Flood Risk Technical Note

herrington

Part of eps

For the Proposed Change of Use at

104 Belsize Lane, London, NW3 5BB

Author(s): KT BSc (Hons)

Checked by: AB BSc (Hons) MSc MCIWEM

Date:	11 February 2025
Revision:	Final

1. Background Information

1.1. Herrington Consulting has been commissioned by **E & O Ltd** to prepare a Flood Risk Assessment for the proposed development at **104 Belsize Lane, London, NW3 5BB**.

1.2. The site is located at OS coordinates 526753, 184816, off Belsize Lane in London. The site covers an area of approximately 109m^2 and is currently in use as a two-storey office building. The location of the site with regards to the surrounding area is shown in Figure 1.1.

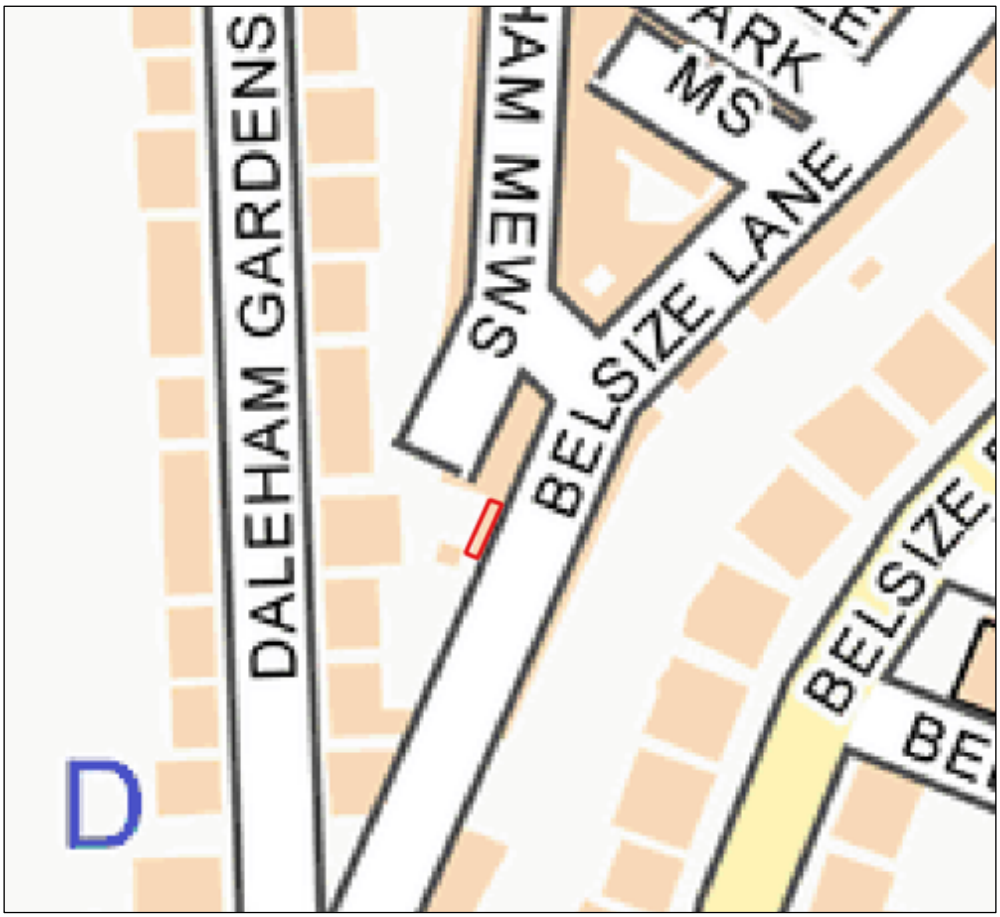


Figure 1.1 – Location map (contains Ordnance Survey data © Crown copyright and database right 2025).

1.3. The proposal for the development comprises a change of use to create a single residential unit at the first floor (Class C3), with the commercial unit (Class E) remaining on the ground floor (Figure 1.2). More detailed drawings of the proposed scheme are included in Appendix A.1 of this report.

