DEVISE.

DESIGN-FOCUSED SUSTAINABILITY-DRIVEN ENGINEERING

CHARTERED STRUCTURAL ENGINEERS | SUSTAINABLE DRAINAGE DESIGN | PARTY WALL

RUISLIP LIDO | RESERVOIR ROAD | HILLINGDON

FLOOD RISK ASSESSMENT

Document Control

DATE	REVISION	COMMENTS	PREPARED	REVIEWED BY
12/09/24	01	For Comment	HH	GS
06/11/24	02	For Comment	HH	GS

CONTENTS

Introduction

Devise Engineers were appointed to provide a Flood Risk Assessment in support of a planning application for the proposed developments at Ruislip Lido, Hillingdon. The site in which this report pertains to are highlighted in Figure 1. The sites are located at Woody Bay and Willow Lawn respectively.

The proposed redevelopment comprises the demolition and replacement of each of the single-storey toilet and changing facilities at Woody Bay and Willow Lawn, as well as the installation of PV panels.

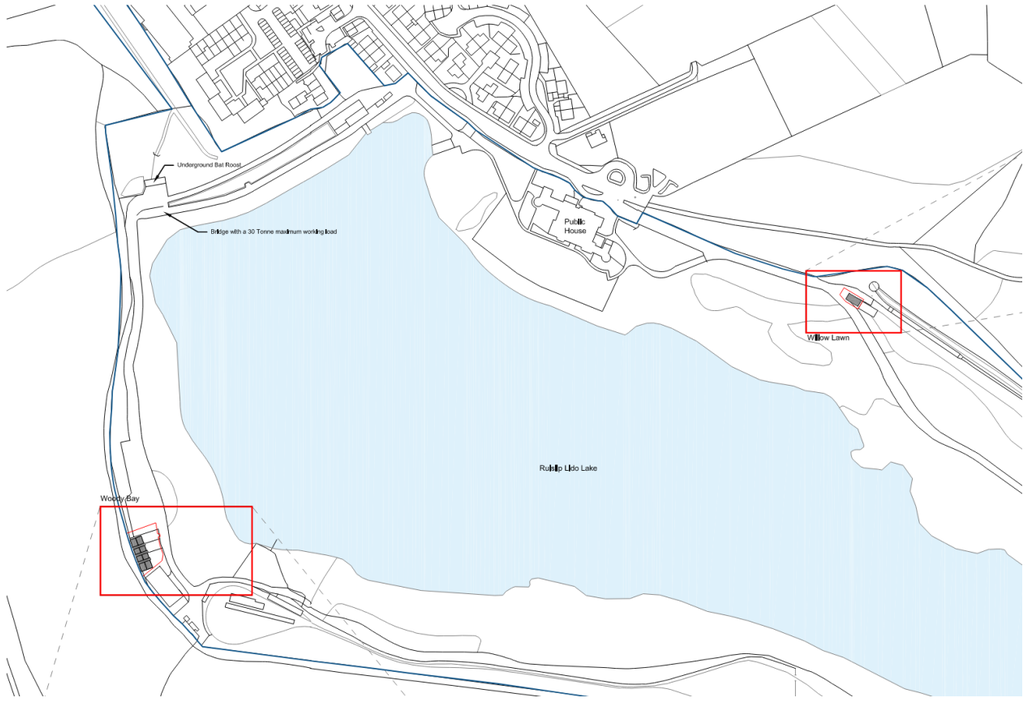
The proposed toilets and changing facilities for the site at Willow Lawn will include 2x male WCs and 2x urinals, 4x female WCs an accessible WC and plant space. The proposed building measures approximately 44m^2, an uplift of approximately 10m^2 over the existing toilet building.

The proposed toilets and changing facilities for the site at Woody Bay will include 5x male WCs and 5x urinals, 20x female WCs, 4x accessible WCs, 3x family changing rooms and plant space. The proposed building measures approximately 188m^2, an uplift of approximately 68m^2 over the existing toilet building.

The proposed redevelopment at Willow Lawn will mimic the existing impermeable area of the site and will result in no increase in surface water runoff rates, whilst the development at Woody Bay will increase the existing impermeable area of the site and will result in an increase in surface water runoff rates. The developments are classed as ‘Less Vulnerable’ Development under the National Planning Policy Framework (NPPF) Table 2: Flood Risk Vulnerability Classification. As such it is deemed to be an Appropriate development for Flood Zones 1 and 2 under the NPPF Table 3: Flood Risk Vulnerability and Flood Zone ‘Compatibility’.

This report considers the flood risk to the proposed development and the impact that the development will have in relation to flooding of adjacent areas and watercourses.

This report takes into account the requirements of NPPF, local Flooding Reports and is based on information received from the Environment Agency (EA) web site.



> FIGURE 1: SITE LOCATION PLAN

Flood Risk Policy

This Flood Risk Assessment has been written in accordance with GOV.uk guidelines and the NPPF. Flood Risk will be assessed for the following flood risks:

- Rivers and the Sea
- Surface Water Runoff
- Sewer Flooding
- Groundwater
- Other Sources

The following documents have been reviewed in preparation of this Flood Risk Assessment:

- West London Strategic Flood Risk Assessment (SFRA)
- Hillingdon Local Plan
- Hillingdon Local Flood Risk Management Strategy
- Hillingdon Surface Water Management Plan
- GOV.uk Flood Risk Maps

Existing Site Conditions

The development sites are located at Ruislip Lido, Reservoir Road, Hillingdon, London. The site eastings and northings are 508899 E; 188909 N and 508719 E; 189377 N respectively. Existing site plans can be found in **Appendix 1**.

The existing sites comprise existing single-storey toilet and changing facilities with associated hard and soft landscaping. The site at Woody Bay is accessed from an access road leading from Reservoir Road and over the bridged spillway to the south of Ruislip Lido. The Willow Lawn site is accessed directly from Reservoir Road to the north of Ruislip Lido.

A topographic survey of the existing sites was undertaken by Midland Survey Ltd in January 2020. The survey indicates that the existing toilet block located at Willow Lawn has a FFL of 51.08mAOD with surrounding levels set slightly lower, falling to the south and east.

The existing Willow Lawn toilet block is bound to the north by Ruislip Lido Railway. To the east of the site is Turntable Tea Room with Willow Lawn Carpark beyond. The access road from which this site is accessed is located on the southern boundary of the site, with Ruislip Lido beyond. Extensive areas of soft landscaping and Reservoir Road are located beyond the western boundary of this site.

The existing toilet block at Woody Bay has a FFL of 52.52mAOD. The building is set slightly higher than the immediate areas adjacent to the buildings. The toilet block is accessed via a set of steps which provide access from the lower levels to the north of the building which are generally at a level of 51.85mAOD and fall to the north towards the Lido.

Ruislip Lido Beach is located to the north of the Woody Bay site. San Remo Lakeside Café is located to the east of the existing building, with extensive woodlands beyond to the east and south of this site. To the west of this site is a children's play area and associated hard and soft landscaping.

The nearest significant watercourse to the site is Mad Bes Brook, approximately 900m west of the dam to the Lido and discharges to Cannon Brook within Whiteheath, approximately 1,000m to the southwest. The Lido discharges via Cannon Brook which then joins the River Pinn approximately 1,600m to the southwest of the Lido. At its closest point, the River Pinn runs westerly, approximately 1,100m south of the Lido.

Sewer Asset mapping has been obtained from Thames Water. The sewer records show the Willow Lawn site to be served by a 525mm foul water sewer located to the north of the site and runs in a westerly direction. The sewer is approximately 4.00m deep to the invert level, with an invert level of 48.40m at Manhole 6401.

No public sewers are present within the vicinity of the Woody Bay site.

British Geological Survey maps indicate the site to be underlain by the Thames Group Formation comprising clay, silt sand and gravel, with no superficial deposits. On this basis it is unlikely that drainage by infiltration techniques would not be feasible. A review of historical borehole logs within the vicinity of the site shows the ground conditions to comprise of made ground and clay with chalk at depth.

The Environment Agency online groundwater mapping uses the same BGS mapping base information and classifies the site as a Secondary A Aquifer, which is described as “These are permeable layers of rock that can support local water supplies and may form an important source of base flow to rivers.”

Proposed Site

The proposed redevelopment comprises the demolition and replacement of each of the single-storey toilet and changing facilities at Woody Bay and Willow Lawn, as well as the installation of PV panels.

The proposed toilets and changing facilities for the site at Willow Lawn will include 2x male WCs and 2x urinals, 4x female WCs an accessible WC and plant space. The proposed building measures approximately 44m^2, an uplift of approximately 10m^2 over the existing toilet building.

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The proposed redevelopment at Willow Lawn will mimic the existing impermeable area of the site and will result in no increase in surface water runoff rates, whilst the development at Woody Bay will increase the existing impermeable area of the site and will result in an increase in surface water runoff rates.

A copy of the proposed site layout is located in **Appendix 2**.

Flood Risk

The Floodplain mapping provided by the Environment Agency (EA) indicates that the area of the Willow Lawn development is located in Flood Zone 2 and therefore does not have to pass the Sequential and Exception Tests.

The development site at Woody Bay is located within Flood Zone 1 and is therefore at a very low risk of flooding.

Flood Zone 1 is defined as comprising 'land assessed as having less than a between a 1 in 1000 (0.1%) annual probability of river or sea flooding'.

Flood Zone 2 is defined as comprising 'land assessed as having between a 1 in 1000 (0.1%) and 1 in 100 (1.0%) annual probability of river or sea flooding'.

The Flood Risk Vulnerability for the developments is classified as 'Less Vulnerable' under Table 2 of NPPF Technical Guidance.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

> FIGURE 2: TABLE 3: FLOOD RISK VULNERABILITY CLASSIFICATION

On this basis the sites at Willow Lawn and Woody Bay are considered to have a medium and very low risk of flooding respectively.

Flood risks to the sites are considered as follows:

Flood from Rivers and the Sea

As noted above, Flood zone information provided by the Environment Agency shows the Willow Lawn site to be located in Flood Zone 2 and is therefore at medium risk of flooding, whilst the Woody Bay site is located in Flood Zone 1 and is therefore at very low risk of flooding.

> FIGURE 3: FLUVIAL FLOOD MAP FOR WILLOW LAWN

> FIGURE 4: FLUVIAL FLOOD MAP FOR WOODY BAY

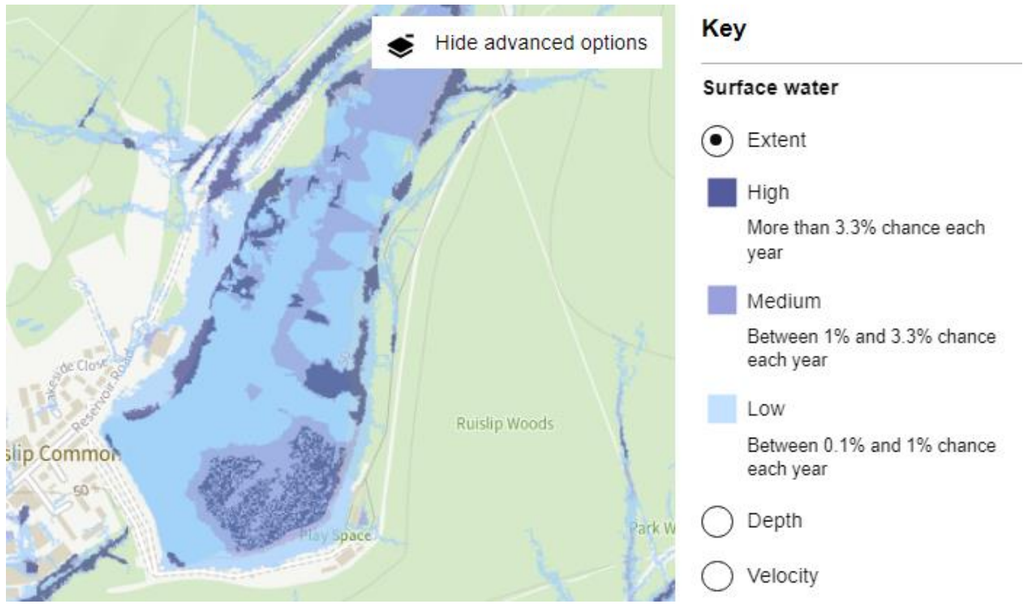
Flooding from Surface Water Runoff

Surface water flooding occurs when intense rainfall is unable to soak into the ground or enter drainage systems, because of blockages, or breakages in water pipes or where the drainage capacity has been exceeded.

Localised flooding of roads can also take place when gullies are unable to discharge into already full combined sewers, sewers which receive both foul water and water from roofs, hard standing and highways. It is often difficult to identify the source of the problem as it can be exacerbated by blocked gullies from debris.

The Environment Agency Flood Risk from Surface Water flood map indicates the Willow Lawn site and the area immediately adjacent to the site sits within an area with a very low risk of flooding from surface water, and therefore has less than 0.1% annual probability of flooding.

The levels within the access road to the south of the site are approximately 500mm lower than the development site, and therefore any surface water runoff will naturally be conveyed, following the route of the existing topography away from the site.



> FIGURE 5: SURFACE WATER FLOOD MAP FOR WILLOW LAWN

Similarly, the Environment Agency Flood Risk from Surface Water flood map indicates the Woody Bay site and surrounding area sits within an area with a very low risk of flooding from surface water, and therefore has less than 0.1% annual probability of flooding.

It is noted within the London borough of Hillingdon Surface Water Management Plan that the development site is not located within a Critical Drainage Area.

Levels on site will be designed to convey surface water runoff away from building thresholds and will increase the resilience to flooding from surface water runoff.

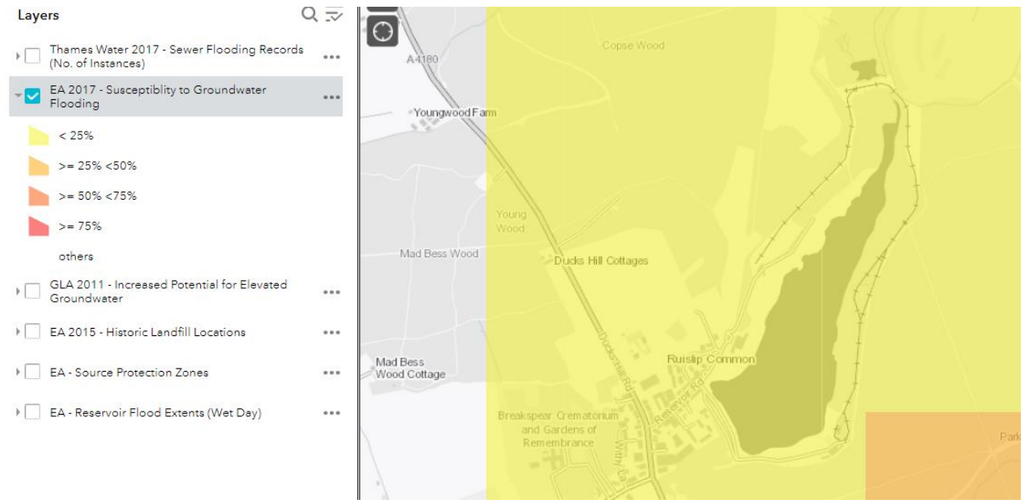
After a review of the above information, the flood risk from surface water runoff for each of the respective sites is deemed to be very low.

Groundwater Flooding

The Flood and Water Management Act (FWMA) 2010 defines groundwater as ‘all water which is below the surface of the ground in direct contact with ground or subsoil’. This water occupies the cracks and pores of permeable rocks, soils and gravels.

Groundwater springs from the ground at the point where the water table meets the surface. This type of flooding is likely to occur in low-lying areas which are underlain by permeable rock (aquifers).

On review of the Environment Agency Susceptible to Groundwater Flooding plan within the West London SFRA, the site is located within an area with less than 25% susceptibility to flooding from groundwater.



> FIGURE 6: EA SUSCEPTIBILITY TO GROUNDWATER FLOODING PLAN

The risk of flooding from groundwater is therefore considered to be low.

Flooding From Sewers

Sewer Asset mapping has been obtained from Thames Water. The sewer records show the Willow Lawn site to be served by a 525mm foul water sewer located to the north of the site and runs in a westerly direction. The sewer is approximately 4.00m deep to the invert level, with an invert level of 48.40m at Manhole 6401.

No public sewers are present within the vicinity of the Woody Bay site.

Thames Water Sewer Records can be found in **Appendix 3**.

Thames Water have also been consulted to confirm if there have been any instances of sewer flooding and confirms that there have been no instances of flooding as a result of sewer surcharge.

Thames Water are responsible for the maintenance of their infrastructure assets and therefore the risk of flooding due to blockages is expected to be low.

Flooding From Private Drainage

The existing below ground drainage arrangement for each site is picked up on the topographical surveys. The existing toilet block located at Willow Lawn appears to discharge foul water to a packaged pumping station, however, there is no formal surface water drainage shown for the existing building. The existing below ground drainage network is situated at lower levels than the building, and should any flooding occur from the private drainage network, it is anticipated that the flood water will arise through the manhole covers in the first instance before flooding the building. On this basis, the risk of flooding from private drainage is deemed to be low.

The existing building at Woody Bay is served via a 100mm foul drain which discharges to a manhole approximately 50m west of the site before upsizing to 150mm pipework.

The existing 100mm drain is laid to falls of approximately 1:166 and would not have sufficient capacity to serve the proposed toilet block and changing facilities. It is therefore recommended that this section of drain is upgraded to a 150mm drain as part of the development works to mitigate against flooding from the private drain.

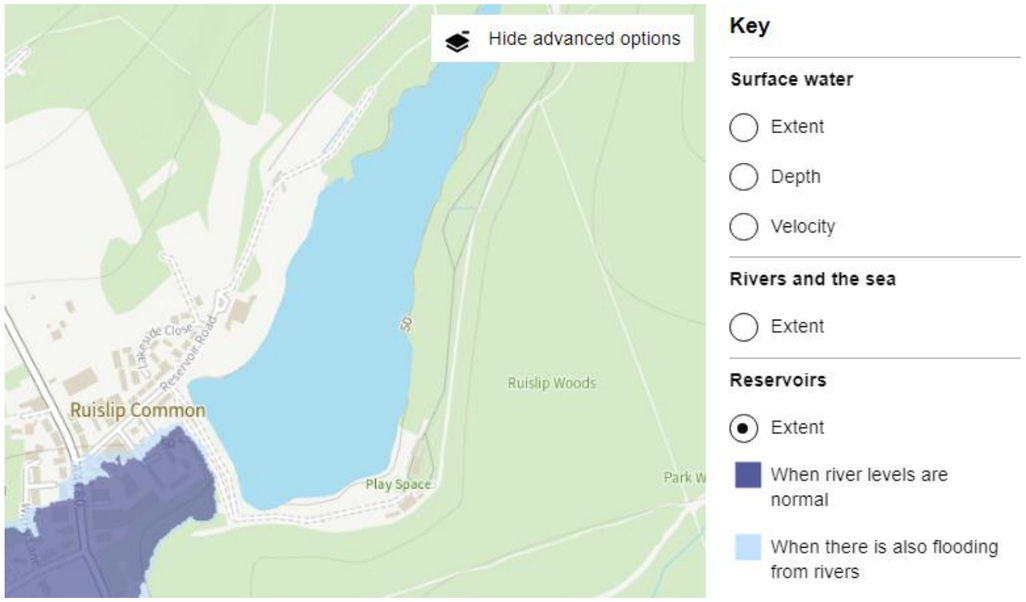
As above, the existing below ground drainage network is situated at lower levels than the building, and should any flooding occur from the private drainage network, it is anticipated that the flood water will arise through the manhole covers in the first instance before flooding the building. On this basis, the risk of flooding from private drainage is deemed to be low.

