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63-71 HIGH STREET, HAMPTON HILL, LONDON, TW12 1NH

FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY

18/10/2016
Version 2.3
RAB: 1366B

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Quality Control

Action	Signature	Date
Prepared	Dr Alexandros Tsavdaris	17/08/2016; 10/10/2016; 13/10/2016; 18/10/2016
Checked	Matt Tandy AMInstLM	18/08/2016
Approved	Ray Pickering CEng MCIWEM C.WEM MCGI MEPS	19/08/2016

Disclaimer

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Contents

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1.0 Introduction

RAB Consultants has prepared this flood risk assessment and drainage strategy in support of a proposed redevelopment at 63-71 High Street, Hampton Hill, London.

The development site is located in Flood Zone 1 according to the Environment Agency's Flood Map for Planning (Rivers and Sea). A site specific drainage strategy will ensure that the development conforms to local sustainable drainage policies. In addition, a flood risk assessment has also been prepared due to the fact that the site falls within a critical drainage area (Group8_006), according to the 2011 London Borough of Richmond Surface Water Management Plan (SWMP).

1.1 National Planning Policy

According to paragraph 079 of the National Planning Policy Framework "*major developments, as defined in the Town and Country Planning (2015), SuDS should be provided unless demonstrated to be inappropriate".*

1.2 London Borough of Richmond Planning Policy

According to the London Borough of Richmond: "*From April 2015 sustainable drainage is a material consideration in planning decisions. Therefore, the Local Planning Authority in consultation with the Lead Local Flood Authority (LLFA) will:*

- *ensure that SuDS are used in major developments unless it is demonstrated that they are inappropriate*
- *ensure that the minimum standards of operation proposed by the applicant are appropriate*
- *ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance of the SuDS scheme over the lifetime of the development*

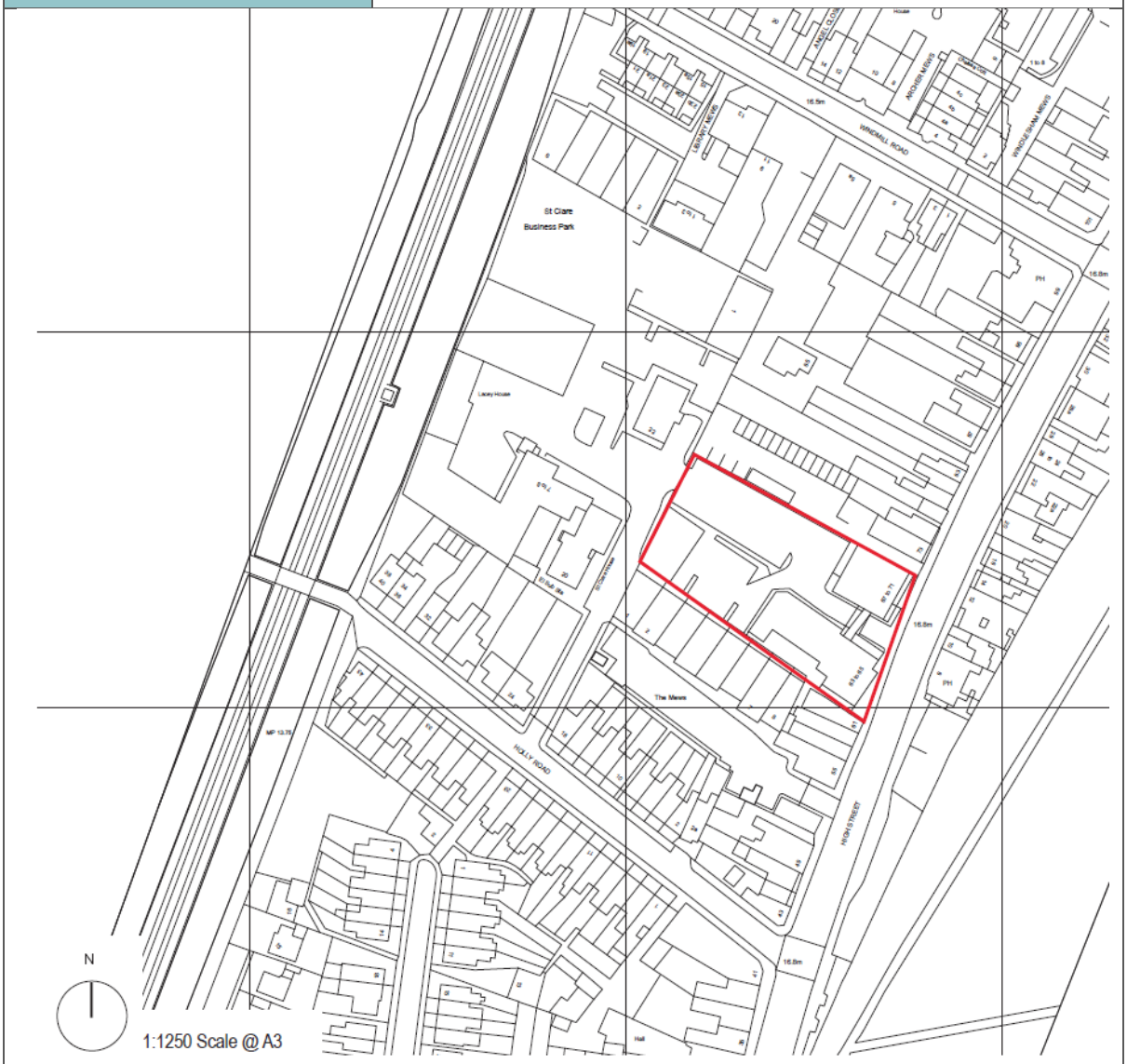
In all applications for major development, developers or applicants must include a statement outlining the proposed Sustainable Drainage System to be incorporated in the development, along with details for their long term management and maintenance".

According to Policy DM SD 7, the site must achieve pre-development Greenfield runoff rates or provide significant betterment compared to the existing flow rate. According to the 2015 Planning Guidance Document: Delivering SuDS in Richmond, the typical discharge rate for the 1% AEP+CC (1 in 100 year plus climate change) is 16l/s/ha (clayey soils).

2.0 Site Details

2.1 Site Location

TABLE 1: SITE DETAILS	
Site address	63-71 High Street, Hampton Hill, London, TW12 1NH
Site area	Approximately 2,380m^2
Existing land use	Mixed Use (Commercial, Residential)
OS NGR	514230 170803
Local Planning Authority	London Borough of Richmond



2.2 Site Description

The site is located west of High Street (Figure 1) and it is surrounded by mixed use buildings. The site is accessed via a gated entrance (Figure 2). The site is developed with three B1 office buildings currently vacant. No 63/65 also has three residential flats on the top floor (Figure 3, Figure 4, Figure 5, and Figure 6). The associated paved area (Figure 7) is mostly impermeable. The site slopes towards the west boundary suggesting that water runoff will flow naturally towards the west. The existing buildings appear to drain to an underground drainage network (Figure 8, Figure 9) while runoff from the paved area seems to flow towards existing gullies (Figure 10). The final discharge point is soakaway at the car park. The site is located approximately 250m north-east of the Longford River.

