GeoSmart Information

SuDSmart Plus

Sustainable Drainage Assessment

Site Address

The Navigator's House
River Lane
Petersham
TW10 7AG

Grid Reference

517950, 173314

Report Prepared for

Matteo D'Angelo

Date

2024-08-30

Report Status

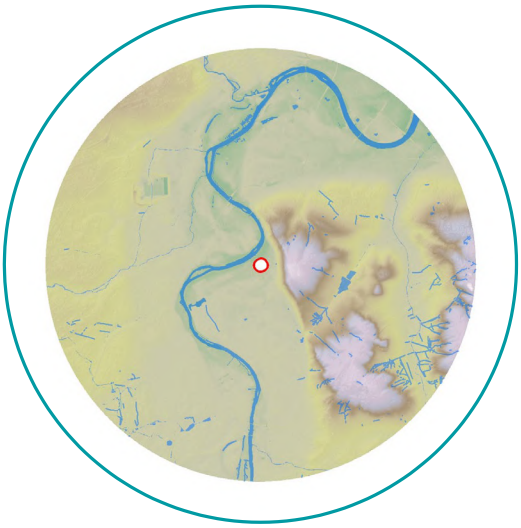
FINAL

Site Area

0.16 ha

Report Reference

82971.01R1



Drain as existing

The proposed development comprises of the extension of the conservatory on the ground floor to the rear of the dwelling over part of the existing patio area and internal modifications.

At a restricted discharge rate of 1 l/s no surface water attenuation is required, therefore, the Site is proposed to drain as existing.

The condition and capacity of the existing drainage network should be the subject of investigation.

Consideration should be made to the adoption of rainwater harvesting measures where feasible.

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1 Executive summary

This report assesses the feasibility of a range of Sustainable Drainage Scheme (SuDS) options in support of the Site development process. A SuDS strategy is proposed to ensure surface water runoff can be managed effectively over the lifetime of the development.

SuDS suitability

Risk	Issue	Result
Discharge Location	What is the infiltration potential at the Site?	Low
	What is the potential to discharge to surface water features?	Low
	What is the potential to discharge to sewers?	High
	What is the potential to discharge to highway drains?	Low
Flooding	What is the river (fluvial) flood risk at the Site?	Low
	What is the surface water (pluvial) flood risk at the Site?	Very Low to Low
	What is the groundwater flood risk at the Site?	Low*
Pollution	Is the groundwater a protected resource?	No
	Is the surface water feature a protected resource?	N/A

*GW5 groundwater mapping records a Negligible groundwater risk at the Site, however, based on relevant borehole data, there is the potential for a shallow water table beneath the Site and the risk rating has been raised to Low.

Summary of existing and proposed development

The Site is currently used within a residential capacity as a two-storey semidetached plus basement dwelling including an outbuilding and landscaped areas. Development proposals comprise the extension of the conservatory on the ground floor to the rear of the dwelling over part of the existing patio area and internal modifications.

Summary of discharge routes

GeoSmart's SuDS Infiltration Potential (SD50) map indicates the Site has a Low potential for infiltration, primarily due to the low permeability of the underlying geology (Langley Silt Member). Infiltration to ground is therefore unlikely to be feasible.

Ordnance Survey (OS) mapping indicates that there are no surface water features within 100 m of the Site. Therefore, discharge to surface water feature is not feasible.

The asset location plan search included in Appendix C confirms the Site is located within 4 m of the public sewer network. Due to the short distance to nearby sewers discharging surface water runoff to the sewer is feasible.

Proposed SuDS strategy

Using a theoretical restricted discharge rate of 1 l/s (considered to be the lowest rate practical without increasing the risk of blockage), the proposed development would not require any additional surface water runoff attenuation. The Site is therefore proposed to drain as existing with the recommendation to adopt rainwater harvesting measures where feasible.

SuDS & drainage network maintenance

The management and maintenance of the SuDS features, in line with the details and schedules outlined in Section 10 of this report, will be undertaken by contractors appointed by the owners and occupiers of the residential building.

Recommendations / Next steps

The current drainage system should be inspected and maintained in perpetuity of the existing and proposed development over its projected lifespan.

Consideration should be made to the adoption of rainwater harvesting measures to reduce the volume of water entering the sewer system.

2 Proposed SuDS strategy

The most suitable SuDS options are outlined below and a SuDS strategy schematic is shown overleaf. Supporting information is provided in subsequent sections.

Table 1. Proposed SuDS sizing (dimensions) and attenuation volumes

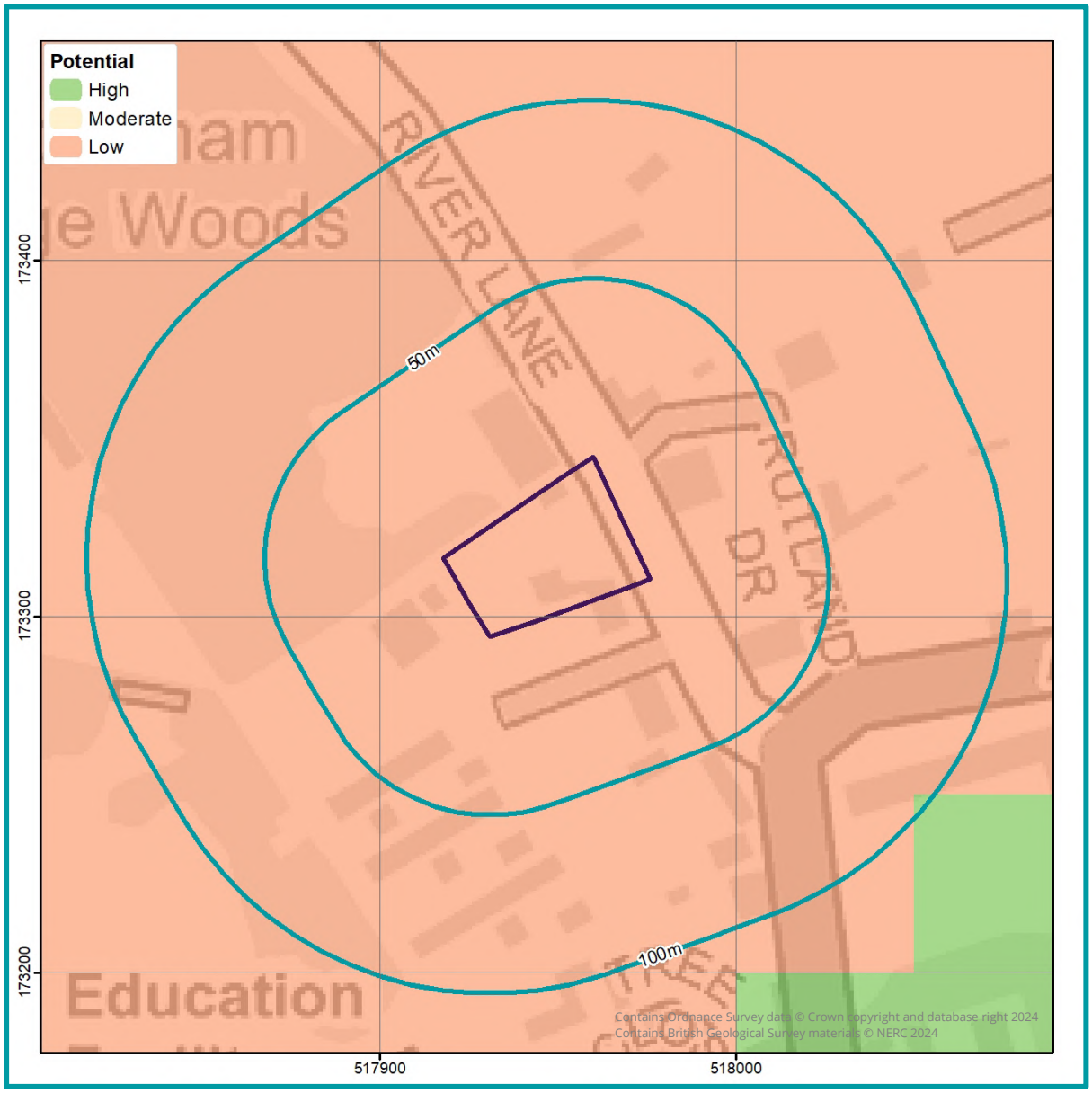
Rainwater Harvesting	To comply with London Plan policy opportunities for rainwater harvesting should be explored where feasible. In terms of attenuation storage within this SuDS scheme, the volume of run-off which could be attenuated by rainwater harvesting has not been considered.
Total Attenuation Provided	0 m^3
Total Attenuation Required	0 m^3

3 Site analysis

Site location

Figure 1. Aerial Imagery (Bluesky, 2024)

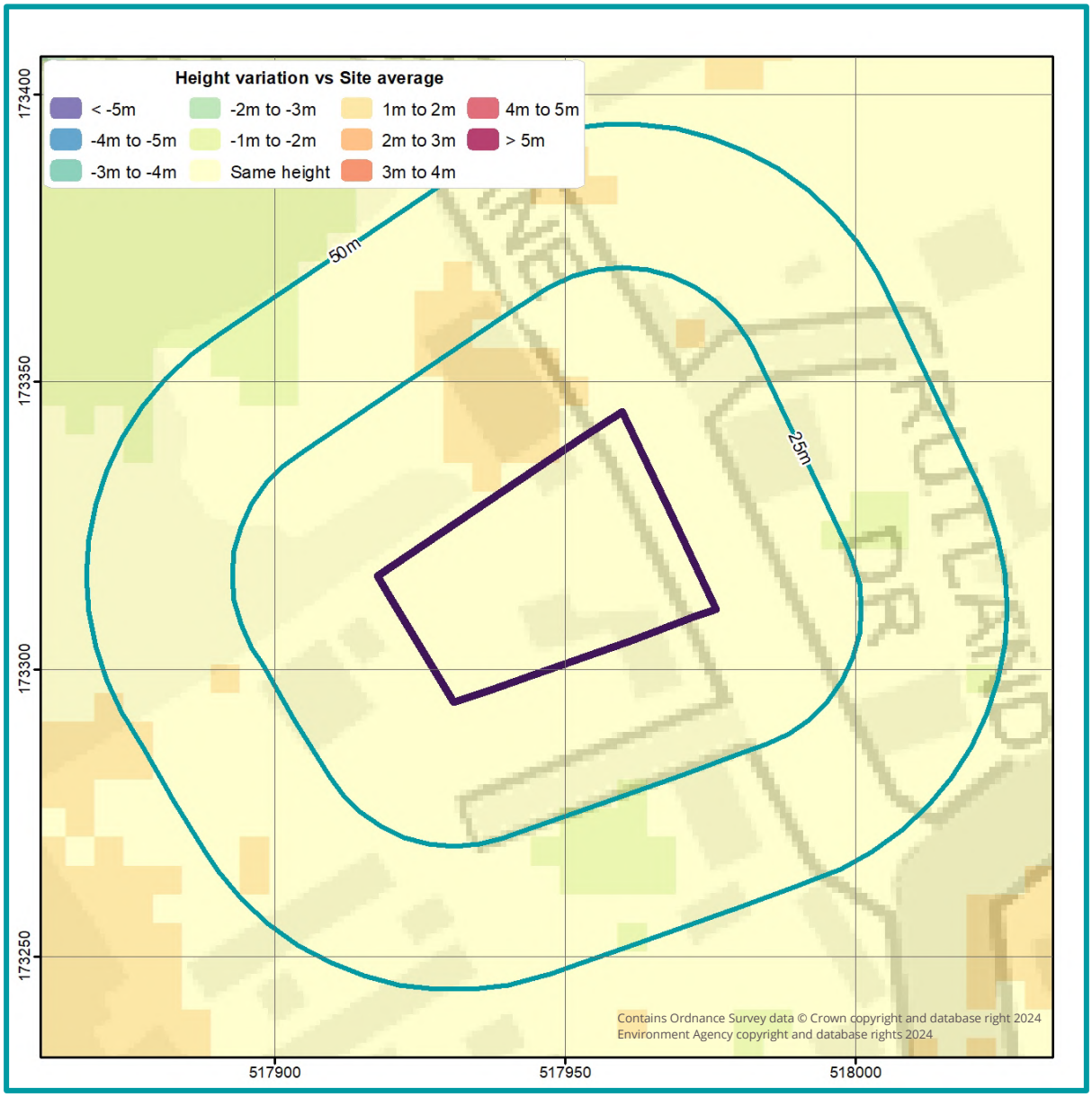
Figure 2. SuDS infiltration suitability (SD50) map (GeoSmart, 2024)



The GeoSmart SuDS Infiltration Suitability Map (SD50) screens the potential for infiltration drainage at the Site and indicates where further assessment is recommended. The map combines information on the thickness and permeability of the underlying material and the depth to the high groundwater table. It supports conceptual Site drainage design and the planning of further Site investigation.

There is a Low potential for infiltration SuDS across the Site. It is likely that the underlying geology at the Site has low permeability which would limit the effectiveness of a proposed infiltration SuDS scheme.

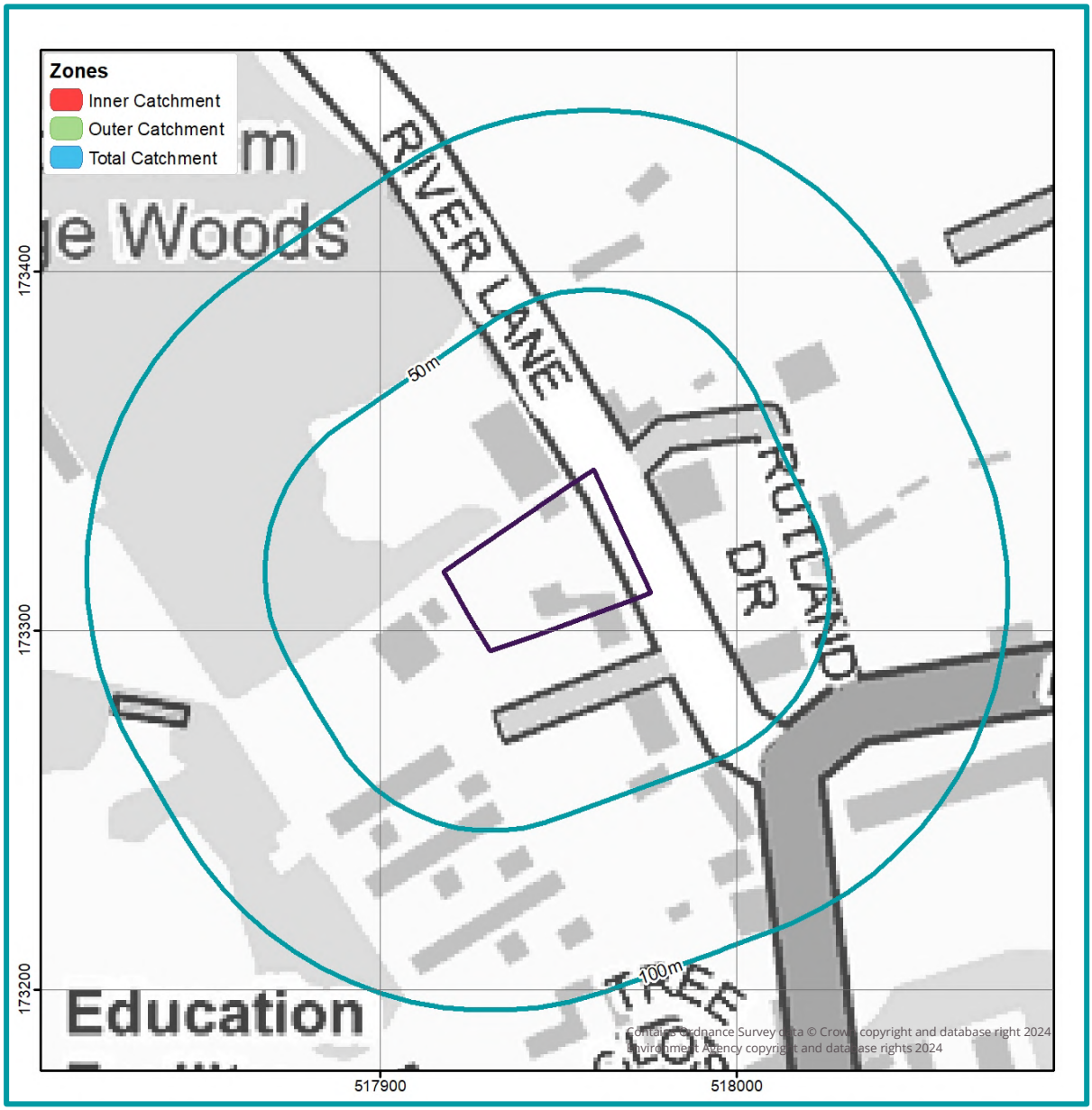
Figure 3. Site topography (GeoSmart, 2024)



An assessment of the topography at the Site has been undertaken using LiDAR DTM5 elevation data to identify the general slope and any localised depressions. The mapping shows a comparison between average ground levels on the Site with ground levels in the surrounding area. The mapping confirms the overall Site is generally on a gradual slope to the southeast.

Further analysis could be undertaken by visiting the Site or by collecting additional topographic survey to provide further confirmation of ground levels.

Figure 4. Source protection zone map (EA, 2024)

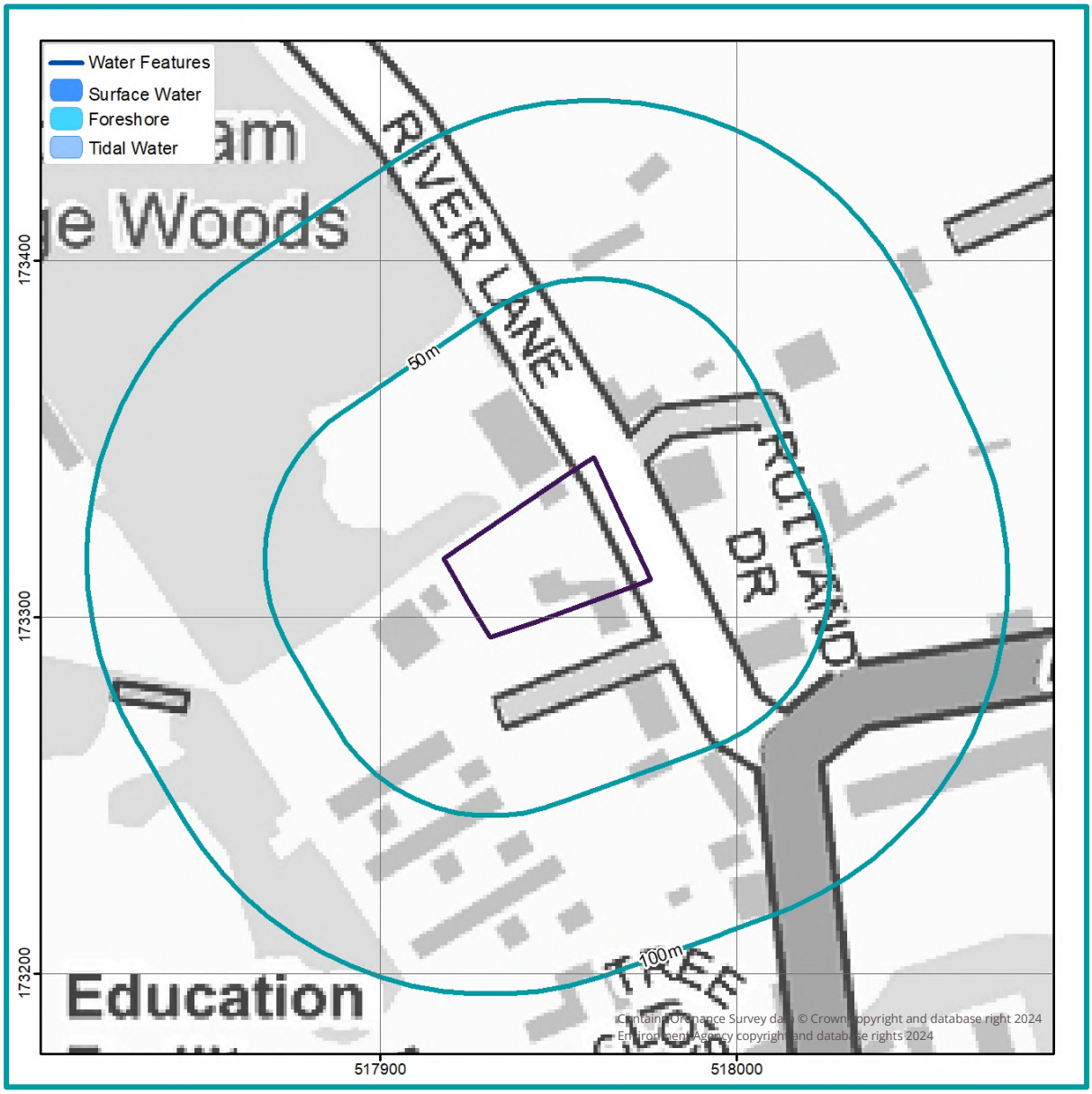


An assessment of the EA's groundwater Source Protection Zones (SPZs) has been undertaken within the vicinity of the Site and confirms the Site is not located within an SPZ.

Infiltration, if possible, is likely to be acceptable providing risk screening identifies suitable mitigation measures, if required, to prevent an impact on water quality from the proposed or historical land use and contaminated land.

If further analysis is required, this would involve a review of Site specific contaminated land data. If hazards are identified, it is recommended that the Local Authority and the Environment Agency are contacted to confirm the susceptibility of any SPZs within the wider area.