Flooding from Other Sources

A review of the Environment Agency flood risk from reservoirs map shows that the site is located outside of the reservoir Flood Risk Zone and is therefore at a very low risk of flooding from reservoir breaches.

With the development sites being located on the boundary of Ruislip Lido, any flooding from the reservoir would occur in the event of the failure of the dam to the west of the Lido which would convey any water away from the development sites.

In the event that the water level within the reservoir were to rise and pose a flood risk to the surrounding areas, the council responsible for the management of the reservoir will increase the discharge rate from the reservoir ensuring that flooding does not occur upstream of the dam.



> FIGURE 8: BGS MAP SHOWING LONDON CLAY FORMATION

Our assessment of the flood risks indicates that the site is in a very low flood risk area.

Conclusions

The development sites at Willow Lawn and Woody Bay lie within Flood Risk Zones 2 and 1 as indicated on the Environment Agency flood map. On this basis the sites are considered to be at medium and low risk of flooding respectively.

A review of all other potential sources of flooding shows the development site to be at low risk of flooding.

APPENDIX 1

NOTES

GENERAL NOTES :-

ALL LEVELS ARE IN METRES DERIVED FROM GPS TRANSFORMATION.

GRID COORDINATES ARE ORDNANCE SURVEY NATIONAL GRID DERIVED FROM GPS TRANSFORMATION. GPS COORDINATES AND LEVELS SET AT ST09 (NO SCALE FACTOR APPLIED)

THIS DRAWING HAS BEEN PRODUCED WITH A PLOT SCALE ACCURACY OF 1:200

SERVICE COVERS INDICATED WHERE VISIBLE. PIPE INVERTS / DETAILS SURVEYED FROM SURFACE INSPECTION ONLY. GENERALLY DAMAGED COVERS AND COVERS WITHIN HIGHWAYS WILL NOT BE LIFTED

TREE SPECIES SHOULD BE CONFIRMED BY TREE SPECIALIST IF CRITICAL.

OVERHEAD CABLES ARE INDICATED USING REMOTE SURVEY METHODS AND ARE SUBJECT TO SEASONAL VARIATION, AND SHOULD BE TREATED AS APPROXIMATE.

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RICS PROFESSIONAL STANDARDS 3RD EDITION RULE 1.19 APPLIES TO THIS SURVEY.

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(ht) – height
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a/g – above ground
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sfc – soil filled chamber
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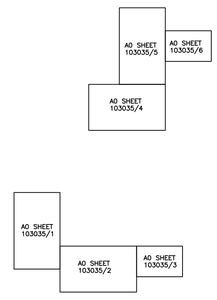
SURVEY CONTROL :-

STATION	EASTINGS	NORTHINGS	LEVEL
ST01	508687.217	188879.722	51.115
ST02	508761.304	188877.111	51.102
ST03	508656.782	188904.720	52.501
ST04	508830.857	188886.320	50.901
ST05	508897.418	188904.499	50.888
ST06	508638.734	188965.522	52.125
ST07	508636.076	188909.963	51.147
ST08	508590.149	189043.432	52.286
ST09	508566.335	189077.280	52.436
ST10	508621.949	188890.046	46.022
ST11	508616.080	188931.377	45.222
ST12	508597.867	188918.325	44.960
ST13	508573.308	189038.057	50.642
ST14	508575.963	189100.571	52.682
ST100	508657.216	189214.122	51.430
ST101	508674.190	189209.323	50.570
ST102	508683.032	189272.526	51.390
ST103	508710.331	189356.368	51.190
ST104	508715.414	189385.736	50.830
ST105	508741.058	189398.884	50.510
ST106	508768.951	189415.877	50.510
ST107	508763.801	189442.131	50.490
ST108	508790.249	189411.124	50.570
ST109	508763.020	189371.508	50.250
ST110	508812.653	189438.691	50.920
ST111	508848.362	189433.058	51.040
ST112	508870.500	189430.097	50.300
ST113	508873.767	189441.151	50.660
ST114	508714.450	189329.642	50.440
ST115	508717.977	189244.506	49.960
ST116	508703.867	189205.873	50.200

NORTH POINT :-

NORTH

SHEET LAYOUT :-



UTILITY SURVEY KEY :-

HATCHED AREA
BOREHOLE
CPT
TRIAL PIT
HAND PIT
WINDOW SAMPLE

ELECTRIC CABLE
WATER PIPE
FOUL SEWER
STORM SEWER
COMBINED SEWER
DUCTS
CABLE TELEVISION
DATA CABLE
TELECOM CABLE
GAS PIPE
UNIDENTIFIED SERVICE
OTHER
CCTV
TRAFFIC LIGHT
OFFSET FILL
VENT
FUEL PIPE
GAUGE LINES
PIPE
ASSUMED ROUTE
TAKEN FROM RECORDS

DISCLAIMER :-

Electromagnetic techniques have been used in the location of underground services. The results are not infallible and trial excavations should be carried out to confirm service identification, positions and particularly depths, where these are critical. The completeness of the underground services information cannot be guaranteed.

This method of survey does not differentiate between live and dead services, and as such all services should be treated as live. This drawing may not include the location of all public services that may cross the site, therefore the relevant service drawings should be obtained from the appropriate utility company and used in conjunction with this drawing.

Private service pipes and cables in highways are not shown, but there presence should be anticipated.

Additional below ground structures or obstructions not shown on this drawing may be present. Reference should be made to historical plans and as-built drawings. Excavations in the vicinity of services should be carried out with due diligence ref: HSG47 document avoiding dangers from underground services

Please note that factors such as ground conditions, proximity of other utilities, material and method of construction have an influence on the quality of the data collected on site.

TSA Standards – "A utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment, and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times, in line with requirements of HSG47 and current CDM regulations".

UTILITY NOTES

NO UTILITY RECORDS PROVIDED AT THE TIME OF THE SURVEY.

THE SMALL BRICK BUILDING IN THE WEST OF THE SURVEY AREA IS A PUMPING STATION FOR THE RESVIOR, UNABLE TO TRACE THE PIPES DUE TO THEM BEING APROX 7 METERS IN DOWN DEPTH. MAKING FINDING THE SERVICE WITH GROUND PENETRATING OR CAT AND GENNY UNUSABLE

NO MAINS GAS FEED ON SITE, THERE IS A LPG TANK BUT NOT IN THE AREA OF WORKS.

THE UNIDENTIFIED SERVICE RUNNING THE WHOLE OF THE SITE IS POSSIABLY THE WATER BUT CAN CAN NOT BE CONFIRMED.

THE MANHOLE IN SOUTH WEST CORNER HAS NO SERVICES THIS IS USED AS AN ACCESS FOR THE UNDER PASS.

FOWL DRAINS AND PUMP AT WILLOW LAWN TRAIN STATION ALL FLOODED/FULL. UNABLE TO RECORED –DEPTHS OR CONNECTING PIPES.

ALL WATER PIPES ACROSS SITE ARE P.E, UNABEL TO INDUCE SIGNAL, NO TRACE POSSIBLE.

WILLOW LAWN CAR PARK FULL AT TIME OF SURVEY.

POOR GPR RESULTS ACROSS SITE DUE TO SURFACE WATER ACROSS SITE.

0 2 4 8 12 16 20

MIDLAND SURVEY LTD

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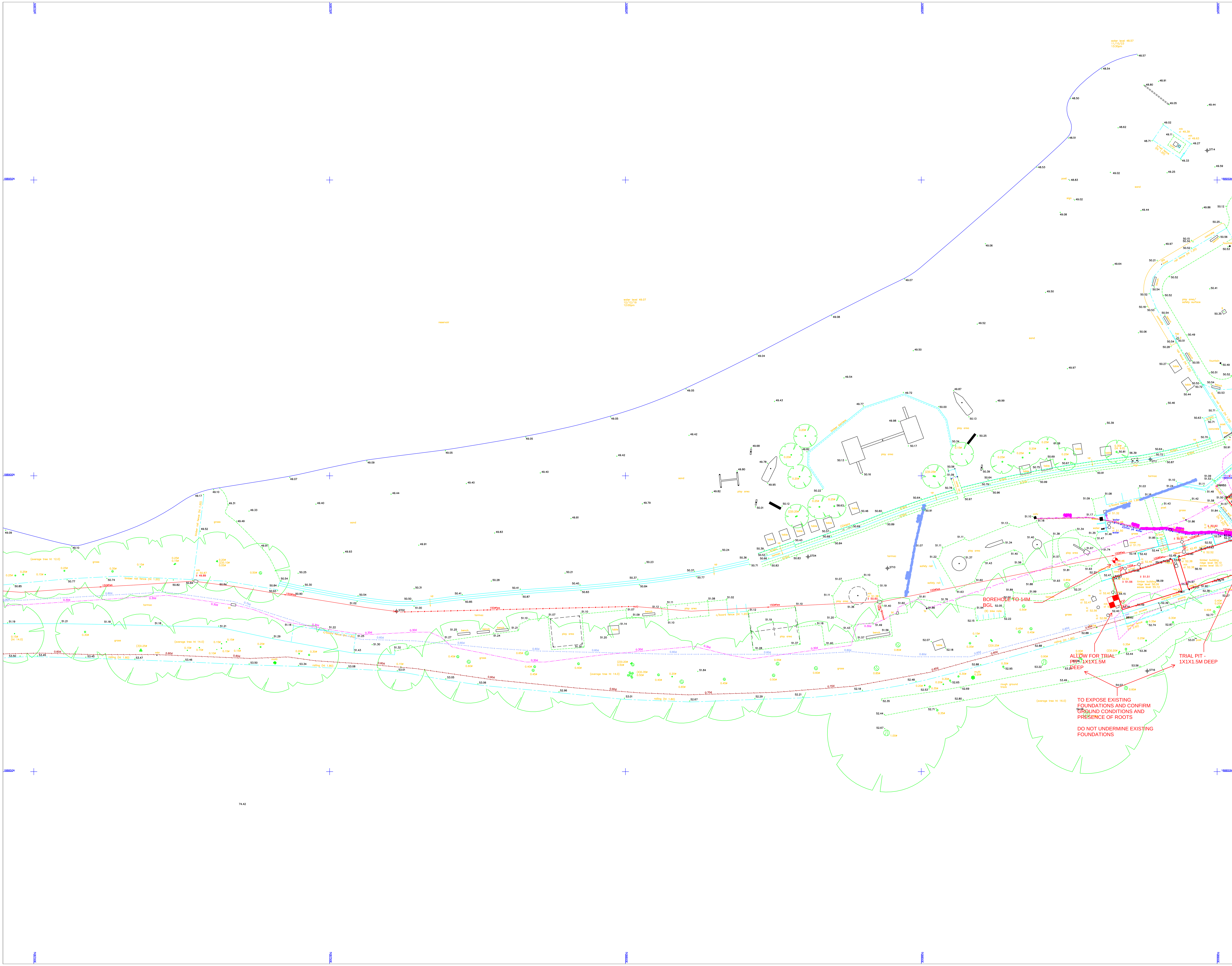
Tel: 01926 810811 Fax 01926 810812
E-Mail: mail@midlandsurvey.co.uk
www.midlandsurvey.co.uk

Client	LONDON BOROUGH OF HILLINGDON
Project	RUISLIP LIDO RESERVOIR, HA4 7TY
Title	TOPOGRAPHICAL SURVEY & UTILITY SURVEY
Date	JANUARY 2020
Scale	1:200@A0
Dwg No	103035 –1
Surveyor	D.J/V.M./L.G/M.G
Checked	J.C. / M.G / L.G

Revisions
R1: SURVEY AREA EXTENDED AROUND 'WOODY BAY' OCTOBER 2023
R2: SURVEY AREA EXTENDED AROUND 'WILLOW LAWN' OCTOBER 2023

TOPOGRAPHICAL (LAND) SURVEYORS / UTILITY SURVEYORS
BUILDING MEASUREMENT SURVEYORS / 3D LASER SCANNING



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ST115	508717.977	189244.506	49.960
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NORTH POINT :-

NORTH

SHEET LAYOUT :-

AO SHEET 103035/5
AO SHEET 103035/6
AO SHEET 103035/4
AO SHEET 103035/1
AO SHEET 103035/2
AO SHEET 103035/3

UTILITY SURVEY KEY :-

HATCHED AREA
BOREHOLE
CPT
TRIAL PIT
HAND PIT
WINDOW SAMPLE

N — ELECTRIC CABLE
W — WATER PIPE
FOUL SEWER
STORM SEWER
COMBINED SEWER
D — DUCTS
TV — CABLE TELEVISION
COM — DATA CABLE
: — TELECOM CABLE
G — GAS PIPE
U — UNIDENTIFIED SERVICE
OTHER
CCTV — CCTV
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WILLOW LAWN CAR PARK FULL AT TIME OF SURVEY.

POOR GPR RESULTS ACROSS SITE DUE TO SURFACE WATER ACROSS SITE.

0 2 4 8 12 16 20

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Client LONDON BOROUGH OF HILLINGDON

Project RUISLIP LIDO RESERVOIR, HA4 7TY

Title TOPOGRAPHICAL SURVEY & UTILITY SURVEY

Date JANUARY 2020
Scale 1:200@A0
Dwg No 103035 –2
Surveyor D.J/V.M./L.G/M.G
Checked J.C. / M.G / L.G

Revisions
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R2: SURVEY AREA EXTENDED AROUND 'WILLOW LAWN' OCTOBER 2023

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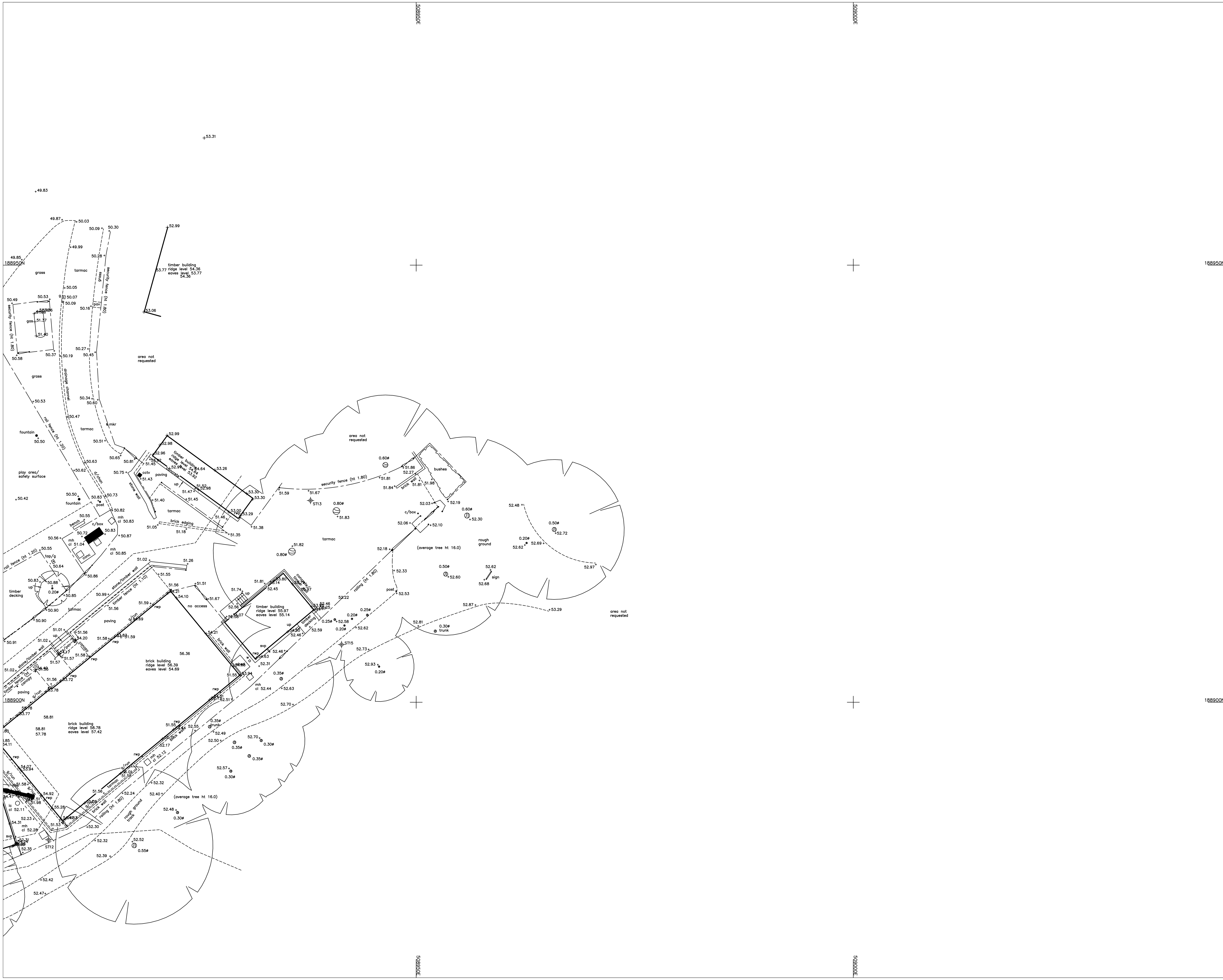

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Client	LONDON BOROUGH OF HILLINGDON
Project	RUISLIP LIDO RESERVOIR, HA4 7TY
Title	TOPOGRAPHICAL SURVEY & UTILITY SURVEY
Date	JANUARY 2020
Scale	1:200@A1
Dwg No	103035 –3
Surveyor	D.J/V.M./L.G/M.G
Checked	J.C. / M.G / L.G