TABLE 2: SITE PHOTOGRAPHS

FIGURE 1: HIGH STREET

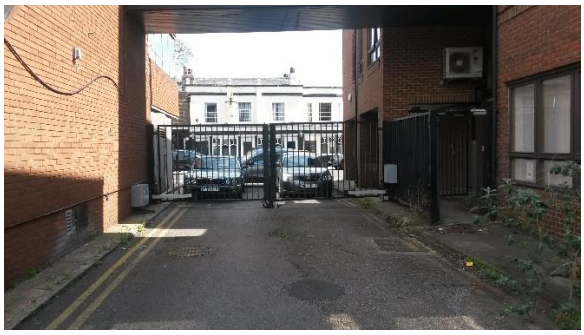


FIGURE 2: VIEW TOWARDS HIGH STREET

FIGURE 3: FRONT VIEW OF EXISTING BUILDING

FIGURE 4: FRONT VIEW OF EXISTING BUILDING

FIGURE 5: EXISTING BUILDING AT SOUTH-WEST PART OF THE SITE

FIGURE 6: REAR VIEW OF EXISTING BUILDINGS

FIGURE 7: PAVED AREA AND GREENFIELD SPACE AT THE REAR OF THE SITE

FIGURE 8: RAINWATER PIPE AT THE SITE

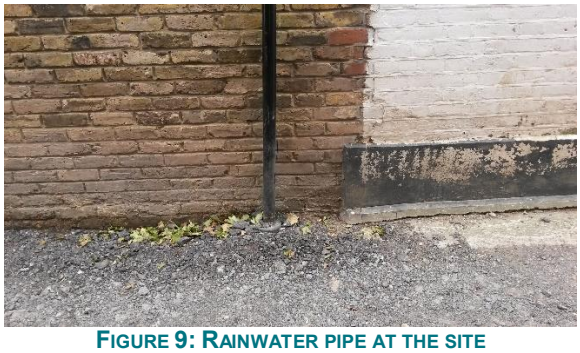


FIGURE 9: RAINWATER PIPE AT THE SITE

FIGURE 10: GULLY AT THE REAR OF THE EXISTING BUILDINGS

2.3 Development Proposal

The proposal is for the erection of an interlinked group of buildings, on the east half of the site, set around a pedestrian entrance court accessed off the High Street and a grouping of town houses, on the west half of the site, set around a landscaped garden court accessed from the eastern entrance court. the development includes a full basement providing car parking spaces; secure cycle storage; refuse stores; resident's stores and plant rooms.

3.0 Flood Risk

3.1 Flooding History

According to the 2011 Surface Water Management Plan (SWMP), local records identify that Mortlake, High Street and Worple Street, as experienced flooding in July 2007 including Upper Richmond Road. However, there are no further details available for the type or duration of the flood event. Pluvial modelling (SWMP, 2011; see page 49) shows surface water from the northwest and Bushy Park pooling at topographical low spots on Broad Street and High Street. Anecdotal records from 2007 suggest that there was approximately a 300mm depth of water, sufficient to flood a number of shops. Nevertheless, there is no evidence to suggest that the site itself flooded. Where property was not flooded directly, wash from vehicles caused indirect flooding. Flood water took approximately an hour to drain away (from local residents' comments).

In addition, the 2010 London Borough of Richmond Strategic Flood Risk Assessment (SFRA) shows that there have been two groundwater flooding incidents close to the junction of High Street with A313, approximately 600m to the north of the site.

No incidents of sewer related flooding have been recorded in the 2010 SFRA or the 2011 SWMP in respect of the site.

3.2 Fluvial Flood Risk

According to the Environment Agency's Flood Map the site lies in Flood Zone 1, which is land assessed as having less than 0.1% AEP (1 in 1,000 year) of fluvial flooding. Consequently, the risk of flooding from this source is very low.

3.3 Flood Defence Breach or Overtopping

The site is not protected by any formal raised flood defences. Consequently, there is no risk of flooding from this source.

3.4 Coastal/Tidal

The site is located at a considerable distance from the sea and is not at risk of coastal or tidal flooding.

3.5 Pluvial (Surface water) Flood Risk

When the infiltration capacity of land or the drainage capacity of a local sewer network is exceeded, excess rainwater flows overland; this water will collect in topographic depressions and at obstructions, and can inundate development downslope. The severity of the rainfall event, the degree of saturation of the soil before the event, the permeability of soils and geology, hill slope steepness and the intensity of land use all contribute to and affect the severity of overland flow.

The Environment Agency's Flood Map for Surface Water can be used to see the approximate areas that would experience surface water flooding from a variety of rainfall return periods. The risk is categorised based on annual probability of occurrence. The different risk categories are displayed below in Table 3.

The surface water maps identify that the site has generally very low risk of flooding. The 2011 SWMP identifies the site as having a low risk of flooding with potential flood depths reaching up to 0.25m (Figure 3.8.6a). In addition, the site has a very low hazard rating (SWMP, 2011; Figure 3.8.6b)

TABLE 3: ENVIRONMENT AGENCY SURFACE WATER RISK CATEGORIES

Surface Water Risk Category	Surface water flooding annual probability of occurrence
Very Low	Less than 0.1% (1 in 1,000 years)
Low	Between 1% and 0.1% (1 in 100 years and 1 in 1,000 years)
Medium	Between 1% and 3.3% (1 in 100 years and 1 in 30 years)
High	Greater than 3.3% (1 in 30 years)

This type of flooding can be difficult to predict as it is hard to forecast where or how much rain will fall in any storm. The Environment Agency's flood map is based on the best information available to them, such as ground levels and drainage assumptions.

3.6 Groundwater and Site Geology

Groundwater flooding usually occurs following a prolonged period of low intensity rainfall and the future risk from this source is more uncertain than surface water as the climate change predictions indicate that although sea levels will rise, thus possibly raising groundwater levels, overall summer rainfall will decrease, therefore having a long-term effect of lowering the groundwater levels. However, long periods of wet weather are predicted to increase; these are the type of weather patterns that can exacerbate groundwater flooding.

On the basis of the 2010 SFRA, the site has not experienced groundwater flooding.

British Geological Survey Maps indicate that the site overlays bedrock of the Thanet Sand Formation and Lambeth Group (undifferentiated) - Clay, Silt and Sand while the superficial deposits are Head - Clay, Silt, Sand and Gravel. The Phase 2 Contamination (Appendix C) report states that the site is underlain by Taplow Gravel Formation overlying London clay formation. This suggests that infiltration SuDS are not viable at the site.

3.7 Artificial Waterbodies

According to the Environment Agency Reservoir Flood Map, the site is not at risk from this source. Nevertheless, the Longford River is located at approximately 240m west of the site. The Longford River is an English artificial waterway, a distributary designed to embellish a park, that diverts water 12 miles (19 km) from the River Colne at Longford near Colnbrook to Bushy Park and Hampton Court Palace where, at both, it has outlets to the Thames, on the

reaches above Teddington Lock and Molesey Lock, respectively (Wikipedia, 2016). There is no evidence to suggest that this watercourse has caused a flood risk problem to the site. Consequently, the risk of flooding from this source is considered to be low.

4.0 Mitigation Measures

4.1 Risk to Buildings

The site is at low risk of flooding from all sources. However, it is good practice to adopt certain measures which can increase flood protection of the actual buildings. The main problem with London is that the drainage infrastructure is of limited capacity and may surcharge during extreme events. Consequently, it is recommended that non-return valves should be placed at the foul water outlet pipes. In addition, the proposed storage feature (see Section 5.0 below) should be designed with a freeboard allowance to mitigate against a potential surcharge at the outfall during extreme rainfall events and/or infrastructure failure.