Figure 5. Surface water features map (EA, 2024)

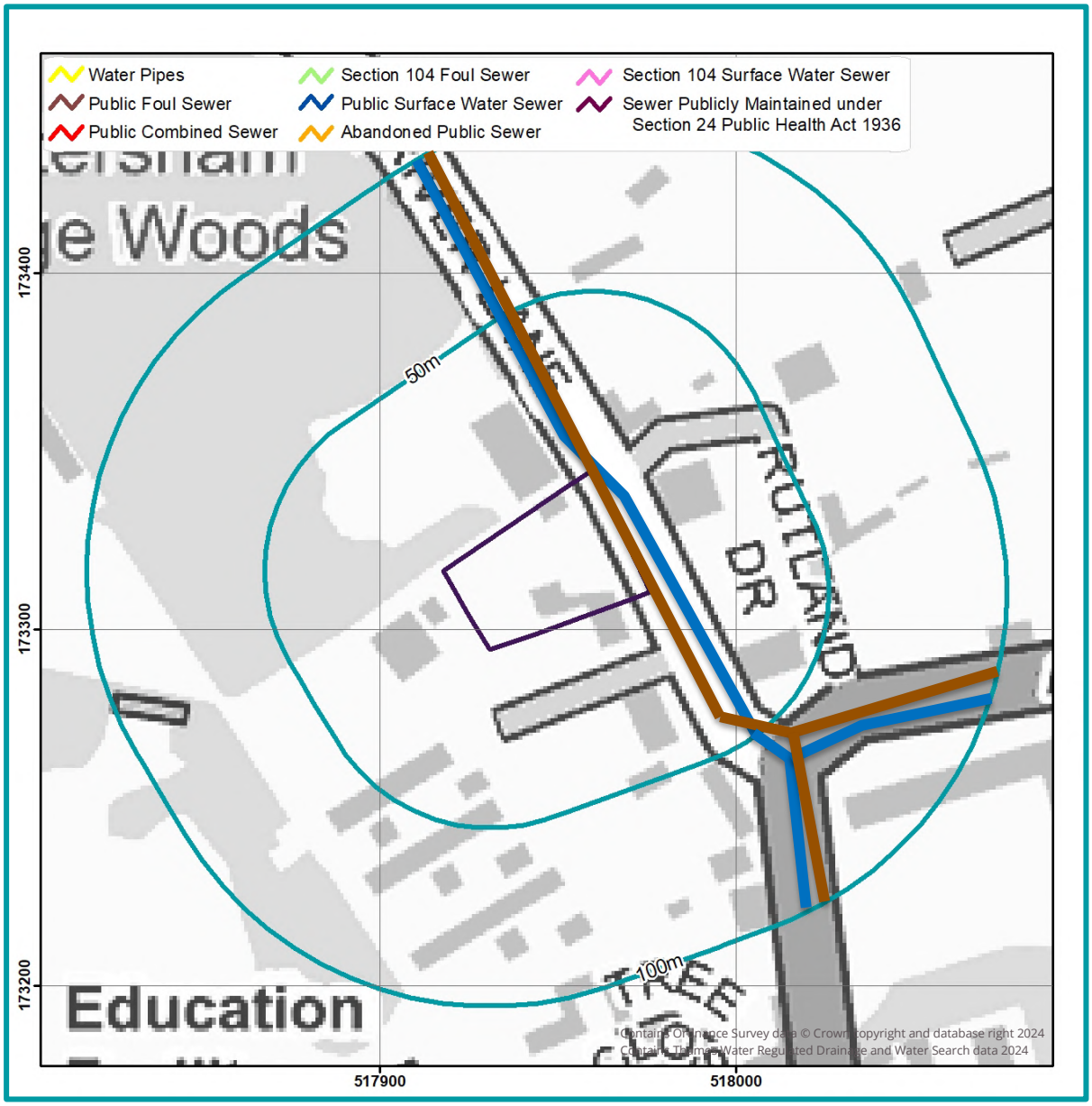


OS mapping indicates there is no surface water feature within 100 m of the Site. Discharging surface water runoff to a surface water feature would require drainage pipework to cross a significant distance across third-party, urbanised land and therefore is not considered feasible.

According to DEFRA's Magic Map, Richmond Park SSSI is 250 m to the east of the Site.

Further analysis could be undertaken by visiting the Site or by contacting the Local Council and the Environment Agency (EA) to confirm the presence, location and condition of any unmapped surface water features.

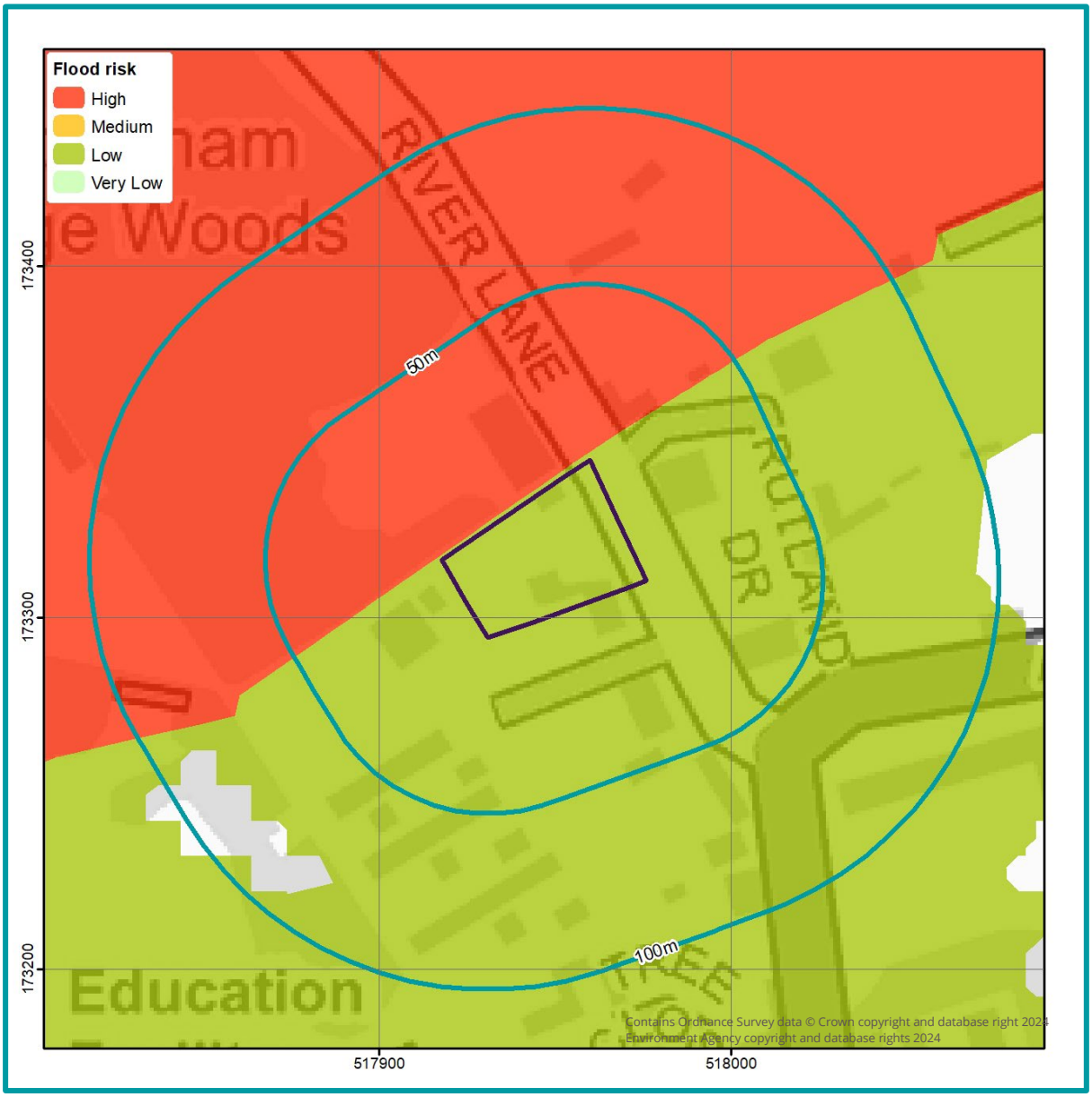
Figure 6. Sewer features map (OS & Thames Water, 2024)



GeoSmart has undertaken an assessment of the location of sewer features within the vicinity of the Site. According to the Thames Water asset location plan there is a public surface water sewer, located within 5 m to the east of the Site, beneath River Lane. Due to the close proximity discharge to the surface water sewer is likely to be appropriate.

Further analysis of the connections and condition of the public surface water drainage system should be undertaken by carrying out a CCTV survey or by contacting the drainage provider or the Local Council to confirm the presence, location and condition of the sewer. Consultation with the drainage provider would also be required to determine that sufficient capacity is available to accept the proposed discharge, and to gain permission to connect if required.

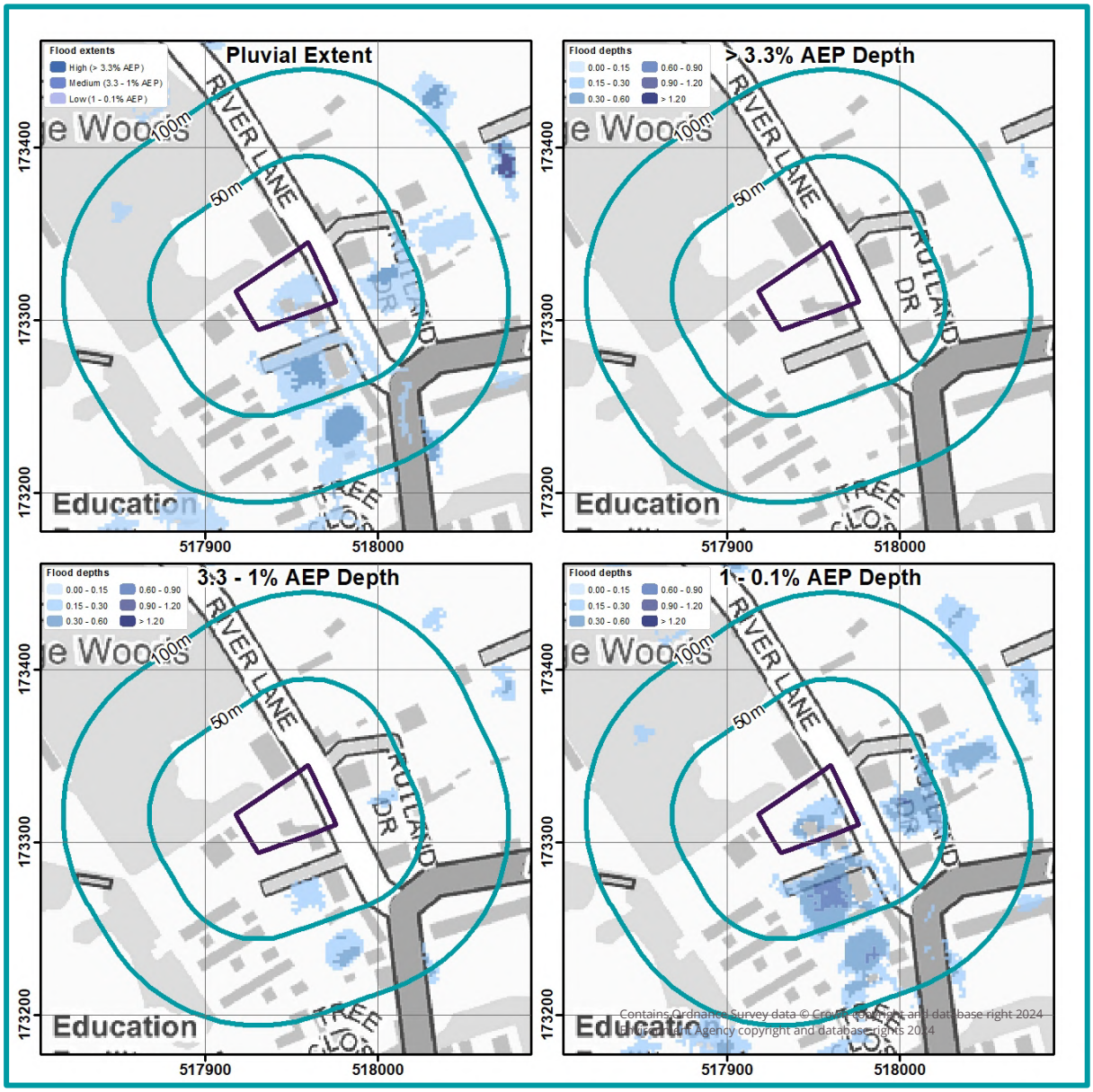
Figure 7. Risk of flooding from rivers & sea map (EA, 2024)



According to the EA's Risk of Flooding from Rivers and the Sea (RoFRS) map, the Site has a Low risk with less than 1% annual probability of flooding from fluvial or coastal flooding, therefore the SuDS design is unlikely to be affected.

A separate Flood Risk Assessment has been undertaken (ref: 82971), where the potential risks to the development are discussed further.

Figure 8. Risk of surface water flooding map (EA, 2024)

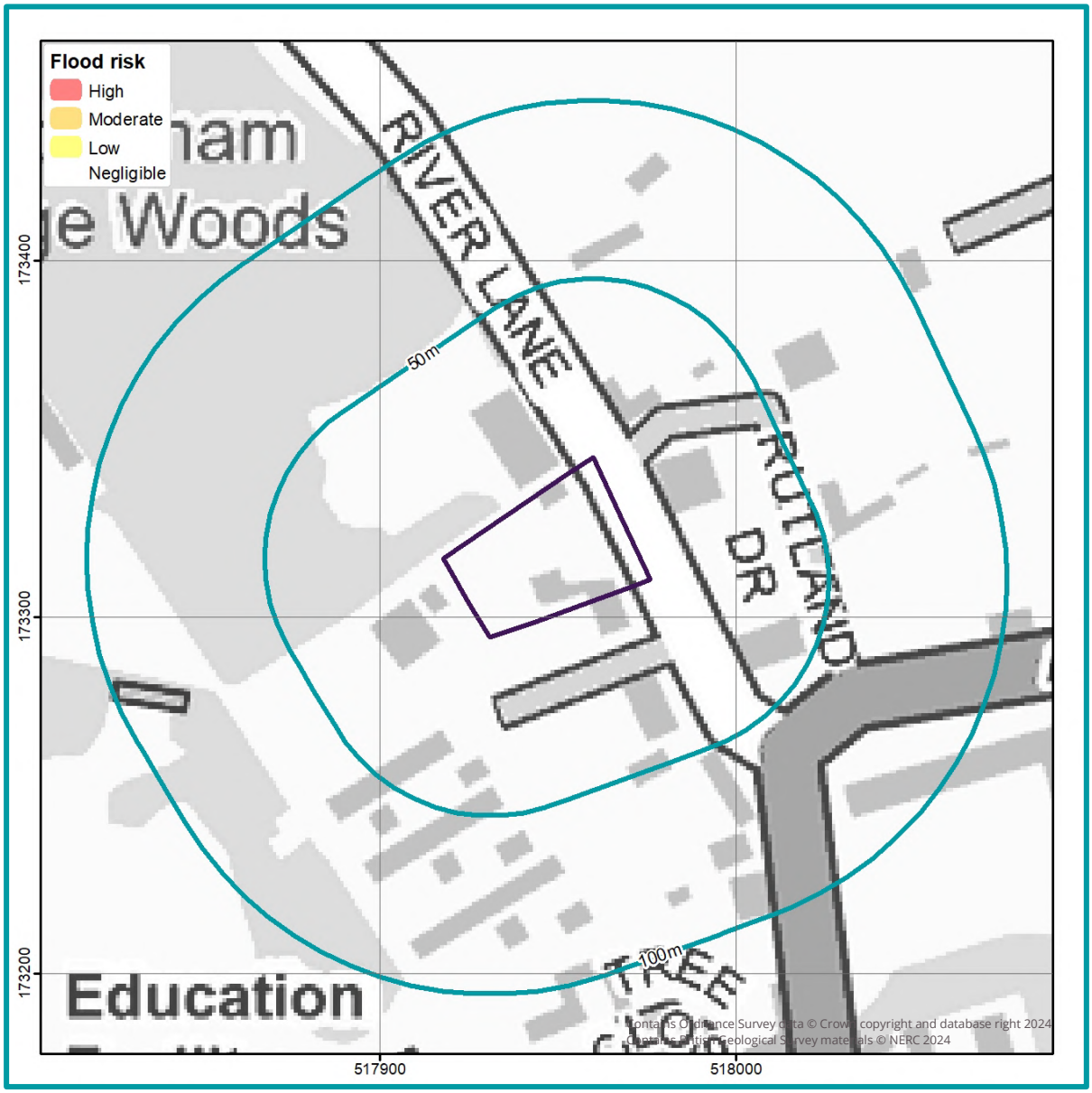


GeoSmart have undertaken an assessment of the risk of flooding from surface water (pluvial) sources within the vicinity of the Site using the EA's Risk of Flooding from Surface Water (RoFSW) mapping. The EA's mapping confirms the Site is considered to be at Very Low to Low risk of surface water flooding.

The above map shows the extent and depth of flooding during the >3.3% annual probability (AEP) (1 in 30 year – High risk), 3.3 – 1% AEP (1 in 100 year – Medium risk) and 1 – 0.1% AEP (1 in 1000 year – Low risk) events. This confirms there are areas where flooding could occur in a 1 in 1000 year event. Flooding in these areas may constrain certain types of SuDS features being used.

A separate Flood Risk Assessment has been undertaken (ref: 82971), where the potential pluvial flooding risks to the development are discussed further.

Figure 9. Groundwater flood risk (GW5) map (GeoSmart, 2024)



GeoSmart have undertaken an assessment of the risk of flooding from groundwater within the vicinity of the Site. GeoSmart's Groundwater Flood Risk Screening (GW5) map confirms the Site has a baseline Negligible risk of groundwater flooding during a 1% annual probability (1 in 100 year) event.

Based on relevant borehole data, there is the potential for a shallow water table beneath the Site. The groundwater risk rating has therefore been raised to Low.

A separate Flood Risk Assessment has been undertaken (ref: 82971), where the potential groundwater risks to the development are discussed further.

4 Site context

Site information

The purpose of this report is to assess the potential for disposing of surface water through a Sustainable Drainage System (SuDS) for the site of The Navigator's House, River Lane, Petersham, TW10 7AG (the Site). The Site is located in the London Borough of Richmond upon Thames in a setting of commercial and residential use.

The land slopes to the southeast from 6.39 mAOD to 5.36 mAOD along the southern boundary. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ±150 mm.

Development

The Site is currently used within a residential capacity as a two-storey semidetached plus basement dwelling including an outbuilding and landscaped areas. Development proposals comprise the extension of the conservatory on the ground floor to the rear of the dwelling over part of the existing patio area and internal modifications. Site plans and drawings are provided in Appendix A.

Geology, permeability and thickness

British Geological Survey (BGS) national superficial and bedrock geology mapping confirms the geological formations underlying the Site and each formation may have a range of permeability.

Table 2. Site Geology

Geology present on-Site		Potentially permeable?
Superficial geology (Figure 11)	Langley Silt Member (LASI) – Clay and Silt	X
Bedrock geology (Figure 12)	London Clay Formation (LC) – Clay and Silt	X

The permeability of the underlying material at the Site shown within the BGS mapping is low, confirmation of the infiltration capacity is not considered to be required.

The BGS website was used to extract ground information from the most relevant borehole records to the Site (ref: TQ17SE281, TQ17SE280, and TQ17SE106). These boreholes are located approximately 270 m to the northeast, 265 m to the northeast, and 95 m to the north

of the Site at an elevation of 6.5 mAOD, 6.5 mAOD, and 4.8 mAOD respectively, compared to levels on-Site of 5.36 to 6.39 mAOD.

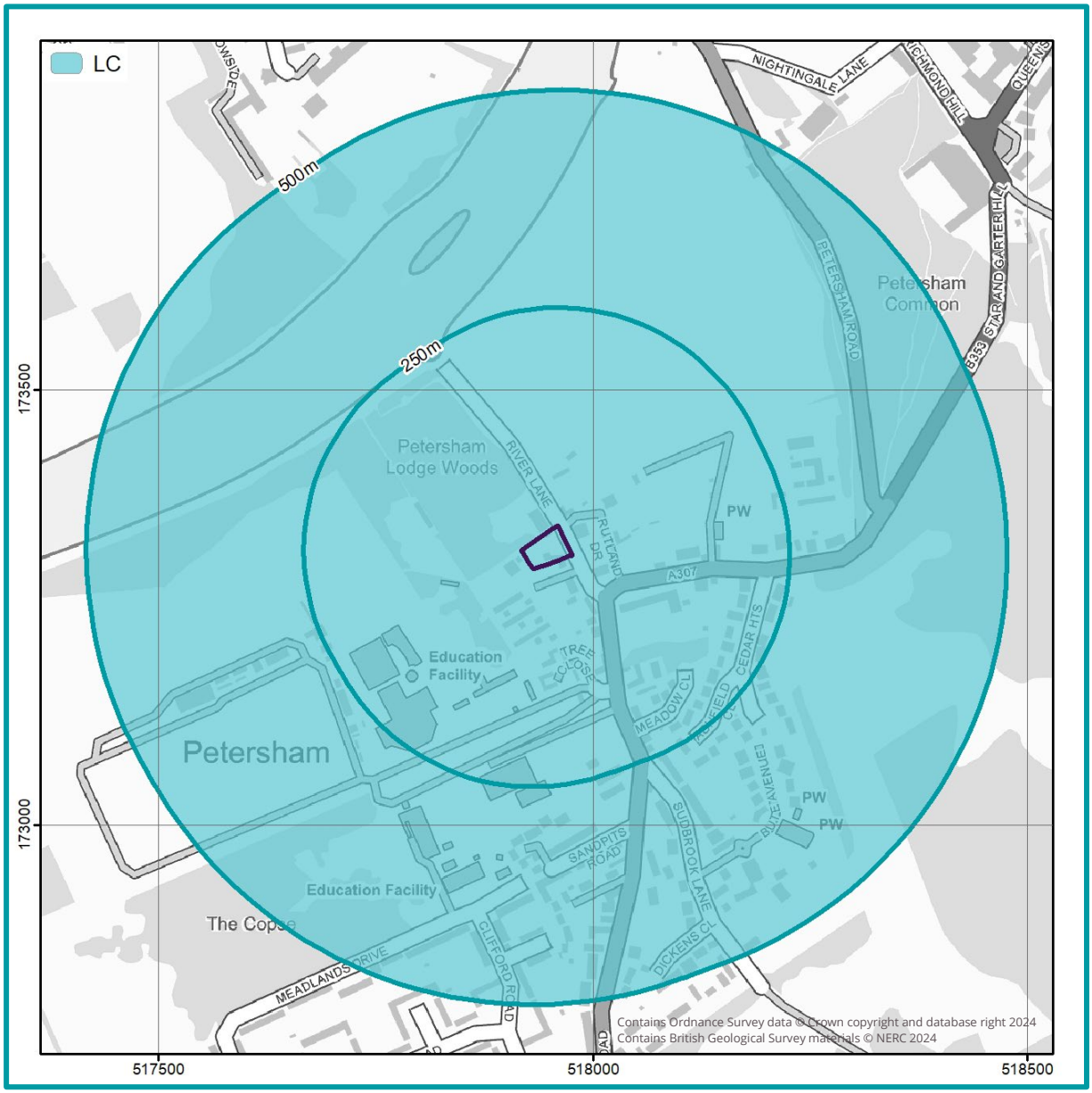
TQ17SE281 indicates the underlying geology is comprised of Tarmac to a depth of 0.20 m below ground level (bgl) underlain by Fill to a depth of 1.6 m bgl, clayey silty sand to a depth of 3.3 m bgl, coarse sand to a depth of 5.5 m bgl, sand and gravel to depth of 7.0 m bgl, and sandy clayey silt to a depth of 10 m bgl where the borehole record terminates.

TQ17SE280 indicates the underlying geology is comprised of Tarmac to a depth of 0.20 m below ground level (bgl) underlain by Fill to a depth of 1.6 m bgl, clayey silty sand to a depth of 3.3 m bgl, coarse sand to a depth of 5.5 m bgl, sand and gravel to depth of 7.4 m bgl, and sandy clayey silt to a depth of 10 m bgl where the borehole record terminates.