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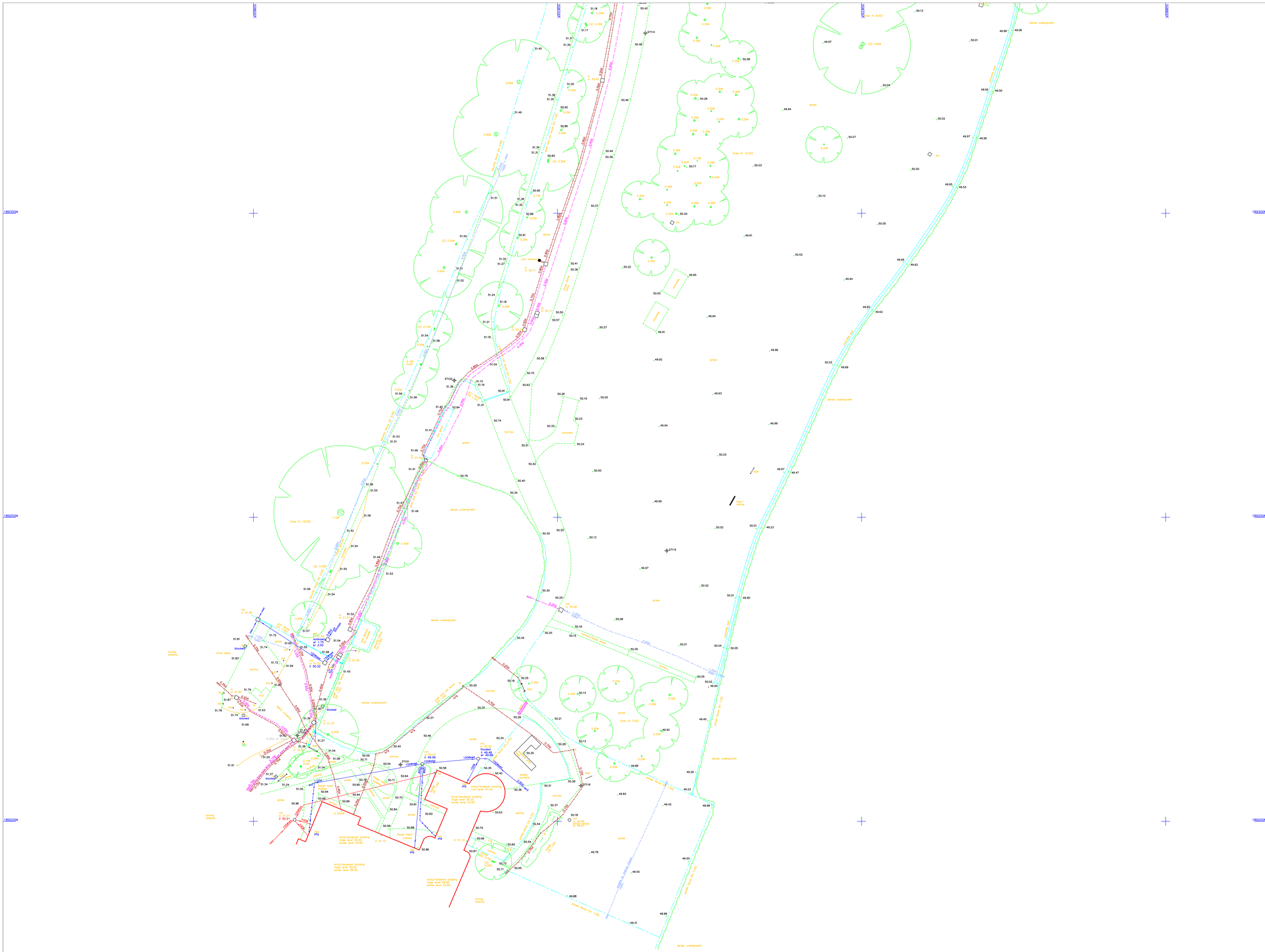
constructionLine
QUALITY ASSURED BS EN ISO 9001:2008 QUAY AUDIT LTD ASCB(E)
THE SURVEY ASSOCIATION



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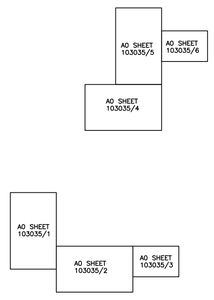
ST14	508575.963	189100.571	52.682
ST100	508657.216	189214.122	51.430
ST101	508674.190	189209.323	50.570
ST102	508683.032	189272.526	51.390
ST103	508710.331	189356.368	51.190
ST104	508715.414	189385.736	50.830
ST105	508741.058	189398.884	50.510
ST106	508768.951	189415.877	50.510
ST107	508763.801	189442.131	50.490
ST108	508790.249	189411.124	50.570
ST109	508763.020	189371.508	50.250
ST110	508812.653	189438.691	50.920
ST111	508848.362	189433.058	51.040
ST112	508870.500	189430.097	50.300
ST113	508873.767	189441.151	50.660
ST114	508714.450	189329.642	50.440
ST115	508717.977	189244.506	49.960
ST116	508703.867	189205.873	50.200

NORTH POINT :-

NORTH

SHEET LAYOUT :-



UTILITY SURVEY KEY :-

HATCHED AREA
BOREHOLE
CPT
TRIAL PIT
HAND PIT
WINDOW SAMPLE

ELECTRIC CABLE
WATER PIPE
FOUL SEWER
STORM SEWER
COMBINED SEWER
DUCTS
CABLE TELEVISION
DATA CABLE
TELECOM CABLE
GAS PIPE
UNIDENTIFIED SERVICE
OTHER
CCTV
TRAFFIC LIGHT
OFFSET FILL
VENT
FUEL PIPE
GAUGE LINES
PIPE
ASSUMED ROUTE
TAKEN FROM RECORDS

DISCLAIMER :-

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This method of survey does not differentiate between live and dead services, and as such all services should be treated as live. This drawing may not include the location of all public services that may cross the site, therefore the relevant service drawings should be obtained from the appropriate utility company and used in conjunction with this drawing.

Private service pipes and cables in highways are not shown, but there presence should be anticipated.

Additional below ground structures or obstructions not shown on this drawing may be present. Reference should be made to historical plans and as-built drawings. Excavations in the vicinity of services should be carried out with due diligence ref: HSG47 document avoiding dangers from underground services

Please note that factors such as ground conditions, proximity of other utilities, material and method of construction have an influence on the quality of the data collected on site.

TSA Standards – "A utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment, and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times, in line with requirements of HSG47 and current CDM regulations".

UTILITY NOTES

NO UTILITY RECORDS PROVIDED AT THE TIME OF THE SURVEY.

THE SMALL BRICK BUILDING IN THE WEST OF THE SURVEY AREA IS A PUMPING STATION FOR THE RESWOIR, UNABLE TO TRACE THE PIPES DUE TO THEM BEING APROX 7 METERS IN DOWN DEPTH, MAKING FINDING THE SERVICE WITH GROUND PENETRATING OR CAT AND GENNY UNUSABLE

NO MAINS GAS FEED ON SITE, THERE IS A LPG TANK BUT NOT IN THE AREA OF WORKS.

THE UNIDENTIFIED SERVICE RUNNING THE WHOLE OF THE SITE IS POSSIABLY THE WATER BUT CAN CAN NOT BE CONFIRMED.

THE MANHOLE IN SOUTH WEST CORNER HAS NO SERVICES THIS IS USED AS AN ACCESS FOR THE UNDER PASS.

FOWL DRAINS AND PUMP AT WILLOW LAWN TRAIN STATION ALL FLOODED/FULL. UNABLE TO RECORED –DEPTHS OR CONNECTING PIPES.

ALL WATER PIPES ACROSS SITE ARE P.E, UNABEL TO INDUCE SIGNAL, NO TRACE POSSIBLE.

WILLOW LAWN CAR PARK FULL AT TIME OF SURVEY.

POOR GPR RESULTS ACROSS SITE DUE TO SURFACE WATER ACROSS SITE.

0 2 4 8 12 16 20

MIDLAND SURVEY LTD

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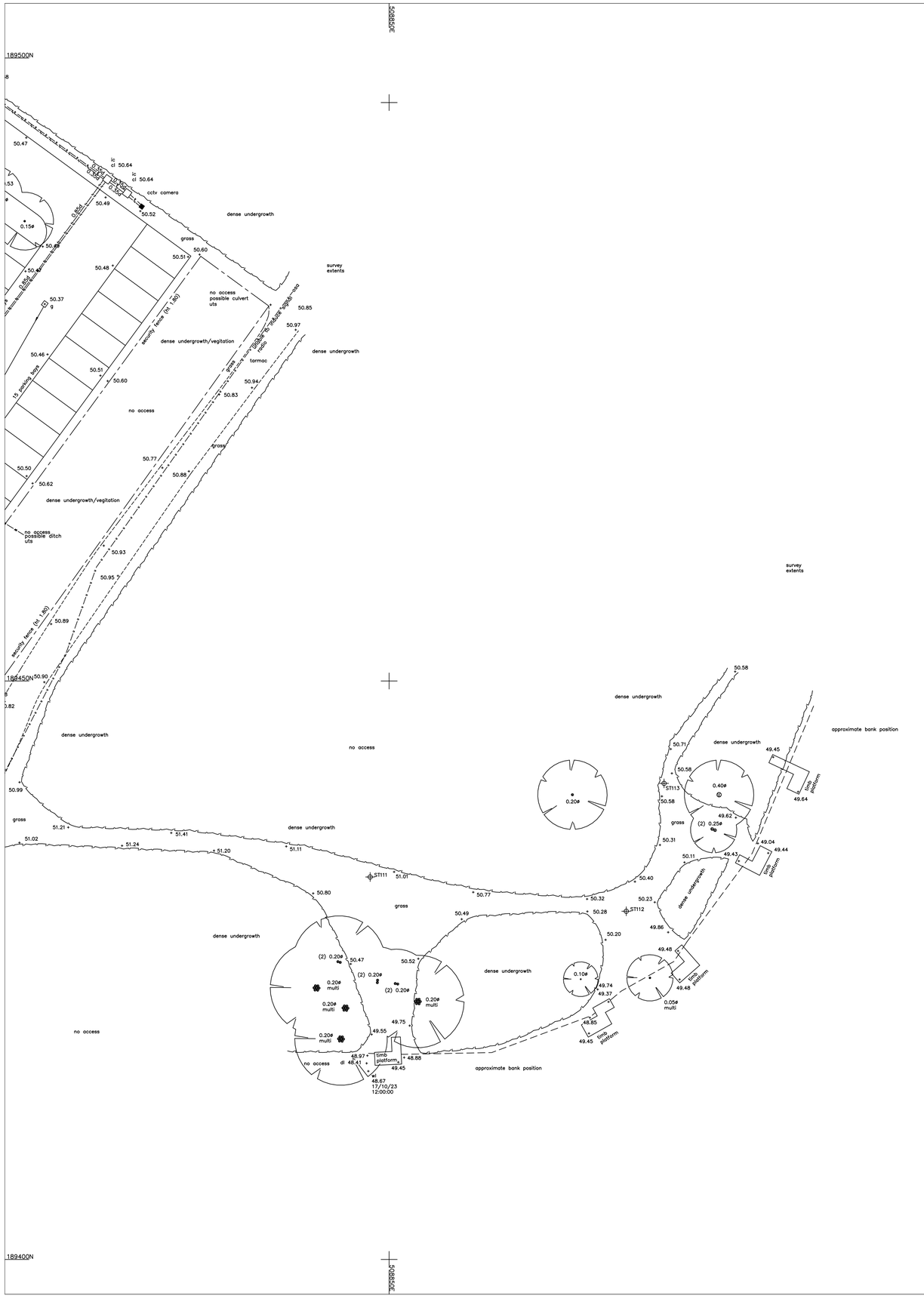
Cromwell House, Westfield Road, Southam, Warwickshire, CV47 0JH.
Tel: 01926 810811 Fax 01926 810812
E–Mail: mail@midlandsurvey.co.uk
www.midlandsurvey.co.uk

Client	LONDON BOROUGH OF HILLINGDON
Project	RUISLIP LIDO RESERVOIR, HA4 7TY
Title	TOPOGRAPHICAL SURVEY & UTILITY SURVEY
Date	JANUARY 2020
Scale	1:200@A0
Dwg No	103035 –5
Surveyor	D.J./V.M./L.G/M.G
Checked	J.C. / M.G / L.G

Revisions
R1: SURVEY AREA EXTENDED AROUND 'WOODY BAY' OCTOBER 2023
R2: SURVEY AREA EXTENDED AROUND 'WILLOW LAWN' OCTOBER 2023

TOPOGRAPHICAL (LAND) SURVEYORS / UTILITY SURVEYORS
BUILDING MEASUREMENT SURVEYORS / 3D LASER SCANNING



NOTES

GENERAL NOTES :-

ALL LEVELS ARE IN METRES DERIVED FROM GPS TRANSFORMATION.

GRID COORDINATES ARE ORDNANCE SURVEY NATIONAL GRID DERIVED FROM GPS TRANSFORMATION. GPS COORDINATES AND LEVELS SET AT ST09 (NO SCALE FACTOR APPLIED)

THIS DRAWING HAS BEEN PRODUCED WITH A PLOT SCALE ACCURACY OF 1:200

SERVICE COVERS INDICATED WHERE VISIBLE. PIPE INVERTS / DETAILS SURVEYED FROM SURFACE INSPECTION ONLY. GENERALLY DAMAGED COVERS AND COVERS WITHIN HIGHWAYS WILL NOT BE LIFTED

TREE SPECIES SHOULD BE CONFIRMED BY TREE SPECIALIST IF CRITICAL.

OVERHEAD CABLES ARE INDICATED USING REMOTE SURVEY METHODS AND ARE SUBJECT TO SEASONAL VARIATION, AND SHOULD BE TREATED AS APPROXIMATE.

THE SURVEYOR WILL NOT BE RESPONSIBLE FOR THE OMISSION OF DETAILS OBSCURED DURING SITE SURVEY

RICS PROFESSIONAL STANDARDS 3RD EDITION RULE 1.19 APPLIES TO THIS SURVEY.

TOPOGRAPHICAL SURVEY/UTILITY KEY :-

(ht) – height
ø – diameter
◐ – pea trap
a/g – above ground
a/r – assumed route
av – air valve
bb – belisha beacon
bd – back drop
bl – bed level
boll – bollard
bos – bottom of shaft
bt – telecom
c/b fence – closeboard fence
c/box – control box
cctv – cable television
cl – cover level
con – conifer
cr – cable riser
cws – combined water sewer
d/chan – drainage channel
ejb – electric junction box
elec – electric
eot – end of trace
ep – electric pole
er – earth rod
f/bed – flower bed
fh – fire hydrant
fl – floor level
fs – fire switch
fws – foul water sewer
g – gully
g/run – gully run
gr – gas riser
h/chestnut – horse chestnut
h/thorn – hawthorn
ic – inspection cover
il – invert level
ill – illuminated
int – interceptor
lp – lamp post
mh – manhole cover
mkr – marker
o/h – over head
of – off let
oso – off survey area
OSBM – ordnance survey bench mark
p & r fence – post & rail fence
pd – pit depth
pr – pipe riser
ptg – pipe to ground
pts – pipe to surface
re – rodding eye
ret wall – retaining wall
rs – road sign
rwp – rain water pipe
s/birch – silver birch
s/p – safety paving
sap – sapling
sec fence – security fence
sfc – soil filled chamber
si – spot light
sp – soil pipe
st – stop tap
sv – stop valve
svp – soil vent pipe
sws – storm water sewer
TBM – temporary bench mark
tfr – taken from records
tl – threshold level
toc – top of cap
top – top of pipe
tot – top of tank
tp – telecom pole
ts – traffic signal
t/s – trench scar
u/s – underside
utl – unable to lift
utr – unable to rod
uts – unable to survey
utt – unable to trace
vp – vent pipe
wfc – water filled chamber
wl – water level
wm – water meter
wp – waste pipe
wr – water riser

SURVEY CONTROL :-

STATION	EASTINGS	NORTHINGS	LEVEL
ST01	508687.217	188879.722	51.115
ST02	508761.304	188877.111	51.102
ST03	508656.782	188904.720	52.501
ST04	508830.857	188886.320	50.901
ST05	508897.418	188904.499	50.888
ST06	508638.734	188965.522	52.125
ST07	508636.076	188909.963	51.147
ST08	508590.149	189043.432	52.286
ST09	508566.335	189077.280	52.436
ST10	508621.949	188890.046	46.022
ST11	508616.080	188931.377	45.222
ST12	508597.867	188918.325	44.960
ST13	508573.308	189038.057	50.642
ST14	508575.963	189100.571	52.682
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ST101	508674.190	189209.323	50.570
ST102	508683.032	189272.526	51.390
ST103	508710.331	189356.368	51.190
ST104	508715.414	189385.736	50.830
ST105	508741.058	189398.884	50.510

NORTH POINT :-

NORTH

UTILITY SURVEY KEY :-

HATCHED AREA
BOREHOLE
CPT
TRIAL PIT
HAND PIT
WINDOW SAMPLE

ELECTRIC CABLE
WATER PIPE
FOUL SEWER
STORM SEWER
COMBINED SEWER
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DATA CABLE
TELECOM CABLE
GAS PIPE
UNIDENTIFIED SERVICE
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TRAFFIC LIGHT
OFFSET FILL
VENT
FUEL PIPE
GAUGE LINES
PIPE
ASSUMED ROUTE
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UTILITY NOTES

MIDLAND SURVEY LTD

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www.midlandsurvey.co.uk

Client	LONDON BOROUGH OF HILLINGDON
Project	RUISLIP LIDO RESERVOIR, HA4 7TY
Title	TOPOGRAPHICAL SURVEY & UTILITY SURVEY
Date	JANUARY 2020
Scale	1:200@A1
Dwg No	103035 –6
Surveyor	D.J/V.M./L.G/M.G
Checked	J.C. / M.G / L.G