4.2 Safe Access and Egress

As mentioned in Section 3.5, the site has a very low hazard rating. Consequently, safe access and egress is possible.

5.0 Drainage Strategy

5.1 Natural Flow Path

On the basis of the topographic survey, the pre-development overland flow routes were identified (see Figure 11). The existing flow routes suggest that most surface water runoff flows towards the low spot of the site which at the north-west part.

FIGURE 11: EXISTING FLOW PATHS

The proposed development should not increase flood risk to others and must conform to SuDS Policy DM SD 7 relating to surface water management. The proposed development will take place on already developed land. According to Policy DM SD 7, the site must achieve pre-development Greenfield runoff rates or provide significant betterment compared to the existing flow rate. On the basis of the 2015 Planning Guidance Document: Delivering SuDS in

Richmond, the typical discharge rate of clayey soils, for the 1% AEP+CC (1 in 100 year plus climate change), is 16l/s/ha within the London Borough of Richmond. Thames Water has agreed on a discharge rate of 3.2 l/s for the site (see Appendix B).

All drainage calculations and drainage design were undertaken by HPBW LLP and can be found in Appendix B (provided by HPBW LLP).

5.2 Existing Site Runoff

Using the topographic survey (see Appendix C) the existing hardstanding area (building footprint and car parking area) was measured at approximately 2,200m^2.

Using the Rational Method (BS EN752) equation, existing flows were assessed as follows:

Q=CIA (C = runoff coefficient; I = rainfall (mm/hr); A = impermeable area (ha):

Q = 2.78 (conversion factor) x 50 x A_{imp} l/s (A_{imp} in ha) based on a 2 year storm return period.

Q = 2.78 x 50 x 0.22 = **30.58 l/s**

This is the estimated runoff rate from the existing impermeable area.

5.3 Greenfield Runoff Rate

The pre-development runoff rate and volume (Appendix B) were calculated on 1ha basis. Using the IH124 method for determining Greenfield runoff rate built into Microdrainage WinDes 2013.1 (including the modification given in the Interim Code of Practice for SUDS, Chapter 6):

- AREA = 1ha.
- SAAR = 600mm
- Soil = 0.3
- **Pre-development QBAR = 1.9 l/s/ha.**
- **Pre-development peak flow with 1 year return period = 1.3 l/s/ha.**
- **Pre-development Peak flow with 30 year return period = 3.4 l/s/ha.**
- **Pre-development Peak flow with 100 year return period = 4.9 l/s/ha.**
- **Pre-development Peak flow with 100 year return period plus 40% climate change = 6.86 l/s/ha.**

Given that the site is brownfield, restricting the rate to 0.22ha (total proposed hardstanding) x 1.9l/s (QBAR) = **0.418 l/s** is unrealistic and impractical. Consequently, the rate should be limited to 0.22ha x 16l/s/ha (Typical discharge rate per ha of clayey sites; Planning Guidance Document: Delivering SuDS in Richmond, 2015) = **3.2 l/s** for all events up to the 1% AEP+CC. This is 88.5% less than the existing 50% AEP site runoff, for all events up to the 1% AEP +40%CC, offering a significant betterment and thereby reducing the flood risk downstream. Thames Water has confirmed (Appendix D) that a 50% reduction of surface water runoff rate

must be achieved post-development. Therefore, the discharge rate is appropriate for this development.

5.4 Greenfield Runoff Volume

Using the FSR method to determine rainfall and FSSR 16 fixed percentage runoff model for volume (Greenfield runoff volume analysis module built into Microdrainage WinDes 2013.1):

- M5_60 = 20.000mm.
- Ratio R = 0.400.
- CWI = 87
- Return period = 100 year.
- Storm duration = 360 minutes.
- Area = 1ha.
- SAAR = 600mm (obtained from WinDes 2013.1 built in FSR map).
- SPR = 30
- Urban = 0.000.
- PR% = 24.48%.

Pre-development Greenfield runoff volume = 153.013 m^3/ha.

5.5 Management of Surface Water Runoff

The SuDS Manual (CIRIA, 2015) discusses the SuDS approach to managing surface water runoff which is intended to mimic the natural catchment process as closely as possible. The approach sets out the design objectives in respect of SuDS:

- Use of surface water runoff as a resource;
- Manage rainwater close to where it falls (at source);
- Manage runoff o the surface (above ground);
- Allow rainwater to soak into the ground (infiltration);
- Promote evapotranspiration;
- Slow and store runoff to mimic natural runoff rates and volumes;
- Reduce contamination of runoff through pollution prevention and by controlling the runoff at source;
- Treat runoff to reduce the risk of urban contaminants causing environmental pollution;

Depending on the characteristics of the site and local requirements, these may be used in combination and to varying degrees. Table 4 presents the functions of the SuDS components (management train) and their feasibility in respect of the site.

TABLE 4: FUNCTIONS OF SUDS COMPONENTS AND FEASIBILITY AT SITE LEVEL

Component	Description	Feasible?
Rainwater harvesting systems	Components that capture rainwater and facilitate its use within the building or local environment.	Yes
Pervious surfacing systems	Structural surfaces that allow water to penetrate, thus reducing the proportion of runoff that is conveyed to the drainage system (green roofs, pervious paving).	A green roof is not feasible; the current intention is for the apartment block to have sloping zinc and PV clad roof and for the top level of the houses to be accessible amenity space; Maybe; Lined pervious systems could be used at the site.
Infiltration systems	Components that facilitate the infiltration of water into the ground. These often include temporary storage zones to accommodate runoff volumes before slow release to the soil.	No; structural integrity risk of surrounding buildings and underground parking. In addition, the geology does not encourage infiltration.
Conveyance systems	Components that convey flows to downstream storage systems (e.g. swales).	No; Impractical due to the presence of underground parking
Storage systems	Components that control the flows and, where possible, volumes of runoff being discharged from the site, by storing water and releasing it slowly (attenuation). These systems may also provide further treatment of the runoff (eg ponds, wetlands, and detention basins).	Yes but only attenuation tank as a pond would be unfeasible due to the underground parking
Treatment systems	Components that remove or facilitate the degradation of contaminants present in the runoff.	Yes

Given the land availability, the site geology, and the size of the development, rainwater harvesting may be feasible given its potential to reduce runoff rates to the public sewer.

The soil permeability has not been evaluated for the site but given the development proposals (underground parking) infiltration can be very intricate in terms of structural integrity. Therefore, infiltration is not recommended at site level given the associated risk.

Following the Thames Water pre-application enquiry, an underground storage tank is being proposed which will discharge (via a pump) to the public sewer (see Appendix B). The design was undertaken by HPBW LLP. The tank should be sized appropriately so that it can accommodate the 1% AEP +40%CC safely, while discharging to a controlled rate as described above. For a 0.22ha impermeable area, the tank volume is estimated (using Microdrainage) to be between 104m^3 – 140m^3. This is only an estimate and should be refined within the detailed design.

