20 July 2021

David Elmore
Welwyn Hatfield Borough Council
The Campus
Welwyn Garden City
Herts
AL8 6AE

Dear David Elmore,

RE: LLFA Response – 6/2020/3222/MAJ, Former Volkswagen Van Centre, Comet Way, Hatfield, AL10 9TF

Thank you for sending the re-consultation letter from Hertfordshire County Council (HCC) as Lead Local Flood Authority (LLFA) dated 14th July 2021, regarding the planning application reference 6/2020/3222/MAJ, Former Volkswagen Van Centre, Comet Way. It is disappointing that despite the LLFA acknowledging that we are providing significant betterment through reduction in runoff rates and the use of SuDs techniques for the proposed development, there is still insistence on providing further restriction to lower greenfield rates.

However, please see below our response to each of the LLFA comments:

1. LLFA comment – Runoff Rates

"1. We are happy to see the usage of multifunctional features like green roofs. We note the final discharge from the site will be limited to 3.8 l/s, which corresponds to the 1 in 100 year greenfield runoff rate.

We understand that while the Flood Risk Assessment indicated a controlled discharge at 1 l/s, it was later decided that this is not feasible, and it is now proposed to discharge at 3.8 l/s.

We acknowledge that the applicant is providing significant betterment however as per our previous comments the discharge rate should be restricted to the greenfield runoff rate for the relevant rainfall event, or to the Qbar rate. We acknowledge the 1 in 1 year and Qbar rates are low and may be difficult to achieve therefore we would accept a maximum of 2 l/s.

We are pleased the applicant has clarified the nature of the green roofs in the calculations, including provision of additional calculations that consider the green roofs as impermeable area.

Stantec response

We are pleased to see the comment made by HCC regarding the positive use of multifunctional features which are to be provided and that the proposed discharge rates are acknowledged by HCC to provide a betterment compared to the existing mechanism on the site.

As detailed in the Drainage Statement and our previous letter to you (01 June 2021), the site is an existing Pre-developed site (Brownfield) and is not Greenfield Development, with the following drainage benefits delivered:

- Drainage limit set to the 1 in 100 year greenfield runoff rate for the site;
- Volume of attenuation for the site is based on the 1 in 100 critical storm duration with an allowance for climate change;
- A betterment in discharge rates of between 95% to 98% when compared to existing;
- Reduction in impermeable areas discharging to the surface water system;

50/60 Station Road
Cambridge
CB1 2JH

Telephone: +44 (0)1223 882000
email: cambridge@stantec.com

Registered Office:
Stantec UK Ltd
Buckingham Court
Kingsmead Business Park
Frederick Place, London Road
High Wycombe HP11 1JU
Registered in England No. 1188070

- Reduction in Runoff Volume;
- Provision of SuDS with improved surface water quality treatment; and
- Thames Water have agreed to the maximum proposed discharge of 3.8 l/s from the site.

Therefore, we are obviously disappointed with the further objection by HCC and consider their recent response to not be in the spirit of the requirements of NPPF and Local Plans which seeks to deliver much needed housing supply on brownfield development. We have also clearly shown the drainage proposal conforms to HCC's own local guidance, Policy 15 of the Hertfordshire County Council LFRMS 2 The strategy for the management of local sources of flooding, paragraph 4.6.3.

Although we feel the request by HCC to limit discharge rates to 2 l/s is unreasonable, we attach updated MicroDrainage calculations applying the restriction of this lower runoff rate. This demonstrates that the size of the tank would need to be increased from 34m^2 to 75m^2.

We have reviewed this against the space available within the adjacent parking area and to provide a tank of this size would require wrapping the tank around the building with a smaller easement and offset than we had previously shown (reduction of 1.7m). The size of the tank would be of a larger scale and likely to result in higher maintenance and tank replacement costs, especially with the offsets to the proposed building and underground services. Our drainage strategy drawing has therefore been updated to provide this larger tank as required by HCC.

As mentioned in our letter of 01 June, increasing the size of the tank, by increasing its depth, is not feasible because of the proposed outfall connection into the existing surface water sewer located in Goldsmith Way. Currently we achieve a gravity fed connection to this existing sewer at self-cleaning velocity. A deeper tank would prevent this and would therefore not conform to the recommendations within Sewers for Adoption.

