Hannah ▪ Reed

LIDL HAYES, BOTWELL LANE

FOUL DRAINAGE STATEMENT

Lidl UK
London North Property Office
4 – 14 Blackbird Hill
Wembley
London
NW9 8SD

Hannah, Reed and Associates Limited
Marlborough House
High Street
Kidlington
Oxford OX5 2DN
Tel No. 01865 841893

X-213440/PS/TB/SK/November 2013

Revision: C

CONTENTS

APPENDICES

INTRODUCTION

This Foul Water Drainage Assessment (FDA) has been undertaken in order to assess existing foul water drainage infrastructure and to examine potential foul water management options in relation to the proposed development described below. It aims to take into account all the available information at the time of writing in order to provide appropriate foul water management options.

This report was prepared on behalf of Lidl UK in support of a planning application to be submitted to the London Borough of Hillingdon. The proposed development consists of the construction of new Lidl store on the site of a former swimming pool complex in Hayes, Greater London.

1. SITE INFORMATION

1.1 Site Location

The site of the proposed development lies on Botwell Lane, Hayes, and is located by the postcode UB3 2BG and National Grid Reference 509730 mE, 180080 mN.

The site is bound by Central Road to the east, Botwell Lane to the south and west, and residential properties to the north. Site location maps detailing the site and surrounding area are provided in **Appendix A**.

1.2 Existing Development

The Brownfield site was formerly home to a swimming pool complex which has subsequently been demolished.

1.3 Topography

Ground levels at the site generally appear to fall towards the north west of the site with levels varying between approximately 35.0 m Above Ordnance Datum (AOD) and 33.5 m AOD.

1.4 Existing Foul Water Drainage Infrastructure

Thames Water is the local water authority and sewerage undertaker. An Asset Location Plan detailing existing public and private sewers at, and in the vicinity of, the site is included in **Appendix C**.

The plans show a 450 mm diameter public foul water sewer running south along Botwell Lane, to the west of the site, which increases in diameter to 525 mm near the southern site boundary.

1.5 Existing Connections to Foul Water Drainage Infrastructure

The location of the existing connection to the public foul water sewer at the site is unknown at the time of writing.

However, based on the existing site layout and the topography of the site it is considered probable that the existing connection is located in the southern corner of the site, near the junction of Botwell Lane and Central Avenue.

2. FOUL DRAINAGE OPTIONS

2.1 Description of Proposed Development

The proposed development consists of the construction of new Lidl store and associated hard-standing parking areas.

2.2 Compliance with Building Regulations

In compliance with Building Regulations Approved Document H, foul water drainage must be designed as follows:

'(1) An adequate system of drainage shall be provided to carry foul water from appliances within the building to one of the following, listed in the order of priority-

a) a public sewer; or, where that is not reasonably practicable,
b) a private sewer communicating with a public sewer; or, where that is not reasonably practicable,
c) either a septic tank which has an appropriate form of secondary treatment or another wastewater treatment system; or, where that is not reasonably practicable,
d) a cesspool.'

2.3 Peak Flow Estimation

The Peak Flow rate has been estimated in accordance with BS EN 12056-2:2000 "Gravity Drainage Systems Inside Buildings"

The following should be considered when assessing the use factors and consequential peak flow rates in a wastewater drain:

a) The number and type of appliances to be connected and the possibility of coincidence of discharge from different appliances
b) The rate of discharge from each appliance
c) The average duration of discharge from each appliance
d) The likely use interval of each appliance

The following empirical formula may be used:

$$Q = k_{du}\sqrt{\sum DU}$$

where:

Q is the peak wastewater design flow rate
K_{du} is a frequency factor. Typical values given in Table 3.5.1
DU is the discharge unit, which is a characteristic value of the rate of wastewater outflow from an appliance. Typical values are given in Table 3.5.2

Table 2.3.1: Typical frequency factors (k_{DU}):

Type of Building	k_{DU}
Dwellings, guesthouses, offices (intermittent use)	0.5
Hospitals, school, restaurant, hotel (frequent use)	0.7
Toilets and/or shower open to the public (congested use)	1.0
Laboratory buildings (special use)	1.2

Table 2.3.2: Typical values of discharge units (DU):

Type of Appliance	DU
Washbasin, shower	0.3 to 0.6
Bath, kitchen sink	0.8 to 1.3
Dishwasher	0.2 to 0.8
Household washing machine	0.5 to 0.8
WCs	1.2 to 2.5

Table 2.3.3: The estimated Discharge Unit flow rate:

Discharge Unit Type	Total	Flow Rate (l/s)	Total (l/s)
Washbasin	4	0.5	2.0
WC	3	2.0	6.0
Floor Gully	1	2.0	2.0
		∑ DU =	10.0

Peak flow, $Q = 0.5\sqrt{10.0} \quad \Rightarrow Q = 1.58\ l/s$

The estimated peak flow from the proposed development is 1.58 l/s.

