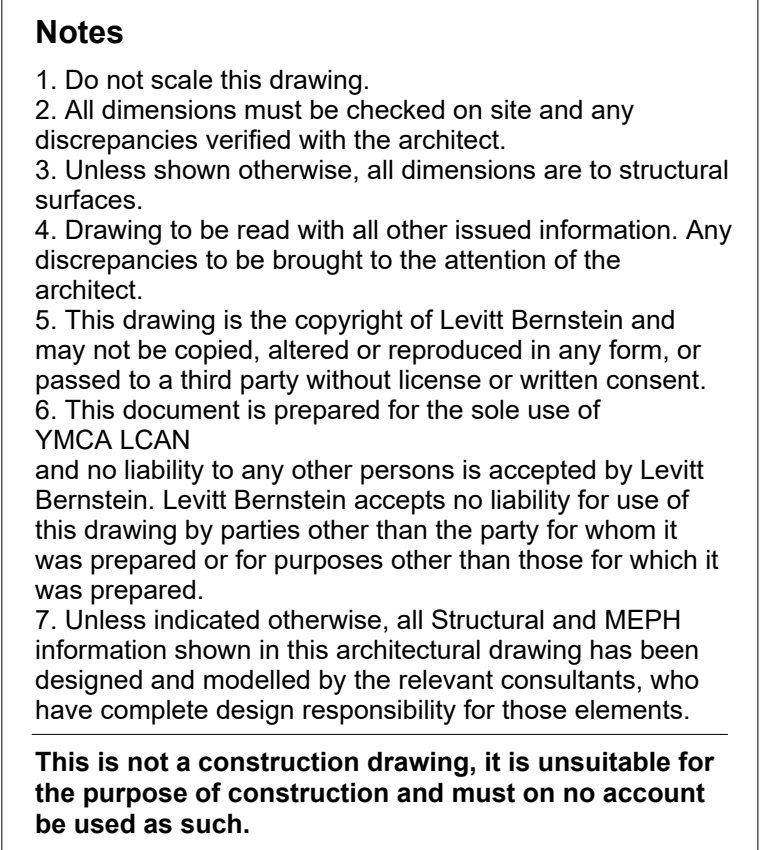
GA Sixth Floor Plan

Purpose of issue
For information

Scale First issue date
1 : 100 @ A1 12/05/25

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|-----|----------|-----------------|-----------------|
| P04 | 23.07.26 | For Information | JW/BM |
| P03 | 20.07.26 | For Information | JW/BM |
| P02 | 02.07.26 | For Information | JW/BM |
| P01 | 22.05.26 | STAGE 3 ISSUE | JW/KS |
| Rev | Date | Description | Drawn / Checked |

184 Tottenham Lane
YMCA London City and North

4079 - LB - ZZ - 07 - D - A - 120009 P04

Drawing

GA Roof Plan

Purpose of issue	
For Information	

Scale	First issue date
1 : 100 @ A1	05/22/26

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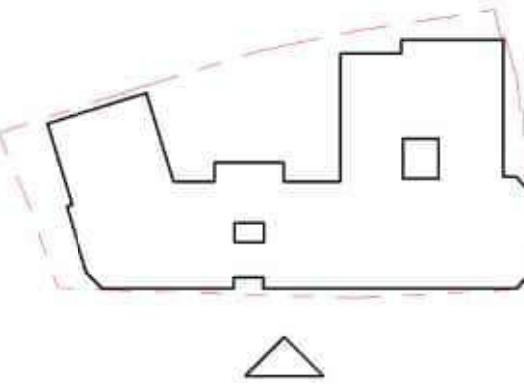


1 | Proposed South Elevation - Tottenham Lane Elevation
1:100

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Key Plan
1:1000

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- 6B** Stainless steel metal panels

P07	23.07.26	For Information	JW/BM
P06	02.07.26	For Information	JW/BM
P05	22.05.26	STAGE 3 ISSUE	JW/KS
P04	10.05.26	Stage 3 Draft	KS/BM
P03	24.03.26	Pre-application Submission	KS/BM
P02	12.12.25	Stage 2 Issue	KS
P01	11.12.25	For Information	JW / KS

Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 130000 **P07**

Drawing

Proposed South Elevation

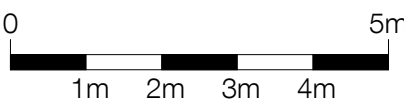
Purpose of issue
For Information

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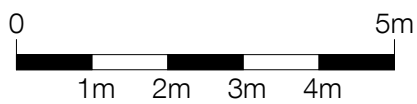




1 | Proposed North Elevation - Rear Courtyard

1:100

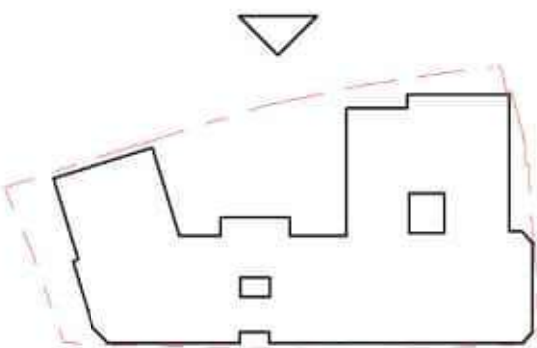
New Courtyard



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Key Plan

1:1000

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P07	23.07.26	For Information	JW/BM
P06	02.07.26	For Information	JW/BM
P05	22.05.26	STAGE 3 ISSUE	JW/KS
P04	10.05.26	Stage 3 Draft	KS/BM
P03	24.03.26	Pre-application Submission	KS/BM
P02	12.12.25	Stage 2 Issue	KS
P01	11.12.25	For Information	JW / KS

Rev	Date	Description	Drawn / Checked
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Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 130001 **P07**

Drawing

Proposed North Elevation

Purpose of issue
For Information

Scale First issue date
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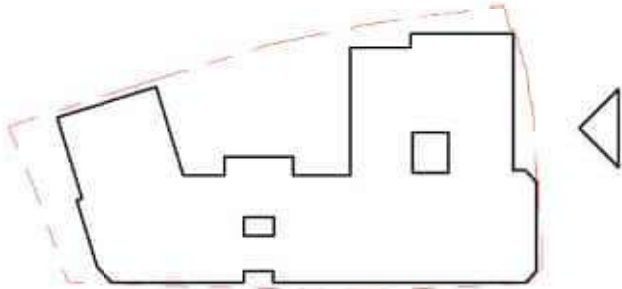


1 | Proposed East Elevation - Elmfield Avenue
1:100

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P07	23.07.26	For Information	JW/BM
P06	02.07.26	For Information	JW/BM
P05	22.05.26	STAGE 3 ISSUE	JW/KS
P04	10.05.26	Stage 3 Draft	KS/BM
P03	24.03.26	Pre-application Submission	KS/BM
P02	12.12.25	Stage 2 Issue	KS
P01	11.12.25	For Information	JW / KS

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 130002 **P07**

Drawing

Proposed East Elevation

Purpose of issue

For Information

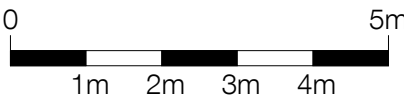
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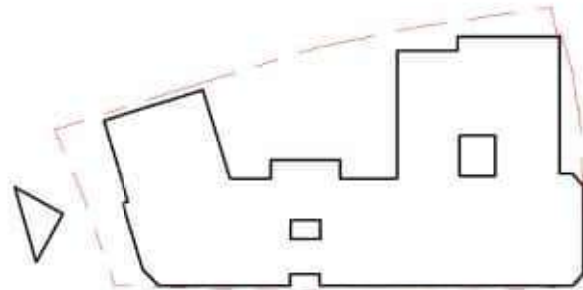




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1 : 1000

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P07	23.07.26	For Information	JW/BM
P06	02.07.26	For Information	JW/BM
P05	22.05.26	STAGE 3 ISSUE	JW/KS
P04	10.05.26	Stage 3 Draft	KS/BM
P03	24.03.26	Pre-application Submission	KS/BM
P02	12.12.25	Stage 2 Issue	KS
P01	11.12.25	For Information	JW / KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane

YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 130003 **P07**

Drawing

Proposed West Elevation

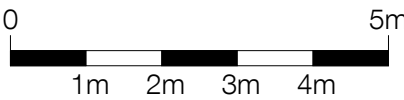
Purpose of issue
For Information

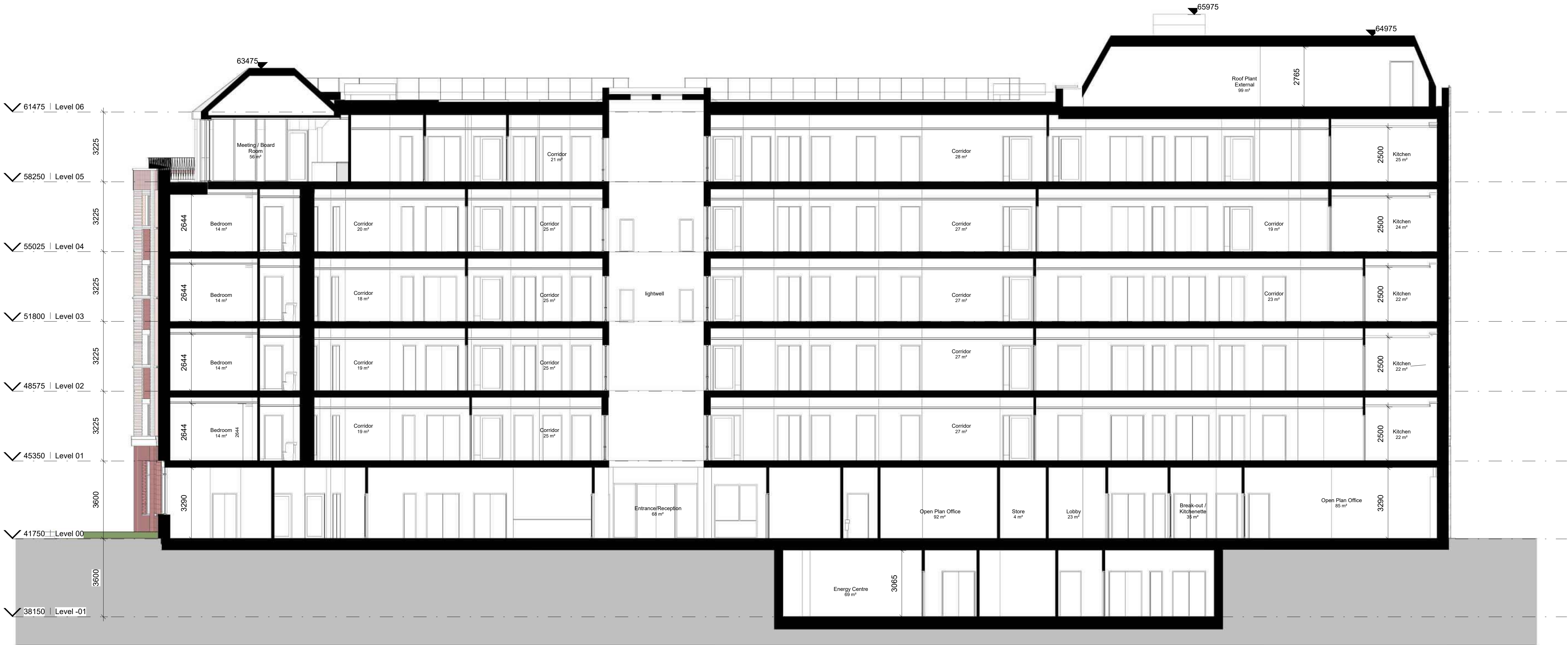
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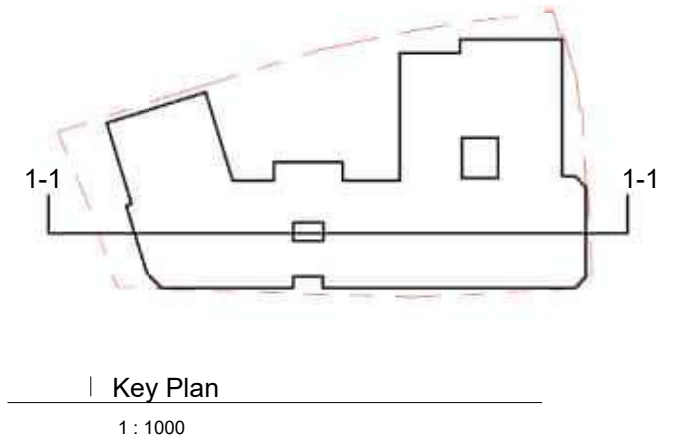


1 | Long Section - Section 1-1
1 : 100

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P06	23.07.26	For Information	JW/BM
P05	02.07.26	For Information	JW/BM
P04	22.05.26	STAGE 3 ISSUE	JW/KS
P03	10.05.26	Stage 3 Draft	KS/BM
P02	31.03.26	For coordination	KS/BM
P01	12.12.25	Stage 2 Issue	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 140000 **P06**

Drawing

GA Long Section 1-1

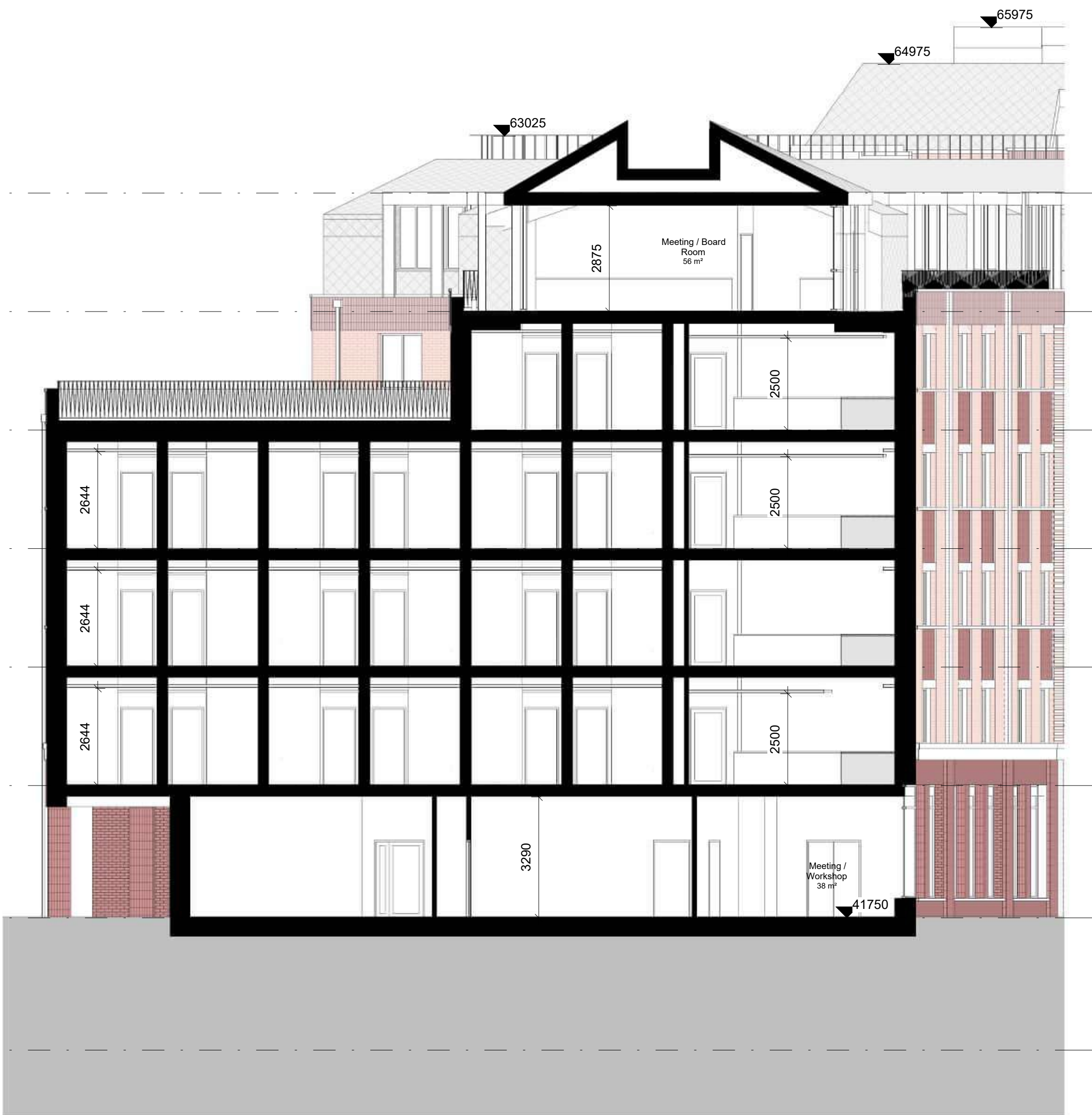
Purpose of issue
For Information

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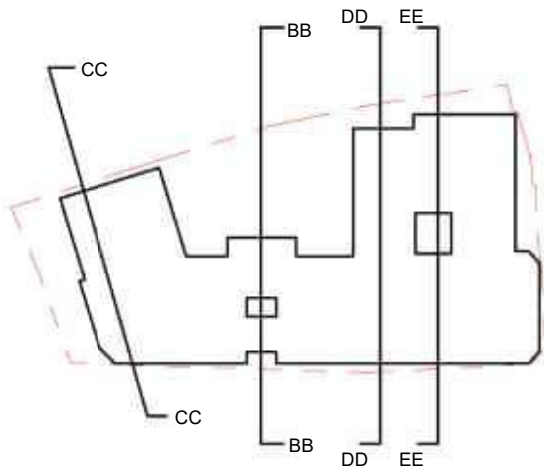
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- Key Plan
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P06	23.07.26	For Information	JW/BM
P05	02.07.26	For Information	JW/BM
P04	22.05.26	STAGE 3 ISSUE	JW/KS
P03	10.05.26	Stage 3 Draft	KS/BM
P02	31.03.26	For coordination	KS/BM
P01	12.12.25	Stage 2 Issue	KS

Rev	Date	Description	Drawn / Checked
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Project name

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Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 140001 **P06**

Drawing

GA Short Sections 1 of 2

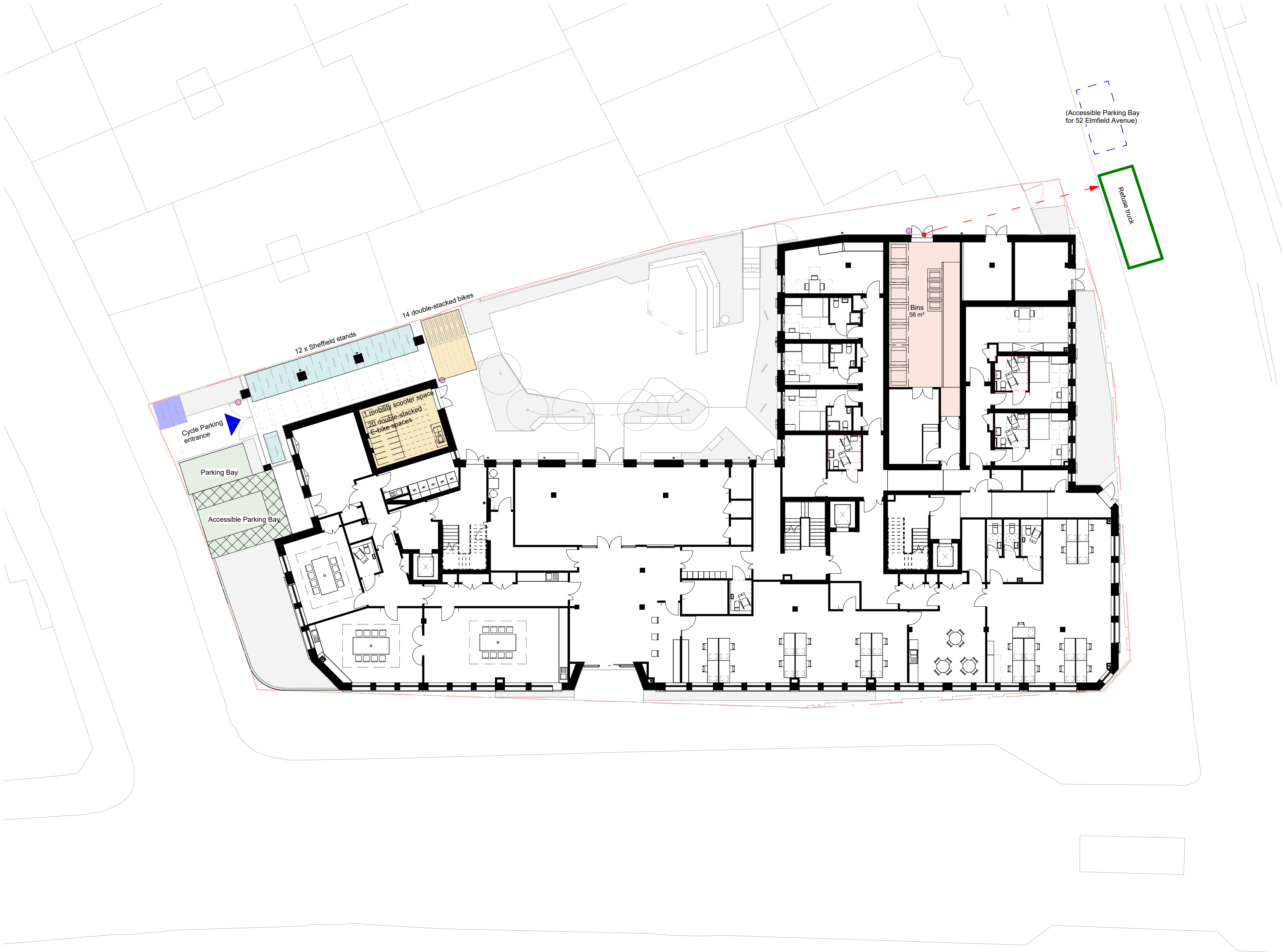
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Cycle Parking Strategy:

To determine the appropriate number of cycle parking spaces for the scheme, we reviewed the existing provision and how the current YMCA Crouch End site operates. We also looked at comparable sites, including YMCA Landaid House on Errol Street, and used these as a baseline for assessing how the proposed scheme is likely to function in practice.

