Flood map for planning

Your reference	Location (easting/northing)	Created
Drury Lane Travelodge	**530253/181307**	**13 Feb 2023 13:39**

Your selected location is in flood zone 1, an area with a low probability of flooding.

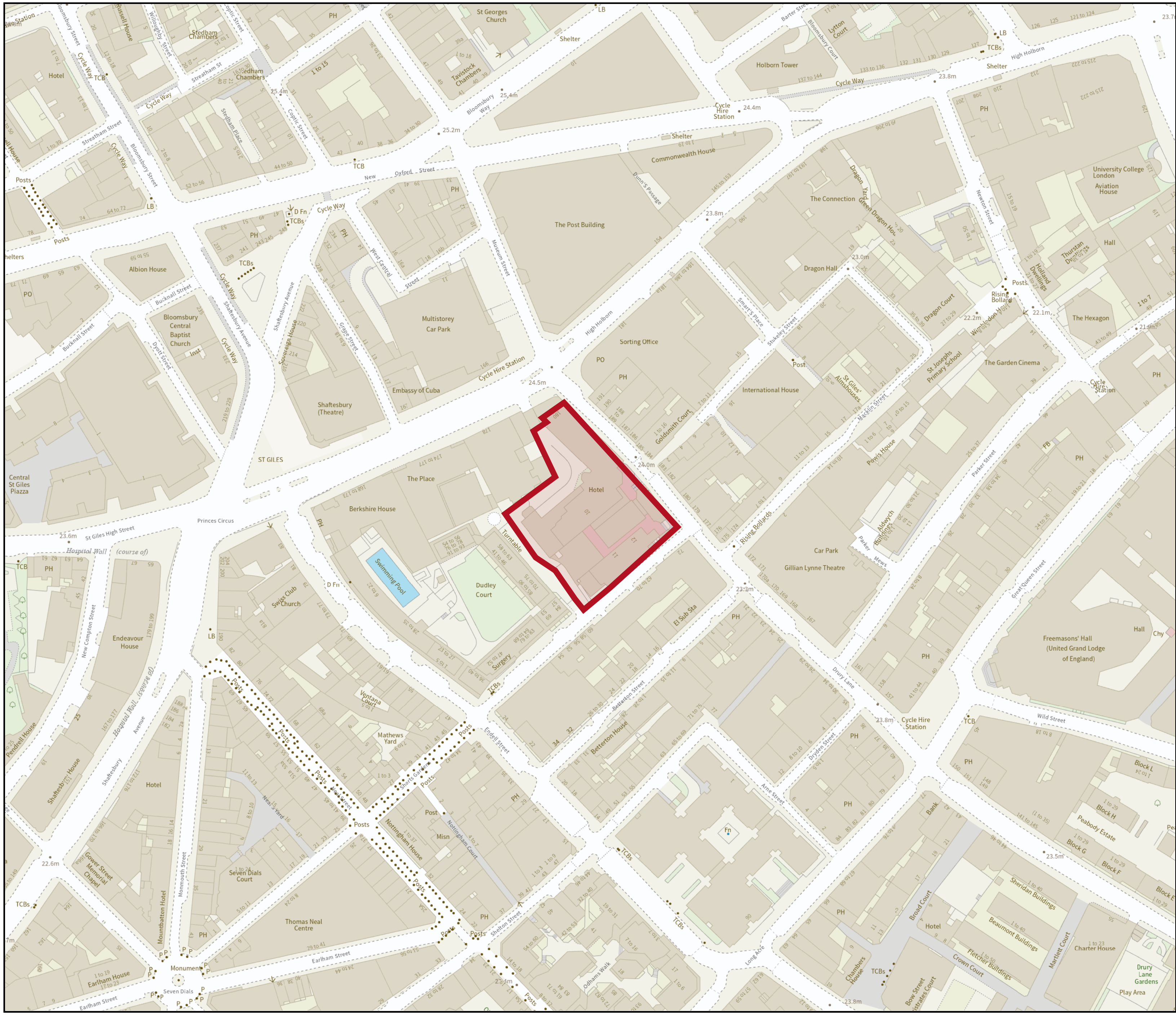
You will need to do a flood risk assessment if your site is **any of the following:**

- bigger that 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
Drury Lane Travelodge

Location (easting/northing)
530253/181307

Scale
1:2500

Created
13 Feb 2023 13:39

Selected area

Flood zone 3

Flood zone 2

Flood zone 1

Flood defence

Main river

Water storage area

0 20 40 60m

Appendix D – COMMERCIALDW Report

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

TM Property Searches Limited
1200, Delta Business Park
Swindon
SN5 7XZ

Search address supplied	DRURY LANE MOAT HOUSE, 10, DRURY LANE, LONDON, WC2B 5RE
Your reference	24291752
Our reference	CDWS/CDWS Standard/2023_4785665
Received date	14 February 2023
Search date	15 February 2023

Keeping you up-to-date

Notification of Price Changes

From 1st April 2023 Thames Water property Searches will be increasing the price of it CON29DW, CommercialDW Drainage & Water Enquiries and Asset Location Searches.

Historically cost would rise in line with RPI but as this currently sits at 14.2%, we are capping it at 10%. Customer will be emailed with the new price by January 1st 2023. Any orders received with higher payments prior to 1st April 2023 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

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

0800 009 4540

CON29DW COMMERCIAL DRAINAGE & WATER SEARCH

DRAINAGE + WATER SEARCHES NETWORK DWSN

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

Question		Summary Answer
Maps		
1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map Provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map Provided
Drainage		
2.1	Does foul water from the property drain to a public sewer?	Connected
2.2	Does surface water from the property drain to a public sewer?	Connected
2.3	Is a surface water drainage charge payable?	See Details
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	Yes
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building, which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?	Not At Risk
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	7.555 Kilometres
Water		
3.1	Is the property connected to mains water supply?	Connected
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	Yes
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	Hard
3.6	Is there a meter installed at this property?	Yes
3.7	Please include details of the location of any water meter serving the property.	See Details

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

Question		Summary Answer
Charging		
4.1.1	Who is responsible for providing the sewerage services for the property?	Thames Water
4.1.2	Who is responsible for providing the water services for the property?	Thames Water
4.2	Who bills the property for sewerage services?	See Details
4.3	Who bills the property for water services?	See Details
Trade Effluent		
5.1	Is there a consent, on this property, to discharge Trade Effluent under S118 of the Water Industry Act(1991) into the public sewerage system?	No
Wayleaves, Easements, Manhole Cover and Invert levels		
6.1	Is there a wayleave/easement agreement giving Thames Water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?	No
6.2	On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available.	See Details

Search address supplied: DRURY LANE MOAT HOUSE, 10, DRURY LANE, LONDON, WC2B 5RE

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website www.thameswater.co.uk and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the map of public sewers, the map of waterworks, water and sewer billing records, adoption of public sewer records, building over public sewer records, the register of properties subject to internal foul flooding, the register of properties subject to poor water pressure and the drinking water register.
Thames Water Utilities Ltd (TWUL) holds all of these.

TWUL, trading as Property Searches, are responsible in respect of the following:-

(i) any negligent or incorrect entry in the records searched

(ii) any negligent or incorrect interpretation of the records searched

(iii) any negligent or incorrect recording of that interpretation in the search report

(iv) and compensation payments

Maps

1.1 Where relevant, please include a copy of an extract from the public sewer map.

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

1.2 Where relevant, please include a copy of an extract from the map of waterworks.

A copy of an extract of the map of waterworks is included, showing water mains, resource mains or discharge pipes in the vicinity of the property.

Drainage

2.1 Does foul water from the property drain to a public sewer?

Records indicate that foul water from the property drains to a public sewer.

2.2 Does surface water from the property drain to a public sewer?

Records indicate that surface water from the property drains to a public sewer.

2.3 Is a surface water drainage charge payable?

Records indicate that a surface water charge is applicable at this property.

2.4 Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundary of the property?

The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from the 1st October 2011 there may be lateral drains and/or public sewers which are not recorded on the public sewer map but which may prevent or restrict development of the property.

2.4.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

2.5 Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

The public sewer map included indicates that there is a public sewer within 30.48 metres (100 feet) of a building within the property.

2.5.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

2.6 Are any sewers or lateral drains serving, or which are proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

2.7 Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

There are no records in relation to any approval or consultation about plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

2.8 Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership It is therefore possible that a property may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

2.9 Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

The nearest sewage treatment works is OLYMPIC PARK BLACKWATER PLANT which is 7.555 kilometres to the east of the property.

Water

3.1 Is the property connected to mains water supply?

Records indicate that the property is connected to mains water supply.

3.2 Are there any water mains, resource mains or discharge pipes within the boundary of the property?

The map of waterworks indicates that there are water mains, resource mains or discharge pipes within the boundaries of the property.

3.3 Is any water main or service pipe serving, or which is proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

3.4 Is the property at risk of receiving low water pressure or flow?

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

3.5 What is the classification of the water supply for the property?

The water supplied to the property has an average water hardness of 110.2mg/l calcium which is defined as HARD by ThamesWater.

3.6 Is there a meter installed at this property?

Records indicate that there is a meter installed at this property.

3.7 Please include details of the location of any water meter serving the property.

Records indicate that the property is served by a water meter, which is not located within the property.

Charging

4.1.1 – Who is responsible for providing the sewerage services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

4.1.2 – Who is responsible for providing the water services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the water undertaker for the area.

4.2 Who bills the property for sewerage services?

If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk

4.3 Who bills the property for water services?

If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk

Trade Effluent

5.1 Is there a consent, on this property, to discharge Trade Effluent under S118 of the water Industry act (1991) into the public sewerage systems?

No.

Wayleaves, Easements, Manhole Cover and Invert levels

6.1 Is there a wayleave/easement agreement giving Thames water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?

No.

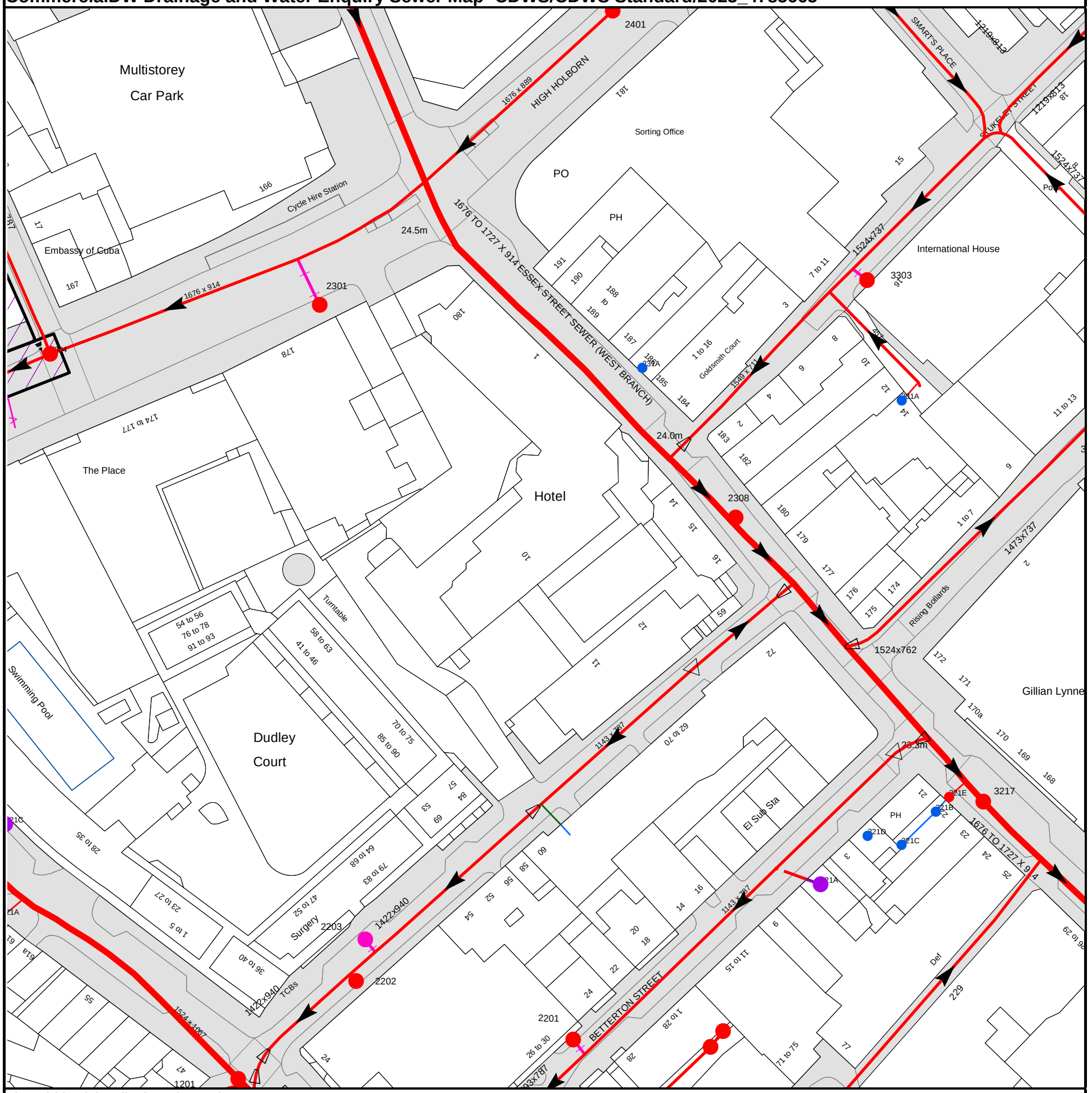
6.2 On the copy extract from the public sewer map, please show manhole cover, depth, and invert levels where the information is available.

Details of any manhole cover and invert levels applicable to this site are enclosed.

Payment for this Search

A charge will be added to your suppliers account.

CommercialDW Drainage and Water Enquiry Sewer Map- CDWS/CDWS Standard/2023_4785665



The width of the displayed area is 200m

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 no survey information is available.

Manhole Reference	Manhole Cover Level	Manhole Invert Level
2401	24.14	19.87
1201	22.9	16.5
22BJ	n/a	n/a
2201	n/a	n/a
22CA	n/a	n/a
2202	23.02	n/a
2203	n/a	n/a
321A	n/a	n/a
321C	n/a	n/a
321D	n/a	n/a
321B	n/a	n/a
3217	23.43	19.23
321E	n/a	n/a
2308	n/a	19.3
331A	n/a	n/a
231A	n/a	n/a
2301	23.7	20.17
3303	n/a	n/a
1304	23.42	19.62

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Con29DW Commercial Drainage and Water 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

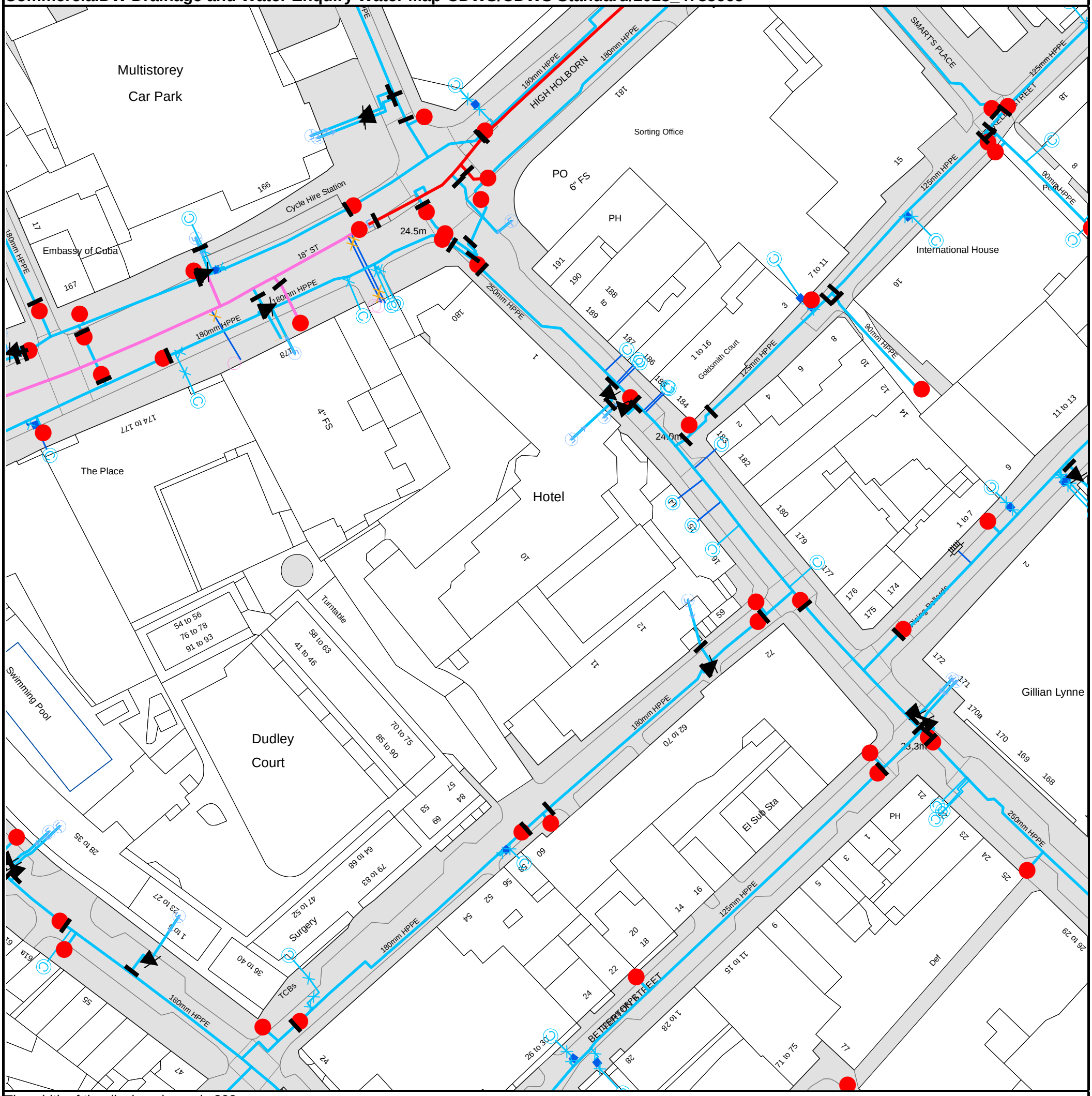
- Casement — Ducts may contain high voltage cables. Please check with Thames Water.
- Conduit Bridge
- Subway
- Tunnel

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.

Thames Water Utilities Ltd, Property Searches, PO Box 3189, Slough SL1 4W, DX 151280 Slough 13
T 0800 009 4540 **E** searches@thameswater.co.uk **I** www.thameswater-propertysearches.co.uk

CommercialDW Drainage and Water Enquiry Water Map-CDWS/CDWS Standard/2023_4785665



The width of the displayed area is 200m

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.

Con29DW Commercial Drainage and Water Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

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

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.

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

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

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.

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')

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.

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.

Thames Water Utilities Ltd, Property Searches, PO Box 3189, Slough SL1 4W, DX 151280 Slough 13
T 0800 009 4540 **E** searches@thameswater.co.uk **I** www.thameswater-propertysearches.co.uk

For your guidance:

- Thames Water Property Searches Complaints Procedure:
  - Thames Water Property Searches offers a robust complaints procedure. Complaints can be made by telephone, in writing, by email (searches@thameswater.co.uk) or through our website (www.thameswater-propertysearches.co.uk)

As a minimum standard Thames Water Property Searches will:

- endeavour to resolve any contact or complaint at the time of receipt. If this isn't possible, we will advise of timescales;
- investigate and research the matter in detail to identify the issue raised (in some cases third party consultation will be required);
- provide a response to the customer within 10 working days of receipt of the complaint;
- provide compensation, if no response or acknowledgment that we are investigating the case is given within 10 working days of receipt of the complaint;
- keep you informed of the progress and, depending on the scale of investigation required, update with new timescales as necessary;
- provide an amended search, free of charge, if required;
- provide a refund if we find your complaint to be justified; take the necessary action within our power to put things right.