2. LLFA comment – Half Drain Down Times

"2. We require half drain down times to be calculated and provided for all attenuation features, including those that do not discharge through infiltration. Half drain times should not exceed 24 hours for all storm events up to and including the 1 in 100 year +40% climate change event.

If this is not achievable on site, we would accept evidence that the network can manage the 1 in 100 year +40% climate change event and a subsequent 1 in 30 year event."

Stantec response

The CIRIA SuDS Design Guide and HHC guidance/policy makes no mention on the need to provide a suitable half-drain down time for attenuation features which do not use infiltration. We requested confirmation from HCC officers on where this requirement is listed, if either national or in their own policy, so we can ensure this is not missed in future. This has not yet been provided.

Despite the lack of evidence supplied regarding this requirement from HCC, we have re-run the calculations to illustrate the likely half-drain down times for the proposed attenuation features for the 1 in 100 year plus 40% climate change event for both the 3.8 l/s and the 2 l/s option. The results show the system operates with a maximum drain down times of as follows:

- 1,248 minutes for the 3.8 l/s rate and 888 minutes for the 2 l/s rate, in the proposed tank;

- Between 744 and 1,008 minutes for both the 2 l/s and 3.8 l/s rates, in the permeable pavement system.

The results are for up to and including the 5760 minutes/4-day storm. A copy of the post development half-drain down time for either option is appended to this letter.

As detailed in my letter to you dated 01 June, draining non-infiltration features with a half drain down time can be counter intuitive when discharging to an existing receptor. As holding back surface water drainage (limiting discharge rates) on a site for longer can be beneficial to the wider drainage catchment.

3. LLFA comment – Drainage of Footpaths along Site Boundaries

"3. We acknowledge the impermeable area of car parking spaces will drain to adjacent permeable paving areas.

The applicant has clarified that the footpath areas to the east and south of the building are proposed to drain unrestricted to existing highway drains in Comet Way and Jetliner Way.

As these areas are within the red line boundary they should be included in the drainage proposals and discharged at a controlled rate (as above) to an appropriate location.
Please note that if it is proposed to drain these areas to highway drains that we would require evidence of agreement in principle from Highways confirming they are happy to accept discharge into their network."

Stantec response

As mentioned, and illustrated in our previous response (01 June), the external (outer edge of the proposed building) of existing and retained footpaths are to operate as the existing scenario, these were referenced on the drainage strategy drawing issued with our letter.

The areas of existing carriageway footpath adjacent to the existing boundary of the site are dropped kerb and drain to a channel drain along the road edge and then to the adjacent beany kerb system. This system then likely drains to the highway drain at MH671F within the south-eastern corner of the site as shown on the attached Thames Water sewer records. This highway drain then connects to the Thames Water public surface water sewer to the south-west of the site at MH571C.

Whilst an existing footpath isn't currently present along the southern boundary of the site, this area is predominantly impermeable and drains to this highway drain as proven by the services survey to either MH671F or MH671B, as shown in our letter dated 01 June. It is therefore proposed to dispose of surface water runoff unattenuated via an aco-drain channel along the southern edge of the new footway to MH671F prior to discharge into the existing drainage system.

The drainage drawing has been updated and appended to our letter to further highlight the drainage for these locations.

Given the shallow nature of the proposed surface water drainage system within the site, it would not be possible to connect these areas into the proposed system via positive drainage and it would also require the draining of these areas under the proposed buildings causing a significant maintenance issue.

As HCC are also aware, these external areas would be adopted and therefore it would not be possible to drain the footpaths to a private drainage system.

The existing carriageway footpaths connect into the existing highway system and therefore we see no reason to deliver anything different.

For the avoidance of doubt, we have consulted the Highways Authority on this matter, and we are awaiting a response. However, it would be reasonable for this to be conditioned and the design of these areas would form part of a future agreements with the highway authority.

Conclusion

The surface water and foul drainage has been designed in full accordance with both national and local policy and we would respectfully direct officers and members of the committee to the significant benefits that the development will be delivering.