Existing YMCA Crouch End Site based on a week survey:

No. of bedspaces	Average no. of ebikes parked	Average no. of standard bike parked	Daily average no. of total bikes	No. of cycle spaces per bedroom
155	11	20	31	0.2

Existing Landaid House Errol Street

No. of bedspaces	Average no. of ebikes parked	Average no. of standard bike parked	Daily average no. of total bikes	No. of cycle spaces per bedroom
146	21	10	31	0.2

Proposed YMCA Crouch End Site: Increase from 0.2 to 0.3 cycle spaced per bedroom

	No. of ebikes cycle parking proposed	No. of standard bike parking proposed	No. of cycle spaces per bedroom	No. of short term cycle spaces
174 bedspaces	20	33	0.3	4
25 staff		5		

Refer to Transport consultant report for more detailed information on cycle and car parking strategy

Car Parking Strategy:

The proposal includes 2 bays for car parking. This will consist of one standard parking bay and one wheelchair accessible parking bay.

Waste and Refuse Strategy:

The refuse store for the proposed scheme is located in the northeast corner of the site along Elmfield Avenue. Waste will be collected twice a week by a commercial waste contractor. The waste and recycling requirements have been assessed using LBHs communal waste metrics, taking into account both residential communal waste and office waste.

London Borough of Haringey Communal Waste Metrics:

Waste Stream	Refuse Allocation	Capacity
Residual waste	Per 6 dwellings	1100 litres
DMR	Per 10 dwellings	1100 litres
Food waste	Per dwelling	20 litres

*Cluster flats/ move-on flats is treated as 1 dwelling

Proposed YMCA	2 bed move-on	3 bed move-on	4 bed cluster	5 bed cluster	6 bed cluster	Total
No. of bespaces	10	15	8	45	96	174
No. of units	5	5	2	9	16	37

Refer to Transport consultant report for more detailed information on waste and refuse strategy

Combined Waste Storage requirements (litres)

Collection Frequency	Residual Waste	DMR	Food waste	Total
Weekly	7137	5129	815	13081
Twice weekly	4079	2931	466	7476

YMCA Crouch End Proposed Weekly Container Requirements:

Collection Frequency	Residual Waste (1100 litre eurobins)	DMR (240 litre eurobins)	Food waste (240 litre eurobins)
Weekly	7	5	8
Twice weekly	4	3	4

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KEY

- Bin store
- E-bike and mobility scooter store
- Sheffield stands
- Sheffield stands - Short stay cycle parking
- Car parking
- Cycle entrance
- Fob key access
- Refuse truck
- (Accessible parking bay relocated to outside Elmfield Avenue)

P04	23.07.26	For Information	JW/BM
P03	15.07.26	Transport Update	JW/BM
P02	02.07.26	For Information	JW/BM
P01	22.05.26	STAGE 3 ISSUE	JW/KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane

YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - 00 - D - A - 410050 **P04**

Drawing

Refuse, Cycle and Vehicle Strategy

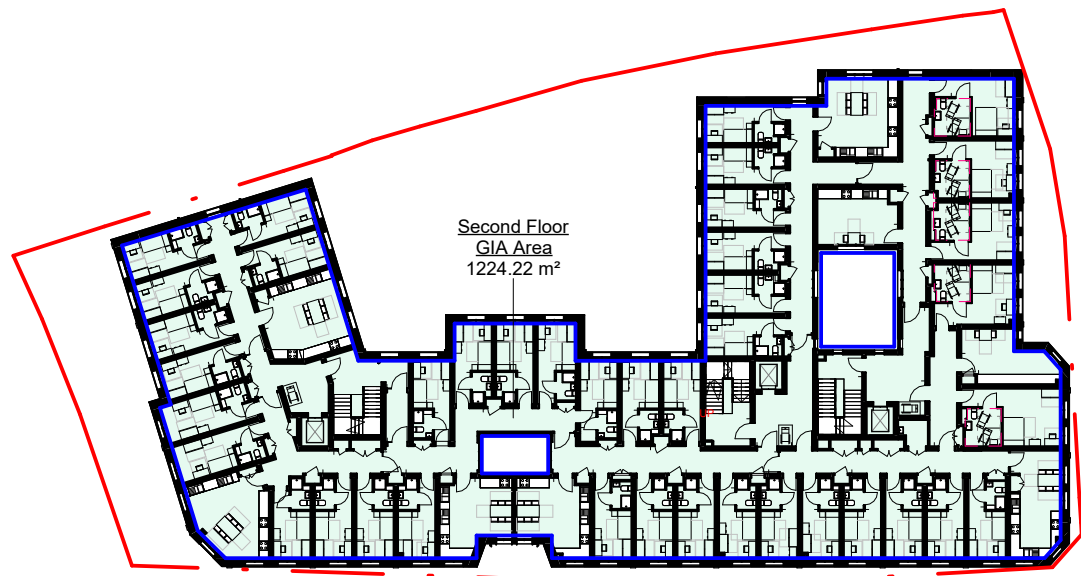
Purpose of issue
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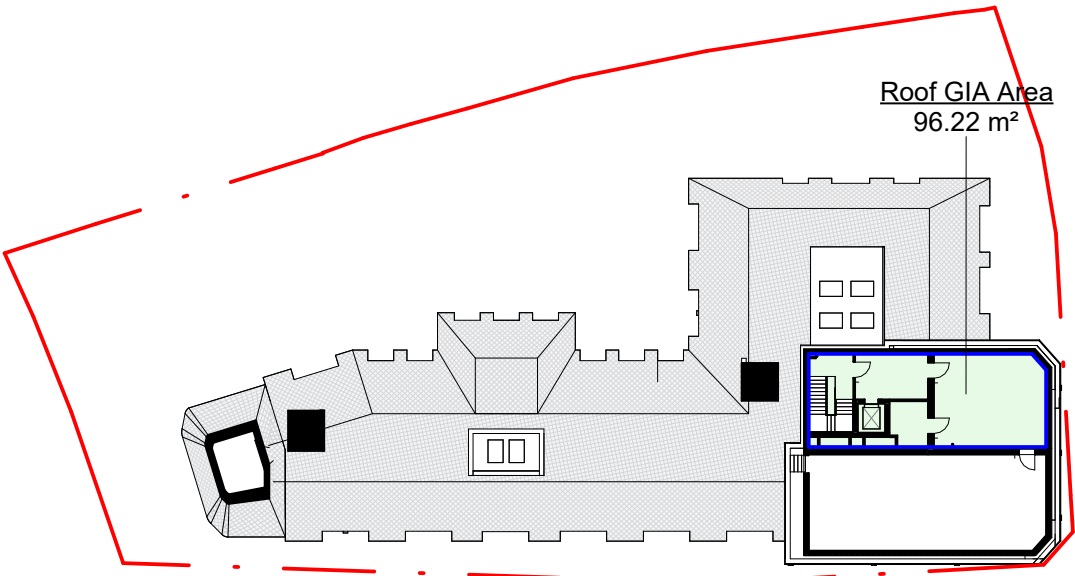
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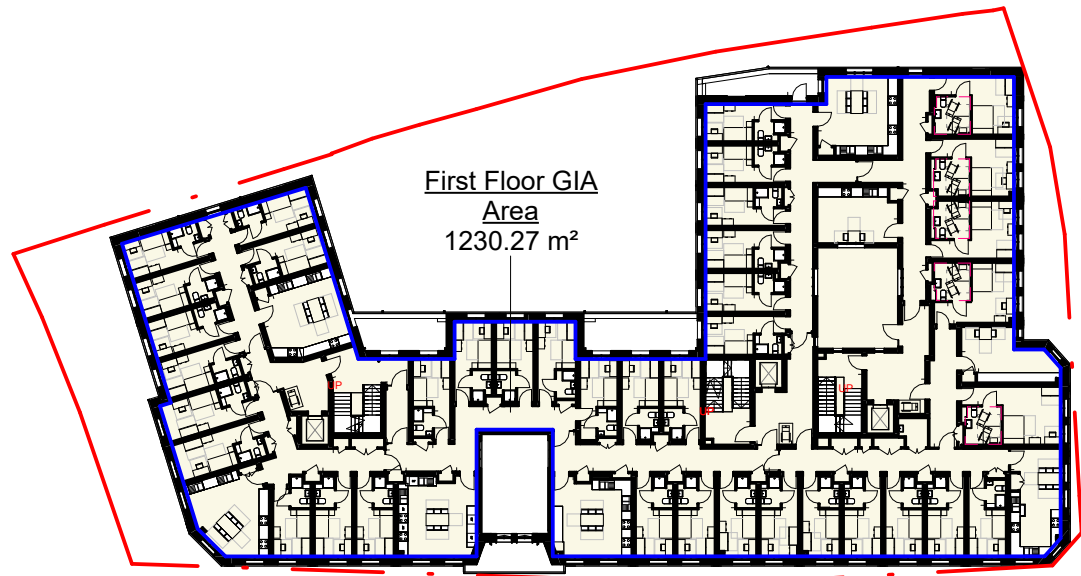
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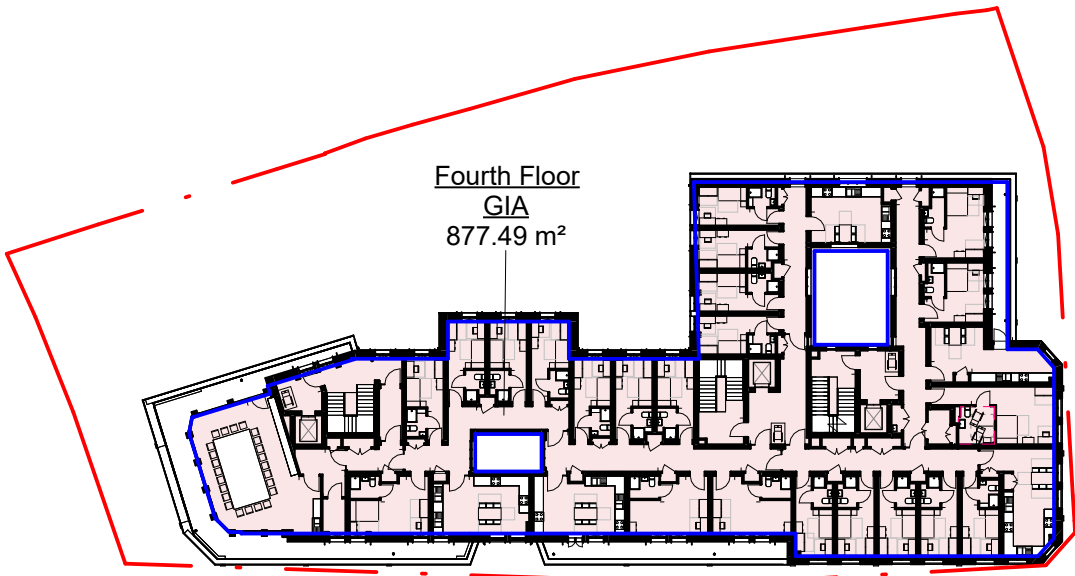
4 | Level 02 GIA Plan
1 : 500



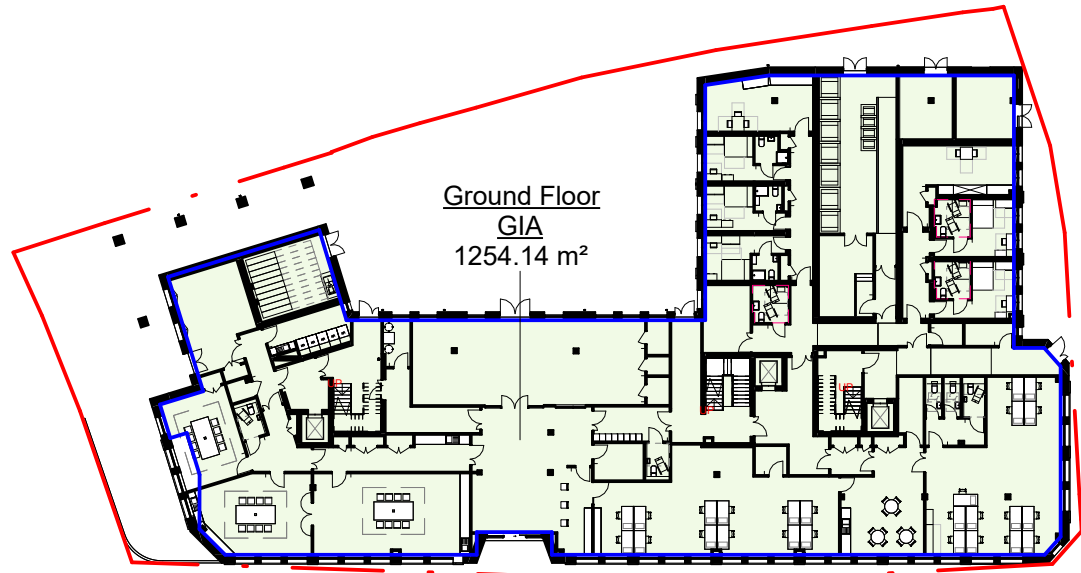
8 | Level 06 GIA Plan
1 : 500



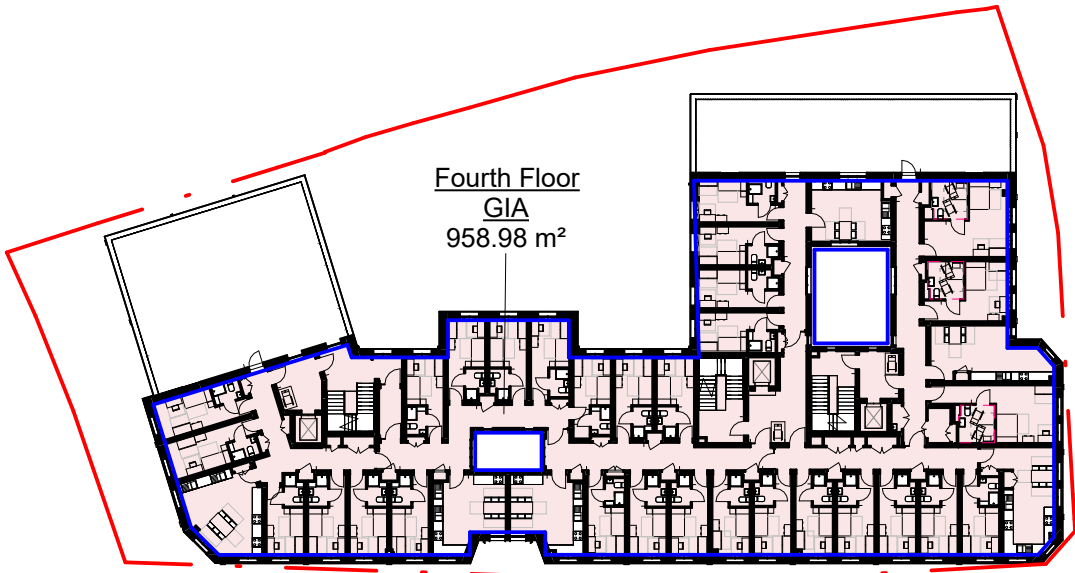
3 | Level 01 GIA Plan
1 : 500



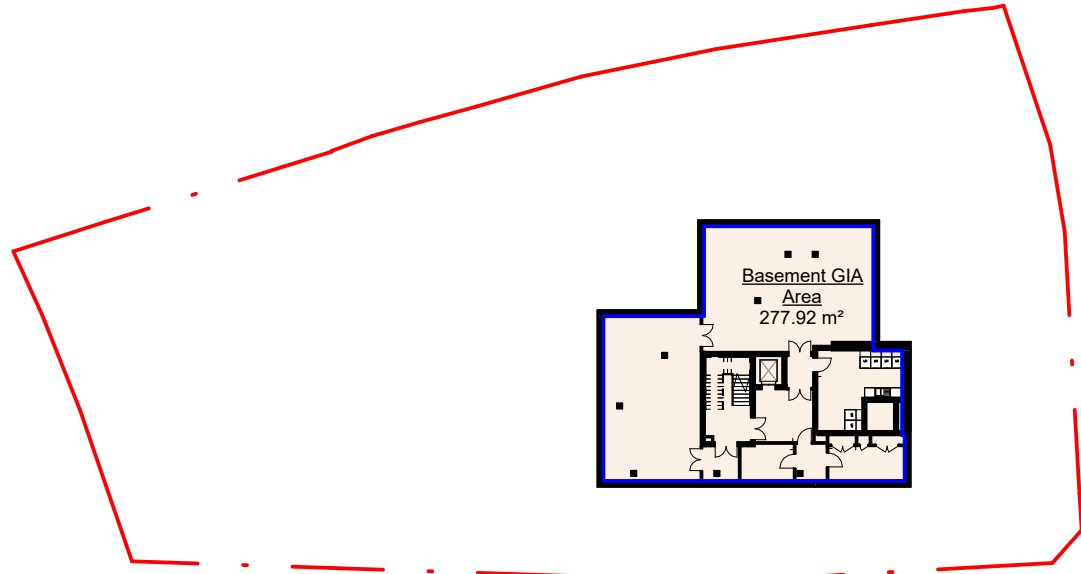
7 | Level 05 GIA Plan
1 : 500



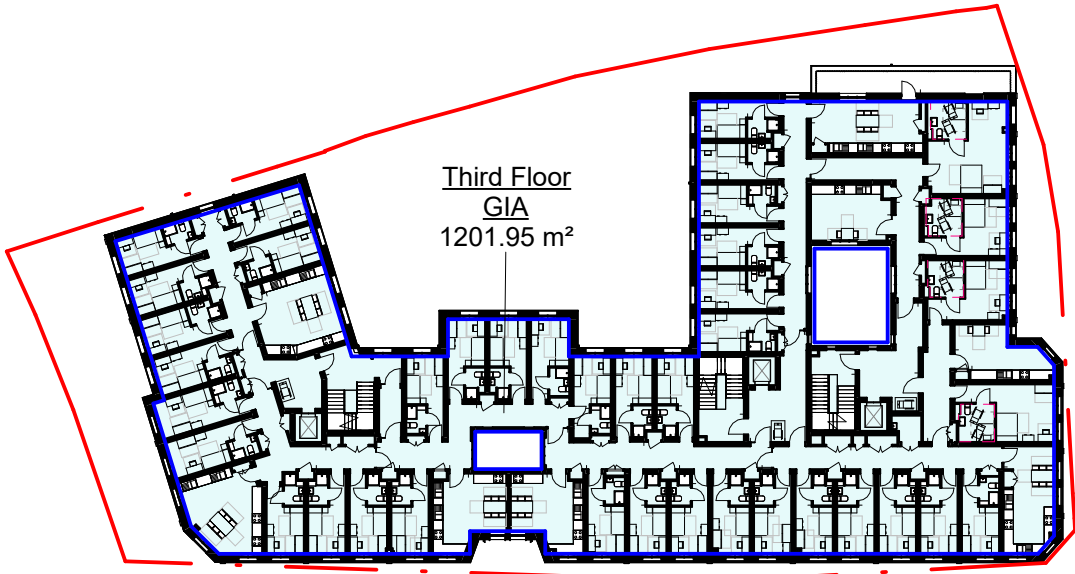
2 | Level 00 GIA Plan
1 : 500



6 | Level 04 GIA Plan
1 : 500



1 | Level -01 GIA Plan
1 : 500



5 | Level 03 GIA Plan
1 : 500

Notes

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Area Schedule (GIA)	
Level	Area
Level -01	278 m²
Level 00	1254 m²
Level 01	1230 m²
Level 02	1224 m²
Level 03	1202 m²
Level 04	959 m²
Level 05	877 m²
Level 06	96 m²
Total:	7120m2

P03	23.07.26	For Information	JW/BM
P02	02.07.26	For Information	JW/BM
P01	22.05.26	STAGE 3 ISSUE	JW/KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

4079 - LB - ZZ - ZZ - D - A - 451001 P03

Drawing

GIA Area Plans

Purpose of issue

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1 : 500 @ A1 05/22/26

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New build - Schedule of Accommodation			
Levels	Department	Room Name	Area
Level -01		Corridor	11.5 m²
Level -01		Corridor	4.7 m²
Level -01		Corridor	5.3 m²
Level -01		Corridor	3.6 m²
Level -01		Lift pit	3.5 m²
Level -01	Mech. Plant	Energy Centre	69.5 m²
Level -01	Mech. Plant	Potable Water Tank Room	90.5 m²
Level -01	Plant	Telecoms Intake Room	8.4 m²