If you want us to liaise with a third party on your behalf, just let us know.

If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager, for resolution, who will respond again within 5 working days.

If you remain dissatisfied with our final response you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk

Question 1.1

For your guidance:

- The Water Industry Act 1991 defines Public Sewers as those which Thames Water have responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purposes only.
- 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.
- Assets other than public sewers may be shown on the copy extract, for information.

Question 1.2

For your guidance:

- The “water mains” in this context are those, which are vested in and maintainable by the water company under statute.
- Assets other than public water mains may be shown on the plan, for information only.
- Water companies are not responsible for private supply pipes connecting the property to the public water main and do not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- 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.

Question 2.1

For your guidance:

- Water companies are not responsible for any private drains that connect the property to the public sewerage system and do not hold details of these. The property owner will normally have sole responsibility for private drains serving the property. These may pass through land outside the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If foul water does not drain to the public sewerage system, the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.2

For your guidance:

- Sewerage Undertakers are not responsible for any private drains that connect the property to the public sewerage system, and do not hold details of these.
- The property owner will normally have sole responsibility for private drains serving the property. These private drains may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- In some cases, 'Sewerage Undertakers' records do not distinguish between foul and surface water connections to the public sewerage system.
- At the time of privatisation in 1989, Sewerage Undertakers were sold with poorly-kept records of sewerage infrastructure. The records did not always show which properties were connected for surface water drainage purposes. Accordingly, billing records have been used to provide an answer for this element of the drainage and water search.
- Due to the potential inadequacy of 'Sewerage Undertakers' infrastructure records with respect to surface water drainage, it is the customer's responsibility to inform the Sewerage Undertaker that they do not receive the surface water drainage service. If on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.
- If surface water from the property does not drain to the public sewerage system, the property may have private facilities in the form of a soakaway or private connection to a watercourse.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.3

For your guidance:

- If surface water from the property drains to a public sewer, then a surface water drainage charge is payable.
- Where a surface water drainage charge is currently included in the property's water and sewerage bill but, on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Question 2.4

For your guidance:

- Thames Water has a statutory right of access to carry out work on its assets. Employees of Thames Water or its contractors may, therefore, need to enter the property to carry out work.
- Please note if the property was constructed after 1st July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public sewer running within the boundary of the property may restrict further development. The Company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.
- 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.

Question 2.4.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public pumping station within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- 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.

Question 2.5

For your guidance:

- From the 1st October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.
- The presence of a public sewer within 30.48 metres (100 feet) of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- 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.

Question 2.5.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The presence of a public pumping station within 50 metres of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- 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.

Question 2.6

For your guidance:

- Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.
- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to a public sewer.
- Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.
- Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991 and meeting the requirements of 'Sewers for Adoption' 6th Edition.

Question 2.7

For your guidance:

- From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have been approved or consulted about any plans to erect a building or extension on the property over or in the vicinity of these.
- Buildings or extensions erected over a sewer in contravention of building controls may have to be removed or altered.

Question 2.8

For your guidance:

- For reporting purposes buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water Utilities Ltd on Tel: 0800 316 9800 or website www.thameswater.co.uk

Question 2.9

For your guidance:

- The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.
- The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.
- It should be noted that there may be a private sewage treatment works closer than the one detailed above that has not been identified.
- As a responsible utility operator, Thames Water Utilities Ltd seeks to manage the impact of odour from operational sewage works on the surrounding area. This is done in accordance with the Code of Practice on Odour Nuisance from Sewage Treatment Works issued via the Department of Environment, Food and Rural Affairs (DEFRA). This Code recognises that odour from sewage treatment works can have a detrimental impact on the quality of the local environment for those living close to works. However DEFRA also recognises that sewage treatment works provide important services to communities and are essential for maintaining standards in water quality and protecting aquatic based environments. For more information visit www.thameswater.co.uk

Question 3.1

For your guidance:

- The Company does not keep details of private supplies. The situation should be checked with the current owner of the property.

Question 3.2

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied, the Ordnance Survey Record was used. If the Water undertaker mentioned in Question 4.1.2 is not Thames Water Utilities Ltd the boundary of the property has been determined by the Ordnance Survey.
- The presence of a public water main within the boundary of the property may restrict further development within it. Water companies have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.

Question 3.3

For your guidance:

- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to the mains water supply.

Question 3.4

For your guidance:

- “Low water pressure” means water pressure below the regulatory reference level, which is the minimum pressure when demand on the system is not abnormal.
- Water Companies are required to include in the Regulatory Register that is presented annually to the Director General of Water Services, properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level)
- The reference level of service is a flow of 9 litres/minute at a pressure of 10metres / head on the customer's side of the outside stop valve (osv). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap. The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served. For two properties, a flow of 18 litres/minute at a pressure of 10metres/head on the customers' side of the osv is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS806-3 or the Institute of Plumbing handbook.
- **Allowable exclusions** The Company is required to include in the Regulatory Register properties receiving pressure below the reference level, provided that allowable exclusions listed below do not apply.
- **Abnormal demand:** This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand, which are normally expected. Companies should exclude from the reported figures properties which are affected by low pressure only on those days with the highest peak demands. During the report year companies may exclude, for each property, up to five days of low pressure caused by peak demand.
- **Planned maintenance:** Companies should not report low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low-pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.
- **One-off incidents:** This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as pressure reducing valves or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.
- **Low-pressure incidents of short duration:** Properties affected by low pressure, which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures.
- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water pressure.

Question 3.5

For your guidance:

- Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table shows the normal ranges of hardness.

Thames Water Hardness Category	Calcium (mg/l)	Calcium Carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 40	0 to 100	0 to 7	0 to 10	0 to 5.6
Medium	41 to 80	101 to 200	8 to 14	11 to 20	5.7 to 11.2
Hard	Over 80	Over 200	Over 14	Over 20	over 11.2

- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water hardness.

Question 3.6

For your guidance:

- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is www.ofwat.gov.uk.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
  - Watering the garden other than by hand (this includes the use of sprinklers).
  - Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
  - A bath with a capacity in excess of 230 litres.
  - A reverse osmosis unit Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the sewerage and water services for this property. For a list of all potential retailers of sewerage and water services for the property please visit www.open-water.org.uk.

Question 3.7

For your guidance:

- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the water services for this property. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Question 5.1

For your guidance:

- If a Trade effluent consent applies to the premises which are the subject of this search, it is for the applicant to satisfy itself as to the suitability of the consent for its client's requirements. The occupier of any trade premises in the area of a sewerage undertaker may discharge any trade effluent proceeding from those premises into the undertaker's public sewers if he does so with the undertaker's consent. If, in the case of any trade premises, any trade effluent is discharged without such consent or other authorisation, the occupier of the premises shall be guilty of an offence.
- Please note any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.
- For further information regarding Trade Effluent consents please contact: Trade Effluent Control, Crossness STW, Belvedere Road, Abbey Wood London SE2 9AQ.

Question 6.1

For your guidance:

- This question relates only to private agreements between the water company acting in a private capacity and a landowner. Such contracts may often be part of a conveyance or land transfer, or a deed of grant of easement.
- If there is no formal easement, then a sewer or water main may have been constructed following the service of notice under the provisions of the Public Health Act 1936, Water Act 1945,Water Act 1989 or Water Industry Act 1991 as applicable. The company does not hold copies of these notices. However, in the absence of evidence to the contrary there is a legal presumption that all matters were properly dealt with. All rights and obligations relating to sewers and water mains are now covered by the Water Industry Act 1991. Where rights exist at the boundary of the property, but we are not sure of the exact correlation, we will answer “Yes” to this question. A documentary right can exist even if the physical asset itself has not yet been laid, or has been moved, or removed. Likewise the position of the right and of the asset may differ.
- You may also find that an asset is protected both with contractual rights and statutory rights. Please consult your solicitor as to why this may happen, and its effects.
- We refer to “defined” assets for the following reasons: Often a contract may give the water company an expressed right to install and maintain assets within an area but without stating the exact position or route of such assets. Also, the law may imply rights where none have been mentioned specifically in a related contract, such as a conveyance. Finally, rights may come into being through long use. In any of these cases the rights are undefined, and although the water company may need to rely on them from time to time, as we cannot map the rights accurately, we will answer “no” to this question.
- Information obtainable from physical inspection (including Trial Bore Holes) overrides information contained in the report.
- Any error in answering this question is not to be regarded as a waiver of the water company’s rights or title, or an agreement or representation that the water company is prepared to vary or discharge any of its rights or title.

Customer and Clients are asked to note these terms, which govern the basis on which this CommercialDW Drainage & Water Enquiry is supplied

Definitions

'Client' means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.
'Company' means a water service company or their data service provider producing the Report.
'Customer' means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.
'Order' means any request completed by the Customer requesting the Report.
'Property' means the address or location supplied by the Customer in the Order.
'Report' means the drainage and/or water report prepared by The Company in respect of the Property.
'Thames Water" means Thames Water Utilities Limited registered in England and Wales under number 2366661 whose registered office is at Clearwater Court, Vastern Road, Reading, Berks, RG1 8DB;

Agreement

1 Thames Water agrees to supply the Report to the Customer and the Client subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client. The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

The Report

2. Whilst Thames Water will use reasonable care and skill in producing the Report, it is provided to the Customer and the Client on the basis that they acknowledge and agree to the following:-

2.1 The information contained in the Report can change on a regular basis so Thames Water cannot be responsible to the Customer and the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.

2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.

2.3 The information contained in the Report is based upon the accuracy, completeness and legibility of the address and other information supplied by the Customer or Client.

2.4 The Report provides information as to the location and connection of existing services and should not be relied on for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Thames Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liability therefore.

2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes and the maps must not be relied on in the event of excavation or other works made in the vicinity of apparatus shown on any maps.

Liability

3 Thames Water shall not be liable to the Client for any failure, defect or non-performance of its obligations arising from any failure of, or defect in any machine, processing system or transmission link or anything beyond Thames Water's reasonable control or the acts or omissions of any party for whom Thames Water are not responsible.

3.1 Where the Customer sells this report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever and the Customer shall indemnify Thames Water in respect of any claim by the Client.

3.2 Where a report is requested for an address falling within a geographical area where Thames Water and another Company separately provide Water and Sewerage Services, then it shall be deemed that liability for the information given by Thames Water or the Company as the case may be will remain with Thames Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Thames Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement Thames Water will therefore not be liable in any way for the accuracy of that information and will supply that information as agent for the Company from which the information was obtained.

3.3 Except in respect of death or personal injury caused by negligence, or as expressly provided in these Terms:

3.3.1 The entire liability of Thames Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and

3.3.2 Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs or expenses;

Copyright and Confidentiality

4. The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Thames Water or the Company as the case may be. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided

4.1 The Customer or Client is entitled to make copies of the Report but is not permitted to copy any maps contained in, or attached to the Report

4.2 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.

4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.

Payment

5. Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Thames Water, without any set off, deduction or counterclaim.

5.1 Unless payment has been received in advance, Customers shall be invoiced for the agreed fee once their request has been processed. Any such invoice must be paid within 14 days. Where the Customer has an account with Thames Water, payment terms will be as agreed with Thames Water.

5.2 No payment shall be deemed to have been received until Thames Water has received cleared funds.

5.3 If the Customer fails to pay Thames Water any sum due Thames Water shall be entitled but not obliged to charge the Customer interest on the sum from the due date for payment at the annual rate of 2% above the base lending rate from time to time of Natwest Bank, accruing on a daily basis until payment is made. Thames Water reserves the right to claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.

5.4 Thames Water reserves the right to increase fees on reasonable prior written notice at any time.

Cancellations or Alterations

6. Once an Order is placed, Thames Water shall not be under any obligation to accept any request to cancel that Order and payment for the Order shall still be due upon completion of the Report. In cases where an error has been made in the original Order (e.g. the Customer has supplied an incorrect address), the Customer will need to place a second Order, detailing the correct information, and shall be liable to pay a second charge in accordance with clause 5 above.

Delivery

7. On receiving your order the reports will be posted to you within 10 working days from receipt.

7.1 Delivery is subject to local post conditions and regulations. All items should arrive within 12 working days, but Thames Water cannot be held responsible should delays be caused by local post conditions, postal strikes or other causes beyond the control of Thames Water.

General

8. If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.

8.1 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.

8.2 Nothing in this notice shall in any way restrict the Customer or Clients statutory or any other rights of access to the information contained in the Report.

These Terms & Conditions are available in larger print for those with impaired vision.

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 TWUL 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 14 days from due 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. TWUL does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. 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'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at TWUL's discretion for increased administration costs.

A copy of TWUL'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 316 9800.

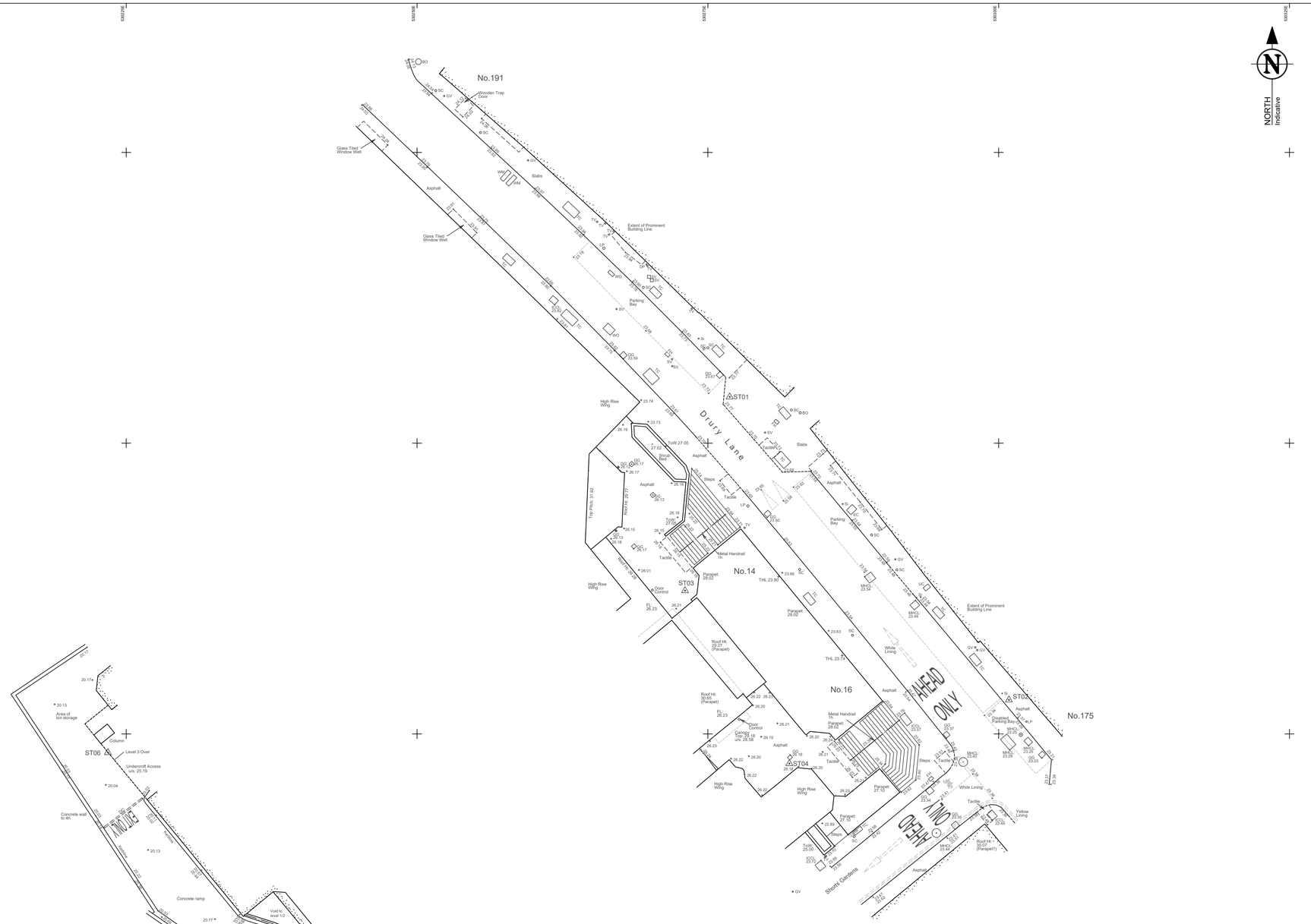
If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the goods or services covered by this invoice falls under the regulation of the Water Industry Act 1991, and you remain dissatisfied you can refer your complaint to CC Water on 0845 039 2837 (it will cost you the same as a local call) or write to them at 11 Belgrave Road, London SW1V 1RB.

Ways to pay your bill

By Post – Cheque only, made payable to 'Thames Water Utilities Ltd' writing your Thames Water account number on the back. Please fill in the payment slip below and send it with your cheque to Thames Water Utilities Ltd., PO Box 223, Swindon SN38 2TW	**By BACS Payment** direct to our bank on account number 90478703, sort code 60-00-01 may be made. A remittance advice must be sent to Thames Water Utilities Ltd., PO Box 223, Swindon SN38 2TW. Or fax to 01793 424599 or email: cashoperations@thameswater.co.uk	**Telephone Banking** By calling your bank and quoting your invoice number and the Thames Water`s bank account number 90478703 and sort code 60-00-01	**By Swift Transfer** You may make your payment via SWIFT by quoting **NWBKGB2L** together with our bank account number 90478703, sort code 60-00-01 and invoice number

Appendix E – Topographical Survey



TOPOGRAPHICAL & MEASURED BUILDING SURVEYS

ABBREVIATIONS & SYMBOLS

AH	Arch Head Height	ER	Earth Rod	RSD	Roller Shutter Door
A/B	Air Brick	ET	EP+Transformer	RSJ	Rolled Steel Joist
AR	Assumed Route	FB	Flower Bed	SI	Sign Post
AV	Air Valve	FBD	Floor Board Direction	SP	Arch Spring Point Height
BB	Bellsha Beacon	FH	Fire Hydrant	SV	Stop Valve
BH	Bore Hole	FL	Floor Level	SW	Surface Water
BL	Bed Level	FP	Flag Pole	SY	Cable Stay
BO	Bollard	FW	Foul Water	Tac	Tactile Paving
BrP	Brace Post	GG	Gully Grate	TC	Telecom Cover
BS	Bus Stop	GV	Gas Valve	TH	Trial Pit
BU	Bush	HH	Head Height	THL	Threshold Level
B/W	Barbed Wire Fence	IC	Inspection Cover	TL	Traffic Light
BX	Box (Utilities)	IL	Invert Level	ToW	Top of Wall
C/B	Close Board Fence	IR	Iron Railings	TP	Telegraph Pole
CH	Cill Height	KO	Kerb Outlet	TS	Traffic Signal Cover
CL	Cover Level	LP	Lamp Post	TV	Cable TV Cover
C/L	Chain Link Fence	MH	Manhole	UB	Universal Beam
C-Lev	Ceiling Level	MP	Marker Post	UC	Unknown Cover
Col	Column	NB	Name Board	UK	Unknown Tree
C/P	Chestnut Paling Fence	OHL	Overhead Line (approx)	UMG	Unmade Ground
CR	Cable Riser	Pan	Panel Fence	USB	Under Side Beam
C/W	Chicken Wire	PB	Post Box	UTL	Unable To Lift
DC	Drainage Channel	PM	Parking Meter	UTS	Unable To Survey
DH	Door Head Height	PO	Post	VP	Vent Pipe
Dil.	Dilapidated	P/R	Post & Rail Fence	WB	Waste Bin
DP	Down Pipe	P/W	Post & Wire Fence	WH	Weep Hole
DR	Drain	PWall	Partition Wall	WL	Water Level
EBx	Electric Box	RE	Rodding Eye	WM	Water Meter
EC	Electric Supply Cover	RL	Ridge Level	WO	Wash Out
EL	Eaves Level	RP	Reflector Post	F/C	Floor to Ceiling Height
EP	Electric Pole	RS	Road Sign	F/FC	Floor to False Ceiling Ht
					Survey Control Station

DRAWING NOTES

Topographical Surveys

Trees are drawn to scale showing the average canopy spread. Descriptions and heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type including roof line details are indicative only and taken externally from ground level.