Yours sincerely

Stephanie Knowles
Associate Civil Engineer
on behalf of Stantec UK Ltd

Encs:

- Post development 1 in 100 rainfall plus 40% cc Half-drain down time
- Post development 1 in 100 rainfall plus 40% cc 2 l/s
- Copy of the LLFA Objection Letter dated 14th July 2021
- Thames Water Sewer Records ref. 2019_4071687
- Updated Drainage Drawing Ref 47179/4001/002 Rev B

Attachment 1:

Post development 1 in 100 rainfall plus 40% cc 2 l/s

Online Controls for Storm

Orifice Manhole: PP5, DS/PN: 2.005, Volume (m³): 1.9

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 74.920

Hydro-Brake® Optimum Manhole: FLOW CONTROL, DS/PN: 2.007, Volume (m³): 4.0

Unit Reference	MD-SHE-0060-2000-1600-2000
Design Head (m)	1.600
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	60
Invert Level (m)	73.410
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.600	2.0	Kick-Flo®	0.536	1.2
Flush-Flo™	0.263	1.5	Mean Flow over Head Range	-	1.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.3	1.200	1.8	3.000	2.7	7.000	4.0
0.200	1.5	1.400	1.9	3.500	2.9	7.500	4.1
0.300	1.5	1.600	2.0	4.000	3.0	8.000	4.2
0.400	1.5	1.800	2.1	4.500	3.2	8.500	4.3
0.500	1.3	2.000	2.2	5.000	3.4	9.000	4.4
0.600	1.3	2.200	2.3	5.500	3.5	9.500	4.6
0.800	1.5	2.400	2.4	6.000	3.7		
1.000	1.6	2.600	2.5	6.500	3.8		

Storage Structures for Storm

Porous Car Park Manhole: PP1, DS/PN: 2.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	41.7	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	75.810	Cap Volume Depth (m)	0.380

Porous Car Park Manhole: PP2, DS/PN: 2.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	17.0
Max Percolation (l/s)	47.2	Slope (1:X)	392.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	75.705	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: PP3, DS/PN: 2.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.0
Max Percolation (l/s)	30.6	Slope (1:X)	381.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	75.675	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: PP4, DS/PN: 2.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	21.0
Max Percolation (l/s)	58.3	Slope (1:X)	304.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	75.595	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: PP5, DS/PN: 2.005

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	19.0
Max Percolation (l/s)	52.8	Slope (1:X)	377.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	75.565	Cap Volume Depth (m)	0.410

Cellular Storage Manhole: FLOW CONTROL, DS/PN: 2.007

Invert Level (m) 73.410 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	75.0	75.0	1.601	0.0	139.0
1.600	75.0	139.0			

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 3
Number of Online Controls 2 Number of Storage Structures 6 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	2013
Site Location	GB 521649 208769 TL 21649 08769
Data Type	Point
Cv (Summer)	0.900
Cv (Winter)	0.900

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
DTS Status ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880
Return Period(s) (years)	100
Climate Change (%)	40

PN	US/MH Name	Duration (mins)	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	681A	15	75.510	72.110	-1.350	0.000	0.000	0.0	OK
2.000	RWDP1	180	76.500	76.043	-0.017	0.000	0.145	1.2	OK
2.001	PP1	180	76.400	76.042	0.082	0.000	9.151	5.8	SURCHARGED
3.000	RWDP2	180	76.500	76.040	-0.050	0.000	0.107	1.4	OK
2.002	PP2	180	76.350	76.038	0.108	0.000	16.564	7.5	SURCHARGED
4.000	RWDP3	180	76.500	76.039	-0.011	0.000	0.151	2.9	OK
2.003	PP3	180	76.320	76.035	0.135	0.000	12.307	14.0	FLOOD RISK
2.004	PP4	180	76.240	76.026	0.206	0.000	25.839	10.7	FLOOD RISK
2.005	PP5	180	76.220	76.019	0.949	0.000	25.004	5.4	FLOOD RISK
2.006	CPIT	720	76.200	74.995	1.310	0.000	1.737	5.1	SURCHARGED
2.007	FLOW CONTROL	720	76.200	74.991	1.431	0.000	115.299	2.0	SURCHARGED
1.001	SITE CONNECTION	720	75.970	72.044	-1.331	0.000	0.075	2.0	OK
1.002	571C	720	76.100	72.035	-1.310	0.000	0.407	2.0	OK