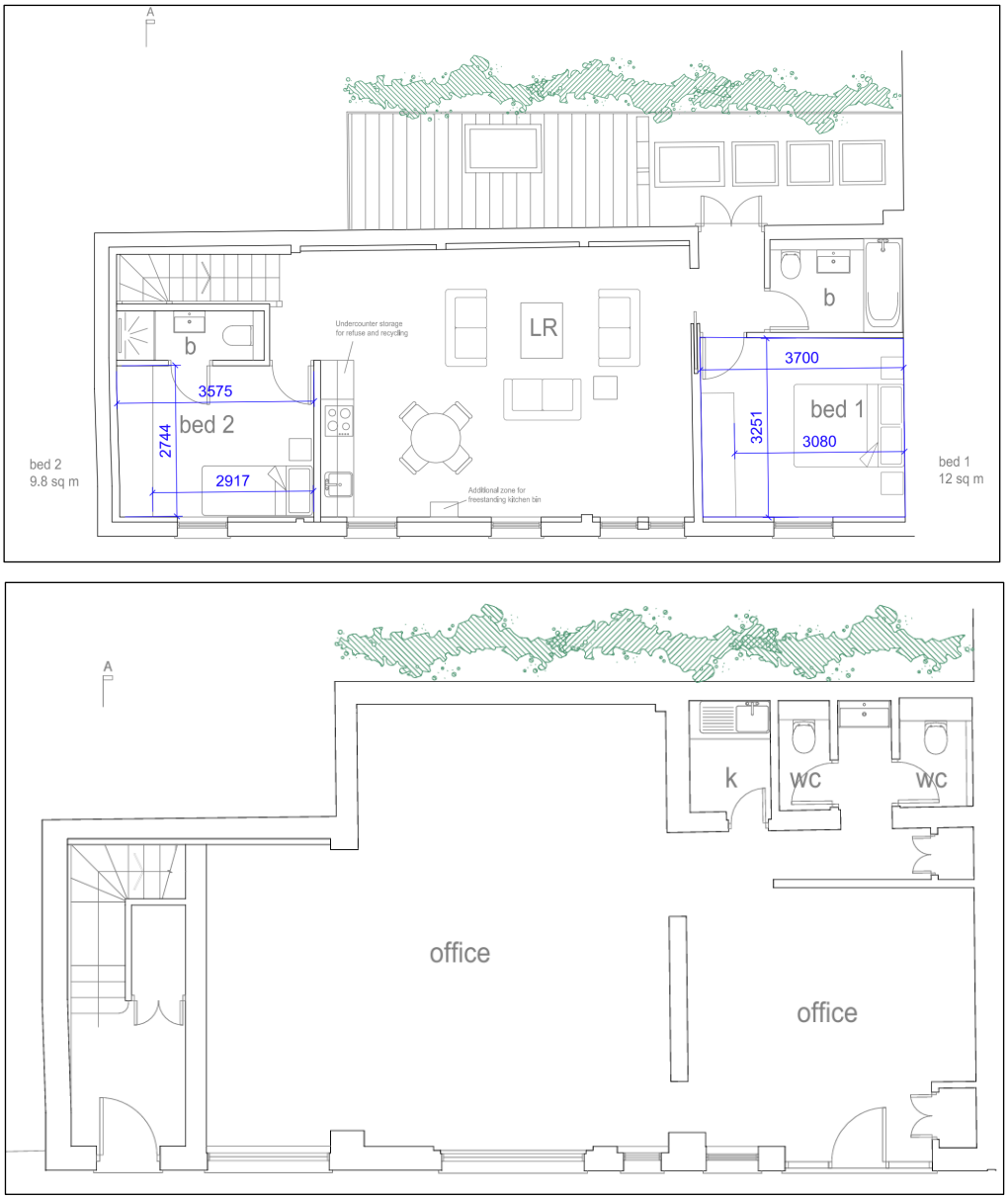


Figure 1.2 – Top image: Proposed first floor layout. Bottom image: As existing ground floor layout.

2. Planning Context

2.1. For any new development located within Flood Zones 2 and 3, or for sites greater than 1 hectare in size, the National Planning Policy Framework (NPPF) requires a FRA. In this case,

the EA's 'Flood Map for Planning' map (Figure 2.1) shows that the site is located within Flood Zone 1 and is smaller than 1 hectare.

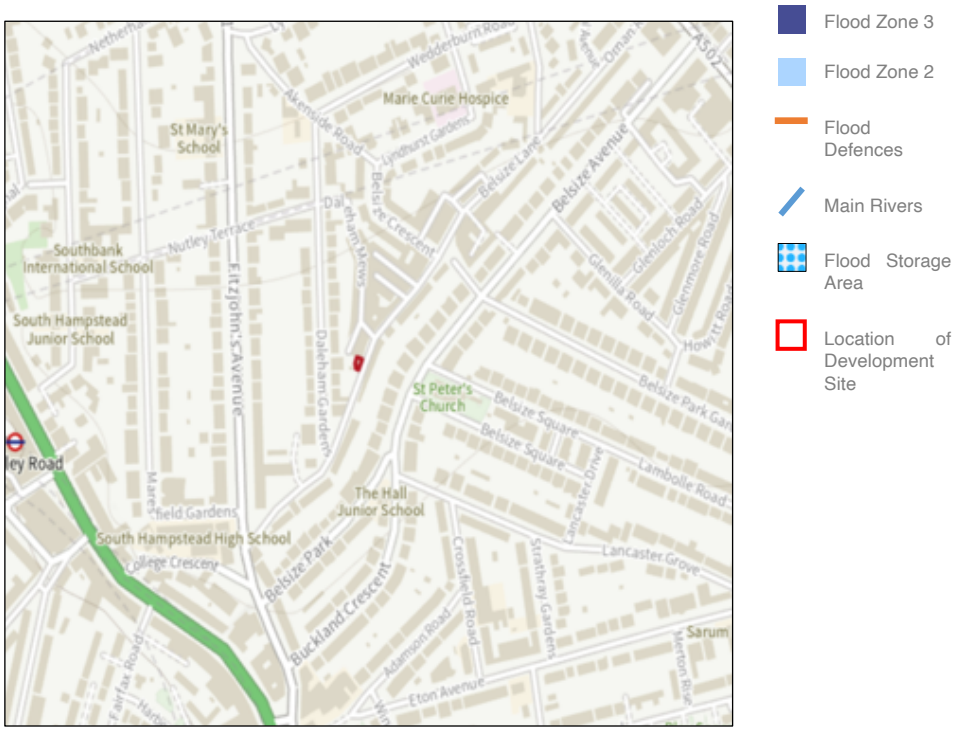


Figure 2.1 - EA's "Flood Map For Planning (© Environment Agency).

2.2. Notwithstanding this, the NPPF also requires a FRA if the development is thought to be risk from other sources (e.g., groundwater, surface water, sewer, etc), including an allowance for climate change. In this case, the London Borough of Camden Critical Drainage Area (CDA) mapping shows that the site lies within a CDA and therefore, the primary focus of this document is to appraise the risk of flooding from all key sources.

3. Flood Risk Analysis

3.1. The main sources of flooding have been assessed as part of this document. The specific issues relating to each one of the impacts on this development are discussed below.

3.2. ***Flooding from Rivers, Ordinary or Man-Made Watercourses*** – Inspection of Ordnance Survey mapping reveals that the River Brent is located approximately 4.4km northwest of the site, and the River Thames is located around 6.1km south of the site. Interrogation of the EA's 'Flood Map for Planning' reveals that the site is located within Flood Zone 1 (Figure 2.1) and is not situation within an area shown to be at risk of flooding from a main river. In addition, inspection of the site and the surrounding are finds that there are no man-made rivers or artificial watercourses in close proximity to the proposed development. Therefore, it can be considered that the risk of flooding from this source is considered to be *low*.

3.3. ***Flooding from the Sea*** – The site is a significant distance inland and whilst the River Thames is still tidally influenced at this location, the risk of flooding from the sea is considered to be *low*.

3.4. ***Flooding from Surface Water*** – The EA's 'Flood Risk from Surface Water' map reveals that there are a few localised areas of 'medium' and 'high' risk of flooding within the adjacent road and neighbouring property. However, the site itself is located in an area classified as having a 'very low' risk of surface water flooding, (Figure 3.2).