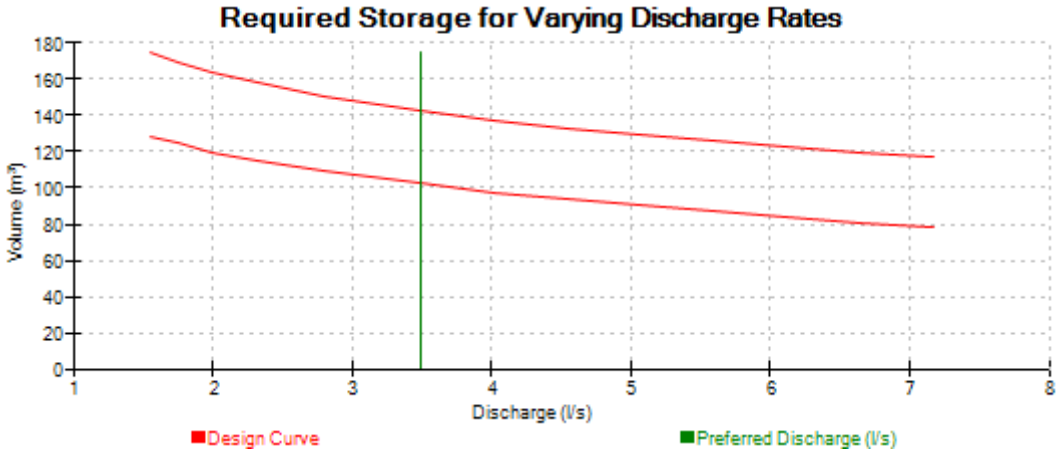


FIGURE 12: ESTIMATED STORAGE VOLUME

A catchpit or a vortex separator should be placed upstream of the tank to minimise the accumulation of sediments within the tank; sediment accumulation can decrease the discharge capacity of the tank.

5.5.1. Maintenance Requirements

Maintenance can be categorised to into three main groups:

- Regular maintenance
- Occasional maintenance
- Remedial maintenance

The level of inspection and maintenance will vary depending on the type of SuDS component and scheme, the land use, and the type of vegetation. It is vital that SuDS construction is supervised and inspected on completion if owners and the Lead Local Flood Authority are to avoid taking on liabilities. This will help to ensure that the specified materials are being used and that they are being placed correctly. Incorrect materials or installation should be rejected as they will adversely affect the performance, maintenance costs and ultimately the design life of the SuDS components.

The SuDS features incorporated to this particular design have to be maintained in order to ensure efficient water treatment and water management. In addition, the outflow control along with the pump must be maintained according to the manufacturer's specification.

Table 5 presents the maintenance schedule for the SuDS pond, in line with the SuDS Manual (CIRIA, 2015).

TABLE 5: INSPECTION AND MAINTENANCE ACTIVITIES

SuDS Feature	Activity	Frequency	Typical Tasks
Attenuation tank	Regular Maintenance	Monthly for three months then annually	• Inspect and identify any areas that are not operating correctly. If required take remedial action.
		Annually	• Remove sediment from the catchpits (if applicable). • Inspect and check all inlets and outlets to ensure that they are in good condition.

5.6 Health and Safety and Bio-diversity

The perception of SuDS, and in particular components that comprise bodies of open water, is important as a driver for setting appropriate risk management principles. For this particular design the following risks should be considered:

- Drowning risk management: there is no drowning risk for the residents and visitors, given the proposed drainage scheme.
- The development proposals should include certain plant species in order to promote bio-diversity at site level. Further details about preferred plant species can be found in the SuDS Manual (CIRIA, 2015).

6.0 Conclusion

The proposed development at 63-71 High Street, Hampton Hill is located in Flood Zone 1 which is land having a less than 0.1% AEP of fluvial/tidal flooding. The scheme proposes the re-development of the existing site which is currently comprised of empty buildings and associated car park and paved areas. The proposal is for the erection of new townhouses, apartment units, retail units, associated paved/green areas, and an underground car park.

On the basis of all of the available information from the Environment Agency and the London Borough of Richmond, the site is at low risk of flooding from all sources.

On the basis of the topographic survey, there is a low spot at the north-west part of the site which could demonstrate ponding during rainfall events. This should be mitigated post-development by re-profiling the relevant area; this will ensure low velocities and higher times of concentration to the drainage system making water management more efficient.

The proposed development should include non-return valves at the outlet pipe of the foul water. In addition, the proposed attenuation tank should be designed with a freeboard to allow for the potential surcharge of the public sewer during extreme events.

The proposed drainage strategy as described in Section 4.0, complies with the London Borough of Richmond SuDS requirements while significantly reducing surface water flood risk downstream. The site should discharge at 3.52 l/s for all events up to and including the 1% AEP plus a 40% allowance for climate change. The storage volume is estimated to be between $104m^3$ – $140m^3$, but this should be clarified during the detailed design stage. The tank will discharge to the public sewer as shown in Appendix B.

Furthermore, a maintenance schedule for the tank has also been provided to ensure maintainability and functionality.

The proposed development can be deemed appropriate given the flood risk, will not increase the flood risk to other people, and it will provide significant betterment with respect to the management of surface water runoff.

7.0 Recommendations

- Surface water should be managed via the use of SuDS (underground tank) and underground pipes, while discharging at a controlled rate of up to 3.52 l/s, as described in Chapter 4.0.
- The proposed drainage scheme must conform to the SuDS Manual (CIRIA, 2015) design specifications, Sewers for Adoption 7th Edition, and all relevant British Standard Codes.
- The size of the proposed (by HPBW LLP) attenuation tank must be confirmed at the detailed design stage.
- A catchpit or a vortex separator should be placed upstream of the tank to minimise the accumulation of sediments within the tank
- The tank should be maintained as per Table 5.
- The drainage network should incorporate non-return valves to mitigate against the unpredictable sewer related flooding.

Appendix A – Development Proposals

To be provided by the client.

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Appendix B – Drainage Design

Provided by HPBW LLP. Calculations to be provided by HPBW LLP.

Greenfield Runoff Volume

FSR Data

Return Period (years)	100
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.400
Areal Reduction Factor	1.00
Area (ha)	1.000
SAAR (mm)	600
CWI	87.000
Urban	0.000
SPR	30.000

Results

Percentage Runoff (%)	24.48
Greenfield Runoff Volume (m^3)	153.013

ICP SUDS Mean Annual Flood

Input

Return Period (years) 100 SAAR (mm) 600 Urban 0.000
Area (ha) 1.000 Soil 0.300 Region Number Region 6

Results l/s

QBAR Rural 1.5
QBAR Urban 1.5

Q100 years 4.9

Q1 year 1.3
Q30 years 3.4
Q100 years 4.9

A1

NOTES

1. DO NOT SCALE
2. This drawing is to be read in conjunction with all other relevant drawings.
3. Should there be any conflict between the details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.
4. Until technical approval has been obtained from the relevant Authority, it should be understood that all drawings and details issued are PRELIMINARY and NOT FOR CONSTRUCTION. Should the contractor commence site work prior to approval being given, it is entirely at his own risk.
5. All dimensions are in millimetres unless otherwise stated.
6. It is the responsibility of the contractor to execute the works at all times in strict accordance with the requirements of the Health And Safety At Work Act 1974 and CDM regulations 2015. The contractor will be deemed to have allowed for full compliance, including full liaison with the Principal Designer, within his rates.