2.4 Preferred Option – Connection to the Public Sewer via Gravity

In accordance with the foul water drainage hierarchy, the preferred option should be to reuse the existing connection to the public foul water sewer.

As the public sewer has a comparatively large diameter it is considered extremely unlikely that it would have insufficient capacity to accept the small peak flows that would be generated by the proposed development.

Furthermore, the peak flows generated by the site post-development would likely be less than those generated by the site prior to demolition.

Thames Water Manhole 6012 is located on the southern site boundary and is approximately 2.4 m deep. This would therefore likely provide a feasible alternative connection point should reusing the existing connection prove impractical.

CONCLUSIONS

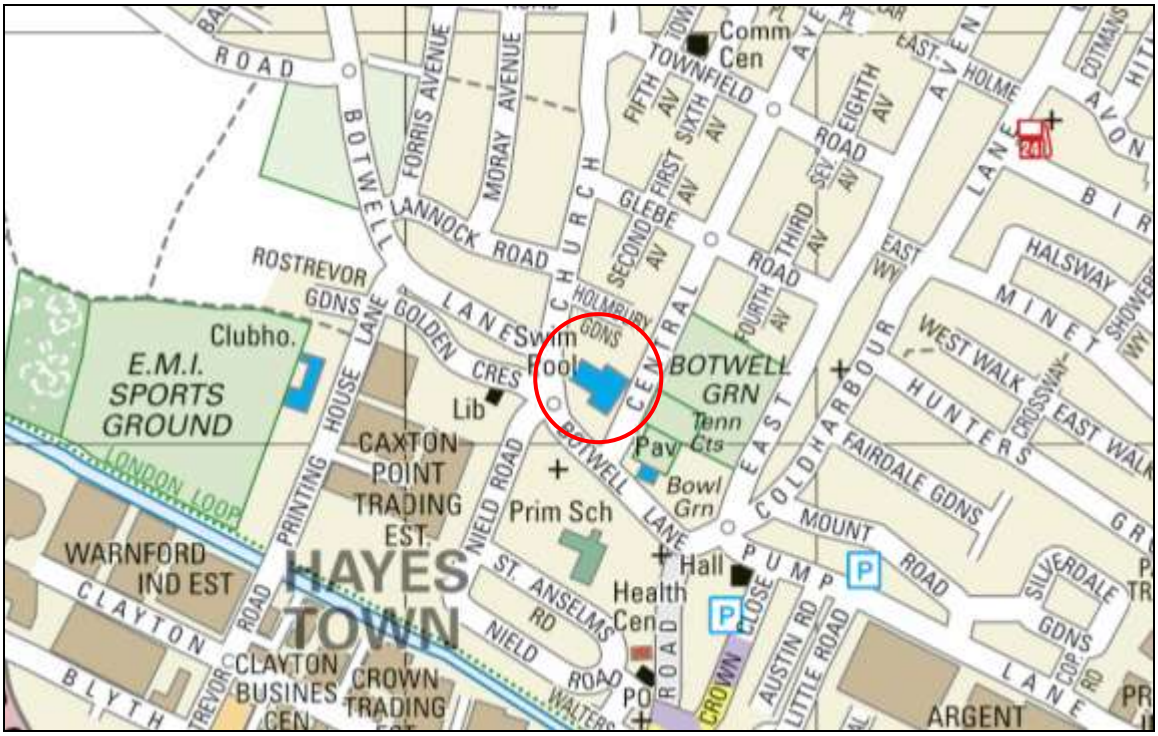
- The proposed development consists of the construction of new Lidl store on the site of a former swimming pool complex in Hayes, Greater London.
- The peak flow that would be generated by the proposed development is anticipated to be approximately 1.58 l/s.
- In accordance with the foul water drainage hierarchy, the preferred option should be to reuse the existing connection to the public foul water sewer.
- It is considered that the public foul water sewer in Botwell Lane would have sufficient capacity to accept the anticipated peak flows that would be generated by the site post development.