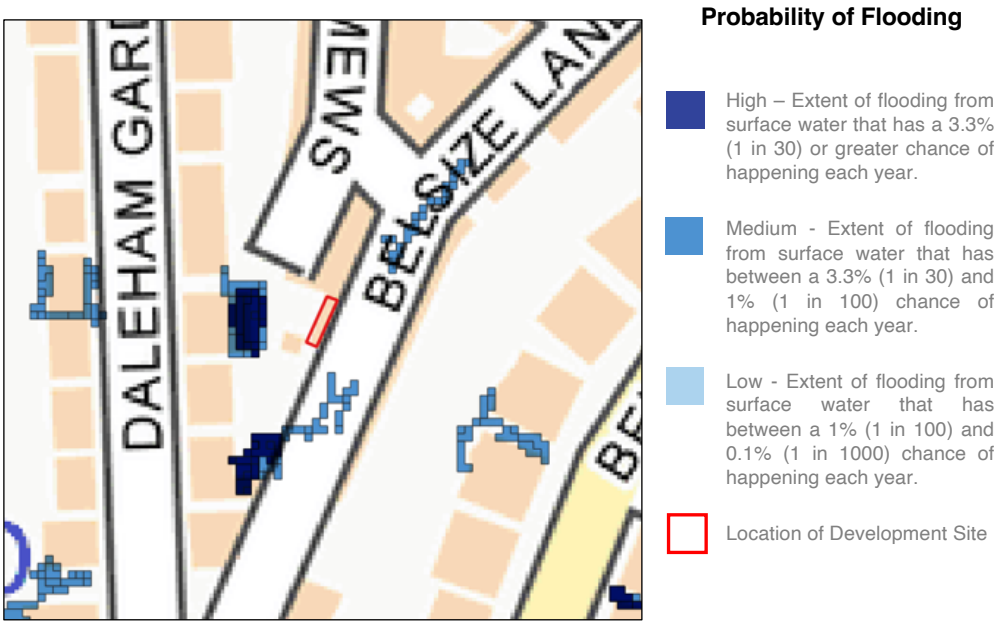


Figure 3.2 – EA's 'Flood Risk from Surface Water' map (© Environment Agency and contains Ordnance Survey data © Crown copyright and database right 2025).

3.5. In addition, inspection of aerial height data reveals if surface water was to land near the site, it would flow in a southeastern direction towards low-lying land and away from the site. Therefore, taking the above into consideration and the fact that the existing building encompasses the entire curtilage of the site, it can be considered that the risk of flooding from this source is *low*.

3.6. ***Flooding from Groundwater*** – Groundwater flooding is most likely to occur in low-lying areas that are underlain by permeable rock (aquifers). The underlying geology in this area is London Clay, which is not typically associated with groundwater flooding. This is supported by BGS groundwater flood risk mapping data shows that the surrounding area to the site is at low of groundwater flooding. Mapping provided as part of the Defra Groundwater Flood Scoping Study (May 2004) shows that no groundwater flooding events were recorded during the very wet periods of 2000/01 or 2002/03 and that the site itself is not located within an area where groundwater emergence is predicted.

Nevertheless, if groundwater were to emerge at or near to the site, inspection of aerial height data reveals that groundwater would flow away from the site in a southeastern direction towards the low-lying land. Consequently, the risk of flooding from this source is considered to be *low*.

3.7. ***Flooding from Sewers*** – Inspection of the asset location mapping provided by Thames Water (Figure 3.3) identifies that the sewers in this area are combined as well as an unknown sewer not operated by Thames Water.

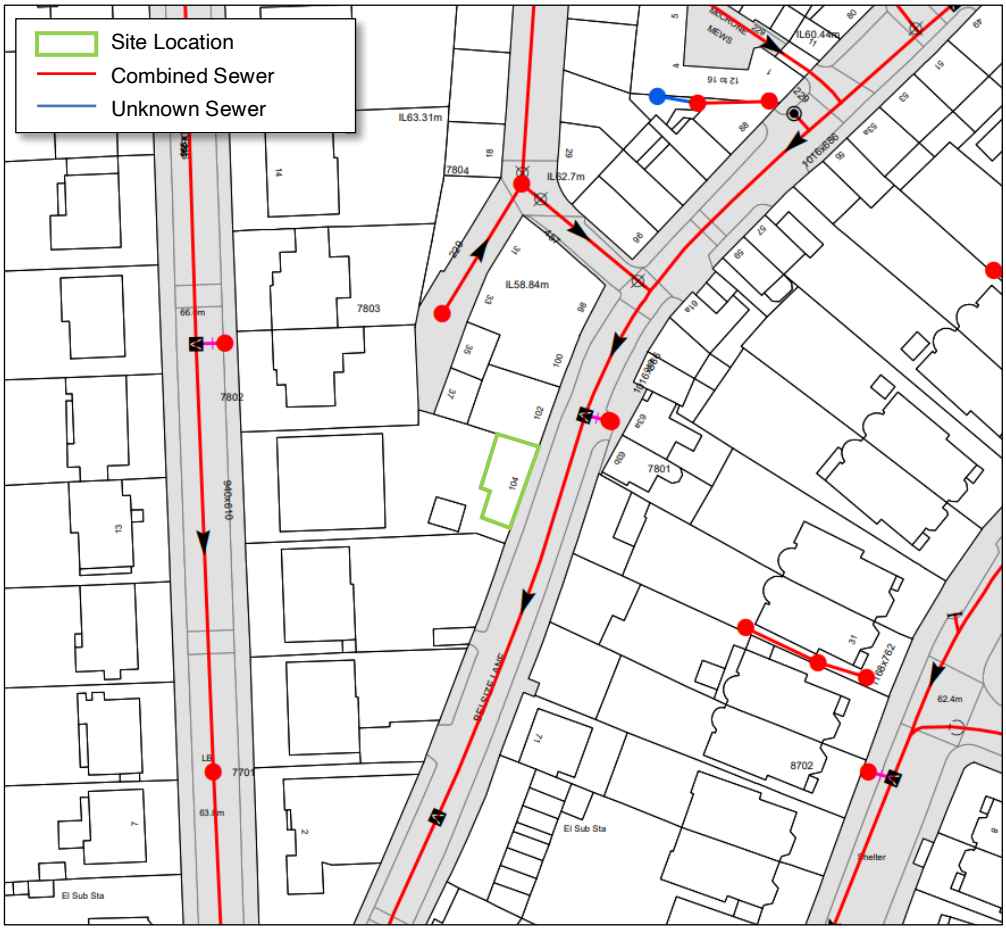


Figure 3.3 – Asset location mapping provided by Southern/Thames Water (a full-scale copy can be found in Appendix A.2).