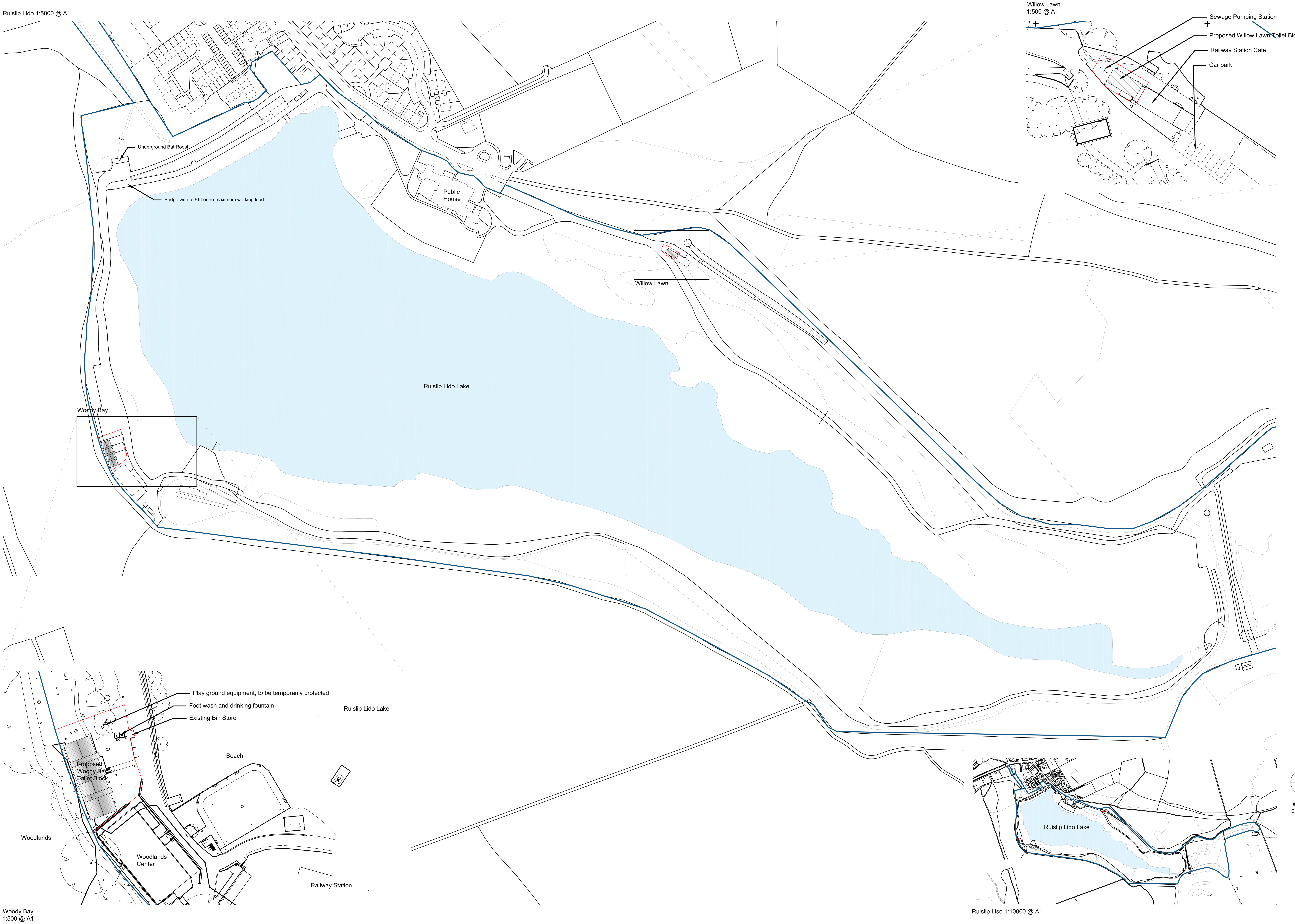
Revisions
R1: SURVEY AREA EXTENDED AROUND 'WOODY BAY' OCTOBER 2023
R2: SURVEY AREA EXTENDED AROUND 'WILLOW LAWN' OCTOBER 2023

TOPOGRAPHICAL (LAND) SURVEYORS / UTILITY SURVEYORS
BUILDING MEASUREMENT SURVEYORS / 3D LASER SCANNING

Accredited Contractor
constructionLine
THE SURVEY ASSOCIATION

APPENDIX 2

Rev:	Date:	By:	Chck:	Appr:	Description:
A	04.07.24	LH	AM	CB	Initial issue for client comment
B	05.07.24	LH	AM	CB	Adjustments to red line boundaries and blue line added



Site Boundary Key

Site Boundaries

Property Boundary

0 50m 100m

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info@haverstock.com
www.haverstock.com

Client:
Hillingdon Council

Job Title:
Ruislip Lido

Drawing Title:
Woody Bay Proposed GF Plan

Job/Dwg No/Rev:	1326	1002	B
Drawn:	Checked:	APPR:	Date:
LH	AM	CB	04.07.24

Drawing status: Preliminary
Do not scale from this drawing: Check all dimensions on site before ordering.

Scale(s):
1:1500@A1

Rev:	Date:	By:	Chck:	Appr:	Description:
A	25.06.24	LH	AM	CB	Issue for plant room
B	11.07.24	LH	AM	CB	First Issue to design team

Site boundary

Beach

Tarmac Walkway

Bin store

Bin store

Fense on low level wall

Existing Footwash

Existing Drinking Fountain

Play Equipment

Landscape zone and access design tbc

Hatch to pump out

Woodlands Center

Fense on low level wall

Watertank

Watertank

Roof overhang

AWC

AWC

FAMILY CHANGE

FAMILY CHANGE

AWC

AWC

CLEANER ST/ ATTENDANT

FEMALE

FEMALE

MALE

PLANT 2600

adder

2649

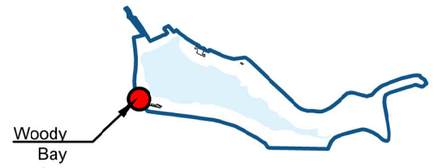
Existing building footprint

Boundary Fense

High level metal fense

Metal access gate

Ground Floor Plan



0 1 2 3 4 5m

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Client:
Hillingdon Council

Job Title:
Ruislip Lido

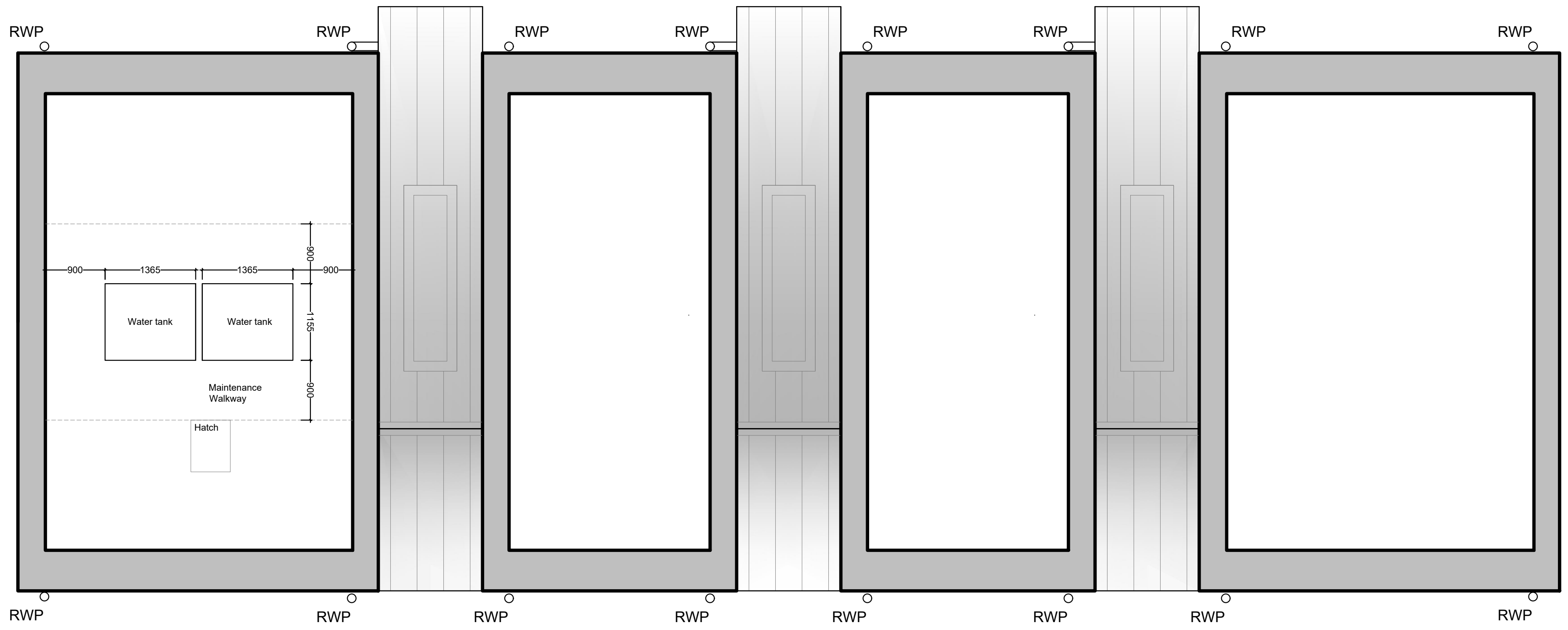
Drawing Title:
Woody Bay Proposed GF Plan

Job/Dwg No/Rev:	1326	1002	B

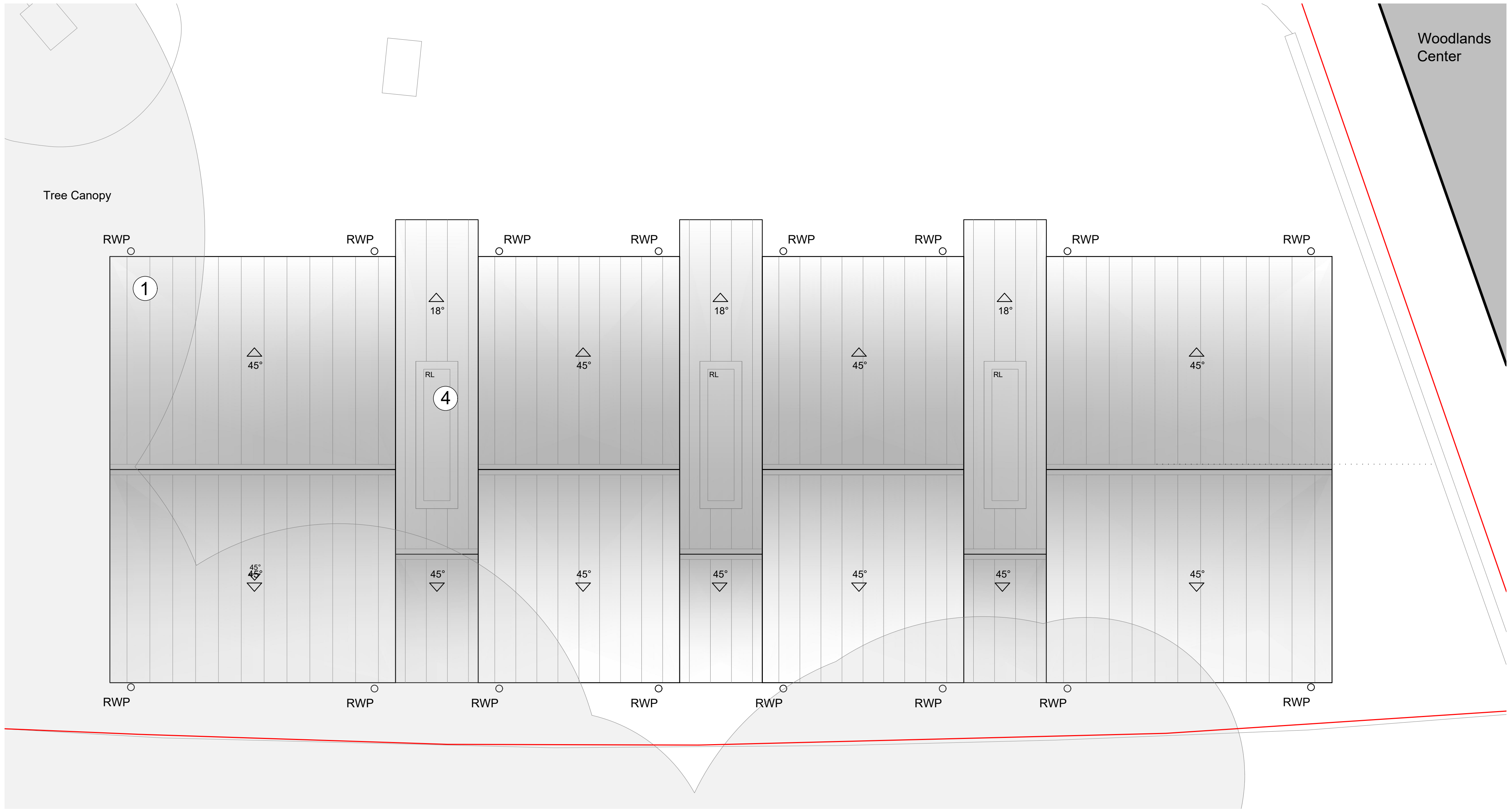
Drawn:	Checked:	APPR:	Date:
NJ	LH	CB	25.06.24

Drawing status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale(s): 1:100@A3



Roof Plan

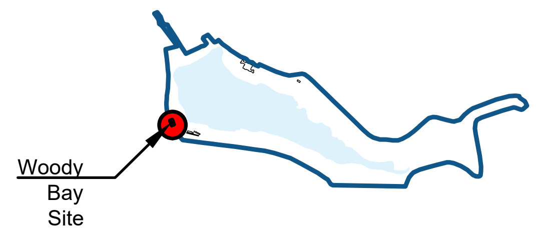


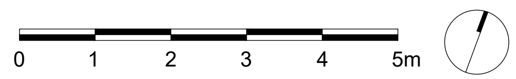
Roof Plan

Rev:	Date:	By:	Chck:	Appr:	Description:
A	25.06.24	LH	AM	CB	Issue to discuss plant room
B	11.07.24	LH	AM	CB	First Issue to design team

Site boundary

	Material Key
1	Standing Seam Zinc
2	Steel Doors
3	Louvred Doors
4	Buff Brick
5	Aluminum Rooflight
6	Metal Water Butts
7	Zinc Gutter and Downpipe
8	Glass Block
RWP	Rainwater Pipe





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Client:
Hillingdon Council

Job Title:
Ruislip Lido

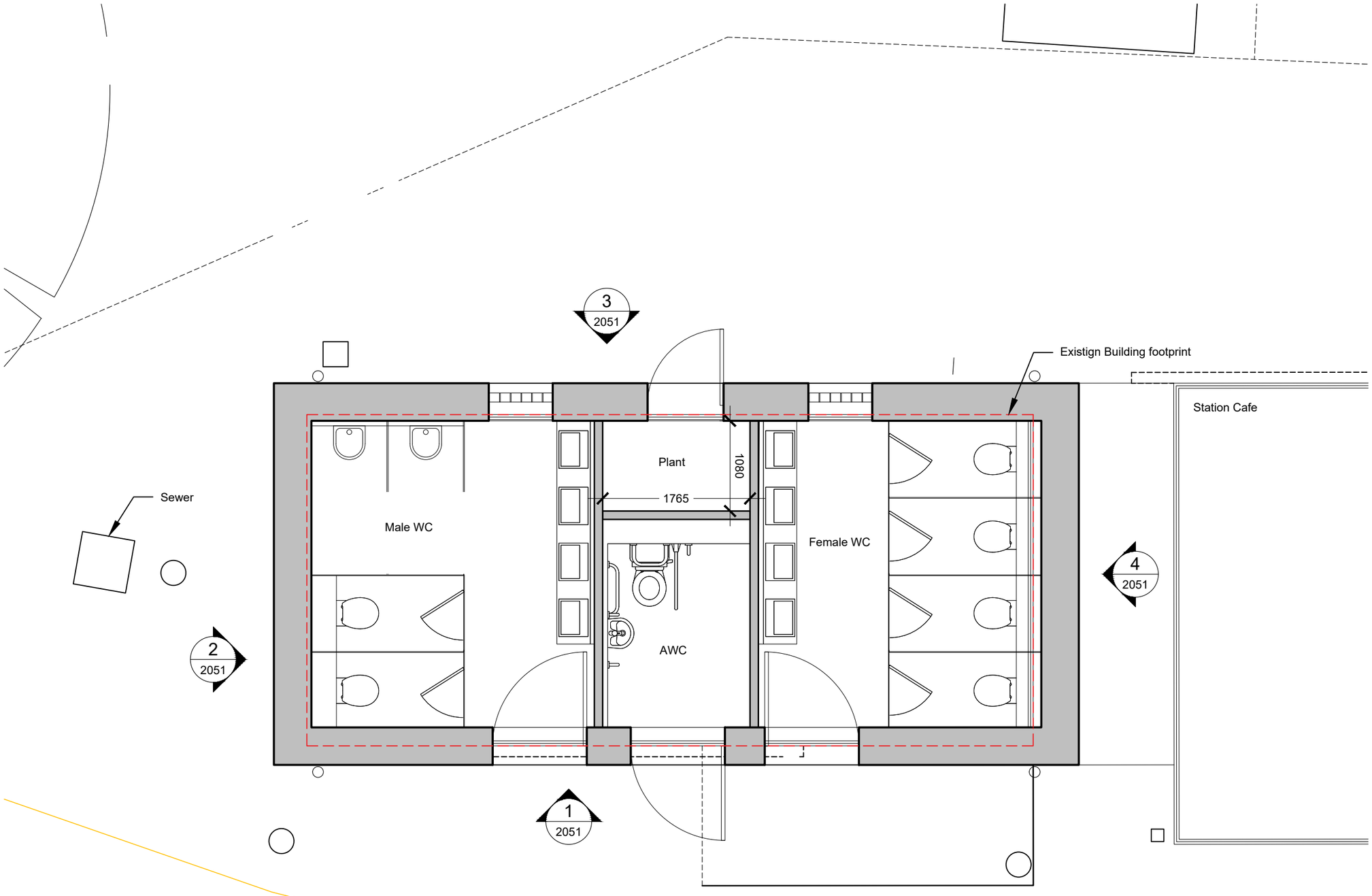
Drawing Title:
Woody Bay Proposed GF and Roof Plan

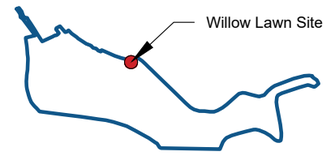
Job/Dwg No/Rev:	1326	1002	A
Drawn: NJ	**Checked:** LH	**APPR:** CB	**Date:** 11.07.2024

Drawing status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale(s): 1:100@A3

Rev.	Date	By	Chck.	Appr.	Description
A	25.06.2024	LH	AM	CB	First Issue to review plant room sizes
B	11.07.2024	LH	AM	CB	Landscape and annotations added





0 1 2

Ground Floor Plan

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hello@hawkstack.com
www.hawkstack.com

