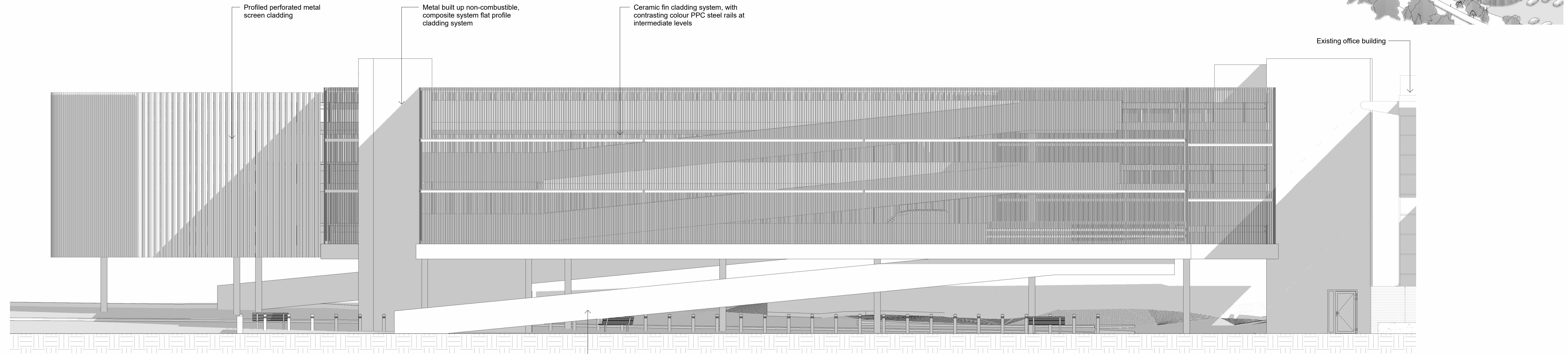
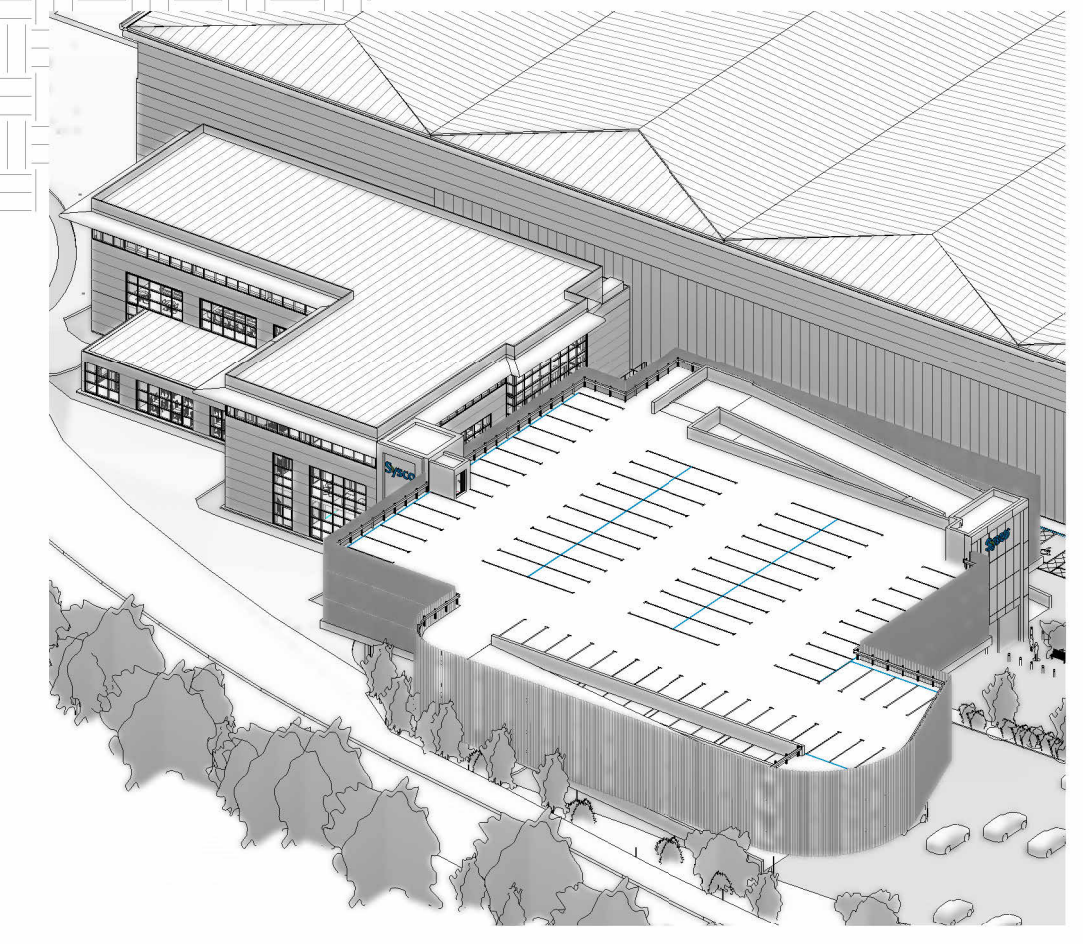


West Elevation
-1 0 1 2 3 4 5
SCALE 1:100 m



North Elevation
-1 0 1 2 3 4 5
SCALE 1:100 m

The contractor must check dimensions on site. Only figured dimensions to be worked from.

Any discrepancies must be reported to the architect before proceeding

DRAWING CONVENTIONS:

For ease of reading, View Tags (Elevation, Section markers etc.) indicate last 4 digits of Document no. only

NOTES:

REVISIONS			
Rev.	Description	Date	Checked
A	WIP Issue. Issued for comment.	08.12.2023	GTH
B	Brakes comments & stair location captured & issued for review	08.03.2024	BA

GTH / architects
www.gth-architects.com
The Print Rooms, 164/180 Union Street, London, SE1 0QE
design@gth-architects.com
www.gth-architects.com



PROJECT TITLE: Boundary Way, Hemel Hempstead HP2 7LF
DOCUMENT TITLE: Hemel 465

West & North Elevations - Proposed

DOCUMENT NO: 1008-GTH-07-ZZ-DR-A-2521 STATUS: S1 REVISION: B SCALE @ A1: 1:100 SCALE @ A3: 1:200

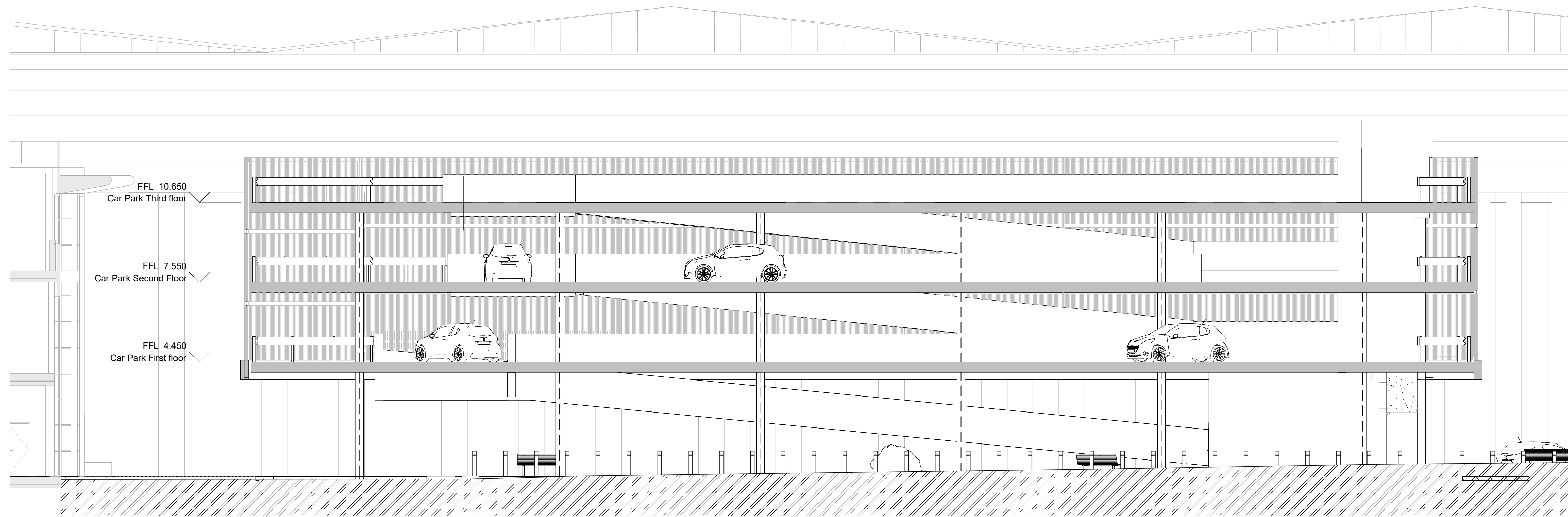
CURRENT ISSUE DATE: 08.03.2024
Drawing numbering as per BS 1192
Refer to This drawing as © copyright by Richard Hopkinson Architects, trading as GTHarchitects



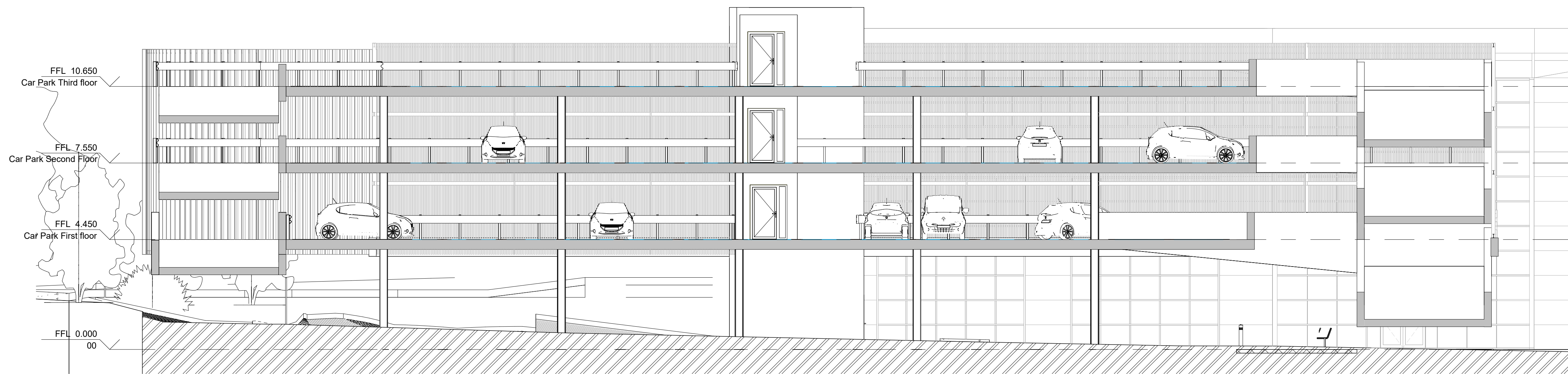
The contractor must check dimensions on site. Only figured dimensions to be worked from.
Any discrepancies must be reported to the architect before proceeding

DRAWING CONVENTIONS:
For ease of reading, View Tags (Elevation, Section markers etc.) indicate last 4 digits of Document no. only