TQ17SE106 indicates the underlying geology is comprised of Mould to a depth of 0.30 m bgl underlain by Loam to a depth of 0.9 m bgl, Sand to a depth of 1.5 m bgl, Ballast to a depth of 1.7 m bgl, Sand to depth of 3.5 m bgl, Gravel to a depth of 4.6 m bgl, and London Clay to a depth of 6.4 m bgl where the borehole record terminates.

Figure 10. Superficial Geology (BGS, 2024)

Figure 11. Bedrock Geology (BGS, 2024)



Depth to groundwater

The SuDS system should be designed to operate in periods of extreme groundwater levels.

- Borehole TQ17SE281 reported striking groundwater on the boundary between the coarse sand and sand and gravel at a depth of 5.5 m bgl rising to 5.3 m bgl, and 5.0 m bgl after thirty minutes. The standing water level was reported to have reached 4.8 m bgl on 25.05.07.
- Borehole TQ17SE280 reported striking groundwater in the sand and gravel at a depth of 5.7 m bgl rising to 5.4 m bgl, and 5.0 m bgl after thirty minutes. The standing water level was reported to have reached 4.5 m bgl once casing was removed.

- Borehole TQ17SE106 reported the rest-level of water to be 3 m bgl within the superficial sand.

Relevant borehole records indicate groundwater levels may fluctuate between 3 m and 4.8 m bgl within superficial sand.

According to relevant borehole records, shallow groundwater is potentially a problem at the Site.

Infiltration features are not proposed at the Site, given the anticipated low permeability of the underlying geology and the potential for shallow groundwater.

Ground conditions

Infiltration SuDS features are not proposed at the Site, therefore a detailed investigation into the ground conditions is not required.

Water quality

The Site does not lie within an SPZ and infiltration features are not proposed therefore for the purposes of the sustainable drainage assessment further consideration of the historical land uses (and any associated contamination risks) is not considered necessary.

5 National & local policy context

National Guidance

CIRIA SuDS Manual (C753) (2015)

A development should utilise sustainable drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

1. Use infiltration techniques, such as porous surfaces in non-clay areas,
2. attenuate rainwater in ponds or open water features for gradual release,
3. attenuate rainwater by storing in tanks or sealed water features for gradual release,
4. discharge rainwater direct to a watercourse,
5. discharge rainwater to a surface water sewer / drain,
6. discharge rainwater to the combined sewer.

Defra - Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems (2015)

Peak Flow control

For developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event.

For greenfield developments, the peak runoff rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event should never exceed the peak greenfield runoff rate for the same event.

Volume control

Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but should never exceed the runoff volume from the development site prior to redevelopment for that event. The runoff volume must be discharged at a rate that does not adversely affect flood risk.

The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the Site for a 1 in 30 year rainfall event.

Ministry of Housing, Communities & Local Government – National Planning Practice Guidance: Flood risk assessments: climate change allowances (2022)

The Peak rainfall intensity allowances section provides advice on the increased rainfall effects on river levels and land and urban drainage systems. As of May 2022, the applicable climate change allowance is defined by specific Management Catchment for the 1 in 30 (≥ 3.3% AEP) and 1 in 100 (< 3.3 to 1% AEP) year event.

As the Site is located within the London Management Catchment the following climate change allowances are applicable.

Table 3. London Management Catchment peak rainfall allowances

London Management Catchment	3.3% Annual exceedance rainfall event		1% Annual exceedance rainfall event	
	2050s	2070s	2050s	2070s
Central	20%	20%	20%	25%
Upper end	35%	35%	40%	40%

The drainage system should be designed to make sure there is no increase in the rate of runoff discharged from the Site for the upper end allowance.

Where on-Site flooding for the upper end allowance presents a significant flood hazard (for example, depths and velocities of surface water runoff cause a significant danger to people), you will need to take further mitigation measures to protect people and property (for example, raising finished floor levels). As a minimum, there should be no significant flood hazard to people from on-Site flooding for the central allowance.

Regional Drainage Policy

London Plan - Policy SI13 Sustainable drainage (2021)

Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed. Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

1. Rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation);
2. Rainwater infiltration to ground at or close to source;

3. Rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens);
4. Rainwater discharge direct to a watercourse (unless not appropriate);
5. Controlled rainwater discharge to a surface water sewer or drain;
6. Controlled rainwater discharge to a combined sewer.

Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.

Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

Development proposals should aim to get as close to greenfield run-off rates as possible depending on Site conditions. The well-established drainage hierarchy set out in this policy helps to reduce the rate and volume of surface water run-off. Rainwater should be managed as close to the top of the hierarchy as possible. There should be a preference for green over grey features, and drainage by gravity over pumped systems. A blue roof is an attenuation tank at roof or podium level; the combination of a blue and green roof is particularly beneficial, as the attenuated water is used to irrigate the green roof.

For many sites, it may be appropriate to use more than one form of drainage, for example a proportion of rainwater can be managed by more sustainable methods, with residual rainwater managed lower down the hierarchy. In some cases, direct discharge into the watercourse is an appropriate approach, for example rainwater discharge into the tidal Thames or a dock. This should include suitable pollution prevention filtering measures, ideally by using soft engineering or green infrastructure. In addition, if direct discharge is to a watercourse where the outfall is likely to be affected by tide-locking, suitable storage should be designed into the system. However, in other cases direct discharge will not be appropriate, for example discharge into a small stream at the headwaters of a catchment, which may cause flooding. This will need to be assessed on a case-by-case basis, taking into account the location, scale and quality of the discharge and the receiving watercourse. The maintenance of identified drainage measures should also be considered in development proposals.

Local Policy

London Borough of Richmond Upon Thames – Planning Guidance Document. Delivering SuDS in Richmond (EPG, 2015).

The London Borough of Richmond upon Thames has a policy requiring the incorporation of SuDS into development proposals.

The Council's Strategic Flood Risk Assessment identified that reducing the rate of discharge from development sites to greenfield runoff rates is one of the most effective ways of reducing and managing flood risk within the borough. This will be part of the SuDS design,

along with a number of other considerations such as preventing any discharge of surface water from a site for the majority of rainfall events up to 5mm depth and treating pollution in runoff.

7.2 Controlling Flows and Volumes

Greenfield run-off is the surface water drainage regime from a site prior to development. To maintain the natural equilibrium of a site, the surface water discharge from a developed site should not exceed the natural greenfield run-off rate. Advice on allowable discharge rates to watercourses for sites or on the design criteria, technical feasibility and future sustainability of the drainage system can be found on the Susdrain website (www.susdrain.org)

London Borough of Richmond Upon Thames – Development Management Plan (2011).

Policy DM SD 7

Sustainable Drainage

All development proposals are required to follow the drainage hierarchy (see below) when disposing of surface water and must utilise Sustainable Drainage Systems (SuDS) wherever practical. Any discharge should be reduced to greenfield run-off rates wherever feasible.

When discharging surface water to a public sewer, developers will be required to provide evidence that capacity exists in the public sewerage network to serve their development.

London Borough of Richmond upon Thames Local Plan (2018)

Sustainable drainage

The Council will require the use of Sustainable Drainage Systems (SuDS) in all development proposals. Applicants will have to demonstrate that their proposal complies with the following:

1. A reduction in surface water discharge to greenfield run-off rates wherever feasible.

2. Where greenfield run-off rates are not feasible, this will need to be demonstrated by the applicant, and in such instances, the minimum requirement is to achieve at least a 50% attenuation of the site's surface water runoff at peak times based on the levels existing prior to the development.

6 Storage, volume and peak flow rate

Table 4. Change in impermeable area associated with the development

Total Site area	1,567 m^2
Impermeable area (and as a percentage of the total area of the proposed development footprint of 10 m^2) *	
Pre-development	Post-development
10 m^2 (100%)	10 m^2 (100%)
Impermeable land use: Existing patio area Permeable land use: N/A	New impermeable land use: 10 m^2 ground floor residential extension

*Only the area intended for building development has been considered for the calculations. As the remainder of the Site is undergoing no change as a result of the development, these areas are assumed to drain as existing.

The proposed development comprises of a ground floor residential extension in an area of existing patio resulting in no increase in impermeable area. Using a theoretical restricted discharge rate of 1 l/s (considered to be the lowest practical rate without increasing the risk of blockages) the proposed development results in no additional surface water runoff attenuation requirement at the Site.

The Site is therefore proposed to drain as existing. Opportunities for rainwater harvesting measures should be explored to provide a betterment on the existing scenario.

Guidance

"The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30 year rainfall event' and 'flooding does not occur during a 1 in 100 year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development"

(Defra, March 2015, non-statutory guidance).

Peak discharge rates

The table below presents peak discharge rates for a range of storm events used to assess the impact of the proposed development and select the maximum permitted discharge rate. Further information on the calculation and control of peak discharge rates is provided in Section 12 'Background Information'.

Table 5. Peak discharge rates associated with the development

Rainfall event	Greenfield runoff rates (l/s)	Existing runoff rates[1] (l/s)	Potential runoff rates without attenuation (l/s)	Potential minus existing (l/s)
QBAR	0.00	N/A	N/A	N/A
6 hour 1 in 1 year	0.00	0.01	0.01	0.00
6 hour 1 in 10 year	0.00	0.02	0.02	0.00
6 hour 1 in 30 year	0.00	0.03	0.03	0.00
6 hour 1 in 100 year	0.00	0.03	0.03	0.00
6 hour 1 in 100 year + 20% CC	N/A	N/A	0.04	0.01
6 hour 1 in 100 year + 40% CC	N/A	N/A	0.05	0.01

[1] Assumes 100% runoff from impermeable surfaces. Assumes Greenfield runoff from permeable surfaces calculated using the IoH124 method.

Relevant national, regional and local planning policy has been consulted in Section 5 to determine restrictions on runoff from previously developed and greenfield sites. In some cases, greenfield rates may be requested, but in practice it is difficult to restrict discharge rates at any one control point to less than 1 l/s, without increasing the risk of any potential blockages occurring in the drainage network.

Total discharge volumes

The table overleaf presents discharge volumes for a range of storm events used to assess the impact of the proposed development and calculate the required storage volumes. Further information on the calculation of total discharge volumes is provided in Section 11 'Methodology and Limitations'.

Table 6. Total discharge volumes associated with the development

Rainfall event	Greenfield runoff volume (m^3)	Existing runoff volume[2] (m^3)	Potential runoff volume without attenuation (m^3)	Potential minus existing (m^3)
QBAR	0.11	N/A	N/A	N/A
6 hour 1 in 1 year	0.08	0.26	0.26	0.00
6 hour 1 in 10 year	0.13	0.43	0.43	0.00
6 hour 1 in 30 year	0.17	0.56	0.56	0.00
6 hour 1 in 100 year	0.22	0.73	0.73	0.00
6 hour 1 in 100 year + 20% CC	N/A	N/A	0.88	0.15
6 hour 1 in 100 year + 40% CC	N/A	N/A	1.02	0.29

[2] Assumes 100% runoff from impermeable surfaces. Assumes Greenfield runoff from permeable surfaces calculated using the IoH124 method.

Critical storm duration and volume requirements

Storage volumes for a range of return periods including the 1 in 30 year, 1 in 100 year and 1 in 100 year plus climate change (40%) events have been calculated to assess the impact of the proposed development. The required storage volumes for attenuation features have been calculated for the critical storm durations, limited to a maximum discharge rate of 1 l/s (considered the lowest feasible discharge rate).

Table 7. Critical Storm Duration and Attenuation volume requirements

Return Period	Runoff rate restriction (l/s)*	Critical Storm Duration (hr)	Attenuation volume required (m^3)
1 in 30 year	1	N/A	0
1 in 100 year	1	N/A	0
1 in 100 year including a 40% climate change	1	N/A	0

*The restricted flow rate is to demonstrate that no attenuation is required for the additional runoff at what is considered to be the lowest practical restricted rate. It is not proposed to install any flow restriction at the Site.

7 Runoff destination

Options for the destination for the runoff generated on-Site have been assessed in line with the prioritisation set out in the Building Regulations Part H document (HM Government, published in 2010 and updated in 2015) and Defra's Non-statutory Technical Standards for SuDS (2015).

Flow attenuation using infiltration SuDS (discharge to ground) is generally the preferred option. If discharge to ground is not available, runoff discharge to surface water is the other preferred method. Only if these two options are impractical should discharge to the sewer network be considered.

Discharge to ground

The Site has Low potential for infiltration, with impermeable underlying Langley Silt Member (Silty Clay) and London Clay (Silty Clay). As a result of this infiltration to ground is not considered a feasible method of surface water management and is therefore not proposed.Choose an item.

Discharge to surface watercourse

The Site is not located within 100 m of a surface water feature; due to the significant drainage pipework that would be required to access any relevant water features, this is not considered a feasible option for discharging runoff.

Discharge to sewer

GeoSmart has undertaken an assessment of the location of sewer features within the vicinity of the Site. According to the asset location search obtained from Thames Water (Appendix C), a public surface water sewers is located within 5 m to the east of the Site, beneath River Lane. Due to the close proximity discharging runoff to the public sewer network is considered feasible.

8 Water quality

A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution. This can be effectively managed by an appropriate "train" or sequence of SuDS components that are connected in series. The frequent and short duration rainfall events are those that are most loaded with potential contaminants (silts, fines, heavy metals and various organic and inorganic contaminants). Therefore, the first 5-10 mm of rainfall (first flush) should be adequately treated with SuDS.

The minimum number of treatment stages will depend on the sensitivity of the receiving water body and the potential hazard associated with the proposed development SuDS Manual (CIRIA, 2015). The hazard of the proposed development is Very Low (roof water). The Site does not lie within an SPZ and therefore additional treatment stages are not required.

Table 8. Level of hazard

Hazard	Source of hazard
Very Low	Residential roof drainage
Low	Residential, amenity uses including low usage car parking spaces and roads, other roof drainage.
Medium	Commercial, industrial uses including car parking spaces and roads (excluding low usage roads, trunk roads and motorways).
High	Areas used for handling and storage of chemicals and fuels, handling of storage and waste (incl. scrap-yards).

The recommended minimum number treatment stages suggested for the different runoff waters identified for the proposed development is highlighted in the table below.

Table 9. Minimum number of treatment stages for runoff

		Sensitivity of the receiving water body		
		Low	Medium	High
Hazard	Low	1	1	1
	Med	2	2	2
	High	3	3	3

9 Proposed SuDS strategy

Sustainable drainage systems

As the proposed development, at a discharge rate of 1 l/s, has no required attenuation volume and therefore is likely to be managed by the existing drainage network. The current drainage system should be inspected and maintained in perpetuity of the existing and proposed development over its projected lifespan.

Based on the above sections, the continued discharge of surface water to the nearby sewer network is considered the most feasible drainage option for the Site. Consideration should be made to the adoption of rainwater harvesting measures to reduce the volume of water entering the sewer system.

SuDS Strategy:

Infiltration to ground is not achievable at the Site, and water features were not identified or available, therefore surface water runoff will be discharged to the existing Site drainage network.

Table 10. Proposed SuDS sizing (dimensions) and attenuation volumes

Rainwater Harvesting	To comply with London Plan policy opportunities for rainwater harvesting should be explored where feasible. In terms of attenuation storage within this SuDS scheme, the volume of run-off which could be attenuated by rainwater harvesting has not been considered.
Total Attenuation Provided	0 m^3
Total Attenuation Required	0 m^3

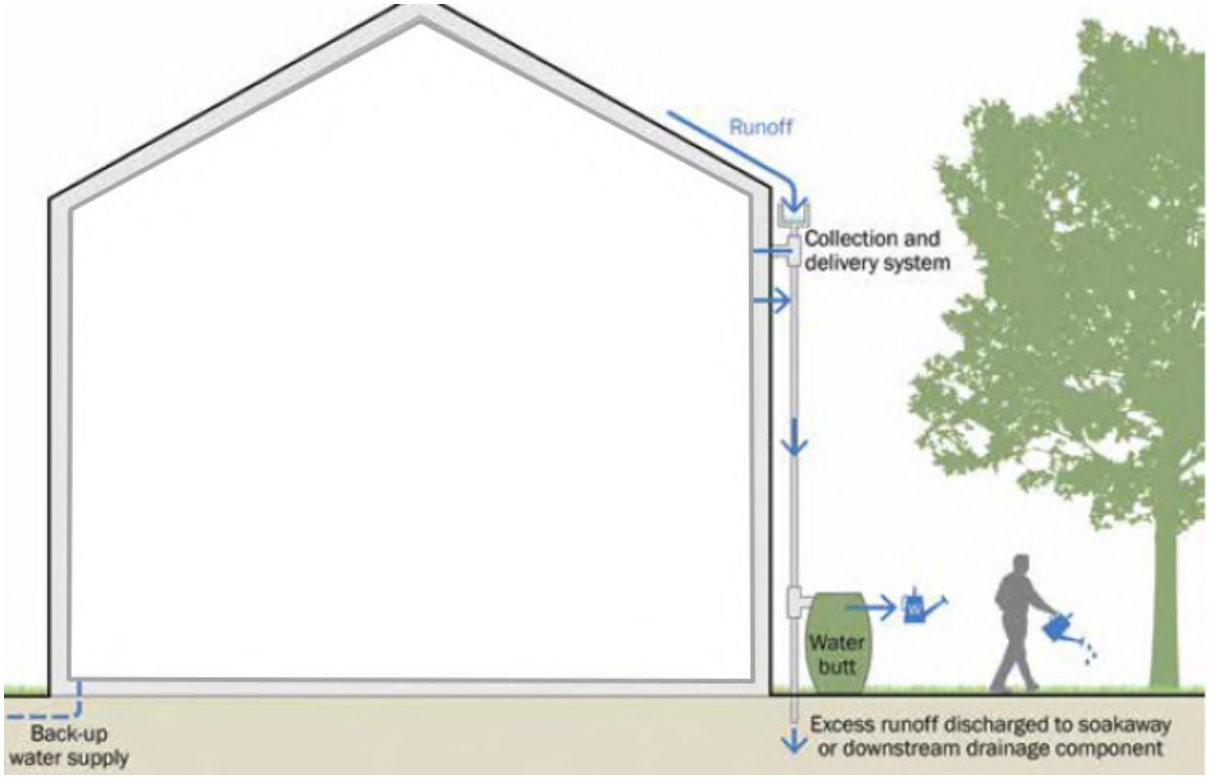
Rainwater harvesting

To comply with London Plan policy, rainwater harvesting features should be utilized where feasible.

Due to the relatively insignificant amounts of attenuation provided by rainwater harvesting tanks in this instance and the requirement to retain water for non-potable uses such garden maintenance, the volume of run-off which could be attenuated by rainwater harvesting has not been considered within the report.

Roof run-off is generally less polluted than run-off from road surfaces but can still generate pollutants such as sediments. Pollutants would be captured by the collection and filtration

system and, by reducing the volume of run-off generated from the Site. Primary screening devices are used to prevent leaves and other debris from entering the butt and first flush devises can be designed to divert the first part of the rainfall away from the main storage tank and can pick up most of the dirt, debris and contaminates that collect on a residential roof.



Modified from Figure 11.3 of the CIRIA SuDS Manual (C753) (2015)

10 SuDS maintenance

Regular maintenance is essential to ensure effective operation of the SuDS features over the intended lifespan of the proposed development. The SuDS Manual (C753) (CIRIA, 2015) provides a maintenance schedule for SuDS with details of the necessary required actions as shown in the Table below.

Table 11. SuDS operation and recommended maintenance requirements

Asset type	Maintenance schedule (and frequency)
Underground drainage pipe network	Regular maintenance: • Remove sediment and debris from pre-treatment devices and floor of inspection tube or chamber (annually). • Cleaning of gutters and any filters on downpipes (annually). • Trimming any roots that may be causing blockages (annually or as required). Monitoring: • Inspect silt traps and note rate of sediment accumulation (monthly in the first year and then annually).
Rainwater Harvesting	Regular maintenance: • Inspection of tank for debris and sediment build up (annually and following poor performance). • Inspection of inlets, outlets, overflow areas, pumps and filters (annually and following poor performance). • Cleaning of tank, inlets, outlets, gutters, roof drain filters and withdrawal devices (annually or as required). Remedial actions: • Repair or overflow erosion damage or damage to tank and associated components (as required)

Client checklist

A drainage strategy has been recommended as suitable on the basis of the information provided. Prior to installation of the Site drainage system it is recommended that the client carries out the following checks to confirm the development proposals. GeoSmart would be able to support with any updates required to the drainage scheme, please contact us and we would be happy to provide you with a proposal to undertake the work.

Table 12. Potential SuDS limitations

Conditions in Non-Statutory Technical Standards (Defra, 2015), limitations to infiltration SuDS	Do these conditions arise at the Site?
Is the surface runoff greater than the rate at which water can infiltrate into the ground?	
Is there an unacceptable risk of ground instability?	
Is there an unacceptable risk of mobilising contaminants?	
Is there an unacceptable risk of pollution to groundwater?	
Is there an unacceptable risk of groundwater flooding?	
Is the infiltration system going to create a high risk of groundwater leakage to the combined sewer?	

Table 13. SuDS design considerations

Confirm that potential flooding on-Site in excess of the design storm event and exceedance flow routes have been considered.	
Review options for the control of discharge rates (e.g. hydrobrake).	
Confirm the owners/adopters of the drainage system. Consider management options for multiple owners.	
Is there an unacceptable risk of pollution to groundwater?	
Review access and way leave requirements.	
Review maintenance requirements.	

Health and safety considerations for SuDS

GeoSmart reports may include outline strategies or designs to support with development plans. Any drawings or advice provided do not comprise any form of detailed design. Implementation of any conceptual scheme options may constitute 'Construction Work' as defined by CDM Regulations (2015).

The CDM Regulations place specific Health and Safety duties on those commissioning, planning and undertaking construction works. If you are uncertain what this means you should seek the advice of your architect, builder or other competent professional.

GeoSmart does not provide health and safety advisory services but we are required to advise you of your general responsibilities under CDM (visit http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/ for more information).

Please remember that detailed design work should be undertaken by a competent professional who might be your engineer, architect, builder or another competent party.

11 Methodology and limitations of study

This report assesses the feasibility of infiltration SuDS and alternative drainage strategies in support of the Site development process. From April 6th 2015 SuDS are regulated by Local Planning Authorities and will be required under law for major developments in all cases unless demonstrated to be inappropriate. What is considered appropriate in terms of costs and benefits by the Planning Authority will vary depending on local planning policy, and Site setting. The Lead Local Flood Authority will require information as a statutory consultee on major planning applications with surface water drainage implications. The National Planning Policy Framework requires that new developments in areas at risk of flooding should give priority to the use of SuDS and demonstrate that the proposed development does not increase flood risk downstream to third parties.

How was the suitability of SuDS estimated for the Site?