Attachment - 2

Post development 1 in 100 rainfall plus 40% cc Half-drain down time

100 year Return Period Summary of Critical Results by Half Drain Time (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	3
Number of Online Controls	2	Number of Storage Structures	6	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	2013
Site Location	GB 521649 208769 TL 21649 08769
Data Type	Point
Cv (Summer)	0.900
Cv (Winter)	0.900

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	Fine	Inertia Status	ON
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760
Return Period(s) (years)	100
Climate Change (%)	40

PN	US/MH Name	Half Drain Time (mins)	Status
1.000	681A		OK
2.000	RWDP1		OK
2.001	PP1	960	OK
3.000	RWDP2		OK
2.002	PP2	840	OK
4.000	RWDP3		OK
2.003	PP3	1008	OK
2.004	PP4	912	OK
2.005	PP5	744	OK
2.006	CPIT		SURCHARGED
2.007	FLOW CONTROL	888	SURCHARGED
1.001	SITE CONNECTION		OK
1.002	571C		OK

100 year Return Period Summary of Critical Results by Half Drain Time (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	3
Number of Online Controls	2	Number of Storage Structures	6	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	2013
Site Location	GB 521649 208769 TL 21649 08769
Data Type	Point
Cv (Summer)	0.900
Cv (Winter)	0.900

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	Fine	Inertia Status	ON
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760
Return Period(s) (years)	100
Climate Change (%)	40

PN	US/MH Name	Half Drain Time (mins)	Status
1.000	681A		OK
2.000	RWDP1		OK
2.001	PP1	960	OK
3.000	RWDP2		OK
2.002	PP2	840	OK
4.000	RWDP3		OK
2.003	PP3	1008	OK
2.004	PP4	912	OK
2.005	PP5	744	OK
2.006	CPIT		OK
2.007	FLOW CONTROL	1248	OK
1.001	SITE CONNECTION		OK
1.002	571C		OK

Attachment 3:

Copy of the LLFA Objection Letter dated 14th July 2021

Director of Environment & Infrastructure:
Mark Kemp

Hertfordshire

David Elmore
Welwyn Hatfield Borough Council
The Campus
Welwyn Garden City
Hertfordshire
AL8 6AE

Post Point CHN 215
Hertfordshire County Council
County Hall, Pegs Lane
HERTFORD SG13 8DN

Contact David Uncle
Email FRMConsultations@hertfordshire.gov.uk

Date 14.07.2021

RE: 6/2020/3222/MAJ – Former Volkswagen Van Centre, Comet Way, Hatfield, AL10 9TF

Dear David,

Thank you for your re-consultation in relation to the above planning application for the Demolition of existing buildings and construction of new building comprising 118 residential apartments, layout of parking areas, landscaping, electricity substation and ancillary development at Former Volkswagen Van Centre, Comet Way, Hatfield, AL10 9TF.

We have reviewed the letter prepared by Stantec dated 01 June 2021 submitted in response to our letter

However, the information provided to date does not provide a suitable basis for an assessment to be made of the flood risks arising from the proposed development.

We therefore object to the grant of planning permission and recommend refusal on this basis for the following reasons.

Details of how surface water arising from a development is to be managed is required under the NPPF for all Major Planning Applications as amended within the NPPG from the 6 April 2015. Therefore, for the LLFA to be able to advise the Local Planning Authority that there is no flood risk from surface water an application for full planning permission should include the following:

1. Restriction to greenfield runoff rates.
2. Provision of half drain down times.
3. Clarification of the submitted surface water drainage strategy.

Overcoming our objection

1. We are happy to see the usage of multifunctional features like green roofs. We note the final discharge from the site will be limited to 3.8 l/s, which corresponds to the 1 in 100 year greenfield runoff rate.

   We understand that while the Flood Risk Assessment indicated a controlled discharge at 1 l/s, it was later decided that this is not feasible, and it is now proposed to discharge at 3.8 l/s.

   We acknowledge the applicant is providing significant betterment however as per our previous comments the discharge rate should be restricted to the greenfield runoff rate for the relevant rainfall event, or to the Qbar rate. We acknowledge the 1 in 1 year and Qbar rates are low and may be difficult to achieve therefore we would accept a maximum rate of 2 l/s.