NOTES:



Section B-B
-1 0 1 2 3 4 5
SCALE 1:100 m



Section A-A
-1 0 1 2 3 4 5
SCALE 1:100 m

Rev.	Description	Date	Checked
C	Brakes comments & stair location captured & issued for review	08.03.2024	BA
B	Car Park Work in Progress issue	07.03.2024	BA
A	WIP Issue. Issued for comment.	08.12.2023	GTH

REVISIONS

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PROJECT TITLE: Boundary Way, Hemel Hempstead HP2 7LF
DOCUMENT TITLE: Hemel 465

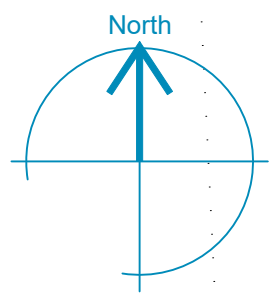
MSCP - Proposed Section A-A & B-B

DOCUMENT NO: 1008-GTH-07-ZZ-DR-A-2524 STATUS: S1 SCALE @ A1: N/A

CURRENT ISSUE DATE: 08.03.2024 Drawing numbering as per BS 1192 / BS EN ISO 19650 This drawing is copyrighted (©) by GTH architects

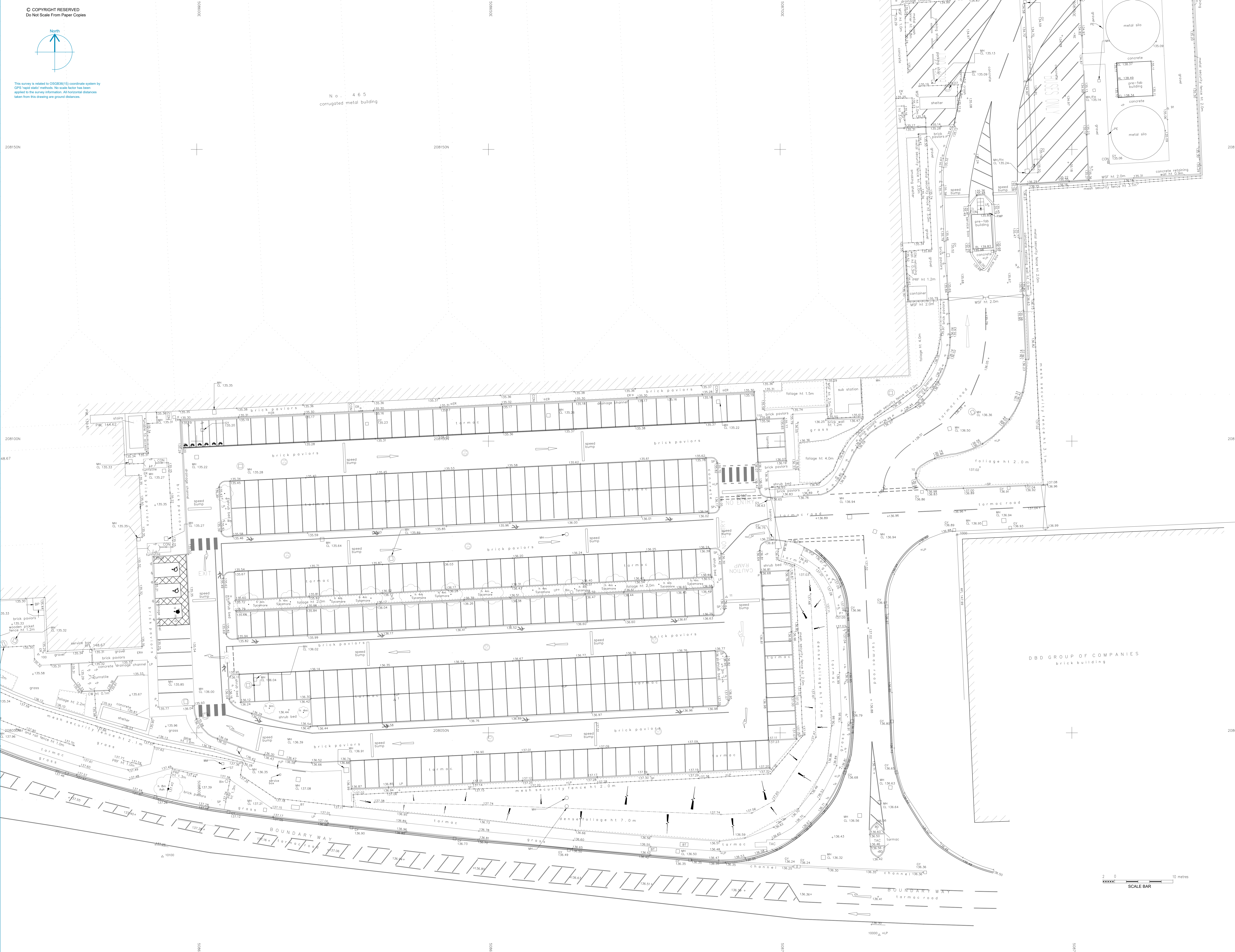


Appendix 2 – Topographic & Utilities Survey and Asset Records



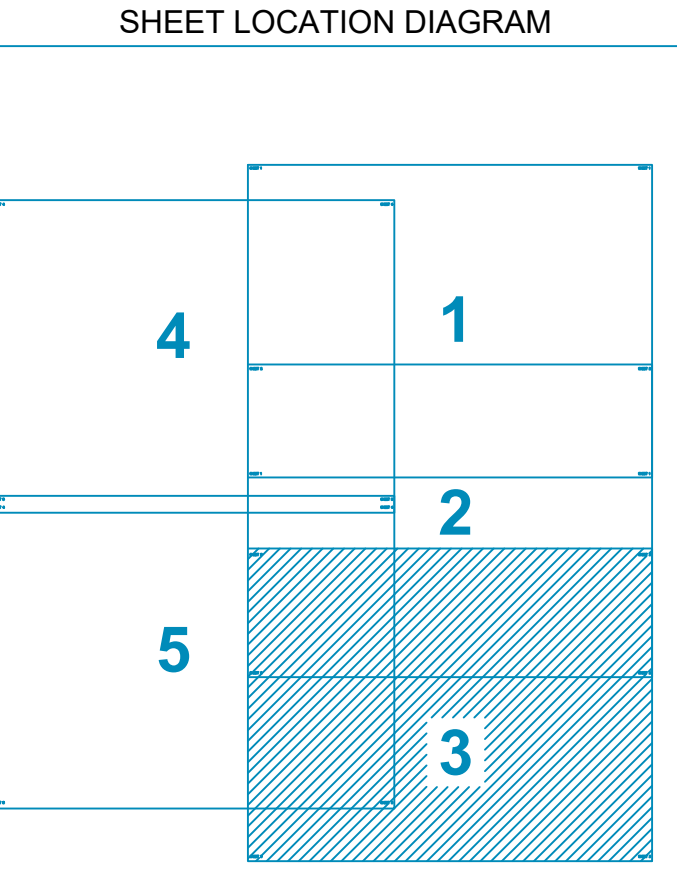
This survey is related to OSGB36(15) coordinate system by GPS 'rapid static' methods. No scale factor has been applied to the survey information. All horizontal distances taken from this drawing are ground distances.

N O . 4 6 5
corrugated metal building



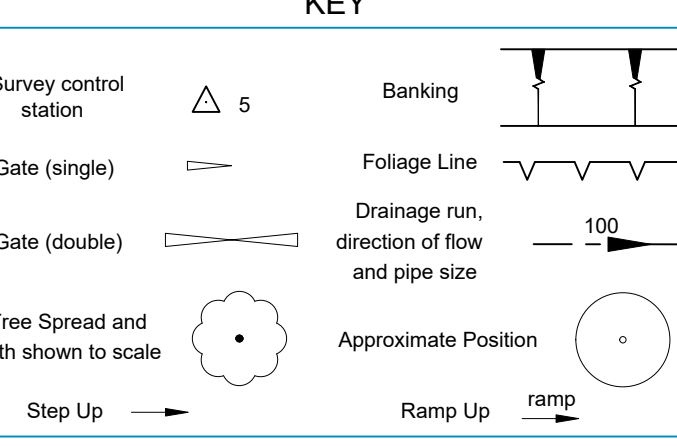
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Station	Easting	Northing	Level
1	508623.934	208055.647	136.546
2	508549.094	208062.344	136.216
3	508490.908	208105.151	136.088
4	508494.865	208191.488	134.819
5	508501.239	208321.373	135.037
6	508427.253	208332.372	135.003
7	508740.153	208336.024	134.538
8	508743.511	208233.807	134.547
9	508740.803	208229.805	135.461
10	508723.279	208094.470	136.936
11	508690.803	208073.287	136.586

All levels related to Ordnance Survey active GPS network, at survey station 5.



DISCLAIMERS

Every effort has been made to confirm tree species on site, yet it is advised to confirm these details with an arborist before proceeding with any design.



ABBREVIATIONS

Air Handling Unit	AHU	Water Meter	WM
Belted Beacon	BB	Eaves Level	EL
Bollard	BD	Ridge Level	RL
Borehole	BH	Roof Level	RFL
BT Inspection Cover	BT	Soft Level	SFL
Cable Television Cover	CTV	Threshold Level	TAL
Drainage Channel	DC	Parapet Wall Level	PWL
Electricity Cover	EC	Finished Floor Level	FFL
Electricity Pole	EP	Head Level	HL
Earth Rod	ER	Sill Level	SL
Fire Hydrant	FH	Canal Level	CL
Gas Valve	GV	Invert Level	IL
Gate Post	GP	No Visible Pipes	NVP
Gully	GY	Unable to Lift	UTL
Inspection Cover	IC	Foul Water	FW
Junction Box	JB	Sump Level	SL
Man Outlet	MO	Surface Water	SW
Lamp Post	LP	Brick Pavings	BP
Manhole	MH	Concrete	CON
Marker Post	MP	Concrete Slabing	CS
Post	P	Flower Bed	FB
Pipe	PE	Shrub Bed	SB
Road Sign	RS	Tactile Paving	TAC
Rodding Eye	RE	Unsurfaced	US
Marker Post	MP	Brick Wall	BW
Sign Post	SP	Retaining Wall	RW
Stop Valve	SV	Charcoal Fence	CF
Stop Tap	ST	Charcoal Paving Fence	CPF
Telegraph Pole	TP	Iron Railing Fence	IRF
Traffic Light	TL	Mesh Security Fence	MSF
Yard Fence	YF	Post and Chain Fence	PCF
Post and Rail Fence	PRF	Post and Wire Fence	PWF
Wooden Panel Fence	WPF		