Client:
Hillingdon

Job Title:
Ruislip Lido

Drawing Title:
Willow Lawn Proposed GF Plan

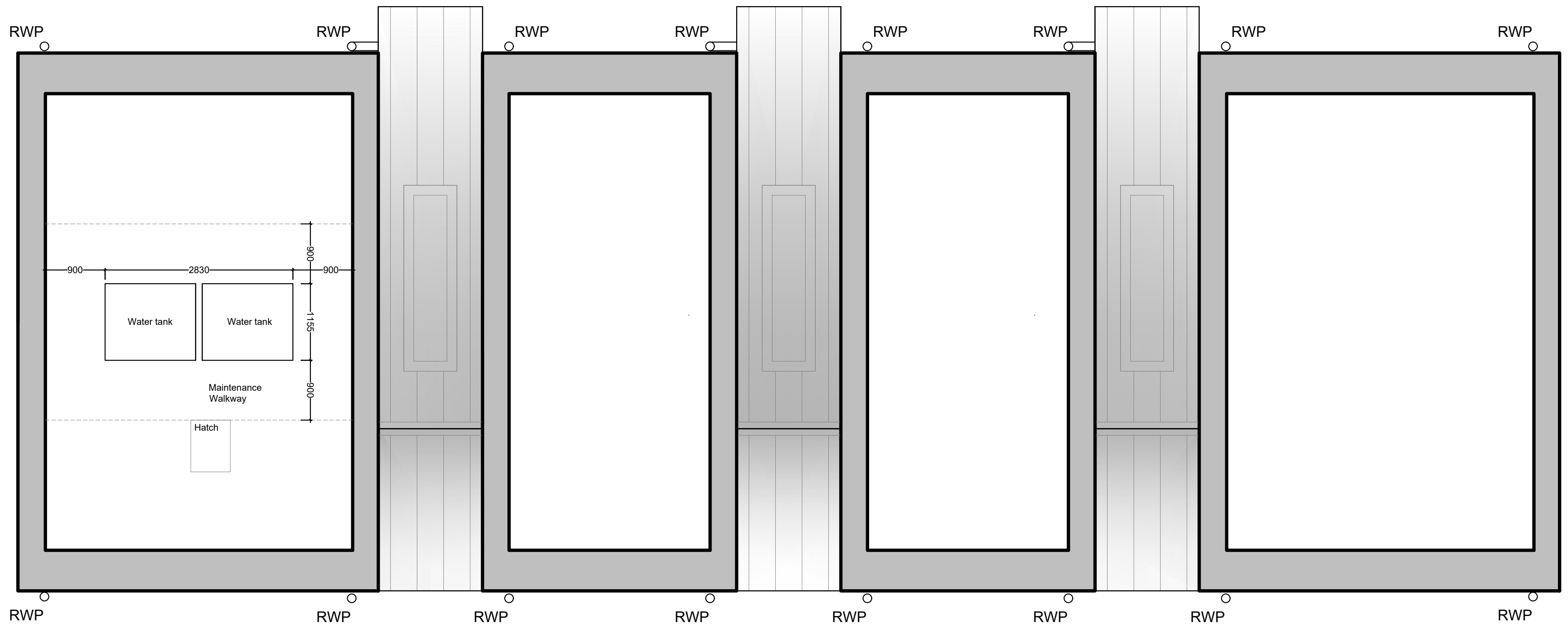
Job/Dwg No/Rev:			
1326	1051	B	

Drawn:	Checked:	APPR:	Date:
NJ	LH	CB	17.05.2024

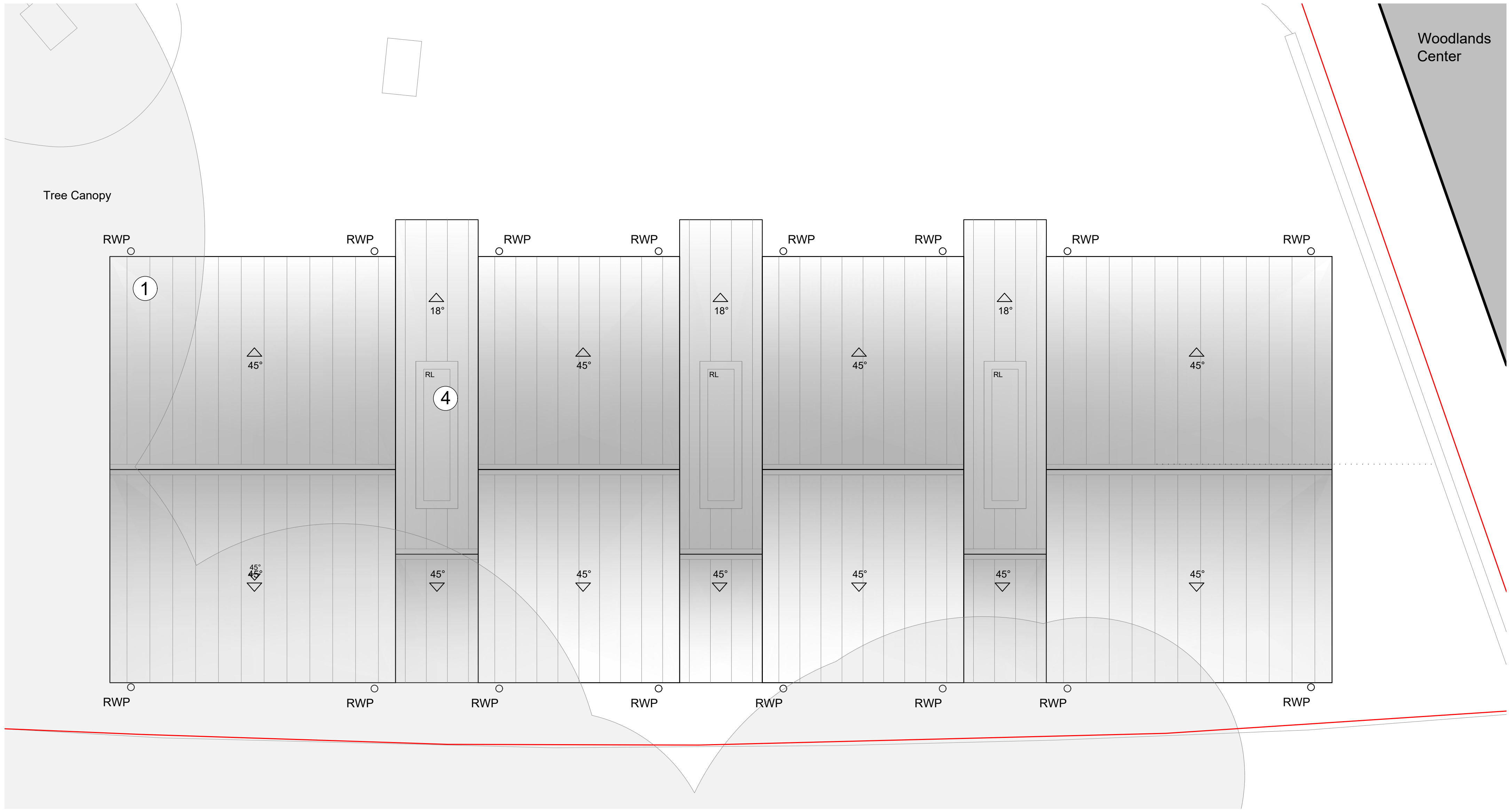
Drawing status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale@A3: 1:50@A3

Rev:	Date:	By:	Chck:	Appr:	Description:
A	11.07.24	LH	AM	CB	First Issue to design team



Roof Plan



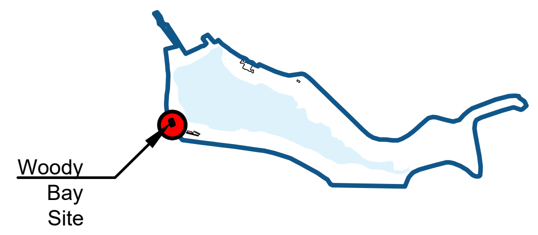
Roof Plan

Site boundary

Material Key

1 Standing Seam Zinc
2 Steel Doors
3 Louvred Doors
4 Buff Brick
5 Aluminum Rooflight
6 Metal Water Butts
7 Zinc Gutter and Downpipe
8 Glass Block

RWP Rainwater Pipe



0 1 2 3 4 5m

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Client:
Hillingdon Council

Job Title:
Ruislip Lido

Drawing Title:
Woody Bay Proposed GF and Roof Plan

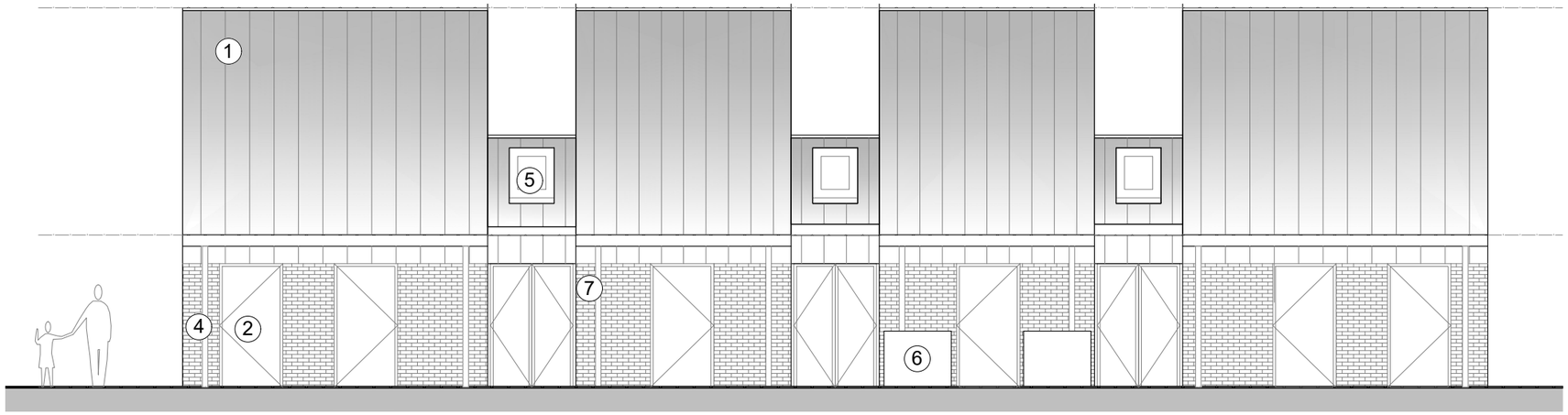
Job/Dwg No/Rev: 1326 1002 A

Drawn: NJ
Checked: LH
APPR: CB
Date: 11.07.2024

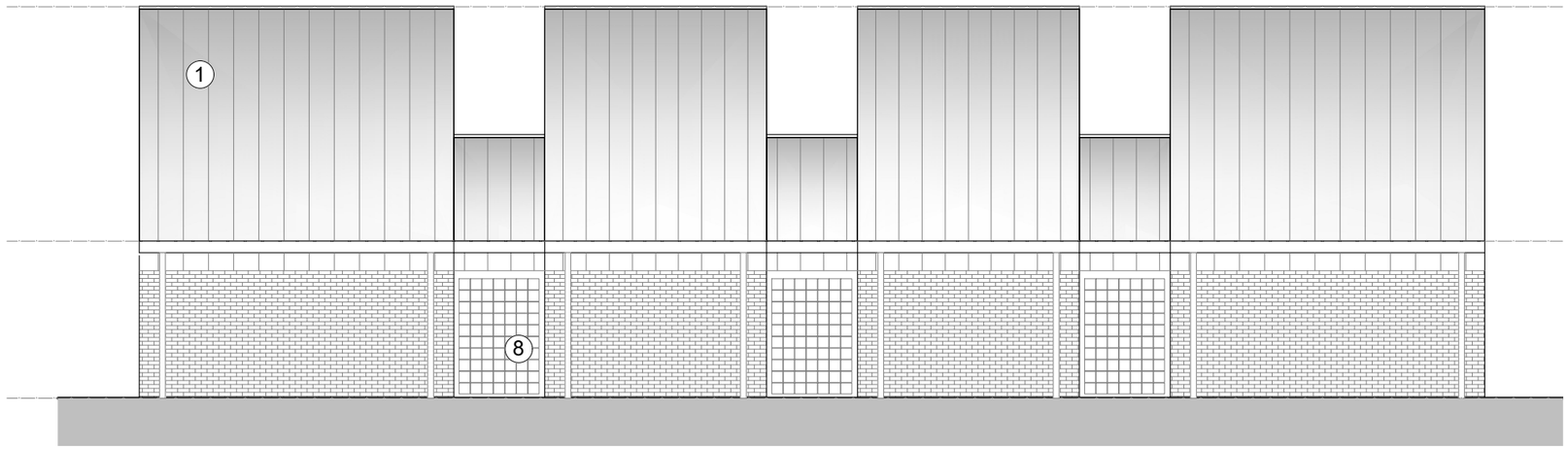
Drawing status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale(s): 1:100@A3

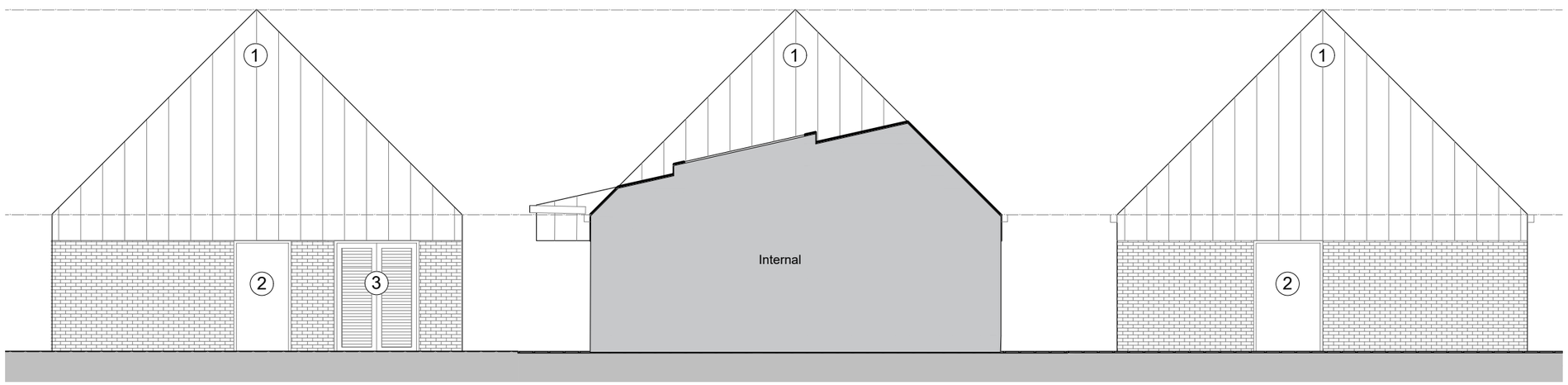
Rev.	Date	By	Chck.	Appr.	Description
A	11.07.24	LH	AM	CB	First Issue to design team



1 North Facing Elevation



2 South Facing Elevation



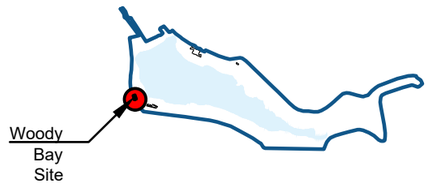
3 West Facing Elevation

4 Gable End Between Rooves

5 East Facing Elevation

Material Key

1 Standing Seam Zinc
2 Steel Doors
3 Louvred Doors
4 Buff Brick
5 Aluminum Rooflight
6 Metal Water Butts
7 Zinc Gutter and Downpipe
8 Glass Block



0 1 2 3 4 5m

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Client:
Hillingdon Council

Job Title:
Ruislip Lido

Drawing Title:
Woody Bay Proposed Elevation

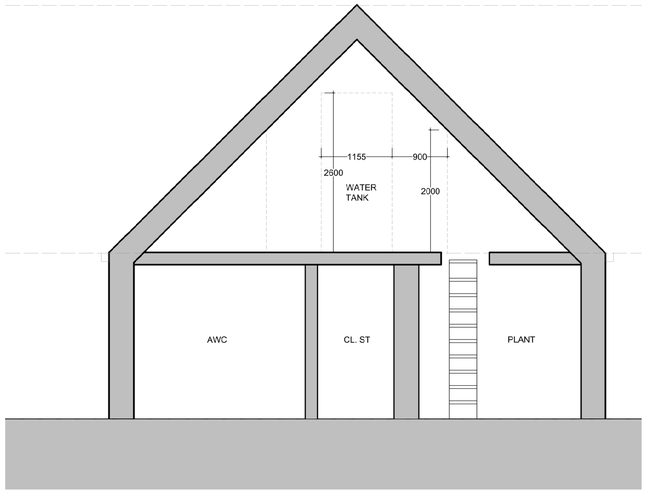
Job/Dwg No/Rev.			
	1326	2001	A

Drawn:	Checked:	APPR:	Date:
NJ	LH	CB	11.07.2024

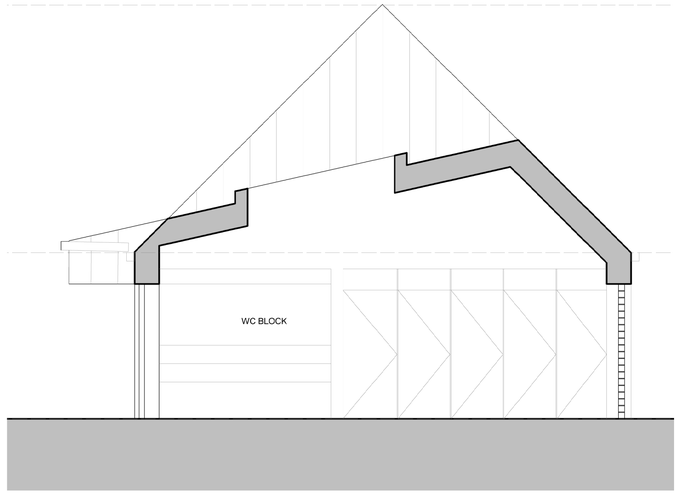
Drawing Status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale@A3: 1:100@A3

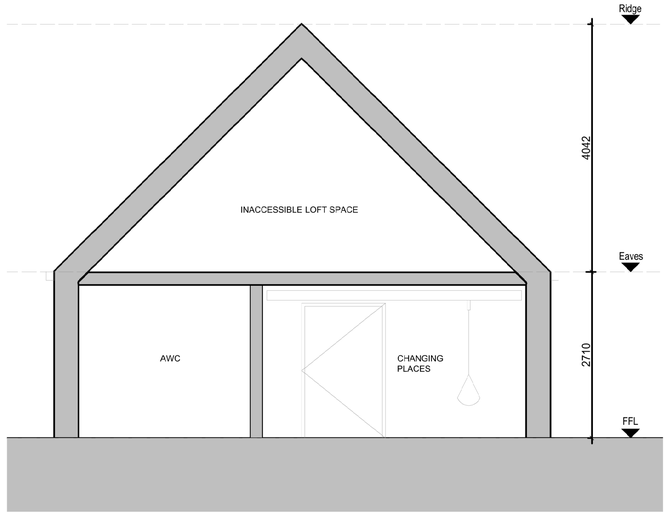
Rev:	Date:	By:	Chck:	Appr:	Description:
A	25.06.24	LH	AM	CB	Initial Issue for the sizing of the plant rooms
B	11.07.24	LH	AM	CB	Issue to design team