There are a range of SuDS options available to provide effective surface water management that intercept and store excess runoff. When considering these options, the destination of the runoff should be assessed using the order of preference outlined in the Building Regulations Part H document (HM Government, 2010) and Defra's National Standards for SuDS (2015):

1. Discharge to the ground;
2. Discharge to a surface water body;
3. Discharge to a surface water sewer;
4. Discharge to a local highway drain; and
5. Discharge to a combined sewer.

Data sets relating to each of the potential discharge options have been analysed to assess the feasibility of each option according to the hierarchy set out above. Hydrogeological characteristics for the Site are assessed in conjunction with the occurrence of SPZ's to assess infiltration suitability. The Site has been screened to determine whether flood risk from groundwater, surface water, fluvial or coastal sources may constrain SuDS. The distance to surface water bodies and sewers has been reviewed gauge whether these provide alternative options.

GeoSmart SuDS Infiltration Suitability Map (SD50)

The GeoSmart SuDS Infiltration Suitability Map (SD50) screens the suitability for infiltration drainage in different parts of the Site and indicates where further assessment is recommended. In producing the SuDS Infiltration Suitability Map (SD50), GeoSmart used data from the British Geological Survey on groundwater levels, geology and permeability to screen

for areas where infiltration SuDS may be suitable. The map classifies areas into 3 categories of High, Medium and Low suitability for infiltration SuDS. This can then be used in conjunction with additional data on Site constraints to give recommendations for SuDS design and further investigation.

The primary constraint on infiltration potential is the minimum permeability of the underlying material and in some cases the range in permeability may be considerable, ranging down to low. The map classifies these areas as moderate infiltration suitability requiring further investigation. In cases where the thickness of the receiving permeable horizon is less than 1.5 meters then additional Site investigation is recommended. If the Site is at risk of groundwater flooding for up to the 1% annual occurrence the map classifies these areas as moderate infiltration suitability requiring further investigation.

The GeoSmart SuDS Infiltration Suitability Map (SD50) is a national screening tool for infiltration SuDS techniques but a Site specific assessment should be used before final detailed design is undertaken. Further information on the GeoSmart SuDS Infiltration Suitability Map (SD50) is available at geosmartinfo.co.uk

How is the suitability to discharge to sewers and watercourses calculated?

The suitability to discharge to discharge to sewers and watercourses has been calculated using the distance from the Site to both. For example, where the Site is within 50 m of a surface water body. Discharge to surface water is potentially appropriate subject to land access arrangements and a feasibility assessment. Where the Site is within 50 m of a sewer, discharge to sewer is potentially appropriate subject to land access arrangements and a feasibility assessment. The utility company should be contacted to agree connection feasibility and sewer capacity.

Further information relating to sewers available in the area can be found in Appendix C.

What is a Source Protection Zone?

The Environment Agency have defined Source Protection Zones (SPZs) for 2000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which is occasionally applied. The zones are used to set up pollution prevention measures in areas which are at a higher risk. The shape and size of a zone depends on the condition of the ground, how the groundwater is removed, and other environmental factors. Inner zone (Zone 1) is defined as the 50 day travel time from any point below the water table to the source (minimum radius of 50 metres). Outer zone (Zone 2) is defined by a 400 day travel time. Total catchment (Zone 3) is defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source.

How was surface water runoff estimated from the Site?

In accordance with The SuDS Manual (C753) (CIRIA, 2015), the Greenfield runoff from the Site has been calculated using the IoH124 method and is assumed representative of the runoff generated on the undeveloped surfaces that are affected by the proposed development. The method used for calculating the runoff complies with the NPPF (MHCLG, 2023). For the impermeable surfaces, it has been assumed that 100% runoff will occur (calculations provided in Appendix B). Rainfall data is derived from the Flood Estimation Handbook (FEH), developed by NERC (2009). Only areas affected by the proposed development are considered in the flow and volume calculations. Permeable areas that remain unchanged are not included in the calculations as it is assumed these will not be actively drained and attenuated.

What is the peak discharge rate?

An estimation of peak runoff flow rate and volume is required to calculate infiltration, storage and discharge requirements. The peak discharge rate is the maximum flow rate at which surface water runoff leaves the Site during a particular storm event, without considering the impact of any mitigation such as storage, infiltration or flow control. Proposed discharge rates (with mitigation) should be no greater than existing rates for all corresponding storm events. If all drainage is to infiltration there will be no discharge off-Site. Discharging all flow from Site at the existing 1 in 100 event would increase flood risk during smaller events. Flow restriction is generally required to limit the final discharge from Site during all events as a basic minimum to the green field QBAR rate. A more complex flow restriction which varies the final discharge rate from the Site depending on the storm event will reduce the volume of storage required on-Site. Drainage to infiltration SuDS is subtracted from the total discharge off-Site to achieve a beneficial net affect.

What is the total discharge volume?

The total discharge volume is calculated on the basis of the surface water runoff that has the potential to leave the Site as a result of the assumed 6 hour duration design storm event. The runoff is related to the underlying soil conditions, impermeable cover, rainfall intensity and duration of the storm event. The total volume generated by the current Site is compared to the potential total volume from the developed Site (not taking into consideration any mitigation). The difference provides the minimum total volume that will need to be stored and infiltrated on-Site or released at a controlled rate. Guidance indicates that the total discharge volume should never exceed the runoff volume from the development Site prior to redevelopment for that event and should be as close as is reasonably practicable to the Greenfield runoff volume.

12 Background SuDS information

SuDS control surface water runoff close to where it falls. SuDS are designed to replicate, as closely as possible, the natural drainage from the Site before development to ensure that the flood risk downstream does not increase as a result of the Site being developed, and that the Site will have satisfactory drainage under current and likely future climatic conditions. SuDS provide opportunities to reduce the causes and impacts of flooding; remove pollutants from urban runoff at source; and combine water management with green space with benefits for amenity, recreation and wildlife. Government planning policy and planning decisions now include a presumption in favour of SuDS being used for all development Sites, unless they can be shown to be inappropriate.

For general information on SuDS see our website: http://geosmartinfo.co.uk/

Infiltration SuDS

Government policy for England is to introduce sustainable drainage systems (SuDS) via conditions in planning approvals. Guidance indicates that capturing rainfall runoff on-Site and infiltrating it into the ground (infiltration SuDS) is the preferred method for managing surface water without increasing flood risk downstream.

The greatest benefit to general flood risk is if all runoff is infiltrated on-Site, however, this may not be feasible due to physical and economic constraints in which case infiltration may be considered as a part of an integrated drainage solution. The final design capacity for an infiltration SuDS system depends on the Site constraints and the requirements of the individual Planning Authority and the Lead Local Flood Authority.

The capacity of the ground to receive infiltration depends on the nature, thickness and permeability of the underlying material and the depth to the high groundwater table. The final proportion of the Site drained by infiltration will depend on topography, outfall levels and a suitable drainage gradient. It is important to note that, even if the whole Site cannot be drained by infiltration, the use of partial infiltration is encouraged, with the remainder of runoff discharged via other SuDS systems.

Types of infiltration SuDS

Infiltration components include infiltration trenches, soakaways, swales and infiltration basins without outlets, rain gardens and permeable pavements. These are used to capture surface water runoff and allow it to infiltrate (soak) and filter through to the subsoil layer, before returning it to the water table below.

An infiltration trench is usually filled with permeable granular material and is designed to promote infiltration of surface water to the ground. An infiltration basin is a dry basin or depression designed to promote infiltration of surface water runoff into the ground. Soakaways are the most common type of infiltration device in the UK where drainage is often connected to over-sized square or rectangular, rubble-filled voids sited beneath lawns.

According to the guidance in Building Research Establishment (BRE) Digest 365 (2016) a soakaway must be able to discharge 50% of the runoff generated during a 1 in 10 year storm event within 24 hours in readiness for subsequent storm flow. This is the basic threshold criteria for a soakaway design and the internal surface area of the proposed soakaway design options should be calculated on this basis by taking into account the soil infiltration rate for the Site.

Developers need to ensure their design takes account of the construction, operation and maintenance requirements of both surface and subsurface components, allowing for any machinery access required.

SuDS maintenance and adoption

Regular maintenance is essential to ensure effective operation of the soakaway(s) over the intended lifespan of the proposed development. A maintenance schedule for SuDs is required. Sewerage undertakers or Local Authorities may adopt SuDS and will require maintenance issues to be dealt with in accordance with their Management Plan. If the SuDS will not be adopted other provision is required with associated financial implications. Maintenance is a long-term obligation requiring the upkeep of all elements of the SuDS, including mechanical components (e.g. pumps), as well as inspections, regular maintenance and repair.

Additional background SuDS information can be found on our website: http://geosmartinfo.co.uk/

13 Further information

The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products			
	Additional assessment: EnviroSmart Report		Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective. Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements. Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions. Please contact info@geosmartinfo.co.uk for further information.

14 References and glossary

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GeoSmart Information

Glossary

General terms

Attenuation	Reduction of peak flow and increased duration of a flow event.
Combined sewer	A sewer designed to carry foul sewage and surface water in the same pipe.
Detention basin	A vegetated depression, normally is dry except after storm events, constructed to store water temporarily to attenuate flows. May allow infiltration of water to the ground.
Evapotranspiration	The process by which the Earth's surface or soil loses moisture by evaporation of water and by uptake and then transpiration from plants.
FEH	Flood Estimation Handbook, produced by Centre for Ecology and Hydrology, Wallingford (formerly the Institute of Hydrology).
Filter drain or trench	A linear drain consisting of a trench filled with a permeable material, often with a perforated pipe in the base of the trench to assist drainage, to store and conduct water, but may also be designed to permit infiltration.
First flush	The initial runoff from a site or catchment following the start of a rainfall event. As runoff travels over a catchment it will collect or dissolve pollutants, and the "first flush" portion of the flow may be the most contaminated as a result. This is especially the case for intense storms and in small or more uniform catchments. In larger or more complex catchments pollution.
Flood plain	Land adjacent to a watercourse that would be subject to repeated flooding under natural conditions (see Environment Agency's Policy and practice for the protection of flood plains for a fuller definition).
Greenfield runoff	This is the surface water runoff regime from a site before development, or the existing site conditions for brownfield redevelopment sites.
Impermeable surface	An artificial non-porous surface that generates a surface water runoff after rainfall.
Permeability	A measure of the ease with which a fluid can flow through a porous medium. It depends on the physical properties of the medium, for example grain size, porosity and pore shape.

Runoff	Water flow over the ground surface to the drainage system. This occurs if the ground is impermeable, is saturated or if rainfall is particularly intense.
Sewerage undertaker	This is a collective term relating to the statutory undertaking of water companies that are responsible for sewerage and sewage disposal including surface water from roofs and yards of premises.
Soakaway	A subsurface structure into which surface water is conveyed to allow infiltration into the ground.
Treatment	Improving the quality of water by physical, chemical and/or biological means.

The terms included in this glossary have been taken from CIRIA (2015) guidance.

Data Sources

Aerial Photography	Contains Ordnance Survey data © Crown copyright and database right 2024 BlueSky copyright and database rights 2024
Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2024 Ordnance Survey data © Crown copyright and database right 2024
Flood Risk (RoFRS/Pluvial/Surface Water Features/SPZ)	Environment Agency copyright and database rights 2024 Ordnance Survey data © Crown copyright and database right 2024
Flood Risk (Groundwater) and SuDS infiltration suitability (SD50)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2024) Contains British Geological Survey materials © NERC 2024 Ordnance Survey data © Crown copyright and database right 2024
Sewer Location	Contains Ordnance Survey data © Crown copyright and database right 2024 Contains Thames Water Regulated Drainage and Water Search data 2024
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2024 Environment Agency copyright and database rights 2024

15 Appendices

GeoSmart Information

Appendix A

Site plans

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2038.01.03.Exg.002

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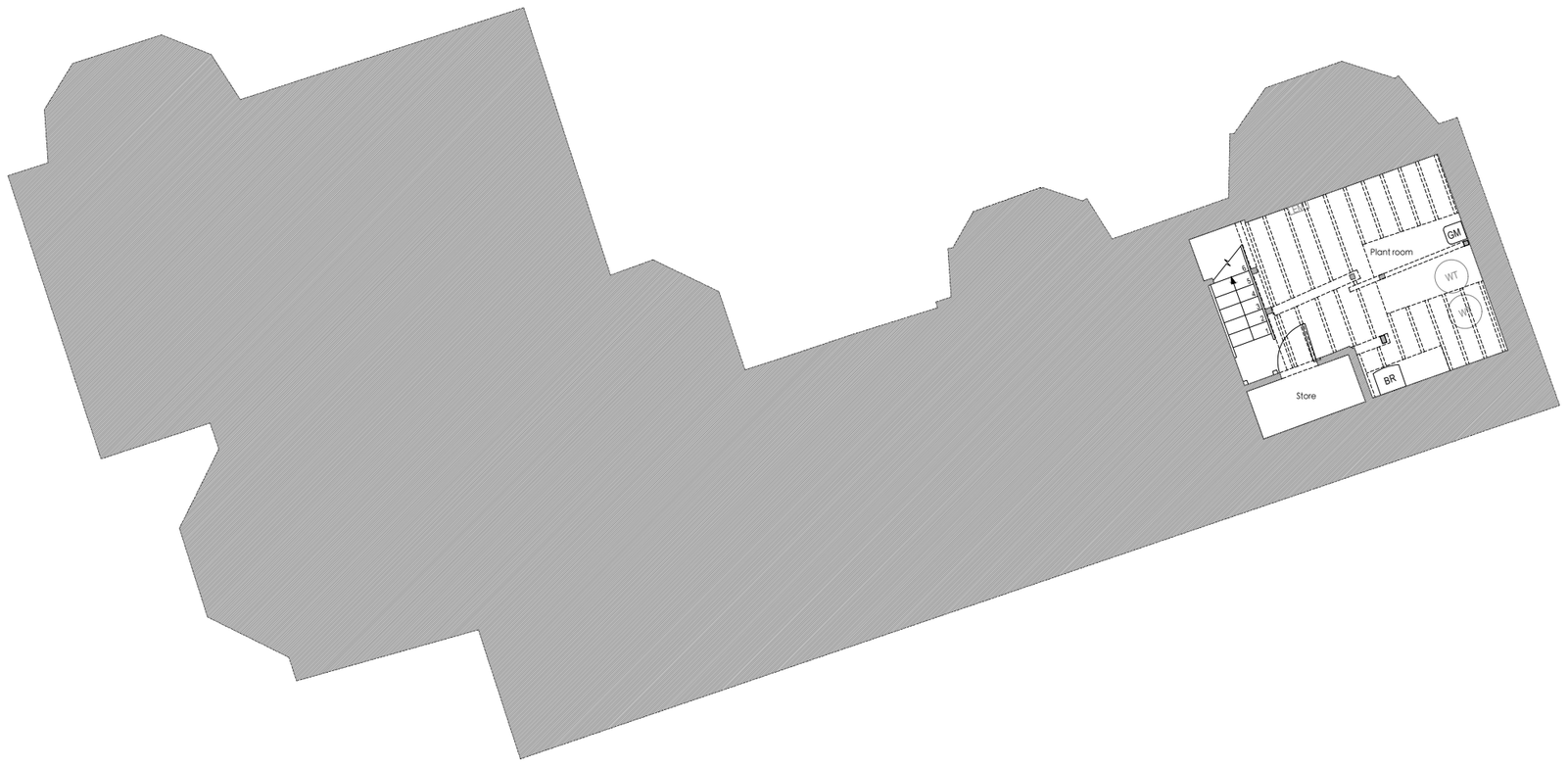
checked by	IP



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2038.01.03.Exg.021

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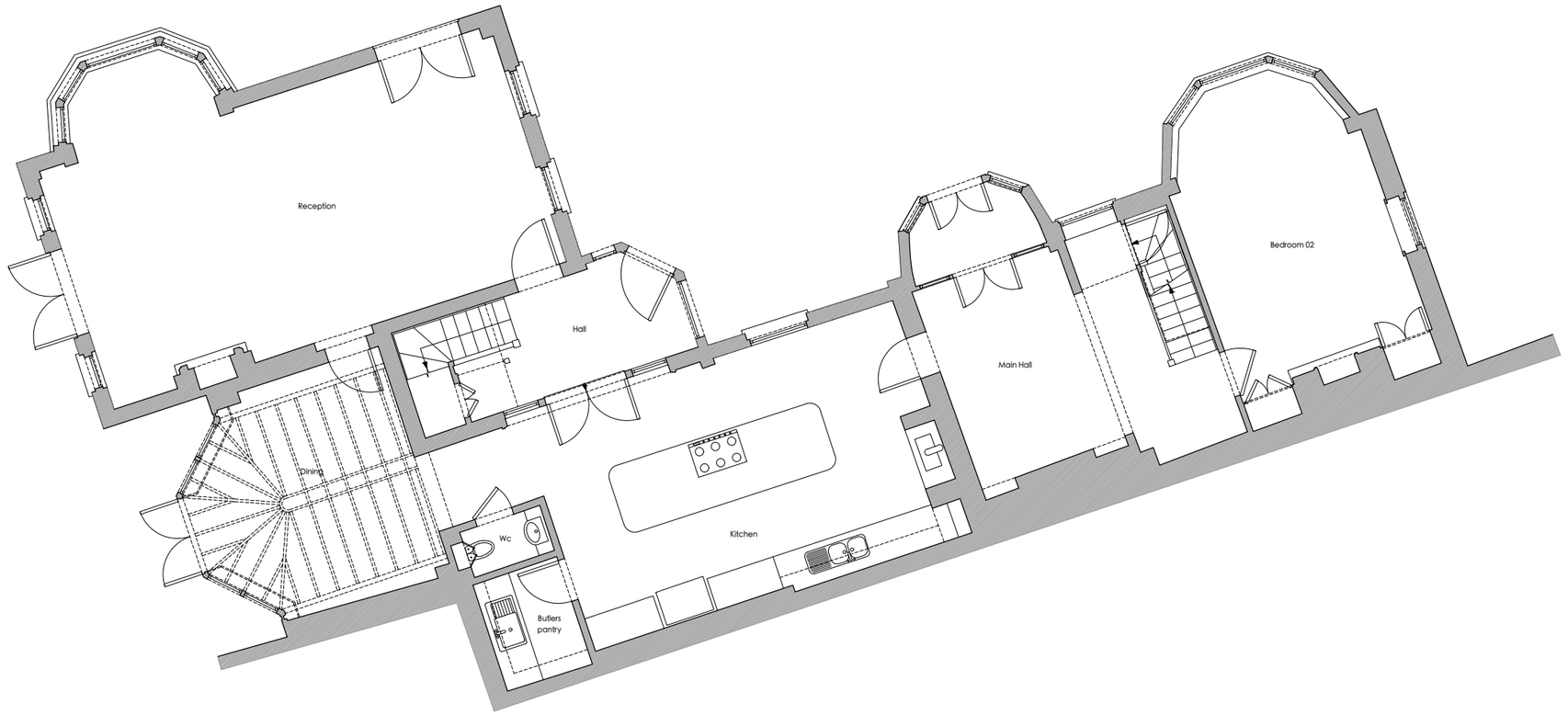

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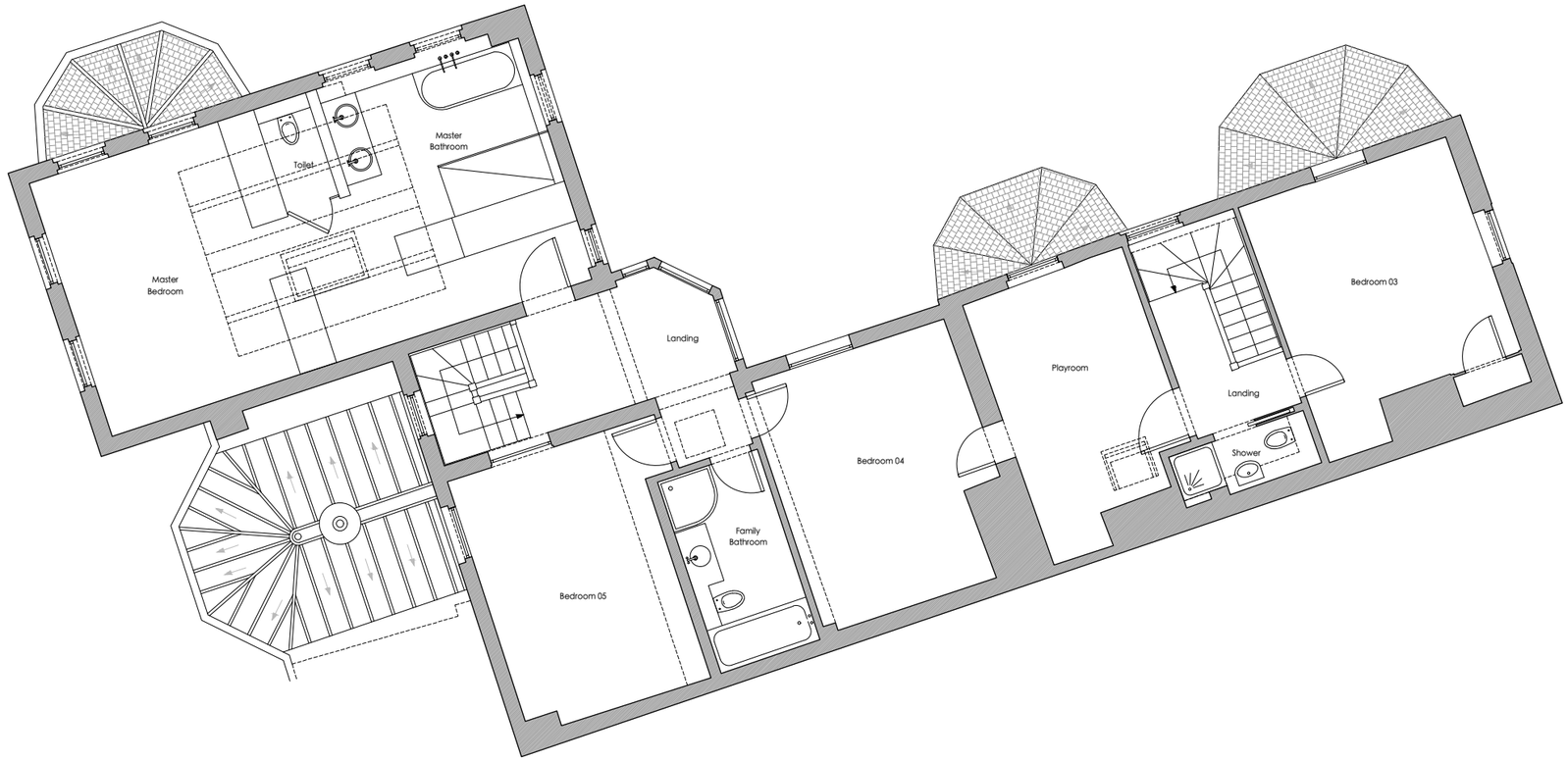