LEGEND

Boundary Line	——○——
CFA Pile	Ø
Foul Water	—— FW —— FW ——
Surface Water	—— SW —— SW ——
Rodding Point	RP

HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

In addition to the hazards/ risks associated with the types of work detailed on this drawing please note the following:

Construction:
1)
2)
3)
etc

Cleaning / Maintenance:
1)
2)
3)
etc

Demolition:
1)
2)
3)
etc

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

DESCRIPTION	REV	DATE	BY	CHKD	APPR
1st Issue	-	27.05.16	RB	EP	PW

HBPW LLP
Civil & Structural Engineering Services

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Retford
Nottinghamshire
DN22 7UX

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STATUS
INFORMATION

CLIENT
GREATPLANET LIMITED

PROJECT
63-71 HIGH STREET
HAMPTON HILL

DRAWING TITLE
DRAINAGE BASEMANET

DRAWN	RB	DATE	MAY 2016
PROJECT ENGINEER	EP		
CHECKED	EP	SCALE	1:200 @ A1
APPROVED	PW		

DRAWING NUMBER	REVISION
SL05030/401	-

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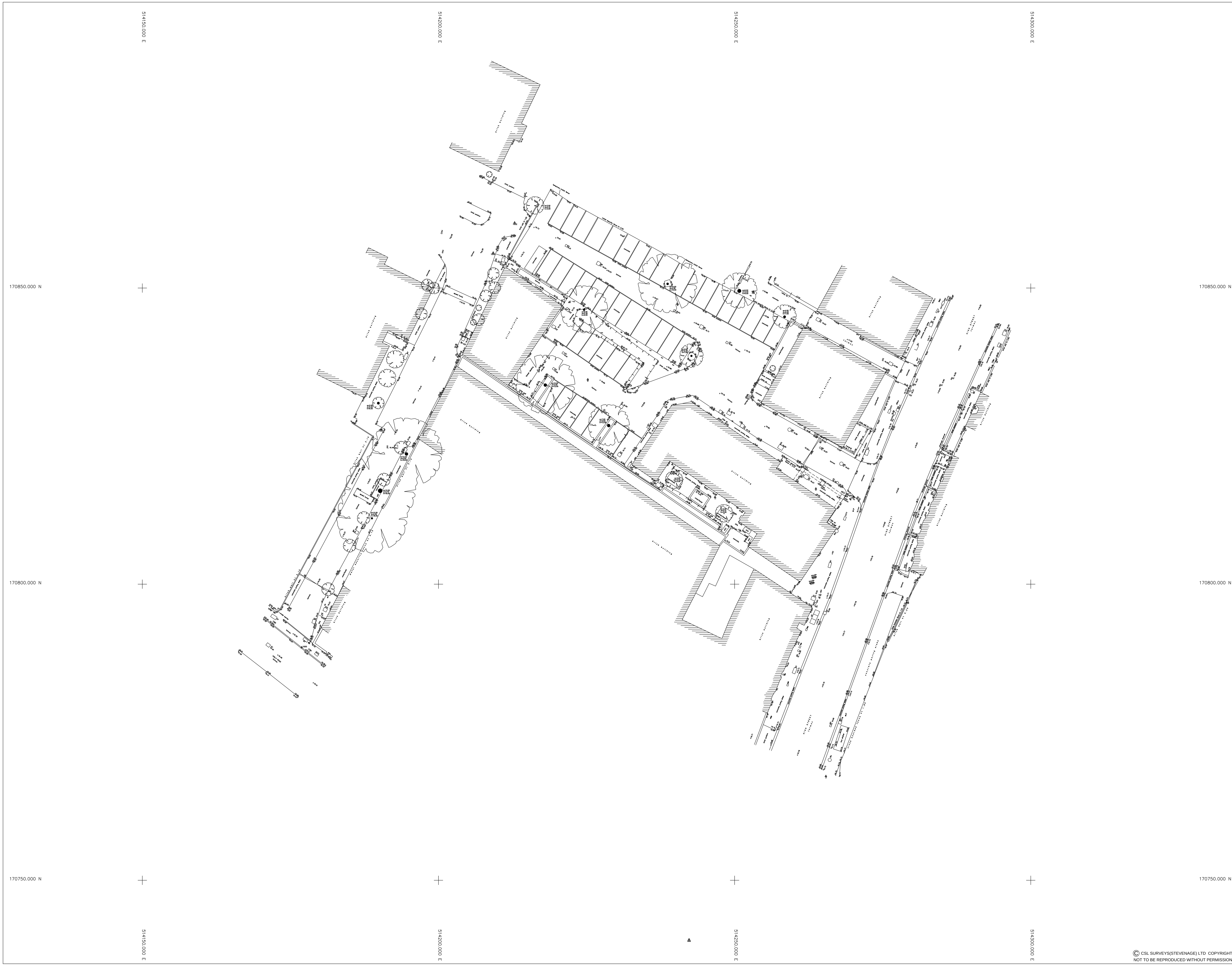
Appendix C – Topographic survey



N
INDICATIVE

SURVEY TO OSGB36 GRID			
STN	Eastings	Northings	Level
1	514288.263	170828.800	16.808
2	514282.083	170814.673	16.776
3	514265.412	170767.578	16.751
4	514263.723	170816.122	16.942
5	514251.192	170827.272	16.793
6	514240.376	170847.301	16.694
7	514222.099	170847.609	16.832
8	514225.213	170834.561	16.701
9	514232.516	170819.668	16.883
10	514236.545	170817.045	16.868
11	514246.696	170814.699	16.878
12	514250.961	170809.020	16.870
100	514253.146	170849.377	16.900
999	514242.308	170740.008	16.634
1000	514176.908	170789.311	16.289
1001	514190.301	170826.139	16.480
1002	514212.856	170861.043	16.419
1500	514209.237	170855.960	16.270

Although every effort has been made to confirm type, run and size of drainage it is advisable to check these details against statutory authority records before proceeding with any design.

Although every effort has been made to confirm species of trees shown on this drawing if it is critical to design we do not accept responsibility for any errors and advise consultation with an aboriculturalist.

Every effort has been made to confirm the structure within the building, however this is a non-intrusive survey and we accept no responsibility for any errors beyond the visible fitout.
If this is critical to design we suggest further investigation.

As determined by RICS guidelines, this survey has a presentation scale of 1:100. Interrogated dimensions will be within tolerance for this and smaller scales only.

Do Not Scale From Paper Copies

Rev.	Notes:	Date

LEGEND

SURVEY STATION — 5
WALL
BANKING — TOP / BOTTOM
BUILDING
OPEN SIDED BUILDING
BUSHES AND HEDGES
CONTOUR — 25.50
TREES — SPREAD SHOWN TO SCALE
ORDNANCE SURVEY BENCH MARK — OSBM VALUE 12.470
TEMPORARY BENCH MARK — TBM VALUE 87.55
GATE — SINGLE, DOUBLE
STILE