New build - Schedule of Accommodation			
Levels	Department	Room Name	Area

Level 00		Corridor	7.9 m²
Level 00		Corridor	14.4 m²
Level 00		Corridor	9.9 m²
Level 00		Corridor	22.9 m²
Level 00		Corridor	14.9 m²
Level 00		Corridor	11.5 m²
Level 00		Corridor	19.6 m²
Level 00		Corridor	6.8 m²
Level 00		Corridor	5.0 m²
Level 00		Corridor	11.8 m²
Level 00		Post room /	4.9 m²
Level 00		Store	3.2 m²
Level 00	Admin	Break-out / Kitchenette	34.7 m²
Level 00	Admin	CCTV Room / Comms Room	7.1 m²
Level 00	Admin	Open Plan Office	85.2 m²
Level 00	Admin	Open Plan Office	92.1 m²
Level 00	Admin	Stock Room / Maintenance Workshop	19.4 m²
Level 00	Admin	Stock Room / Maintenance Workshop	28.0 m²
Level 00	Communal Lounge	Reflection Room	5.7 m²
Level 00	Communal Lounge	Resident's Lounge	97.3 m²
Level 00	Move-on Bedroom	Bedroom	15.2 m²
Level 00	Move-on Bedroom	Bedroom	19.8 m²
Level 00	Move-on Bedroom	Bedroom	20.0 m²
Level 00	Move-on Bedroom	Bedroom	15.5 m²
Level 00	Move-on Bedroom	Bedroom	14.8 m²
Level 00	Move-on Kitchen	Kitchen	27.3 m²
Level 00	Move-on Kitchen	Kitchen	24.8 m²
Level 00	Plant	LV Switchroom	15.0 m²
Level 00	Plant	Substation	16.1 m²
Level 00	Reception	Entrance/Reception	68.2 m²
Level 00	Shared	Meeting / Workshop	55.4 m²
Level 00	Shared	Meeting / Workshop	37.6 m²
Level 00	Shared	Presentation space	26.9 m²

New build - Schedule of Accommodation			
Levels	Department	Room Name	Area

Level 01		Corridor	13.8 m²
Level 01		Corridor	18.7 m²
Level 01		Corridor	24.7 m²
Level 01		Corridor	26.7 m²
Level 01		Corridor	26.8 m²
Level 01		Corridor	28.1 m²
Level 01		Corridor	22.8 m²
Level 01		Corridor	13.5 m²
Level 01		Winter Garden	35.5 m²
Level 01	5B Cluster 1	Bedroom	14.5 m²
Level 01	5B Cluster 1	Bedroom	12.7 m²
Level 01	5B Cluster 1	Bedroom	12.7 m²
Level 01	5B Cluster 1	Bedroom	11.8 m²
Level 01	5B Cluster 1	Bedroom	14.5 m²
Level 01	5B Cluster 2	Bedroom	12.7 m²
Level 01	5B Cluster 2	Bedroom	12.7 m²
Level 01	5B Cluster 2	Bedroom	13.0 m²
Level 01	5B Cluster 2	Bedroom	12.7 m²
Level 01	5B Cluster 2	Bedroom	12.8 m²
Level 01	5B Cluster 3	Bedroom	12.9 m²
Level 01	5B Cluster 3	Bedroom	12.7 m²
Level 01	5B Cluster 3	Bedroom	12.7 m²
Level 01	5B Cluster 3	Bedroom	12.6 m²
Level 01	5B Cluster 3	Bedroom	12.8 m²
Level 01	6B Cluster 1	Bedroom	12.6 m²
Level 01	6B Cluster 1	Bedroom	12.7 m²
Level 01	6B Cluster 1	Bedroom	12.6 m²
Level 01	6B Cluster 1	Bedroom	12.6 m²
Level 01	6B Cluster 1	Bedroom	12.7 m²
Level 01	6B Cluster 1	Bedroom	12.6 m²
Level 01	6B Cluster 2	Bedroom	12.7 m²
Level 01	6B Cluster 2	Bedroom	12.6 m²
Level 01	6B Cluster 2	Bedroom	12.7 m²
Level 01	6B Cluster 2	Bedroom	12.7 m²
Level 01	6B Cluster 2	Bedroom	12.7 m²
Level 01	6B Cluster 2	Bedroom	12.6 m²
Level 01	6B Cluster 3	Bedroom	13.2 m²
Level 01	6B Cluster 3	Bedroom	13.2 m²
Level 01	6B Cluster 3	Bedroom	12.7 m²
Level 01	6B Cluster 3	Bedroom	13.1 m²
Level 01	6B Cluster 3	Bedroom	13.1 m²
Level 01	Cluster Kitchen	Kitchen	24.6 m²
Level 01	Cluster Kitchen	Kitchen	26.5 m²
Level 01	Cluster Kitchen	Kitchen	26.4 m²
Level 01	Cluster Kitchen	Kitchen	25.7 m²
Level 01	Cluster Kitchen	Kitchen	22.0 m²
Level 01	Cluster Kitchen	Kitchen	26.1 m²
Level 01	Move-on Bedroom	Bedroom	20.0 m²
Level 01	Move-on Bedroom	Bedroom	20.6 m²
Level 01	Move-on Bedroom	Bedroom	21.2 m²

New build - Schedule of Accommodation			
Levels	Department	Room Name	Area
Level 01	Move-on Bedroom	Bedroom	20.7 m²
Level 01	5B Cluster 1	Bedroom	24.3 m²
Level 01	Move-on Kitchen	Kitchen	18.0 m²
Level 01	Move-on Kitchen	Kitchen	18.9 m²

Level 02		Corridor	13.8 m²
Level 02	5B Cluster 1	Bedroom	14.5 m²
Level 02	5B Cluster 1	Bedroom	12.7 m²
Level 02	5B Cluster 1	Bedroom	12.7 m²
Level 02	5B Cluster 1	Bedroom	11.8 m²
Level 02	5B Cluster 1	Bedroom	14.5 m²
Level 02	6B Cluster 1	Bedroom	12.6 m²

New build - Schedule of Accommodation			
Levels	Department	Room Name	Area

Level 02	6B Cluster 1	Bedroom	12.7 m²
Level 02	6B Cluster 1	Bedroom	12.6 m²
Level 02	6B Cluster 1	Bedroom	12.6 m²
Level 02	6B Cluster 1	Bedroom	12.7 m²
Level 02	6B Cluster 1	Bedroom	12.6 m²
Level 02	6B Cluster 2	Bedroom	12.8 m²
Level 02	6B Cluster 2	Bedroom	12.8 m²
Level 02	6B Cluster 2	Bedroom	13.0 m²
Level 02	6B Cluster 2	Bedroom	12.8 m²
Level 02	6B Cluster 2	Bedroom	12.8 m²
Level 02	6B Cluster 2	Bedroom	12.6 m²
Level 02	6B Cluster 3	Bedroom	12.9 m²
Level 02	6B Cluster 3	Bedroom	12.7 m²
Level 02	6B Cluster 3	Bedroom	12.7 m²
Level 02	6B Cluster 3	Bedroom	12.6 m²
Level 02	6B Cluster 3	Bedroom	12.8 m²
Level 02	6B Cluster 3	Bedroom	12.6 m²
Level 02	6B Cluster 4	Bedroom	12.7 m²
Level 02	6B Cluster 4	Bedroom	12.6 m²
Level 02	6B Cluster 4	Bedroom	12.7 m²
Level 02	6B Cluster 4	Bedroom	12.7 m²
Level 02	6B Cluster 4	Bedroom	12.7 m²
Level 02	6B Cluster 4	Bedroom	12.6 m²
Level 02	6B Cluster 5	Bedroom	13.1 m²
Level 02	6B Cluster 5	Bedroom	13.2 m²
Level 02	6B Cluster 5	Bedroom	13.2 m²
Level 02	6B Cluster 5	Bedroom	13.1 m²
Level 02	6B Cluster 5	Bedroom	12.7 m²
Level 02	6B Cluster 5	Bedroom	12.7 m²
Level 02	Cluster Kitchen	Kitchen	21.2 m²
Level 02	Cluster Kitchen	Kitchen	26.5 m²
Level 02	Cluster Kitchen	Kitchen	25.7 m²
Level 02	Cluster Kitchen	Kitchen	22.1 m²
Level 02	Cluster Kitchen	Kitchen	21.4 m²
Level 02	Move-on Bedroom	Bedroom	20.0 m²
Level 02	Move-on Bedroom	Bedroom	19.8 m²
Level 02	Move-on Bedroom	Bedroom	21.2 m²
Level 02	Move-on Bedroom	Bedroom	20.7 m²
Level 02	Move-on Bedroom	Bedroom	24.3 m²
Level 02	Move-on Kitchen	Kitchen	18.0 m²
Level 02	Move-on Kitchen	Kitchen	18.9 m²

Level 03		Corridor	13.7 m²
Level 03		Corridor	18.3 m²
Level 03		Corridor	24.9 m²
Level 03		Corridor	26.5 m²
Level 03		Corridor	22.7 m²
Level 03		Corridor	23.4 m²
Level 03		Corridor	22.7 m²
Level 03		Corridor	13.4 m²
Level 03	5B Cluster 1	Bedroom	14.5 m²
Level 03	5B Cluster 1	Bedroom	12.7 m²
Level 03	5B Cluster 1	Bedroom	12.7 m²
Level 03	5B Cluster 1	Bedroom	11.8 m²
Level 03	5B Cluster 1	Bedroom	14.5 m²
Level 03	6B Cluster 1	Bedroom	12.7 m²
Level 03	6B Cluster 1	Bedroom	12.7 m²
Level 03	6B Cluster 1	Bedroom	12.6 m²
Level 03	6B Cluster 1	Bedroom	12.7 m²
Level 03	6B Cluster 1	Bedroom	12.6 m²
Level 03	6B Cluster 2	Bedroom	12.8 m²
Level 03	6B Cluster 2	Bedroom	12.8 m²

New build - Schedule of Accommodation			
Levels	Department	Room Name	Area
Level 03	6B Cluster 2	Bedroom	13.0 m²
Level 03	6B Cluster 2	Bedroom	12.8 m²
Level 03	6B Cluster 2	Bedroom	12.8 m²
Level 03	6B Cluster 2	Bedroom	12.7 m²
Level 03	6B Cluster 3	Bedroom	12.9 m²
Level 03	6B Cluster 3	Bedroom	12.7 m²
Level 03	6B Cluster 3	Bedroom	12.7 m²
Level 03	6B Cluster 3	Bedroom	12.6 m²
Level 03	6B Cluster 3	Bedroom	12.8 m²
Level 03	6B Cluster 3	Bedroom	12.6 m²
Level 03	6B Cluster 4	Bedroom	12.7 m²
Level 03	6B Cluster 4	Bedroom	12.6 m²
Level 03	6B Cluster 4	Bedroom	12.7 m²
Level 03	6B Cluster 4	Bedroom	12.7 m²
Level 03	6B Cluster 4	Bedroom	12.7 m²
Level 03	6B Cluster 4	Bedroom	12.6 m²
Level 03	6B Cluster 5	Bedroom	13.1 m²
Level 03	6B Cluster 5	Bedroom	13.2 m²
Level 03	6B Cluster 5	Bedroom	13.2 m²
Level 03	6B Cluster 5	Bedroom	13.1 m²
Level 03	6B Cluster 5	Bedroom	12.7 m²
Level 03	6B Cluster 5	Bedroom	12.7 m²
Level 03	Cluster Kitchen	Kitchen	24.6 m²
Level 03	Cluster Kitchen	Kitchen	21.5 m²
Level 03	Cluster Kitchen	Kitchen	26.4 m²
Level 03	Cluster Kitchen	Kitchen	23.9 m²
Level 03	Cluster Kitchen	Kitchen	22.1 m²
Level 03	Cluster Kitchen	Kitchen	21.2 m²
Level 03	Move-on Bedroom	Bedroom	31.9 m²
Level 03	Move-on Bedroom	Bedroom	20.9 m²
Level 03	Move-on Bedroom	Bedroom	20.7 m²
Level 03	Move-on Bedroom	Bedroom	24.3 m²
Level 03	Move-on Kitchen	Kitchen	18.0 m²
Level 03	Move-on Kitchen	Kitchen	18.8 m²

Level 04		Corridor	27.6 m²
Level 04		Corridor	20.3 m²
Level 04		Corridor	24.6 m²
Level 04		Corridor	26.8 m²
Level 04		Corridor	19.5 m²
Level 04		Corridor	14.8 m²
Level 04	4B Cluster 1	Bedroom	13.8 m²
Level 04	4B Cluster 1	Bedroom	13.2 m²
Level 04	4B Cluster 1	Bedroom	13.2 m²
Level 04	4B Cluster 1	Bedroom	14.2 m²
Level 04	5B Cluster 1	Bedroom	14.5 m²
Level 04	5B Cluster 1	Bedroom	12.7 m²
Level 04	5B Cluster 1	Bedroom	11.8 m²
Level 04	5B Cluster 1	Bedroom	12.7 m²
Level 04	5B Cluster 1	Bedroom	14.5 m²
Level 04	6B Cluster 1	Bedroom	12.8 m²
Level 04	6B Cluster 1	Bedroom	12.8 m²
Level 04	6B Cluster 1	Bedroom	12.8 m²
Level 04	6B Cluster 1	Bedroom	12.7 m²
Level 04	6B Cluster 2	Bedroom	12.9 m²
Level 04	6B Cluster 2	Bedroom	12.7 m²
Level 04	6B Cluster 2	Bedroom	12.7 m²
Level 04	6B Cluster 2	Bedroom	12.6 m²
Level 04	6B Cluster 2	Bedroom	12.9 m²
Level 04	6B Cluster 2	Bedroom	12.6 m²
Level 04	6B Cluster 3	Bedroom	12.8 m²

New Build - Summary Schedule of Accommodation		
Level	Area	Usage

Level -01	168.4 m²	Plant
Level -01	57.7 m²	Cores
Level -01	3.4 m²	Ancillary
Level -01	28.6 m²	
	258.0 m²	

Level 00	54.8 m²	Plant
Level 00	52.1 m²	Kitchens
Level 00	119.9 m²	GF Shared Staff / Residents / Visitors
Level 00	68.2 m²	GF Reception
Level 00	103.0 m²	GF Communal Lounge
Level 00	219.1 m²	GF Admin
Level 00	55.0 m²	Corridors
Level 00	150.4 m²	Cores
Level 00	85.3 m²	Bedrooms
Level 00	170.4 m²	Ancillary
Level 00	77.7 m²	

Level 01	188.3 m²	Kitchens
Level 01	13.8 m²	Corridors
Level 01	121.9 m²	Cores
Level 01	530.9 m²	Bedrooms
Level 01	26.3 m²	Ancillary
Level 01	196.7 m²	
	1077.9 m²	

Level 02	178.5 m²	Kitchens
Level 02	13.8 m²	Corridors
Level 02	120.9 m²	Cores
Level 02	555.7 m²	Bedrooms
Level 02	24.7 m²	Ancillary
Level 02	0.4 m²	
	893.9 m²	

Level 03	176.3 m²	Kitchens
Level 03	13.7 m²	Corridors
Level 03	121.2 m²	Cores
Level 03	547.6 m²	Bedrooms
Level 03	26.4 m²	Ancillary
Level 03	151.9 m²	
	1037.2 m²	

Level 04	135.8 m²	Kitchens
Level 04	104.8 m²	Cores
Level 04	425.0 m²	Bedrooms
Level 04	23.7 m²	Ancillary
Level 04	133.6 m²	
	822.9 m²	

Level 05	109.7 m²	Kitchens
Level 05	94.5 m²	Cores
Level 05	315.4 m²	Bedrooms
Level 05	21.8 m²	Ancillary
Level 05	160.3 m²	
	701.7 m²	

Level 06	145.6 m²	Plant
Level 06	29.8 m²	Cores
Level 06	4.1 m²	Ancillary
Level 06	7.5 m²	

Grand total:	187.0 m²	
585	6134.6 m²	

Notes

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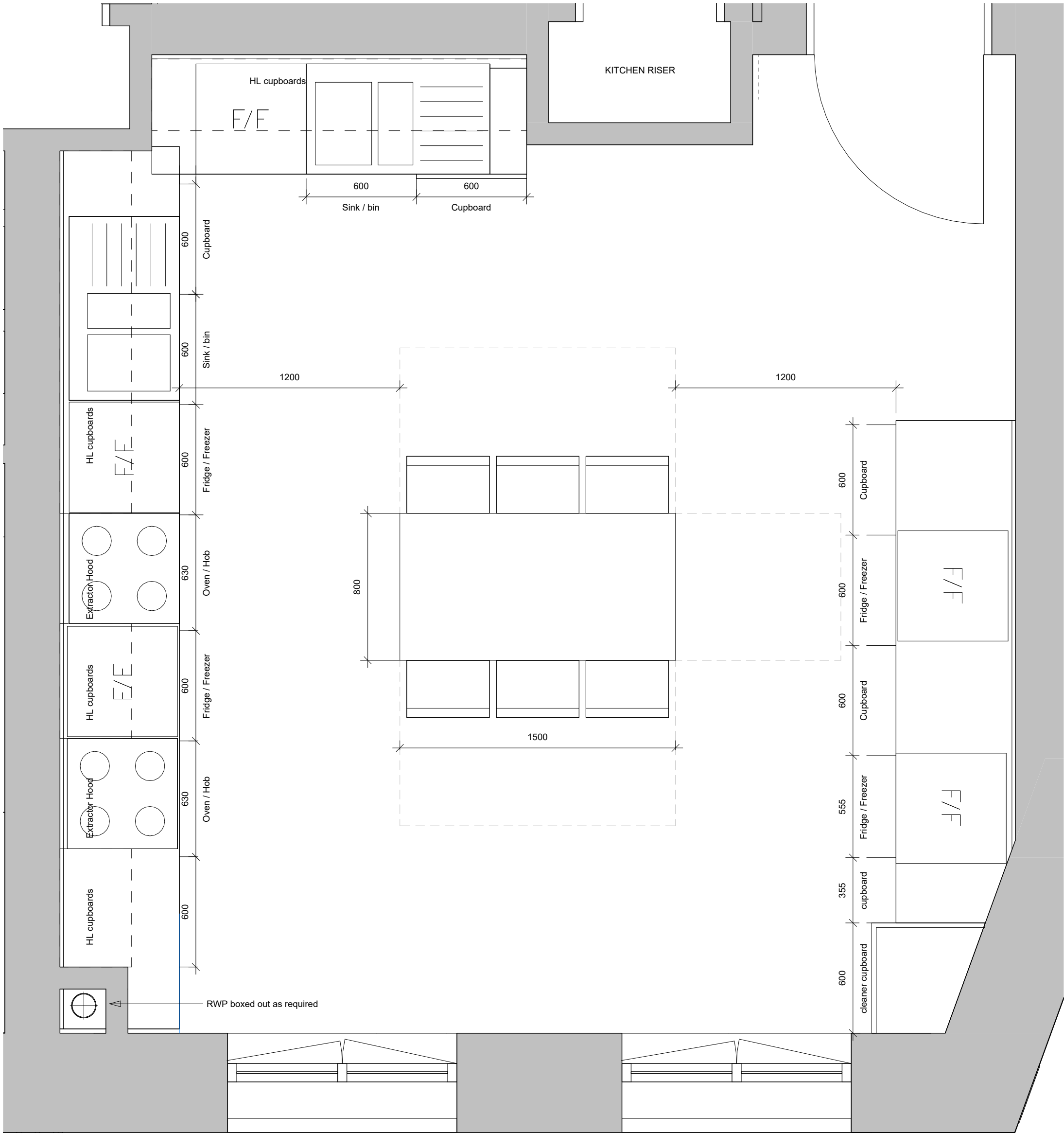
P05	23.07.26	For Information	JW/BM
P04	26.05.26	STAGE 3 ISSUE	JW/KS
P03	12.12.25	Stage 2 Issue	KS
P02	15.10.25	For Information	KS
P01	21.07.25	For information	KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