NOVA BC

Project
**465 BOUNDARY WAY
HEMEL HEMPSTEAD
HP2 7HZ**

TOPOGRAPHICAL SURVEY

Drawing Number
TS23-706-3

Revision	Description	Rev. By	Date

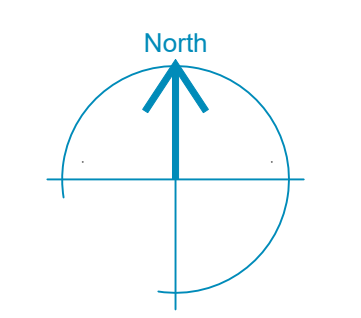
Scale: 1:200@A0 Sheet 3 of 5

Drawn by BB	Checked by PG	Date of Survey DEC 2023
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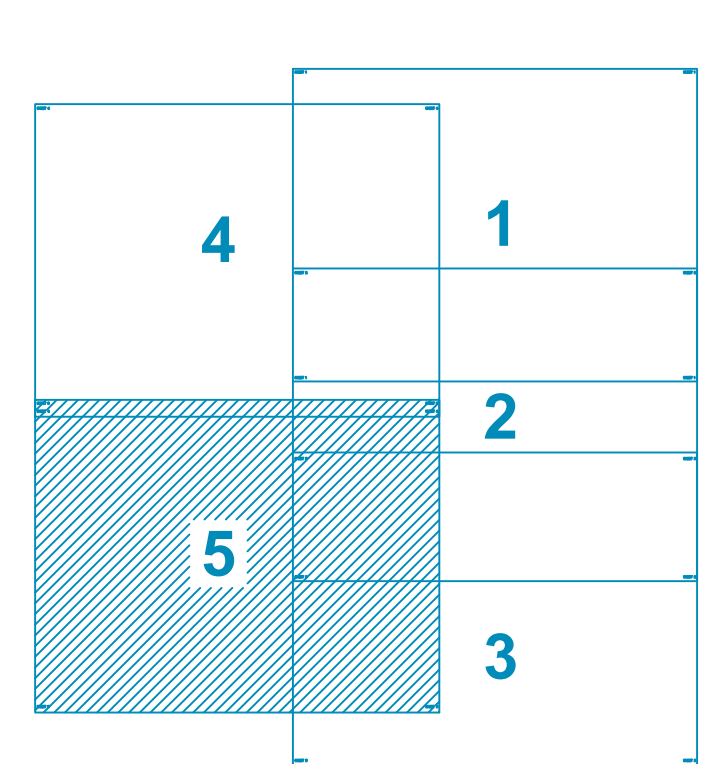
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This survey is related to OSGB36(15) coordinate system by GPS 'rapid static' methods. No scale factor has been applied to the survey information. All horizontal distances taken from this drawing are ground distances.

Co-ordinate Table			
Station	Easting	Northing	Level
1	508693.934	208095.647	136.546
2	508494.094	208160.344	136.216
3	508490.908	208105.151	136.088
4	508494.865	208191.488	134.819
5	508501.239	208321.373	135.037
6	508427.253	208332.372	135.003
7	508740.153	208336.024	134.538
8	508743.511	208233.807	134.547
9	508740.803	208229.856	135.451
10	508723.279	208284.470	136.936
11	508690.803	208073.287	136.586

All levels related to Ordnance Survey active GPS network, at survey station 5.

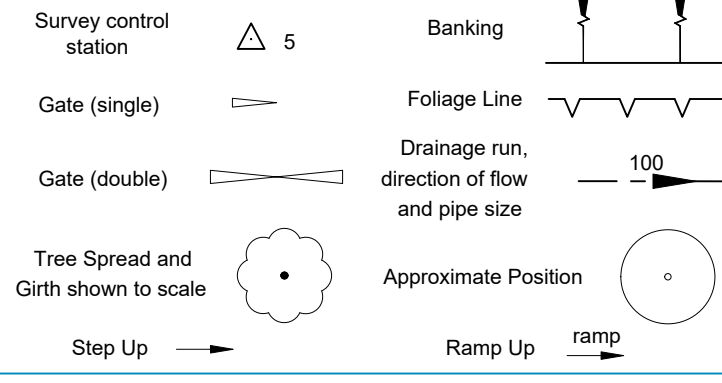


No. 465
corrugated metal building

DISCLAIMERS

Every effort has been made to confirm tree species on site, yet it is advised to confirm these details with an arborist before proceeding with any design.

KEY



ABBREVIATIONS

Air Handling Unit	AHU	Water Meter	WM
Bolton Beacon	BB	Eaves Level	EL
Bollard	BD	Ridge Level	RL
Borehole	BH	Roof Level	RFL
BT Inspection Cover	BT	Soft Level	SFL
Cable Television Cover	CTV	Threshold Level	TAL
Drainage Channel	DC	Parapet Wall Level	PWL
Electricity Cover	EC	Finished Floor Level	FFL
Electricity Pole	EP	Head Level	HL
Earth Rod	ER	Sill Level	SL
Fire Hydrant	FH	Canal Level	CL
Gas Valve	GV	Invert Level	IL
Gate Post	GP	No Visible Pipes	NVP
Gully	GV	Unable to Lift	URL
IC Inspection Cover	IC	Foul Water	FW
Junction Box	JB	Sump Level	SL
Man Outlet	MO	Surface Water	SW
Lamp Post	LP	Brick Pavings	BP
Manhole	MH	Concrete	CON
Marker Post	MP	Concrete Paving Slab	CPS
Post	P	Flower Bed	FB
Pipe	PE	Shrub Bed	SB
Road Sign	RS	Tactile Paving	TAC
Rodding Eye	RE	Unsurfaced	US
Marker Post	MP	Brick Wall	BW
Sign Post	SP	Retaining Wall	RW
Stop Valve	SV	Chainlink Fence	CLF
Stop Tap	ST	Chainlink Paving Fence	CPF
Telegraph Pole	TP	Iron Railing Fence	IRF
Traffic Light	TL	Metal Security Fence	MSF
Wood Pile	WP	Post and Chain Fence	PCF
Post and Rail Fence	PRF	Post and Wire Fence	PWF
Wooden Panel Fence	WPF		

Client
NOVA BC

Project
**465 BOUNDARY WAY
HEMEL HEMPSTEAD
HP2 7HZ**

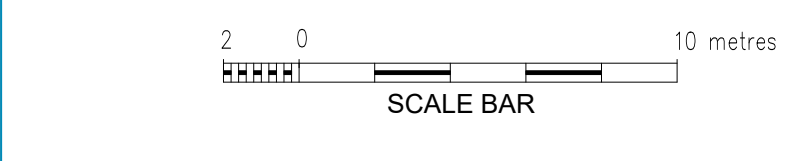
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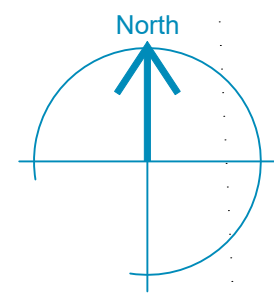
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Revision	Description	Rev. By	Date

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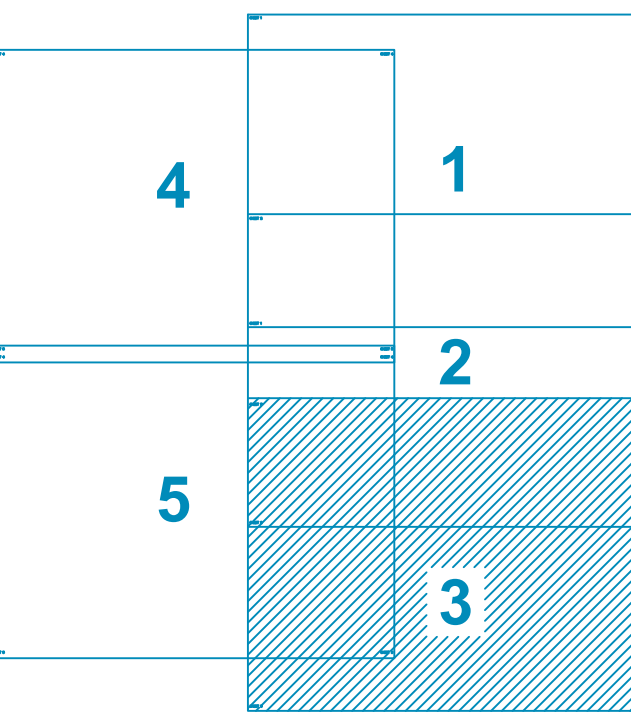
Drawn by: BB
Checked by: PG
Date of Survey: DEC 2023





This survey is related to OSGB36(15) coordinate system by GPS 'rapid static' methods. No scale factor has been applied to the survey information. All horizontal distances taken from this drawing are ground distances.

N 0.465
corrugated metal building



Note: The underground services information has been supplied by Anveit Survey Ltd.

UTILITY KEY

- ELECTRIC CABLE
 - ELECTRIC & COMM. CABLE
 - FIBRE OPTIC / CABLE
 - TRAFFIC SIGNAL CABLE
 - TELECOM CABLE
 - TELECOM & COMM. CABLE
 - CABLE TELEVISION
 - COMMUNICATION CABLE
 - WATER PIPE
 - GAS PIPE
 - FIBRE DRAINAGE
 - CONTAMINATED SURFACE
 - SURFACE DRAINAGE
 - COMMING DRAINAGE
 - PUMPING MAIN
 - FUEL PIPE
 - VENT PIPE
 - HEATING PIPES
 - UNIDENTIFIED GREY HIT
 - UNIDENTIFIED GREY HIT
 - UNIDENTIFIED GREY HIT
 - SERVICE DUCTS
 - TROUGH SCAL
 - GROUND DEPRESSION
 - SURVEY BOUNDARY
-
- HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY VISUALLY DETECTED ABOVE GROUND OR LOCATED WITHIN WALLS OR IN SPTS ETC.
 - HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY DETECTED BY MULTIPLE GEOPHYSICAL TECHNIQUES USED.
 - HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY DETECTED BY ONE GEOPHYSICAL TECHNIQUE USED.
 - HORIZONTAL LOCATION ONLY OF THE UTILITY DETECTED BY ONE GEOPHYSICAL TECHNIQUE USED.
 - A UTILITY SEGMENT WHICH IS SUSPECTED TO EXIST BUT HAS NOT BEEN DETECTED AND IS THEREFORE SHOWN AS AN ASSUMED ROUTE.
 - A SEGMENT OF UTILITY WHERE LOCATION AND OR EXTENT IS UNKNOWN AND IS THEREFORE INDICATED BY VISUAL REFERENCE TO STREET FURNITURE, SIGNPOSTS, OR EXISTING OR PREVIOUS STREET WORKS.
 - A SEGMENT OF UTILITY WHERE LOCATION CANNOT BE DEMONSTRATED BY VISUAL REFERENCE TO STREET FURNITURE OR SIGNPOSTS AND HAS BEEN DERIVED SOLELY FROM RECORD PLANS.
-
- CABLE / PIPE MARK
 - BACKDROP / TRAPPED EXIT
 - DRAINAGE VALVE
 - END OF TRACE
 - END OF RECORD
 - HEAD OF MAN / CAPTOP
 - PIPE MEET / OUTFALL