   We are pleased the applicant has clarified the nature of the green roofs in the calculations, including provision of additional calculations that consider the green roofs as impermeable area.

2. We require half drain down times to be calculated and provided for all attenuation features, including those that do not discharge through infiltration. Half drain down times should not exceed 24 hours for all storm events up to and including the 1 in 100 year + 40% climate change event.

   If this is not achievable on site, we would accept evidence that the network can manage for the 1 in 100 year + 40% climate change event and a subsequent 1 in 30 year event.

3. We acknowledge the impermeable area of car parking spaces will drain to the adjacent permeable paving areas.

   The applicant has clarified that the footpath areas to the east and south of the building are proposed to drain unrestricted to existing highway drains in Comet Way and Jetliner Way.

   As these areas are within the red line boundary they should be included in the drainage proposals and discharged at a controlled rate (as above) to an appropriate location.

   Please note that if it is proposed to drain these areas to highways drains that we would require evidence of agreement in principle from Highways confirming they are happy to accept discharge into their network.

Any changes based on our comments above should be supported by an updated report, modelling and an updated drainage layout.

Informative to the LPA

We ask to be re-consulted when the amended surface drainage assessment will be submitted. We will provide you with bespoke comments within 21 days of receiving formal re-consultation. Our objection will be maintained until an adequate surface water management scheme has been submitted.

Yours sincerely,

David Uncle
SuDS Officer
Flood Risk Management

Attachment 4:

Thames Water Sewer Records ref. 2019_4071687

Asset location search

Property Searches

CHECKED

Atkins Telecoms
Stats Enquiries Team The Hub
500Park Avenue
BRISTOL
BS32 4RZ

Search address supplied Site at Comet Way, Hatfield
AL10 9TF

Your reference 79259

Our reference ALS/ALS Standard/2019_4071687

Search date 9 September 2019

Keeping you up-to-date

Notification of Price Changes

From 1 September 2018 Thames Water Property Searches will be increasing the price of its Asset Location Search in line with RPI at 3.23%.

For further details on the price increase please visit our website: www.thameswater-propertysearches.co.uk
Please note that any orders received with a higher payment prior to the 1 September 2018 will be non-refundable.

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

0845 070 9148

searchcode

Asset location search

Thames Water Property Searches

Search address supplied: Site at Comet Way, Hatfield, AL10 9TF

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

Thames Water Property Searches

Waste Water Services

Please provide a copy extract from the public sewer map.

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

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

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

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

For your guidance:

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

Clean Water Services

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

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way
Hatfield
AL10 9EZ
Tel: 0845 7823333

For your guidance:

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

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

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

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

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

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

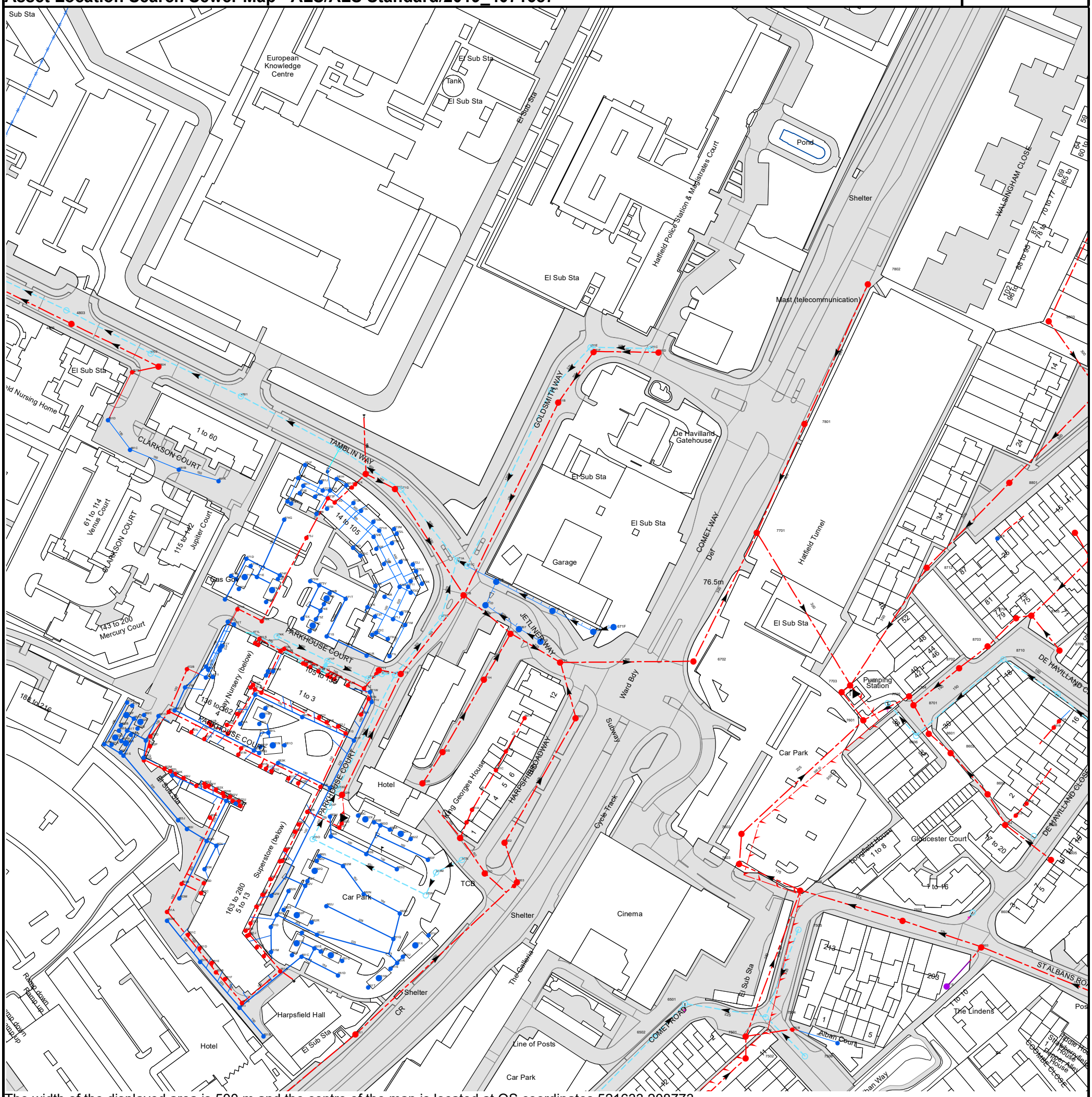
Clean Water queries

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

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

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2019_4071687



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 521633,208773

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
8712	n/a	n/a
8706	77.14	74.66
871B	n/a	n/a
7701	76.19	n/a
8708	n/a	n/a
8801	n/a	n/a
7801	76.57	70.44
681B	75.57	72.16
681A	75.51	72.11
681D	74.97	72.555
681F	75.26	72.34
681C	74.97	72.315
681E	75.25	72.225
8803	n/a	n/a
7802	77.05	70.92
563M	75.15	73.41
563S	n/a	n/a
561B	n/a	n/a
563L	75.48	73.71
561C	n/a	n/a
561A	n/a	n/a
671H	n/a	n/a
661D	n/a	n/a
661C	n/a	n/a
6602	75.62	72.62
661B	n/a	n/a
6603	n/a	n/a
661A	n/a	n/a
6701	75.86	71.01
6601	75.69	71.09
6501	75.89	74.37
6702	n/a	n/a
7603	75.65	72.28
7602	n/a	n/a
7504	76.14	74.45
751B	n/a	n/a
7505	75.85	74.92
7604	75.72	72.48
7703	n/a	n/a
7702	76.22	n/a
7601	76.28	71.83
7705	76.25	74.71
571O	75.3	72.62
551T	n/a	n/a
572N	75.5	74.5
571W	75.5	74.5
571V	75.5	74.5
563B	n/a	n/a
551W	75.26	72.71
571Y	75.35	71.9
563D	75.25	73.28
571Q	75.4	72.56
571L	75.7	74.95
563A	n/a	n/a
551S	n/a	n/a
551Q	75.15	72.89
571N	75.52	72.35
563G	74.9	74
551R	75.25	72.74
562O	75.2	73.12
562Y	75.25	73.22
571X	75.55	71.84
551U	n/a	n/a
562Z	n/a	n/a
551X	75.3	72.71
563R	n/a	n/a
563N	75.25	73.2
563F	75.2	74.2
551V	n/a	n/a
571R	75.4	74.8
671G	75.695	74.205
573U	n/a	n/a
572D	n/a	n/a
671C	75.48	71.275
572C	75.65	74.65
671D	76.13	73.88
6707	75.49	74.08
671F	75.99	74.23
571M	75.7	74.4
571J	75.5	73.62
571E	75.87	72.11
573T	n/a	n/a
573S	n/a	n/a
671E	74.38	72.86
571K	75.75	74.75
571D	75.7	73.825
573R	n/a	n/a
571B	75.95	71.44
573Q	n/a	n/a
572A	75.75	74.49
571I	75.7	73.46