All below ground details including drainage, voids and services have been identified from above ground and therefore all details relating to these features including; sizes, depth, description etc will be approximate only. All critical dimensions and connections should be checked and verified prior to starting work.

Detail, services and features may not have been surveyed if obstructed or not reasonably visible at the time of the survey.

Surveyed physical features may not necessarily represent the legal boundary line.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1m above the floor level and the wall assumed to be vertical.

Cill heights are measured as floor to the cill and head heights are measured from cill to the top of window.

General

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. Any errors or discrepancies must be notified to Survey Solutions immediately.

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

Do not scale from this drawing.

SURVEY CONTROL CO-ORDINATES

SURVEY STATIONS

Name	Easting	Northing	Height	Remark
ST01	530276.878	181328.980	23.777	NAIL
ST02	530300.883	181302.925	23.410	NAIL
ST03	530273.034	181312.321	26.188	NAIL
ST04	530282.007	181297.449	26.190	NAIL
ST05	530253.022	181261.242	23.423	NAIL
ST06	530223.422	181298.396	20.052	NAIL

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance Survey (OS) national grid.

The level datum established for this survey is related to Ordnance Survey (OS) using GPS Smarthet.

To avoid discrepancies any coordinated data used in conjunction with this survey must be derived directly from this control data.

REV	DESCRIPTION	DRAWN	APPR	DATE

SURVEY SOLUTIONS

LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING
MONITORING

0845 040 5969
survey-solutions.co.uk

IPSWICH BEDFORD COVENTRY GLASGOW LONDON MANCHESTER NORWICH NOTTINGHAM YEOVIL

PROJECT TITLE
10 Dury Lane, High Holborn, London, Greater London, WC2B 5RE

DRAWING DETAIL
Topograhpical Survey
Sheet 1 of 1

CLIENT	SCALE
Travelodge Hotels Limited and Falkerstone Limited	1:200

SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS
PY/RD	05/12/2022	AJ	MM	FINAL

DRAWING NUMBER	REVISION	ISSUE DATE
45951BDLS-01		16/12/2022

RICS chartered ices THE SURVEY ASSOCIATION

Original Sheet Size A1H

Appendix F – BGS Borehole Log

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

Page 1

DEPTH METRES	Depth	Level	Log	Description
	0.35	23.13		MADE GROUND 100mm Tarmacadam over moderately weak light brownish grey concrete comprising about 40 to 50 angular and subangular medium and coarse flint gravel aggregate in a sand cement matrix with 5 voids 5mm
1.0				
2.0				MADE GROUND Brown slightly clayey gravelly sand Gravel is angular to subrounded fine to coarse brick concrete flint and bitumen with rare whole bricks
	2.90	20.58		
3.0				Dense locally very dense brown locally yellowish brown and dark grey slightly clayey sandy angular to rounded fine to coarse flint GRAVEL Locally very sandy
4.0				

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

DEPTH METRES	Depth	Level	Log	Description
				Dense locally very dense brown locally yellowish brown and dark grey slightly clayey sandy angular to rounded fine to coarse flint GRAVEL Locally very sandy
6.0	6.10	17.38		Stiff fissured light reddish brown slightly fine sandy CLAY Fissures randomly orientated very closely spaced planar rough matt
7.0	7.00	16.48		Stiff fissured brownish grey CLAY locally slightly sandy Fissures randomly orientated very closely to closely spaced planar to curviplanar rough matt Rare white specks
8.0				Moderately weak brownish grey CLAYSTONE
9.0				Stiff fissured brownish grey slightly fine sandy CLAY Rare white specks Rare partings of light grey silt Rare burrows 5mm infilled with light grey silt Rare pockets 10mm of light grey and dark grey silt Fissures randomly orientated very closely to closely spaced planar to curviplanar rough matt occasional silt dustings on surfaces
	9.50	13.98		
	9.70	13.78		

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

Page 3

DEPTH METRES	Depth	Level	Log	Description
11.0				Stiff fissured brownish grey slightly fine sandy CLAY Rare white specks Rare partings of light grey silt Rare burrows 5mm infilled with light grey silt Rare pockets 10mm of light grey and dark grey silt Fissures randomly orientated very closely to closely spaced planar to curviplanar rough matt occasional silt dustings on surfaces
12.0	11.85	11.63		
13.0				Very stiff fissured brownish grey CLAY Occasional partings of light brown silt Rare white specks Rare burrows 5mm infilled with light grey silt Fissures randomly orientated very closely to closely spaced planar to curviplanar rough matt locally smooth and polished
14.0				

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

DEPTH METRES	Depth	Level	Log	Description
				Very stiff fissured brownish grey CLAY Occasional partings of light brown silt Rare white specks Rare burrows 5mm infilled with light grey silt Fissures randomly orientated very closely to closely spaced planar to curviplanar rough matt locally smooth and polished
16.0	16.35	7.13		
17.0				
				Very stiff fissured brownish grey CLAY Rare white specks Rare burrows 5mm infilled with light grey silt Fissures randomly orientated closely locally very closely spaced planar smooth and polished locally rough and matt with rare silt dustings on surfaces
18.0				
19.0				

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

Page 5

DEPTH METRES	Depth	Level	Log	Description
	21.60	1.88		Very stiff fissured brownish grey CLAY Rare white specks Rare burrows 5mm infilled with light grey silt Fissures randomly orientated closely locally very closely spaced planar smooth and polished locally rough and matt with rare silt dustings on surfaces
21.0				
22.0				Very stiff fissured brownish grey slightly fine sandy CLAY locally sandy Rare white specks Rare burrows tubes 5mm infilled with white silt Rare pockets 20mm of dark grey silt Fissures randomly orientated closely spaced planar rough matt
23.0				
24.0				

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

Page 6

DEPTH METRES	Depth	Level	Log	Description
26.0				Very stiff fissured brownish grey slightly fine sandy CLAY locally sandy Rare white specks Rare burrows tubes 5mm infilled with white silt Rare pockets 20mm of dark grey silt Fissures randomly orientated closely spaced planar rough matt
27.0				
28.0				
29.0				

Crossrail RT122 CP

X: 530288.917 Y: 181286.276 Level: 23.48

Start: 2010-10-29 End: 2010-11-05

Client: Crossrail Limited

Contractor:

Engineer: GCG

Page 7

DEPTH METRES	Depth	Level	Log	Description
				Very stiff fissured brownish grey slightly fine sandy CLAY locally sandy Rare white specks Rare burrows tubes 5mm infilled with white silt Rare pockets 20mm of dark grey silt Fissures randomly orientated closely spaced planar rough matt
31.0				
32.0				
33.0	33.00	-9.52		
				Very stiff and hard fissured yellowish brown mottled bluish grey CLAY Fissures randomly orientated very closely spaced planar and rough locally smooth
34.0				
	35.00	-11.52		

GENERAL REMARKS

Prior to boring a Cable Avoidance Tool (CAT) survey was carried out. An inspection pit was hand-dug to 1.20m depth and rescanned using the CAT to check for services. Services were not encountered. Driller noted slow progress through very dense gravels between 4.30m to 4.70m (75mins).

Appendix G – CCTV Survey & Willow Pumps Report

Drainage Report

Prepared For

Falkerstone Limited
PO Box 95, 2A Lord Street
Douglas
Isle of Man
IM99 1HP

Site

Travelodge
10 Dury Lane
Holborn
London
WC2B 5RE

LIBRA UTILITY SERVICES LIMITED
Surveyor: Paul Arnold
martin@librautility.services
07806 768120

Total Defects for Project

0	0	19	0	0

Total DRB Grades for Project

3	13	0

A55241 TL COVENT GARDEN - CCTV Survey Report : 25/01/23

Name :	LIBRA UTILITY SERVICES LIMITED
Contact :	Martin Holden
Location :	Unit 1C Oast Trade Park
Town :	Hartlip
Region :	Kent
Postcode :	ME9 7TT
Email :	martin@librautility.services
Contact Number :	07806 768120
Surveyor :	Paul Arnold
Valid Certification No :	

Client Information

Name :	Falkerstone Limited
Contact :	
Location :	PO Box 95, 2A Lord Street
Town :	Douglas
Region :	Isle of Man
Postcode :	IM99 1HP
Tel :	
Mobile :	
Email :	
Fax :	

Site Information

Name :	Travelodge
Contact :	
Location :	10 Dury Lane
Town :	Holborn
Region :	London
Postcode :	WC2B 5RE
Tel :	
Mobile :	
Email :	
Fax :	

Total Defects for Project

0 0 19 0 0

Total DRB Grades for Project

3 13 0

Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recomendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, Including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Total Defects for Project

Total DRB Grades for Project

Overview

Section: 1 **From: SW1** **To: SW2** **MH**	HPWJ REQUIRED TO REMOVE DEBRIS	**DRB Grade: B** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**
Section: 2 **From: SW2** **To: PUMP STATION** **MH**	HPWJ REQUIRED TO REMOVE DEBRIS THIS COULD BE DONE FROM PUMP STATION OR IF EAISER BACK JETTING WITH TANKER TO REMOVE WASTE	**DRB Grade: B** **Pipe Size: 225** **Material: Cast Iron** **Use: Surface Water**
Section: 3 **From: SW2** **To: LAT A** **MH**	UNABLE TO SURVEY TO DUE TO HARDENED SCALE, WILL REQUIRE DE SCALE WITH PICOTE	**DRB Grade: B** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**
Section: 4 **From: SW2** **To: LAT B** **MH**	HWPJ REQUIRED TO REMOVE DEBRIS	**DRB Grade: B** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**
Section: 5 **From: SW2** **To: LAT C** **MH**	UNABLE TO PASS BEND IN PIEP WORK	**DRB Grade: A** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**
Section: 6 **From: SW3** **To: SW4** **MH**	HPWJ REQUIRED TO REMOVE DEBRIS	**DRB Grade: B** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**

Total Defects for Project

Total DRB Grades for Project

Section: 7 **From: SW4** **To: SW5** **MH**	UTL (UNABLE TO LIFT MANHOLE DUE TO VAN PARK OVER IT) RECOMMEND DE SCALE WITH PICOTE RECOMMEND HWPJ TO REMOVE LOOSE DEBRIS	**DRB Grade: B** **Pipe Size: 150** **Material: Cast Iron** **Use: Surface Water**
Section: 8 **From: FW1** **To: U/S** **MH**	SCALE OBSERVED FROM 00.00 TO 07.03M, MECHANICAL DE SCALE WITH PICOTE RECOMMENDED	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 9 **From: FW1** **To: LAT A** **MH**	Grade B	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 10 **From: FW1** **To: FW2** **MH**	5% HARDENED SCALE OBSERVED INCREASING TO 10% RECOMMEND DE SCALE WITH PICOTE	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 11 **From: FW2** **To: FW4** **MH**	RECOMMEND HPWJ	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 12 **From: FW4** **To: FW2** **MH**	HPWJ RECOMMENDED	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 13 **From: FW2** **To: FW3** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**

Total Defects for Project

0 0 19 0 0

Total DRB Grades for Project

3 13 0

Section: 14 **From: FW3** **To: FW2** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 15 **From: FW3** **To: PUMP STATION** **MH**	HWPJ RECOMMENDED, THIS CAN BE DONE FROM PUMP SATION OR CAN BE DONE FROM FW3 BUT WILL NEED TANKER TO REMOVE WASTE AS JETTING IS IN PROCCES	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**
Section: 16 **From: FW4** **To: U/S** **MH**	MECHANICAL DE SCALE REQUIRED WITH PICOTE	**DRB Grade: B** **Pipe Size: 100** **Material: Cast Iron** **Use: Foul**

Site: 10 Dury Lane, Holborn

Section 1

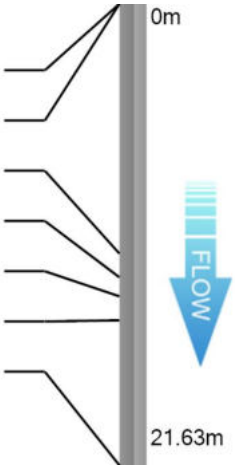
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW1	Finish Node Ref:	SW2	Direction:	D	Height/Dia:	150
Start Node Depth:	1.60	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	Cl	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	21.63	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		0_0	
00.00m	WL	Water level 0%		0_1	0:00:00
11.71m	WL	Water level 5%		0_2	0:00:43
12.82m	WL	Water level 10%		0_3	0:00:47
13.71m	DES	Settled deposits fine 10%		0_4	0:00:52
14.83m	WL	Water level 40%		0_5	0:00:59
21.63m	MHF	Finish node type, manhole		0_99	



Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 1

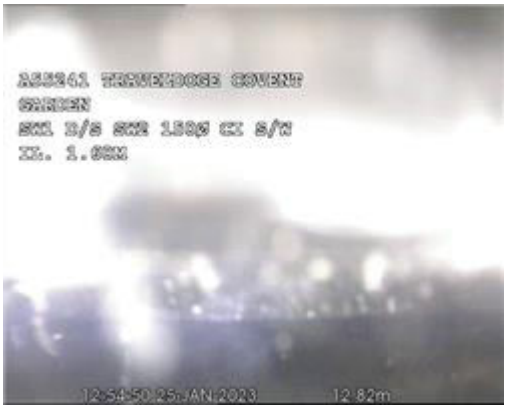
Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW1	Image Provided - Ref: 0_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 0_1 
11.71m	0:00:43	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 0_2 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
12.82m	0:00:47	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 0_3 
13.71m	0:00:52	DES	Settled deposits fine: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 0_4 
14.83m	0:00:59	WL	Water level: 40% Height/Diameter	Image Provided - Ref: 0_5 

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
21.63m		MHF	Finish node type, manhole SW2	Image Provided - Ref: 0_9999 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 2

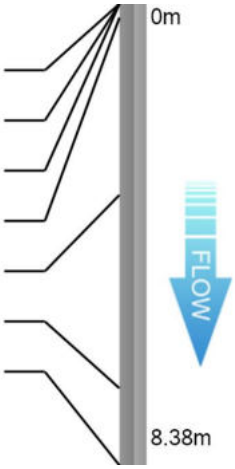
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW2	Finish Node Ref:	PUMP STATION	Direction:	D	Height/Dia:	225
Start Node Depth:	1.45	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.38	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		1_0	
00.00m	WL	Water level 0%		1_1	0:00:00
00.00m	WL	Water level 5%		1_2	0:00:01
00.25m	LRH	Line of drain/sewer deviates right [half]		1_3	0:00:04
03.47m	WL	Water level 10%		1_4	0:00:24
06.98m	DES	Settled deposits fine 10%		1_5	0:00:31
08.38m	MHF	Finish node type, manhole		1_99	



Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW2	Image Provided - Ref: 1_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 1_1 
00.00m	0:00:01	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 1_2 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
00.25m	0:00:04	LRH	Line of drain/sewer deviates right [half]	Image Provided - Ref: 1_3 
03.47m	0:00:24	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 1_4 
06.98m	0:00:31	DES	Settled deposits fine: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 1_5 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
08.38m		MHF	Finish node type, manhole PUMP STATION	Image Provided - Ref: 1_9999 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 3

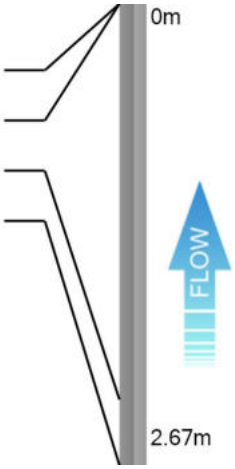
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW2	Finish Node Ref:	LAT A	Direction:	U	Height/Dia:	150
Start Node Depth:	1.45	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	Cl	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.67	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		2_0	
00.00m	WL	Water level 0%		2_1	0:00:00
02.29m	DEE	Attached deposits, encrustation 04-08 20%		2_2	0:00:29
02.67m	SA	Survey abandoned		2_99	



Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW2	Image Provided - Ref: 2_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 2_1 
02.29m	0:00:29	DEE	Attached deposits, encrustation from 04 o'clock to 08 o'clock: 20% Cross sectional area loss - Severity 3	Image Provided - Ref: 2_2 

Pos	Video Ref	Code	Description	Image
02.67m		SA	Survey abandoned LAT A	Image Provided - Ref: 2_9999 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 4

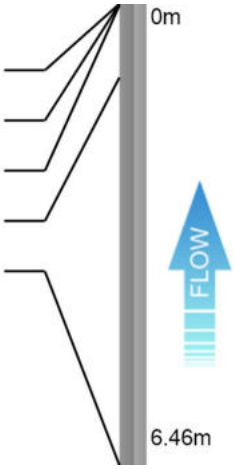
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW2	Finish Node Ref:	LAT B	Direction:	U	Height/Dia:	150
Start Node Depth:	1.45	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.46	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		3_0	
00.00m	WL	Water level 10%		3_1	0:00:00
00.02m	LRQ	Line of drain/sewer deviates right [quarter]		3_2	0:00:02
01.03m	DES	Settled deposits fine 5%		3_3	0:00:06
06.46m	MHF	Finish node type, manhole		3_99	



Total Defects for section

0 | 0 | 1 | 0 | 0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW2	Image Provided - Ref: 3_0 
00.00m	0:00:00	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 3_1 
00.02m	0:00:02	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 3_2 

Pos	Video Ref	Code	Description	Image
01.03m	0:00:06	DES	Settled deposits fine: 5% Cross sectional area loss - Severity 3	Image Provided - Ref: 3_3 
06.46m		MHF	Finish node type, manhole LAT B	Image Provided - Ref: 3_9999 

Site: 10 Dury Lane, Holborn

Section 5

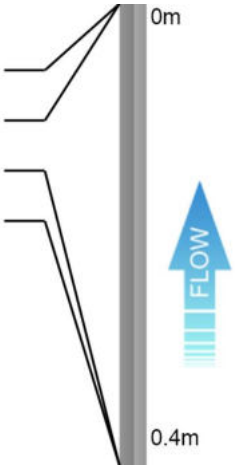
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW2	Finish Node Ref:	LAT C	Direction:	U	Height/Dia:	150
Start Node Depth:	1.45	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.4	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		4_0	
00.00m	WL	Water level 0%		4_1	0:00:00
00.40m	LUH	Line of drain/sewer deviates up [half]		4_2	0:00:03
00.40m	SA	Survey abandoned		4_99	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 5

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW2	Image Provided - Ref: 4_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 4_1 
00.40m	0:00:03	LUH	Line of drain/sewer deviates up [half]	Image Provided - Ref: 4_2 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
00.40m		SA	Survey abandoned LAT C	Image Provided - Ref: 4_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: 10 Dury Lane, Holborn