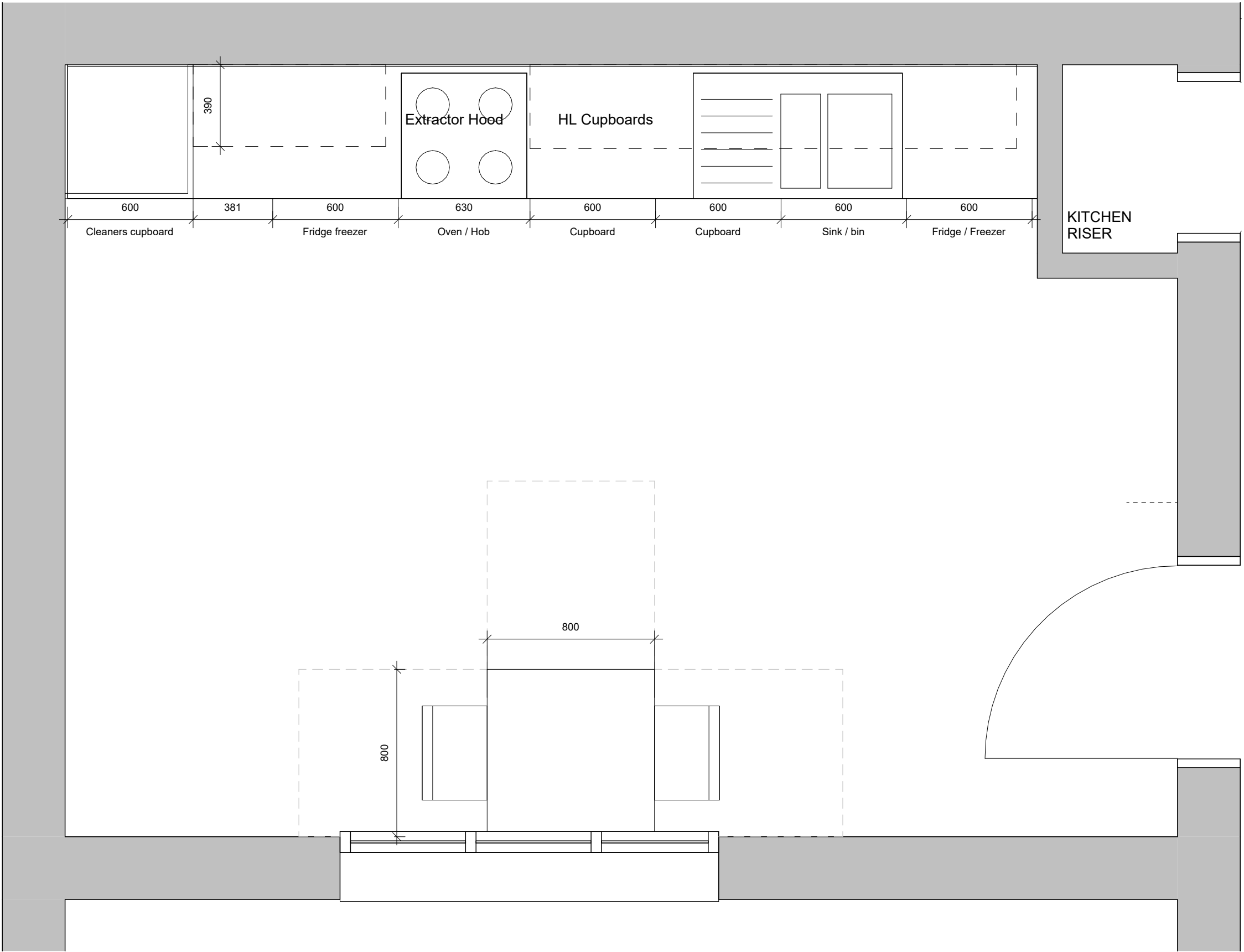
4079 - LB - ZZ - ZZ - D - A - 500002 **P05**



1 | Typical Kitchen Plan - Cluster

1 : 20

4 - 6 person kitchen



2 | Typical Kitchen Plan - Move-on Flat

1 : 20

2 - 3 person kitchen

Notes

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Kitchen to have:

- 1 oven / hob per 3 people
- 1 sink per 3 people
- 1 fridge / freezer and 1 storage cupboard per person

(as per Haringey HMO requirements)

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P01	22.05.26	STAGE 3 ISSUE	JW/KS
Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
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Drawing number

Rev

630020

P03

Drawing

Detailed Kitchen Layout

Purpose of issue

For information

Scale

1 : 20 @ A1

First issue date

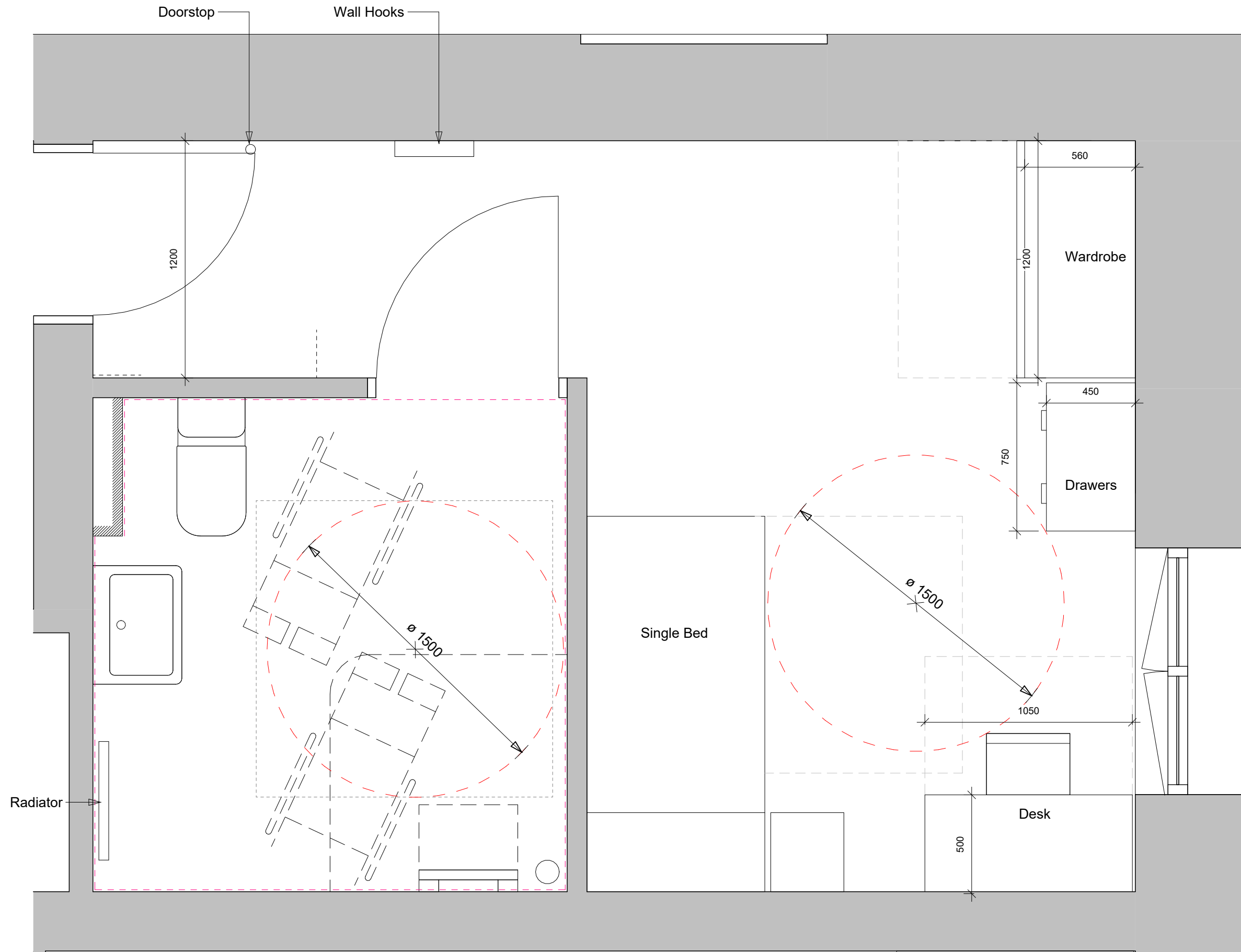
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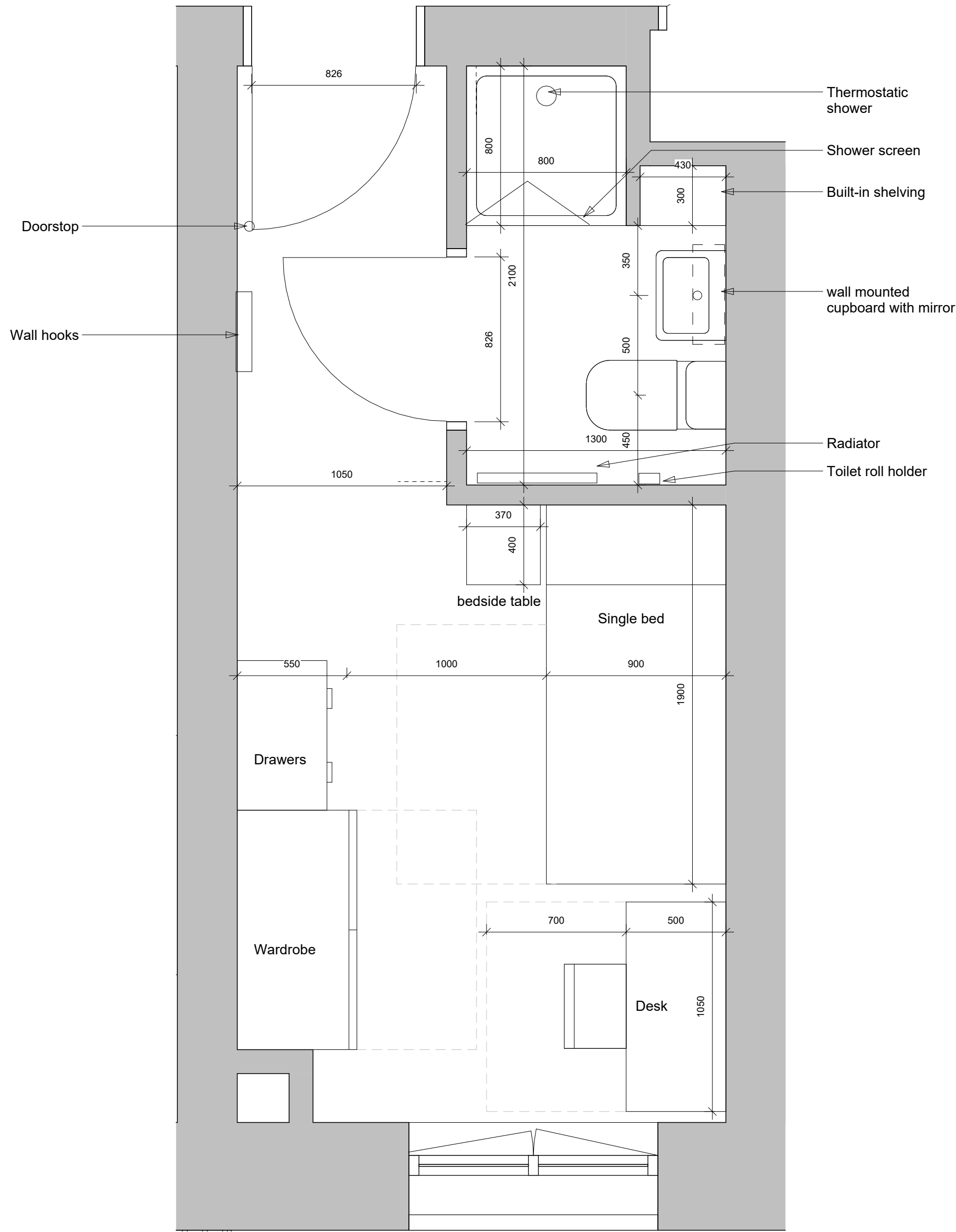
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1 | Typical Bedroom Plan - Accessible Move-on Bedroom
1 : 20



2 | Typical Bedroom Plan - Cluster Flat Bedroom
1 : 20

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Rev	Date	Description	Drawn / Checked

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number Rev

630030 **P03**

Drawing

Detailed Bedroom Layout

Purpose of issue

For information

Scale First issue date
1 : 20 @ A1 05/15/26

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KEY

Site boundary

Planting

PL01 Defensive planting to building frontage

PL02 Courtyard planting

PL03 Raingarden planting to courtyard

Paving

P01A Concrete sett paving - impermeable

P01B Concrete sett paving - permeable

P02 Resin bound gravel - permeable except small areas between corduroy paving and steps and at bottom of steps

P03 Corduroy paving - impermeable

P04 Proprietary step unit - impermeable
Note 1.1m high steel handrail to both sides

P05 Natural stone feature paving - impermeable

P06 Concrete flag paving to match existing adjacent surface - impermeable

Furniture

F01 Stainless steel Sheffield cycle stand

F02 Precast concrete bench with timber top

F03 Precast concrete table with integrated barbeque grill

F04 Precast concrete bench to match F03.

F05 Pergola with solid roof

F06 Timber deck seating

F07 Rainwater butt

F08 Perforated metal screen to which equipment for activities can be fixed - up to 3m in height.

F09 Perforated metal screens approx. 500 mm wide x 1800mm high

F10 Double stacked cycle rack

Boundaries and Gates

B01 Steel railing to 2.1m height; colour to match architectural metalwork

G01 Lockable gate to match B01 railing (note gate leaf dimensions vary according to location and technical requirements)

B02 Visually impermeable boundary to 2.1m height; material TBC

G02 Visually impermeable lockable gate to match B02

B03 Wall of solid construction to receive murals; material TBC. Built alongside retained garden boundary as indicated.

B04 Steel railing to underside of soffit (2.9m); colour to match architectural metalwork

Edges

E01 Flush concrete edge to public realm planting at grade

E02 Raised concrete stop-start SuDS kerb to raingarden planting

E03 Raised steel edge to raised public realm planting, with flush concrete kerb adjacent to steel edge where there is a transition to existing or proposed flag paving.

E04 Flush steel edge to courtyard planting and resin bound gravel interfaces with other paving as annotated

E05 Metal retaining edge

E06 Paved wheel stop to avoid vehicles colliding with building

Trees

Existing Root Protection Area (RPA)

Existing trees

Proposed trees

Indicative extent of underground soil cells forming tree pit

Other

WP Water Point

Notes

1. Do not scale this drawing.

2. All dimensions must be checked on site and any discrepancies verified with the architect.

3. Unless shown otherwise, all dimensions are to structural surfaces.

4. Drawing to be read with all other issued information. Any discrepancies to be brought to the attention of the architect.

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P03	23/07/26	For Information	EB/RJ
P02	17/07/26	Draft planning issue for information	EB/E
P01	26/05/26	Stage 3 Issue	B
Rev	Date	Description	EB/RJ
Drawn / Checked			

Project name

184 Tottenham Lane
YMCA London City and North

Drawing number

4079 - LB - ZZ - 00 - D - L - 200001

Drawing

Landscape GA Plan

Purpose of issue

For Information

Scale

1:100 @ A0

Client

YMCA London City and North - YLCAN

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Notes

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This is not a construction drawing, it is unsuitable for the purpose of construction and must on no account be used as such.

Trees						
QTY	Botanical name	Min. height/cm	Form	Clear stem height/cm	Girth	Support
5	Alnus glutinosa 'Laciniata'	400	Clear stem	200	20-25cm	Underground guy
Number of transplants						
4x						

PL01 - Defensive planting to building frontage

Shrubs

Botanical name	Height/cm	Form	Container size	Density m.sq	No. of breaks
Choisya 'Little Bee'	20-30cm	Branched	2L	3	3
Daphne Perfume Princess	20-30cm	Branched	2L	3	3
Hydrangea macrophylla 'White'	40-60cm	Branched	5L	as specimens	5
Lonicera pileata	30-40cm	Branched	2L	4	2
Mahonia eurybracteata soft caress	30-40cm	Branched	2L	3	2
Sarcococca confusa	20-30cm	Bushy	3L	4	6
Viburnum davidii	20-30cm	Bushy	3L	3	3
Viburnum opulus 'compactum'	40-60cm	Bushy	5L	2 or as specimens	5

Herbaceous Plants, Grasses and Ferns

Botanical name	Container size	Density m.sq	Propagation S or V
Bergenia 'Bressingham White'	1L	5	V
Carex pendula	1L	5	V
Dryopteris filix-mas	1L	5	V
Hakonechloa macra	1L	5	V
Iris foetidissima	1L	5	V
Liriope muscari	1L	5	V
Matteuccia struthiopteris	1L	5	V

Bulbs

Botanical name	Grade	Density
Tulipa 'White Triumphator'	10 to 12cm	12
Narcissus 'Thalia'	5to 6cm	10

PL02 Courtyard planting

Shrubs

Botanical name	Height/cm	Form	Container size	Density m.sq	No. of breaks
Daphne Perfume Princess	20-30cm	Branched	2L	3	3
Hydrangea paniculata 'Limelight'	40-60cm	Branched	5L	as specimens	5
Mahonia eurybracteata soft caress	30-40cm	Branched	2L	3	2
Sarcococca confusa	20-30cm	Bushy	3L	4	6
Viburnum opulus 'compactum'	40-60cm	Bushy	5L	2 or as specimens	5

Herbaceous Plants, Grasses and Ferns

Botanical name	Container size	Density m.sq	Propagation S or V
Acanthus mollis 'Rue Leden'	2L	as specimens to edge of bed	V
Alchemilla mollis	P9	7	V
Bergenia 'Bressingham White'	1L	5	V
Carex pendula	1L	5	V
Dryopteris filix-mas	1L	5	V
Hakonechloa macra	1L	5	V
Iris foetidissima	1L	5	V
Liriope muscari	1L	5	V
Oenothera lindheimeri 'Whirling Butter'	1L	5	V
Matteuccia struthiopteris	1L	5	V

Climbing Plants

Botanical name	Container size	Density	Propagation S or V	Note
Lonicera periclymenum	3L	total 1 climbing plant per 2 l/m	V	33% of mix - climber wire support
Hydrangea anomala subsp. Petiolaris	3L	total 1 climbing plant per 2 l/m	V	33% of mix - no support needed
Trachelospermum jasminoides	3L	total 1 climbing plant per 2 l/m	V	33% of mix - climber wire support

Bulbs

Botanical name	Grade	Density
Allium schoenoprasum	tbc	10
Leucojum vernum	tbc	7
Tulipa 'Havran'	10 to 12cm	12

PL03 Rain garden planting to courtyard

Shrubs

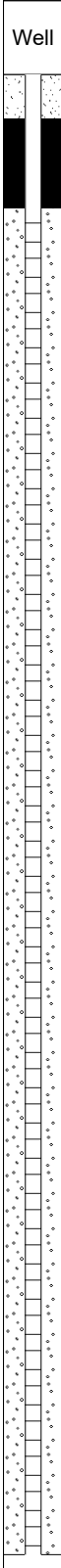
Botanical name	Height/cm	Form	Container size	Density m.sq	No. of breaks
Hydrangea macrophylla 'White'	40-60cm	Branched	5L	as specimens	5
Viburnum opulus 'compactum'	40-60cm	Bushy	5L	2 or as specimens	5

Herbaceous Plants, Grasses and Ferns

Botanical name	Container size	Density m.sq	Propagation S or V
Bergenia 'Bressingham White'	1L	5	V
Carex divulsa	1L	5	V
Dryopteris filix-mas	1L	5	V
Geranium pratense	1L	5	V
Iris foetidissima	1L	5	V
Matteuccia struthiopteris	1L	5	V
Persicaria bistorta superba	1L	5	V

APPENDIX D: Trial Hole Logs



Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.05			MADEGROUND: (asphalt)	1
		0.15						MADEGROUND: Brown gravelly SAND. Sand is fine, Gravel is angular fine type 1	
		0.50	D		0.40			MADE GROUND: Brown grey GRAVEL. Gravel is angular to subangular, fine to coarse brick and concrete.	
		0.80	D		0.90			MADE GROUND: Soft to firm brown sandy gravelly CLAY. Sand is fine, Gravel is angular, fine to coarse brick fragments and some roots.	
		1.00	D	N=6 (1,0/1,1,2,2)				Soft to firm brown CLAY. With some soft mudstone and some grey clay mixed in from about 2.5m. (LONDON CLAY FOMATION)	2
		1.20	SPT						
		1.50	D						
		2.00	D	N=11 (1,1/2,2,3,4)					3
		2.00	SPT						
		2.50	D						
		3.00	UT						4
		3.50	D						
		4.00	D						
		4.00	SPT	N=11 (1,2/2,3,3,3)					5
		4.50	D						
		5.00	D						
		5.00	SPT	N=13 (1,2/3,3,3,4)					6
		5.50	D						
		6.00	D						
		6.00	SPT	N=15 (1,2/3,4,4,4)					7
6.50	D								
7.00	D								
7.50	D	N=16 (1,3/3,4,4,5)					8		
7.50	SPT								
8.00	D								
8.50	D						9		
9.00	D								
9.00	SPT								
9.50	D	N=21 (2,2/4,4,6,7)					10		
10.00	D								

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
1.50	200	1.50	200					0.00	40.45	90	0
40.45	150	11.00	150								

No Ground Water Encountered





Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					10.60			Firm to stiff brown CLAY. Becoming grey from about 9.8m bgl. (LONDON CLAY FOMATION)		
	10.50	UT						Firm to stiff grey CLAY. (LONDON CLAY FOMATION)	11	
	11.00	D								
	11.50	D								
	12.00	D								12
	12.00	SPT	N=20 (2,4/4,5,5,6)							
	12.50	D								
	13.00	D								13
	13.50	D								
	13.50	SPT	N=22 (3,4/4,5,6,7)							
	14.00	D								14
	14.50	D								
	15.00	UT								15
	15.50	D								
	16.00	D								16
	16.50	D								
	16.50	SPT	N=23 (2,3/5,5,6,7)							
	17.00	D								17
	17.50	D								
	18.00	D								18
18.00	SPT	N=30 (2,4/6,7,8,9)								
18.50	D									
19.00	D							19		
19.50	D									
19.50	SPT	N=31 (3,5/6,7,9,9)								
20.00	D							20		