STREET FURNITURE

AIR VALVE	AV	SIGN POST	SP
BASEMENT LIGHT	BLT	SLUICE VALVE	SV
BELISHA BEACON	BB	STOP TAP	ST
BOLLARD	BD	STOP COCK	SC
BOUNDARY POST/PEG	BP	TELEGRAPH POLE	TP
BRITISH TELECOM BOX	BTB	TELEPHONE CALL BOX	TCB
BT INSPECTION COVER	BT	TRAFFIC LIGHT	TL
BUS STOP	BS	UNSURFACED	U/S
CABLE TELEVISION COVER	CATV	VENT PIPE	VP
CLOSED CIRCUIT TELEVISION	CCTV	WATER METER	WM
CIRCULAR MANHOLE	MH	WATER TROUGH	WT
CONCRETE PAVING SLABS	CPS	BARBED WIRE FENCE	BWF
DOWN PIPE	DP	CORRUGATED IRON FENCE	CIF
ELECTRICITY CABLE PIT	EC	CLOSE BOARDED FENCE	CBF
ELECTRICITY CONTROL BOX	ECB	CHAIN LINK FENCE	CLF
ELECTRICITY POLE	EP	IRON RAILINGS	IRF
ELECTRICITY PYLON	PYL	INTERWOVEN FENCE	IWF
FIRE HYDRANT	FH	LARCH LAP FENCE	LLP
FLAG POLE	POLE	MISCELLANEOUS FENCE	MISC F
FLOWER BED	FB	PALING FENCE	PF
FEEDER PILLAR	FP	PALISADE FENCE	PALI F
GAS VALVE	GV	POST AND CHAIN FENCE	PCF
GATE POST	GP	POST AND RAIL FENCE	PRF
GULLEY	GY	POST AND WIRE FENCE	PWF
HIGHWAY BOUNDARY	HB	TRELLIS	TLS
INSPECTION COVER	IC	BED LEVEL	BL
JUNCTION BOX	JCB	BASEMENT LEVEL	BTL
KERB OUTLET	KO	FLOOR LEVEL	FL
LAMP POST	LP	THRESHOLD LEVEL	THL
LETTER BOX	LB	WATER LEVEL	WL
LITTER BIN	BIN	SOFFIT LEVEL	SFL
MANHOLE	MH	EAVES LEVEL	EL
NOTICE BOARD	NB	RIDGE LEVEL	RL
PARKING METER	PM	ROOF LEVEL	RFL
POST	P	COVER LEVEL	CL
PIPE	PE	INVERT LEVEL	IL
REFLECTOR POST	RP	SUMP LEVEL	SL
ROAD SIGN	RS	SURFACE WATER	SW
RODDING EYE	RE	FOUL WATER	FW
SERVICE MARKER POST	MK	UNABLE TO LIFT	UTL

CSL SURVEYS (STEVENAGE) LTD
16 LEYDEN ROAD, STEVENAGE,
HERTFORDSHIRE, SG1 2BP
TEL: (01438) 728 441 FAX: (01438) 742 435
email: mail@cslsurveys.com
http://www.cslsurveys.com

Project
63-71 HIGH STREET
HAMPTON HILL
TW12 1NY

Title
TOPOGRAPHICAL SURVEY

Client
P2M UK LIMITED
SHAWN CARDOSO

Project No	Revision	Dwg No.
03816LH	F0	1 of ?
Plot Scale	Sheet Size	Date
1:200	A0	29/02/2016

Levels Related to OSGB36 unless otherwise stated.

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Appendix D – Thames Water Data

Roy Bailie
HBPW LLP
43 Bridgegate
Retford
Nottinghamshire
DN22 7UX

Your account number
DS6018027
thameswater.co.uk

0800 009 3921
Mon – Fri 9am-5pm,
16th May 2016

Pre Development Enquiry

Site Address: 63-71 High Street, Hampton Hill, Hampton, London, TW12 1NH

Development Details: Proposed mixed development of 27 flats, 8 townhouses and 1 retail unit

Dear Mr Bailie

I refer to your application concerning the above site and requesting that a pre-development capacity check is undertaken.

Thank you for providing the correct fee and information regarding the site. I can now respond as follows;

Foul Water

From the information you have provided, I can confirm that the existing foul water sewer has sufficient capacity to accommodate the proposed foul water discharge from the proposed residential property development.
We have no concerns in regards to the sewer infrastructure capacity.

Surface Water

Where there are no Surface Water sewers connection of surface water to a Foul Sewer will only be considered when all other methods of disposing of the surface water have been proven impracticable.

In accordance with the Building Act 2000 clause H3.3. Positive connection to a public surface water will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. The disposal hierarchy being ;- 1st Soakaways; 2nd Watercourses; 3rd Sewer.

As this is a brownfield site, Thames Water expect a 50% reduction in surface water discharge post development.

Foul and surface water must not be combined. This will only be permitted when a combined public sewerage system exists. When it is proposed to connect to a combined public sewer, the site drainage should be separate and combined at the final manhole nearest the boundary.

A Trade Effluent Consent will be required for any Trade Effluent discharge. Applications should be made to Waste Water Quality, Crossness STW, Belvedere Road, Abbeywood, London. SE2 9AQ.

Where a developer proposes to discharge groundwater into a public sewer, a groundwater discharge permit will be required. Groundwater discharges typically result from construction site dewatering, deep excavations, basement infiltration, borehole installation, testing and site remediation. Groundwater permit enquiries should be directed to Thames Water's Risk Management Team by telephoning 020 8507 4890 or by emailing wwqriskmanagement@thameswater.co.uk. Application forms should be completed on line via www.thameswater.co.uk/wastewaterquality. Any discharge made without a permit is deemed illegal and may result in prosecution under the provisions of the Water Industry Act 1991.

Details approved in principle.

Please Note

All connection requests are subject to a full Section 106 (Water Industry Act 1991) application before the Company can confirm approval to the connection itself. Please also note that capacity in the public sewerage system cannot be reserved.

The views expressed by Thames Water in this letter are in response to this pre development enquiry at this time and do not represent our final views on any future planning applications made in relation to this site.

In regards to the sewer records and flooding history please contact Property Searches department, please find the link to their website here https://www.thameswater-propertysearches.co.uk/

Yours sincerely

Natalya Collins
Development Engineer

Asset Location Search

RAB Consultants
7Kingsway
KINGSWAY
MK42 9BA

Search address supplied

63
High Street
Hampton Hill
Hampton
TW12 1NH

Your reference 1366B

Our reference ALS/ALS Standard/2016_3324181

Search date 11 May 2016

You are now able to order your Asset Location Search requests online by visiting
www.thameswater-propertysearches.co.uk

searchcode

Asset Location Search

Search address supplied: 63, High Street, Hampton Hill, Hampton, TW12 1NH

Dear Sir / Madam

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

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

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

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

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

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

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

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

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Asset Location Search

Waste Water Services

Please provide a copy extract from the public sewer map.

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

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

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

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

For your guidance:

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

Clean Water Services

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

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

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

pressure test to be carried out for a fee.

For your guidance:

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

Payment for this Search

A charge will be added to your suppliers account.

Asset Location Search

Further contacts:

Waste Water queries

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

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

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

Tel: 0845 850 2777
Email: developer.services@thameswater.co.uk

Clean Water queries

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

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

Tel: 0845 850 2777
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2016_3324181