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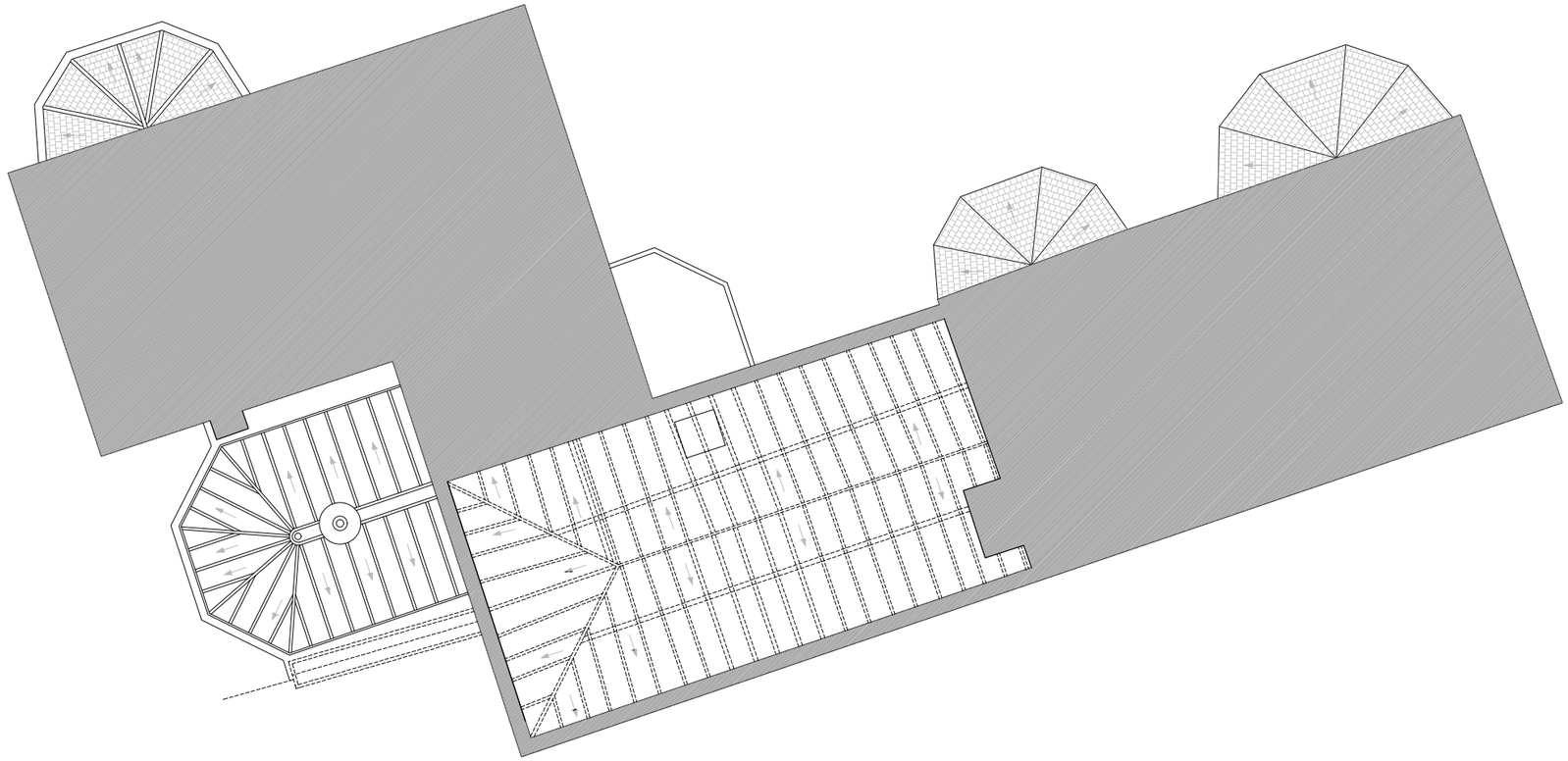

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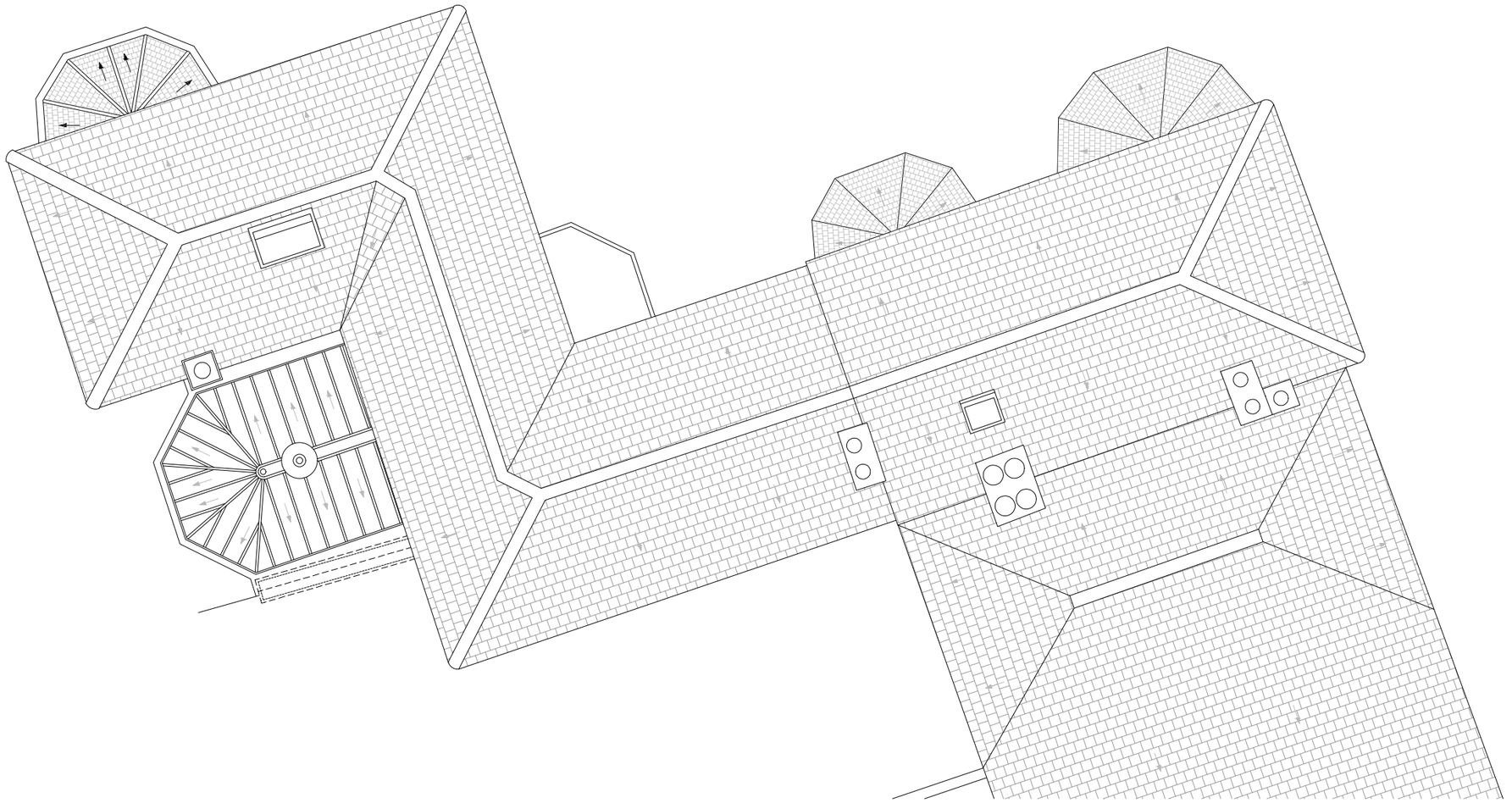

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MH - Existing Roof Plan

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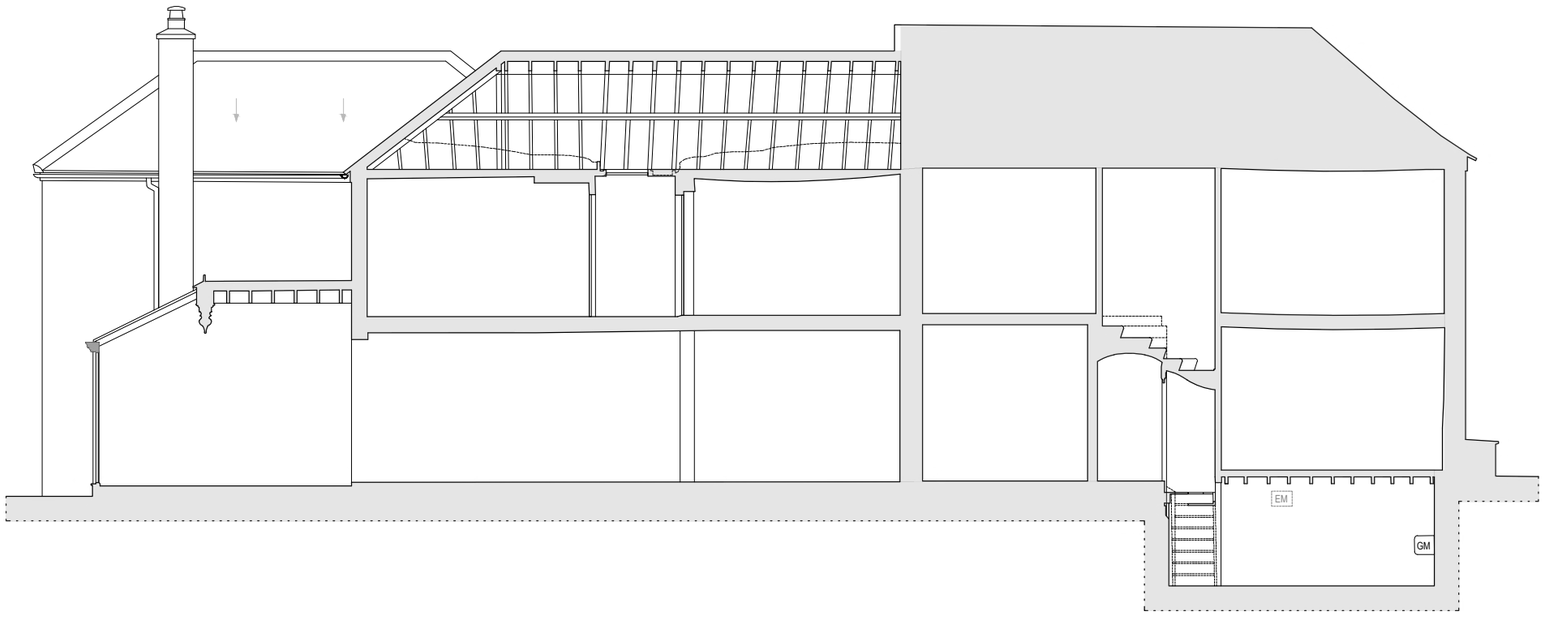

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MH - Existing AA Section

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2038.01.03.Exg.MH.040

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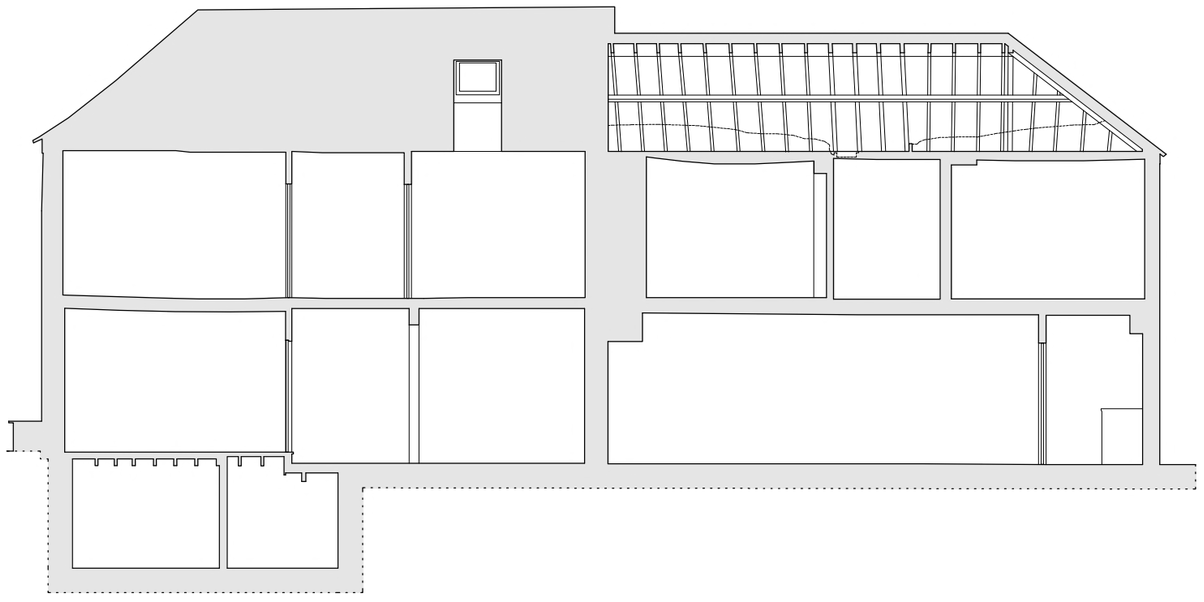

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drawing title
MH - Existing BB Section

drawing number
2038.01.03.Exg.MH.041

rev
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date	Aug 2024
drawn by	SP
checked by	IP

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revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Existing CC Section

drawing number
2038.01.03.Exg.MH.042

rev
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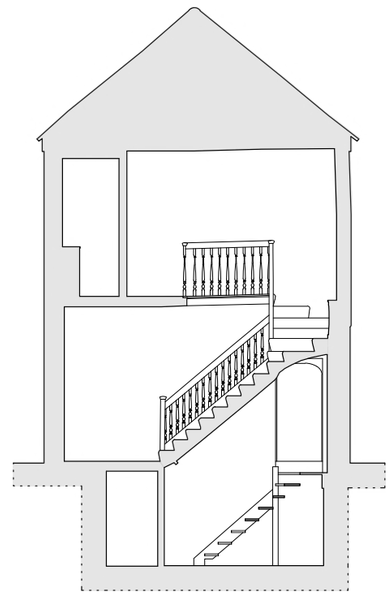
date Aug 2024
drawn by SP
checked by IP



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revisions

job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Existing DD Section

drawing number
2038.01.03.Exg.MH.043

rev
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date Aug 2024
drawn by SP
checked by IP

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revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Existing North Elevation

drawing number
2038.01.03.Exg.MH.060

rev
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date Aug 2024
drawn by SP
checked by IP

0 1 2 4m

revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Existing East Elevation

drawing number
2038.01.03.Exg.MH.061

rev
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date Aug 2024
drawn by SP
checked by IP

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revisions

job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Existing West Elevation

drawing number
2038.01.03.Exg.MH.062

rev
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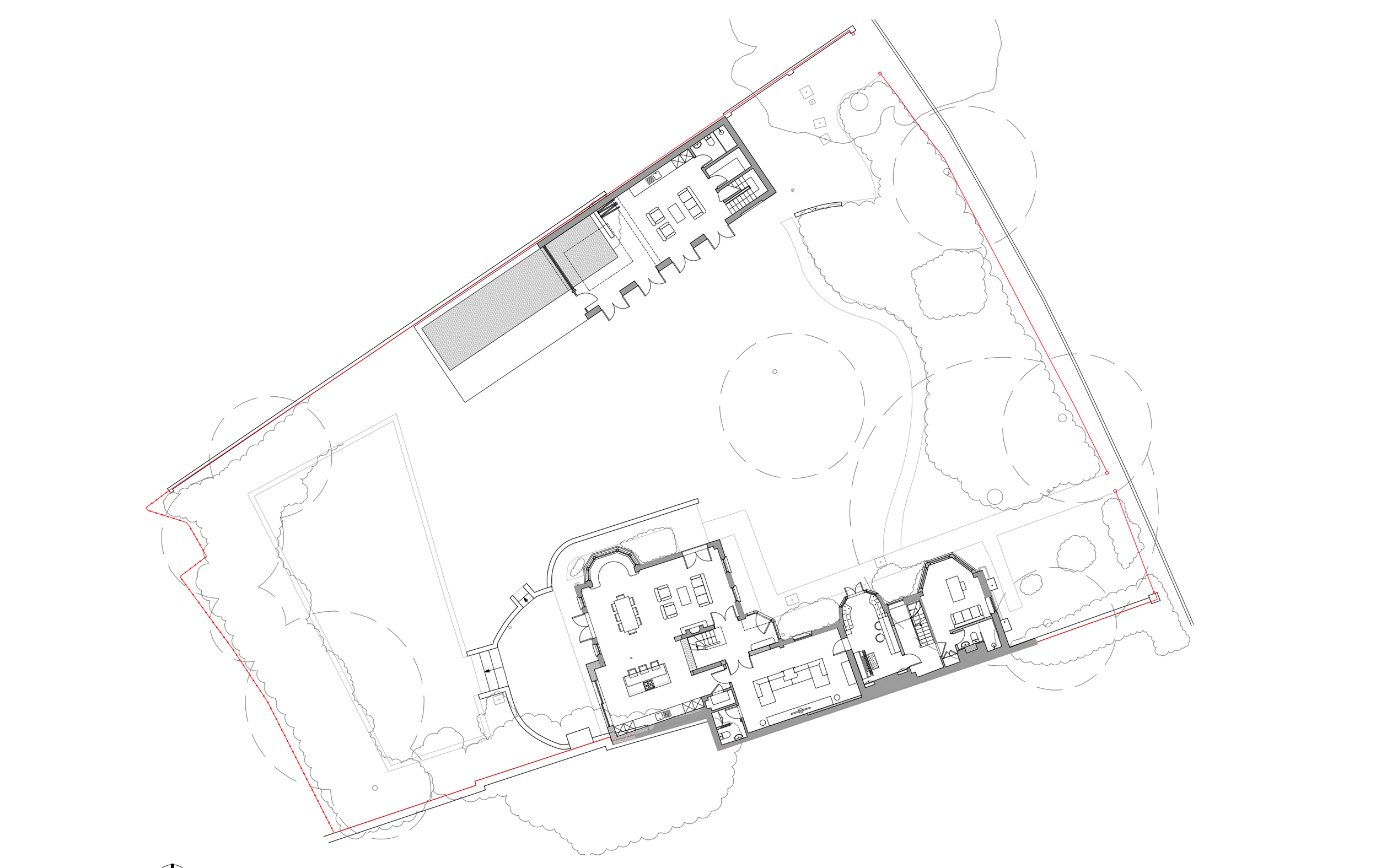

revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
Proposed Site Plan

drawing number
2038.03.03.Pln.002

rev
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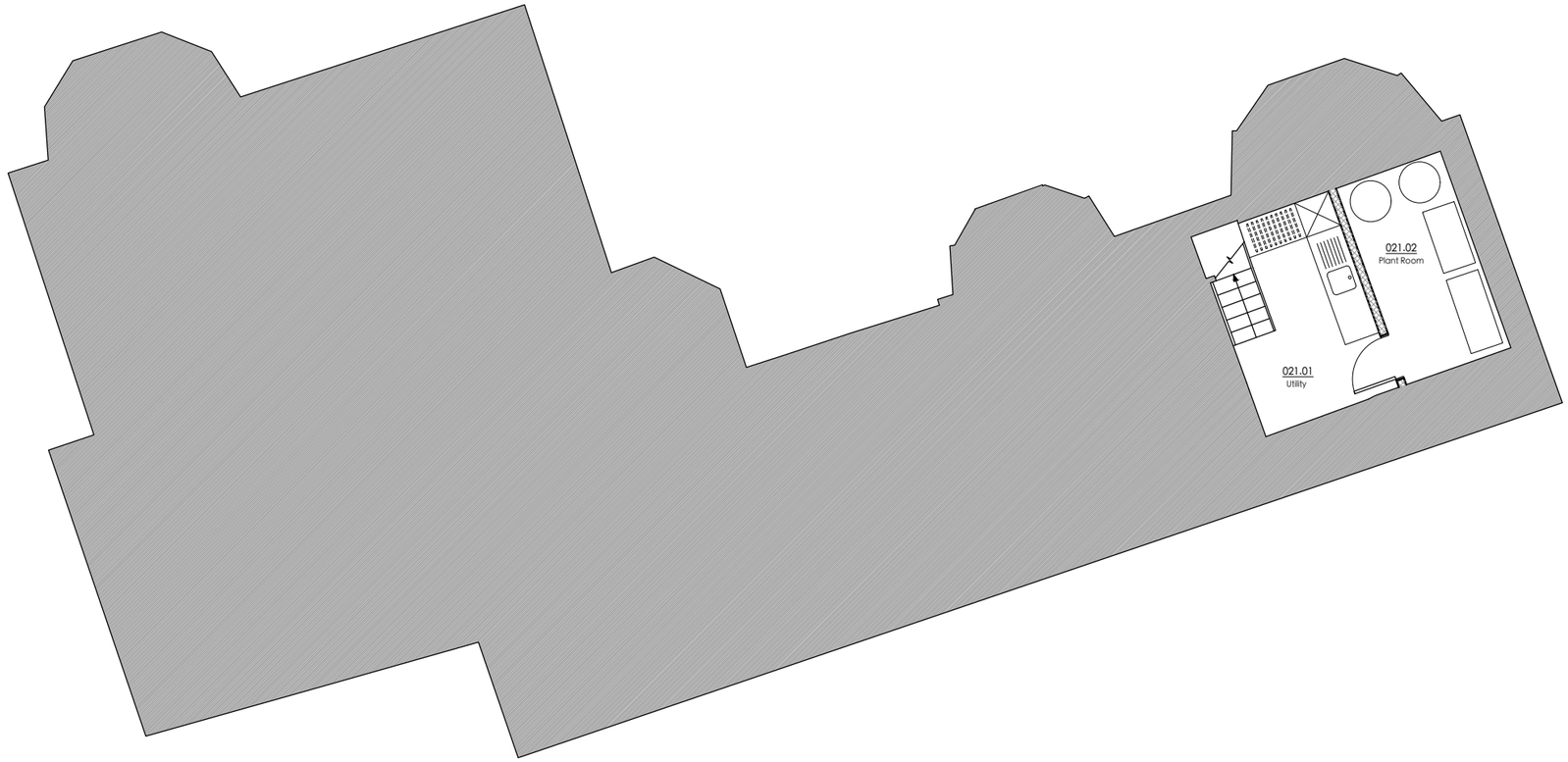
date Aug 2024
drawn by VG
checked by IP