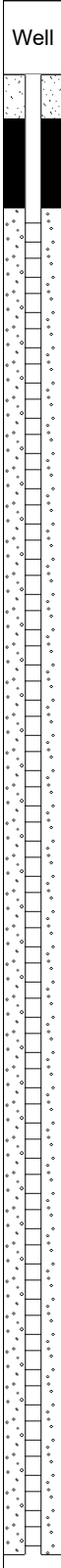
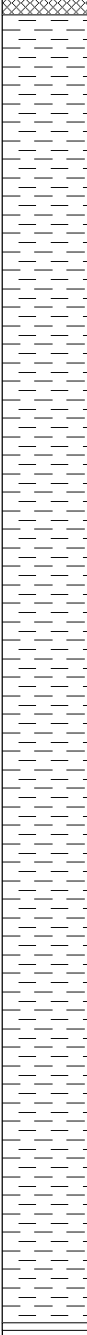
Remarks	
Roots Encountered to 0.90m bgl	
No Ground Water Encountered	









Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D	N=4 (1,0/0,1,1,2)	0.05			MADEGROUND (asphalt)	1
		0.50	D		0.40			MADEGROUND: Brown grey sandy GRAVEL. Sand is fine , Gravel is angular to subangular, fine to coarse brick, concrete, type 1with fragments of metal and rubbish	
		0.80	D		0.70			MADE GROUND: Soft to firm brown sandy gravelly CLAY. Sand is fine, Gravel is angular, fine to coarse brick fragments.	
		1.00	D		MADE GROUND: Soft dark grey silty CLAY				
		1.20	SPT	N=10 (1,1/2,2,3,3)	1.30			Firm to stiff brown CLAY. (LONDON CLAY FORMATION)	2
		1.50	D						
		2.00	UT	N=12 (1,2/2,3,3,4)					3
		2.50	D						
		3.00	D	N=14 (1,2/3,3,4,4)					4
		3.00	SPT						
		3.50	D	N=20 (5 for 75mm/20 for 225mm)					5
		4.00	D						
		4.00	SPT	N=20 (5 for 75mm/20 for 225mm)					6
		4.50	D						
		5.00	D	N=20 (5 for 75mm/20 for 225mm)					7
		5.00	SPT						
		5.50	D	N=20 (5 for 75mm/20 for 225mm)					8
		6.00	D						
		6.50	UT	N=20 (5 for 75mm/20 for 225mm)					9
		7.00	D						
7.50	D	N=20 (5 for 75mm/20 for 225mm)					10		
8.00	D								
8.00	SPT	N=20 (5 for 75mm/20 for 225mm)					10		
8.50	D								
9.00	D	N=20 (5 for 75mm/20 for 225mm)					10		
9.50	UT								
10.00	D	N=20 (5 for 75mm/20 for 225mm)					10		

Remarks	
No Roots Encountered	
No Ground Water Encountered	





Percussion Drilling Log

Project Name: YMCA London City and North		Client: Altair Ltd		Date: 29/05/2026 - 03/06/2026	
Location: 184 Tottenham Lane London N8 8SG		Contractor: ABSI		Co-ords: E530297.16 N188694.15	
Project No. : GWPR7007		Crew Name: Gerhardt Potgieter		Drilling Equipment: Cable percussion (shell and auger)+Hand Tools	
Borehole Number BH02	Hole Type CP	Level	Logged By Gerhardt Potgieter	Scale 1:50	Page Number Sheet 3 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		20.00	SPT	N=26 (3,4/5,6,7,8)	20.45			Firm to stiff grey CLAY. (LONDON CLAY FORMATION)	
								End of Borehole at 20.450m	
									21
									22
									23
									24
									25
									26
									27
									28
									29
									30

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
20.45	150	2.50	150					0.00	20.45	90	0

Remarks

No Roots Encountered

No Ground Water Encountered





Trial Pit Log

Project Name: YMCA London City and North		Client: Altair Ltd		Date: 22/05/2026	
Location: 184 Tottenham Lane London N8 8SG		Contractor: ABSI			
Project No. : GWPR7007		Crew Name:		Equipment:	
Location Number TP2	Location Type TP	Level	Logged By	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05			CONCRETE PATIO SLAB	
		0.20	D		0.20			CONCRETE	
		0.50	D					MADE GROUND: Brown gravelly SAND. Sand is fine to coarse, gravel is angular, fine to coarse concrete, brick and mortar.	
		0.70	D		0.70				
								End of Borehole at 0.700m	
									1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

No Roots Encountered

No Ground Water Encountered





Trial Pit Log

Project Name: YMCA London City and North		Client: Altair Ltd		Date: 22/05/2026	
Location: 184 Tottenham Lane London N8 8SG		Contractor: ABSI			
Project No. : GWPR7007		Crew Name:		Equipment:	
Location Number TP3	Location Type TP	Level	Logged By	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.30			CONCRETE	
		0.50	D					MADE GROUND: Grey GRAVEL, Gravel is angular, fine to coarse type 1 gravels, boulder sized concrete and fine rounded flint.	
		0.80	D						
		1.00	D		1.00			End of Borehole at 1.000m	1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks	
No Roots Encountered	
No Ground Water Encountered	

APPENDIX E: Laboratory Testing Results



Laboratory Report



Contract Number: 87262

Client Ref: **GWPR7007**

Client PO: **GWPR7007**

Date Received: **11-06-2026**

Date Completed: **22-06-2026**

Report Date: **22-06-2026**

Client: **Ground and Water Limited**

This report has been checked and approved by:

Contract Title: **YMCA London City and North, 184 Tottenham Lane, London, N8 8SG**

For the attention of: **Toby Dobson-Smith**

Shaun Jones
Laboratory manager

Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - * UKAS	27
1 point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	15
4 Point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	12
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	10

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Jason Jenkins (Business Development Manager)
Luke Williams (Senior Laboratory Technician) - Paul Evans (Director) - Richard John (Quality/Technical Manager)
Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Vince Williams (Site Technician)
Wayne Honey (HR & HSE Manager)

WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
BS 1377-2:2022 Clause 5.3
BS EN ISO 17892-12:2018+A2:2022 1 Point Liquid Limit
BS EN ISO 17892-1:2014+A1:2022 Determination of Water Content

Contract Number	87262	
Project Name	YMCA London City and North, 184 Tottenham Lane, London, N8 8SG	
Date Tested	18/06/2026	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BH1		D	1.20	-		Brown silty CLAY
BH1		D	2.00	-		Brown silty CLAY
BH1		D	5.00	-		Brown silty CLAY
BH1		D	12.00	-		Brown silty CLAY
BH1		D	19.50	-		Brown silty CLAY
BH1		D	25.00	-		Brown silty CLAY
BH1		D	30.00	-		Brown silty CLAY
BH1		D	36.00	-		Brown silty CLAY
BH1		D	40.00	-		Brown silty CLAY
BH2		D	2.45	-		Brown silty CLAY
BH2		D	4.00	-		Brown silty CLAY
BH2		D	8.00	-		Brown silty CLAY
BH2		D	12.00	-		Brown silty CLAY
BH2		D	17.00	-		Brown silty CLAY
BH2		D	20.00	-		Brown silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		

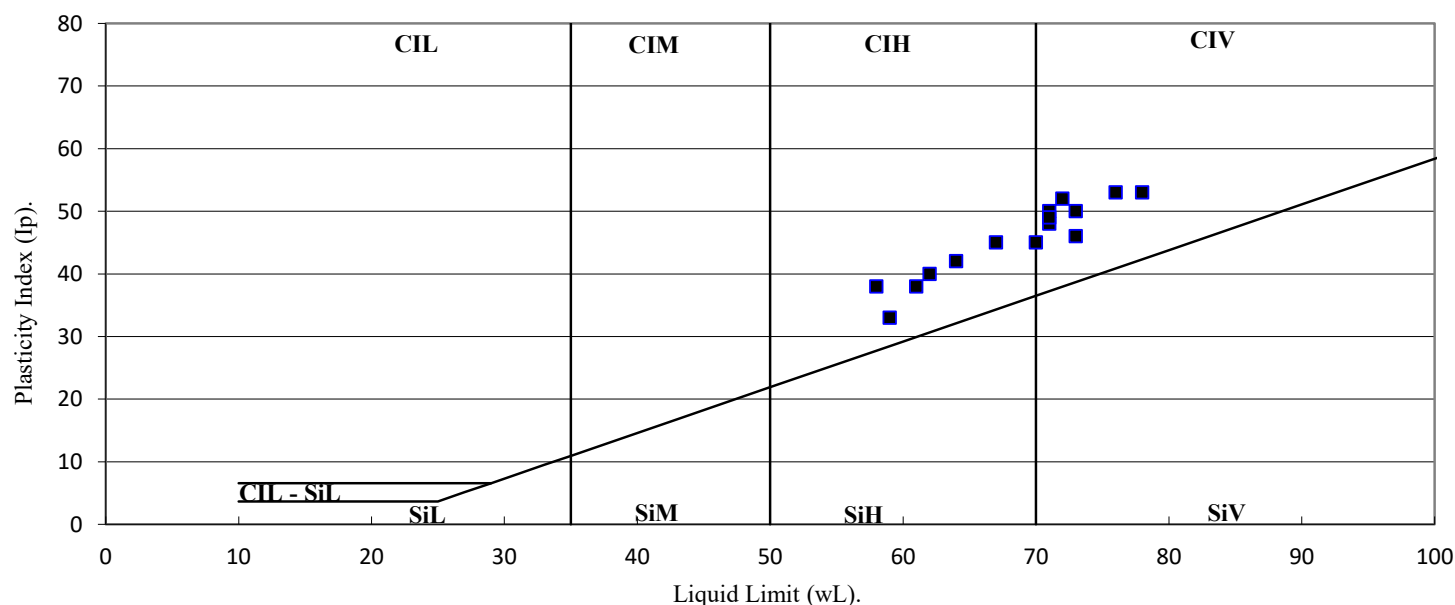
Operator
Clayton. J

Contract Number	87262	
Project Name	YMCA London City and North, 184 Tottenham Lane, London, N8 8SG	
Date Tested	18/06/2026	
Test Comments	80g/30° Fall cone used	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Water Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Factor Applied	Remarks
BH1		D	1.20	-		28.1	76	23	53	100	0.981	CV Very High Plasticity
BH1		D	2.00	-		26.8	64	22	42	100	0.976	CH High Plasticity
BH1		D	5.00	-		29.4	59	26	33	100	0.981	CH High Plasticity
BH1		D	12.00	-		28.5	71	23	48	100	1.005	CV Very High Plasticity
BH1		D	19.50	-		26.1	73	23	50	100	1.016	CV Very High Plasticity
BH1		D	25.00	-		28.3	67	22	45	100	1.015	CH High Plasticity
BH1		D	30.00	-		25.9	71	21	50	100	1.015	CV Very High Plasticity
BH1		D	36.00	-		24.4	58	20	38	100	1.015	CH High Plasticity
BH1		D	40.00	-		25.5	62	22	40	100	0.998	CH High Plasticity
BH2		D	2.45	-		28.9	78	25	53	100	0.981	CV Very High Plasticity
BH2		D	4.00	-		30.4	70	25	45	100	0.998	CH/V High/HighPlasticity
BH2		D	8.00	-		30.2	73	27	46	100	1.028	CV Very High Plasticity
BH2		D	12.00	-		29.5	61	23	38	100	1.005	CH High Plasticity
BH2		D	17.00	-		26.6	71	22	49	100	1.015	CV Very High Plasticity
BH2		D	20.00	-		26.7	72	20	52	100	1.015	CV Very High Plasticity
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								

SYMBOLS : NP = Non Plastic

PLASTICITY CHART
BS EN ISO 14688-2:2018 Clause 4.4



*For sample descriptions please see sample descriptions sheet

Operator
Clayton. J

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description

Brown silty CLAY

Depth Top (m)

10.00

Depth Base (m)

10.95

Date Tested

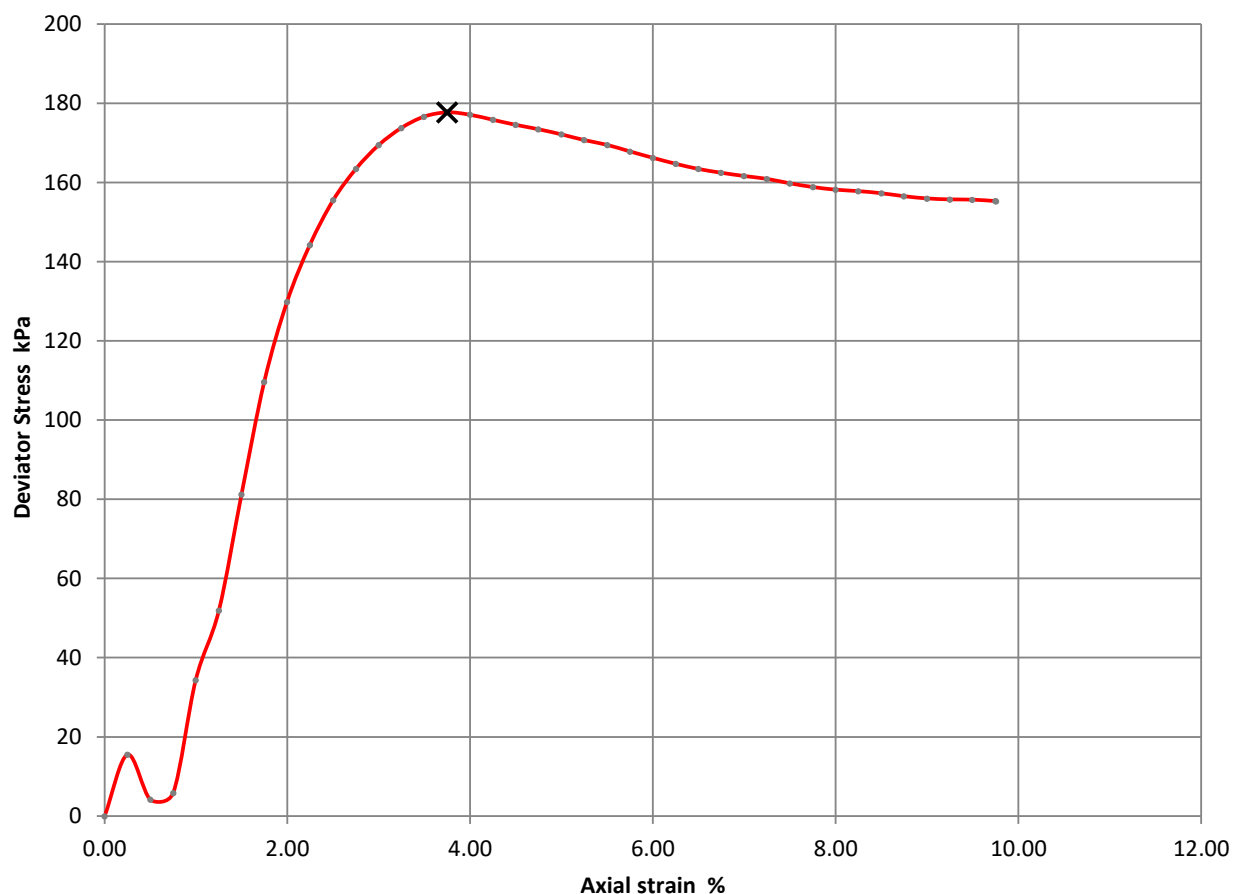
16/06/2026

Sample Type

U

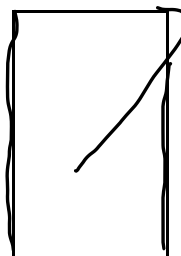
Operator

David. E



Moisture Content (%)	30
Bulk Density (Mg/m ³)	1.91
Dry Density (Mg/m ³)	1.47
Specimen Length (mm)	208.4
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	210
Deviator Stress (kPa)	178
Undrained Shear Strength (kPa)	89
Failure Strain (%)	4
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description

Brown silty CLAY

Depth Top (m)

15.00

Depth Base (m)

15.45

Date Tested

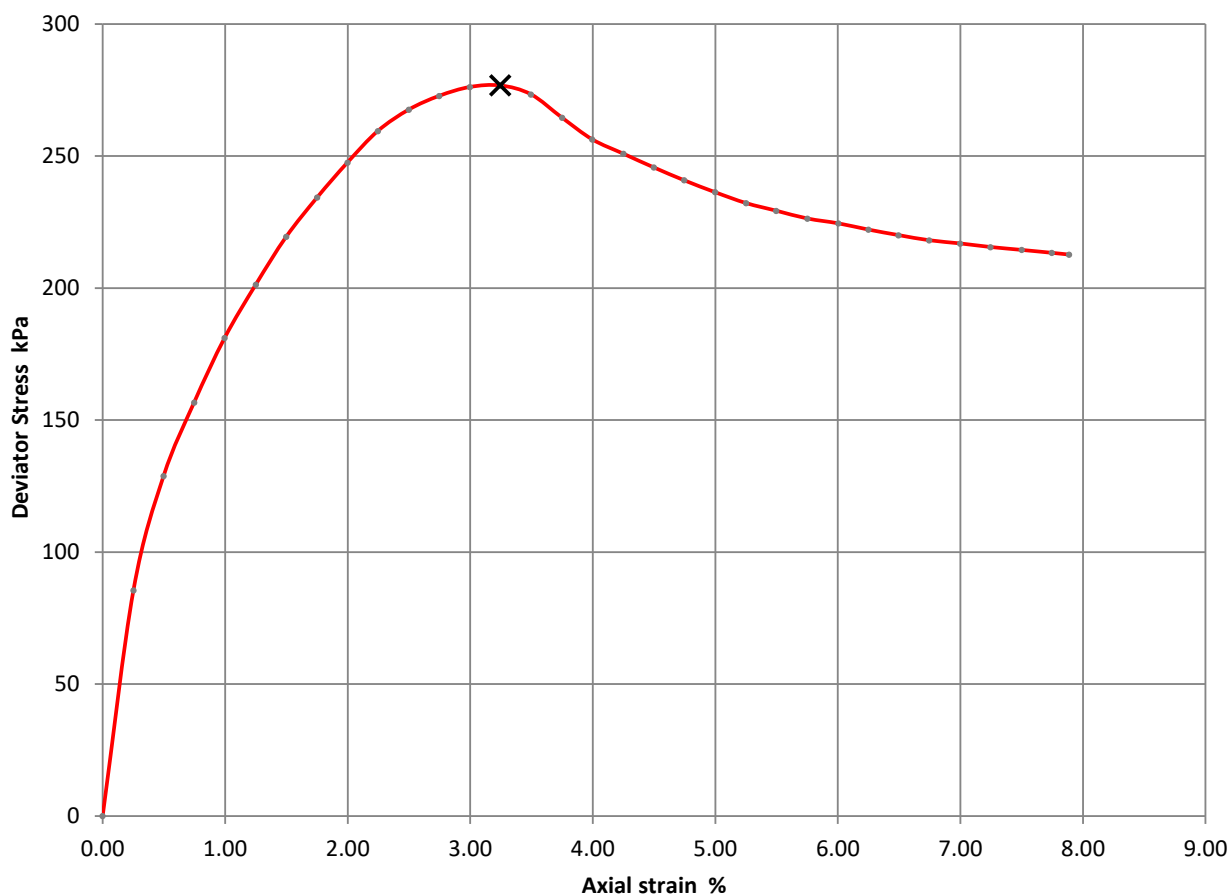
16/06/2026

Sample Type

U

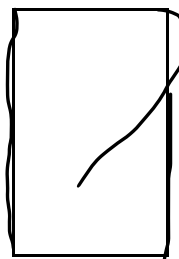
Operator

David. E



Moisture Content (%)	27
Bulk Density (Mg/m ³)	1.94
Dry Density (Mg/m ³)	1.53
Specimen Length (mm)	207.4
Specimen Diameter (mm)	104.1
Cell Pressure (kPa)	300
Deviator Stress (kPa)	277
Undrained Shear Strength (kPa)	138
Failure Strain (%)	3
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.33