3.8. Inspection of aerial height data reveals that in the unlikely event that water was to exit the sewer network as a result of an extreme rainfall event or blockage, floodwater would not pond onsite but instead would be contained within the roads and flow towards low-lying land in the southeast. Consequently, the risk of flooding from this source is considered to be *low*.

3.9. ***Flooding from Reservoirs, Canals and Other Artificial Sources*** – Inspection of OS mapping of the area reveals that the Hamstead No 1 Pond is located 1.1km northeast of the site. However, it should be noted that the Hampstead Ponds is currently managed by a private

individual, company or charity. Therefore, given the pond is located a significant distance from the site and is maintained to a good working order and are inspected regularly, it can be considered that flooding from the pond is unlikely.

3.10. In addition to the site is the EA's 'Flooding Risk from Reservoirs' shows that the site is outside the extents of flooding from reservoirs. Therefore, the risk of flooding from this source is considered to be *low*.

4. Mitigation Measures

4.1. It has been identified that the development site would remain at 'extremely low' risk of flooding even if the impacts of climate change are taken into consideration. Furthermore, the proposals are for a change of use of the first floor from commercial to residential use, with the commercial ground floor to remain unchanged. Consequently, it is not considered necessary to include mitigation measures.

4.2. In addition, there is limited opportunity to incorporate sustainable drainage systems into the design as the site encompasses the entire site.

5. Conclusions and Recommendations

5.1. The overarching objective of this report is to appraise the risk of flooding at 104 Belsize Lane, London to ensure that the proposals for development are acceptable and that any risk of flooding to the occupants of the proposed residential unit is appropriately mitigated.

5.2. The risk of flooding has therefore been appraised across a range of sources and it has been demonstrated that the risk of flooding is *low* from all sources, even when the impacts for climate change is taken into consideration.

5.3. In conclusion, the occupants of the development will be safe. Consequently, it has been demonstrated that the development will therefore meet the requirements of the NPPF.