Section 6

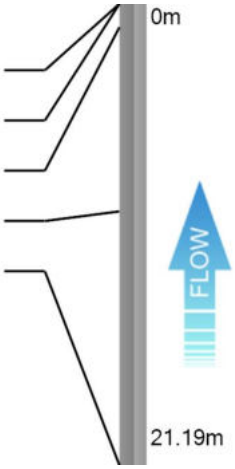
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW3	Finish Node Ref:	SW4	Direction:	U	Height/Dia:	150
Start Node Depth:	1.40	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	Cl	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	21.19	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		5_0	
00.00m	WL	Water level 0%		5_1	0:00:00
01.07m	DES	Settled deposits fine 5%		5_2	0:00:07
09.53m	DES	Settled deposits fine 10%		5_3	0:00:35
21.19m	MHF	Finish node type, manhole		5_99	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW3	Image Provided - Ref: 5_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 5_1 
01.07m	0:00:07	DES	Settled deposits fine: 5% Cross sectional area loss - Severity 3	Image Provided - Ref: 5_2 

Pos	Video Ref	Code	Description	Image
09.53m	0:00:35	DES	Settled deposits fine: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 5_3 
21.19m		MHF	Finish node type, manhole SW4	Image Provided - Ref: 5_9999 

Site: 10 Dury Lane, Holborn

Section 7

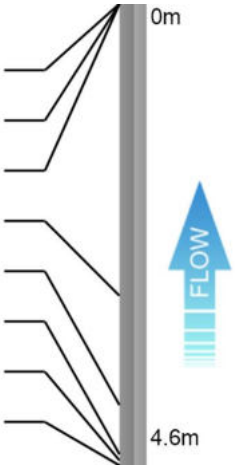
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	SW4	Finish Node Ref:	SW5	Direction:	U	Height/Dia:	150
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	Cl	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	4.6	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		6_0	
00.00m	WL	Water level 0%		6_1	0:00:00
00.00m	DES	Settled deposits fine 10%		6_2	0:00:00
02.91m	LUQ	Line of drain/sewer deviates up [quarter]		6_3	0:00:41
04.00m	LDQ	Line of drain/sewer deviates down [quarter]		6_4	0:00:44
04.49m	DEE	Attached deposits, encrustation 04-08 10%		6_5	0:00:50
04.55m	CU	Loss of vision		6_6	0:00:56
04.60m	MHF	Finish node type, manhole		6_99	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW4	Image Provided - Ref: 6_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	Image Provided - Ref: 6_1 
00.00m	0:00:00	DES	Settled deposits fine: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 6_2 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

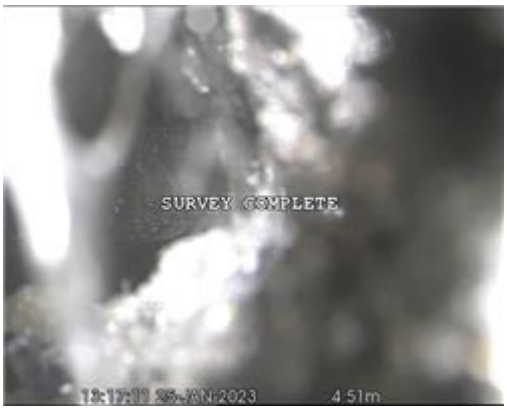
Pos	Video Ref	Code	Description	Image
02.91m	0:00:41	LUQ	Line of drain/sewer deviates up [quarter]	Image Provided - Ref: 6_3 
04.00m	0:00:44	LDQ	Line of drain/sewer deviates down [quarter]	Image Provided - Ref: 6_4 
04.49m	0:00:50	DEE	Attached deposits, encrustation from 04 o'clock to 08 o'clock: 10% Cross sectional area loss - Severity 3 MECHANICAL DE SCALE WITH PICOTE RECOMMENDED	Image Provided - Ref: 6_5 

Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
04.55m	0:00:56	CU	Loss of vision	Image Provided - Ref: 6_6 
04.60m		MHF	Finish node type, manhole SW5	Image Provided - Ref: 6_9999 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 8

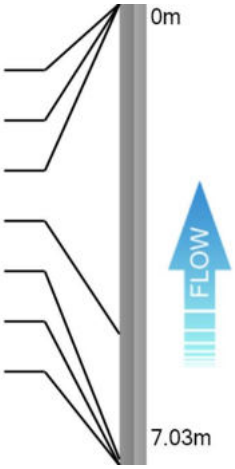
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW1	Finish Node Ref:	U/S	Direction:	U	Height/Dia:	100
Start Node Depth:	1.40	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	7.03	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		7_0	
00.00m	WL	Water level 5%		7_1	0:00:00
00.00m	DEE	S1 Attached deposits, encrustation 04-08 10%	S1	7_2	0:00:00
05.03m	LRQ	Line of drain/sewer deviates right [quarter]		7_3	0:00:30
06.94m	LUQ	Line of drain/sewer deviates up [quarter]		7_4	0:00:39
07.03m	DEE	F1 Attached deposits, encrustation 04-08 10%	F1	7_-2	0:00:00
07.03m	MHF	Finish node type, manhole		7_99	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW1	Image Provided - Ref: 7_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 7_1 
00.00m	0:00:00	S1 DEE	Attached deposits, encrustation 0m - 7.03m from 04 o'clock to 08 o'clock: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 7_2 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
05.03m	0:00:30	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 7_3 
06.94m	0:00:39	LUQ	Line of drain/sewer deviates up [quarter]	Image Provided - Ref: 7_4 
07.03m	0:00:00	F1 DEE	Attached deposits, encrustation Defect End from 04 o'clock to 08 o'clock: 10% Cross sectional area loss - Severity 3	
07.03m		MHF	Finish node type, manhole U/S	Image Provided - Ref: 7_9999 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 9

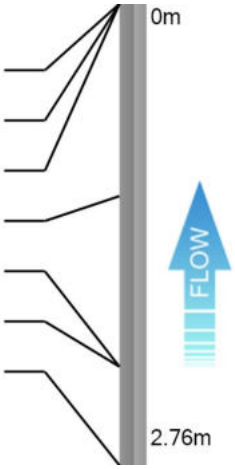
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW1	Finish Node Ref:	LAT A	Direction:	U	Height/Dia:	100
Start Node Depth:	1.40	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.76	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		8_0	
00.00m	WL	Water level 5%		8_1	0:00:00
00.00m	DEE	S1 Attached deposits, encrustation 03-09 5%	S1	8_2	0:00:00
01.15m	LDH	Line of drain/sewer deviates down [half]		8_3	0:00:09
02.17m	DEE	F1 Attached deposits, encrustation 03-09 5%	F1	8_-2	0:00:00
02.17m	LUQ	Line of drain/sewer deviates up [quarter]		8_4	0:00:13
02.76m	MHF	Finish node type, manhole		8_99	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW1	Image Provided - Ref: 8_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 8_1 
00.00m	0:00:00	S1 DEE	Attached deposits, encrustation 0m - 2.17m from 03 o'clock to 09 o'clock: 5% Cross sectional area loss - Severity 3	Image Provided - Ref: 8_2 

Pos	Video Ref	Code	Description	Image
01.15m	0:00:09	LDH	Line of drain/sewer deviates down [half]	Image Provided - Ref: 8_3 
02.17m	0:00:00	F1 DEE	Attached deposits, encrustation Defect End from 03 o'clock to 09 o'clock: 5% Cross sectional area loss - Severity 3	
02.17m	0:00:13	LUQ	Line of drain/sewer deviates up [quarter]	Image Provided - Ref: 8_4 
02.76m		MHF	Finish node type, manhole LAT A	Image Provided - Ref: 8_9999 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 10

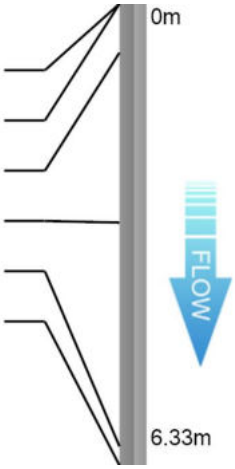
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW1	Finish Node Ref:	FW2	Direction:	D	Height/Dia:	100
Start Node Depth:	1.40	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.33	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		9_0	
00.00m	WL	Water level 5%		9_1	0:00:00
00.67m	WL	Water level 10%		9_2	0:00:07
03.00m	DEE	S1 Attached deposits, encrustation 04-08 5%	S1	9_3	0:00:16
06.07m	DEE	F1 Attached deposits, encrustation 04-08 5%	F1	9_-3	0:00:16
06.33m	MHF	Finish node type, manhole		9_99	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW1	Image Provided - Ref: 9_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 9_1 
00.67m	0:00:07	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 9_2 

Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
03.00m	0:00:16	S1 DEE	Attached deposits, encrustation 3m - 6.07m from 04 o'clock to 08 o'clock: 5% Cross sectional area loss - Severity 3	Image Provided - Ref: 9_3 
06.07m	0:00:16	F1 DEE	Attached deposits, encrustation Defect End from 04 o'clock to 08 o'clock: 5% Cross sectional area loss - Severity 3	
06.33m		MHF	Finish node type, manhole FW2	Image Provided - Ref: 9_9999 

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 11

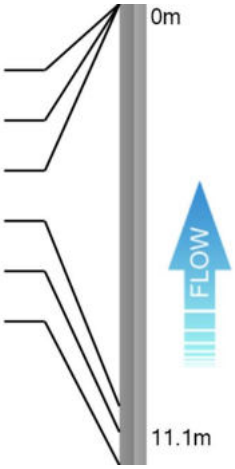
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW2	Finish Node Ref:	FW4	Direction:	U	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	11.1	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		10_0	
00.00m	WL	Water level 5%		10_1	0:00:00
00.00m	LRQ	Line of drain/sewer deviates right [quarter]		10_2	0:00:00
09.68m	DES	Settled deposits fine 5%		10_3	0:00:46
10.30m	LLH	Line of drain/sewer deviates left [half]		10_4	0:00:51
11.10m	MHF	Finish node type, manhole			



Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 11

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW2	Image Provided - Ref: 10_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 10_1 
00.00m	0:00:00	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 10_2 

Pos	Video Ref	Code	Description	Image
09.68m	0:00:46	DES	Settled deposits fine: 5% Cross sectional area loss - Severity 3	Image Provided - Ref: 10_3 
10.30m	0:00:51	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 10_4 
11.10m		MHF	Finish node type, manhole FW4, OVERLAP REQUIRED	

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 12

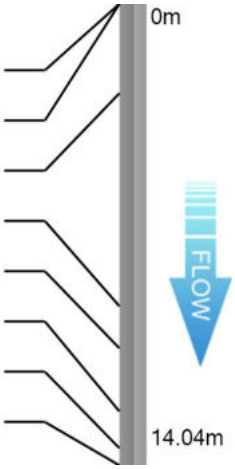
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW4	Finish Node Ref:	FW2	Direction:	D	Height/Dia:	100
Start Node Depth:	1.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	14.04	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		11_0	
00.00m	WL	Water level 5%		11_1	0:00:00
02.72m	CU	Loss of vision		11_2	0:00:17
09.20m	LLH	Line of drain/sewer deviates left [half]		11_3	0:00:43
10.48m	DES	Settled deposits fine 10%		11_4	0:00:51
12.40m	LLH	Line of drain/sewer deviates left [half]		11_5	0:01:01
13.52m	LRH	Line of drain/sewer deviates right [half]		11_6	0:01:12
14.04m	MHF	Finish node type, manhole		11_9	



Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 12

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW4	Image Provided - Ref: 11_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 11_1 
02.72m	0:00:17	CU	Loss of vision	Image Provided - Ref: 11_2 

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
09.20m	0:00:43	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 11_3 
10.48m	0:00:51	DES	Settled deposits fine: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 11_4 
12.40m	0:01:01	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 11_5 

Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
13.52m	0:01:12	LRH	Line of drain/sewer deviates right [half]	Image Provided - Ref: 11_6 
14.04m		MHF	Finish node type, manhole FW2, OVERLAP COMPLETE	Image Provided - Ref: 11_9999 

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 13

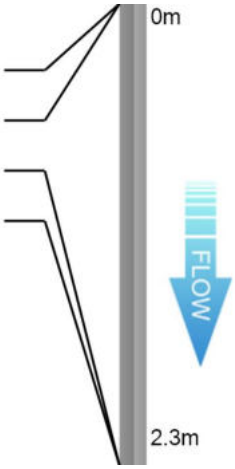
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW2	Finish Node Ref:	FW3	Direction:	D	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.3	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		12_0	
00.00m	WL	Water level 5%		12_1	0:00:00
02.30m	LLH	Line of drain/sewer deviates left [half]		12_2	0:00:13
02.30m	MHF	Finish node type, manhole		12_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 13

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW2	Image Provided - Ref: 12_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 12_1 
02.30m	0:00:13	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 12_2 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
02.30m		MHF	Finish node type, manhole FW3,OVERLAP REQUIRED UNABLE TO PUSH AROUND BEND	Image Provided - Ref: 12_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: 10 Dury Lane, Holborn

Section 14

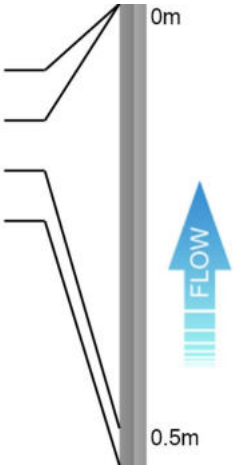
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW3	Finish Node Ref:	FW2	Direction:	U	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		13_0	
00.00m	WL	Water level 5%		13_1	0:00:00
00.46m	LRQ	Line of drain/sewer deviates right [quarter]		13_2	0:00:05
00.50m	MHF	Finish node type, manhole		13_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 14

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW3	Image Provided - Ref: 13_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 13_1 
00.46m	0:00:05	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 13_2 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
00.50m		MHF	Finish node type, manhole FW2, OVERLAP COMPLETE	Image Provided - Ref: 13_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: 10 Dury Lane, Holborn

Section 15

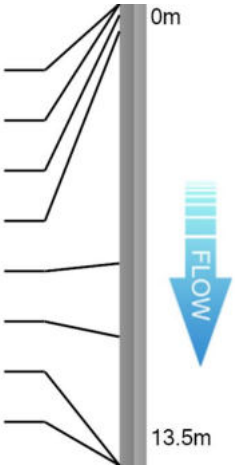
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW3	Finish Node Ref:	PUMP STATION	Direction:	D	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	13.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		14_0	
00.00m	WL	Water level 5%		14_1	0:00:00
00.33m	WL	Water level 10%		14_2	0:00:03
00.80m	DES	S1 Settled deposits fine 10%	S1	14_3	0:00:05
07.59m	CU	Loss of vision		14_4	0:00:36
09.74m	LRH	Line of drain/sewer deviates right [half]		14_5	0:00:46
13.50m	DES	F1 Settled deposits fine 10%	F1	14_-	0:00:05
13.50m	MHF	Finish node type, manhole		14_9	



Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images — Section 15

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW3	Image Provided - Ref: 14_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 14_1 
00.33m	0:00:03	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 14_2 

Pos	Video Ref	Code	Description	Image
00.80m	0:00:05	S1 DES	Settled deposits fine 0.8m - 13.5m: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 14_3 
07.59m	0:00:36	CU	Loss of vision	Image Provided - Ref: 14_4 
09.74m	0:00:46	LRH	Line of drain/sewer deviates right [half]	Image Provided - Ref: 14_5 
13.50m	0:00:05	F1 DES	Settled deposits fine Defect End: 10% Cross sectional area loss - Severity 3	

Total Defects for section

0 0 2 0 0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
13.50m		MHF	Finish node type, manhole PUMP STATION	Image Provided - Ref: 14_9999 

Total Defects for section

0	0	2	0	0

DRB Grade for Section

B

Site: 10 Dury Lane, Holborn

Section 16

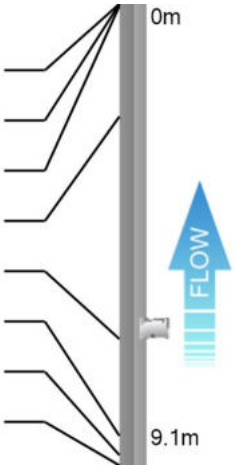
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Falkerstone Limited	10 Dury Lane	Holborn	A55241	Paul Arnold	25/01/2023

Start Node Ref:	FW4	Finish Node Ref:	U/S	Direction:	U	Height/Dia:	100
Start Node Depth:	1.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	CI	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	9.1	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		15_0	
00.00m	WL	Water level 5%		15_1	0:00:00
00.04m	LLH	Line of drain/sewer deviates left [half]		15_2	0:00:02
02.22m	LRQ	Line of drain/sewer deviates right [quarter]		15_3	0:00:12
06.61m	JN	S1 Junction 09 : 100mm Diameter	S1	15_4	0:00:38
08.52m	LLH	Line of drain/sewer deviates left [half]		15_5	0:00:47
08.90m	DEE	Attached deposits, encrustation 03-09 20%		15_6	0:00:50
09.10m	SA	Survey abandoned		15_9	



Total Defects for section

0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 16

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW4	Image Provided - Ref: 15_0 
00.00m	0:00:00	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 15_1 
00.04m	0:00:02	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 15_2 

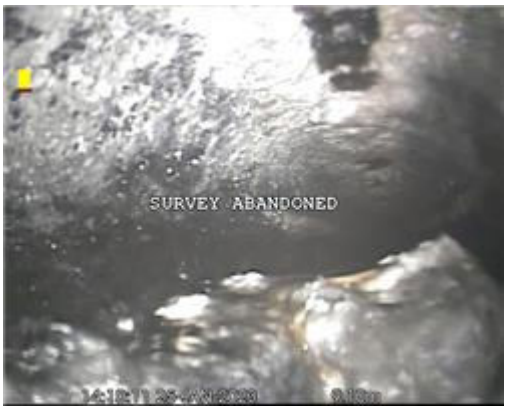
Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Pos	Video Ref	Code	Description	Image
02.22m	0:00:12	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 15_3 
06.61m	0:00:38	S1 JN	Junction 6.61m - 0m at 09 o'clock: 100mm Diameter	Image Provided - Ref: 15_4 
08.52m	0:00:47	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 15_5 

Pos	Video Ref	Code	Description	Image
08.90m	0:00:50	DEE	Attached deposits, encrustation from 03 o'clock to 09 o'clock: 20% Cross sectional area loss - Severity 3	Image Provided - Ref: 15_6 
09.10m		SA	Survey abandoned U/S	Image Provided - Ref: 15_9999 

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

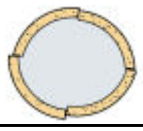
A guide to defects and other observations in drainage systems

More detailed information can be found in the National Standard (BS EN 13508-1:2003) and in the Manual of Sewer Condition Classification (MSCC) 5th Edition, written by the Water Research Centre (WRc).