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revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Proposed Basement Floor Plan

drawing number
2038.03.03.Pln.021

rev
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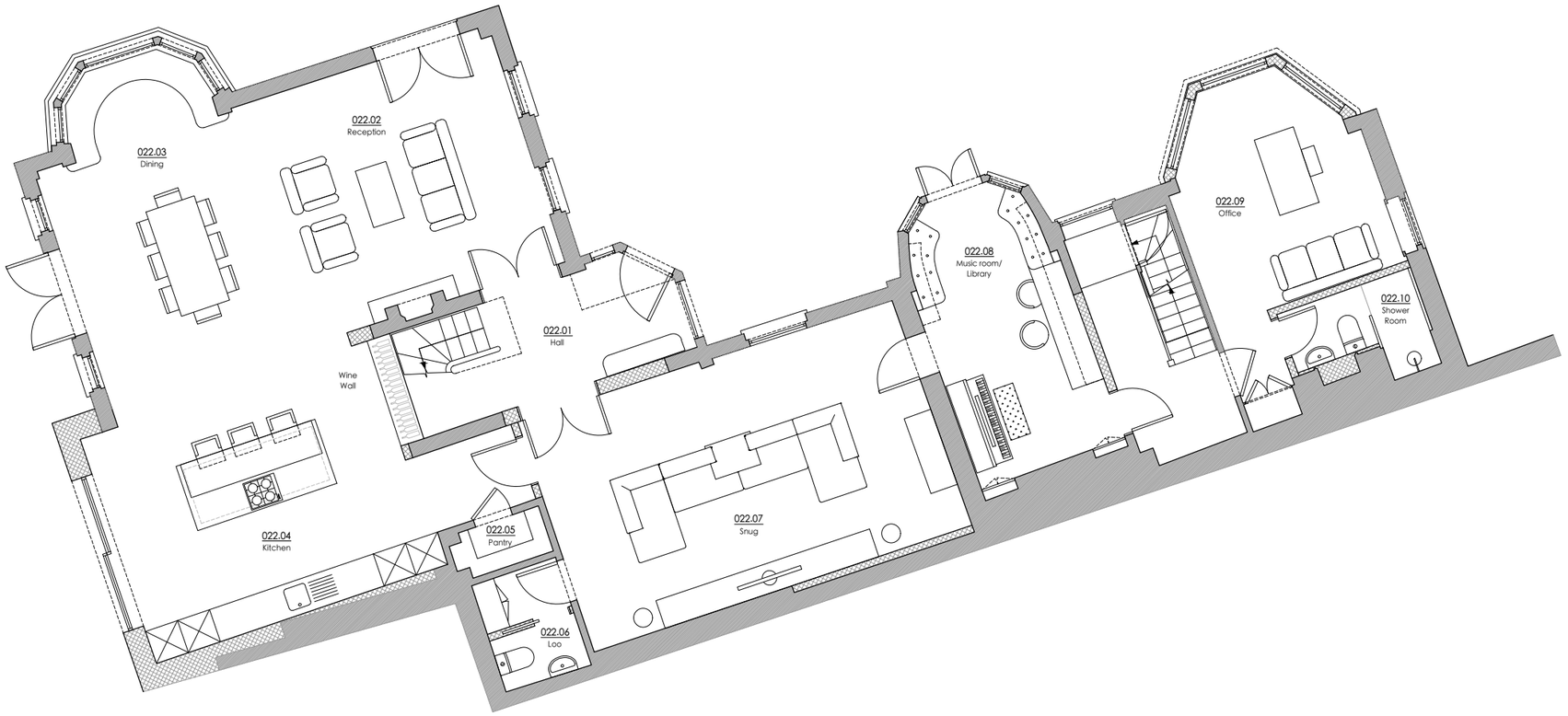

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revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Proposed Ground Floor Plan

drawing number
2038.03.03.Pln.022

rev
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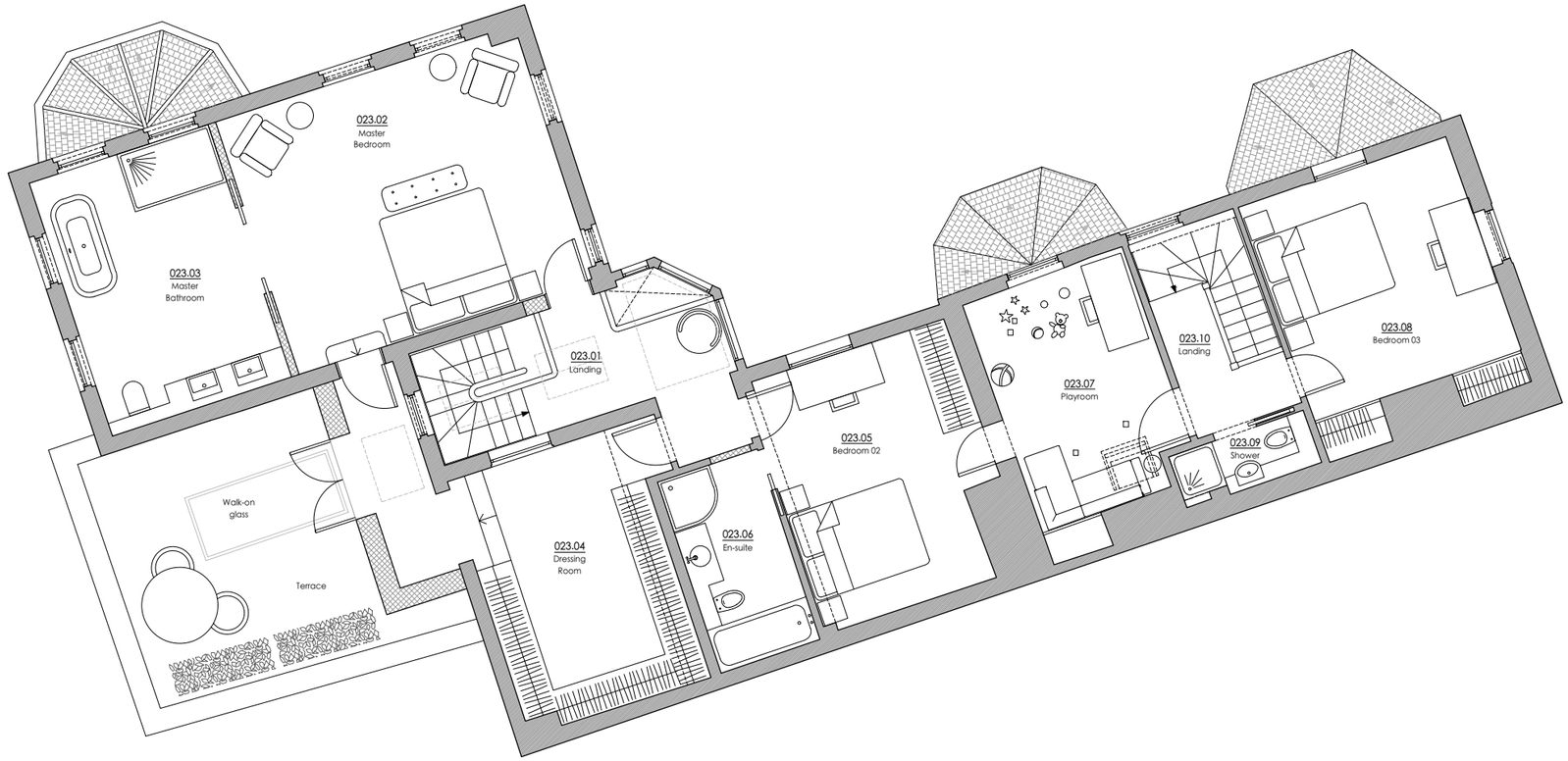

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revisions

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job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Proposed First Floor Plan

drawing number
2038.03.03.Pln.023

rev
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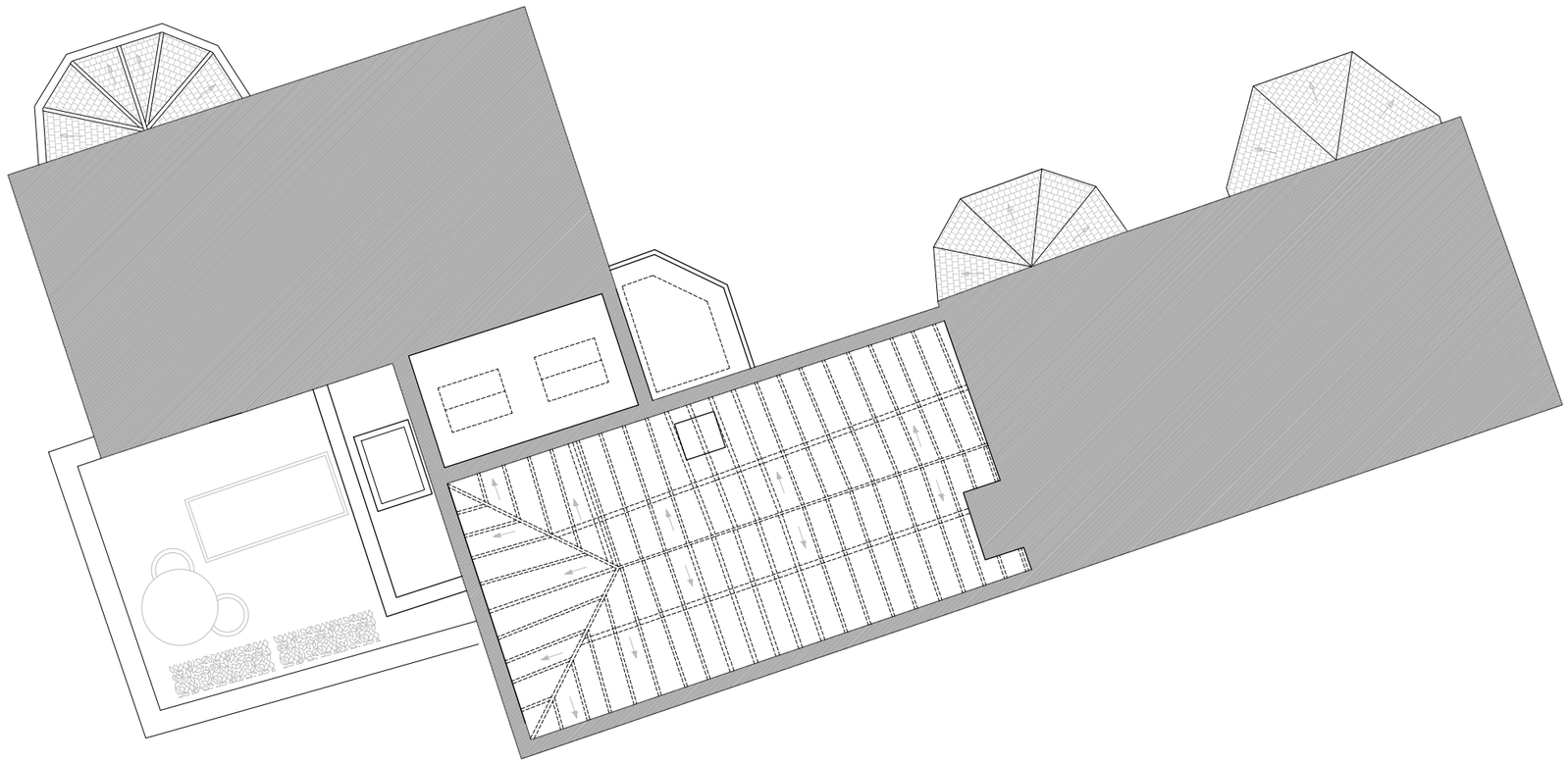
drawn by	VG
checked by	IP



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revisions

job title
Navigators House

client
Gareth and Victoria Bradley

drawing title
MH - Proposed Loft Floor Plan

drawing number
2038.03.03.Pln.024

rev
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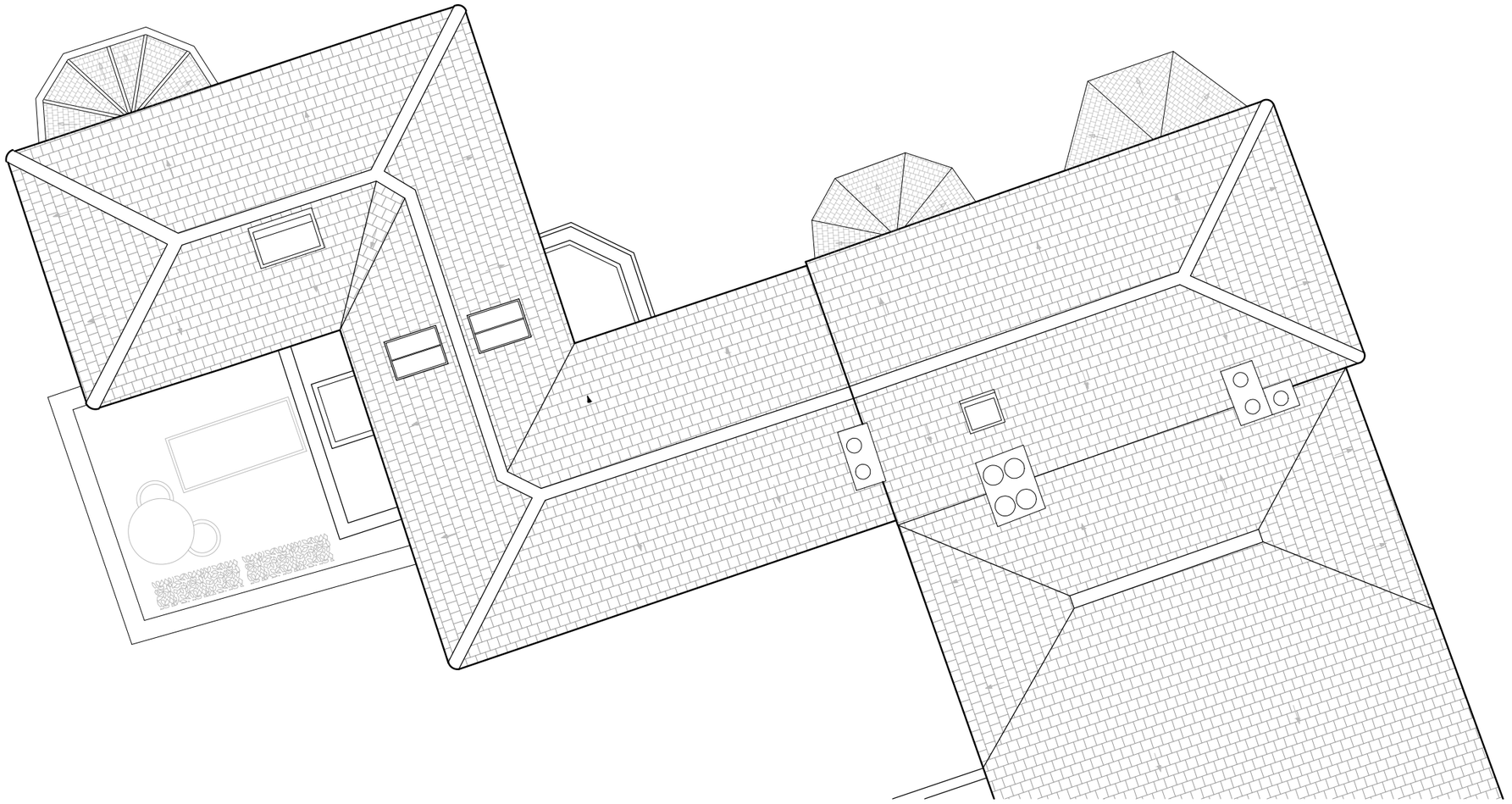
date Aug 2024

drawn by VG

checked by IP



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revisions

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job title

Navigators House

client

Gareth and Victoria Bradley

drawing title

MH - Proposed Roof Plan

drawing number

2038.03.03.Pln.025

rev

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scale	1:100@A3
date	Aug 2024
drawn by	VG
checked by	IP

GeoSmart Information

Appendix B

Rainfall runoff calculations

Input parameters for run-off calculations		
Country	England	
Total site area	1567	m^2
Area proposed for development	10	m^2
Current permeable ground cover	0	m^2
Current impermeable ground cover	10	m^2
Proposed permeable ground cover	0	m^2
Proposed impermeable ground cover	10	m^2
Urban Creep Allowance	0%	
Final impermeable ground cover	10	m^2
SPR	0.3	
SAAR	606	mm
Region	6	
Climate change factor	40%	
Discharge Rate (l/s)	1.0	
Run-off coefficient	100%	

Current impermeable area as % of total	100%
Proposed impermeable area as % of total	100%
Change in permeable area (m2)	0
Change in impermeable area (m2)	0
Change in impermeable area as % of total	0%

Rainfall event	Greenfield run-off rates (l/s)	Existing run-off rates(l/s)	Potential run-off rates without attenuation (l/s)	Potential minus exisiting (l/s)
QBAR	0.00	N/A	N/A	N/A
6 hour 1 in 1 year	0.00	0.01	0.01	0.00
6 hour 1 in 10 year	0.00	0.02	0.02	0.00
6 hour 1 in 30 year	0.00	0.03	0.03	0.00
6 hour 1 in 100 year	0.00	0.03	0.03	0.00
6 hour 1 in 100 year + 20% CC	N/A	N/A	0.04	0.01
6 hour 1 in 100 year + 40% CC	N/A	N/A	0.05	0.01

Rainfall event	Greenfield run-off volume (m^3)	Existing run-off volume (m^3)	Potential run-off volume without attenuation (m^3)	Potential minus existing (m^3)
QBAR	0.11	N/A	N/A	N/A
6 hour 1 in 1 year	0.08	0.26	0.26	0.00
6 hour 1 in 10 year	0.13	0.43	0.43	0.00
6 hour 1 in 30 year	0.17	0.56	0.56	0.00
6 hour 1 in 100 year	0.22	0.73	0.73	0.00
6 hour 1 in 100 year + 20% CC	N/A	N/A	0.88	0.15
6 hour 1 in 100 year + 40% CC	N/A	N/A	1.02	0.29

Return Period	Runoff rate restriction (l/s)	Critical Storm Duration (hr)	Attenuation Volume Required (m^3)	Volume required above previous return period
1 in 30 year	1.00	0.25	-0.69	N/A
6 hour 1 in 100 year	1.00	0.25	-0.63	0.06
6 hour 1 in 100 year + 40% CC	1.00	0.25	-0.52	0.11

GeoSmart Information

Appendix C

Thames Water Asset Location Plan

Asset Location Search

Thames Water Property Searches

GeoSmart Information Ltd
1st Floor Old Bank Buildings
Suite 9-11Bellstone
SHREWSBURY
SY1 1HU

Search address supplied The Navigators House
River Lane
Richmond
TW10 7AG

Your reference 82971

Our reference ALS/ALS Standard/2024_5033665

Search date 9 August 2024

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: The Navigators House, River Lane, Richmond, TW10 7AG

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.

The following quartiles have been printed as they fall within Thames' sewerage area:

TQ1873SW
TQ1773SE

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.

The following quartiles have been printed as they fall within Thames' water area:

TQ1873SW
TQ1773SE

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

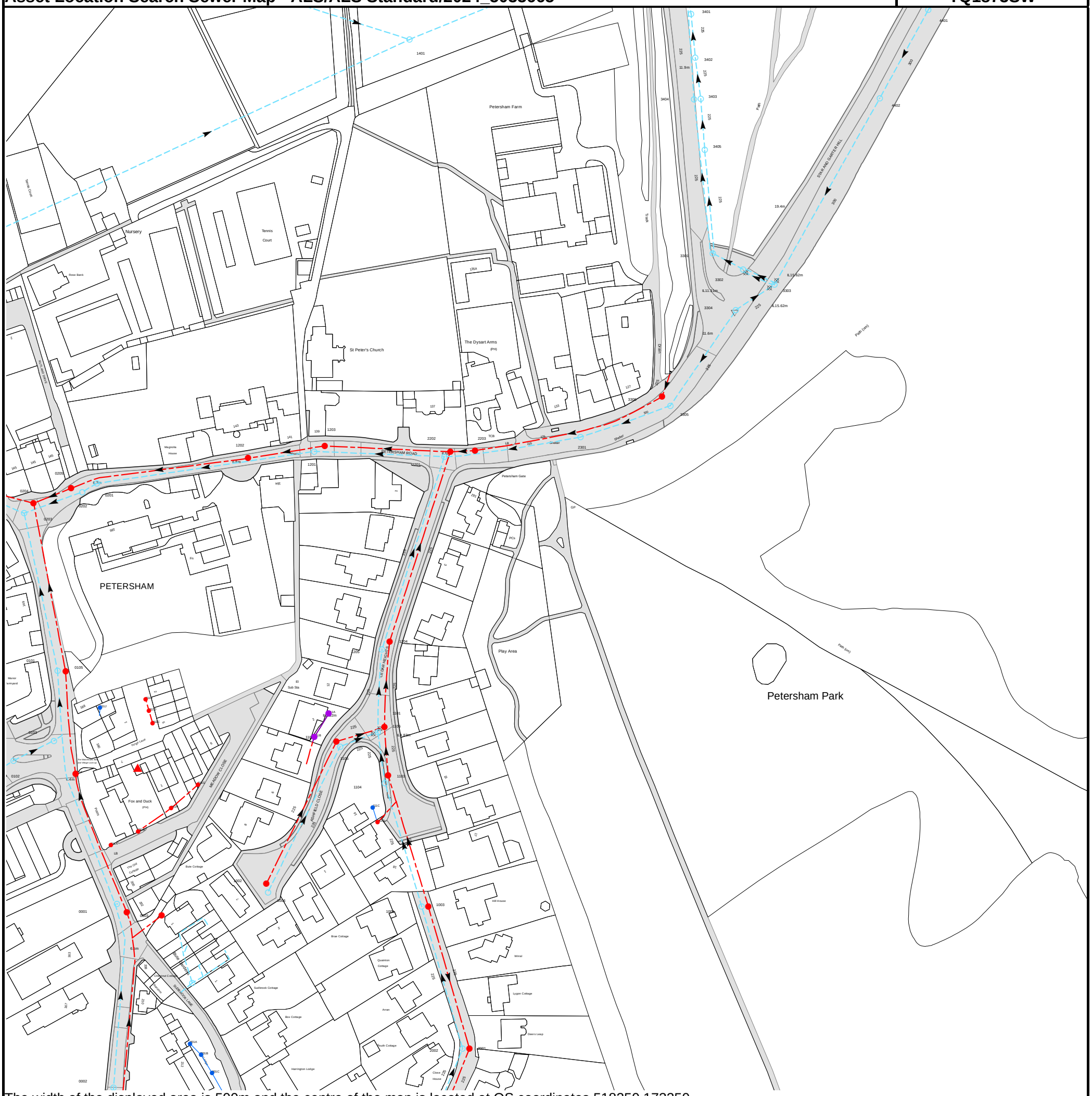
Should you require any advice concerning clean water operational issues or clean water connections, please contact:

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/2024_5033665

TQ1873SW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 518250,173250

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.