Manhole Reference	Manhole Cover Level	Manhole Invert Level
572I	n/a	n/a
572K	n/a	n/a
671B	75.58	72.65
573P	n/a	n/a
572G	n/a	n/a
573I	n/a	n/a
573F	75.7	74.13
573A	75.7	73.08
573G	75.57	74.09
581H	n/a	n/a
581C	74.98	71.64
581G	n/a	n/a
573D	n/a	n/a
573K	n/a	n/a
581K	75.55	72.12
573C	n/a	n/a
573L	n/a	n/a
581A	75.21	72.06
573M	n/a	n/a
572B	75.7	74.33
572F	n/a	n/a
571H	75.65	73.28
572E	n/a	n/a
573N	n/a	n/a
572M	n/a	n/a
571F	75.38	71.91
572L	n/a	n/a
573O	n/a	n/a
571G	75.367	71.775
572J	n/a	n/a
571A	75.998	71.9
571C	76.1	71.995
7503	76.04	74.54
7502	76.19	74.21
7506	75.95	74.53
751A	n/a	n/a
7501	76.16	73.95
6502	75.74	74.25
551B	74.7	73.75
562J	74.3	73.3
562W	74.95	74.35
561Y	n/a	n/a
562N	74.65	73.34
562K	74.7	73.7
562V	74.55	73.28
562T	n/a	n/a
561Z	n/a	n/a
562Q	74.55	73.25
562M	74.35	73.47
562A	n/a	n/a
561X	74.95	72.63
562U	n/a	n/a
562L	74.6	73.6
563E	74.55	73.38
562C	n/a	n/a
563O	74.7	72.91
563I	74.6	73.7
562D	n/a	n/a
562F	n/a	n/a
562E	n/a	n/a
562G	n/a	n/a
562X	74.65	73.22
563H	74.9	73.9
563C	n/a	n/a
562B	74.95	72.41
563P	74.9	72.81
5501	75.55	73.15
451I	75	73.5
451G	74.95	73.19
551D	74.9	74
551A	74.9	73.04
551G	n/a	n/a
551C	74.5	73.26
551L	n/a	n/a
551K	74.7	73.16
551I	n/a	n/a
551M	74.8	73.87
551F	n/a	n/a
551E	74.55	73.19
451K	n/a	n/a
551J	74.6	73.14
451L	n/a	n/a
451J	74.95	72.9
551P	74.4	73.35
551H	n/a	n/a
451M	n/a	n/a
551O	74.7	73.7
463O	74.95	72.84
562R	n/a	n/a
562I	74.7	73.5
562P	74.45	73.21
562S	n/a	n/a
463P	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
462T	74.95	74.1
462U	n/a	n/a
562H	75.06	72.24
563Q	75.06	72.76
563J	75.05	73.58
561R	75.05	73.11
561W	n/a	n/a
561V	n/a	n/a
561U	n/a	n/a
561T	n/a	n/a
561S	n/a	n/a
563K	74.9	74.3
461M	n/a	n/a
463Q	74.9	74
461H	74.9	73.81
461K	74.9	73.38
561P	n/a	n/a
561O	n/a	n/a
561N	75	73.73
561F	75.4	73.83
561G	75.45	73.54
561L	75	73.74
561J	n/a	n/a
461I	n/a	n/a
461A	75.1	74.5
561K	n/a	n/a
561I	n/a	n/a
561D	75.4	74
561M	75.9	73.69
561H	n/a	n/a
461F	n/a	n/a
561Q	n/a	n/a
471M	75.4	74.32
574T	75.45	73.83
471N	75.45	73.86
571Z	75.45	73.83
471O	n/a	n/a
572S	n/a	n/a
471P	n/a	n/a
572R	n/a	n/a
572U	n/a	n/a
574O	n/a	n/a
572V	n/a	n/a
574N	n/a	n/a
574M	75.5	74.52
571U	75.5	74.45
572T	n/a	n/a
574Q	n/a	n/a
574P	n/a	n/a
572W	n/a	n/a
571P	75.3	72.76
574S	75.45	74.62
574U	75.5	74.5
574L	75.45	74.45
471R	n/a	n/a
471Q	n/a	n/a
471S	75.45	74.58
571S	75.6	74.6
574K	75.2	72.95
471L	75.5	74.9
574A	n/a	n/a
574C	75.6	73.92
574R	75.4	74.56
573Z	n/a	n/a
573X	75.5	74.8
574E	75.45	73.96
471K	75.25	74.64
573Y	n/a	n/a
574H	n/a	n/a
571T	75.5	74.75
574D	75.2	73.92
574B	n/a	n/a
574J	75.4	73.56
471F	n/a	n/a
573V	75.15	74.07
573W	75.2	74.2
471C	75	73.76
574I	n/a	n/a
471H	75.05	73.59
471E	75.15	73.61
574F	75.3	74.3
463F	74.7	74.1
461G	75.1	74.16
462K	n/a	n/a
462J	n/a	n/a
471W	75.3	74.35
472B	75.2	74.14
461L	n/a	n/a
462I	74.95	74
462Z	n/a	n/a
461N	n/a	n/a
462Q	74.95	74.02
472A	75.5	74.2