Use	
Code	**Description**
C	Combined
F	Foul
S	Surface Water
T	Trade Effulent
W	Culverted Watercourse
Z	Other

Common Materials	
Code	**Description**
VC	Vitrified Clay
PVC	Polyvinyl Chloride
CO	Concrete
CI	Cast Iron
PF	Pitch Fibre
PE	Polyethylene
DI	Ductile Iron

Start Node	Description	Finish Node
MH	Manhole	MHF
IC	Inspection Chamber	ICF
GY	Gulley	GYF
RE	Rodding Eye	REF
SK	Soakaway	SKF
BN	Buchan Trap	BNF
BR	Major Connection without Ref	BRF
CP	Cacth Pit	CPF
OC	Other Special Chamber	OCF
OF	Outfall	OFF
OS	Oil Seperator	OSF
WR	Winser Trap	WRF
LH	Lamphole	LHF

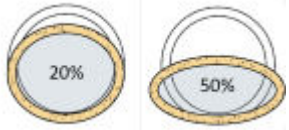
Code	Observation	Description	Attributes	
B	Broken	Pieces pipe have visibly moved	Defined by clock references. Associated with deformity in rigid pipe	
CC CL CM CR	Cracks	Cracks are break lines that are not visibly open	Defined by clock reference position/s. Longitudinal and radiating cracks attract only one clock reference	
CN	Connection	Lateral pipe has been connected after original construction	Described by clock reference position and diameter	

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

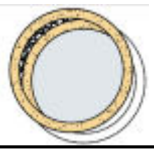
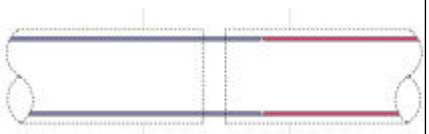
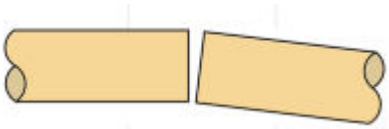
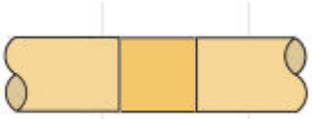
CX(I)	Defective Connection (Intruding)	Defective by intrusion or damage due to factors including: cracks, fractures, obstruction, position etc	Described by clock reference position and diameter (+ % intrusion)	
CU	Loss of Vision	Lens of camera is obscured by debris, water etc. Operator is unable to see drain clearly	'W' can be added if loss of vision is due to water	
D	Deformed	Pipe has lost its structure	Described by percentage loss of height or width. Recorded in 5% increments	
DEE	Deposits Encrustation	Eg. Attached scale deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DEG	Deposits Grease	Attached grease deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DER DES	Deposits Coarse/Fine	Settled deposits on the invert of the pipe.	Described by percentage loss of height or diameter. Recorded in 5% increments.	
FC FL FM FR	Fractures	Fractures are visibly open. Pieces of pipe have not moved	Defined by clock reference position/s. Longitudinal and radiating fractures attract only one clock reference	
H	Holes	Section of pipe fabric is missing	Defined by clock reference location. Normally two clock references	
I	Infiltration	Water is infiltrating the pipe, normally via a joint but could be via another defect	Can be described in Remarks using terms such as Seeper, Dripper and Runner	
JDL	Joint Displaced Large	Pipe has moved at joint, perpendicular to axis of pipe	More than 1.5 times the pipe wall thickness must be visible	

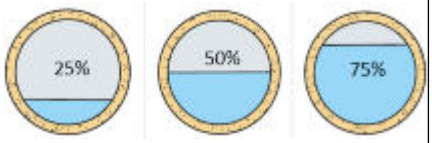
Total Defects for section

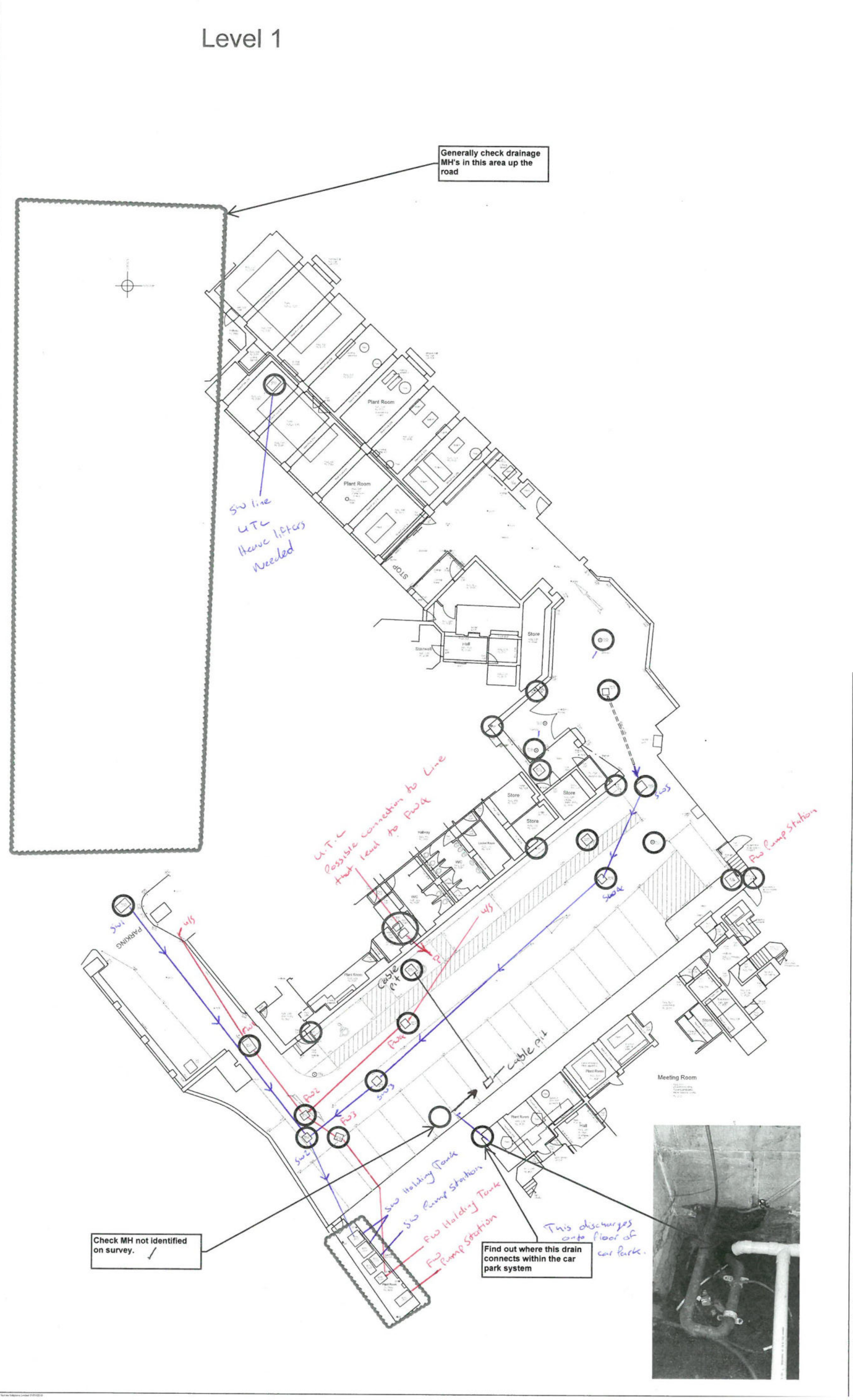
0	0	1	0	0

DRB Grade for Section

B

JDM	Joint Displaced Medium	Pipe has moved at joint, perpendicular to axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
JN	Junction	Lateral pipe was installed at construction	Described by clock reference position and diameter	
JX	Defective Junction	Lateral pipe was installed at construction but is defective in some way	Joint can be defective due to factors including: cracks, fractures, obstruction, position etc	
LD **LU** **LL** **LR**	Line Deviation	LD = Line Down, LU = Line Up, LL = Line Left, LR = Line Right. Not related to CIPP lining.	Additional modifiers are added: Q = Quarter (22.5), H = Half (45), F = Full (90). In degrees.	
LC	Lining Changes	If the drain is lined, the lining material has changed	Position of lining material change	
MC	Material Change	The pipe material has changed	Position of change is noted. Type of material change can be defined	
OB	Obstruction/Obstacle	An obstruction or obstacle is affecting the flow through the pipe	Described in percentage loss of cross-sectional area	
OJL	Open Joint Large	Pipe has moved at joint, along the axis of pipe	More than 1.5 times the pipe wall thickness must be visible	
OJM	Open Joint Medium	Pipe has moved at joint, along the axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
PC	Pipe Length Changes	Length of individual pipe changes	New length described at this position	

R	Roots	Evidence of root ingress	Roots will normally infiltrate via bad joints, cracks, fractures, breaks etc	
REM	Remark	General remark	Used for additional information	
S	Surface Damage	This might include corrosion, spalling and chemical attack	Position only. Additional information can be added in Remarks	
SA	Survey Abandoned	Used when a survey cannot continue for any reason	The reason for abandoning a survey should be noted in the remarks area	
SC	Shape Changes	Dimension of drain changes	Diameter dimension change recorded. Second dimension is recorded for no circular pipe changes	
SR	Sealing Ring	Sealing ring intrudes into pipe at joint	Described by clock reference position	
V	Vermin	Evidence of Vermin in pipe	Can also be used for evidence within manhole etc	
WL	Water Level	Used to record changes in water level. Always shown at the beginning of every survey, if dry noted as 00.	Described by percentage of height or diameter. Recorded in 5% increments	
XP	Collapsed	Drain is suffering from complete loss of structural integrity. Always followed by SA - Survey Abandoned	Percentage loss of cross-sectional area is recorded. Other related structural defects are not recorded	



TOPOGRAPHICAL & MEASURED BUILDING SURVEYS

ABBREVIATIONS & SYMBOLS

DRAWING NOTES

Topographical Surveys

Trees are drawn to scale showing the average canopy spread, Descript heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type in roof line details are indicative only and taken externally from ground leve

All below ground details including drainage, voids and services have be identified from above ground and therefore all details relating to these in including: sizes, depth, description etc will be approximate only. All critic dimensions and connections should be checked and verified prior to sta work.

Detail, services and features may not have been surveyed if obstructed reasonably visible at the time of the survey.

Surveyed physical features may not necessarily represent the legal bou line.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1 above the floor level and the wall assumed to be vertical.

Cill heights are measured as floor to the cill and head heights are meas from cill to the top of window.

General

The contractor must check and verify all site and building dimensions, le utilities and drainage details and connections prior to commencing work errors or discrepancies must be notified to Survey Solutions immediately

The accuracy of the digital data is the same as the plotting scale implies dimensions are in metres unless otherwise stated.

The survey control listed is only to be used for topographical surveys at t stated scale. All control must be checked and verified prior to use.

Do not scale from this drawing.

SURVEY CONTROL CO-ORDINATES

STATIONS	EASTINGS	NORTHINGS	LEVEL	DESCRIPTI

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance (OS) national grid.

The level datum established for this survey is related to Ordnance Survey using GPS Smartnet.

To avoid discrepancies any coordinated data used in conjunction with this must be derived directly from this control data.

REV	DESCRIPTION	DRAWN	APPR

SURVEY SOLUTIONS

0345 040 5969
survey-solutions.co.

PROJECT TITLE
10 Drury Lane, High Holborn, London
Greater London, WC2B 5RE

DRAWING DETAIL
Floor Plan - Level1
Sheet 1 of 3

CLIENT				SCALE
Travelodge Hotels Limited and Falkerstone Limited				1-100
SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG ST
PY	5/13/22	AJ	MM	FINAL
DRAWING NUMBER			REVISION	ISSUE
45951BDLS-02				16/12/

RICS
ICES

Water In, Waste Out Experts

Willow Pumps provide expert services for all your pump, drainage, waste and clean water needs. From design and installation, to maintenance, repair and emergency callouts, we are here to help.

Site Survey Inspection Report

Travelodge Hotels

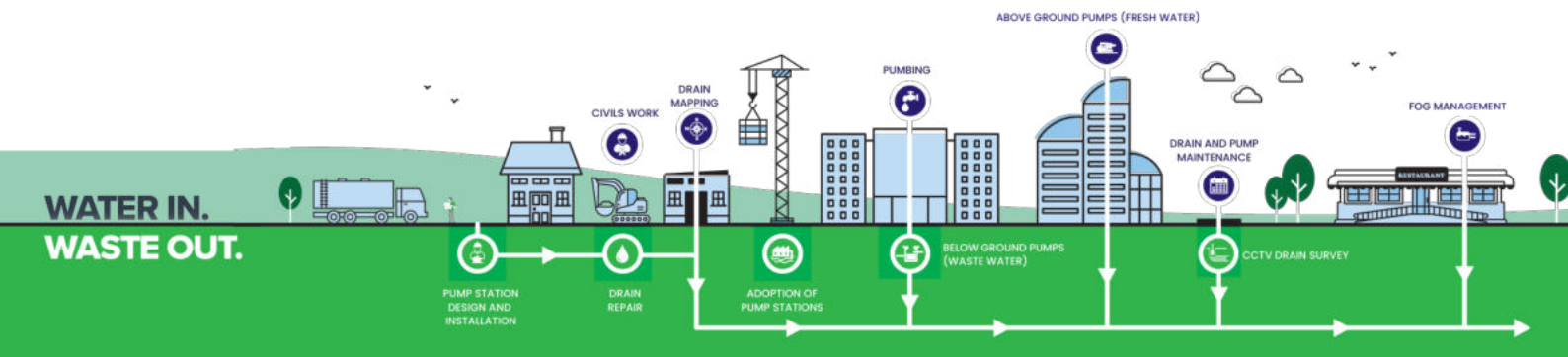
c/o Falkerstone Limited

10 Drury Lane

High Holborn

London

WC2B 5RE



Site Assets:

2x Foul and 1x Storm PS,

Reason for Visit:

Drop Down Tests on Two Foul Pump Stations and One Storm Pump Station.

Comments:

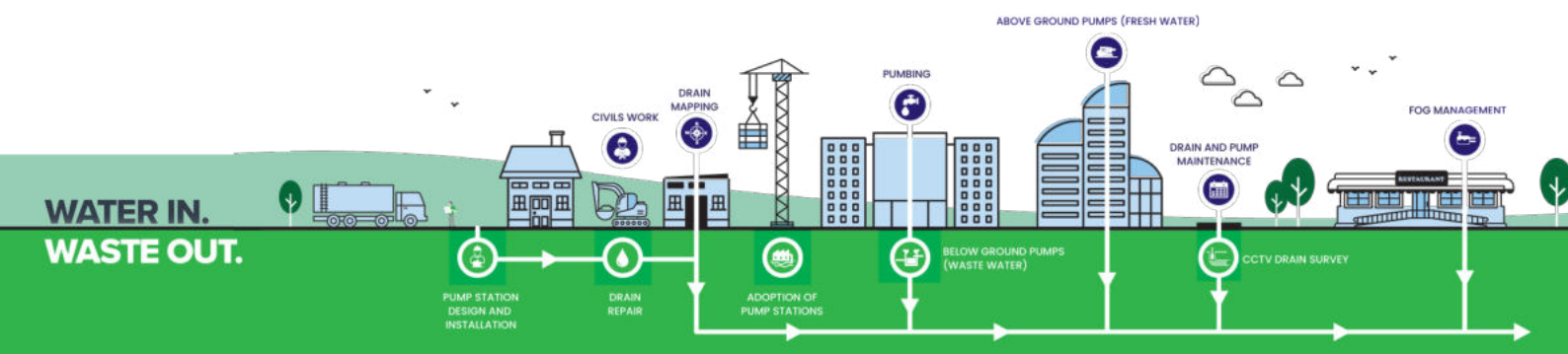
- Switch Room Foul Station: Station works but needs Refurbing to bring up to current Spec.
- Switch Room Storm Station: Station works but needs Refurbing to bring up to current Spec.
- Foul Station by Stairs: Station is in fairly good condition however there are a few issues to be addressed.

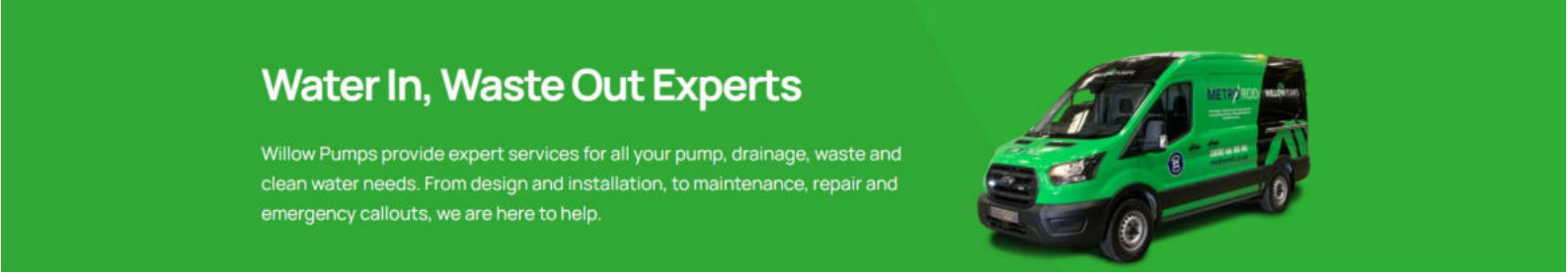
Recommendations:

Switch Room Foul Station: This station needs a refurb as isn't up to current spec. It has a high fat build up therefore the grease trap isn't working.

This Station needs:

- New 415V, Dual Pump 4 Float Panel (see pictures)
- 4 x New Floats and Float bracket
- New 4" Pipework including Valves
- New 2" Guide Rails
- New Top pegs and Pedestals
- New Cover Split 1300mm x 1330mm
- Depth 2.6M





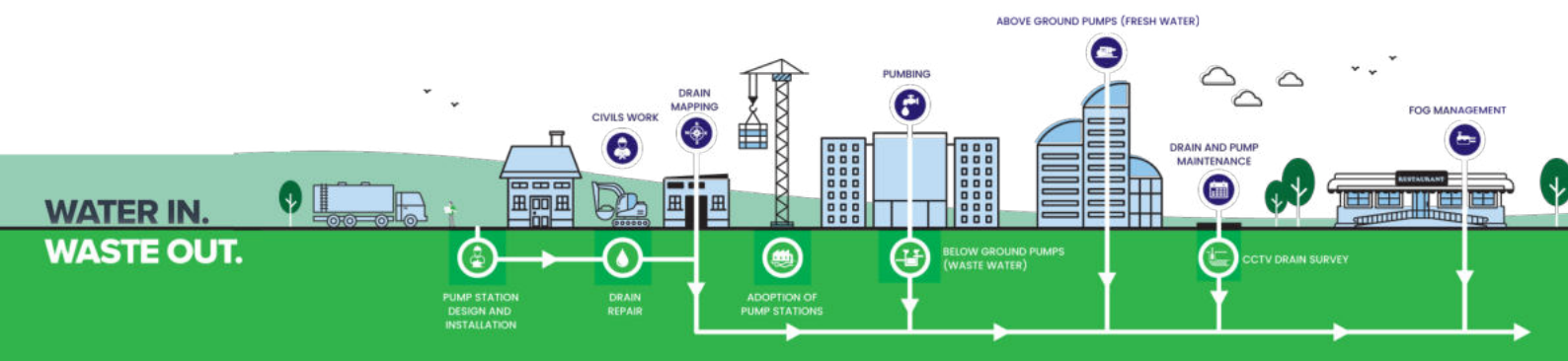
Switch Room Storm Station: This Station is in urgent need of a Full Refurb to bring it up to current spec. Also, the Cover Plate for the old pump station is broken and is very dangerous needs changing and making safe.