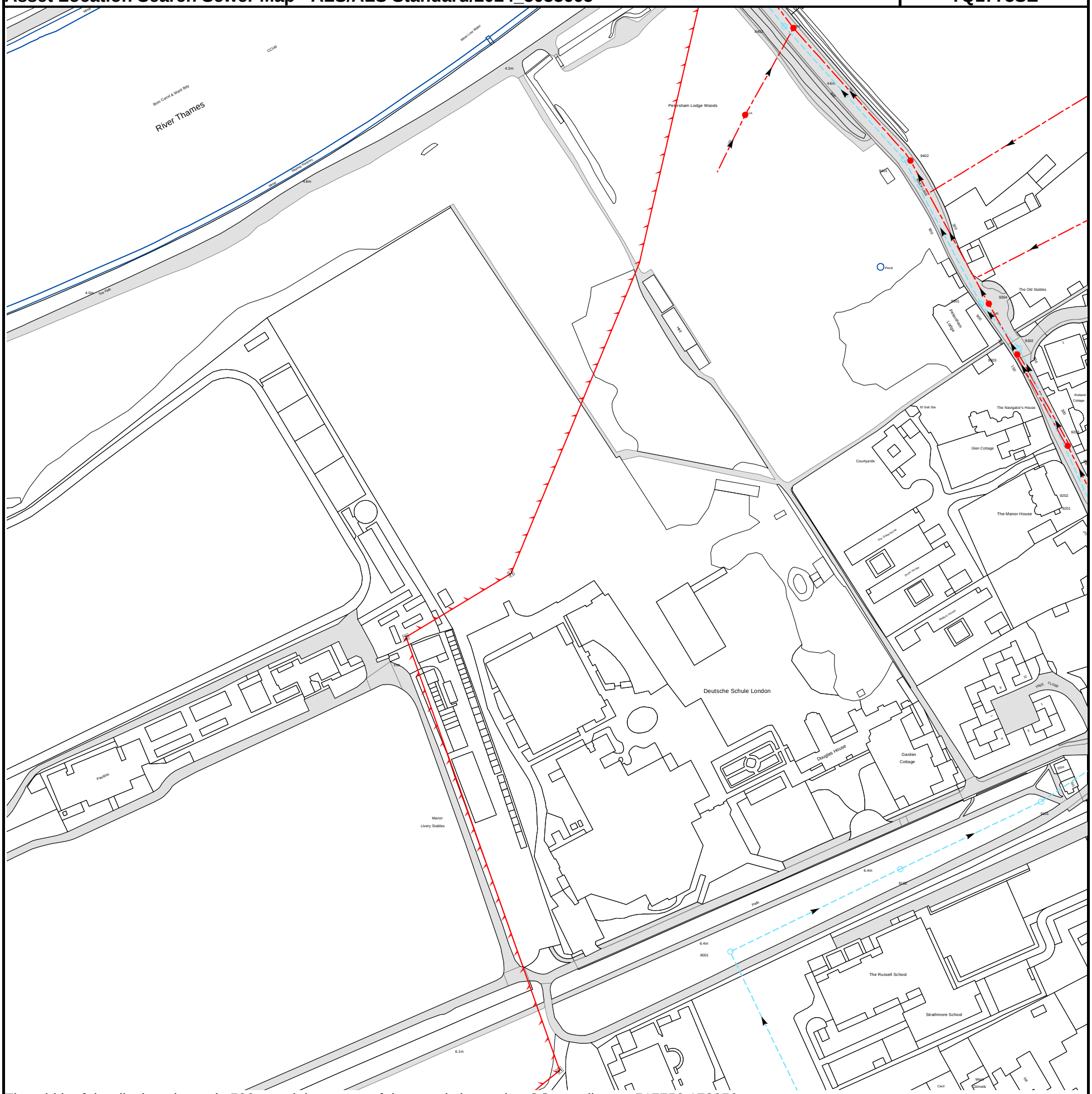
NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1401	n/a	n/a
3401	n/a	n/a
3404	n/a	n/a
3402	12.05	10.82
3403	n/a	n/a
3405	n/a	n/a
3301	13.04	12.33
3302	15.47	14.28
4402	25.41	23.26
4401	27.67	25.57
0002	n/a	n/a
001C	n/a	n/a
001B	n/a	n/a
2001	6.77	3.65
2002	6.74	5.22
001A	n/a	n/a
00ZQ	n/a	n/a
00ZY	n/a	n/a
0102	n/a	n/a
0103	n/a	n/a
011F	n/a	n/a
011J	n/a	n/a
011A	n/a	n/a
0001	n/a	n/a
0003	n/a	n/a
011B	n/a	n/a
011E	n/a	n/a
011D	n/a	n/a
011C	n/a	n/a
011H	n/a	n/a
011G	n/a	n/a
1002	6.32	5.02
1006	6.29	5.34
111B	n/a	n/a
111A	n/a	n/a
1102	6.68	4.7
1105	6.67	5.04
111C	n/a	n/a
111D	n/a	n/a
1106	6.79	4.73
1101	7	3.33
1104	7.15	4.75
1103	7.11	3.43
1005	7.24	5.11
1003	7.28	3.93
0203	n/a	n/a
0204	n/a	n/a
0101	n/a	n/a
0105	n/a	n/a
0205	n/a	n/a
0202	n/a	n/a
0201	n/a	n/a
1202	n/a	n/a
1201	n/a	n/a
1203	n/a	n/a
1205	6.76	4.63
1204	6.75	2.97
2201	n/a	n/a
2202	n/a	n/a
2203	6.49	n/a
2301	7.09	4.78
3306	8.82	2.85
3305	9.33	7
3304	13.08	n/a
3303	16.86	15.32

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 Map - ALS/ALS Standard/2024_5033665

TQ1773SE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 517750,173250

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.

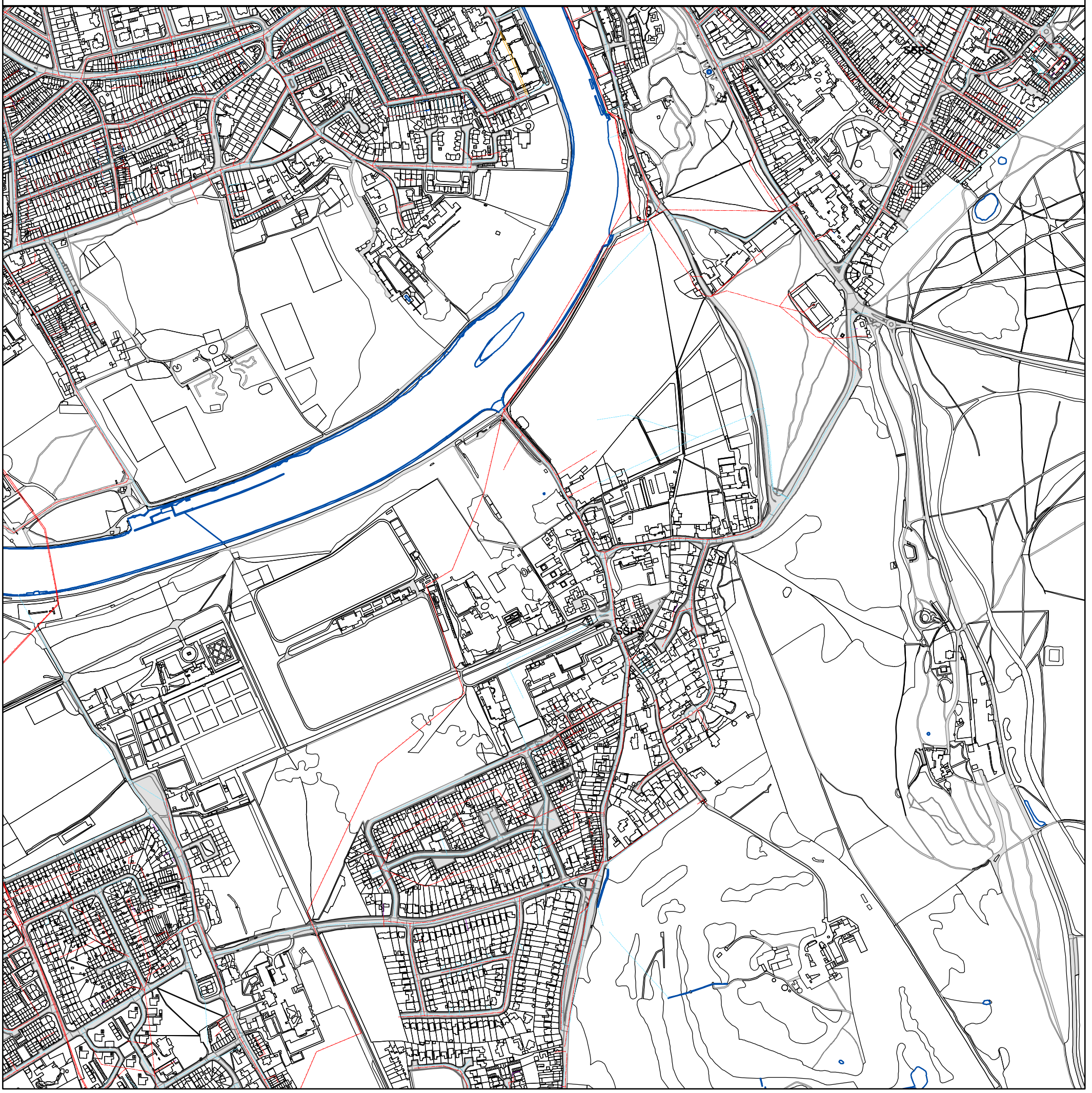
NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9301	n/a	n/a
9304	n/a	n/a
9303	n/a	n/a
9302	n/a	n/a
9203	n/a	n/a
9201	n/a	n/a
9202	n/a	n/a
8001	n/a	n/a
9102	n/a	n/a
9101	n/a	n/a
841A	4.368	2.519
8402	n/a	n/a
8403	n/a	n/a
9401	n/a	n/a
9402	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.

Based on the Ordnance Survey Map with the sanction of the Controller of H.M Stationary Office License Number 10019345

ALS/ALS Standard/2024_5033665



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Meters

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Printed By:	Skrishna1
Print Date:	09/08/2024
Map Centre:	517901,173279
Grid Reference:	TQ1773SE

Comments:

ALS/ALS Standard/2024_5033665

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

REFERENCE	COVER LEVEL	INVERT LEVEL
971A		
211B		
9804		
701A		
281B		
421C		
3101	5.55	2.87
4109	5.86	3.25
8603	6.17	4.39
85ZS		
9805		
61NC		
0602	6.57	
4504	35.27	33.97
75ZY		
4604		
7003	7.58	6.41
71JN		
52HJ		
0801	6.49	4.61
0909		
70NE		
4608		
0204		
0701	6.62	
4201	38.96	36.98
60NL		
62ND		
0805		
4503	33.78	30.98
3108	5.5	4
9304	7.53	5.68
4702	44.69	43.58
0706	6.67	
0805		
00ZY		
9907		
2106	41.11	39.38
5603	6.93	5.49
62LJ		
6410	7.7	5.8
32ML		
4103	5.96	2.96
8501	6.56	5.13
52DE		
2402	7.79	5.11
1904	6.28	
8206	5.53	3
8509		
9802		
42KK		
51JK		
61HH		
1203		
2107	40.07	37.96
9101		
6302	6.79	5.34
74ZV		
5208	6.34	3.39
20MJ		
2904	9.51	
0010	5.47	3.59
3906	39.64	35.98
75YT		
2702		
84ZX		
2205	38.17	35.86
1005	7.24	5.11
3502		
42ME		
41ND		
93ZX		
2601		
7703	6.64	4.36
3305	9.33	7
61KM		
1803	8.83	4.03
97ZS		
74XZ		
8805		
3402	12.05	10.82

REFERENCE	COVER LEVEL	INVERT LEVEL
571A		
21LD		
421A		
011B		
281C		
4611		
3402	6.96	4.06
8505	7.46	5.28
8402		
9401	8.47	6.09
9906		
62EL		
0802		
3208	5.64	3.08
7602	6.36	4.68
4102	38.91	37.72
7406	8.21	6.23
8506	7.46	5.29
0705	6.79	
4609		
7705		
7405	8.19	6.46
08ZY		
0201	9.52	5.6
08ZV		
6502	7.06	5.02
60NM		
62FK		
1204	34.35	31.61
39NH		
7502	7.94	5.82
4602	39.75	37.6
4903		
4601	38.48	35.68
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32KN		
9303	7.57	5.87
4402	25.41	23.26
6404	7.72	5.56
62KH		
6105	7.03	5.12
3202	5.73	2.53
4116	5.87	3.68
4115	5.97	4.83
4705		
21NL		
1202	34.04	31.3
8701	6.7	3.94
9901	8.35	4.08
9909	8.51	4.96
3304	13.08	
51JL		
1802		
2002	6.74	5.22
4605		
6904	7.12	4.71
7305	6.84	5.01
5503	7.31	5.64
0205		
22NC		
2304	6.99	5.11
3703		
75YW		
7301	6.81	5.28
3501		
8106	5.67	3.22
1904		
1003	7.28	3.93
3001	6.42	3.2
41NH		
9803		
9612	6.83	4.05
2004	42.21	40.05
7801	7.85	4.58
2108	40.84	38.71
6908		
3201	6.46	2.9
71MN		
8105	5.55	3.39
8210	5.67	3.07
41NJ		

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REFERENCE	COVER LEVEL	INVERT LEVEL
41NK		
4008	6.42	4.07
51NM		
1103	7.11	3.43
4007	6.05	3.93
52MC		
74YT		
8802	8.39	5.44
52LH		
61LE		
2203	5.59	3.65
2002	6.29	3.02
61NE		
1806		
9603	6.62	5.46
52EL		
0903	6.68	
1902		
1006	6.29	5.34
0604	6.73	
21NM		
7104	6.56	3.84
8902	7.43	6.36
8107	5.55	3.96
42LL		
52EM		
51KL		
0012	7.47	6.19
1805		
1205	6.76	4.63
2501		
3702		
51NC		
61JL		
3801	6.64	5.49
32KH		
3004	6.46	4.81
6104	28.69	27.29
52JE		
0203		
7601	6.35	4.1
3202	38.53	34.46
51JJ		
0904		
5802		
201A	5.94	3.96
7901	7.58	6.21
7204	6.9	4.87
9502	7.54	5.71
32NJ		
3203		3.05
4902		
0102		
6511	6.81	4.98
6902	7.62	
60NK		
1106	6.79	4.73
52FD		
50NL		
0603	6.6	
8903	8.32	5.21
9302	7.82	6.42
42MN		
42JD		
41NL		
5103	6.76	4.09
70ZT		
9904	7.32	5.26
9302		
99KE		
9507		
9202		
99ZR		
6110		
00MJ		
09NM		
8001	35.5	33.3
52YR		
91NM		
4502	30.08	27.83
6703		

REFERENCE	COVER LEVEL	INVERT LEVEL
4503		
5703		
1801		
1204	6.75	2.97
201B	5.99	3.63
9501	6.95	5.34
8508		
3901	39.55	37.59
6912	6.97	3.84
6907		
2001	5.8	2.96
2506		
61NK		
99YW		
2701		
52FF		
0201		
1002	6.32	5.02
3706		
0704	6.73	
21MN		
71MD		
8204	5	3.02
8208	5.67	3.87
5104	6.51	4
52FH		
51LD		
1804		
32LK		
2901	37.84	35.77
2103	5.52	2.43
32YT		
51NF		
1801		
3203	6.49	4.88
3207	5.75	3.37
9507	7.56	5.02
52HL		
95ZV		
7004	6.05	3.84
3902	6.99	4.68
5205	6.17	4.27
52CH		
8104	5.04	3.23
9306	7.59	5.3
62JD		
7902	7.53	6.16
4110	5.94	3.48
32NK		
3905	6.58	4.04
4108	5.89	3.24
9301	7.68	5.9
48ZX		
6002	7.86	6.82
60NF		
6507	6.78	4.6
52EN		
5901	6.72	4.57
50NM		
8101	5.06	4.12
9406	8.46	5.48
9601	6.28	4.87
42NC		
4114	6.26	5.11
41NM		
7109	34.85	
6005		
9307	7.63	5.81
9802	7.47	4.27
9801	7.67	4.58
0301	4.75	3.22
9908		
0702	6.66	
6111		
09NC		
7102	31.47	29.37
52YV		
6101		
9801		
49ZW		
61LJ		

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REFERENCE	COVER LEVEL	INVERT LEVEL
9806		
9905	8.08	4.87
00MD		
60YX		
50ZW		
2105	40.05	37.23
1701	8.54	7.05
6903		
10NK		
09JH		
0113	5.63	4.04
10JE		
10HN		
52MN		
51NH		
00ZQ		
2203	6.49	
60XR		
6112		
97ND		
5005	31.19	28.72
1109	5.39	3.79
1502		
1204	6.8	3.77
48ZT		
48ZV		
70YP		
5202	34.58	32.03
0804	6.85	5.02
09LC		
70ZP		
6602	6.89	5.09
62EE		
71ME		
75ZW		
75ZQ		
41NC		
7210	30.28	28.8
5101	35.68	32.95
5904	38.51	35.16
1309	6.8	4.07
7303	6.72	5.4
8108	5.67	3.92
2005	42.3	40.47
0013	3.92	3.89
2109	5.51	3.56
2102	5.6	2.91
2003	5.64	4.17
8203	6.9	6.03
8204	6.89	5.42
51LL		
1903		
1305	7.16	6
11LJ		
10JK		
6002		
8209	5.56	3.84
9701		
31NH		
31NM		
9707		
9201		-1.2
6109		
19ML		
6113		
7104	28.86	27.74
0603	6.47	3.85
0504		
7114	32.12	
52DJ		
5003	6.79	5.43
0104	7.94	5.85
22NJ		
3802		
9702		
8110		2.99
52FJ		
4504		
4111	5.94	4.29
2105	5.47	3.64
9506		

REFERENCE	COVER LEVEL	INVERT LEVEL
93ZW		
0001		
09MN		
70ZY		
52CF		
1102	6.68	4.7
2001	6.77	3.65
1501		
0604		
0109	5.48	2.81
0507	5.45	2.5
10LF		
70YW		
51ND		
0804		
0703	7.57	5.93
8203		
61ZY		
6114	29.39	26.65
9502		
1301	7.2	6.29
1902	7.7	5.74
1105	5.47	3
31NJ		
49ZX		
52YY		
7101	32.58	
0001	6.99	2.25
09HE		
70XR		
51KM		
6704		
6603		
1202		
7904	7.6	4.5
3205	6.23	3.18
6102		
70ZQ		
50ZV		
1106	5.11	3.64
71ML		
7704	7.01	4.76
2103		
5005	7	6.1
0902	6.7	
2302	6.73	4.27
2505		
8001		
8405	8.68	6.27
5202	6.32	3.79
51MC		
42LE		
1006		
1004		
10NM		
1804		
99ZY		
3109	5.58	3.86
3206	5.67	3.23
9706		
99ZQ		
0103		
69ZW		
6107		
6106	29.43	28.14
60WX		
09LJ		
7106	32.08	
5901	38.44	36.03
52DM		
0101		
20MF		
3803		
8801		
9703		
52FC		
4104	5.92	3.46
41MM		
1201		
21KH		
99KF		

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REFERENCE	COVER LEVEL	INVERT LEVEL
99LK		
09HF		
6503	7	4.72
6509	6.98	4.98
6003		
9904		
2102		
61NJ		
1702		
3204	6.45	3.25
42NH		
42NM		
3701		
7802	8.32	4.09
9604	6.44	4.83
9303		
3404		
6101	6.58	4.87
7803		
2901	6.61	3.56
2703		
3111	5.95	3.23
3110	5.66	3.71
32ZP		
9203		
3204	38.47	36.98
3205		
4703	44.96	44.38
52DD		
62HH		
1201	35.99	33.01
3906	6.78	4.8
9102		
3303	16.86	15.32
61LM		
7203	6.87	5.18
71KN		
7403	7.86	6.51
2801		
51LN		
9609	6.68	5.06
0001		
2303	6.73	4.24
8402	8.78	6.1
8902	7.65	3.4
8502	7.41	5.13
3203	40.03	36.47
4607		
8601	6.17	3.91
48ZS		
52DH		
5206	6.19	4.27
62HD		
61NM		
0908		
7404	7.88	6.76
8203	5.01	3.8
0901	6.92	
3301	6.59	3.21
41NE		
4112	6.01	4.42
0803	6.47	
74ZS		
42JN		
61ZW		
6201	26.31	24.91
7105	31.05	
1702	8.53	7.42
0804		
6116	28.97	25.52
7206	28.96	26.93
19NE		
1103	5.27	2.24
7205	30.17	28.3
09LH		
7207	28.6	26.2
60ND		
6405	7.59	5.28
6408	7.56	5.51
3401	6.69	3.13
4206	6.3	2.89

REFERENCE	COVER LEVEL	INVERT LEVEL
99KH		
1203	36.07	32.88
6504	7.35	5
6105	29.04	27.59
8704		
2301	7.09	4.78
61ND		
6701	8.46	5.13
2705		
42NE		
42NJ		
4113	6.13	4.8
7701		
8109		2.76
9508	6.96	4.54
3502		
6104	6.61	4.38
61HN		
2201		
2202		
3103	5.93	2.82
4009	6.06	4.13
3705		
3907	6.86	5.84
0003		
3401		
2902	6.6	5.26
5004	6.8	5.76
6905	7.17	5.24
1901		
3102	5.62	2.83
9704	6.42	4.52
9401		
3905	39.66	36.31
61MC		
7302	7.14	5.5
75YY		
1401		
51LK		
52EJ		
0002		
22NE		
2903	6.62	4.97
8119		4.04
8703		
3403		
3405		
3901	6.8	4.87
4401	27.67	25.57
4606		
52DL		
6601	6.81	4.93
61NL		
6003	7.03	4.57
0905		-0.6
7304	6.8	5.08
4205	6.12	2.87
3908	7.04	3.56
4105	6.05	3.7
41MN		
8110		3.02
3501		
41LE		
42KC		
60ZV		
7211	28.98	27.23
5101	6.8	4.52
8901	8.33	3.48
6904		
7112	30.35	
0004		
1801	7.6	3.71
1104	5.55	2.94
07NJ		
71ZW		
7002	32.34	30.13
60NJ		
6911	7.74	3.98
1105	6.67	5.04
3804	6.65	5.21
4102	5.94	2.91

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REFERENCE	COVER LEVEL	INVERT LEVEL
6902		
5102	6.55	4.17
71ZT		
7103	30.43	
10JN		
61ZT		
6115	30.13	28.38
70XY		
7115	33.95	
60XQ		
10JD		
1306	6.8	5.1
2802	7.02	5.63
9703	7.79	4.17
6905		
71ZR		
60YW		
10NJ		
99LL		
6001		
09JF		
5003		
0114	6.16	4.1
1401	7.15	5.13
7208	27.75	25.7
7214	27.5	26
7107	34.11	
52YW		
91ND		
4107	6.31	3.34
52KF		
5701	7.01	5.49
1101	7	3.33
42LC		
3301	13.04	12.33
8121		3.59
8401	8.72	6.99
3902	36.79	33.26
62JJ		
6702	6.73	4.57
6301	6.28	5.6
1802		
0202		
3302	15.47	14.28
8122		3.43
99ZX		
2202	37.41	35.12
8705		
52KM		
5702	6.86	5.32
98ZY		
2106	5.4	3.42
6403	7.33	5.88
11ME		
1201	6.81	4.67
90NH		
0501		
09KE		
61ZQ		
7212	28.6	26.5
2503		
10MN		
9304	7.53	6.34
9804	6.53	3.26
0901	7	2.32
99EM		
29NL		
2701		
0503	5.5	3.61
9503		
9403	7.6	6.61
9101	6.58	4.45
1201	5.37	3.19
91MM		
101C		
09ME		
0304	7.35	5.57
10NE		
1311	6.94	4.27
9206	6.73	3.38
1603		