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

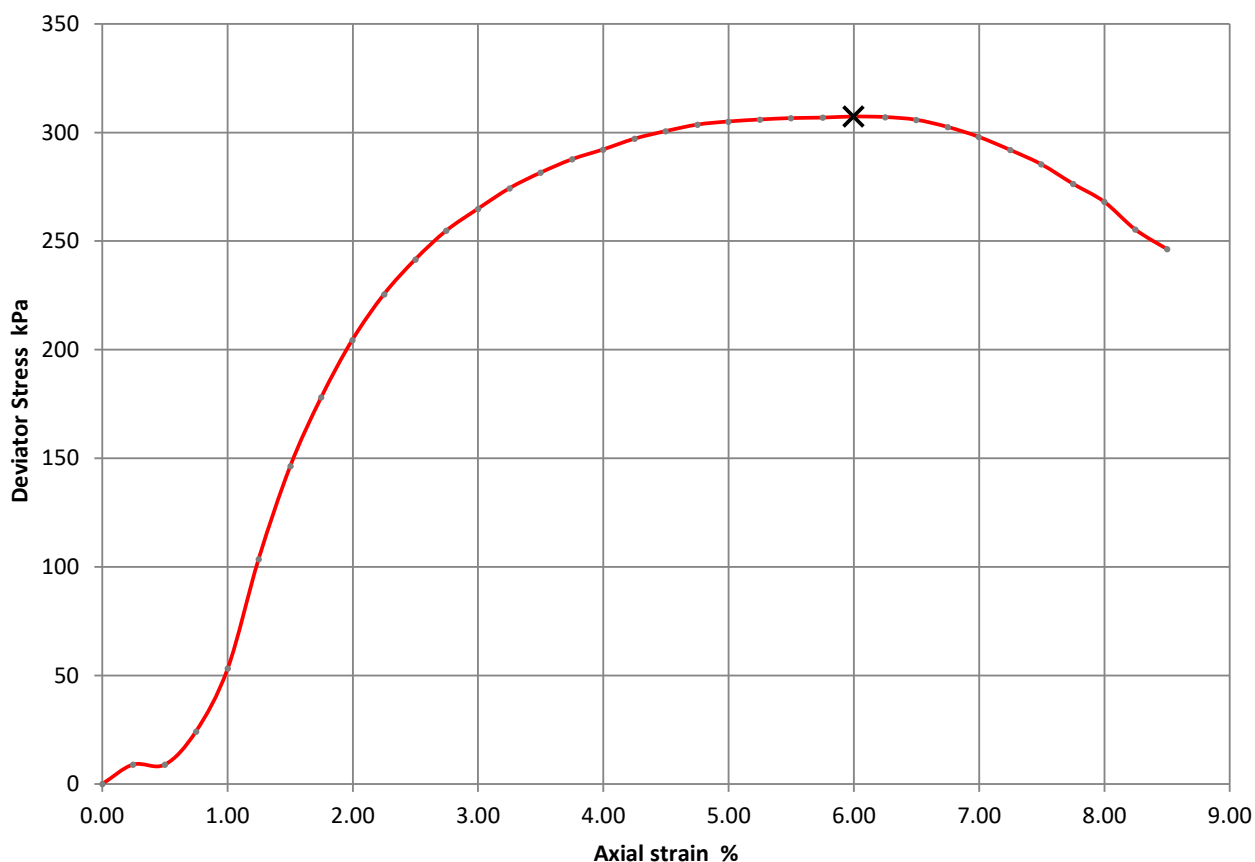
Depth Top (m) 21.00

Depth Base (m) 21.45

Date Tested 16/06/2026

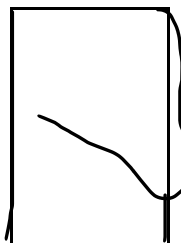
Sample Type U

Operator David. E



Moisture Content (%)	27
Bulk Density (Mg/m ³)	1.93
Dry Density (Mg/m ³)	1.51
Specimen Length (mm)	208.4
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	420
Deviator Stress (kPa)	307
Undrained Shear Strength (kPa)	154
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

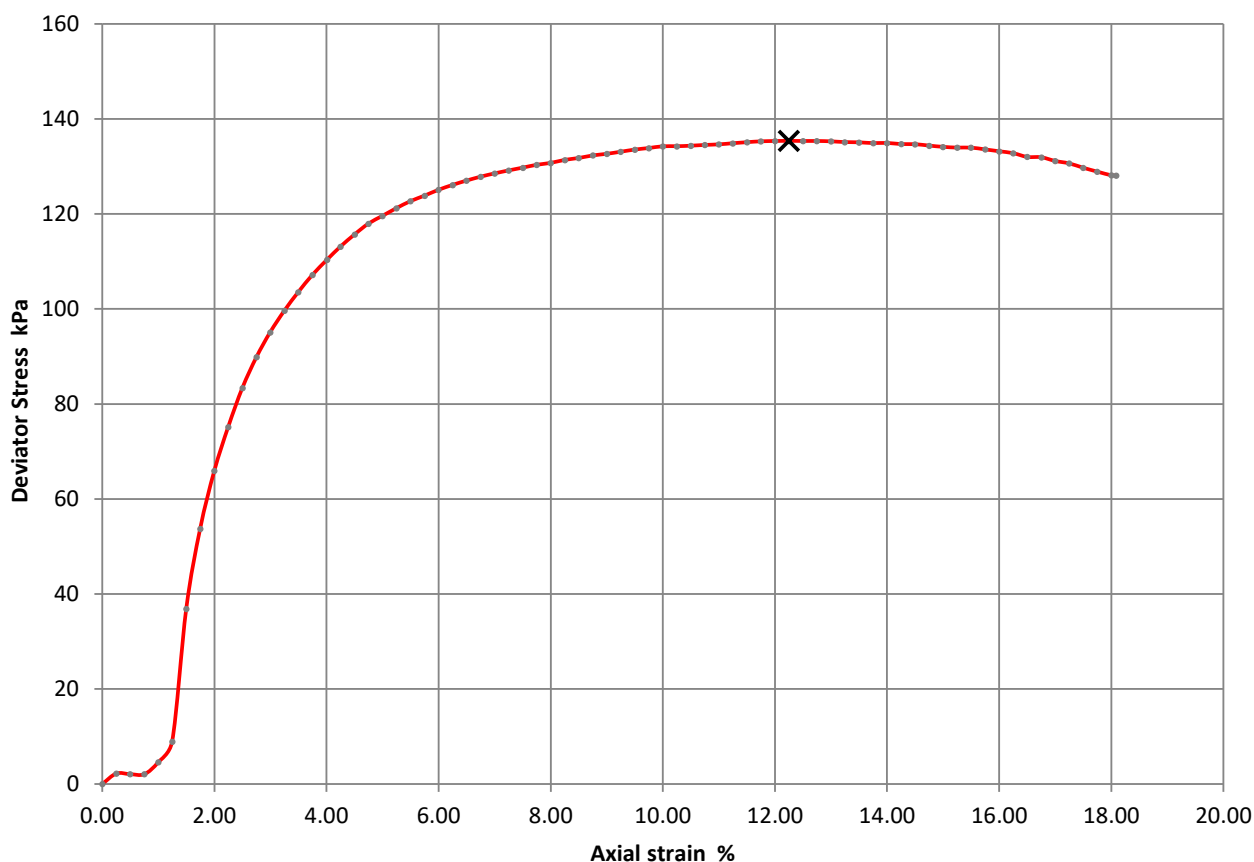
Depth Top (m) 3.00

Depth Base (m) 3.45

Date Tested 16/06/2026

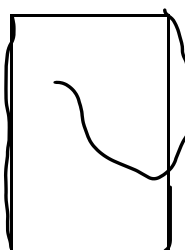
Sample Type U

Operator David. E



Moisture Content (%)	31
Bulk Density (Mg/m ³)	1.88
Dry Density (Mg/m ³)	1.44
Specimen Length (mm)	208.3
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	60
Deviator Stress (kPa)	135
Undrained Shear Strength (kPa)	68
Failure Strain (%)	12
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

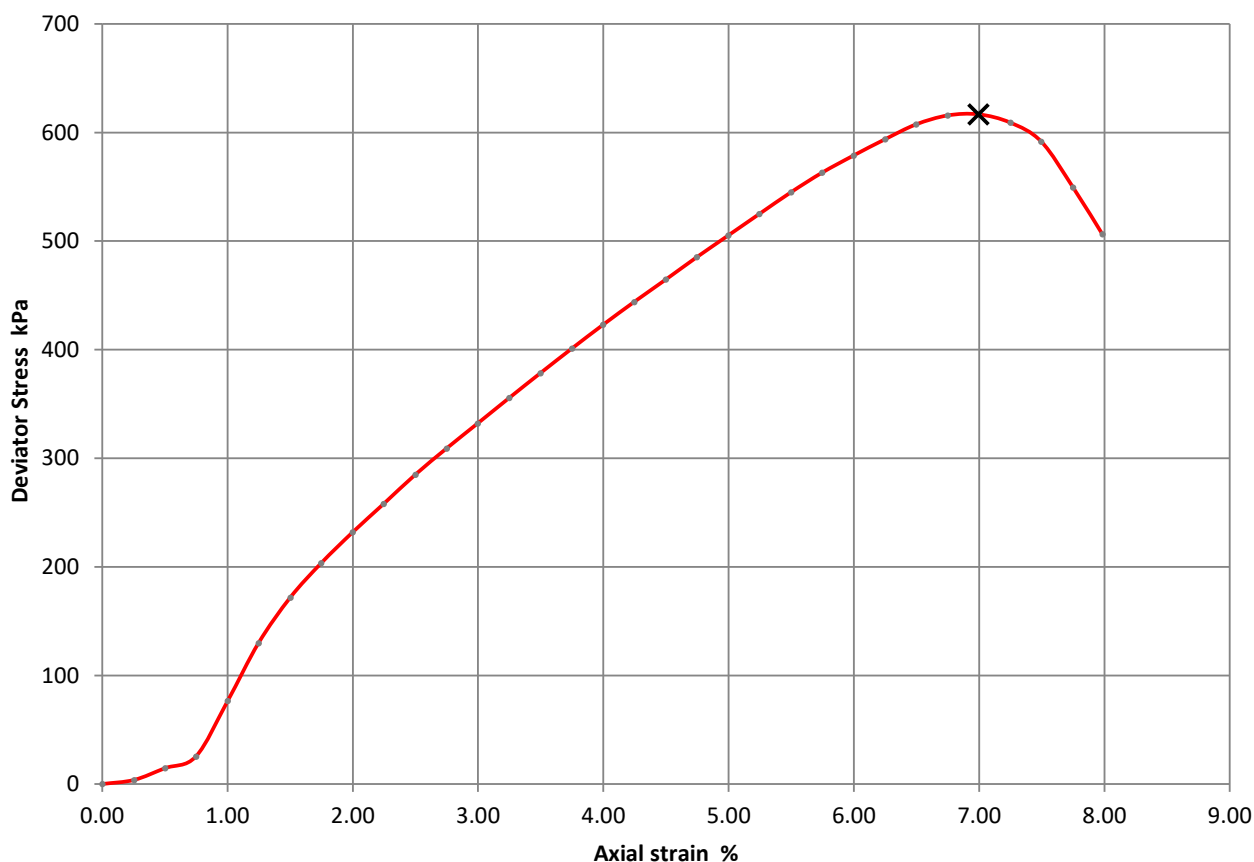
Depth Top (m) 34.50

Depth Base (m) 34.85

Date Tested 16/06/2026

Sample Type U

Operator David. E



Moisture Content (%)	26
Bulk Density (Mg/m ³)	1.95
Dry Density (Mg/m ³)	1.55
Specimen Length (mm)	208.3
Specimen Diameter (mm)	104.4
Cell Pressure (kPa)	690
Deviator Stress (kPa)	617
Undrained Shear Strength (kPa)	308
Failure Strain (%)	7
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

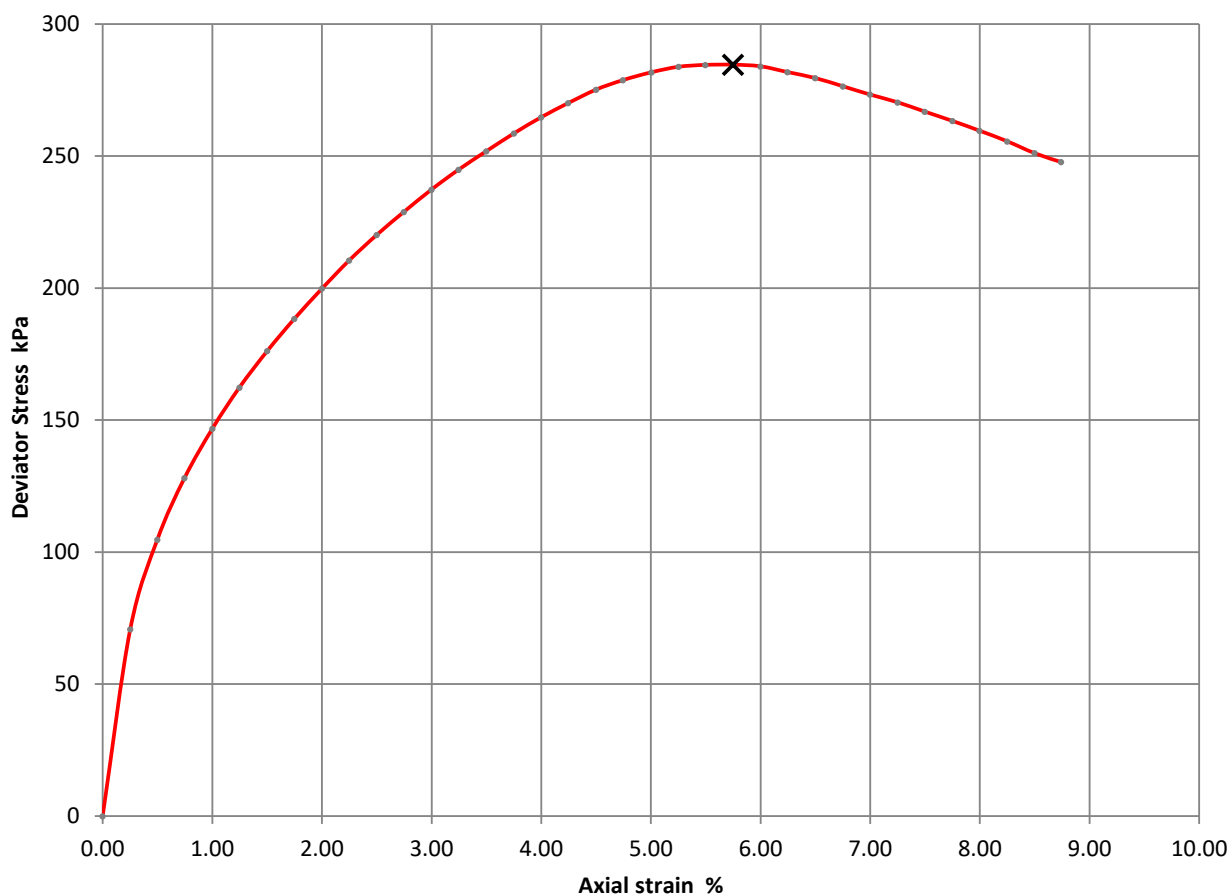
Depth Top (m) 12.50

Depth Base (m) 12.95

Date Tested 16/06/2026

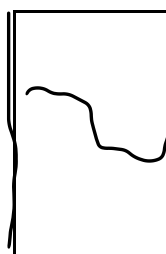
Sample Type U

Operator David. E



Moisture Content (%)	32
Bulk Density (Mg/m ³)	2.00
Dry Density (Mg/m ³)	1.52
Specimen Length (mm)	207.3
Specimen Diameter (mm)	103.3
Cell Pressure (kPa)	250
Deviator Stress (kPa)	285
Undrained Shear Strength (kPa)	142
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.33

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

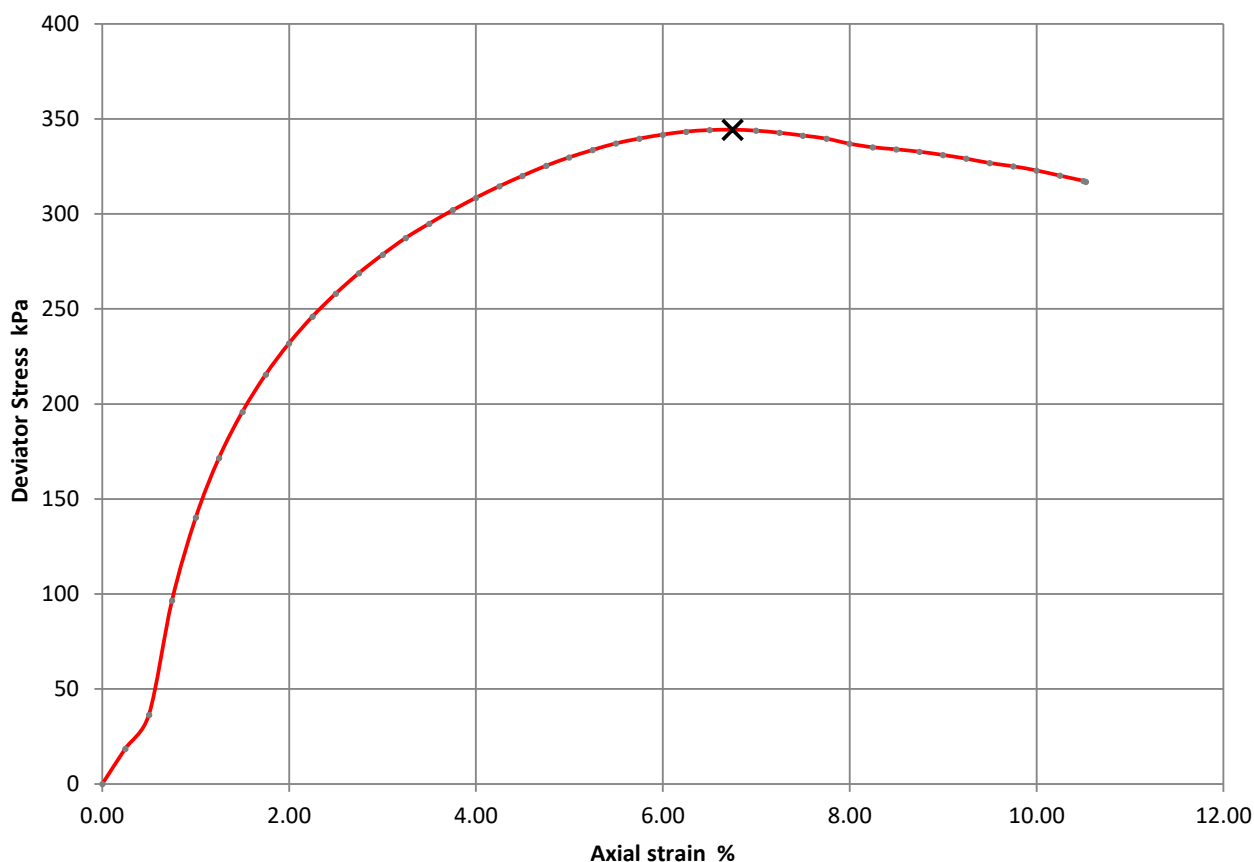
Depth Top (m) 18.50

Depth Base (m) 18.95

Date Tested 16/06/2026

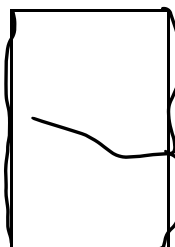
Sample Type U

Operator David. E



Moisture Content (%)	51
Bulk Density (Mg/m ³)	1.94
Dry Density (Mg/m ³)	1.28
Specimen Length (mm)	207.4
Specimen Diameter (mm)	104.2
Cell Pressure (kPa)	370
Deviator Stress (kPa)	344
Undrained Shear Strength (kPa)	172
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.33

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

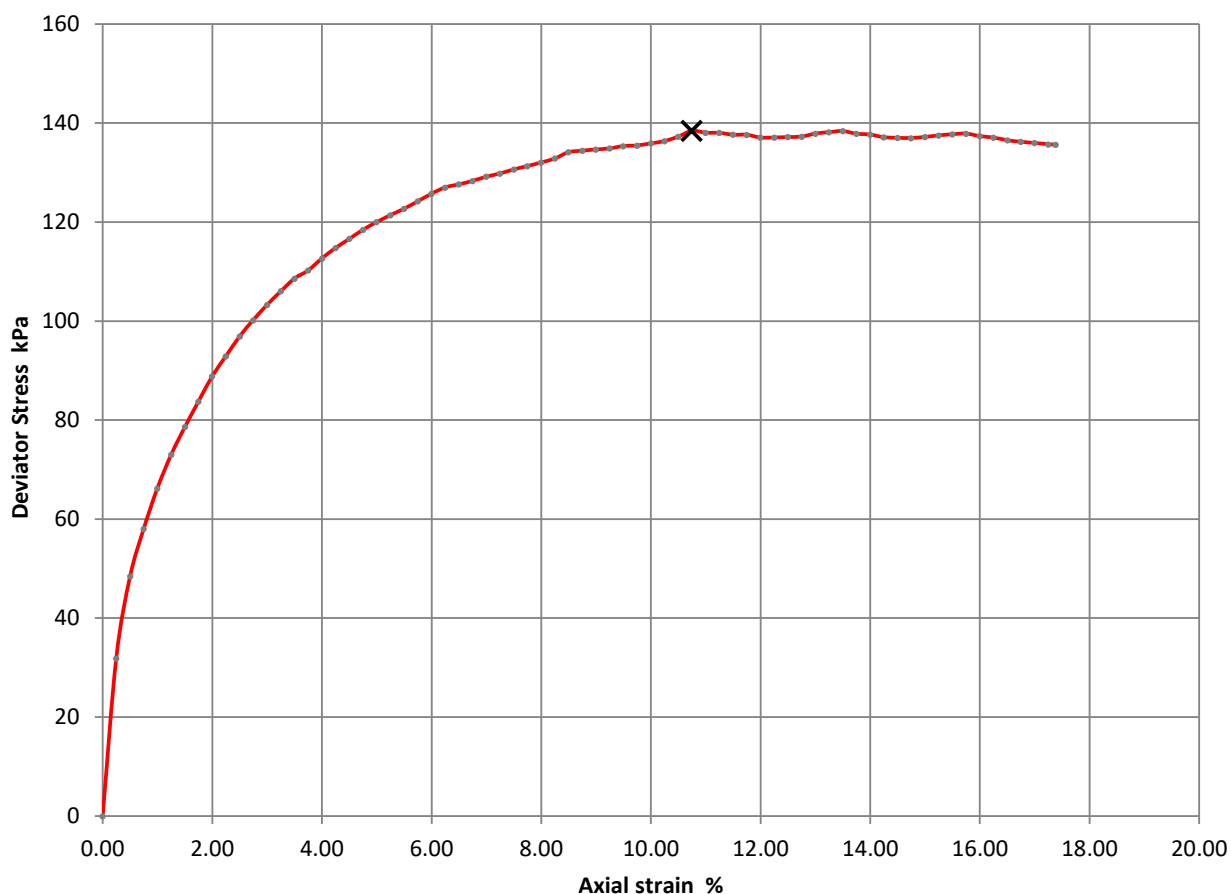
Depth Top (m) 2.00

Depth Base (m) 2.45

Date Tested 16/06/2026

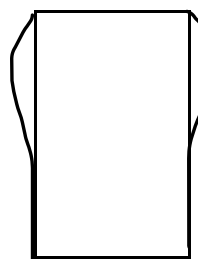
Sample Type U

Operator David. E



Moisture Content (%)	33
Bulk Density (Mg/m ³)	1.86
Dry Density (Mg/m ³)	1.40
Specimen Length (mm)	208.3
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	40
Deviator Stress (kPa)	138
Undrained Shear Strength (kPa)	69
Failure Strain (%)	11
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown gravelly sandy silty CLAY