This Station needs:

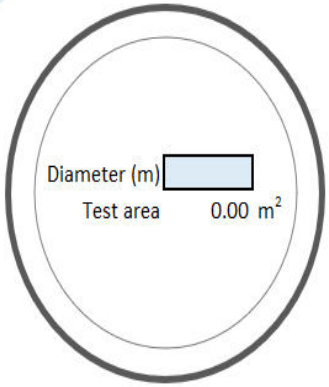
- New 415V, Dual Pump 4 Float Panel (see pictures)
- 4 x New Floats and Float bracket
- New 1.5" Pipework including Valves (existing is steel needs to be plastic)
- Install a New Guide Rail system with chains
- New Top pegs and Pedestals
- New Cover 1220mm x 610mm
- Depth 2.7M

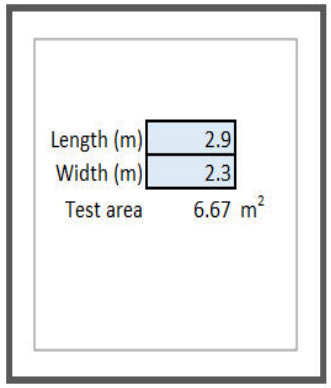
Foul Station by Stairs: This station is in good condition however needs new floats as cables are stiff and Unistrut is very corroded. The panel works fine with no issues.
This Station needs:

- 4 x New Floats and 2 x Float bracket
- Unistrut Bracket for top pegs (800mm) With Elbow Brackets



Switch Room Foul Station – Flow Rate Test Results





Test area	
Start height (m)	0.2
Stop height (m)	0.1
Span	0.1 m
Total test area	0.67 m³

Desired flow	12	lps

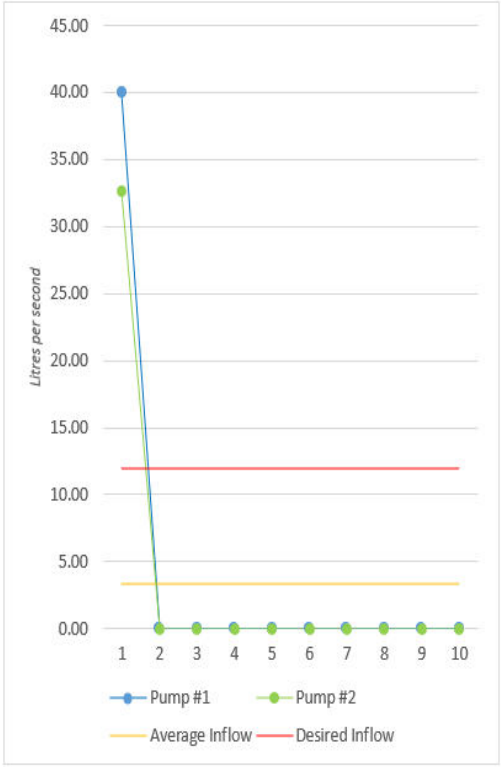
Static pressure		bar
Pump 1 open pres.		bar
Pump 2 open pres.		bar
Pump 1 closed pres.		bar
Pump 2 closed pres.		bar

	Inflow time		
Test #	minutes	seconds	Inflow
1	0	200	3.34
2	0	200	3.34
3	0	200	3.34
		Average	3.34 lps

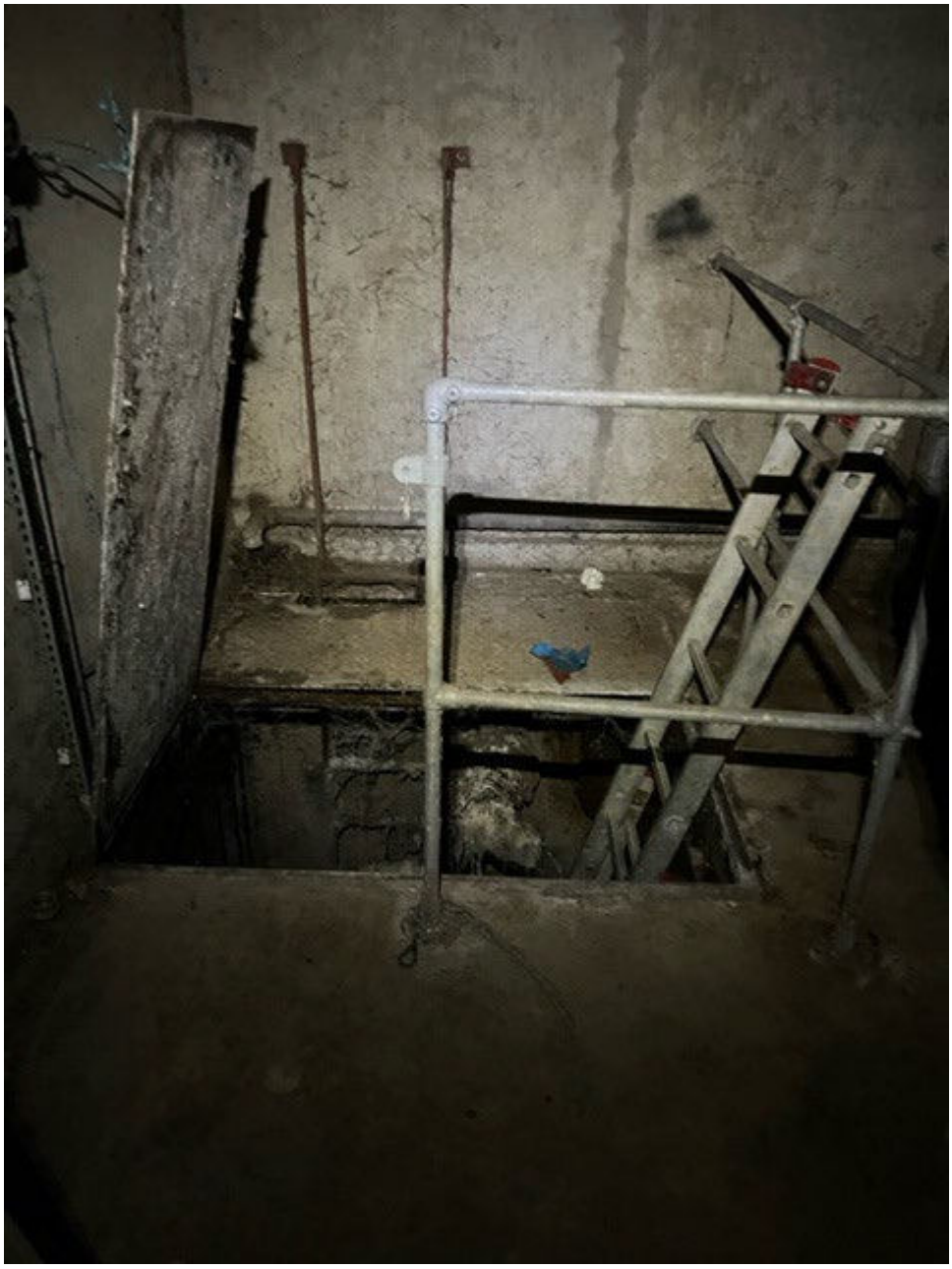
START STOP RESET

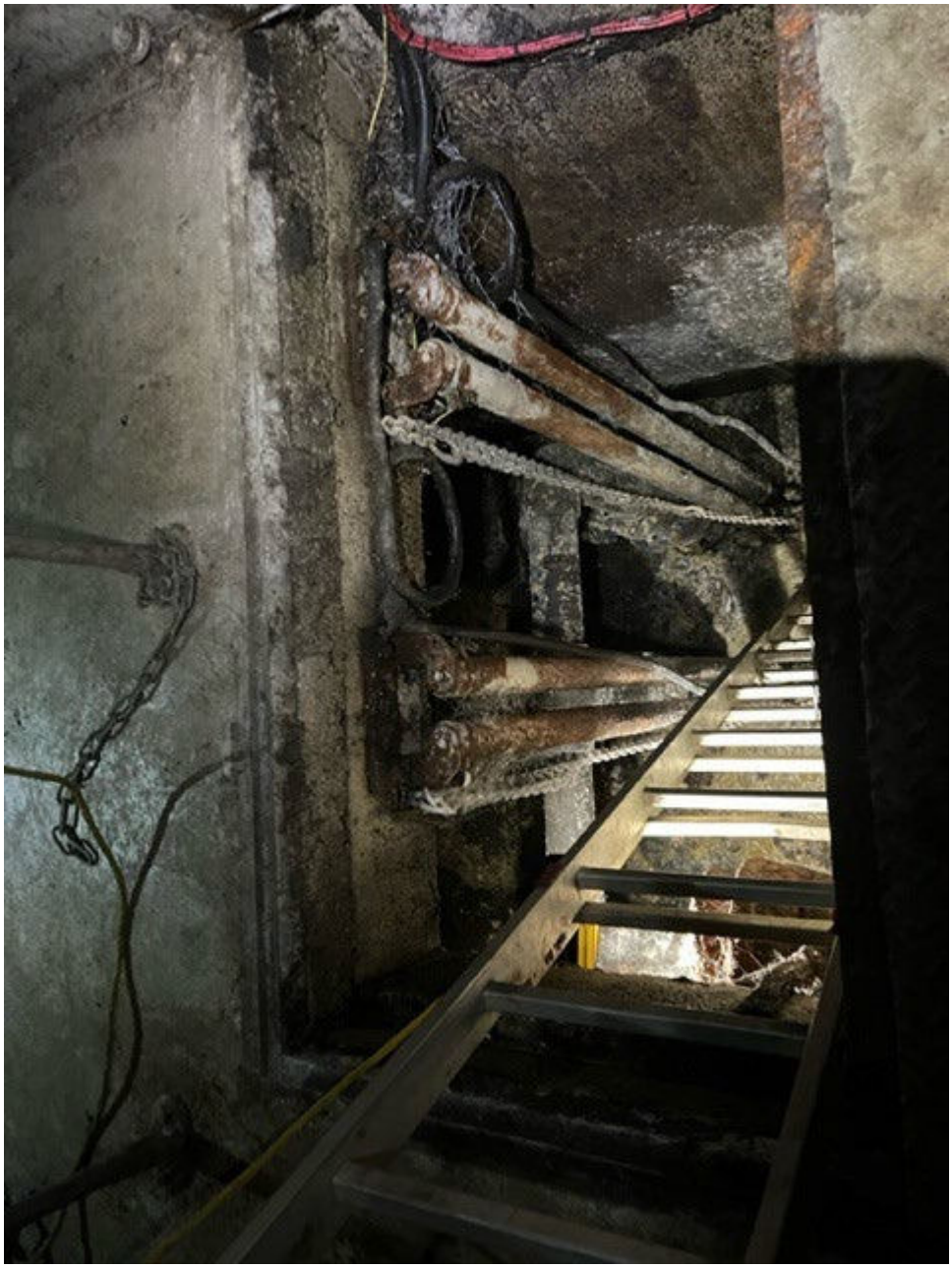
	Pump #1	Pump #2
Make	Flygt 3102.181	Flygt 3102.181
Serial	1111064	1111064
Power	415V	415v
Current	In: 6.8Amps/ Run: 3.2Amps	In: 6.8Amps/ Run: 3.3Amps
Impeller	181	181

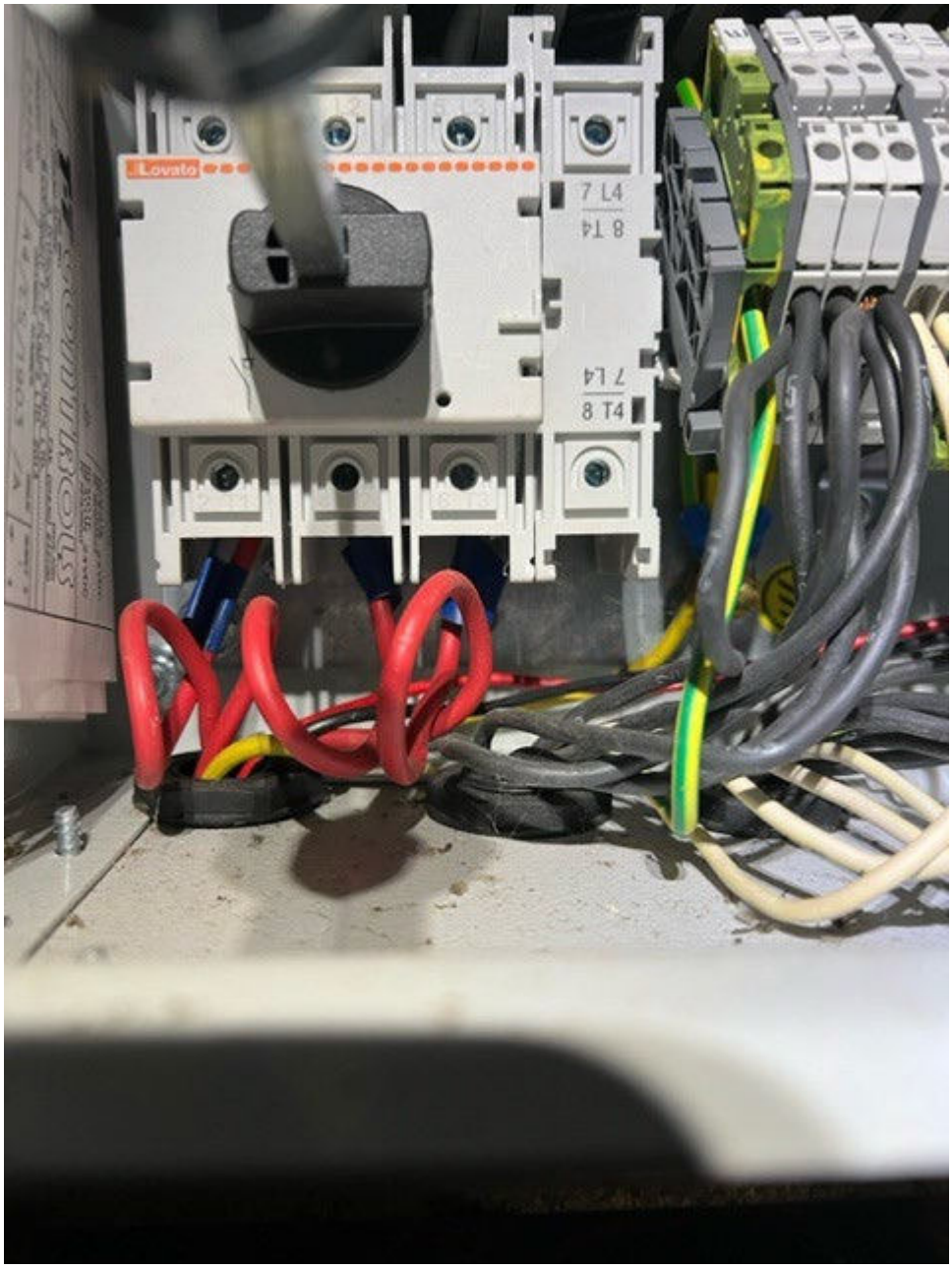
	Pump #1		In + Out	Pump #2		In + Out
Test #	minutes	seconds	Lps	minutes	seconds	Lps
1	0	18.2	39.98	0	22.8	32.59
2	0	0		0	0	
3	0	0		0	0	
4						
5						
6				0		
7				0	0	
8				0	0	
9				0	0	
10				0	0	
		Average	39.98 lps		Average	32.59 lps



Foul Station Switch Room

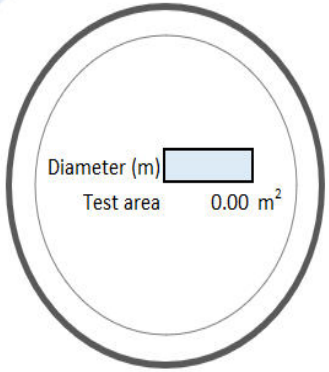


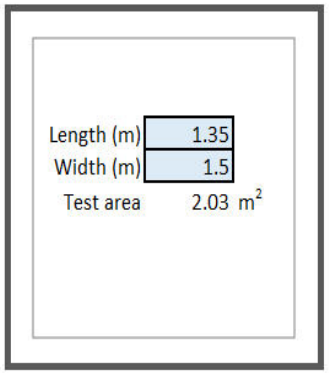



Lovato


C1
BFX10 02
C2
BFX10 02
SR
OL2

Foul Station By Stairs – Flow Rate Test Results





Test area	
Start height (m)	0.2
Stop height (m)	0.1
Span	0.1 m
Total test area	0.20 m³

Desired flow	12	lps
Static pressure		bar
Pump 1 open pres.		bar
Pump 2 open pres.		bar
Pump 1 closed pres.		bar
Pump 2 closed pres.		bar

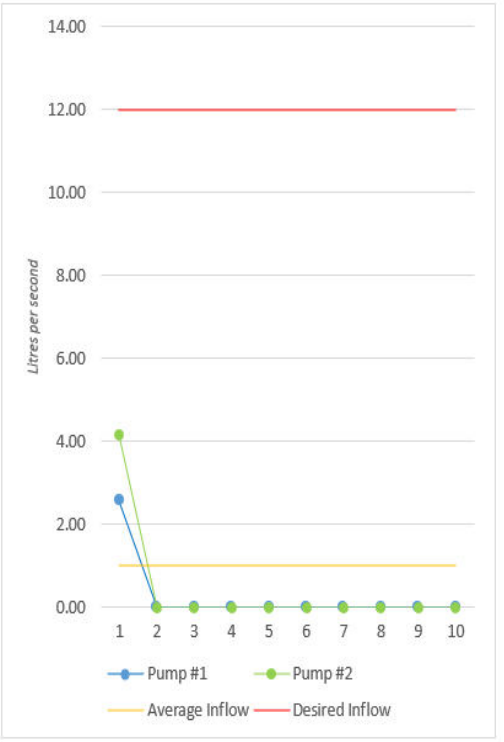
	Inflow time		
Test #	minutes	seconds	Inflow
1	0	200	1.01
2	0	200	1.01
3	0	200	1.01
		Average	1.01 lps

00:00:00

START STOP RESET

	Pump #1	Pump #2
Make	Flygt 3068.170	Flygt 3068.170
Serial	1160107	1160108
Power	415V	415v
Current	In: .3.8Amps/ Run: 2.16Amps	In: 3.8Amps/ Run: 2.15Amps
Impeller	170	170

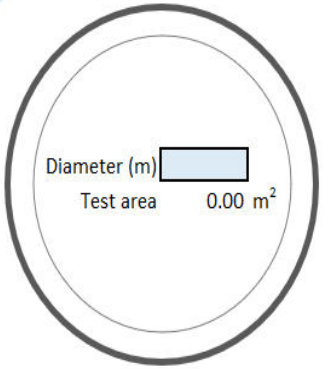
	Pump #1		In + Out	Pump #2		In + Out
Test #	minutes	seconds	Lps	minutes	seconds	Lps
1	2	9	2.58	1	4	4.18
2	0	0		0	0	
3	0	0		0	0	
4						
5						
6				0		
7				0	0	
8				0	0	
9				0	0	
10				0	0	
		Average	2.58 lps		Average	4.18 lps



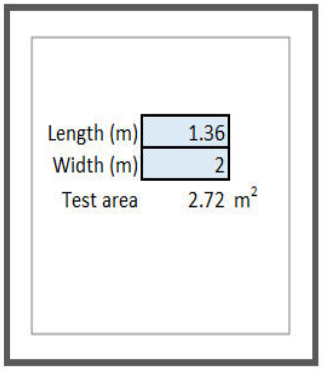
Foul Station at bottom of steps

WILLOW PUMPS
DESIGN, INSTALLATION & MAINTENANCE

Switch Room Storm Station – Flow Rate Test Results



Diameter (m)
Test area 0.00 m^2



Length (m) 1.36
Width (m) 2
Test area 2.72 m^2

Test area	
Start height (m)	0.2
Stop height (m)	0.1
Span	0.1 m
Total test area	0.27 m^3

Desired flow	12 lps

Static pressure	bar
Pump 1 open pres.	bar
Pump 2 open pres.	bar
Pump 1 closed pres.	bar
Pump 2 closed pres.	bar