ABBREVIATIONS

- | | | | |
|------|----------------------------------|------|-----------------------|
| AC | AGGREGATE CEMENT | LP | LAMP-POST |
| AR | ASSUMED ROUTE | MM | MANHOLE |
| BR | BASE BENCH | MW | MONITORING WELL |
| BO | BACKSTOP | OH | OVERHEAD |
| BS | BORISOLE | OSA | OFF-SURFACE AREA |
| BR | BRICK | PE | POLYETHYLENE |
| BT | BT INSPECTION CHAMBER | PL | PLASTER |
| CATV | CATV INSPECTION CHAMBER | PP | PIPE RISER |
| CM | CONTROL ROOM | PCFC | POSSIBLE FLOOR CHANGE |
| CI | CABLE RISER | RE | RECORDING EYE |
| CO | CATCHPI | RW | RAIN WATER PIPE |
| CP | CABLE RISER | S/A | SKYWAY |
| D | DEPTH | SP | SPIN FROM |
| DI | DIAPHRAGM | ST | STOP TAP |
| DO | DOWN PIPE | SJ | STEEL |
| DP | DOWN PIPE | SV | SURFACE VALVE |
| ED | END OF RECORD | SW | SOFT SAND |
| EO | END OF TRACE | SUP | SURFACE |
| EP | ELECTRICITY POLE | TF | TRUCK FROM RECORD |
| ER | EARTHED | TR | TRUCK FROM RECORD |
| FL | FLOOD LIGHT | UN | UNABLE TO SURVEY |
| FR | FIRE RISER | UN | UNABLE TO SURVEY |
| GR | GROUND PENETRATING RADAR | UN | UNABLE TO SURVEY |
| GW | GROUND WATER | UT | UTILITY |
| GV | GAS VALVE | UTS | UNABLE TO SURVEY |
| HL | HIGH LEVEL | VE | VENT PIPE |
| HOR | HEAD OF RUN | VP | VENT PIPE |
| IC | INSPECTION CHAMBER | WR | WATER RECOVERY |
| IS | INSULATION | WK | WATER LEVEL |
| MW | MANHOLE | WA | WATER METER |
| MWS | SURFACE WATER SEWER | WO | WASH OUT VALVE |
| MS | CONTAMINATED SURFACE WATER SEWER | | |
| MWS | SURFACE WATER SEWER | | |
| OWS | COMBINED WATER SEWER | | |

DISCLAIMER

THE UTILITY SURVEY HAS BEEN CARRIED OUT IN ACCORDANCE WITH A PAS 128:2014 WITH SPECIFICATION EXCLUDING POST PROVISION OF GROUND PENETRATING RADAR AND A MANHOLE VISUAL SURVEY. ELECTROMAGNETIC INTERFERENCE AND/OR GROUND PENETRATING RADAR HAVE BEEN USED IN THE LOCATION OF UNDERGROUND SERVICES. THE RESULTS ARE NOT FINAL AND THE FINAL LOCATION OF SERVICES SHOULD BE CONFIRMED BY VISUAL REFERENCE TO STREET FURNITURE, SIGNPOSTS, OR EXISTING OR PREVIOUS STREET WORKS. WHERE AVAILABLE RECORD DRAWINGS, THE COMPLETENESS OF THE UNDERGROUND SERVICES INFORMATION CANNOT BE GUARANTEED. THE METHOD OF SURVEY AND THE DEPTH OF SERVICES DETECTED MAY VARY AND SHOULD BE CONFIRMED BY VISUAL REFERENCE TO RECORD DRAWINGS OR MANHOLE VISUAL SURVEY.

WHERE SERVICES ARE NON-METALLIC, POSITIVE IDENTIFICATION FROM RECORD DRAWINGS OR MANHOLE VISUAL SURVEY IS REQUIRED. DEPTH ESTIMATES ARE GENERAL TO MATCH LEVELS UNLESS OTHERWISE STATED.

PAS 128:2014 CANNOT BE DEPEND ON VISUAL SURVEY HAS TAKEN FROM RECORD DRAWINGS OR MANHOLE VISUAL SURVEY.

Client

NOVA BC

Project
**465 BOUNDARY WAY
HEMEL HEMPSTEAD
HP2 7HZ**

Title
PAS128 UTILITY SURVEY

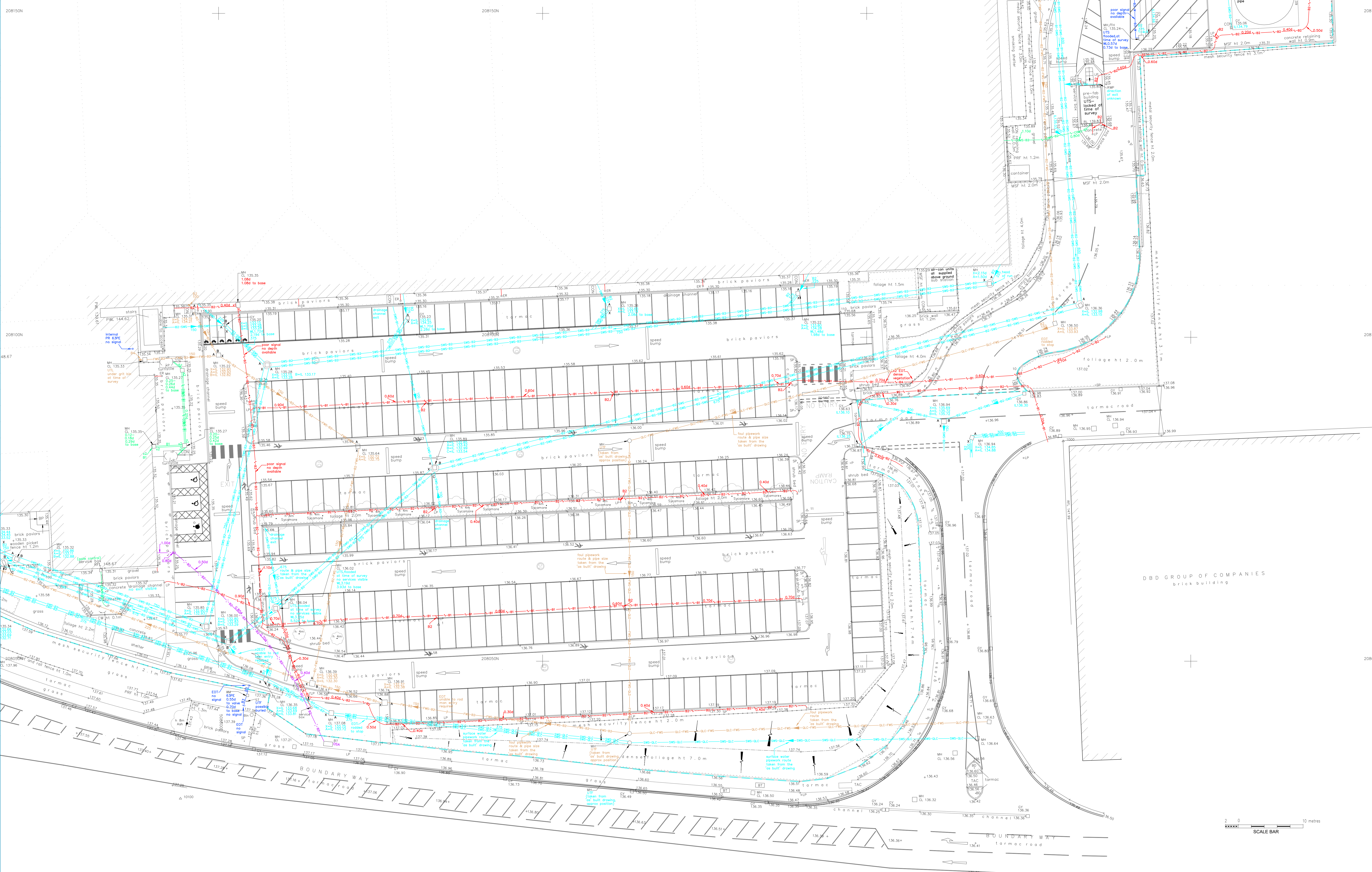
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TS23-706-8

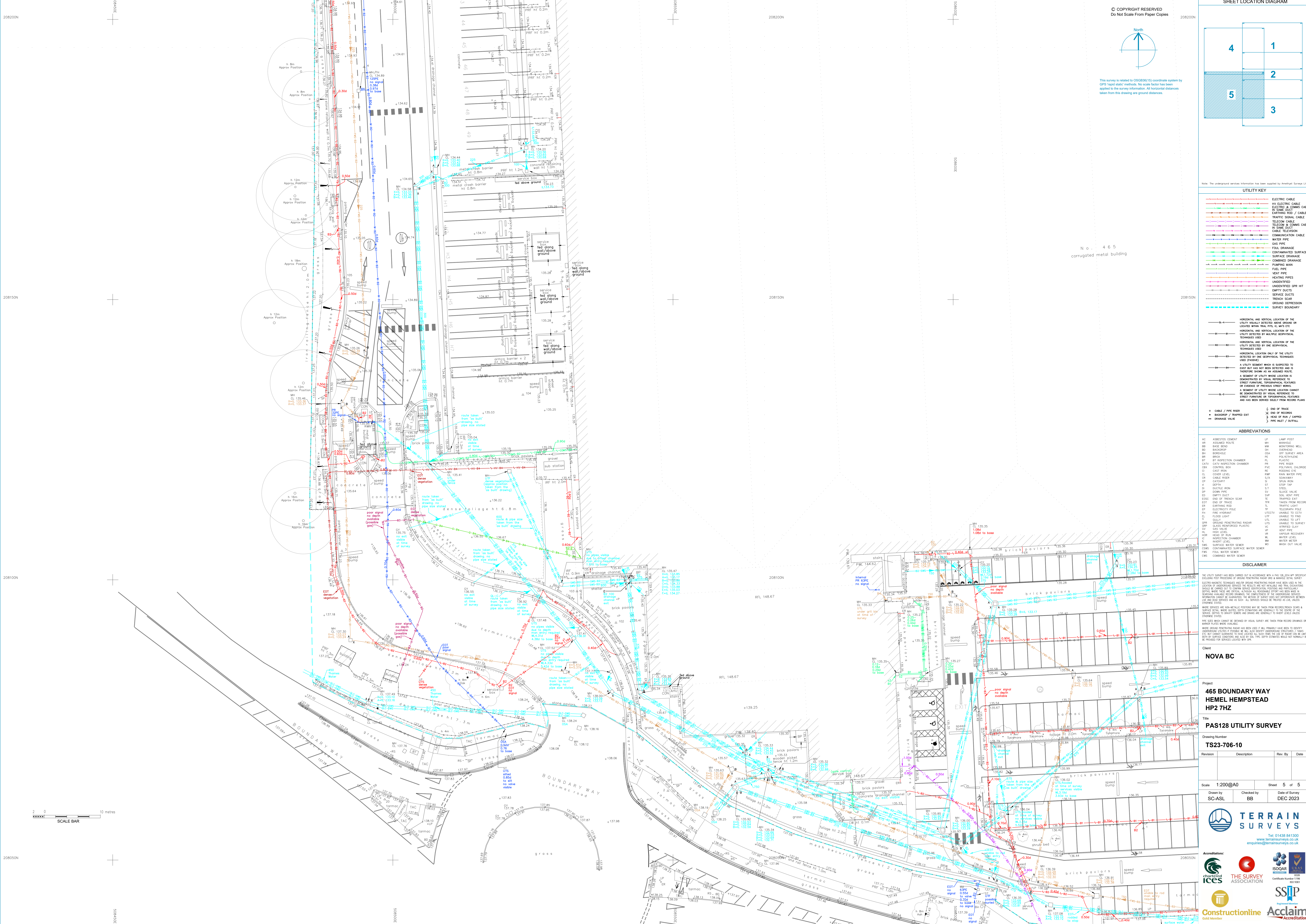
Revision	Description	Rev. By	Date
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Drawn by
SC-ASL