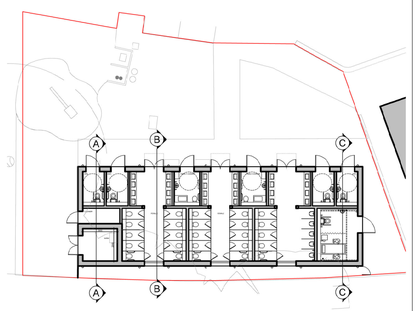
AA Short Section - Through Plant Room

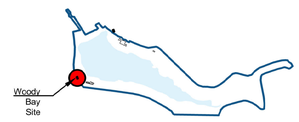


BB Short Section - Through WC Block



CC Short Section - Changing Places





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Client:
Hillindon Council

Job Title:
Ruislip Lido

Drawing Title:
Woody Bay Proposed Sections

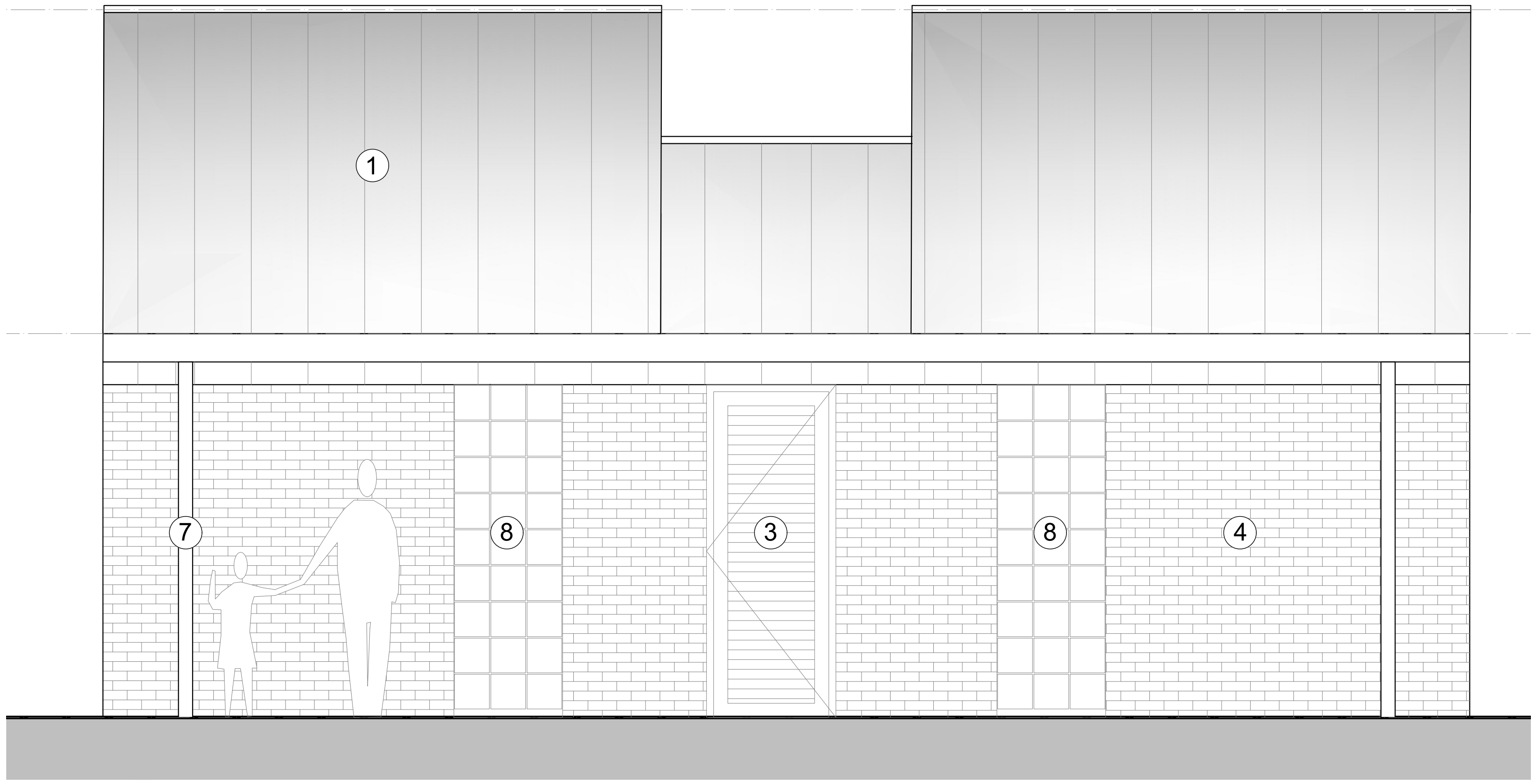
Job/Dwg No/Rev:			
	1326	2002	B

Drawn:	Checked:	APPR:	Date:
LH	AM	CB	25.06.2024

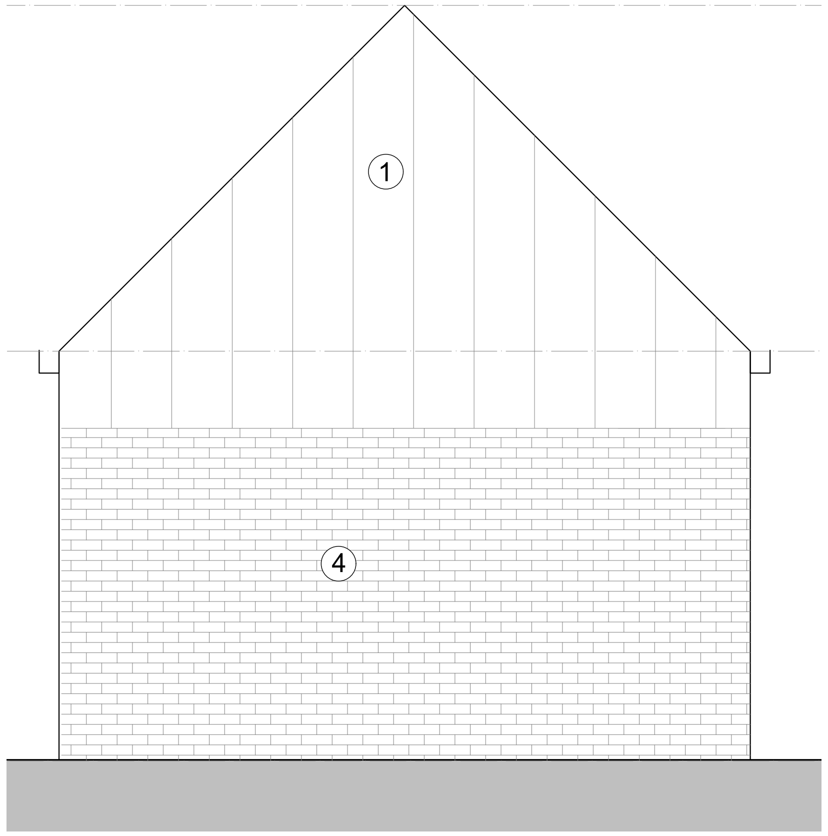
Drawing status: Preliminary
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale(s):
1:50@A3

Rev:	Date:	By:	Chck:	Appr:	Description:
A	25.06.2024	LH	AM	CB	First Issue to design team

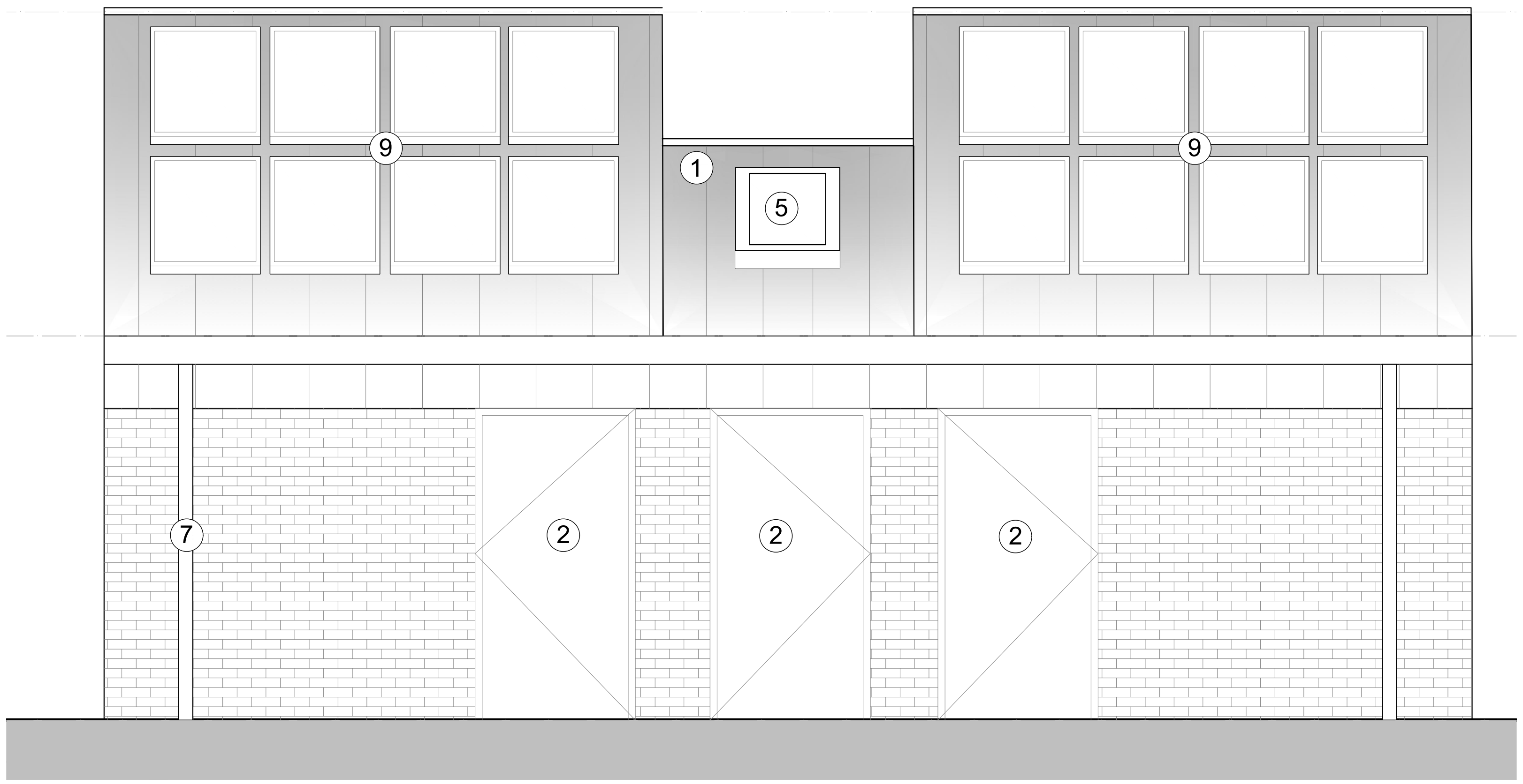


1 West Facing Elevation

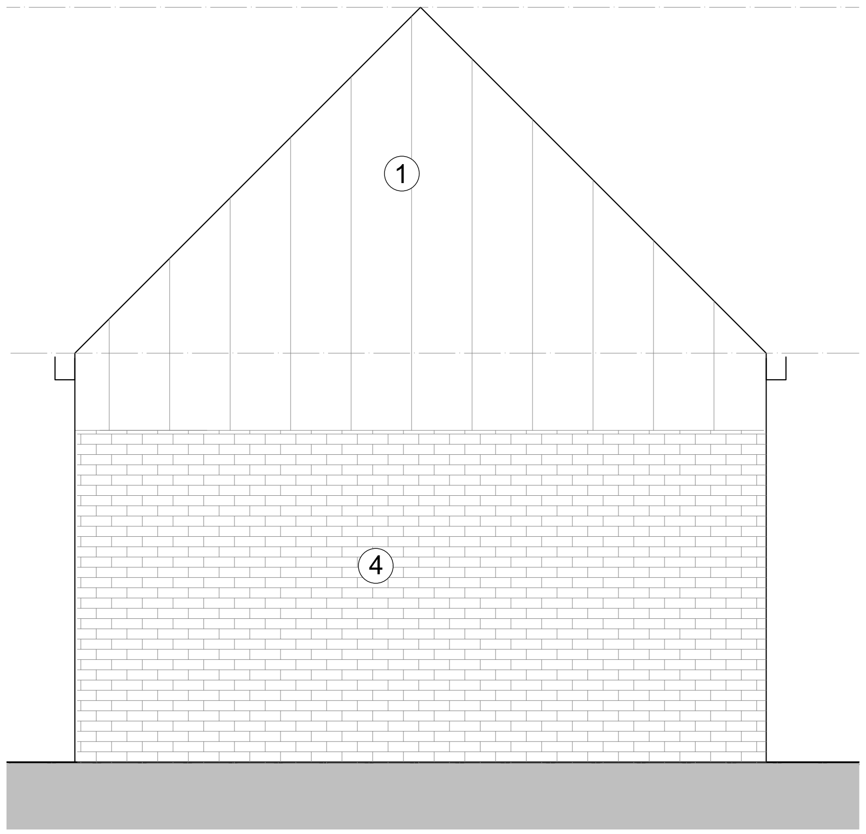


2 South Facing Elevation

	Material Key
1	Standing Seam Zinc
2	Steel Doors
3	Louvred Doors
4	Buff Brick
5	Aluminum Rooflight
6	Metal Water Butts
7	Zinc Gutter and Downpipe
8	Glass Block
9	Indicative PV locations



3 East Facing Elevation



2 North Facing Elevation

0 1 2

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Client:
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Job Title:
Ruislip Lido

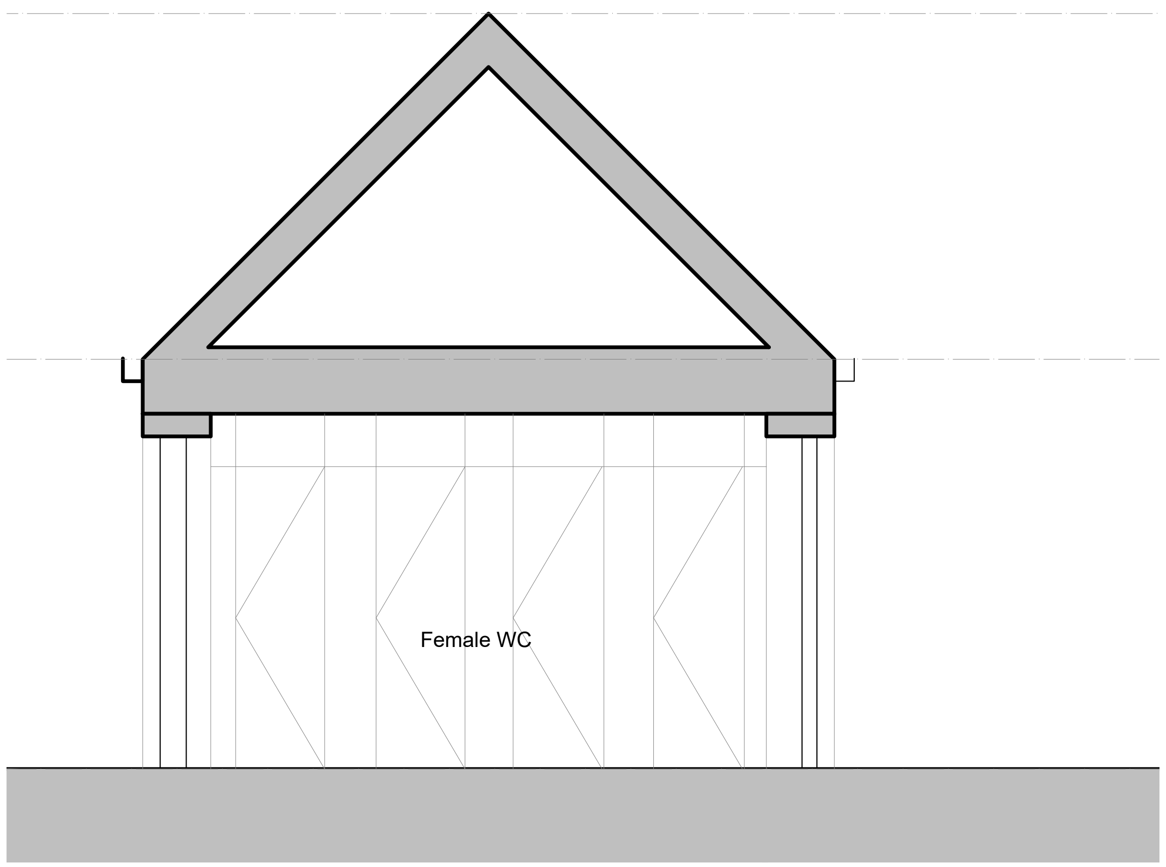
Drawing Title:
Willow Lawn Proposed Elevation

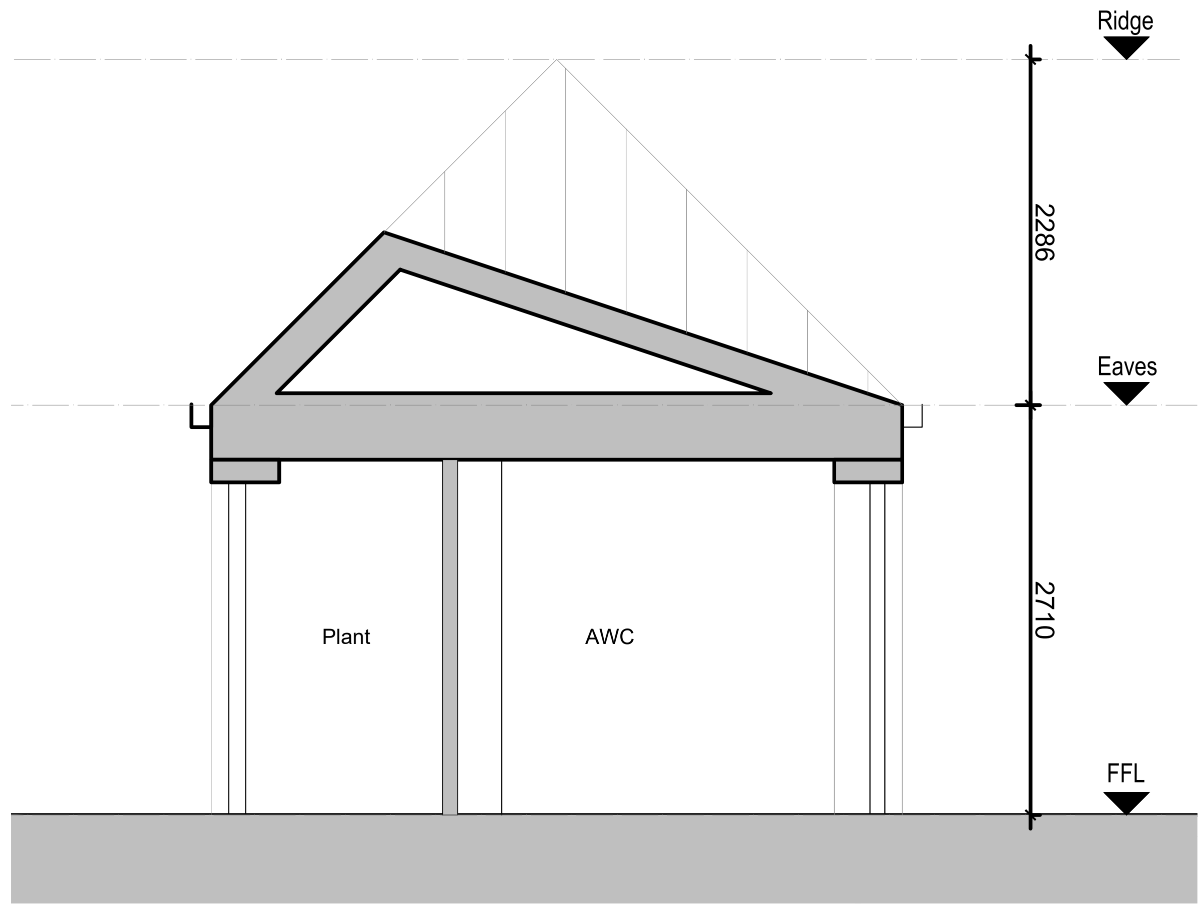
Job/Dwg No/Rev:	1326	2051	A
Drawn: LH	**Checked:** AM	**APPR:** CB	**Date:** 11.07.2024

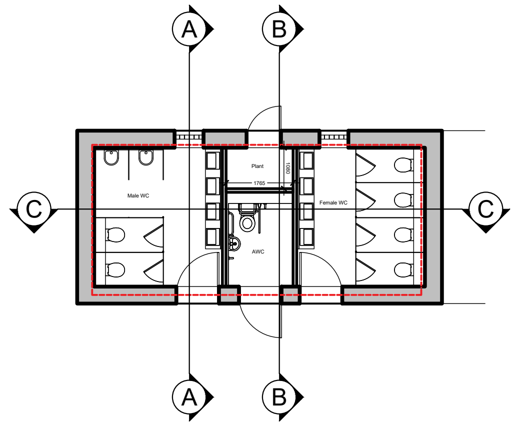
Drawing status: Prelim
Do not scale from this drawing. Check all dimensions on site before ordering.