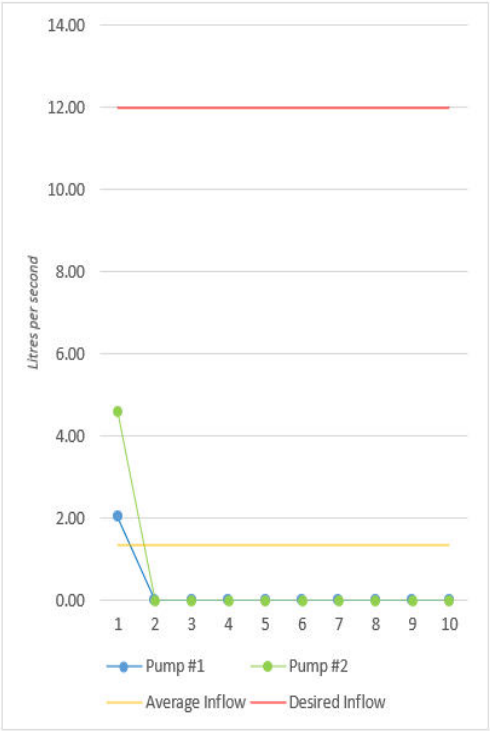
	Inflow time		
Test #	minutes	seconds	Inflow
1	0	200	1.36
2	0	200	1.36
3	0	200	1.36
		Average	1.36 lps

00:00:00

START STOP RESET

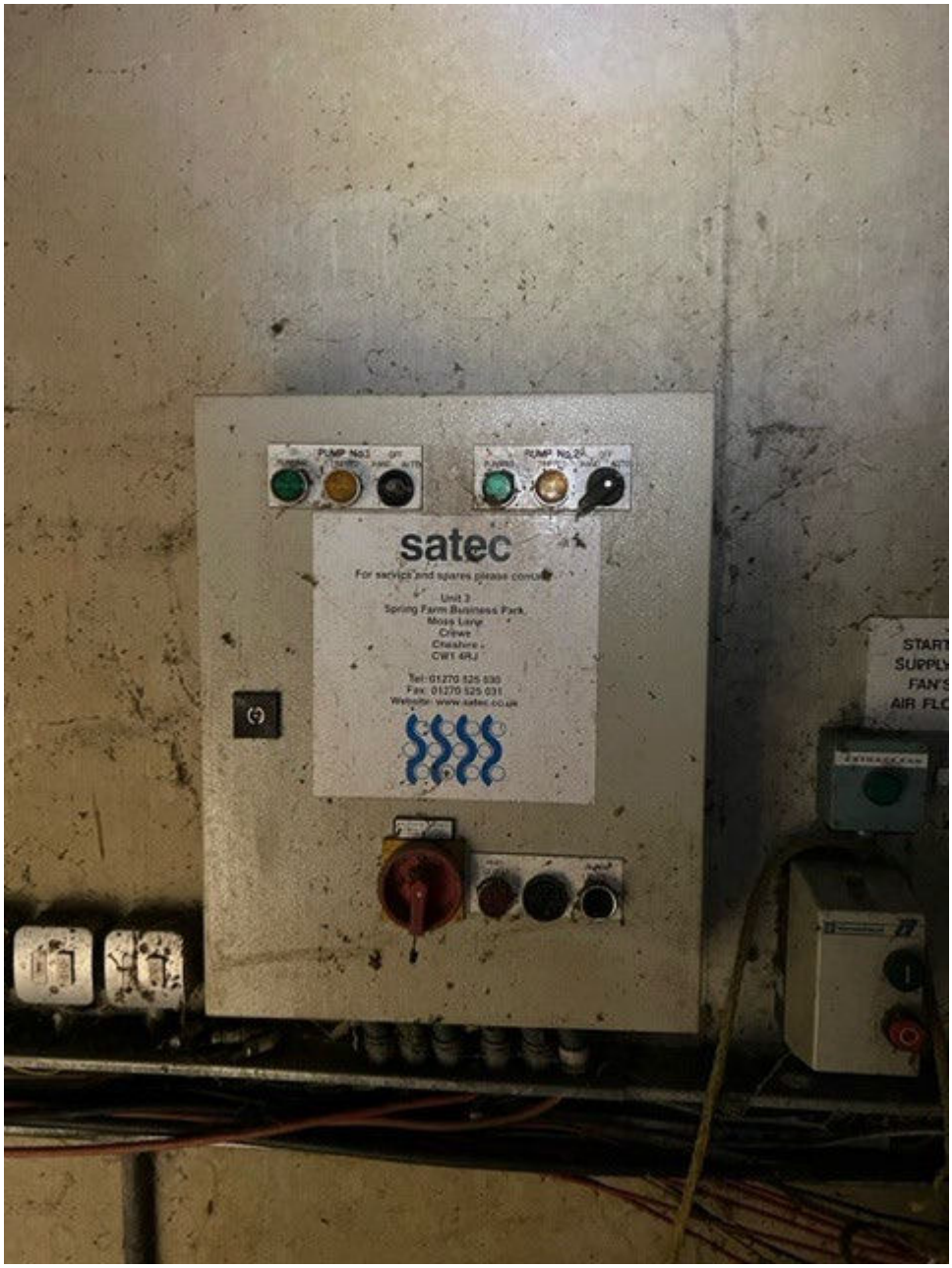
	Pump #1	Pump #2
Make	Homa H312 D	Homa H312 D
Serial	248915	248915
Power	415V	415v
Current	In: 2.40Amps/ Run: 1.57Amps	In: 2.40Amps/ Run: 1.84
Impeller	Unknown	Unknown

	Pump #1		In + Out	Pump #2		In + Out
Test #	minutes	seconds	Lps	minutes	seconds	Lps
1	6	40	2.04	1	24	4.60
2	0	0		0	0	
3	0	0		0	0	
4						
5						
6				0		
7				0	0	
8				0	0	
9				0	0	
10				0	0	
		Average	2.04 lps		Average	4.60 lps

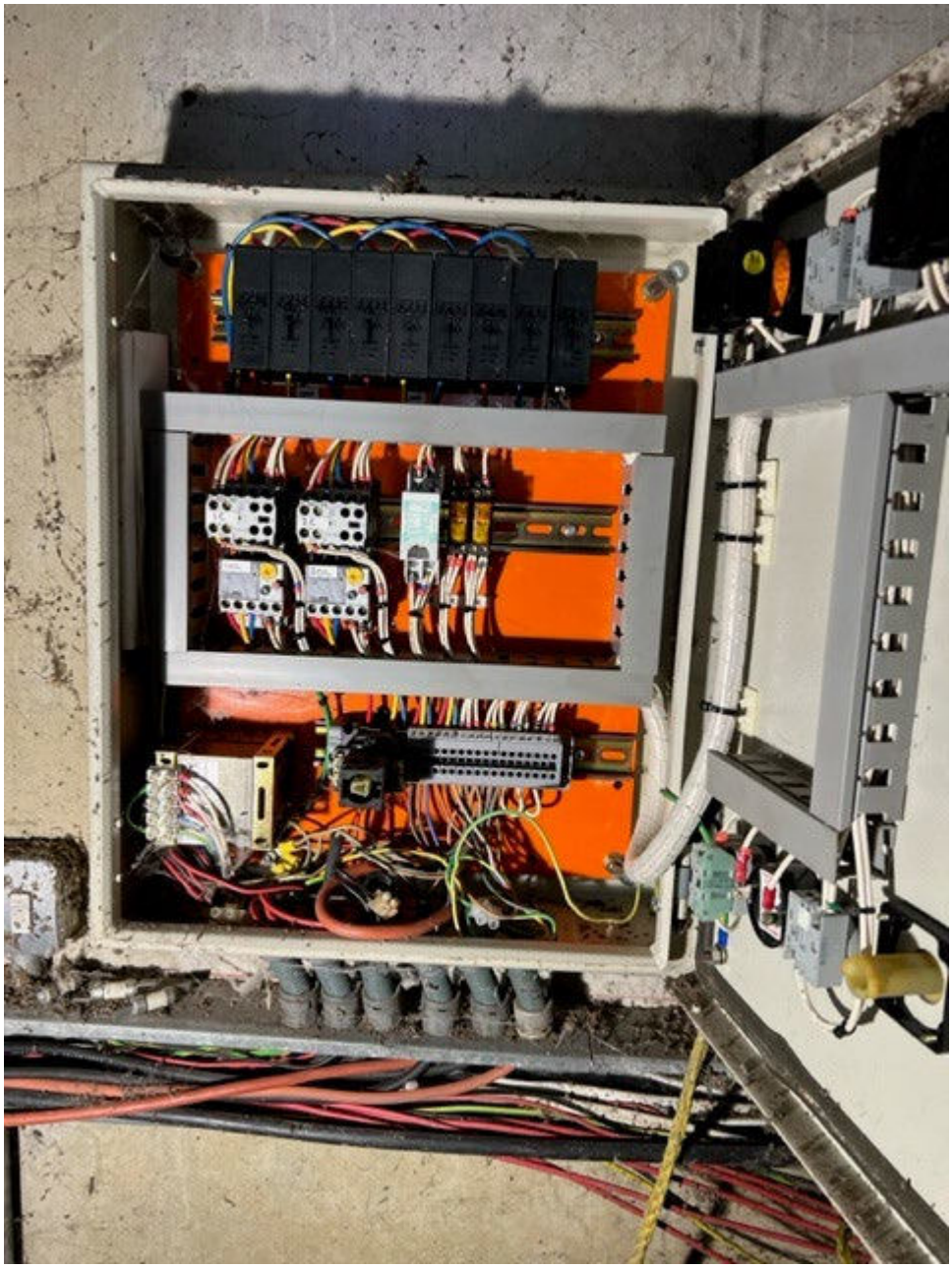


Storm Station – Switch Room

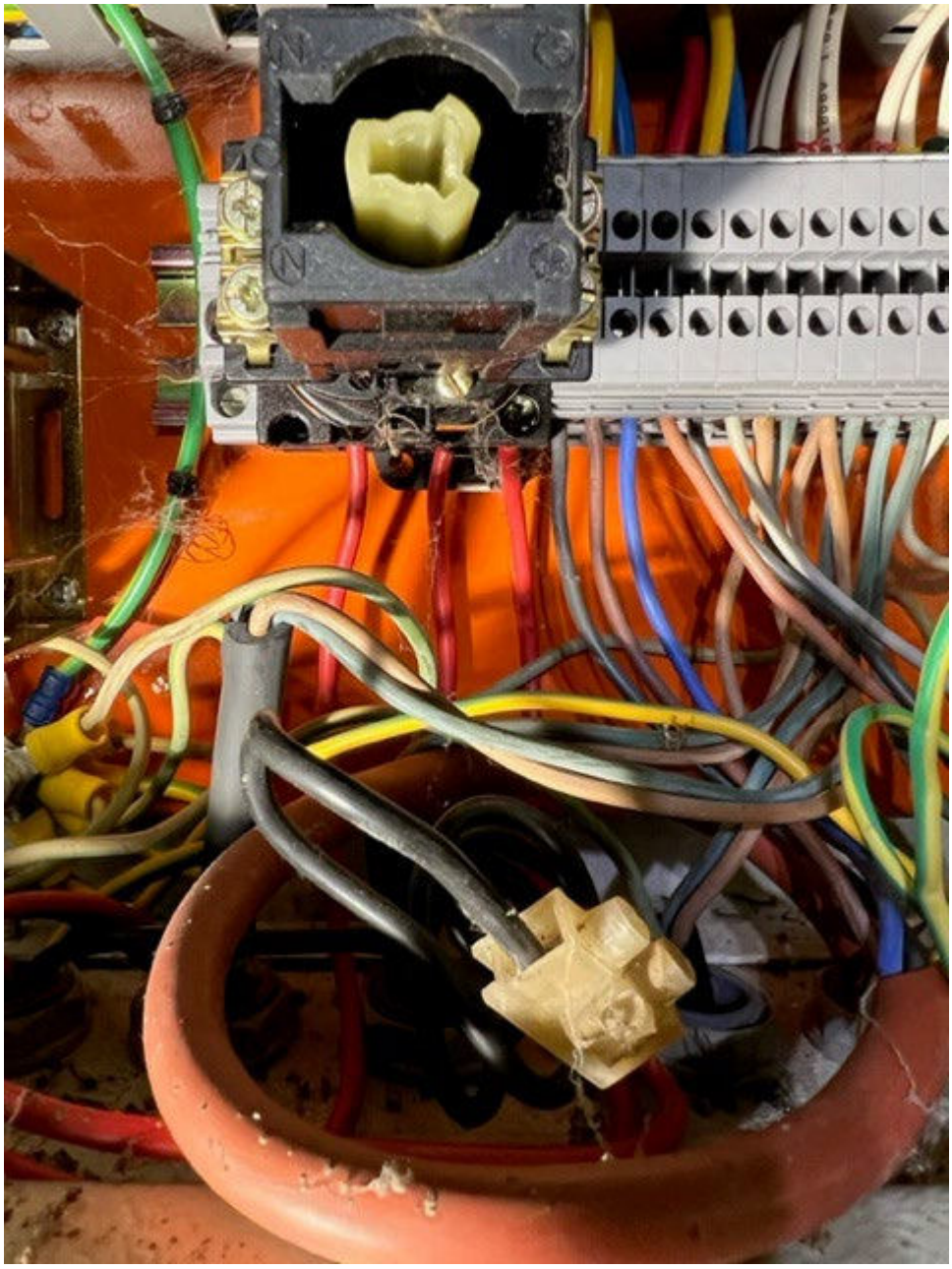

PN20


PUMP No.1
PUMP No.2
satec
Unit 3
Spring Farm Business Park
Moss Lane
Crewe
Cheshire
CW1 6RJ
Tel: 01270 525 530
Fax: 01270 525 531
Website: www.satec.co.uk

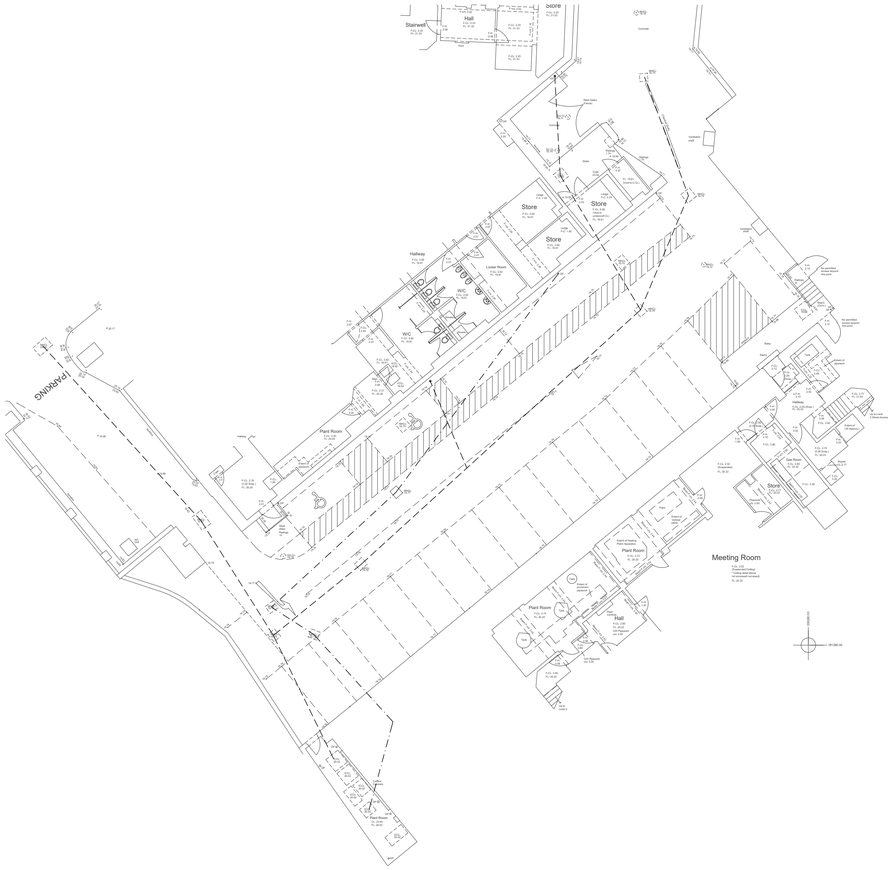

CUSTOMER
SATEC LTD
ORDER NO.
C5861/0002
REFERENCE
SUPPLY
415V 3PH 50HZ
CONTROL VOLTAGE
24V 50HZ
MOTOR RATING
1.1KW
DIAGRAM NO.
S3629
SERIAL NO.
9613
A.P.CONTROL SYSTEMS




1C
11 DIL EM
2C
11 DIL EM
10L
20L



Appendix H – Drainage Design Package Including Runoff Rates



LEVEL 1 EXISTING DRAINAGE LAYOUT

SCALE 1:200

Notes

GENERAL

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORKS.

2. ALL WORKMANSHIP AND MATERIALS ARE TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT EUROCODES, CODES OF PRACTICE AND GOOD BUILDING PRACTICE.

3. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL AUTHORITY.

4. SETTING OUT DETAILS ARE SHOWN ON THE ARCHITECTS DRAWINGS UNLESS NOTED OTHERWISE. ENGINEERS DRAWINGS INDICATE STRUCTURAL ELEMENTS ONLY.

5. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE BEFORE CARRYING OUT ANY WORKS.

6. ALL EXISTING DETAILS AND DIMENSIONS INDICATED ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR.

7. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF EXISTING STRUCTURES AND THE WORKS AT ALL TIMES DURING CONSTRUCTION.

8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.

9. THIS DRAWING IS FOR THE PRIVATE AND CONFIDENTIAL USE OF THE CLIENT FOR WHOM IT WAS UNDERTAKEN AND IT SHOULD NOT BE REPRODUCED IN WHOLE OR IN PART OR RELIED UPON BY THIRD PARTIES FOR ANY USE WITHOUT THE EXPRESS WRITTEN AUTHORITY OF J P CHICK AND PARTNERS LIMITED.

Rev.	Date	By	Amendment	Chk	App
P1	16.03.23	GJB	PRELIMINARY ISSUE		

Status

PRELIMINARY

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Client

Barnes CONSTRUCTION

Project

TRAVELODGE
DRURY LANE
COVENT GARDEN

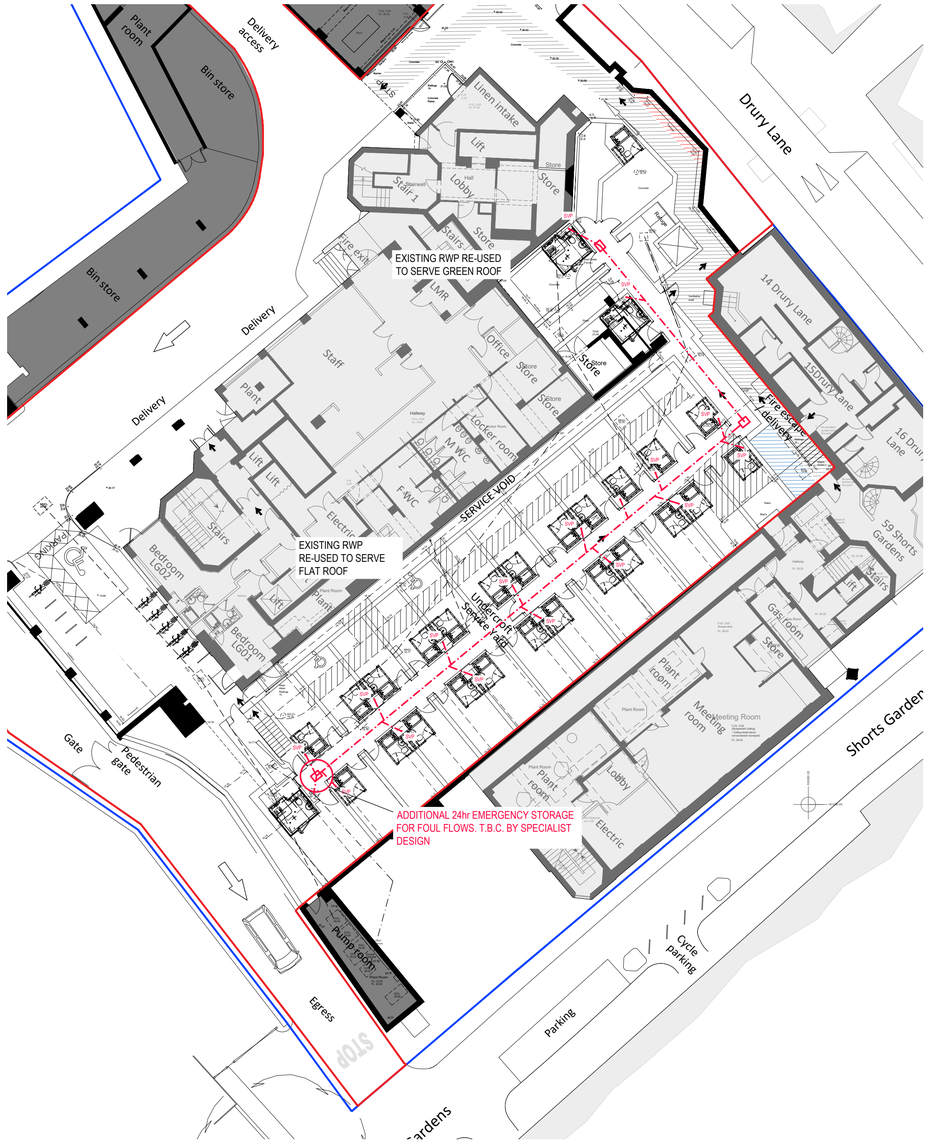
Drawing Title

EXISTING DRAINAGE LAYOUT

Scale	Checked	Date
1:200 @ A1		

Date	Drawn By
MARCH 2023	GJB

Drawing Number	Rev
IG22/185/200	P1



LEVEL 1 PROPOSED DRAINAGE LAYOUT

SCALE 1:200

LEVEL 4 PROPOSED DRAINAGE LAYOUT

SCALE 1:200

Notes

GENERAL

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORKS.