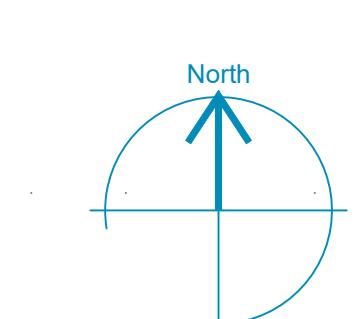
Checked by
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Date of Survey
DEC 2023



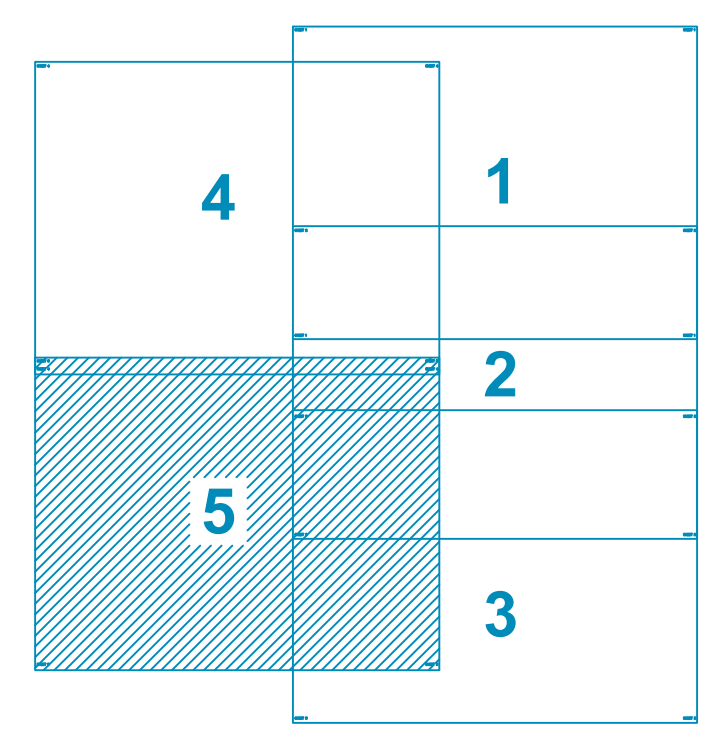


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This survey is related to OSGB36(15) coordinate system by GPS 'rapid static' methods. No scale factor has been applied to the survey information. All horizontal distances taken from this drawing are ground distances.

SHEET LOCATION DIAGRAM



Note: The underground services information has been supplied by Anveqat Survey Ltd.

UTILITY KEY

[Red dashed line]	ELECTRIC CABLE
[Blue dashed line]	BY ELECTRIC CABLE
[Green dashed line]	ELECTRIC & COMMS CABLE IN SAME DUCT
[Orange dashed line]	EXTERIOR FIBRE / CABLE
[Purple dashed line]	TRAFFIC SIGNAL CABLE
[Light blue dashed line]	TELECOM CABLE
[Light green dashed line]	TELECOM & COMMS CABLE IN SAME DUCT
[Light purple dashed line]	CABLE TELEVISION
[Light orange dashed line]	COMMUNICATION CABLE
[Light red dashed line]	WATER PIPE
[Light blue dashed line]	GAS PIPE
[Light green dashed line]	FIBRE DRAINAGE
[Light orange dashed line]	CONTAMINATED SURFACE
[Light purple dashed line]	SURFACE DRAINAGE
[Light blue dashed line]	COVERING DRAINAGE
[Light green dashed line]	PUMPING MAIN
[Light orange dashed line]	FUEL PIPE
[Light red dashed line]	VENT PIPE
[Light blue dashed line]	HEATING PIPES
[Light green dashed line]	EMPTY DUCTS
[Light orange dashed line]	UNIDENTIFIED
[Light purple dashed line]	SERVICE DUCTS
[Light blue dashed line]	THROUGH SCAL
[Light green dashed line]	GROUND DEPRESSION
[Light orange dashed line]	SURVEY BOUNDARY

[Red dashed line]	HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY VISUALLY DETECTED ABOVE GROUND OR LOCATED WITHIN WALLS OR M/S'S ETC.
[Blue dashed line]	HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY DETECTED BY MULTIPLE GEOPHYSICAL TECHNIQUES USED.
[Green dashed line]	HORIZONTAL AND VERTICAL LOCATION OF THE UTILITY DETECTED BY ONE GEOPHYSICAL TECHNIQUE USED.
[Orange dashed line]	HORIZONTAL LOCATION ONLY OF THE UTILITY DETECTED BY ONE GEOPHYSICAL TECHNIQUE USED.
[Purple dashed line]	A UTILITY SEAMANT WHICH IS SUSPECTED TO EXIST BUT HAS NOT BEEN DETECTED AND IS THEREFORE SHOWN AS AN ASSUMED ROUTE.
[Light blue dashed line]	A SEAMANT OF UTILITY WHOSE LOCATION IS DETERMINED BY VISUAL REFERENCE TO STREET FURNITURE, TOPOGRAPHICAL FEATURES OR EXTENSION OF PREVIOUS STREET WORKS.
[Light green dashed line]	A SEAMANT OF UTILITY WHOSE LOCATION CANNOT BE DETERMINED BY VISUAL REFERENCE TO STREET FURNITURE OR TOPOGRAPHICAL FEATURES AND HAS BEEN DERIVED SOLELY FROM RECORD PLANS.

[Red dot]	CABLE / PIPE RISER	[Blue dot]	END OF TRACE
[Blue dot]	BACKDROP / TRAPPED EXIT	[Green dot]	HEAD OF MAIN / CAPTOP
[Orange dot]	DRAINAGE VALVE	[Purple dot]	PIPE RILET / OUTFALL

ABBREVIATIONS

AC	AGGREGATE CEMENT	LP	LAMP-POST
AR	ASSUMED ROUTE	MH	MANHOLE
BS	BASE BENCH	MW	MONITORING WELL
BD	BACKDROP	OH	OVERHEAD
BR	BOREROLE	OSA	OFF SURVEY AREA
BR	BRICK	PE	POLYETHYLENE
BR	BRICK CHAMBER	PL	PLASTIC
CATV	CATV INSPECTION CHAMBER	PP	PIPE RISER
CM	CONTROL ROOM	PVC	POLYVINYL CHLORIDE
O	CAST IRON	RE	RECORDING EYE
CL	COVER LEVEL	RWB	RAIN WATER PIPE
CR	CABLE RISER	S/A	SKIDAWAY
C	CATCHPIT	S	SPIN IRON
Q	DEPTH	ST	STOP TAP
D	DUCTILE IRON	S.T	STEEL
DR	DOWN PIPE	SV	SURFACE VALVE
ED	END OF TRACE	SW	SOIL WASH PIPE
EOP	END OF PREVIOUS SEAM	SUF	SURFACED CUT
EDT	END OF TRACE	TR	TRAFALGAR FROM RECORD
FL	FLOORING	TRF	TRAFALGAR FROM RECORD
EP	ELECTRICITY POLE	UP	UNABLE TO FIND
FL	FLOORING	UT	UNABLE TO FIND
FL	FLOOR LIGHT	UTS	UNABLE TO SURVEY
GRP	GROUND PENETRATING RADAR	VC	VENT COVER
GRP	GRASS PENETRATING RADAR	VF	VENT PIPE
GV	GAS VALVE	VF	VENT PIPE
HR	HEAD OF RUN	VR	VENT RECOVERY
I	INSPECTION CHAMBER	W	WATER LEVEL
IC	INSPECTION CHAMBER	WA	WATER WETTER
SWS	SURFACE WATER SEWER	WO	WASH OUT VALVE
CWS	COMBINED WATER SEWER		

DISCLAIMER

THE UTILITY SURVEY HAS BEEN CARRIED OUT IN ACCORDANCE WITH A PAS 128:2014 (M) SPECIFICATION. EXCEPT FOR PROVISIONS OF GRADING PREVENTING ROAD WORKS & MINOR STREETS SURVEY. ELECTRO-MAGNETIC INTERFERENCE OR OTHER OBSTACLES MAY HAVE BEEN IN THE LOCATION OF UNDERGROUND SERVICES. THE RESULTS ARE NOT VALID AND THAT LOCATION OF UNDERGROUND SERVICES IS FOR INFORMATION ONLY. THE SURVEYOR HAS PARTICULAR CARE TO BE TAKEN TO CHECK SERVICE IDENTIFICATION, DEPTHS AND PARTICULAR SERVICES AVAILABLE RECORD DRAWINGS. THE COMPLETION OF THE UNDERGROUND SERVICES RECORDS CANNOT BE GUARANTEED. THE DEPTH OF SERVICE CANNOT BE GUARANTEED FROM USE AND DEPTHS SHOWN AND AS SUCH ALL SERVICES SHOULD BE TREATED AS UNLESS OTHERWISE STATED.

WHERE SERVICES ARE NON-METALLIC POSTING MAY BE TAKEN FROM RECORDS, RECORDS SHOULD BE CHECKED AGAINST VISUAL SURVEY. DEPTHS ESTIMATED ARE GENERAL TO MATCH LEVELS UNLESS OTHERWISE STATED.

PIPE SIZES SHOULD NOT BE DETERMINED BY VISUAL SURVEY. IF TAKEN FROM RECORDS DRAWINGS OR MARKET DATA BEING HELD.

WHERE DEPTHS ARE NON-METALLIC POSTING MAY BE TAKEN FROM RECORDS, RECORDS SHOULD BE CHECKED AGAINST VISUAL SURVEY. DEPTHS ESTIMATED ARE GENERAL TO MATCH LEVELS UNLESS OTHERWISE STATED.

DEPTH ESTIMATED ARE GENERAL TO MATCH LEVELS UNLESS OTHERWISE STATED.

Client

NOVA BC

Project
**465 BOUNDARY WAY
HEMEL HEMPSTEAD
HP2 7HZ**

Title
PAS128 UTILITY SURVEY

Drawing Number
TS23-706-10

Revision	Description	Rev. By	Date

Scale: 1:200@A0

Sheet 5 of 5

Drawn by	Checked by	Date of Survey
DS-ASL	BB	DEC 2023

TERRAIN SURVEYS

Tel: 01438 841300
www.terrain-surveys.co.uk
enquiries@terrain-surveys.co.uk

Accreditation:

Chartered ices

THE SURVEY ASSOCIATION

ISO 9001

ISO 9001

SSIP

Constructionline

Acclaim

Asset location search



Property Searches

stats-search.co.uk Limited
1 Foxfield Road
WIRRAL
CH47 0NJ

Search address supplied Green Lane
Buncefield Terminal
Hemel Hempstead
HP2 7HZ

Your reference Boundary Way (15288)

Our reference ALS/ALS Standard/2023_4916855

Search date 27 November 2023

Notification of Price Changes

From 1st April 2023 Thames water Property Searches will be increasing the prices of its CON29DW, CommercialDW Drainage & Water Enquiries and Asset Location Searches. Historically costs would rise in line with RPI but as this currently sits at 14.2%, we are capping it at 10%.