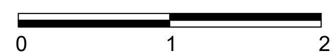
Scale(s):
1:50@A3

Rev:	Date:	By:	Chck:	Appr:	Description:
A	11.07.2024	LH	AM	CB	First Issue to design team









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Client:
Hillingdon Council

Job Title:
Ruislip Lido

Drawing Title:
Willow Lawn Proposed Elevation

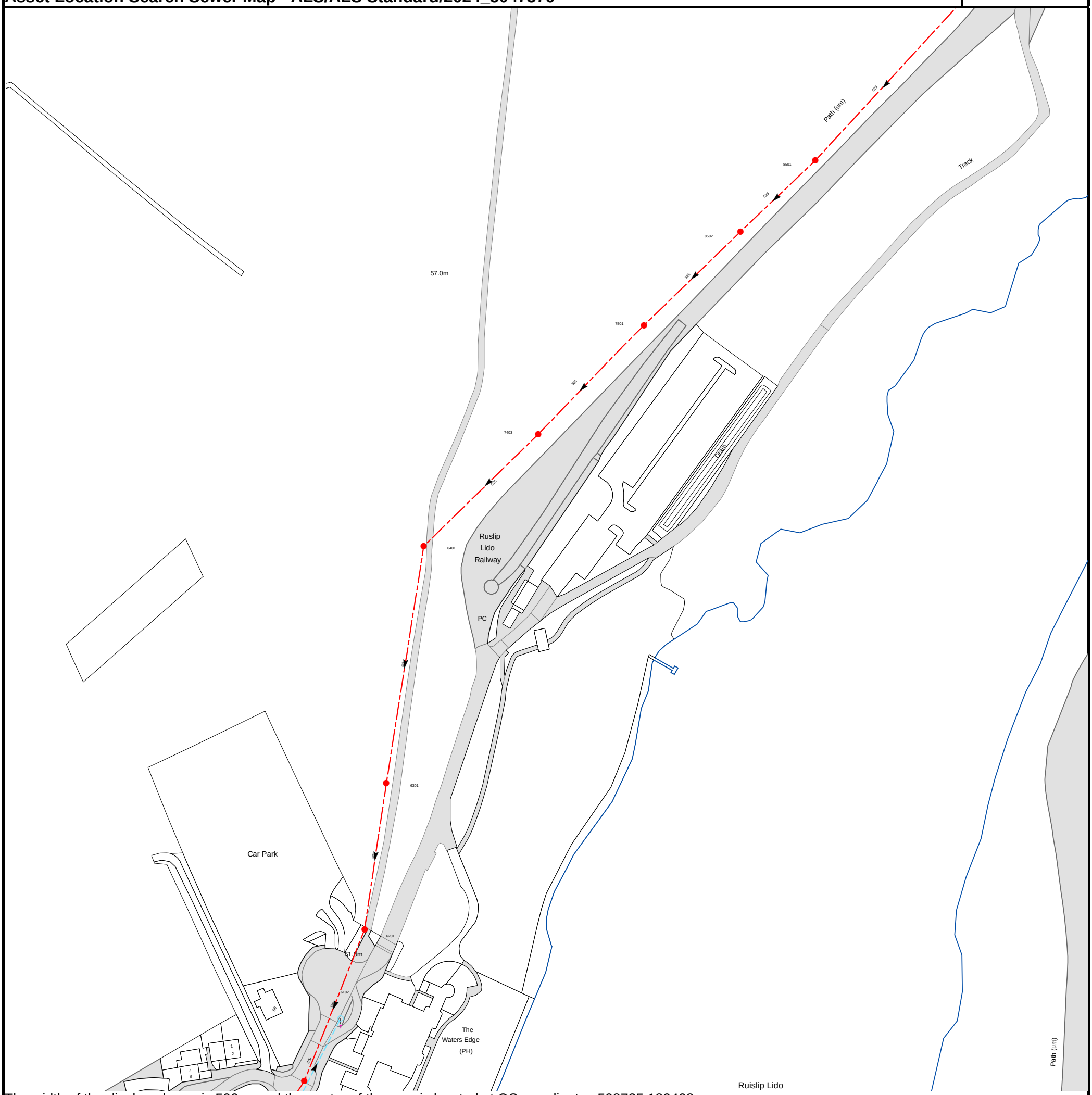
Job/Dwg No/Rev:	1326	2051	A
Drawn: LH	**Checked:** AM	**APPR:** CB	**Date:** 11.07.2024

Drawing status: Prelim
Do not scale from this drawing. Check all dimensions on site before ordering.

Scale(s):
1:50@A3

APPENDIX 3

Asset Location Search Sewer Map - ALS/ALS Standard/2024_5047376



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 508735,189408

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6101	n/a	n/a
6102	51.78	50.1
6201	n/a	n/a
6301	52.49	48.21
6401	52.43	48.4
7403	n/a	n/a
7501	n/a	n/a
8502	n/a	n/a
8501	n/a	n/a

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

ALS/ALS Standard/2024_5047376

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
561B	88.576	86.573
551D	87.949	86.341
551L	83.195	81.263
5908	45.98	44.98
3602	44.1	41.99
5907		
1606		
2504	42.68	41.39
2405	42.44	40.97
8404	55.49	54.05
4004		
6102	51.78	50.1
8901		
2702	46.89	45.77
0402		
1408		
1402	65.72	63.88
3201	54.83	52.27
4303		
8001	52.63	49.86
4306	55.69	53.26
4307		
7201	51.67	50.47
8401	52.52	51.22
4304		
7501		
8502		
3102		
4003		
5402	43.48	41.43
1402		
2505		
3903		
4809	44.97	44.07
5003	52.67	51.56
2501		
3504		
3401		
8501		
4909	45.93	43.81
1401		
6402	51.58	49.29
7407		
2401	43.53	41.21
2603	45	42.49
3503		
4601		
8401	55.49	53.71
3802		
4802	45.53	43.38
4505		
5902		
1303	65.64	64.47
2101	53.11	51.24
6201	54.51	52.07
9001	52.71	50.44
4801	45.2	42.52
6401	52.24	50.1
4501		
8402	55.77	54.22
4906	48.14	47.21
3605		
4002		
6474	51.89	50.35
1602	49.15	47.74
5901	46.28	44.65
5401	49.82	47.67
1407		
3101		
3606		
5905	47.21	46.3
2201		
4602		
1604		
7405		
9701		
6407		
2602		
2518		
3703	44.91	43.16
6406	53.19	51.54

REFERENCE	COVER LEVEL	INVERT LEVEL
551C	87.304	85.152
551E	86.812	84.865
651B	83.103	81.193
5906	46.17	45.05
8403	55.77	54.49
6476		
2506		
2512	44	41.78
6475		
3604	44.22	43.16
5503	52.79	50.81
7403		
1403		
2510		
0501	50.03	48.73
3505		
1302	65.6	64.41
4308		
4305		
8301	52.63	50.93
4201		
1301	65.72	63.88
5302	56.63	53.03
4202	55.28	53.17
1404	43.6	39.03
7403		
1603	49.89	48.58
4702	44.33	42.17
5701		
5401	43.54	41.8
1605		
3803		
4808	45.12	44.34
4904		
5001	52.36	47.64
3001		
3603	44.15	42.82
6201		
1406		
6404	51.64	50.47
3002		
7406		
2515	44.56	42.13
2516	45.07	43.87
2511		
3702	45.23	44.24
0101	52.39	50.74
2605	45.16	44.16
4507		
4903		
5903	48.6	47.22
4708		
3301	63.1	61.07
4301		
5301		
4806	45.21	43.87
4804	45.24	43.7
7404		
4905	48.58	47.61
9401	54.4	53.06
4508		
4705		
6611	86.76	85.16
1601	49.36	47.36
3901		
5402	49.69	48.17
1501	45.06	43.55
9601		
3801	44.92	43.16
4902	48.55	44.82
8801		
2604	44.65	42.75
5101	52.6	51.53
5904	47.16	46.37
1410		
6473	52.33	50.45
6202	53.67	51.07
2406	44.77	41.95
4309		
5601	50.81	48.81
1101	52.26	50.98

ALS/ALS Standard/2024_5047376

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
4302		
3402	46.76	44.86
1405		
1502	44.73	43.38
2408	44.72	42.34
3506		
1504	44.36	41.91
6405	51.7	50.18
6504		
2502		
3805	44.71	43.12
6408		
3103		
3607		
4506		
1401		
2606	46.7	45.37
2302		
7803	92.75	90.61
2513	44	41.78
6612	86.66	82.2
041G		
741B		
041C		
501A		
501C		
761A		
661D		
261B		
3902		
7101	52.85	50.22
2402	42.52	40.75
4703	45	44.04
6472		
7506	76.73	75.75
6516	80.13	77.33
7608	82.83	78.03
7501	78.36	76.23
6515	79.09	76.11
7609	80.63	77.73
401A		
401C		
2403	44.77	41.95
6512	82.39	80.92
6601		
6607		
5501		
6501		
551N		
661B		
501E		
551K	83.293	81.335
651D	81.723	81.125
551A	87.929	85.854
551B	86.782	85.41
561C	89.099	87.089
6504	82.49	80.87
551F	87.279	84.492
641A		
641F		
551M	83.375	81.494
941E		
941C		
551I		
7403	43.04	41.46
6471		
4203		
561B		
561A		
551B		
9403	53.03	51.25
5002	51.27	46.18
641B		
451A		
751A		
251A		
651F		
551G		
551C		
551E		
6301	52.49	48.21

REFERENCE	COVER LEVEL	INVERT LEVEL
6505	53.65	51.18
1503	48.27	46.98
1409		
2703	45.83	44.96
3501		
5502		
2514		
6501	52.39	50.87
6103	51.95	50.81
2607	44.85	43.27
4803	43.86	42.1
0401		
7402		
3601	44.05	41.97
6506		
5501	52.39	51.38
2701	47.72	46.08
3608		
7701	87.45	82.78
241C		
041E		
261A		
741C		
041F		
041H		
501D		
661C		
591A		
3701	46	44.35
2301		
5301	56.7	53.08
4504		
1607		
6505	79.4	77.42
7502	76.26	74.52
6514	79.42	77.35
7509	78.6	76.56
6507	78.915	76.67
6517	80.13	77.3
4001		
401B		
401D		
4701	49.01	48
6503	52.29	51.1
6502		
6511		
6510		
6602		
661A		
501B		
501F		
651C	83.328	81.178
651E	82.21	81.044
561A	89.084	86.667
551H	84.353	82.493
561D	88.559	87.049
651A	83.96	82.157
551G	84.8	83.193
641D		
551I	84.241	82.267
941A		
941B		
941D		
4503		
2407	43.42	41.74
9402	53	52.04
3404		
4502		
551A		
151A		
491A		
2601	44.71	43.39
641C		
451B		
251B		
641E		
551F		
551H		
551D		
251D		
6401	52.43	48.4

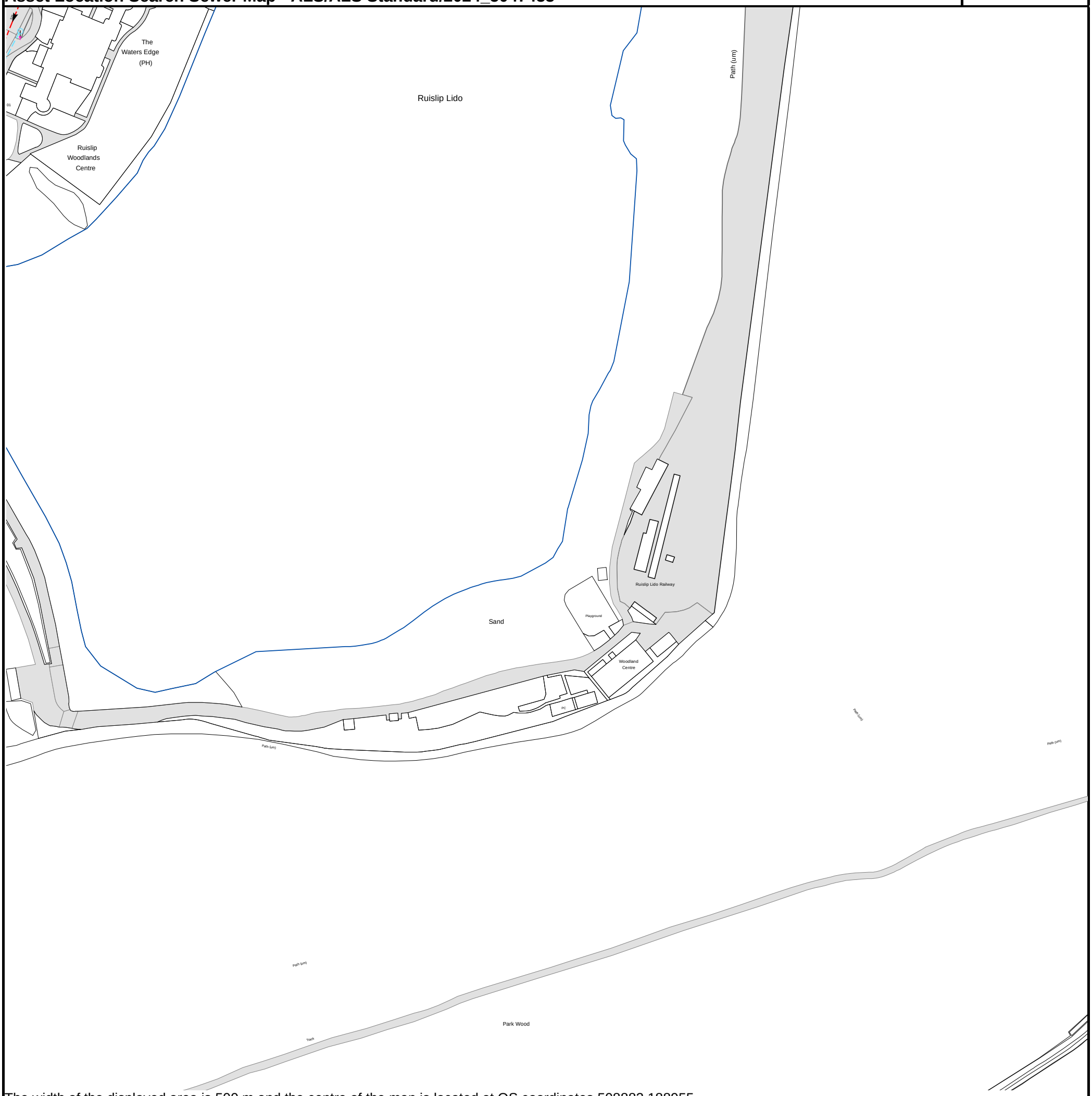
ALS/ALS Standard/2024_5047376

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
941J		
2508	44.67	43.4
741A		
841B		
171B		
171D		
141A		
4907		
041D		
4813	44.83	43.81
551O		
451C		
451F		
451H		
541A		
641H		
481A		
481C		
241D		
451I		
391B		
151B		
151D		
301A		
301C		
651G		
561D		
561G	51.3	50
561C	49.41	48.2
561F	52.2	50.9
541D		
761D		
761I		
761E		
761J		

REFERENCE	COVER LEVEL	INVERT LEVEL
941K		
251C		
841A		
171A		
171C		
3804		
141B		
4908	46.82	45.7
4901	47.83	45.13
2507	45.14	43.46
6101		
451E		
451G		
451D		
641G		
541A		
481B		
261C		
241E		
391A		
511A		
151C		
151E		
301B		
841C		
651H		
561H	50.51	49
561E	52.5	51.2
471A	49.15	48.05
161A		
541C		
761G		
761H		
761F		
651I		