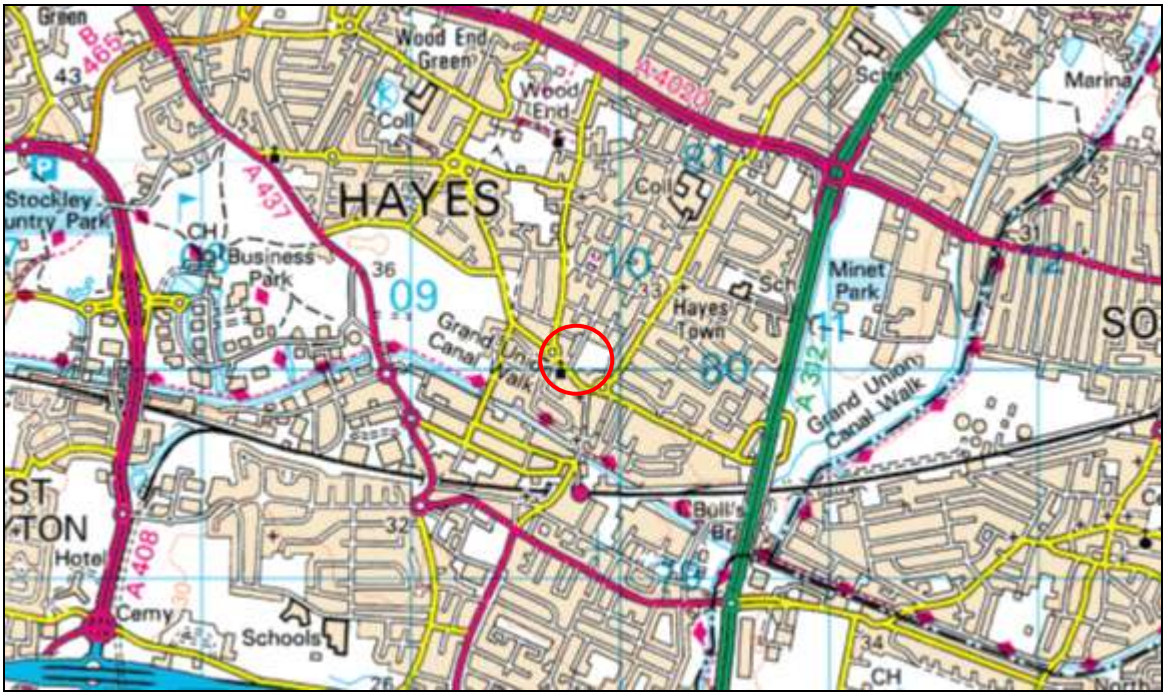
APPENDIX A

Site Location Maps

Site Location Maps

Lidl Hayes, Botwell Lane, Hayes, Greater London, UB3 2BG
509730 mE, 180080 mN





APPENDIX B

Proposed Site Plan

SCHEDULE OF ACCOMMODATION

🟥	Lidl site area	0.517ha (1.277 acres)
🟩	Council site area	0.020ha (0.05 acres)
	Total site area	0.537ha (1.327 acres)

PARKING

Standard	58	
Disabled	3	
Parent & child	3	
TOTAL	64	spaces

POOLE & PATTLE chartered architects
TEL: 01473 230580 FAX 01473 231549 E-MAIL mail@pooleandpattle.co.uk
5 OBSERVATION COURT 84 PRINCES STREET IPSWICH SUFFOLK IP1 1RY