Customers will be emailed with the new prices by January 1st 2023.

Any orders received with a higher payment prior to the 1st April 2023 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Search address supplied: Green Lane, Buncefield Terminal, Hemel Hempstead, HP2 7HZ

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way
Hatfield

Asset location search



Property Searches

AL10 9EZ
Tel: 0345 3572401

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.



Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

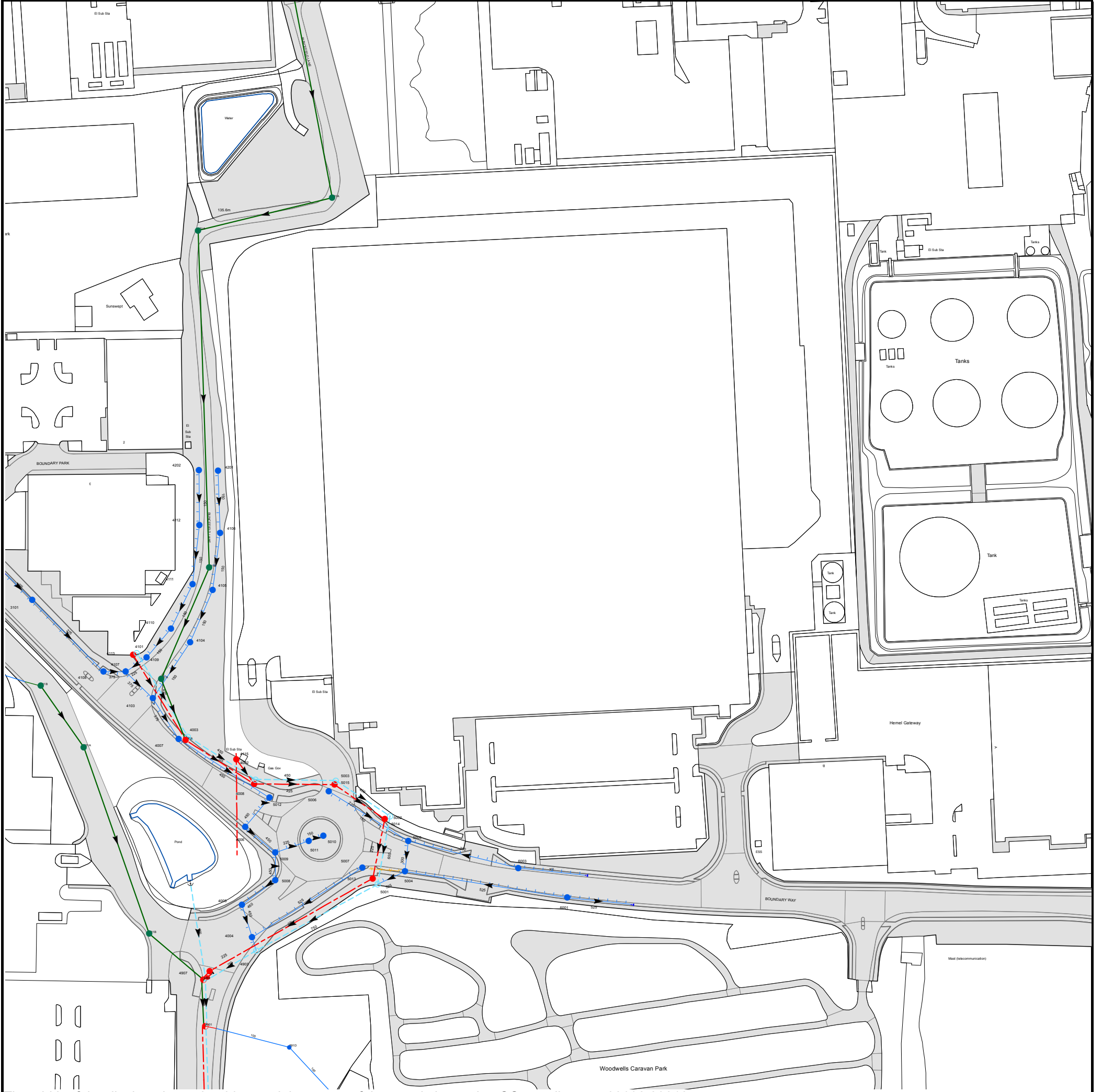
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2023 4916855



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 508632,208184

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.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

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
4110	n/a	n/a
3101	n/a	n/a
4105	n/a	n/a
4111	n/a	n/a
411B	n/a	n/a
4106	n/a	n/a
4112	n/a	n/a
4201	n/a	n/a
4202	n/a	n/a
431A	n/a	n/a
531A	n/a	n/a
401B	n/a	n/a
4005	n/a	n/a
5008	n/a	n/a
5009	n/a	n/a
5011	n/a	n/a
5010	n/a	n/a
4006	n/a	n/a
5012	n/a	n/a
5006	n/a	n/a
5015	n/a	n/a
4008	n/a	n/a
4002	n/a	n/a
4115	n/a	134.78
401A	n/a	n/a
4009	n/a	n/a
4007	n/a	n/a
4003	n/a	n/a
4103	n/a	n/a
311B	n/a	n/a
411A	n/a	n/a
4107	n/a	n/a
4108	n/a	n/a
4109	n/a	n/a
4113	n/a	n/a
4101	n/a	n/a
4104	n/a	n/a
4902	136.21	130.4
4901	n/a	n/a
4907	n/a	n/a
4004	n/a	n/a
4903	n/a	n/a
591D	n/a	n/a
6001	n/a	n/a
5001	n/a	n/a
5013	n/a	n/a
5004	n/a	n/a
6003	n/a	n/a
5007	n/a	n/a
5005	n/a	n/a
5014	n/a	n/a
5002	n/a	n/a
5003	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.



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

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.

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
 - Conduit Bridge
 - Subway
 - Tunnel
- Ducts may contain high voltage cables. Please check with Thames Water.

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.

Appendix 3 – Site Investigation Extract

2. THE SITE

2.1 Site Details

Site Address:	<i>Boundary Way Hemel Hempstead.</i>
National Grid Reference:	<i>NGR: 508500, 208500</i>
Size:	<i>6.5 Ha</i>
Description of Site:	<i>The site comprises a former oil depot. The majority of the site has undergone demolition and consists of open ground with crushed demolition rubble covering the sites surface.</i>
Description of Surrounding Area:	<i>The site is surrounded by mixed landuse comprising industrial and commercial units with some open ground/pasture. Current access to the site is via the main Buncefield oil terminal site, the southern section of the site can be accessed via Boundary Way.</i> <i>The adjacent Texaco site operates as a truck park although there are currently three above ground bulk fuel storage tanks remaining on this site..</i>

The location of the site is presented on **Figure 1**.

2.2 Current Site Use

The property was previously operated for the storage and distribution of oils and fuel. The site covers an area of approximately 6.5 ha. The majority of the site comprises a recently demolished oil distribution facility, which is covered by crushed demolition rubble although concrete hardstanding remains over an area of the site.

The southern section of the site is located outside the perimeter of the site and is occupied by an area of banded open land along Boundary Way.

The Texaco site is currently operated as a truck park.

2.3 Site History

It is understood from the Weeks Report that the site was developed as a fuel storage and distribution facility from agricultural land in the 1960's. The site was operated as a fuel depot from the 1960's until 2001. The site has historically been used for the storage of a range of products including diesel, leaded and unleaded petrol, gas oil, waste oil, kerosene and Jet A1. In addition several other fuel additives and chemicals were stored at the site.

During its use as a commercial oil storage and distribution facility the site is understood to have comprised 12 No. above ground storage tanks with a combined capacity of approximately 77,427m³. In addition to the main storage tanks there were a number of above and below ground diesel / oil tanks used for maintenance and vehicle refuelling activities.

The site operated a series of loading gantries twelve of which were located on the subject site, the remainder being on the adjacent Chevron Texaco site, these were fed by fuel lines running from the storage tanks located on site with the pump raft situated between the two.

The site was decommissioned in 2002/2003 with the majority of the structures, in ground obstructions and services removed by the former occupier. The site is currently unoccupied.

A former layout of the site is presented as **Figure** .

2.4 Recorded Pollution Incidents / Spillages

A summary of recorded spillages and pollution incidents based on information contained in the Weeks Report is summarised in Table 2.1.

Table 2.1: Recorded Pollution Incidents.

Date	Location of Incident	Volume/type of spillage	Volume recovered
NR	Pump Raft	Unknown	NR
1978	Tank 9	300,000 litres / Leaded Petrol	NR
1991	Pipe Track Tank 10	47,000 litres / 'product'	38,000
1991	Gantry 11 (Texaco Site)	100 litres / Motor Spirit	NR
1991	Gantry 12 (Texaco Site)	550 litres / Petrol	NR
1992	Supply Line (not specified)	NR noted to be 'substantial'	NR
1996	From Road Tanker (not specified)	1,500 litres / Gas oil	NR
2001	Tank 13 (Texaco Site)	13,500 litres / Kerosene	11,344 litres

On the basis of the recorded volumes spilt and subsequently recovered a minimum of 11,000 litres of product remains unaccounted for.

2.5 Neighbouring Land Uses

The land uses in the vicinity of the site comprise a mix of commercial and light industrial land uses.

The site boundaries comprise the remainder of the Buncefield Oil Terminal. The sites to the immediate north and east of the site are occupied by Texaco and Total Fina Elf respectively. The southern and western boundaries comprise a series of commercial units along Boundary Way.

2.6 Geology

Geological Mapping at 1:50,000 scale, Sheet 238 (Solid and Drift), Aylesbury, shows the following geological sequence:

Geological Unit	Aquifer Status
<i>Woolwich and Reading Beds</i>	<i>Minor Aquifer</i>
<i>Upper Chalk</i>	<i>Major Aquifer</i>

Data from the previous site investigations generally confirm the published geology as Drift deposits overlying Upper Chalk.

2.7 Hydrogeology

The Environment Agency Groundwater Vulnerability Map and Regional Appendices, which make up part of the published Policy and Practice for the Protection of Groundwater, divide the underlying strata in England and Wales into major, minor and non aquifers dependent upon their potential for potable water supply.

Based on the groundwater vulnerability map for the area (No. 39 West London), the strata underlying the site are classified as a minor aquifer of variable permeability. This classification refers to the Woolwich and Reading Beds at the site, which although not producing large quantities of water for abstraction can be important for local supplies and in supplying base flow to rivers.

The Upper Chalk strata located beneath the site is classified as a major aquifer of high permeability. These are highly productive formations usually with a known or probable occurrence of significant fracturing. They may be highly productive and capable of supporting large abstractions for public water supply and other uses. The Environment Agency for the area have confirmed that there will be a high probability of solution features in the area. Regional groundwater is believed to be at a depth of 40m to 50m.

There is one recorded groundwater abstraction within 1000m of the site, the abstraction point is located approximately 250m to the west of the site and permits the abstraction of groundwater from the chalk for emergency evaporative cooling at a rate of 100m³ per year. Information published by the Environment Agency indicates that the Total Catchment Area of a designated Source Protection Zone exist on the sites north eastern boundary. **(Figure.7)**

Based on the above information, the underlying aquifer is considered to have a **High** sensitivity.