The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 514237,170829

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
16WZ	n/a	n/a
1601	16.52	14.36
1602	16.46	14.99
1703	16.43	15.09
17YY	n/a	n/a
17ZR	n/a	n/a
16YS	n/a	n/a
16YW	n/a	n/a
16ZS	n/a	n/a
16YV	n/a	n/a
16VZ	n/a	n/a
17ZP	n/a	n/a
17ZS	n/a	n/a
17ZV	n/a	n/a
16VX	n/a	n/a
16VY	n/a	n/a
16WW	n/a	n/a
16WV	n/a	n/a
16WS	n/a	n/a
16WT	n/a	n/a
26ZY	n/a	n/a
261A	n/a	n/a
26ZX	n/a	n/a
26ZW	n/a	n/a
261B	n/a	n/a
2601	16.47	13.73
2603	16.46	n/a
2602	16.26	15.52
96XY	n/a	n/a
96XZ	n/a	n/a
96YP	n/a	n/a
06ZW	n/a	n/a
0603	16.88	14.8
0601	16.34	n/a
06YS	n/a	n/a
06ZX	n/a	n/a
06ZQ	n/a	n/a
06ZT	n/a	n/a
0702	n/a	n/a
06ZS	n/a	n/a
07ZY	n/a	n/a
16ZV	n/a	n/a
16ZX	n/a	n/a
17ZY	n/a	n/a
17VT	n/a	n/a
16YR	n/a	n/a
17VV	n/a	n/a
16YP	n/a	n/a
16XX	n/a	n/a
16XV	n/a	n/a
171A	n/a	n/a
16XQ	n/a	n/a
17YQ	n/a	n/a
17YR	n/a	n/a
17YS	n/a	n/a
17YT	n/a	n/a
17YV	n/a	n/a
16XZ	n/a	n/a
16XP	n/a	n/a
161G	n/a	n/a
161C	n/a	n/a
161H	n/a	n/a
15YX	n/a	n/a
161B	n/a	n/a
161I	n/a	n/a
161A	n/a	n/a
1502	15.02	n/a
15ZV	n/a	n/a
16VP	n/a	n/a
16ZP	n/a	n/a
15ZS	n/a	n/a
15ZW	n/a	n/a
16VR	n/a	n/a
16VS	n/a	n/a
16VQ	n/a	n/a
15ZX	n/a	n/a
16YY	n/a	n/a
16ZQ	n/a	n/a
2502	16.64	15.77
9501	16.514	11.724
96XX	n/a	n/a
06YV	n/a	n/a
06YW	n/a	n/a
06YZ	n/a	n/a
06YY	n/a	n/a
06YX	n/a	n/a
151E	n/a	n/a
15YV	n/a	n/a
151A	n/a	n/a
161E	n/a	n/a
161F	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
161D	n/a	n/a
39YQ	n/a	n/a
391F	n/a	n/a
39YX	n/a	n/a
391D	n/a	n/a
391C	n/a	n/a
39YW	n/a	n/a
391B	n/a	n/a
39YV	n/a	n/a
3907	16.63	15.87
39YT	n/a	n/a
30ZP	n/a	n/a
30YX	n/a	n/a
30YZ	n/a	n/a
30YY	n/a	n/a
2001	n/a	n/a
4002	16.61	13.92
30ZZ	n/a	n/a
4001	16.52	13.85
4003	16.52	15.45
3004	n/a	n/a
30ZX	n/a	n/a
30ZW	n/a	n/a
3003	n/a	n/a
30ZV	n/a	n/a
291A	n/a	n/a
2803	16.76	15.7
28ZW	n/a	n/a
28ZX	n/a	n/a
2801	16.67	13.01
28ZY	n/a	n/a
2802	16.76	14.58
28ZV	n/a	n/a
291F	n/a	n/a
391A	n/a	n/a
3801	16.67	15.56
39XY	n/a	n/a
39XZ	n/a	n/a
39YP	n/a	n/a
3910	16.59	15.4
3901	16.63	12.59
3906	16.68	15.08
3909	16.59	15.48
39ZP	n/a	n/a
39ZQ	n/a	n/a
3908	16.76	15.66
3902	16.46	15.01
39ZT	n/a	n/a
39ZX	n/a	n/a
39ZV	n/a	n/a
39ZW	n/a	n/a
39YR	n/a	n/a
171B	n/a	n/a
17YP	n/a	n/a
17XY	n/a	n/a
17XW	n/a	n/a
17XV	n/a	n/a
17XT	n/a	n/a
17WX	n/a	n/a
17XS	n/a	n/a
17WZ	n/a	n/a
17XR	n/a	n/a
1702	16.38	15.33
17XP	n/a	n/a
17WS	n/a	n/a
17VZ	n/a	n/a
17VY	n/a	n/a
17ZX	n/a	n/a
27YW	n/a	n/a
27ZS	n/a	n/a
27ZT	n/a	n/a
27YV	n/a	n/a
27ZV	n/a	n/a
27YY	n/a	n/a
27ZX	n/a	n/a
27ZY	n/a	n/a
2702	16.6	13.51
2704	16.61	15.7
2703	16.66	15.75
2701	16.53	13.54
1903	n/a	n/a
291D	n/a	n/a
1904	15.73	10.49
29YQ	n/a	n/a
291E	n/a	n/a
29ZV	n/a	n/a
29YR	n/a	n/a
29ZW	n/a	n/a
29ZY	n/a	n/a
29YZ	n/a	n/a
19ZR	n/a	n/a
29ZP	n/a	n/a
1907	16.4	11.89

Manhole Reference	Manhole Cover Level	Manhole Invert Level
19ZS	n/a	n/a
1006	n/a	n/a
1002	n/a	n/a
20ZY	n/a	n/a
20ZV	n/a	n/a
20ZS	n/a	n/a
10ZX	n/a	n/a
1005	n/a	n/a
10ZW	n/a	n/a
20ZX	n/a	n/a
20YQ	n/a	n/a
20YP	n/a	n/a
1004	16.19	10.29
1009	n/a	n/a
1003	n/a	n/a
20YW	n/a	n/a
1008	n/a	n/a
20YV	n/a	n/a
20YT	n/a	n/a
1001	n/a	n/a
1007	n/a	n/a
201B	n/a	n/a
201C	n/a	n/a
201D	n/a	n/a
201A	n/a	n/a
09XT	n/a	n/a
09YW	n/a	n/a
08ZX	n/a	n/a
09YX	n/a	n/a
19ZV	n/a	n/a
18ZY	n/a	n/a
19ZW	n/a	n/a
17WP	n/a	n/a
17WQ	n/a	n/a
19ZX	n/a	n/a
18ZX	n/a	n/a
17WR	n/a	n/a
18ZV	n/a	n/a
17WV	n/a	n/a
17VX	n/a	n/a
17VW	n/a	n/a
27YS	n/a	n/a
27YR	n/a	n/a
27ZR	n/a	n/a
27ZQ	n/a	n/a
28ZR	n/a	n/a
27ZP	n/a	n/a
29YX	n/a	n/a
291B	n/a	n/a
291C	n/a	n/a
28ZT	n/a	n/a
29YW	n/a	n/a
09ZP	n/a	n/a
09XY	n/a	n/a
09WW	n/a	n/a
091A	n/a	n/a
09YP	n/a	n/a
991B	n/a	n/a
99YY	n/a	n/a
09YR	n/a	n/a
09XR	n/a	n/a
09XQ	n/a	n/a
0909	n/a	n/a
99ZQ	n/a	n/a
09ZX	n/a	n/a
0910	n/a	n/a
99ZP	n/a	n/a
00YZ	n/a	n/a
00ZR	n/a	n/a
00ZS	n/a	n/a
00ZQ	n/a	n/a
00ZT	n/a	n/a
00YY	n/a	n/a
00XQ	n/a	n/a
00YX	n/a	n/a
00YT	n/a	n/a
00YW	n/a	n/a
00XP	n/a	n/a
98YX	n/a	n/a
98ZP	n/a	n/a
99YS	n/a	n/a
98XX	n/a	n/a
98YZ	n/a	n/a
98YY	n/a	n/a
09WY	n/a	n/a
0802	n/a	n/a
09WZ	n/a	n/a
09YY	n/a	n/a
09ZQ	n/a	n/a
09XZ	n/a	n/a
09ZT	n/a	n/a
09ZV	n/a	n/a
09YT	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
0801	15.84	14.14
0803	15.79	15.02
09XV	n/a	n/a
09YS	n/a	n/a
08ZW	n/a	n/a
00YV	n/a	n/a
0004	n/a	n/a
0005	n/a	n/a
00XY	n/a	n/a
00WZ	n/a	n/a
00XZ	n/a	n/a
0002	15.74	11.28
00YQ	n/a	n/a
00XV	n/a	n/a
0003	n/a	n/a
00XX	n/a	n/a
271A	n/a	n/a
291J	n/a	n/a
291I	n/a	n/a
291K	n/a	n/a
291G	n/a	n/a
291H	n/a	n/a

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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

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

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

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

Air Valve

Dam Chase

Fitting

Meter

Vent Column

Operational Controls

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

Control Valve

Drop Pipe

Ancillary

Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

Outfall

Undefined End

Inlet

Other Symbols

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

Public/Private Pumping Station

Change of characteristic indicator (C.O.C.I.)