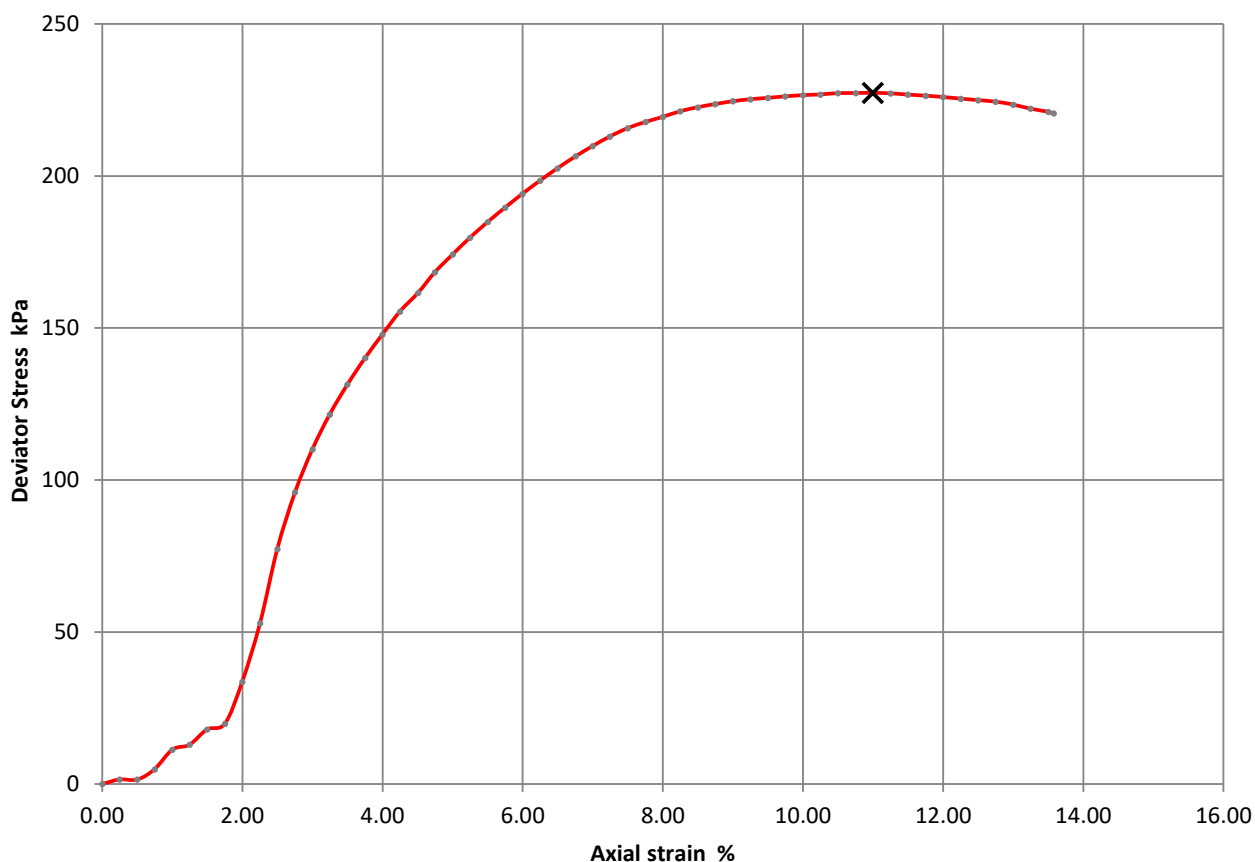
Depth Top (m) 6.50

Depth Base (m) 6.95

Date Tested 16/06/2026

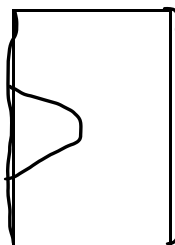
Sample Type U

Operator David. E



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.92
Dry Density (Mg/m ³)	1.49
Specimen Length (mm)	208.4
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	130
Deviator Stress (kPa)	227
Undrained Shear Strength (kPa)	114
Failure Strain (%)	11
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.32

Notes.



Failure Sketch.

Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 87262

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description Brown silty CLAY

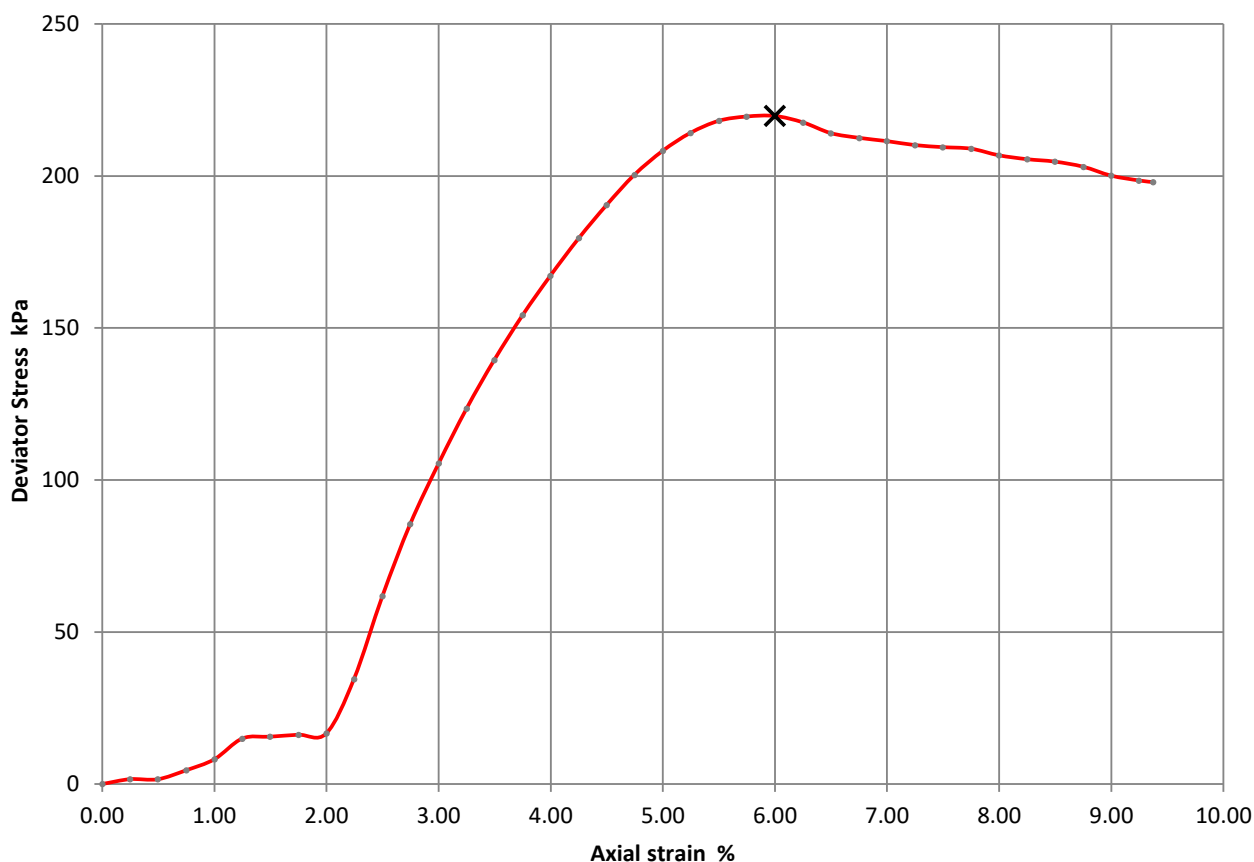
Depth Top (m) 9.50

Depth Base (m) 9.95

Date Tested 16/06/2026

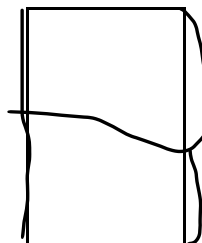
Sample Type U

Operator David. E



Moisture Content (%)	33
Bulk Density (Mg/m ³)	1.97
Dry Density (Mg/m ³)	1.48
Specimen Length (mm)	207.3
Specimen Diameter (mm)	103.3
Cell Pressure (kPa)	190
Deviator Stress (kPa)	220
Undrained Shear Strength (kPa)	110
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	1.33

Notes.



Failure Sketch.

Laboratory Report

Contract Number: 87536

Client Ref: **GWPR7007**

Client PO: **GWPR7007**

Date Received: **23-06-2026**

Date Completed: **01-07-2026**

Report Date: **01-07-2026**

Client: **Ground and Water Limited**

This report has been checked and approved by:

Contract Title: **YMCA London City and North, 184 Tottenham Lane, London, N8 8SG**

For the attention of: **Toby Dobson-Smith**



Richard John

Quality/Technical Manager

Description	Qty
100mm Unconsolidated Undrained Triaxial	2
BS EN ISO 17892-8:2018 - @ Non Accredited Test	

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Approved Signatories:

Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Jason Jenkins (Business Development Manager)

Luke Williams (Senior Laboratory Technician) - Paul Evans (Director) - Richard John (Quality/Technical Manager)

Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)

Unconsolidated Undrained Triaxial Test
BS 1377-2:2022, 28 &
BS EN ISO 17892-8:2018, 8.1

Contract Number 87536

Borehole/Pit No. BH1

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description

Brown silty CLAY

Depth Top (m)

15.00

Depth Base (m)

15.45

Date Tested

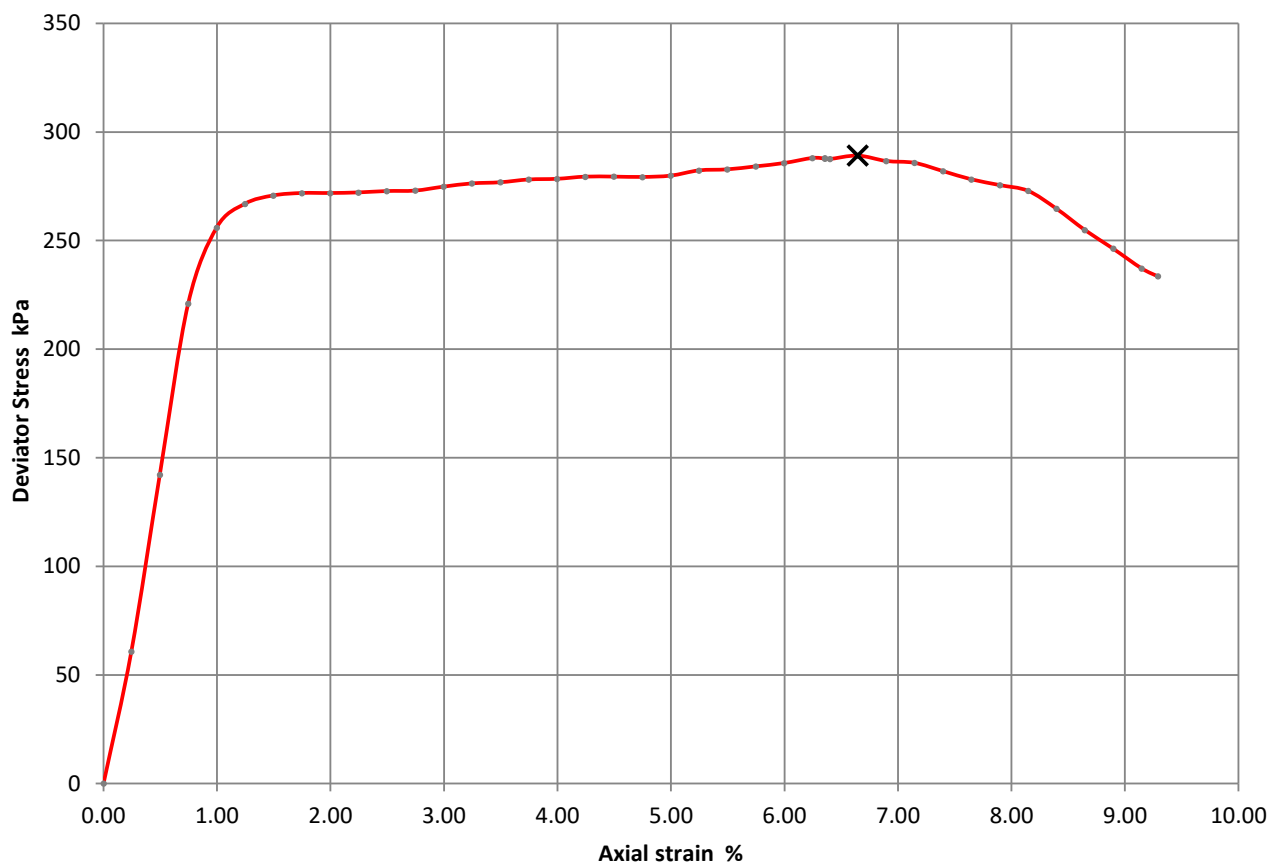
24/06/2026

Sample Type

UT

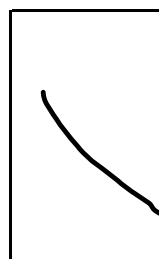
Operator

David E



Water Content (%)	25.8
Bulk Density (Mg/m ³)	1.97
Dry Density (Mg/m ³)	1.57
Specimen Length (mm)	210.6
Specimen Diameter (mm)	103.2
Cell Pressure (kPa)	300
Deviator Stress (kPa)	289
Undrained Shear Strength (kPa)	145
Strain at Failure (%)	6.6
Mode of Failure	Brittle
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	0.30
Water Content in the Failure Zone (%) (if measured)	28.4

Notes.



Failure Sketch.

Unconsolidated Undrained Triaxial Test
BS 1377-2:2022, 28 &
BS EN ISO 17892-8:2018, 8.1

Contract Number 87536

Borehole/Pit No. BH2

Project Name YMCA London City and North, 184 Tottenham Lane, London, N8 8SG

Sample No.

Soil Description

Brown silty CLAY

Depth Top (m) 15.00

Depth Base (m) 15.45

Date Tested

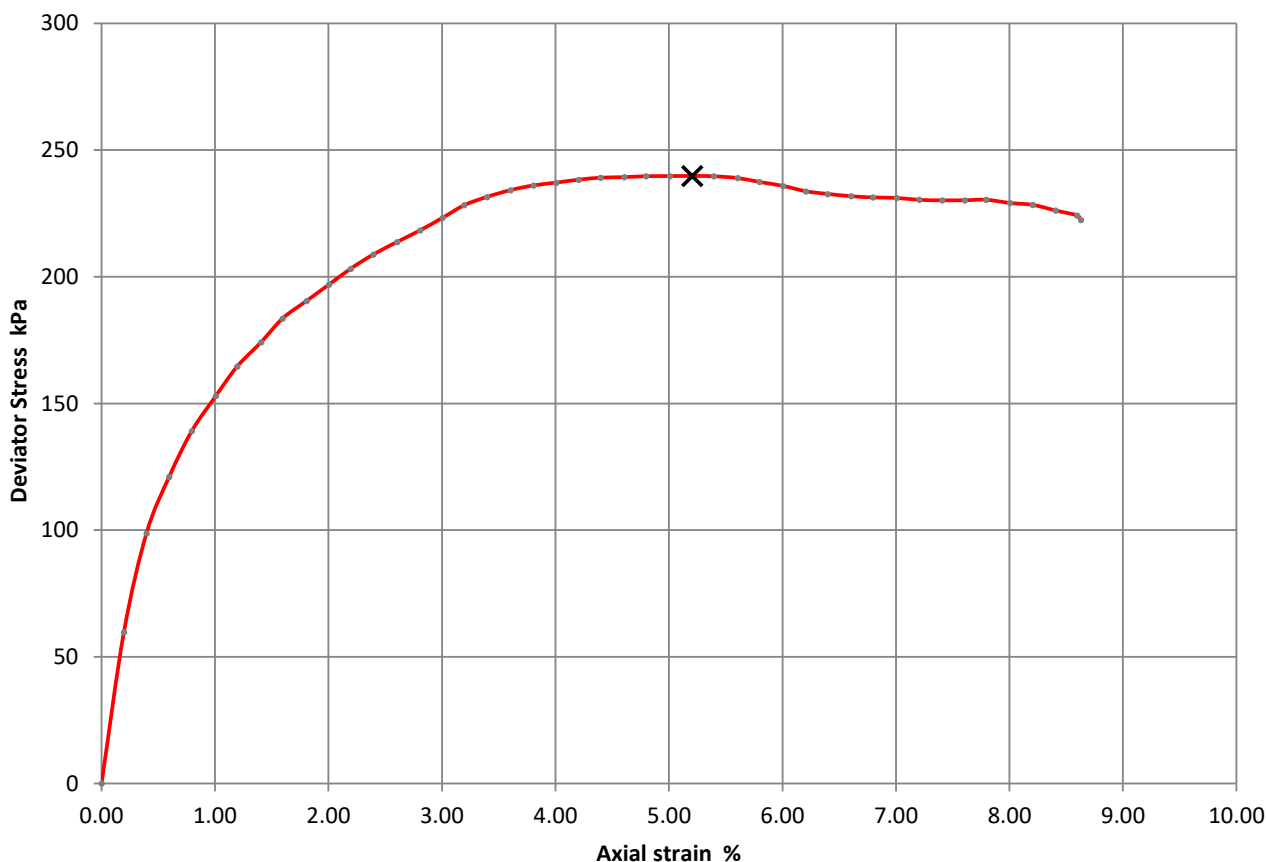
24/06/2026

Sample Type

UT

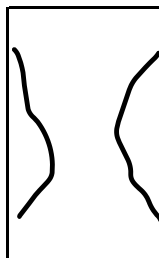
Operator

David E



Water Content (%)	27.8
Bulk Density (Mg/m ³)	1.98
Dry Density (Mg/m ³)	1.55
Specimen Length (mm)	209.3
Specimen Diameter (mm)	103.2
Cell Pressure (kPa)	310
Deviator Stress (kPa)	240
Undrained Shear Strength (kPa)	120
Strain at Failure (%)	5.2
Mode of Failure	Brittle
Membrane Used/Thickness	Rubber/0.4mm
Rate of Strain (%/min)	0.30
Water Content in the Failure Zone (%) (if measured)	27.9

Notes.



Failure Sketch.