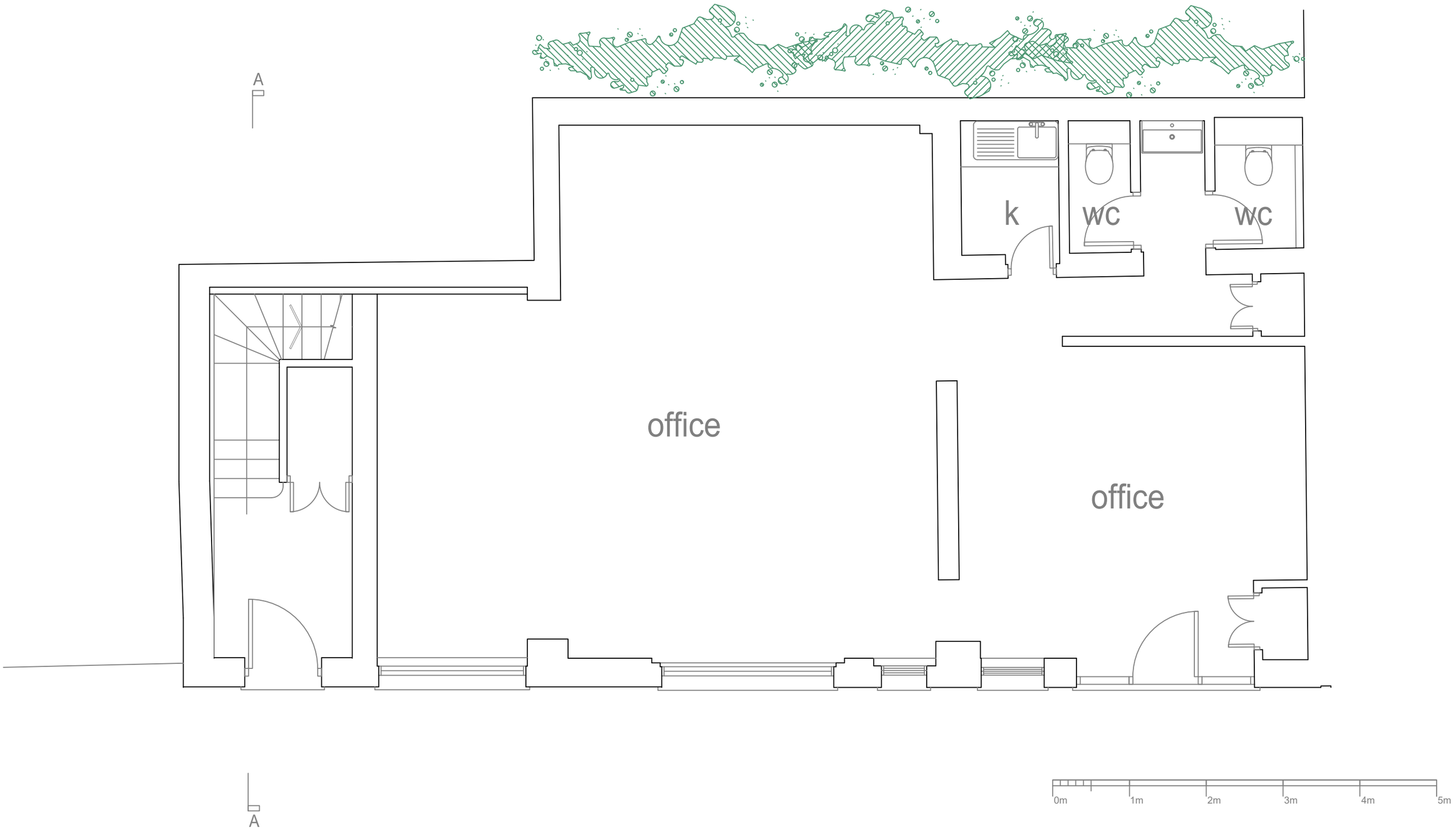
6. Appendices

6.1. Appendix A.1 – Scheme Drawings

6.2. Appendix A.2 – Asset Location Mapping

104BL-100-01

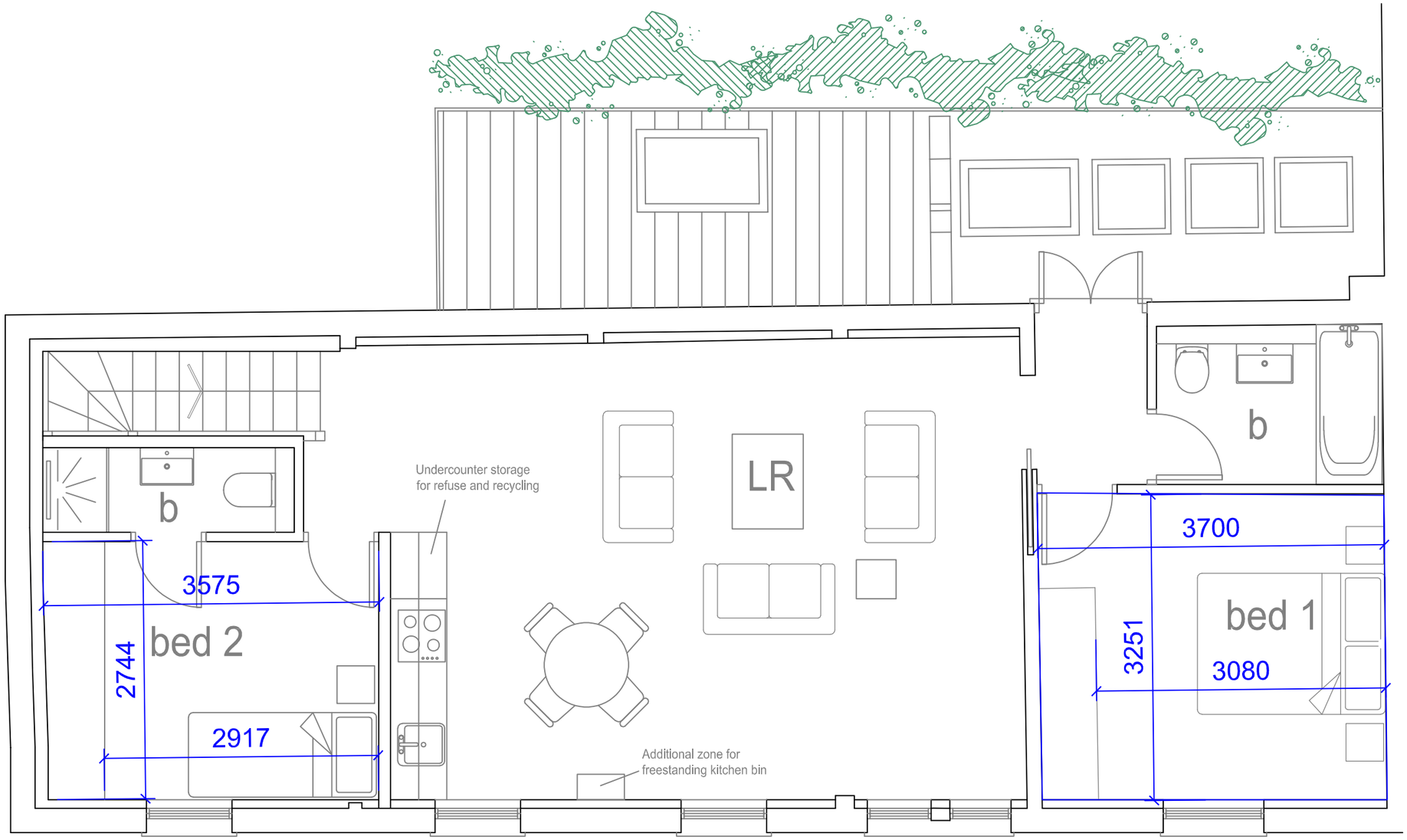
104 BELSIZE LANE NW3 5BB **OCTOBER 2024** **Location Plan** Scale 1:500@A3