Asset Location Search Sewer Map - ALS/ALS Standard/2024_5047433



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 508882,188955

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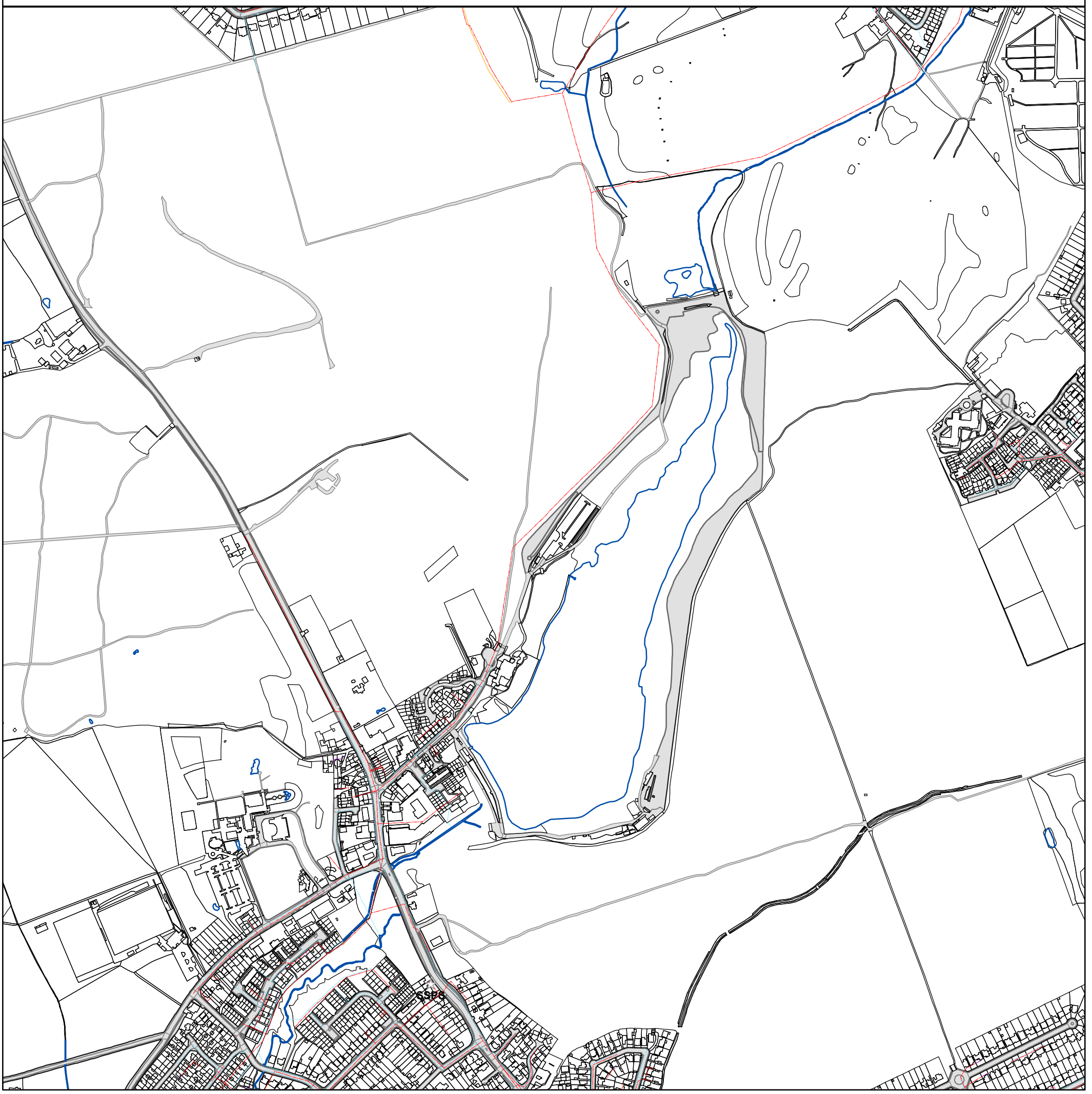
ALS/ALS Standard/2024_5047376



0 45 90 180 270 360
Meters

Scale:	1:7160
Width:	2000m
Printed By:	Skrishna1
Print Date:	10/09/2024
Map Centre:	508735,189408
Grid Reference:	TQ0889SE

Comments:

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6102	51.78	50.1

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ALS/ALS Standard/2024_5047433

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
561B	88.576	86.573
551D	87.949	86.341
551L	83.195	81.263
321B		
7005	47.26	46.51
4001	40.94	37.7
5908	45.98	44.98
6103		
6003		
3602	44.1	41.99
7002	49.38	48.53
8206	53.39	51.28
5907		
6105		
6007		
9302		
1214		
1216		
0004	40.62	39.3
2101	41.31	39.44
2001	40.74	37.32
2504	42.68	41.39
2202		
9301		
3303	44.87	42.65
8404	55.49	54.05
3604	44.22	43.16
1202	42.48	39.47
1104	41.78	39.3
4004		
5503	52.79	50.81
6102		
1403		
2510		
2104		
7906	45.27	43.22
9003		
0205	42.42	38.7
0501	50.03	48.73
1408		
0301	45.83	44.32
0905	40.3	36.98
0301		
0202		
1404	43.6	39.03
8303	53.17	50.63
8304	53.16	51.68
7209		
8502		
1302		
2103		
4702	44.33	42.17
4003		
5402	43.48	41.43
1101	41.68	39.38
1307		
1605		
2505		
3803		
4808	45.12	44.34
2202	41.28	39.53
4904		
5003	52.67	51.56
2210		
2203		
2302	41.9	40.38
3603	44.15	42.82
6201		
7201		
8501		
9101		
1406		
4909	45.93	43.81
5303	41.71	40.69
6404	51.64	50.47
3203	41.03	40.23
7103	51.45	49.83
7902	44.18	42.13
0213	42.42	38.7
3304	44.93	42.63
4203	41.58	40.23

REFERENCE	COVER LEVEL	INVERT LEVEL
551C	87.304	85.152
551E	86.812	84.865
651B	83.103	81.193
7205	51.79	50.24
0303		
4002	40.69	39
5906	46.17	45.05
6104		
6201	41.78	37.36
7102	51.4	50.38
8403	55.77	54.49
5102	41.49	37.95
6005		
6476		
7208		
1606		
7206	51.93	50.74
2506		
0001	41.41	39.8
2201	41.45	40.08
2208		
2512	44	41.78
2405	42.44	40.97
6475		
8302	53.92	52.09
9903	41.47	36.92
1006	41.19	39.07
1007	41.14	39.24
3404	44.85	41.66
4004		
6102	51.78	50.1
7403		
2702	46.89	45.77
2111		
2207		
7301	51.13	48.04
9001		
0402		
9102		
8201	53.6	49.65
3505		
0208	41.88	41.43
0902		
1212		
7501		
8004	45.99	44.72
7403		
8306	53.9	52.33
0212	42.42	39.74
1603	49.89	48.58
3102		
4201	41.83	40.05
5701		
5401	43.54	41.8
6303	41.96	40.71
1402		
2109		
3001	44.74	42.92
3903		
4809	44.97	44.07
3208	41.25	40.13
6002	41.72	40.32
5001	52.36	47.64
2501		
3001		
3504		
3401		
7001		
8205	53.39	51.1
9008		
9007		
8003	45.98	44.05
4209	45.25	43.84
5301	41.68	40.76
1301	42.73	41.1
7007	50.17	49.53
7905	44.9	43.86
1401		
3002	44.6	42.86
3002		
6402	51.58	49.29

ALS/ALS Standard/2024_5047433

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
0006		
7406		
0215		
2515	44.56	42.13
2401	43.53	41.21
2101	43.73	42.23
2603	45	42.49
2511		
3202		
3503		
3301	44.7	42.15
4601		
8301	54.88	52.89
9103		
1201		
8204	52.39	50.71
1306		
2102		
2605	45.16	44.16
3306	44.54	42.09
2002	40.75	36.63
4903		
5903	48.6	47.22
8203	52.37	48.92
0202	45.8	44.2
0002	42.43	40.47
4708		
4806	45.21	43.87
5009		
5102	45.76	44.3
7303	51.08	49.05
0003		
4102	44.87	43.35
4501		
8402	55.77	54.22
8202	53.39	51.45
5101	45.38	44
5302	42.2	40.61
8904		
6308		
4101	41.14	36.97
4302	42.8	41.32
4508		
4001	44.11	43.09
4705		
4005		
6611	86.76	85.16
6474	51.89	50.35
7204	51.93	50.89
7101		
1601	49.36	47.36
2113		
3901		
4203	45.25	43.35
5901	46.28	44.65
5401	49.82	47.67
1407		
1205		
9601		
3801	44.92	43.16
4101	44.85	43.65
5905	47.21	46.3
5006		
7207	51.74	50.15
7202	51.88	47.74
8005	45.74	44.05
2105		
2604	44.65	42.75
1904	41.05	39.38
4602		
5003	45.66	43.81
6303		
1213		
0904	40.35	39.35
1905	40.574	39.544
5101	41.22	37.88
5005		
5001	43.47	42.46
7405		
0305		
1204		

REFERENCE	COVER LEVEL	INVERT LEVEL
0201		
7407		
0102	41.59	39.33
2304		
2516	45.07	43.87
2204		
2209		
3204		
3201		
3403	44.72	42.89
3702	45.23	44.24
6304		
9305		
9304		
8401	55.49	53.71
1301	43.48	38.81
1305		
0102	45	43.41
3802		
4507		
4802	45.53	43.38
4505		
5902		
0101	45.08	43.15
0201	45.88	44.11
0006	42.69	40.88
4201	44.94	42.85
4801	45.2	42.52
4804	45.24	43.7
6401	52.24	50.1
7404		
0002		
4208	45.12	42.98
4905	48.58	47.61
8002	45.78	43.36
5002	42.89	41.85
5304	42.22	40.57
6001	47.42	45.87
0001		
9401	54.4	53.06
4301	42.78	41.01
4906	48.14	47.21
3605		
4202	41.78	40.44
4103	45.06	43.61
4002		
5103		
6002	48.14	46.63
7104		
9006		
1602	49.15	47.74
0304		
4002	44.22	43.14
4210	46.19	44.97
5402	49.69	48.17
1501	45.06	43.55
1211		
9904	41.91	40.91
3101		
3606		
4902	48.55	44.82
5010		
7003		
7004	46.53	45.52
8801		
0901	40.29	36.26
2201		
3203		
3001	40.81	37.51
5101	52.6	51.53
3206	41.37	40.24
1604		
0903	40.05	39.04
0902	40.34	37.04
1008	41.05	39.56
5305	41.99	40.36
5904	47.16	46.37
7203	50.67	49.78
0302		
1207		
9002	42.87	41.59

ALS/ALS Standard/2024_5047433

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REFERENCE	COVER LEVEL	INVERT LEVEL
9201	50.04	48.51
1313		
1410		
9701		
1901	40.54	37.23
1102	41.94	38.95
6473	52.33	50.45
6307		
2602		
2406	44.77	41.95
2518		
1002	40.81	36.44
5011		
5308	42.03	40.37
5601	50.81	48.81
6406	53.19	51.54
9902		
6505	53.65	51.18
8401	70.81	68.93
1010		
1102	41.88	40.7
1405		
9905	41.78	41
1906	40.51	39.6
1309		
1409		
2703	45.83	44.96
1009	41.25	39.62
1201	42.67	39.92
1101	42.61	39.12
3305	44.78	42.56
5204		
0307		
5205		
6309		
2514		
0302	43.61	42.01
6501	52.39	50.87
6504		
2502		
2106		
4803	43.86	42.1
6408		
0108		
0214		
0209		
7402		
3302	44.84	42.38
3601	44.05	41.97
4506		
4202	45.14	43.09
0007		
0101	41.8	37.98
0104		
8001	47.18	45.25
5202	46.81	45.48
8001		
0008		
2606	46.7	45.37
2701	47.72	46.08
7203	41.41	38.34
3608		
6001		
8002	42.89	38.44
8612		
8507		
8003	42.843	41.703
7901	43.72	38.23
7902	43.752	41.402
8602	75.96	73.43
8502	45.49	43.83
7404	43.97	42.12
8610		74.83
7701	87.45	82.78
8601	75.47	73.94
8611		74.16
8506		
2513	44	41.78
7607	84.33	83.08
7801	88	85.93
7508	76.18	74.86

REFERENCE	COVER LEVEL	INVERT LEVEL
0203		
1208		
1314		
1902		
1012	41.6	37.13
1003	40.99	38.02
6407		
1209		
2205		
2201		
2206		
3703	44.91	43.16
5103		
5903	43.27	42.01
6305		
9901		
9104		
0204		
8402	68.58	66.57
3402	46.76	44.86
1503	48.27	46.98
1206		
9001	42.66	41.34
1210		
1215		
1502	44.73	43.38
2408	44.72	42.34
1103	41.96	39.7
1908	40.39	39.48
3501		
3506		
0309		
5201	45.81	43.98
5502		
1504	44.36	41.91
2301	42.49	40.29
6405	51.7	50.18
9002		
6103	51.95	50.81
2607	44.85	43.27
3805	44.71	43.12
8002		
9105		
0103	42.03	37.92
0401		
3103		
8006	47.31	46.17
3607		
4206	45.13	43.39
4003	43.91	43.42
8405	45.03	43.03
6506		
0306		
1401		
5203	46.79	45.5
5501	52.39	51.38
0106		
0216		
2107		
2302		
7802	89.08	87.69
7401	43.01	41.48
7803	92.75	90.61
7902	92.27	90.46
7504	75.94	74.74
8402	44.87	43.33
7901	92.43	90.5
7201		
8501		
8508		
7602		75.06
8701	81.68	79.41
8404	44.29	42.4
8802	84.45	82.17
8605		
8502		
8906	85.19	82.6
241C		
8509		
8603	74.9	72.75
6101	41.42	38.22

ALS/ALS Standard/2024_5047433

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REFERENCE	COVER LEVEL	INVERT LEVEL
8702	81.8	79.53
6612	86.66	82.2
8501	45.92	44.27
7601		74.97
8804	84.57	82.29
621B		
8004	43.063	41.803
041E		
261A		
721B		
741C		
041B		
121C		
501A		
221H		
411B		
041H		
501D		
661C		
3205	41.3	40.21
3204	41.22	40.48
731A		
591A		
0009	41.02	37.87
3701	46	44.35
1903	41.29	39.03
921A		
9005		
7006	49.46	48.65
3003	44.18	42.84
8201	41.94	38.57
1203		
5004	43.44	42.43
4504		
6101		
4703	45	44.04
6472		
3302	42.38	40.98
6505	79.4	77.42
7506	76.73	75.75
7502	76.26	74.52
6514	79.42	77.35
7509	78.6	76.56
6507	78.915	76.67
6517	80.13	77.3
4001		
401B		
401D		
4701	49.01	48
7202	41.35	37.64
0014	40.8	40.2
521C		
521F		
011C		
6601		
6607		
5501		
6510		
6602		
551N		
661B		
501E		
551K	83.293	81.335
651D	81.723	81.125
551A	87.929	85.854
551B	86.782	85.41
561C	89.099	87.089
6504	82.49	80.87
551F	87.279	84.492
921A		
641D		
551I	84.241	82.267
401A		
941A		
941B		
941D		
891B		
891D		
2108		
4503		
6004		

REFERENCE	COVER LEVEL	INVERT LEVEL
8401	44.2	42.59
8905	89.18	87.28
8609		74.9
7402	43.91	42.3
8503		
621A		
8001	43.11	38.41
041G		
721A		
741B		
041C		
041A		
041F		
221G		
411A		
411C		
501C		
761A		
661D		
3201	40.99	39.66
3202	41.4	39.8
741D		
261B		
0207		
1907	41.34	39.39
3902		
0005		
2301		
6006		
7904	43.99	43.15
8608		73.59
6302	47.8	46.35
2402	42.52	40.75
2303		
8403		
1607		
2112		
7501	48.9	47.5
7503	76.12	73.74
7507	76.45	75.01
6516	80.13	77.33
7608	82.83	78.03
7501	78.36	76.23
6515	79.09	76.11
7609	80.63	77.73
401A		
401C		
2403	44.77	41.95
6512	82.39	80.92
1001	41	40.4
6503	52.29	51.1
521E		
521A		
011D		
6502		
6511		
4006		
6501		
2302		
661A		
501B		
501F		
651C	83.328	81.178
651E	82.21	81.044
561A	89.084	86.667
551H	84.353	82.493
561D	88.559	87.049
651A	83.96	82.157
551G	84.8	83.193
641A		
641F		
551M	83.375	81.494
401B		
941E		
941C		
891A		
891C		
891E		
551I		
7403	43.04	41.46
1202	41.84	39.7

ALS/ALS Standard/2024_5047433

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REFERENCE	COVER LEVEL	INVERT LEVEL
6302	41.92	40.84
6471		
9004		
2301	42.06	40.24
2204	41.1	40.09
221A		
221C		
011B		
891B		
401E		
701A		
701C		
031A		
4502		
551A		
151A		
9403	53.03	51.25
121A		
121C		
121E		
741A		
421E		
331C		
2601	44.71	43.39
091A		
431B		
021A		
211C		
641B		
521B		
641C		
451B		
1004	40.95	38.2
741C		
211B		
421C		
4204	44.68	43.24
991B		
211A		
4205	45.25	43.81
391B		
831B		
401C		
331E		
231D		
641E		
7401	51.33	49.96
531A		9.4
8801	89.9	87.46
5007		
651F		
551G		
551C		
551E		
251D		
6301	52.49	48.21
011C		
901B		
941J		
931B		
941F		
941I		
251C		
111A		
491F		
821B		
421A		
904A	41	39.47
091B		
731B		
841B		
171B		
171D		
221E		
321A		
321C		
3804		
001D		
921B		
1312		
141A		

REFERENCE	COVER LEVEL	INVERT LEVEL
2407	43.42	41.74
9402	53	52.04
8305	54.88	52.89
2203	41.13	39.58
2102	41.12	39.56
221B		
011A		
891A		
411D		
401F		
701B		
901A		
561B		
561A		
551B		
011B		
491A		
121B		
121D		
5002	51.27	46.18
711B		
421F		
431A		
8504		
991A		
531C		
021B		
711A		
6306		
521D		
451A		
881B		
741B		
751A		
421B		
421D		
4207	45.12	42.98
311A		
421A		
001A		
831A		
251B		
401D		
231C		
251A		
7302	51.16	49.61
531B		8.548
331D		
5008		-0.4
8511		
551F		
551H		
551D		
231E		
011A		
6401	52.43	48.4
871B		
941H		
931A		
941K		
941G		
2508	44.67	43.4
111B		
631A		
821A		
491A		
991E		
001B		
741A		
841A		
171A		
171C		
221D		
221F		
321B		
321D		
001C		
911A		
1308		
131A		
141B		

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REFERENCE	COVER LEVEL	INVERT LEVEL
4907		
041D		
121B		
121A		
891A		
231B		
431B		
421G		
2507	45.14	43.46
4003	40.667	39.75
901B		
901D		
901F		
901G		
991K		
991I		
6101		
491C		
491E		
451E		
451G		
3303	42.37	41.25
001E		
541A		
331F		
331I		
331G		
021B		
641G		
921D		
481A		
511A		
481C		
241D		
451I		
391A		
131B		
031A		
511A		
781A		
151B		
151D		
331J		
301A		
301C		
211B		
211D		
211F		
211H		
411H		
321F		
841C		
321E		
211F		
601A		
691B		
651H		
561D		
561G	51.3	50
561C	49.41	48.2
561F	52.2	50.9
541D		
871E		
211I		
761B		
101A		
761G		
761H		
761F		
821C		
761K		
811C		
651I		

REFERENCE	COVER LEVEL	INVERT LEVEL
4908	46.82	45.7
4901	47.83	45.13
4813	44.83	43.81
801B		
231A		
821A		
431C		
431D		
401A	40.407	39.857
901A		
901C		
901E		
991G		
551O		
991H		
991J		
491B		
491D		
451C		
451F		
451H		
451D		
001F		
321A		
331H		
3301	42.37	40.63
021A		
921C		
641H		
541A		
481B		
511B		
261C		
241E		
791B		
391B		
131C		
221I		
401B	40.512	39.65
901H		
151C		
151E		
331K		
301B		
211A		
211C		
211E		
211G		
511C		
411G		
321E		
321D		
211E		
691C		
691A		
651G		
401C		
561H	50.51	49
561E	52.5	51.2
471A	49.15	48.05
161A		
541C		
881C		
211J		
761C		
761D		
761I		
761E		
761J		
821D		
761L		
231F		

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- Air Valve
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Inlet
- Outfall
- Undefined End

Other Symbols

Symbols used on maps which do not fall under other general categories.

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

Ducts may contain high voltage cables. Please check with Thames Water.

- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement.

If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

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