Ground and Water Ltd
2 The Long Barn
Norton Farm
Selbourne Road
Alton
Hampshire
GU34 3NB

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t:

t: 01923 225404

e: toby.dobsonsmith@groundandwater.co.uk

f: 01923 237404

e: info-i2analytical@normecgroup.com

Analytical Report Number : 26-031012

Project / Site name:	YMCA London City and North 184 Tottenham	Samples received on:	09/06/2026
Your job number:		Samples instructed on/ Analysis started on:	10/06/2026
Your order number:	GWPR7007	Analysis completed by:	20/06/2026
Report Issue Number:	1	Report issued on:	22/06/2026
Samples Analysed:	9 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number	945991	945992	945993	945994	945995
Sample Reference	BH1	BH2	BH1	BH2	BH1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00-1.00	0.50-0.50	0.30-0.60	0.30-0.50	3.50-3.50
Date Sampled	03/06/2026	03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	47	< 0.1
Moisture Content	%	0.01	NONE	21	20	17	15	21
Total mass of sample received	kg	0.1	NONE	0.6	0.7	2	2	1.2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN	MJN	-
Analysis completed	N/A	N/A	N/A	20/06/2026	20/06/2026	20/06/2026	20/06/2026	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.8	7.5	8.6	11.9	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	1.51
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	490	960	160	76	6100
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	3060
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	247	479	78.9	37.8	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	46
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	5700
Total Sulphur	%	0.005	MCERTS	-	-	-	-	0.573
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	-	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	< 0.05
Organic Matter (automated)	%	0.1	MCERTS	0.6	2.9	2.8	2	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.4	1.7	1.6	1.2	-
Nitrate as NO ₃ (Water Soluble) (2:1)	mg/kg	0.9	NONE	-	-	-	-	< 0.90
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	0.9	N/A	-	-	-	-	< 0.90

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
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Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number	945991	945992	945993	945994	945995
Sample Reference	BH1	BH2	BH1	BH2	BH1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00-1.00	0.50-0.50	0.30-0.60	0.30-0.50	3.50-3.50
Date Sampled	03/06/2026	03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.08	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.06	0.36	0.36	0.58	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.05	0.06	0.13	-
Fluoranthene	mg/kg	0.05	MCERTS	0.15	0.63	0.94	1.3	-
Pyrene	mg/kg	0.05	MCERTS	0.14	0.56	0.87	1.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.08	0.28	0.46	0.75	-
Chrysene	mg/kg	0.05	MCERTS	0.1	0.35	0.55	0.83	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.1	0.4	0.53	1.1	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.16	0.36	0.44	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.07	0.3	0.53	0.88	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.16	0.28	0.57	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.06	0.1	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.2	0.34	0.7	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	3.46	5.35	8.73	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9	13	17	46	-
Boron (water soluble)	mg/kg	0.2	MCERTS	4.3	3.5	3	2.5	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	2.5	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	53	33	32	40	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	25	52	76	140	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	230	340	890	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	1.2	7.9	0.8	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36	19	20	43	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.1	< 1.0	1.5	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	85	60	60	92	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	170	130	2200	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	310
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	620

Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number	945991	945992	945993	945994	945995
Sample Reference	BH1	BH2	BH1	BH2	BH1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00-1.00	0.50-0.50	0.30-0.60	0.30-0.50	3.50-3.50
Date Sampled	03/06/2026	03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	-	-	< 10	< 10	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	< 10	< 10	-
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	< 10	< 10	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-	-	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-	-	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	-	-	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	< 10	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	< 10	< 10	-
TPHCWG - Aromatic >EC35 - EC40 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	< 10	< 10	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	< 10	< 10	-
TPHCWG - Aromatic >EC5 - EC40 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	< 10	< 10	-

TPH Total >EC5 - EC40 _{EH_CU+HS_ID_TOTAL}	mg/kg	10	NONE	-	-	< 10	< 10	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	< 8.0	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number	945996	945997	945998	945999
Sample Reference	BH1	BH1	BH2	BH2
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	16.95-16.95	39.00-39.00	10.00-10.00	8.00-8.00
Date Sampled	03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	20	17	20	20
Total mass of sample received	kg	0.1	NONE	0.8	1	1.1	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-
Analysis completed	N/A	N/A	N/A	-	-	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.1	8.7	8.4	7.9
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.113	-	0.25	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1200	2500	1900	4800
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	579	1260	944	2410
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	70	-	88	-
Total Sulphur	mg/kg	50	MCERTS	2300	-	3600	-
Total Sulphur	%	0.005	MCERTS	0.227	-	0.355	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	8.1	-	6.1	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	0.51	-	0.38	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	-
Nitrate as NO ₃ (Water Soluble) (2:1)	mg/kg	0.9	NONE	2.83	-	< 0.90	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	0.9	N/A	1.41	-	< 0.90	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-
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Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number				945996	945997	945998	945999
Sample Reference				BH1	BH1	BH2	BH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				16.95-16.95	39.00-39.00	10.00-10.00	8.00-8.00
Date Sampled				03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	28	-	59	-
Magnesium (water soluble)	mg/kg	5	NONE	55	-	120	-

Analytical Report Number: 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number	945996	945997	945998	945999
Sample Reference	BH1	BH1	BH2	BH2
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	16.95-16.95	39.00-39.00	10.00-10.00	8.00-8.00
Date Sampled	03/06/2026	03/06/2026	03/06/2026	03/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-
TPHCWG - Aromatic >EC35 - EC40 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-
TPHCWG - Aromatic >EC5 - EC40 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-

TPH Total >EC5 - EC40 _{EH_CU+HS_ID_TOTAL}	mg/kg	10	NONE	-	-	-	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
945991	BH1	None Supplied	1.00-1.00	Brown clay and sand with vegetation and gravel
945992	BH2	None Supplied	0.50-0.50	Brown loam and clay with gravel and brick
945993	BH1	None Supplied	0.30-0.60	Brown clay and sand with gravel
945994	BH2	None Supplied	0.30-0.50	Brown gravelly loam with stones
945995	BH1	None Supplied	3.50-3.50	Brown clay
945996	BH1	None Supplied	16.95-16.95	Brown clay
945997	BH1	None Supplied	39.00-39.00	Brown clay
945998	BH2	None Supplied	10.00-10.00	Brown clay
945999	BH2	None Supplied	8.00-8.00	Brown clay

Analytical Report Number : 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS

Analytical Report Number : 26-031012

Project / Site name: YMCA London City and North 184 Tottenham

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Water Soluble Nitrate (2:1) as NO ₃ in soil	Determination of nitrate as NO ₃ in soil by discrete method	In-house method by discrete analyzer based on TON as N, Total Oxidized Nitrogen (Vanadium Chloride reduction), Thermo Fisher Scientific, MANUAL 2015-0	L082B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



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Analytical Report Number : 26-031574

Project / Site name: YMCA London City and North 184
Tottenham

Samples received on: 09/06/2026

Your job number:

**Samples instructed on/
Analysis started on:** 10/06/2026

Your order number: GWPR7007

Analysis completed by: 23/06/2026

Report Issue Number: 1

Report issued on: 23/06/2026

Samples Analysed: 2 soil samples - 2 leachate samples

Signed:

Ashleigh Cunningham
Customer Service Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 26-031574

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number				949101	949102
Sample Reference				BH1	BH2
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.30-0.60	0.30-0.50
Date Sampled				03/06/2026	03/06/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Mass of stone >10mm	%	0.1	NONE	< 0.1	8.6
Moisture Content	%	0.01	NONE	17	19
Total mass of sample received	kg	0.1	NONE	2	2

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	8.1	8.4
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.7	1.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.1	5.4
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	6.5	18

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.06
Acenaphthylene	mg/kg	0.05	MCERTS	0.12	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.18	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.14	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.3	0.68
Anthracene	mg/kg	0.05	MCERTS	0.51	0.21
Fluoranthene	mg/kg	0.05	MCERTS	4.9	1.5
Pyrene	mg/kg	0.05	MCERTS	4.3	1.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.2	0.77
Chrysene	mg/kg	0.05	MCERTS	2.5	0.84
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	3.2	1.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.1	0.54
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.5	0.91
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.4	0.56
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.38	0.16
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	0.75
Coronene	mg/kg	0.05	NONE	0.25	0.15

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	27.4	9.47
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Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	< 10	26
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

Total BTEX	µg/kg	10	MCERTS	< 10	< 10
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Analytical Report Number: 26-031574
Project / Site name: YMCA London City and North 184 Tottenham
Your Order No: GWPR7007

Lab Sample Number				949101	949102
Sample Reference				BH1	BH2
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.30-0.60	0.30-0.50
Date Sampled				03/06/2026	03/06/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number: 26-031574

Project / Site name: YMCA London City and North 184 Tottenham

Your Order No: GWPR7007

Lab Sample Number				949101	949102
Sample Reference				BH1	BH2
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.30-0.60	0.30-0.50
Date Sampled				03/06/2026	03/06/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

10:1 WAC Leachate

Arsenic	mg/l	0.001	ISO 17025	0.00452	0.0057
Barium	mg/l	0.00005	ISO 17025	0.0183	0.046
Cadmium	mg/l	0.0001	ISO 17025	< 0.000100	< 0.000100
Chromium	mg/l	0.0004	ISO 17025	0.00093	0.0027
Copper	mg/l	0.0007	ISO 17025	0.014	0.0099
Mercury	mg/l	0.0005	ISO 17025	< 0.000500	< 0.000500
Molybdenum	mg/l	0.0004	ISO 17025	0.0117	0.0147
Nickel	mg/l	0.0003	ISO 17025	0.00088	0.00099
Lead	mg/l	0.001	ISO 17025	0.011	0.0054
Antimony	mg/l	0.0017	ISO 17025	0.0051	0.012
Selenium	mg/l	0.004	ISO 17025	< 0.0040	< 0.0040
Zinc	mg/l	0.0004	ISO 17025	0.017	0.021
Chloride	mg/l	0.15	ISO 17025	2.8	1.3
Fluoride	mg/l	0.05	ISO 17025	0.67	0.4
Sulphate	mg/l	0.045	ISO 17025	9.1	41
Total dissolved solids	mg/l	6	ISO 17025	74	100
Total monohydric phenols	mg/l	0.01	ISO 17025	< 0.010	< 0.010
Dissolved organic carbon	mg/l	0.1	NONE	8.62	6.8

10:1 WAC Leachate

Arsenic	mg/kg	0.01	NONE	0.0452	0.057
Barium	mg/kg	0.0005	NONE	0.183	0.46
Cadmium	mg/kg	0.001	NONE	< 0.00100	< 0.00100
Chromium	mg/kg	0.004	NONE	0.0093	0.027
Copper	mg/kg	0.007	NONE	0.14	0.099
Mercury	mg/kg	0.005	NONE	< 0.00500	< 0.00500
Molybdenum	mg/kg	0.004	NONE	0.117	0.147
Nickel	mg/kg	0.003	NONE	0.0088	0.0099
Lead	mg/kg	0.01	NONE	0.11	0.054
Antimony	mg/kg	0.017	NONE	0.051	0.12
Selenium	mg/kg	0.04	NONE	< 0.040	< 0.040
Zinc	mg/kg	0.004	NONE	0.17	0.21
Chloride	mg/kg	1.5	NONE	28	13
Fluoride	mg/kg	0.5	NONE	6.7	4
Sulphate	mg/kg	0.45	NONE	91	410
Total dissolved solids	mg/kg	60	NONE	740	1000
Total monohydric phenols	mg/kg	0.1	NONE	< 0.10	< 0.10
Dissolved organic carbon	mg/kg	1	NONE	86.2	68

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Waste Acceptance Criteria Analytical Results							
Report No:	26-031574						
					Client: Ground and Water Ltd		
Location	YMCA London City and North 184 Tottenham						
Lab Reference (Sample Number)	949101				Landfill Waste Acceptance Criteria		
Sampling Date	03/06/2026				Limits		
Sample ID	BH1				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.30-0.60						
Solid Waste Analysis							
TOC (%)**	1.7				3%	5%	6%
Loss on Ignition (%) **	5.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	27.4				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	6.5				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00452			0.0452	0.5	2	25
Barium *	0.0183			0.183	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.00093			0.0093	0.5	10	70
Copper *	0.014			0.14	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.0117			0.117	0.5	10	30
Nickel *	0.00088			0.0088	0.4	10	40
Lead *	0.011			0.11	0.5	10	50
Antimony *	0.0051			0.051	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.017			0.17	4	50	200
Chloride *	2.8			28	800	15000	25000
Fluoride*	0.67			6.7	10	150	500
Sulphate *	9.1			91	1000	20000	50000
TDS*	74			740	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.62			86.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2						
Dry Matter (%)	83						
Moisture (%)	17						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				*= UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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Waste Acceptance Criteria Analytical Results							
Report No:	26-031574						
					Client: Ground and Water Ltd		
					Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill		
Location	YMCA London City and North 184 Tottenham						
Lab Reference (Sample Number)	949102						
Sampling Date	03/06/2026						
Sample ID	BH2						
Depth (m)	0.30-0.50						
Solid Waste Analysis							
TOC (%)	1.9				3%	5%	6%
Loss on Ignition (%)	5.4				--	--	10%
BTEX (µg/kg)	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	26				500	--	--
Total PAH (WAC-17) (mg/kg)	9.47				100	--	--
pH (units)	8.4				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	18				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0057			0.057	0.5	2	25
Barium *	0.046			0.46	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0027			0.027	0.5	10	70
Copper *	0.0099			0.099	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.0147			0.147	0.5	10	30
Nickel *	0.00099			0.0099	0.4	10	40
Lead *	0.0054			0.054	0.5	10	50
Antimony *	0.012			0.12	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.021			0.21	4	50	200
Chloride *	1.3			13	800	15000	25000
Fluoride*	0.4			4	10	150	500
Sulphate *	41			410	1000	20000	50000
TDS*	100			1000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.8			68	500	800	1000
Leach Test Information							
Stone Content (%)	8.6						
Sample Mass (kg)	2						
Dry Matter (%)	81						
Moisture (%)	19						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				*= UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Analytical Report Number : 26-031574
Project / Site name: YMCA London City and North 184 Tottenham

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
949101	BH1	None Supplied	0.30-0.60	Brown clay and sand with gravel
949102	BH2	None Supplied	0.30-0.50	Brown gravelly loam with stones

Analytical Report Number : 26-031574

Project / Site name: YMCA London City and North 184 Tottenham

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
One stage WAC 10:1 leachate preparation	One stage batch test at a liquid to solid ratio of 10 L/kg	BS EN 12457-2-2002	L043B	W	ISO 17025
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025



Analytical Report Number : 26-031574
Project / Site name: YMCA London City and North 184 Tottenham

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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Analytical Report Number : 26-028552

Replaces Analytical Report Number: 26-028552, issue no. 1

Additional analysis undertaken.

Added Asbestos Quantification for sample 933577 as per client's requested.

Project / Site name:	YMCA 184 Tottenham Lane London N8 8SG	Samples received on:	28/05/2026
Your job number:	GWPR7007	Samples instructed on/ Analysis started on:	28/05/2026
Your order number:	GWPR7007	Analysis completed by:	17/06/2026
Report Issue Number:	2	Report issued on:	17/06/2026
Samples Analysed:	2 soil samples		



Signed:

Dominika Liana
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.

Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.

Application of uncertainty of measurement would provide a range within which the true result lies.

An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 26-028552
Project / Site name: YMCA 184 Tottenham Lane London N8 8SG
Your Order No: GWPR7007

Lab Sample Number				933577	933578
Sample Reference				TP2	TP3
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.50	0.35
Date Sampled				22/05/2026	22/05/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Mass of stone >10mm	%	0.1	NONE	49.7	66.9
Moisture Content	%	0.01	NONE	8.4	3.2
Total mass of sample received	kg	0.1	NONE	0.9	1.1
Whole Sample Crushed	N/A	N/A	NONE	-	Crushed

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	CZJ	CZJ
Analysis completed	N/A	N/A	N/A	05/06/2026	05/06/2026
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	Detected	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	< 0.001	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.6	8.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3400	91
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	1680	45.5
Organic Matter (automated)	%	0.1	MCERTS	0.9	0.5
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.5	0.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.06	0.85
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.26
Fluoranthene	mg/kg	0.05	MCERTS	0.12	2.5
Pyrene	mg/kg	0.05	MCERTS	0.13	2.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.08	0.98
Chrysene	mg/kg	0.05	MCERTS	0.07	0.75
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.09	0.84
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.82
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.37
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.08
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.37



Analytical Report Number: 26-028552
Project / Site name: YMCA 184 Tottenham Lane London N8 8SG
Your Order No: GWPR7007

Lab Sample Number				933577	933578
Sample Reference				TP2	TP3
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.50	0.35
Date Sampled				22/05/2026	22/05/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection Test Accreditation Status

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	10.4
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	2.3
Boron (water soluble)	mg/kg	0.2	MCERTS	3.7	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	39	38
Lead (aqua regia extractable)	mg/kg	1	MCERTS	79	49
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	47	61
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	66

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	-	< 10
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	< 10
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	0.075
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	0.14
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	< 10
TPHCWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	-	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	< 10
TPHCWG - Aromatic >EC5 - EC40 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	< 10

TPH Total >EC5 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	< 10
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Analytical Report Number: 26-028552
Project / Site name: YMCA 184 Tottenham Lane London N8 8SG
Your Order No: GWPR7007

Lab Sample Number				933577	933578
Sample Reference				TP2	TP3
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.50	0.35
Date Sampled				22/05/2026	22/05/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection Test Accreditation Status

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	76
Ethylbenzene	µg/kg	5	MCERTS	-	14
p & m-Xylene	µg/kg	8	MCERTS	-	65
o-Xylene	µg/kg	5	MCERTS	-	36

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number:26-028552

Project / Site name:YMCA 184 Tottenham Lane London

Your Order No:GWPR7007

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample	Analysis completed	Analyst ID
933577	TP2	0.5	174	Loose Fibres	Amosite & Chrysotile	< 0.001	< 0.001	17/06/2026	MMI

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 26-028552
Project / Site name: YMCA 184 Tottenham Lane London N8 8SG

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
933577	TP2	None Supplied	0.5	Brown sand with gravel and stones
933578	TP3	None Supplied	0.35	Brown sand with gravel and stones

Analytical Report Number : 26-028552

Project / Site name: YMCA 184 Tottenham Lane London N8 8SG

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS



Analytical Report Number : 26-028552
Project / Site name: YMCA 184 Tottenham Lane London N8 8SG

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

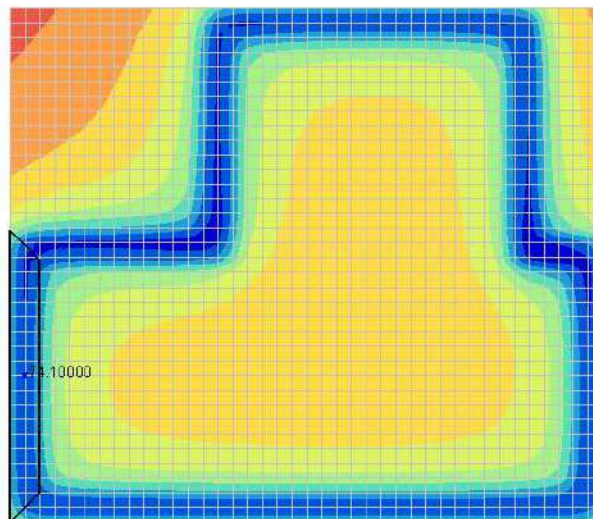
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

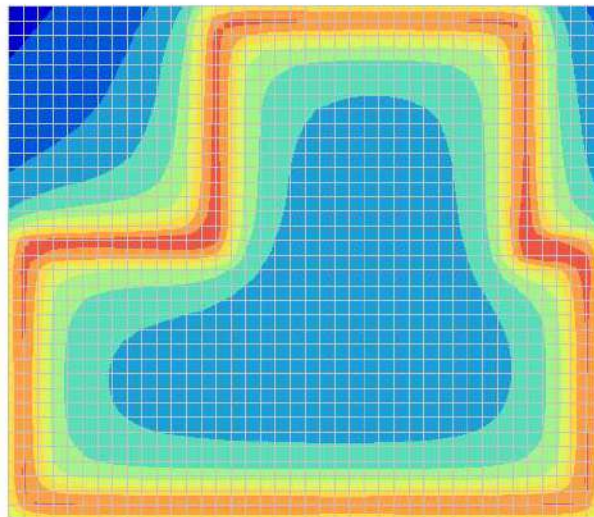
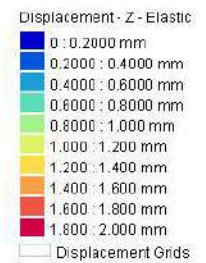
Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

APPENDIX F: Soil Displacement Assessment

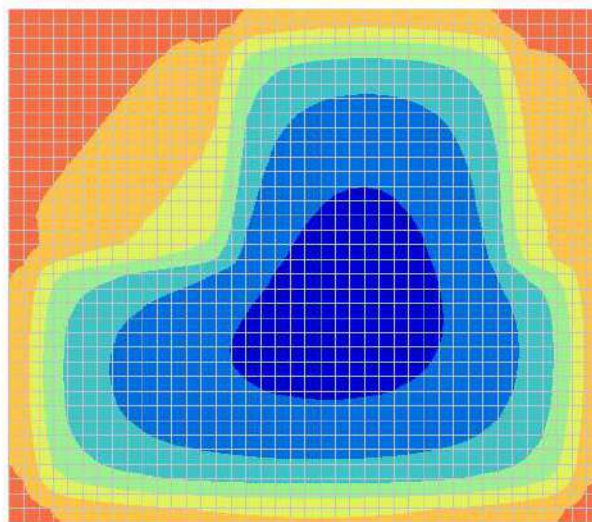
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			GWPR7122		
			Drg. Ref.		
	Made by RT	Date	Checked	Date	



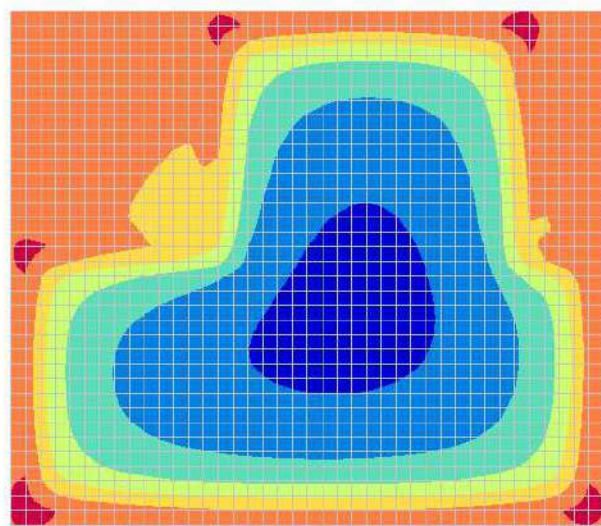
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	Made by RT	Date	Checked	Date	



Oasys YMCA London City and North Model 3	GROUND AND WATER LIMITED		Job No.	Sheet No.	Rev.
			GWPR7122		
			Drg. Ref.		
	Made by RT	Date	Checked	Date	



Oasys YMCA London City and North Model 4	GROUND AND WATER LIMITED		Job No.	Sheet No.	Rev.
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			Drg. Ref.		
	Made by RT	Date	Checked	Date	



Oasys YMCA London City and North Model 5	GROUND AND WATER LIMITED		Job No.	Sheet No.	Rev.
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			Drg. Ref.		
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