104BL-110-00

104 BELSIZE LANE NW3 5BB **OCTOBER 2024** **Proposed Plans - Ground Floor** Scale 1:50@A3

A



bed 2
9.8 sq m

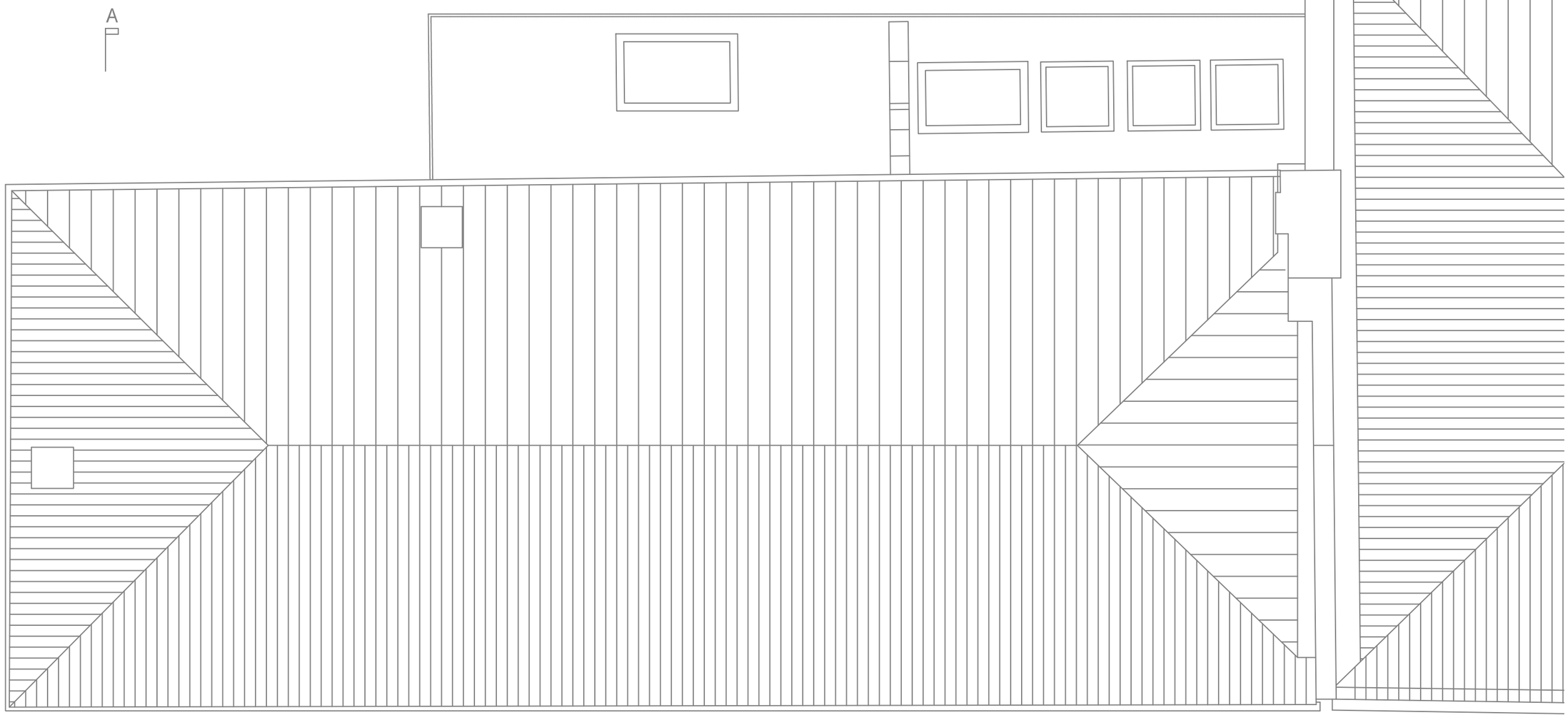
bed 1
12 sq m

0m 1m 2m 3m 4m 5m

A

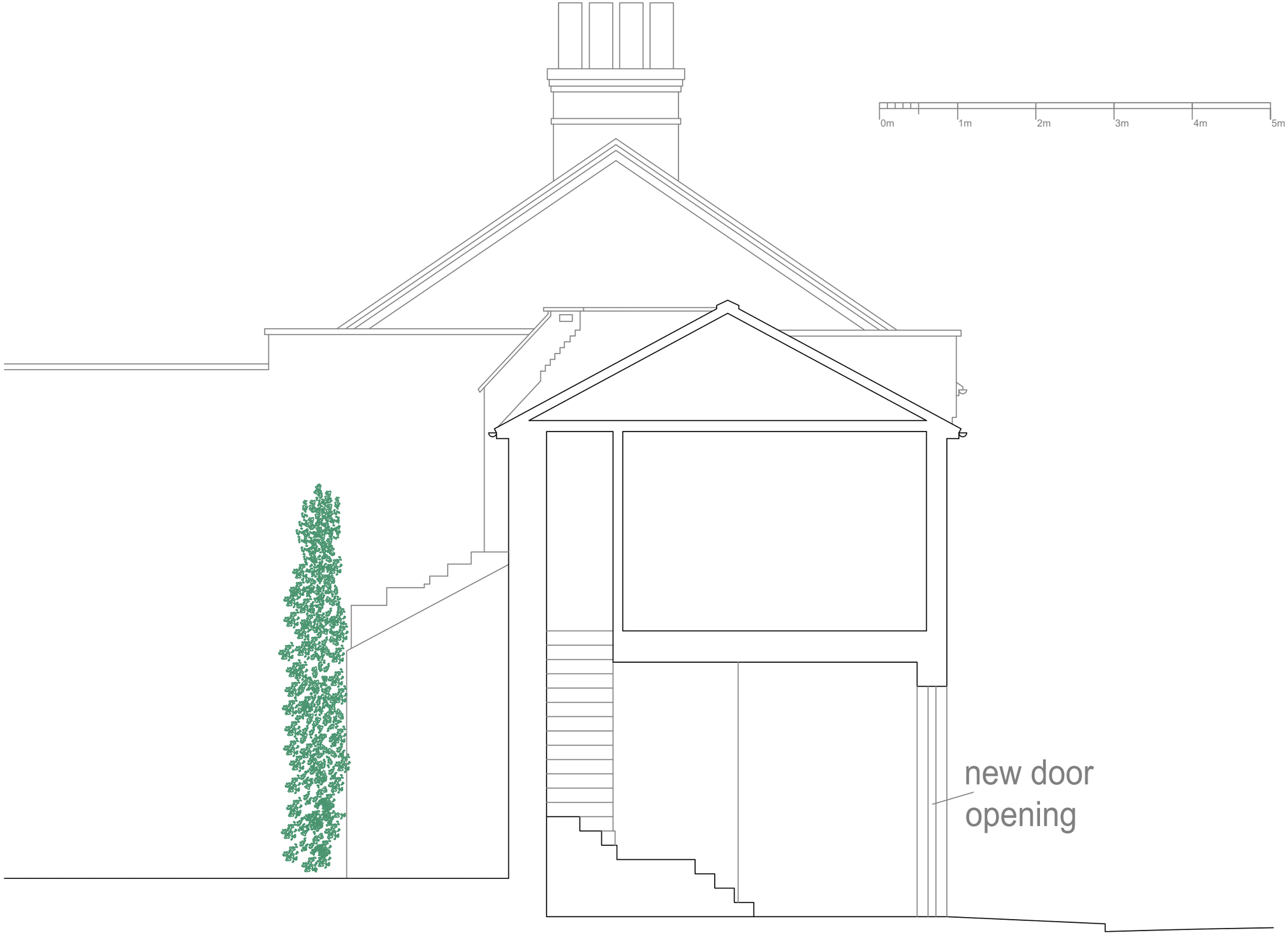
104BL-110-01

104 BELSIZE LANE NW3 5BB **OCTOBER 2024** **Proposed Plans - First Floor** Scale 1:50@A3



104BL-110-R

104 BELSIZE LANE NW3 5BB **OCTOBER 2024** **Proposed Roof Plan** Scale 1:50@A3

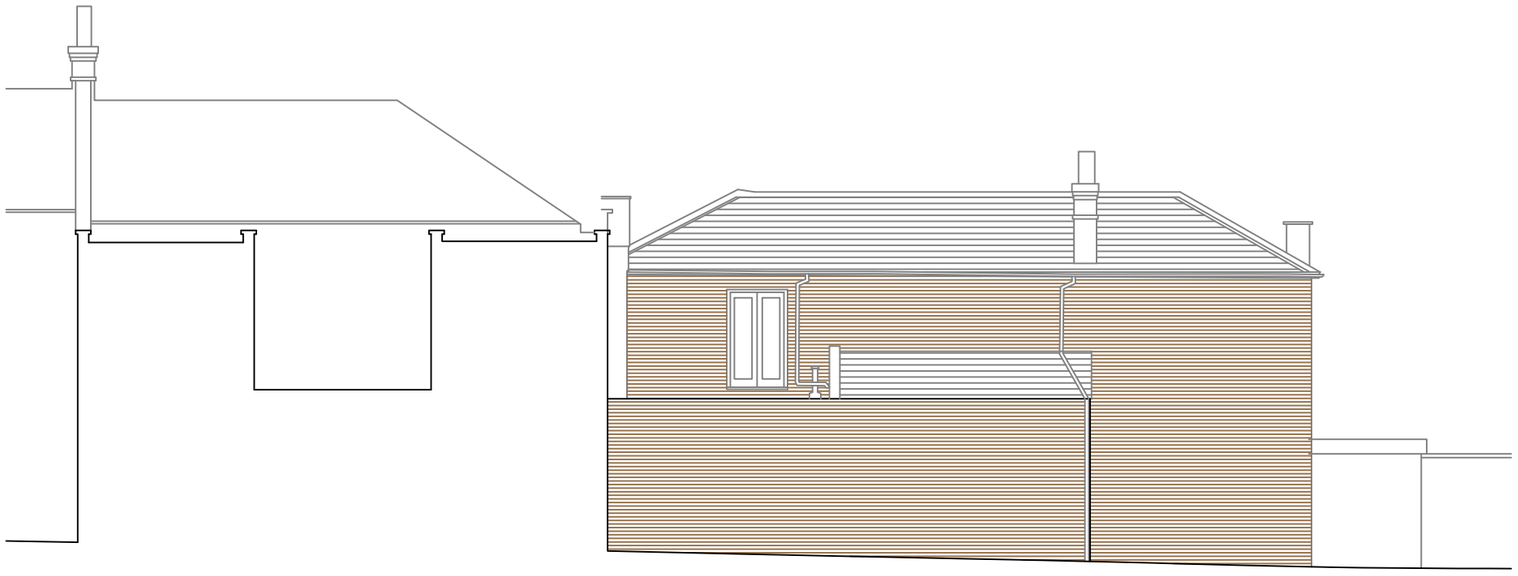


104BL-130-01

104 BELSIZE LANE NW3 5BB **OCTOBER 2024** **Proposed Section A - A** Scale 1:50@A3

FRONT ELEVATION

SIDE ELEVATION



REAR ELEVATION

104BL-120-01

104 BELSIZE LANE NW3 5BB

OCTOBER 2024

Proposed Elevations Scale 1:125@A3

Asset Location Search

Property Searches

Herrington Consulting Limited
Barham Business Park,Unit 6 Barham Business Park

CANTERBURY
CT4 6DQ

Search address supplied

E & O Ltd
104
Belsize Lane
London
NW3 5BB

Your reference 4234KT

Our reference ALS/ALS Standard/2025_5111322

Search date 28 January 2025

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the prices of its CON29DW Residential and Commercial searches along with the Asset Location Search. Costs will rise in line with RPI as per previous years, which is sat at 6%.

Customers will be emailed with the new prices by February 28th 2024.

Any orders received with a higher payment prior to the 1st April 2024 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

Asset Location Search

Property Searches

Search address supplied: E & O Ltd, 104, Belsize Lane, London, NW3 5BB

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

Asset Location Search

Thames Water Property Searches

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.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