2.8 Surface Water (Hydrology)

Surface water features in the vicinity of the subject site are as follows:

Surface Water Feature	GQA Classification	Distance from Site	Direction from Site
River Gader	NR	3km	West
Grand Union Canal	NR	3km	West

There are no recorded surface water abstractions or discharge consents within 1000m of the site.

According to information published by the EA the site is not located within an indicative river floodplain.

There are no recorded pollution incidents within 500m of the site.

2.9 Mineral Extraction

There are no records of extractive industries operating at the site.

2.10 Landfill

Information published by the EA indicates that there are no recorded landfill sites within 1km of the site.

2.11 Previous Reports

As part of the works the following report has been reviewed:

- Weeks Consulting, Report Ref:15224V.02/MW, Factual and Interpretative Reports, Shell Buncefield Terminal.
- SLR Consulting Limited, Report No. 4D/042/209, Environmental Assessment Report, Southern 1.377 Ha Parcel , Former Shell Buncefield Oil Terminal

2.11.1 Weeks Investigation

The Weeks Factual and Interpretative Reports also provided a summary of the previous Celtic Technologies Reports undertaken between 1999 and 2002 on both the subject site and adjacent Texaco sites.

The following key issues have been identified that arise from the report reviewed:

- Ground conditions at the site comprise a layer of Made Ground over a variable extent of clay drift deposits, which in turn are underlain by Upper Chalk. The clay cover at the site

was noted to be highly variable and was recorded as being less than 1m thick in some exploratory holes.

- Perched groundwater was encountered at depths ranging from 0.1 – 1.7m bgl at the base of the Made Ground and within the clay drift deposits. Visual evidence of hydrocarbon contamination was noted in a number of exploratory locations, particularly in the vicinity of the former gantry area and the adjacent pump raft area where phase separated product was noted.
- The site investigations have identified significant hydrocarbon contamination, which reflects the previous use of the site. The identified contamination predominantly comprised petrol and diesel range hydrocarbons. The main areas of contamination identified by the previous site investigations are in the vicinity of the gantry, pump raft and fuel tanks 7 – 10.
- Visual and olfactory evidence of hydrocarbon contamination has also been recorded in areas of known spillages and drainage runs.
- Evidence of contamination has been noted to extend to 8m (bgl) into the chalk strata, although recorded concentrations were negligible at this depth.

2.11.2 SLR Consulting Investigation

The SLR Report covers the 1.4ha parcel of land to the north of the property and to the best of our knowledge comprises 3 No. above ground storage tanks as well as remaining sections of the pump raft. The following key issues have been identified that arise from the report reviewed:

- Ground conditions at the site comprise a layer of Made Ground over a variable extent of clay drift deposits, which in turn are underlain by Upper Chalk.
- Perched groundwater was encountered at depths ranging from 0.46 – 3.66m bgl at the base of the Made Ground and within the clay drift deposits. No phase separated hydrocarbon contamination was noted on the perched groundwater.
- Low levels of dissolved phase hydrocarbon contamination were recorded particularly in the vicinity of the former loading gantry.
- The SLR Report records a series of previous investigations carried out in response to fuel leakages of 14,000 litres from T13 and from a heating fuel line. No
- The site investigations have identified visual and olfactory evidence of contamination (including PID readings above 500ppm) in the gantry area with contamination extending to at least 4m in BHE. This is in keeping with observations and data for the gantry area to the south of the Texaco site. In addition significant contamination has been recorded in the area of the heating fuel line although it is unknown as to whether this contamination is significant in extent or localised.

7. ENVIRONMENTAL RISK MITIGATION AND MANAGEMENT

The following risk management measures are recommended to deal with environmental risks associated with the identified ground and groundwater contamination in the context of current use and the proposed redevelopment of the site for a commercial end use.

7.1 Protection for Current User

The site is currently unoccupied and secure therefore risks to site users and the general public are considered to be negligible.

7.2 Construction/Maintenance Workers

Construction workers or maintenance staff involved in excavation at the site will be exposed to concentrations of hydrocarbons in soils that are likely to present a **moderate to high** risk to human health. It will be necessary to ensure that construction workers are adequately protected and that a suitable health and safety management scheme is operated during construction activities. These measures should include the following:

PPE to be worn:

- Nitrile gauntlet type gloves to be worn.
- Disposable overalls to be worn.
- Disposable masks with a PS2 filter to be worn where dusty working conditions are encountered.
- Organic vapour masks to be available and worn where appropriate.

General Site Practices:

- Prior to remediation treat all significant excavations as confined space and undertake ambient air monitoring.
- Provide on-site washing facilities.
- Wash hands at the end of every work period (including forearms, face etc. if become dirty) and before eating, smoking etc.
- Respect the no eating on site rule and confine smoking to areas away from the work site, and only smoke after decontamination.
- Report any ill health.
- Use dust suppression.

7.3 Third Party Land and General Public

Contamination identified on site is likely to impact upon third party land, primarily through migration of groundwater contamination.

Given the significant depth to the water table within the Upper Chalk, hydrocarbon contamination is unlikely to result in exposure hazards to third parties although off-site migration is not discounted.

As part of the proposed development, areas of hydrocarbon contamination associated with the upper soil horizons will require remediation (see below). Following remediation it is unlikely that any residual contamination will present exposure hazards to third parties.

During redevelopment, dusts generated by construction would constitute a risk to construction workers and third party land. Therefore it is recommended that dust control measures for the subject site are implemented during construction. Given the volatile nature of the site contamination, ambient air monitoring for volatile contamination is also considered prudent during the remediation of the site.

7.4 Protection of Groundwater

Results from groundwater analysis show evidence of impact from previous activities on the site. The investigation has identified areas of substantial hydrocarbon contamination in the vicinity of the former gantry and pump raft areas. No further contamination has been measured in boreholes around the site perimeter, which would indicate that contamination may be relatively restricted.

It is considered that this contamination has entered the aquifer through a major fuel loss, potentially from either the pump raft area, the tank farms or the gantries. There is currently insufficient evidence to confirm the source of the contamination and further works will be required to assess the extent of the hydrocarbon impact.

Given the presence of the low permeability clay layer across the site it is considered that chronic leaching of contamination from the soil phase to groundwater represents a very minor hazard. In general, long-term future risks to groundwater are considered to be low for the following reasons:

- Remediation as part of the proposed development will be undertaken to remove the existing sources of contamination and improve conditions within the aquifer.

- The majority of the proposed development will comprise hardstanding, which will act to reduce rainfall infiltration. The subsequent leaching or mobilisation potential of any hydrocarbon contamination is therefore significantly reduced.
- The upper horizons on the site comprise low permeability clays, which will retard leaching contamination substantially.
- Groundwater is present at significant depths (nominally 40m below ground), which represents a substantial migration pathway for leachate generated by residual soil contamination.

7.5 Protection of Surface Water

The nearest surface water bodies are approximately 3km from the site and are unlikely to be within the zone of influence of the site.

During demolition, there will be greater risk of contamination runoff during times of rainfall, including hydrocarbon contamination and high concentrations of suspended solids. Protection of surface water drains and catchment of surface runoff will be required to effectively mitigate these risks.

The site drainage system is believed to have been removed by the former occupier as part of the demolition works. WSP have not been provided with any information concerning these works.

7.6 Protection of Future End User

Hydrocarbon contamination represents a future exposure risk to site users through the inhalation of volatile vapours, particularly given the types of hydrocarbon contamination encountered on the site.

Direct contact mechanisms are not considered to pose a risk to future site users given the proposed remediation of near surface soils and the proposed provision of hardstanding cover across the majority of the site.

Based on the above it is considered that the risk of exposure to hydrocarbons will require further quantification and consideration as part of the development of the site remediation strategy. Protection of future users should comprise the provision of a gas retardant membrane and ventilation of confined spaces to prevent the build up of potentially harmful vapours. The majority of the site will be covered by a large warehouse where the risk of build up is considered negligible with the exception of service and ancillary rooms. The main structure where gas and vapour risks require more detailed consideration is considered to be the office

structure, which will be a separate building. Development proposals, indicate that this structure will not be located within an area of known contamination and therefore the risks associated with this building are considered relatively low. However, as part of the evolution of the development plans for the site it will be necessary to validate the gas and hydrocarbon contamination regime beneath this structure and confirm the requirements for gas protection through ongoing monitoring.

7.7 Protection of Buildings

Gas protection measures are considered to be necessary to mitigate the risk posed to any proposed buildings from volatile vapour and ground gas resulting from the degradation of any residual hydrocarbon contamination.

HDPE service pipes are susceptible to the ingress of certain hydrocarbons therefore where these contaminants have been recorded it will be necessary to provide alternative materials for potable water supplies, such as ductile iron pipes with copper utility connectors.

DO NOT SCALE

Gantry Areas

Workshops / Additional Areas

Fuel Storage Tank Areas

Pump Raft Areas

NB. Contamination of drainage system and cable ducts etc anticipated across site.

REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS:

FINAL



54 Hagley Road, Edgbaston, BIRMINGHAM B16 8PE
Tel: +44 (0) 121 456 1177 Fax: +44 (0) 121 456 4737
<http://www.wspgroup.com>

CLIENT:



ARCHITECT:

PROJECT:

Boundary Way, Hemel Hempstead

TITLE: **Estimated Extent of Soil Contamination**

SCALE@SIZE:

NTS

CHECKED:

PK

APPROVED:

RGC

CAD FILE:

APC Final

DESIGN/DRAWN:

PK

DATE:

Sept 2003

PROJECT NO:

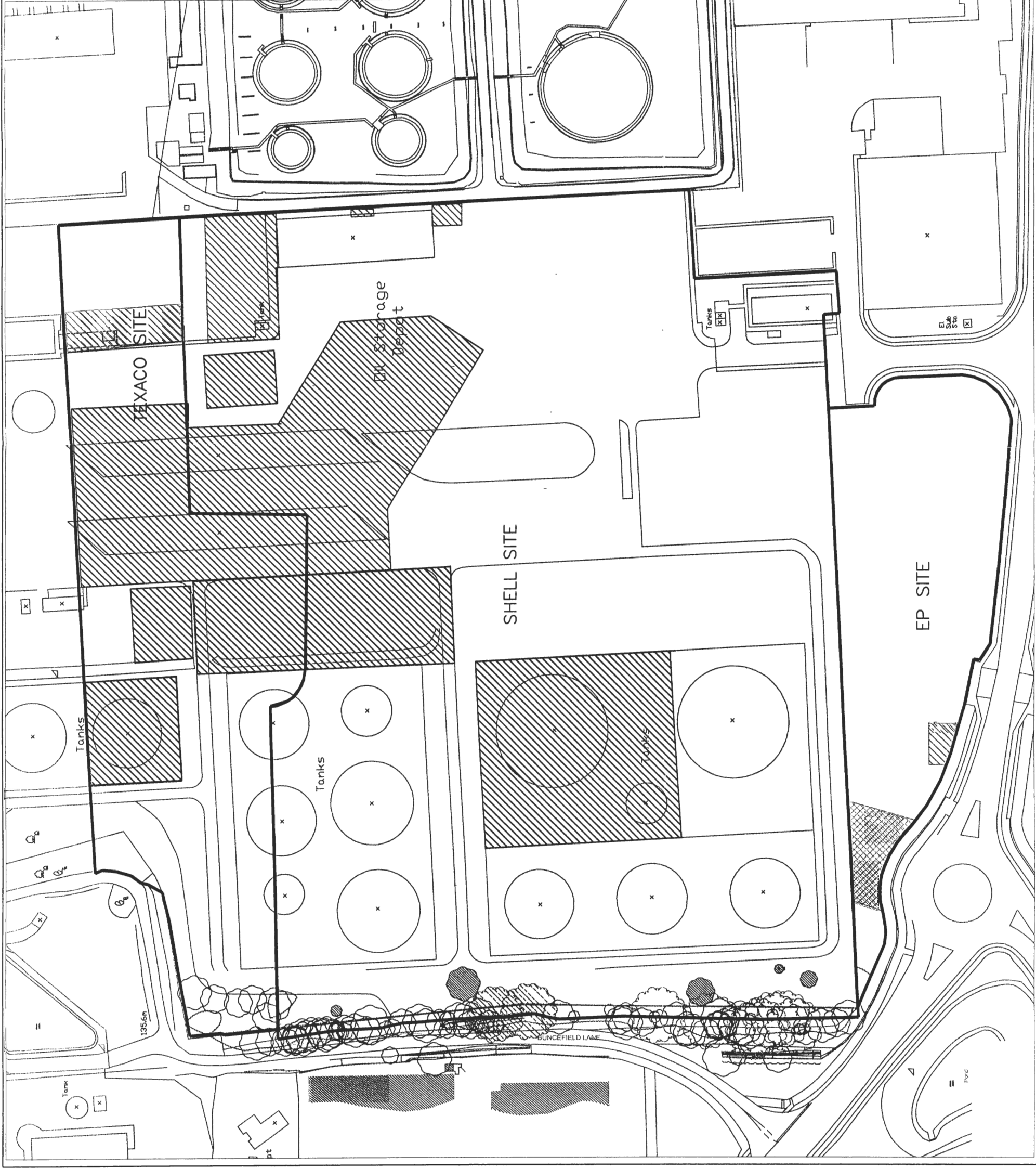
12170344

DRAWING NO:

Figure 5

REV:

© WSP Group plc



Comment is provided on third party report for completeness and is provided to add background information only.

2.12 Potential Environmental Issues

Based on the information obtained as part of this phase of the study, the following environmental issues have been identified for consideration:

- Use and storage of hydrocarbons/fuel additives associated with previous site operations and elevated levels of hydrocarbons recorded in soils during previous site investigations.
- Potential for hydrocarbon contamination to have migrated to deeper groundwater reserves.
- Potential for ground gases generated by degradation of existing hydrocarbon contamination.

Site features and potential geo-environmental issues are presented in **Figure 3**.

PROJECT Boundary Way

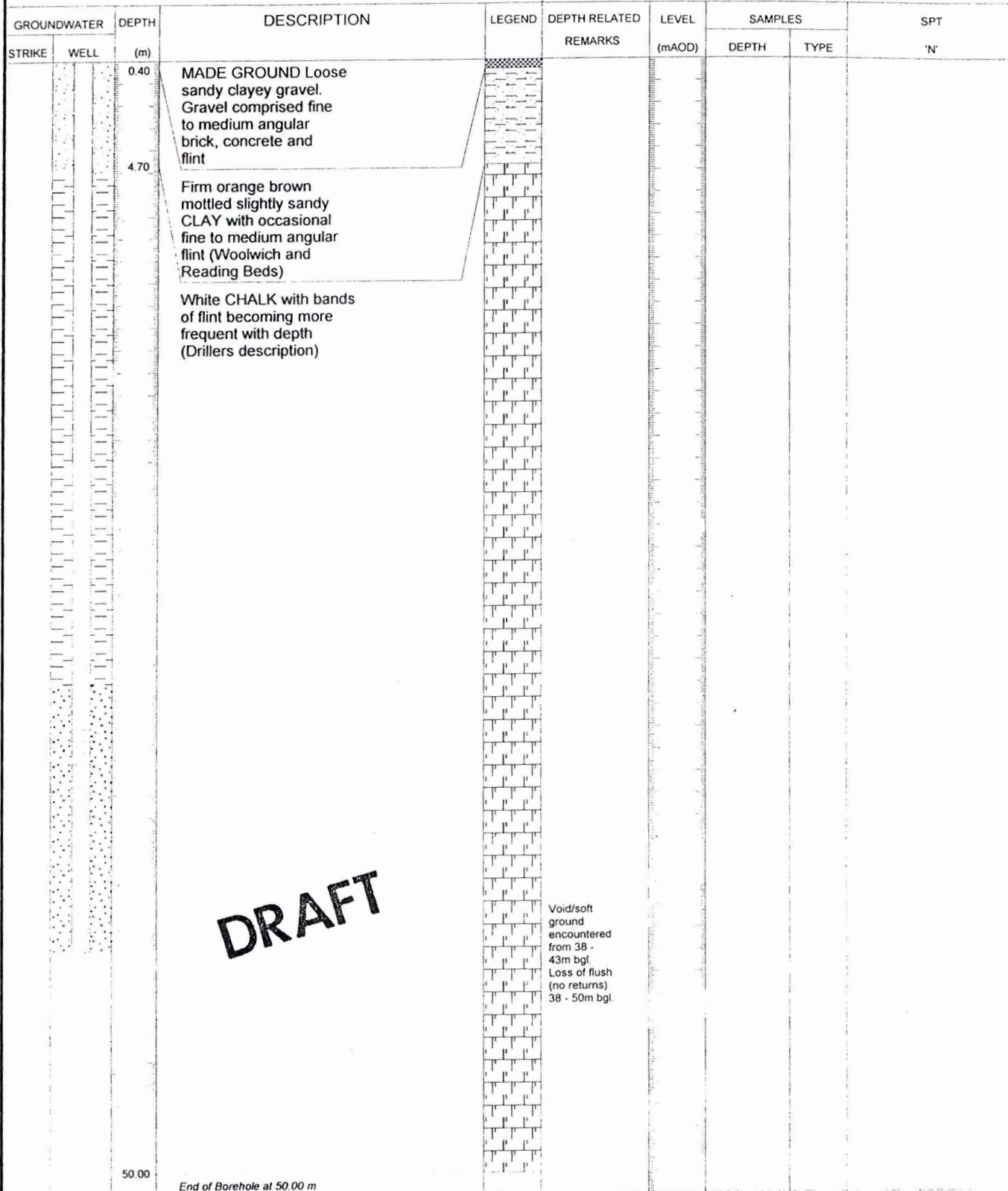
BOREHOLE No BH05

CLIENT Astral Development

DATE 27/03/2003

METHOD Shell and Auger (250mm)

PROJECT No 12170344



DRAFT

50.00 End of Borehole at 50.00 m

KEY

Sample Types:

- U - Undisturbed
- D - Disturbed
- B - Bulk
- W - Water
- T - Tub
- J - Amber Jar
- V - Vial

Water Levels:

- Water Strike
- Water Level

In Situ Tests:

- C - CPT
- S - SPT

REMARKS

Shell and Auger (250mm) to 5m bgl with permanent 210mm casing and bentonite cement annulus grout. Rotary follow on to 50m bgl

EASTING

NORTHING

GROUND LEVEL (mAOD)

LOGGED BY

PK

SCALE

1:255

Sheet 1 of 1



PROJECT					BOREHOLE No				
Boundary Way					BH105				
CLIENT					DATE				
Astral Development					05/06/2003				
METHOD					PROJECT No				
Shell and Auger (150mm)					12170344				
GROUNDWATER		DEPTH (m)	DESCRIPTION	LEGEND	DEPTH RELATED REMARKS	LEVEL (mAOD)	SAMPLES		SPT 'N'
STRIKE	WELL						DEPTH	TYPE	
		1.00	MADE GROUND Brown slightly sandy gravelly clay. Gravel comprised fine to medium angular brick, flint and concrete				1.00		
		1.90	Soft to firm brown mottled slightly sandy CLAY with occasional fine to medium subrounded to angular flint (Woolwich and Reading beds)				1.45	D 01	N=13 (9,3,3,4,3)
			Structureless white silty CHALK composed of weak fine to medium subrounded and angular chalk gravel in a soft silty matrix (Grade Dm)				2.00	D 02	N=18 (7,4,5,5,4)
							2.45		
							3.00	D 03	N=13 (5,3,3,4,4)
							3.45		
							4.00	D 04	N=10 (3,2,2,3,3)
							4.45		
							5.00	D 05	N=13 (4,2,3,4,4)
							5.45		
					Occasional medium to coarse angular and subrounded flint		6.00	D 06	N=10 (2,2,2,3,3)
							6.45		
							7.00	D 07	N=14 (3,2,3,4,5)
							7.45		
							8.00	D 08	N=12 (6,4,3,2,3)
							8.45		
							9.00	D 09	N=11 (4,3,2,3,3)
							9.45		

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Continued Next Sheet

KEY
Sample Types:

- U - Undisturbed
- D - Disturbed
- B - Bulk
- W - Water
- T - Tub
- J - Amber Jar
- V - Vial

Water Levels:

- Water Strike
- Water Level

In Situ Tests:

- C - CPT
- S - SPT

REMARKS

No groundwater encountered

EASTING

NORTHING

GROUND LEVEL (mAOD)

LOGGED BY

PK

SCALE





1:50

Sheet 1 of 2




WSP ENVIRONMENTAL

PROJECT Boundary Way		TRIAL PIT No TP06	
CLIENT Astral Development		DATE 27/05/2003	
METHOD JCB with backactor		PROJECT No 12170344	

DEPTH (m)	DESCRIPTION	LEGEND	DEPTH RELATED REMARKS	LEVEL m(AOD)	SAMPLES		TEST RESULTS
					DEPTH	TYPE	
0.30	MADE GROUND Brown sandy slightly clayey gravel. Gravel comprised fine to medium angular brick and concrete		VANE 80		0.50	B 001	
	MADE GROUND Firm to stiff brown and grey mottled clay with occasional medium subrounded and angular flint and rare fine angular brick						
1.20	Firm to stiff brown and grey mottled CLAY with occasional medium subrounded and angular flint (Woolwich and Reading Beds)				1.50	B 002	
2.70	Stiff brown CLAY with much fine to coarse angular and subrounded flint (Woolwich and Reading Beds)				3.00	B 003	
3.50	End of Trial Pit at 3.50 m.						

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KEY Sample Types: U - Undisturbed D - Disturbed B - Bulk W - Water V - Vial In-Site Tests: VANE - In Situ Hand Shear Vane ICBR - In Situ CBR PP - Pocket penetrometer			REMARKS Trial pit stable No groundwater encountered
EASTING	NORTHING	GROUND LEVEL (mAOD)	
TRIAL PIT WIDTH 0.75	TRIAL PIT LENGTH 3.00	LOGGED BY PK	 WSP ENVIRONMENTAL