Project
PROPOSED LIDL, CENTRAL AVENUE, HAYES

Date
SEPT 2013

Scale
1:500 @ A3

Drawing
PROPOSED SITE LAYOUT

3176

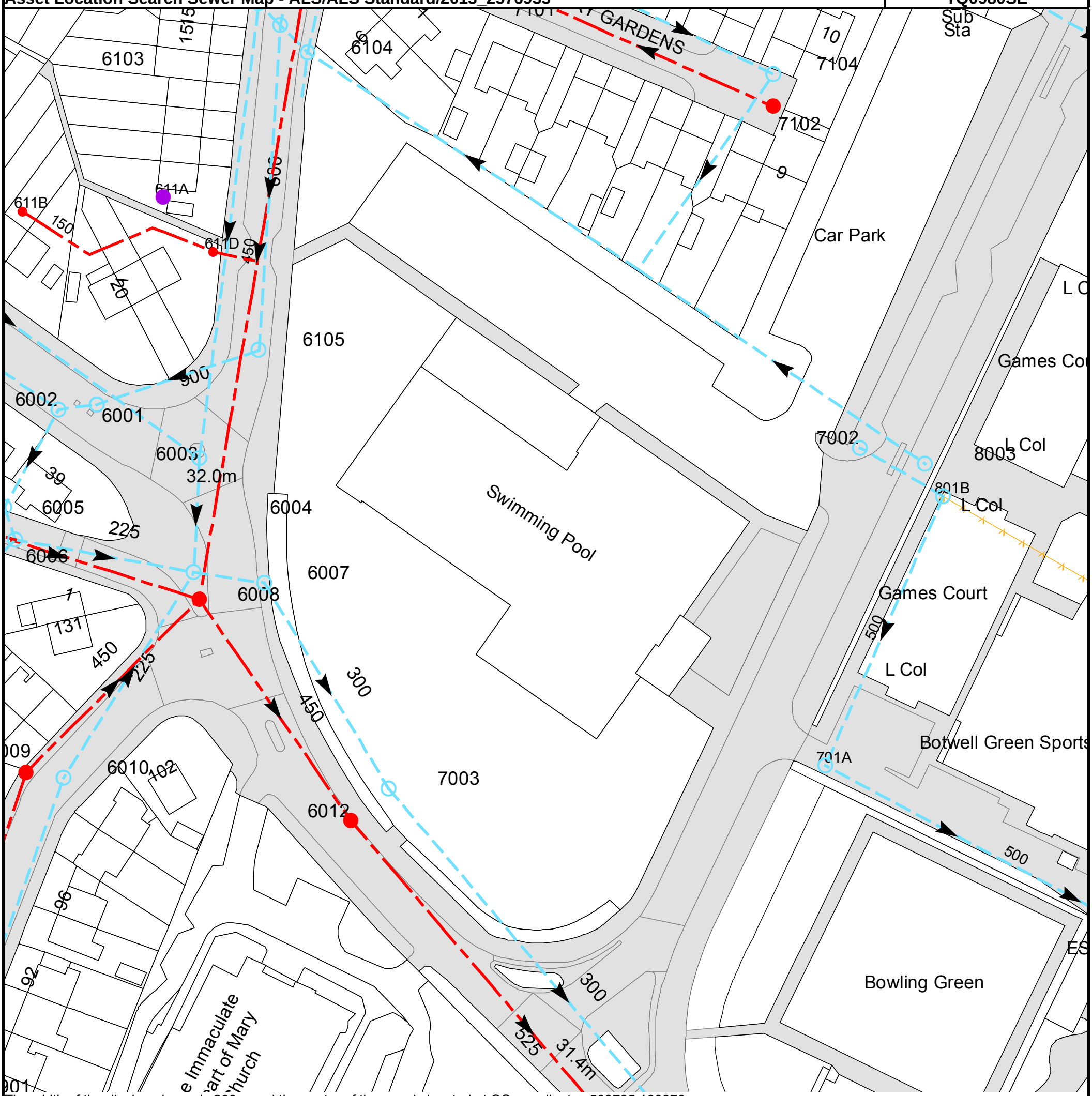
108

E

APPENDIX C

Thames Water Asset Location Plans

Asset Location Search Sewer Map - ALS/ALS Standard/2013_2576933 | **TQ0980SE**



The width of the displayed area is 200m and the centre of the map is located at OS coordinates 509735,180070

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
6012	31.59	29.2
7003	n/a	n/a
701A	31.34	30.09
6007	n/a	n/a
801B	31.5	30.3
8003	n/a	n/a
7002	n/a	n/a
7102	n/a	n/a
7104	n/a	n/a
6104	n/a	n/a
6103	n/a	n/a
6105	n/a	n/a
611D	n/a	n/a
611B	n/a	n/a
611A	n/a	n/a
6005	n/a	n/a
6006	n/a	n/a
6009	n/a	n/a
6002	n/a	n/a
6010	n/a	n/a
6001	n/a	n/a
6004	n/a	n/a
6008	32.78	30.24
-	-	-
6003	n/a	n/a

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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

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

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

- Trunk Surface Water
- Trunk Foul
- Storm Relief
- Trunk Combined
- Vent Pipe
- Bio-solids (Sludge)
- Proposed Thames Surface Water Sewer
- Proposed Thames Water Foul Sewer
- Gallery
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Sludge Rising Main
- Proposed Thames Water Rising Main
- Vacuum

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
- Dam Chase
- Fitting
- Meter
- Vent Column

Operational Controls

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

- Control Valve
- Drop Pipe
- Ancillary
- 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.

- Outfall
- Undefined End
- Inlet

Other Symbols

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

- Public/Private Pumping Station
- Change of characteristic indicator (C.O.C.I.)
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Operational Site
- Chamber
- Tunnel
- Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

- Foul Sewer
- Surface Water Sewer
- Combined Sewer
- Gulley
- Culverted Watercourse
- Proposed
- Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plans are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate 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 level indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. 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 present on the plan, please contact a member of Property Insight on 0845 070 9148.