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

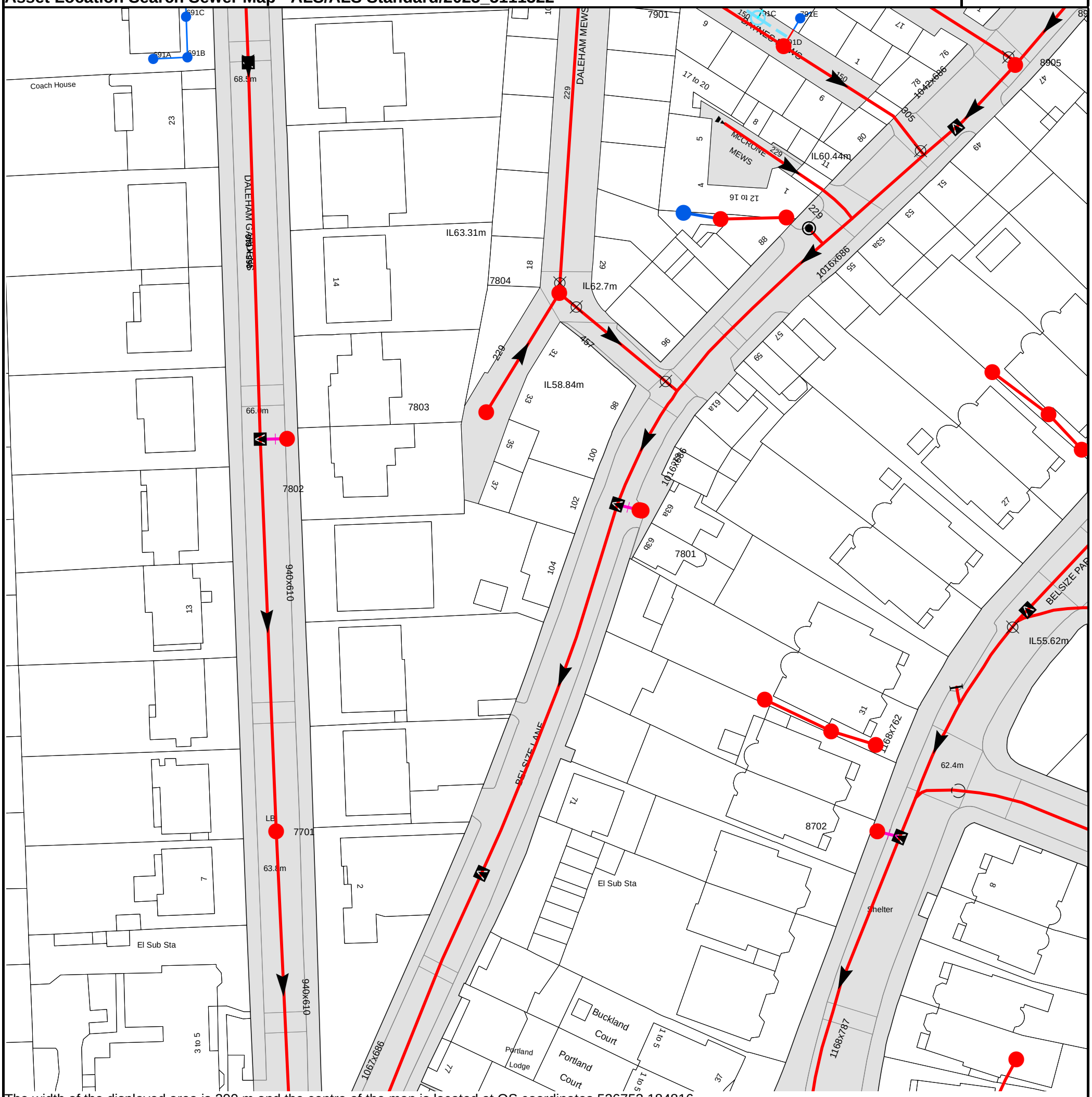
Clean Water queries

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/2025_5111322



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 526753,184816

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.

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
791C	n/a	n/a
791D	n/a	n/a
791E	n/a	n/a
87AJ	n/a	n/a
691A	n/a	n/a
691C	n/a	n/a
691B	n/a	n/a
7701	64.11	59.55
7802	n/a	n/a
7803	65.02	63.93
7804	65.37	n/a
7801	n/a	n/a
78BB	n/a	n/a
78BG	n/a	n/a
78BH	n/a	n/a
77BF	n/a	n/a
78BI	n/a	n/a
87CA	n/a	n/a
87CB	n/a	n/a
8702	n/a	n/a
88CE	n/a	n/a
8905	n/a	n/a
88CF	n/a	n/a
88CG	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

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

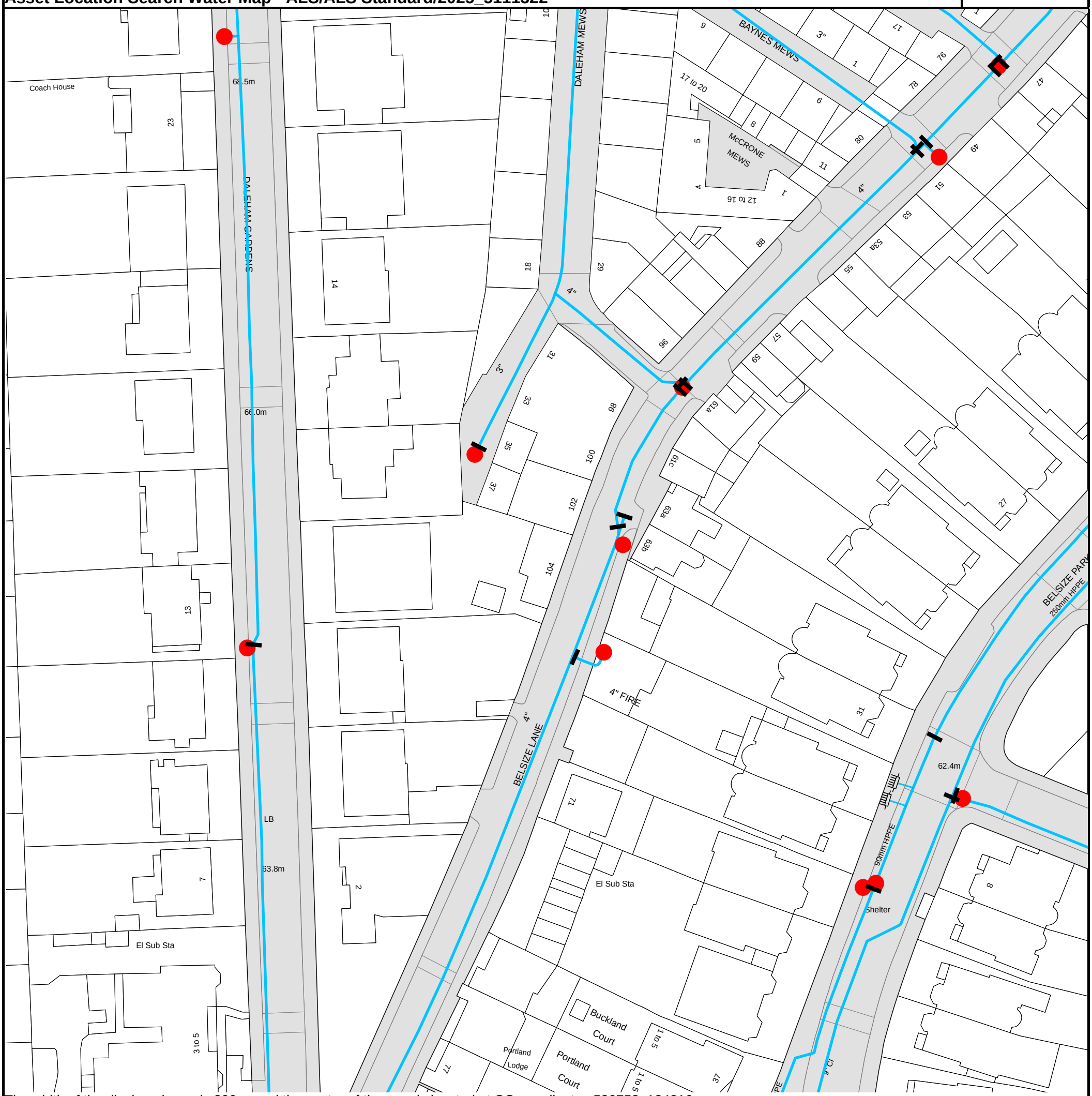
Ducts may contain high voltage cables. Please check with Thames Water.

- 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.

Asset Location Search Water Map - ALS/ALS Standard/2025_5111322



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 526753, 184816.

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 - Water Key

Water Pipes (Operated & Maintained by Thames Water)

4"

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

16"

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

3" SUPPLY

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

3" FIRE

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

3" METERED

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- **Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indiates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Payment Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 980 8800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	**BACS Payment**	**Telephone Banking**
Please Call **0800 009 4540** quoting your invoice number starting CBA or ADS	Account number **90478703** Sort code **60-00-01** A remittance advice must be sent to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.** or email **ps.billing@thameswater.co.uk**	By calling your bank and quoting: Account number **90478703** Sort code **60-00-01** and your invoice number

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.