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DRAINAGE NOTES

1. ALL PRIVATE DRAINAGE WORKS SHALL BE IN ACCORDANCE WITH 'THE BUILDING REGULATIONS APPROVED DOCUMENT H' AND BRITISH STANDARD EN 752.

2. PRIOR TO COMMENCEMENT OF THE WORKS THE CONTRACTOR SHALL LIAISE WITH ALL RELEVANT AUTHORITIES TO OBTAIN THEIR REQUIREMENTS AND TO OBTAIN APPROVAL FOR HIS METHOD OF WORKING AND WHERE APPROPRIATE HIS INTENDED CHOICE OF MATERIALS.

3. ALL MATERIALS, UNLESS OTHERWISE SPECIFIED, SHALL COMPLY WITH THE RELEVANT BRITISH STANDARD. SOURCES OF MATERIALS ARE TO BE AGREED WITH THE EMPLOYERS REPRESENTATIVE/ENGINEER IN ADVANCE OF THE WORKS.

4. PRIOR TO COMMENCEMENT OF THE WORKS ALL DRAINAGE OUTFALL POINTS, WHETHER EXISTING SEWER, DRAIN OR WATERCOURSE, SHALL BE VERIFIED ON SITE BY THE CONTRACTOR IF THE OUTFALL POINT IS FOUND TO BE HIGHER OR SIGNIFICANTLY LOWER THAN SHOWN ON THE DRAWINGS THEN THE ENGINEER IS TO BE NOTIFIED (SIGNIFICANT REDESIGN OF DRAINAGE AND LEVELS MAY BE NECESSARY).

5. ALL WORKS TO NEW OR EXISTING PUBLIC SEWERS SHALL BE TO THE APPROVAL OF THE WATER AUTHORITY AND IN ACCORDANCE WITH `SEWERS FOR ADOPTION' THE LATEST EDITION.

6. ALL COVER LEVELS SHOWN ON THIS DRAWING ARE APPROXIMATE. EXACT LEVELS OF NEW COVERS AND FRAMES TO BE DETERMINED ON SITE TO MATCH LEVEL AND PROFILE OF FINISHED SURFACE.

7. ALL COVERS, GRATINGS AND FRAMES TO CHAMBERS, GULLIES, CHANNELS etc SHALL BE OF THE CORRECT LOAD CLASS TO SUIT THEIR LOCATION.

LOAD CLASS A15	PEDESTRIAN AREAS (NOT ACCESSIBLE BY VEHICLES).
LOAD CLASS B125	PRIVATE DRIVES.
LOAD CLASS C250	LIGHTLY TRAFFICKED ROADS.
LOAD CLASS D400	MAIN ROADS

8. THE CONTRACTORS ATTENTION IS DRAWN TO DIAGRAMS 7 AND 8 OF `THE BUILDING REGULATIONS APPROVED DOCUMENT H' SHOWING DETAILS OF DRAINS LAID BELOW AND NEAR TO BUILDINGS. WHERE GROUND BEAMS ARE USED THEIR LEVEL SHALL BE SET TO AVOID CLASHING WITH DRAIN CONNECTIONS.

9. FOR THE EXACT LOCATION OF SOIL PIPES, STUBSTACKS W.C. 's AND OTHER DRAINAGE CONNECTIONS REFER TO M&E/ARCHITECTS DRAWINGS.

10. ALL PIPES TO BE 100mmØ @ 1:80 UNLESS NOTED OTHERWISE.

11. ALL BEDDING AND SURROUND TO BE GRANULAR U.N.O. IN LANDSCAPED AREAS WHERE PIPES HAVE LESS THAN 600mm COVER PROVIDE CONCRETE BEDDING AND SURROUND. IN ROADS AND CAR PARKS PROVIDE CONCRETE BEDDING AND SURROUND WHERE COVER IS LESS THAN 900mm.

Rev.	Date	By	Amendment	Chk	App
P2	23.03.23	GJB	DRAWING AMENDED		
P1	16.03.23	GJB	PRELIMINARY ISSUE		

Status

PRELIMINARY

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Client

Barnes
CONSTRUCTION

Project

TRAVELODGE
DRURY LANE
COVENT GARDEN

Drawing Title

DRAINAGE LAYOUT

Scale	Checked	Date
1:200 @ A1		

Date	Drawn By
MARCH 2023	GJB

Drawing Number	Rev
IG22/185/201	P2

Run-off from Hard Standing Areas - Pre Development

Peak Discharge Q = 3.61 Cv i A Cv = 0.9
i = Rainfall Intensity From Micro Drainage
A = Area = 0.018 ha

1 Year Event

15 minute storm	=	3.61	x	0.9	x	38.37	x	0.018	=	2.244 l/s
30 minute storm	=	3.61	x	0.9	x	24.06	x	0.018	=	1.407 l/s
120 minute storm	=	3.61	x	0.9	x	8.68	x	0.018	=	0.507 l/s
6 hour storm	=	3.61	x	0.9	x	3.78	x	0.018	=	0.221 l/s

30 Year Event

15 minute storm	=	3.61	x	0.9	x	80.60	x	0.018	=	4.713 l/s
30 minute storm	=	3.61	x	0.9	x	51.64	x	0.018	=	3.020 l/s
120 minute storm	=	3.61	x	0.9	x	18.76	x	0.018	=	1.097 l/s
6 hour storm	=	3.61	x	0.9	x	7.90	x	0.018	=	0.462 l/s

100 Year Event

15 minute storm	=	3.61	x	0.9	x	104.81	x	0.018	=	6.130 l/s
30 minute storm	=	3.61	x	0.9	x	67.67	x	0.018	=	3.957 l/s
120 minute storm	=	3.61	x	0.9	x	24.65	x	0.018	=	1.442 l/s
6 hour storm	=	3.61	x	0.9	x	10.25	x	0.018	=	0.599 l/s

Volume of Run-off from Hard Standing 6 Hour Storm

1 Year Storm	=	0.221	x	60	x	60	x	6	=	4775 litres or	4.775 m^3
30 Year Storm	=	0.462	x	60	x	60	x	6	=	9976 litres or	9.976 m^3
100 Year Storm	=	0.599	x	60	x	60	x	6	=	12949 litres or	12.949 m^3

Project: DRURY LANE TRAVELODGE

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Suffolk
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Designed	Checked	Date	Job No.
GJB		Mar-23	IG22/185

Calculation Sheet

Sheet No. 1 of 1

BLUE ROOF ATTENUATION AND OUTFLOW SUMMARY

PRIVATE & CONFIDENTIAL - NOT FOR DISTRIBUTION

Project Name:	Travelodge Hotel off Drury Lane, London - Level 4, Green Roof		
Prepared for:	JP Chick, Ipswich.		
Date:	09/02/2023		
ABG Project ID:	24735	Calculator version:	1.30
Prepared by:	Andrew Keer, andrew@abgltd.com, 07525-808700		
Notes/description:	Green roof; with potential for free-standing/ballasted, PV panels to be installed, on top of the 'blue roof' system (recommended). Maintenance access only - with mansafe posts - 2no.-3no. TBC). Warm roof/inverted roof, construction, with zero falls - TBC.		

Blue Roof Estimate

Input Parameters - Rainfall Information (Flood Studies Report 1975)			
Return period:	100	years	*As supplied by Client*
Allowance for Climate Change:	40	%	*As supplied by Client*
Location selected for FSR data:	London (Central)		

Input Parameters - Roof Information			
Total catchment area:	106	m^2	*As supplied by Client*
Attenuation area:	92	m^2	*As supplied by Client*
Maximum allowable runoff:	0.6	l/s	*As supplied by Client*

Output - Rainfall Calculation

Duration	Time to Empty	Restricted Outflow (l/s)
15 mins	3 hours and 20 minutes	0.4
30 mins	3 hours and 50 minutes	0.5
1 hour	4 hours and 10 minutes	0.5
2 hours	4 hours and 0 minutes	0.5
4 hours	3 hours and 30 minutes	0.4
6 hours	2 hours and 40 minutes	0.4
10 hours	1 hour and 20 minutes	0.2
24 hours	0 hours and 0 minutes	0.0
48 hours	0 hours and 0 minutes	0.0

Total attenuation required: 5.7 m^3
Half empty time: 0 hours and 20 minutes.

Output - Recommended Blue Roof System		
System Name:	ABG blueroof VF HD 129mm	
Description:	The blue roof depth of 129mm, already includes for a 25mm deep, reservoir board. No. of control positions TBC by design team, and also with the structural engineer's deflection analysis. Additional 'tell-tale'/emergency parapet overflow outlets, may also be added by the architect.	
Total attenuation capacity:	10.4	m^3
Number of Blue Roof outlets:	2	

Notes:

1. This document contains an estimate which has been prepared by ABG Ltd and is illustrative only and not a detailed design.
2. Further details on the theories used in this estimate are available upon request from ABG. The values given for the performance of the system relate to testing, modelling and analysis of our systems obtained from laboratories and testing institutes. In line with our policy of continuous improvement the right is reserved to make changes to our systems without notice at any time.
3. The estimate given in this report is based on the stated parameters as per the brief. If these parameters are not correct or have changed, ABG should be contacted to provide a revised estimate.
4. This estimate is specific to the characteristics of ABG products/systems and is not applicable to other competitor products. The substitution of the whole or any component of this design for a material supplied from another source renders this estimate invalid.
5. Final determination of the suitability of any information is the sole responsibility of the user. ABG will be pleased to discuss the use of this or any other product but responsibility for selection of a material and its application in any specific project remains with the user.

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UK t 01484 852096 e geo@abgltd.com **Export** t +44(0)1484 852250 e export@abgltd.com
www.abgltd.com

1. DEFINITIONS

'Consultant' means ABG Geosynthetics Ltd and its legal successors. 'Client' means the person, firm, company or organisation for whom the Consultant is performing the Services. 'Agreement' means the contract referred to in Clause 2. 'Services' means the services to be performed by the Consultant in accordance with the proposal from the Consultant. 'Project' means the project or works for which the Client has commissioned the Services.

2. GENERAL

Unless and until a formal agreement is entered into, the Client's acceptance of the proposal for Services from the Consultant or a request for some or all the Services to be performed by the Consultant, shall constitute a binding
contract between the Client and the Consultant which contract will be subject to any terms and conditions contained or referred to in the aforementioned proposal and these terms and conditions. In the event of any conflict, the terms and conditions in the proposal shall prevail over these terms and conditions. The Agreement so formed shall supersede all previous understandings, commitments or agreements whether written or oral between the Client and the Consultant relating to the subject matter hereof. No person or entity shall have any rights in relation to this Agreement, whether as third parties or otherwise, save the parties to this Agreement. Should any term or condition of this Agreement be held to be unenforceable or invalid by the courts of any jurisdiction to which it is subject then such term or condition shall be disregarded and the remaining terms and conditions shall remain in full force and effect.

3. PERFORMANCE OF SERVICES AND SCOPE

The Consultant shall perform the Services using the degree of skill care and diligence to be expected from a consultant experienced in the provision of services of similar scope size and complexity. The Consultant shall use reasonable endeavours to complete the Services within the time or programme agreed but shall not be responsible for any delay beyond the reasonable control of the Consultant.

The fee contained in the proposal is for the scope of services as defined therein. If not already contained in the proposal the Consultant and the Client shall agree as an initial activity an integrated project services programme to
include the activities of all the parties to the Project relevant to the Services to be supplied by the Consultant. The
aforesaid programme shall show the key dates for final information and the delivery of such to the Consultant so as to enable the Consultant to carry out the services in an efficient once through manner to achieve the programme delivery dates for the Services.

The Consultant provides various services including Design and Product use advice which is distinct from a Design Service. The Design Service may or may not attract a fee.

Where the Consultant's services are of an advisory nature and dependent upon the degree of information and release thereof by the Client then the Client agrees that any reliance placed on the services by the Client shall take due account of such constraints.

4. CONFIDENTIALITY AND INTELLECTUAL PROPERTY RIGHTS

i. The Consultant and the Client shall keep confidential all information pertaining to the Services.

ii. Copyright for all reports, documents and the like produced by the Consultant in the performance of the Services
shall remain vested with the Consultant but the Consultant shall grant an irrevocable royalty free license to the Client to use such reports, documents and the like for any purpose in connection with the Project.

5. LIABILITY

i. The Consultant shall be liable to pay compensation to the Client arising out of or in connection with this
Agreement only if a breach of the duty of care in Clause 3 is established against the Consultant.

ii. Notwithstanding any other term to the contrary in this Agreement or any related document and whether the cause of action for any claim arises under or in connection with the Agreement in contract or in tort, in negligence or for breach of statutory duty or otherwise the Consultant shall have no liability to the Client in respect of any claim for loss or damage arising from acts of war or terrorism or arising from flooding, burst water mains or failed drainage or arising from any incidence of toxic mould or asbestos but otherwise in relation to any cause of action as aforesaid the total liability of the Consultant in the aggregate for all claims shall be limited to a sum equivalent to ten (10) times the fee payable under this Agreement or £50,000, whichever is the lesser, or such other sum as may be expressly stated in the Consultant's proposal, and further but without prejudice to the aforesaid limit of liability any such liability of the Consultant shall be limited to such sum or sums as it would be just and equitable for the Consultant to pay having regard to the Consultant's responsibility for the same and on the basis that all other parties appointed or to be appointed by the Client to perform related services in connection with the Project shall be deemed to have provided undertakings on terms no less onerous than this Agreement and shall be deemed to have paid to the Client such contribution as it would be just and equitable for them to pay having regard to their responsibility for any loss or damage and providing that it shall be deemed that such other parties have not limited or excluded their liability to the Client for such loss or damage in any way which may be prejudicial to the Consultant's liability under this clause. Nothing in this clause shall operate to exclude or limit the Consultant's liability for death or personal injury.

iii. The Client shall indemnify and keep indemnified the Consultant from and against all claims, demands,
proceedings, damages, costs and expenses arising out of or in connection with this Agreement or the Project
arising from acts of terrorism or arising otherwise in excess of the liability of the Consultant under this
Agreement or which may be made in respect of events occurring after the expiry of the period of liability stated
in this Agreement.

iv. No action or proceedings under or in connection with this Agreement shall be commenced against the Consultant after the expiry of one year from completion of the Services.

v. ABG Geosynthetics Ltd is not responsible for consequential, indirect or incidental losses.

6. INSURANCE

The Consultant shall arrange Professional Indemnity Insurance cover for the amount stated in Clause 5(ii). The Consultant will use all reasonable endeavours to maintain Professional Indemnity Insurance cover for the period stated in 5(iv) above, providing such insurance remains available to the Consultant at commercially reasonable rates.

7. CLIENT'S OBLIGATIONS

The Client shall supply, without charge and in such time so as not to delay or disrupt the performance of the Consultant in carrying out the Services, all necessary and relevant information, in his possession or available to him from his other agents or consultants and all necessary approvals or consents. Any deviation on any information from the proposal shall be confirmed in writing and any attendant consequential fees will be forwarded for approval by the Client before any changes are made. The Consultant shall not be liable for any consequential delays on site. Every reasonable effort will be made to mitigate against delays, however no liability for losses and costs will be accepted. The approval or consent by the Client to the Services shall not relieve the Consultant from any liability under this Agreement. All work undertaken by the Consultant must be ratified and signed off by the Client.

8. PAYMENT

i. The Client shall pay the Consultant for the Services in accordance with the proposal and this Agreement. If the Consultant performs any additional services or if the Services are delayed or disrupted for reasons beyond the
reasonable control of the Consultant then the Consultant shall be entitled to such additional fees as are fair and
reasonable in the circumstances. The Consultant may render an invoice at monthly intervals for services properly
performed. The agreed invoice, or in the event of a dispute the undisputed element, shall be paid within 28 days of receipt of the invoice by the Client. Any invoice paid after this period will attract interest at 3% above the base
rate of the central bank of the country of the currency of payment along with any collection costs which may occur.

ii. The Client shall not withhold any payment of any sum or part of a sum due to the Consultant under this
Agreement by reason of claims or alleged claims against the Consultant unless the amount to be withheld has
been agreed between the Client and the Consultant as due to the Client or such sum arises from an award in
adjudication, arbitration or litigation in favour of the Client and arises under or in connection with the Agreement.
Save as aforesaid all rights of set off at common law, in equity or otherwise which the Client may otherwise be
entitled to exercise are hereby expressly excluded.

9. TERMINATION

If a party is in breach of a material term of this Agreement and despite written notice from the other party fails to
remedy such breach within 30 days or such other period as may be agreed between the parties, then the other party shall be entitled to terminate this Agreement forthwith. The Consultant may seek to recoup costs incurred for works completed prior to termination.

10. DISPUTE RESOLUTION

Any dispute between the parties that cannot be settled by mutual agreement shall be referred for final settlement to the arbitration of a person agreed between the parties or failing such agreement appointed upon the application of either party by the President of the Chartered Institute of Arbitrators and the said arbitration shall be carried out in accordance with the Construction Industry Model Arbitration Rules 1998 or such other version current at the time of the referral under this clause. Where the Agreement is subject to a governing law other than that of England and Wales then any dispute between the parties that cannot be settled by mutual agreement shall be finally settled by arbitration in accordance with the UNCITRAL Arbitration Rules by one arbitrator appointed in compliance with the said Rules. In either case such rules as appropriate are deemed to be incorporated into this Agreement by reference.

11. COMPLIANCE WITH LAWS

This Agreement shall be governed by and construed in accordance with the law of England and Wales unless stated
otherwise in the proposal for services from the Consultant.

Changes to the above terms and conditions will only be considered if agreed in writing as
part of the appointment process prior to ABG Geosynthetics commencing work.