Invert Level

Summit

Areas

Lines denoting areas of underground surveys, etc.

Agreement

Operational Site

Chamber

Tunnel

Conduit Bridge

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

Foul Sewer

Surface Water Sewer

Combined Sewer

Gulley

Culverted Watercourse

Proposed

Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.

2) All measurements on the plans are metric.

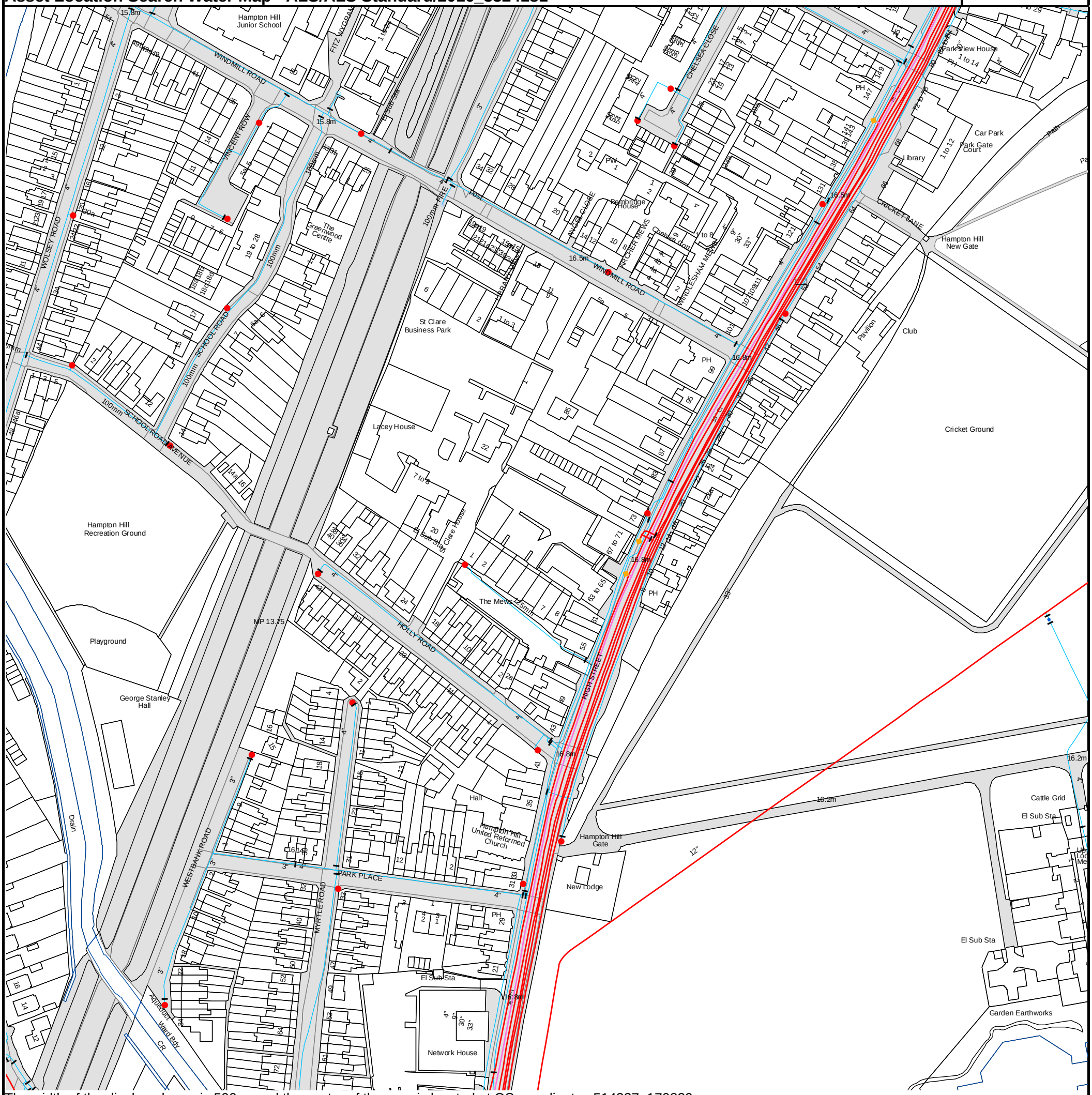
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.

4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

5) 'na' or '0' on a manhole level indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.

Asset Location Search Water Map - ALS/ALS Standard/2016_3324181



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 514237, 170829.

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.

ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

4"

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

16"

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

3" SUPPLY

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

3" FIRE

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

3" METERED

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

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

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

Valves

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

Hydrants

- Single Hydrant

Meters

- Meter

End Items

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

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

Operational Sites

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

Other Symbols

- Data Logger

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

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

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

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

Terms and Conditions

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

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 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. Thames Water 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 the discretion of the company for increased administration costs.

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

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 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 him 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 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	**BACS Payment**	**Telephone Banking**	**Cheque**
Call **0845 070 9148** quoting your invoice number starting CBA or ADS.	Account number **90478703** Sort code **60-00-01** A remittance advice must be sent to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.** or email **ps.billing@thameswater.co.uk**	By calling your bank and quoting: Account number **90478703** Sort code **60-00-01** and your invoice number	Made payable to '**Thames Water Utilities Ltd**' Write your Thames Water account number on the back. Send to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW** or by DX to **151280 Slough 13**

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

Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

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

Complaints

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

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

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

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

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Sewer Flooding
History Enquiry

RAB Consultants

Kingsway

Search address supplied

63
High Street
Hampton Hill
Hampton
TW12 1NH

Your reference 1366B

Our reference SFH/SFH Standard/2016_3324182

Received date **11 May 2016**

Search date **11 May 2016**

Thames Water Utilities Ltd

Property Searches
PO Box 3189
Slough SL1 4WW

DX 151280 Slough 13

T 0118 925 1504
E searches@thameswater.co.uk
I www.thameswater-propertysearches.co.uk

Registered in England and Wales
No. 2366661, Registered office
Clearwater Court, Vastern Road
Reading RG1 8DB

Sewer Flooding

History Enquiry

Search address supplied: 63,High Street,Hampton Hill,Hampton,TW12 1NH

This search is recommended to check for any sewer flooding in a specific address or area

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

(iv) compensation payments

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Sewer Flooding

History Enquiry

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- 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 on Tel: 0800 316 9800 or website www.thameswater.co.uk

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