REFERENCE	COVER LEVEL	INVERT LEVEL
0505		
7113	30.99	
70ZV		
1307	6.95	4.07
0604	6.09	2.58
6206	26.69	23.7
6204	26.31	23.79
70YR		
7001	35.35	32.65
99MF		
10LE		
2801	7.09	3.62
9306	7.72	5.87
98NF		
60XT		
71ZS		
1101	5.43	3.25
99LM		
20NF		
0703		
5002		
70ZR		
0506		
1901	7.61	5.3
71ZP		
7110	29.02	26.36
5801		
5001	31.18	29.71
0102	6.23	2.87
51LC		
51MM		
62JF		
41LD		
4204	6.2	2.98
8120		4.01
8406	8.73	7.03
9103		2.96
62KJ		
61FN		
62LK		
1104	7.15	4.75
9302		
20ML		
3112	6.33	2.78
9602	6.33	4.61
7103	6.98	5.64
8205	5.85	3.16
2001	42.54	40.58
52LN		
9204	10.52	8.79
2501		
2507		
6801		
11LK		
97NE		
9704	7.65	4.06
09HN		
60XY		
62ZR		
091A		
2602		
91MN		
99HH		
90LH		
0502		
21HM		
2104	5.28	2.38
9205	6.23	3
00ME		
2301	6.79	4.46
98MF		
0112	5.38	3.94
9505		
101A		
0005	6.74	4.23
0904		
1102		2.31
1406	7.44	4.41
1403	7.83	4.74
9101		
1005		

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REFERENCE	COVER LEVEL	INVERT LEVEL
1801	6.24	2.41
1506		
10MK		
2601		
10NC		
21ND		
2108	4.99	3.67
09MH		
1601		
11MD		
0303	7.34	5.8
0111	5.3	4.09
19LH		
10KL		
9604		
20NM		
901B	9.89	3.75
9401		
10KM		
9605		
9102		1.94
91NC		
97NF		
90LK		
0605		
1402	5.03	1.93
11MH		
2201	5.37	2.86
99HM		
2101	5.09	3.27
2702	7.12	5.38
9103	6.7	2.06
1402	7.62	4.78
2502		
22KF		
20NL		
99EN		
00MF		
1308	7.26	4.77
0101	5.56	2.89
09NK		
0903		
0006		
9705	7.65	2.73
99JF		
0302	7.48	5.68
9301		
1302	7.04	5.32
11KC		
9905	7.44	5.23
9005	7.56	3.54
121A		
021A		
51NK		
591B		
591D		
411D		
411F		
011G		
781A		
501D		
51LE		
341A		
0005		-0.8
111C		
4006	6.09	3.22
901A		
161B		
001A		
001C		
721B		
661A		
00MN		
52NF		
6208		
60ZP		
51KH		
1303	7.12	5.31
1407	7.25	4.23
9611	6.95	4.36
0602		

REFERENCE	COVER LEVEL	INVERT LEVEL
1904	7.38	3.8
1003		
9201	6.77	4.71
2202	5.34	3.39
1701	7.62	2.51
2901	6.45	4.21
2902	6.44	4.24
1404	7.12	5.32
10KE		
20NK		
0401	7.29	5.52
0301	7.32	6.1
1602		
9002	7.73	5.27
1107	5.21	3.86
9706	8.22	3.74
9504		
1503		
91ML		
9007	7.78	4.52
9902	7.42	3.61
9702	8.2	4.45
9601		
09KD		
1905	7.74	5.21
10NF		
10ML		
20NJ		
06MK		
22MC		
99FH		
21KN		
10KF		
29NK		
2107	5.22	3.52
9006	7.25	4.61
09MF		
0506	5.31	2.26
99FF		
0605		
0701		
09ND		
99FM		
99MJ		
99FN		
9008		
99HF		
1507		
97NK		
9402	7.7	6.64
9303		
121B		
951F		
591A		
591C		
591E		
411E		
011H		
9610	6.3	4.14
671A		
7603		
241A		
0006		-0.85
011F		
111D		
1901		
161A		
171A		
001B		
191D		
6604		
661B		
61JD		
99HN		
71KJ		
0704	7.51	2.86
3704		
9501		
9701	8.22	4.62
6203	26.19	22.93
1108	5.1	3.75

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REFERENCE	COVER LEVEL	INVERT LEVEL
41NF		
6906	6.95	5.48
8002	7.27	6.66
2401	7.66	3.12
5002	6.7	5.18
7003	34.93	32.65
61ZX		
0110	5.48	2.16
4101	5.89	2.84
9305	7.7	5.97
52NE		
20MM		
7213	27.5	26.2
99JH		
97ZT		
8111		3.17
09KN		
9202	6.1	4.3
5201	34.82	33.39
62KL		
7102	7.01	5.99
72NM		
11HF		
61FI		
7209	27.5	25.9
4005	6.23	3.34
2502		
85ZY		
7501	7.94	5.88
21MF		
98NE		
09JC		
6909		
111A		
611B		
5803		
9701		
0601	6.72	
391A		
231A		
331B		
981A		
011B		
311B		
301B		
391A		
42KM		
061C		
001A		
9301		
71ZV		
0011	7.84	6.51
1902		
5602	7.06	5.11
1803		
9205		
3801	41.5	40.28
9201		
6117	28.65	25.23
6501	7.07	5.37
111A		
501A		
411C		
09JM		
8112		4.09
8507		
081A		
0803		-0.53
8601		
9402		
251F		
251G		
251A		
151D		
52KL		
9803	7.61	3.54
151A		
051C		
051D		
151E		
98MK		

REFERENCE	COVER LEVEL	INVERT LEVEL
9304		
7108	34.36	
6901	7.74	5
0102	7.92	4.41
9603		
10JH		
7702	6.55	4.11
6409	7.32	6.05
0503		
6202	5.95	3.13
0601		
2802		
5004	31.42	29.18
8201		
5902	6.33	4.47
60YT		
6108		
4701	43.02	42.38
6207	26.7	25.35
62LM		
71LL		
7101	6.57	4.66
711A		
11KD		
0808		
3204	6.62	3.75
2603		
0502		
1703		
99MH		
9305	7.56	5.58
7903		
52MJ		
101B		
5804		
9602		
191A		
97ZP		
1310	7.23	5.3
331A		
331C		
011A		
311A		
301A		
301C		
411A		
60LF		
6510	7.34	5.3
1504		
71ZX		
19MJ		
6103	7.08	4.94
70XS		
1304	6.94	5.27
3306	8.82	2.85
9301		
52NC		
1906	7.34	4.85
60WZ		
2004	6	4.17
111B		
411B		
911E		
001B	6.09	4.52
8403		
9702		
841A	4.368	2.519
0806		
8506		
0807		
151F		
911C		
141A		
251E		
21KM		
051B		
151B		
151C		
42KH		
98MH		
981A		

ALS/ALS Standard/2024_5033665

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

REFERENCE	COVER LEVEL	INVERT LEVEL
801D		
501C		
621A		
061D		
1401	5.12	3.49
611A		
621E		
621G		
4106	6.12	3.99
3302	6.62	3.75
751B	9.99	
751D	10.2	
9202		
8702	49.63	47.01
861B	49.8	47.041
2101	40.98	37.91
191B		
961K		
801A		
801C		
52JD		
001B		
051F		
411B		
961E		
961M		
881A		
191C		
191D		
88ZX		
8804		
061D		
5905	6.66	3.61
951A		
951D		
701D		
311C		
811D		
811F		
811I		
811K		
811N		
821B		
821D		
821E		
811Q		
811S		
811U		
811X		
821G		
812C		
812E		
812G		
812J		
812L		
812N		
812P		
812S		
812V		
821I		
821K		
821L		
812Z		
813B		
811A		
811H		
811Z		
711B		
812I		
812T		
821N		
751F		
801E		
391B		
28ZX		
271A		
021A		
021B		
39MK		
98NJ		
721C		

REFERENCE	COVER LEVEL	INVERT LEVEL
511A		
651A		
621B		
061E		
9601		
621D		
621F		
411A		
31ZW		
751A		
751C	10.17	
861C	50	47.022
8602	49.48	47.08
861A	49.86	47.054
621C		
291A		
191C		
961L		
801B		
52HK		
0501	5.5	3.76
001C		
051E		
761A		
961N		
961H		
961F		
6910	7.72	3.74
8803		
191A		
191B		
471A		
6004		
951B		
421D		
701C		
711A		
811E		
811G		
811J		
811L		
821A		
821C		
811O		
811P		
811R		
811T		
821F		
811Y		
812B		
812D		
812F		
812H		
812K		
812M		
812O		
812Q		
812U		
812W		
821J		
812X		
821M		
813A		
813C		
811C		
8204		
812A		
821H		
812R		
812Y		
751E		
751G		
221A		
221B		
38ZY		
281A		
011A		
6705		
171B		
98NH		
321B		

ALS/ALS Standard/2024_5033665

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

REFERENCE	COVER LEVEL	INVERT LEVEL
431A		
60LH		
60MK		
60LD		
60LK		
071A		
0603		
321F		
621A		
421A		
931A		
99LE		
99LC		
781B		
2704		
9903	7.11	4.8
991A		
061B		
831A		
831C		
311D		
251H		
911B		
951A		
421E		
11NL		
813D		
971B		
98NL		
651B		
301A		
951G		
32NH		
9004	7.72	3.16
071B	9.51	8.08
51KK		
011D		
211A		
561A		
961A		
811B		
111D		
41LK		
09KJ		
9003		2.62
691A		
7117	34.89	
0105		
551A		
651D		
591F		
501A		
191F		
6102	7.06	5.44
711C		
1903	6.23	3.51
09HK		
1405	7.83	4.47
961P		
041B		
80NK		
70NH		
811W		
591A		
171C		
091A		
011B		
711D		
331D		
891A		
801I		
261B		
231B		
131A		
071C		
961Q		
961S		
961U		
581A		
671D		
901C		

REFERENCE	COVER LEVEL	INVERT LEVEL
41LH		
60ML		
61NH		
60MF		
60MN		
161D		
321E		
321G		
161C		
421B		
931B		
201A		
061A		
781C		
061C		
931D		
62FD		
41MK		
831B		
2908	6.37	4.04
211A		
911A		
2201		
521A		
321H		
921A		
6508	7.07	5.26
98NK		
98LJ		
631A		
421B		
461A		
321C		
09JL		
0606	5.86	3.81
011C		
011E		
5604		
701A		
9101		-1.09
111C		
971C		
99LD		
09KK		
601A		
321B		
7116	34.37	
011J		
651C		
931A		
591G		
191E		
61LC		
7111	31.22	28.11
701B		
09HJ		
141D		
961O		
041A		
141E		
80NL		
811V		
501F		
591B		
521B		
011A		
621J		
711E		
331E		
801H		
261A		
221A		
231C		
821G		
671B		
961R		
961T		
481A		
671C		
871A		
311E		

ALS/ALS Standard/2024_5033665

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

REFERENCE	COVER LEVEL	INVERT LEVEL
061J	9.34	8.03
061E	9.57	7.97
061G	9.73	8.33
061I	9.5	8.24
161F		
991B		
991D		
991E		
991G		
041C		
701C		
701E		
711C		
711B		
331F		
691C		
781G		
781F		
971A		
721D		
521C		
261C		
171D		
171F		
501G		
391C		
461B		
941A		
651E		
651H		

REFERENCE	COVER LEVEL	INVERT LEVEL
071D	9.34	
061F	9.71	8.62
061H	9.48	8.45
161E		
161G		
991C		
891A		
991F		
981B		
041D		
701B		
701F		
701G		
331G		
691B		
691A		
781E		
781D		
111A		
721E		
981B		
171E		
271A		
061K		
301D		
301E		
471B		
161H		
651F		
651G		

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.

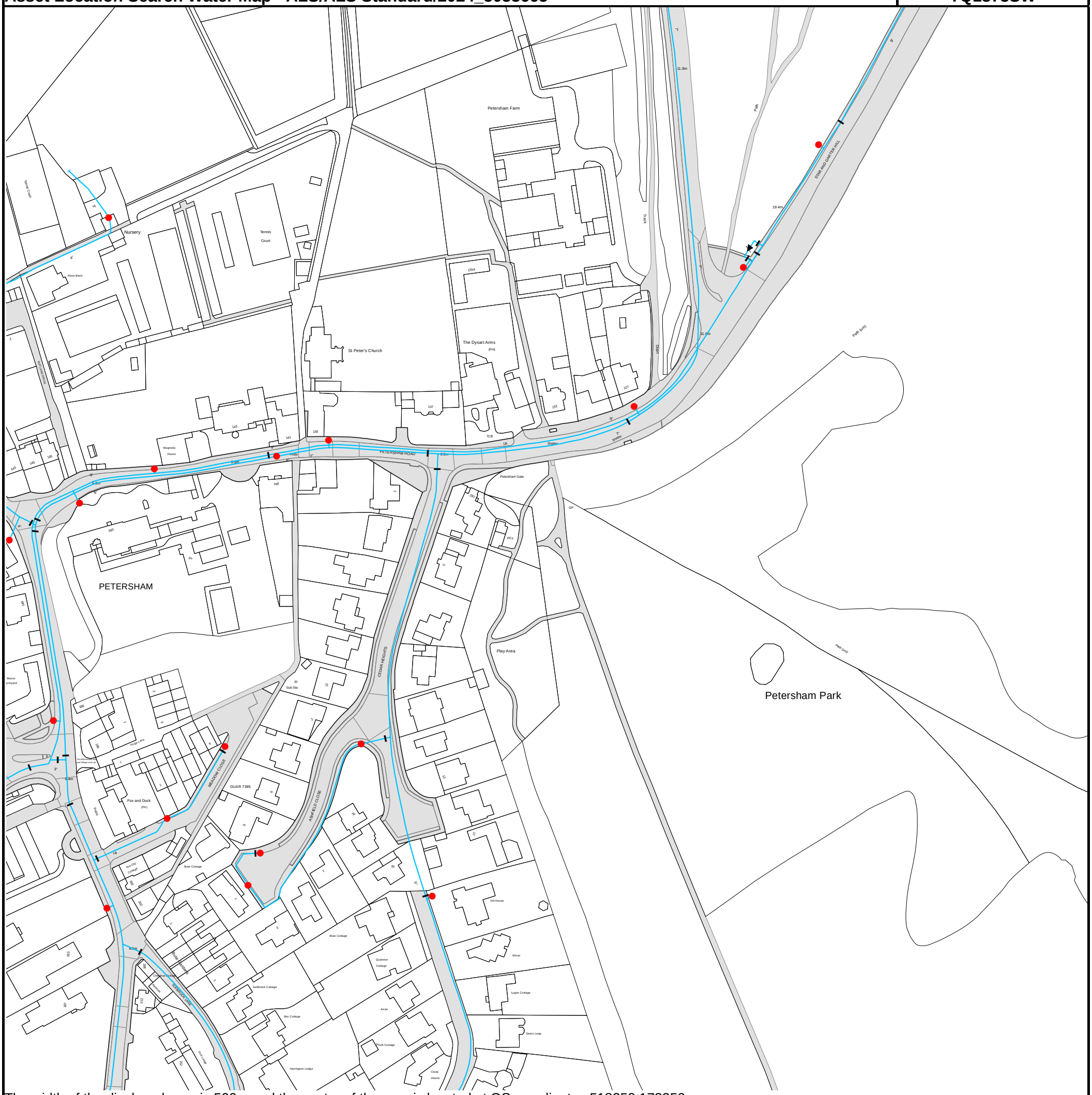
- Conduit Bridge
- Subway
- Tunnel

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/2024_5033665

TQ1873SW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 518250,173250

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 Map - ALS/ALS Standard/2024_5033665

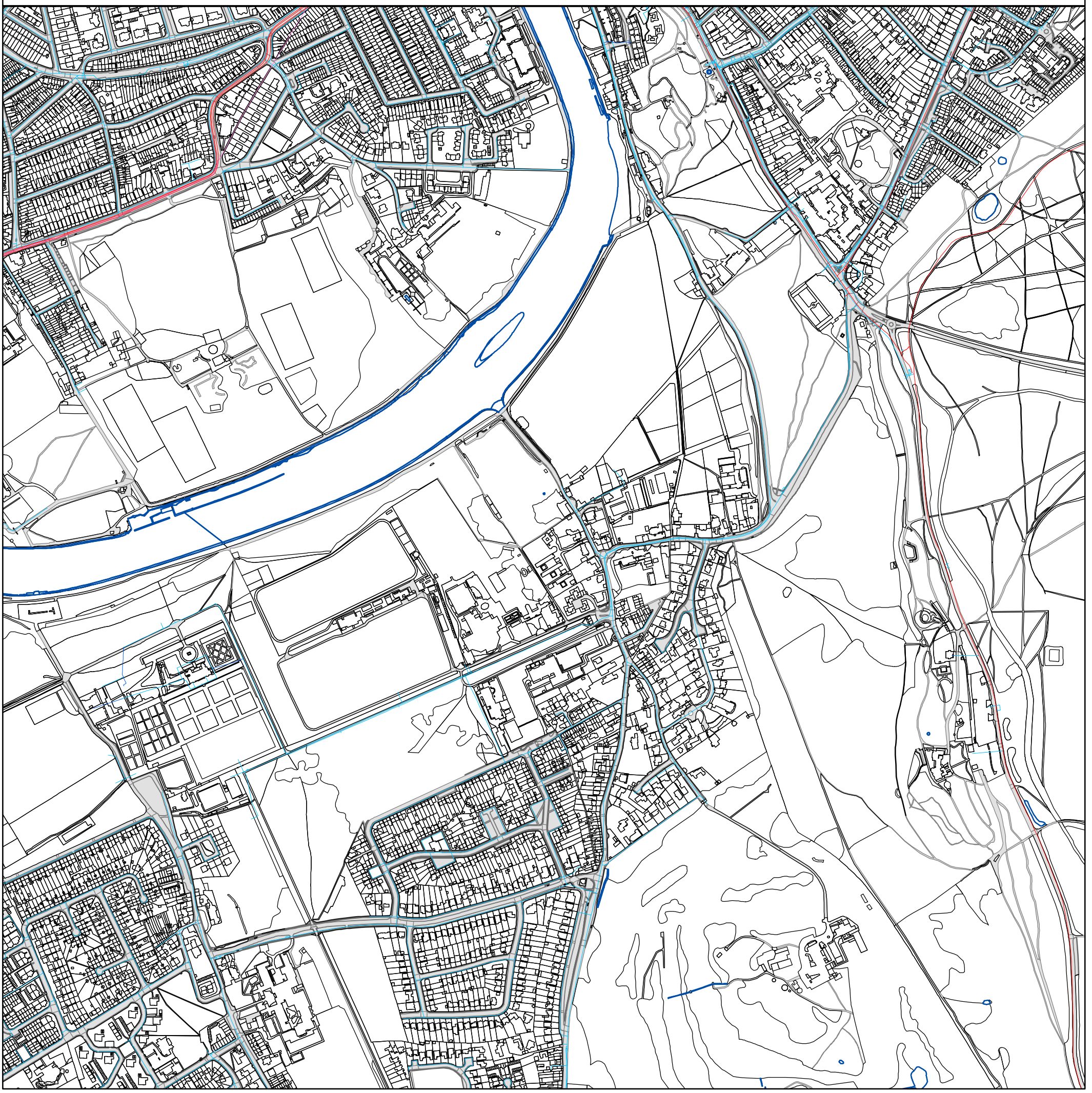
TQ1773SE

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 517750,173250

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 with the sanction of the Controller of H.M Stationary Office License Number 10019345

ALS/ALS Standard/2024_5033665



0 45 90 180 270 360
Meters

Scale:	1:7160
Width:	2000m
Printed By:	Skrishna1
Print Date:	09/08/2024
Map Centre:	517901,173279
Grid Reference:	TQ1773SE

Comments:

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

Disclaimer

This report has been prepared by GeoSmart in its professional capacity as soil, groundwater, flood risk and drainage specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by GeoSmart solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to GeoSmart at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, GeoSmart may, by prior written agreement, agree to such release, provided that it is acknowledged that GeoSmart accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. GeoSmart accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against GeoSmart except as expressly agreed with GeoSmart in writing.

For full T&Cs see http://geosmartinfo.co.uk/terms-conditions

Further information

Information on confidence levels and ways to improve this report can be provided for any location on written request to info@geosmart.co.uk or via our website. Updates to our model are ongoing and additional information is being collated from several sources to improve the database and allow increased confidence in the findings. Further information on groundwater levels and flooding are being incorporated in the model to enable improved accuracy to be achieved in future versions of the map. Please contact us if you would like to join our User Group and help with feedback on infiltration SuDS and mapping suggestion.

Important consumer protection information

This search has been produced by GeoSmart Information Limited, Suite 9-11, 1st Floor, Old Bank Buildings, Bellstone, Shrewsbury, SY1 1HU.

Tel: 01743 298 100

Email: info@geosmartinfo.co.uk

GeoSmart Information Limited is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom.
- sets out minimum standards which firms compiling and selling search reports have to meet.
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals.
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.
- By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports.
- act with integrity and carry out work with due skill, care and diligence.
- at all times maintain adequate and appropriate insurance to protect consumers.
- conduct business in an honest, fair and professional manner.
- handle complaints speedily and fairly.
- ensure that products and services comply with industry registration rules and standards and relevant laws.
- monitor their compliance with the Code.

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs contact details:

The Property Ombudsman scheme

Milford House

43-55 Milford Street

Salisbury

Wiltshire SP1 2BP

Tel: 01722 333306

Fax: 01722 332296

Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

Please ask your search provider if you would like a copy of the search code

Complaints procedure

GeoSmart Information Limited is registered with the Property Codes Compliance Board as a subscriber to the Search Code. A key commitment under the Code is that firms will handle any complaints both speedily and fairly. If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Complaints should be sent to:

Martin Lucass

Commercial Director

GeoSmart Information Limited

Suite 9-11, 1st Floor,

Old Bank Buildings,

Bellstone, Shrewsbury, SY1 1HU

Tel: 01743 298 100

martinlucass@geosmartinfo.co.uk

16 Terms and conditions, CDM regulations and data limitations

Terms and conditions can be found on our website:

http://geosmartinfo.co.uk/terms-conditions/

CDM regulations can be found on our website:

http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/

Data use and limitations can be found on our website:

http://geosmartinfo.co.uk/data-limitations/