Manhole Reference	Manhole Cover Level	Manhole Invert Level
471V	75.5	74.5
471J	75.5	74.86
462Y	n/a	n/a
461B	n/a	n/a
461C	74.75	74.1
471I	75.5	74.9
471Z	n/a	n/a
471X	75.5	74.8
471Y	n/a	n/a
471A	74.95	74
461E	n/a	n/a
461D	74.95	74.03
471U	75.45	74.75
471B	74.95	73.95
471T	n/a	n/a
451F	n/a	n/a
451B	74.55	73.32
451E	n/a	n/a
451H	74.7	73.71
451D	n/a	n/a
451C	n/a	n/a
463N	74.8	74
451A	74.78	73.55
463M	74.62	73.42
463C	75	74.4
463B	74.76	73.65
463D	n/a	n/a
463K	74.68	74.05
463L	74.03	73.35
463H	74.59	73.14
463I	74.78	73.08
463J	74.95	73.04
463A	n/a	n/a
463G	74.95	74.4
463E	74.85	73.6
462S	74.95	74
462V	n/a	n/a
462R	74.95	73.95
462W	n/a	n/a
462X	n/a	n/a
461R	75.05	73.47
461X	n/a	n/a
462G	74.7	72.65
462A	n/a	n/a
461Y	n/a	n/a
462B	n/a	n/a
461W	74.65	72.67
461S	74.9	72.85
462H	74.7	72.65
462F	74.6	72.65
461T	74.5	72.72
472C	74.7	73.7
461Z	n/a	n/a
472D	n/a	n/a
461U	74.6	72.67
462D	n/a	n/a
462E	74.65	72.65
461Q	75	74.4
462N	75	73.82
462C	n/a	n/a
461P	74.8	73.84
462P	n/a	n/a
462O	75	73.74
461O	74.95	74
462M	n/a	n/a
461J	75.14	73.64
462L	n/a	n/a
4803	n/a	n/a
4805	n/a	n/a
481D	n/a	n/a
481C	n/a	n/a
481E	n/a	n/a
4802	n/a	n/a
4804	n/a	n/a
481B	n/a	n/a
481A	n/a	n/a
4801	n/a	n/a
471D	74.9	73.7
471G	n/a	n/a
574G	75.1	74.1
572X	75.5	74.9
572Y	n/a	n/a
581E	75.3	73.4

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 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.

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 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 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 / OSS	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 the Ombudsman finds that you have suffered actual loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the code.

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

TPOs Contact Details

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

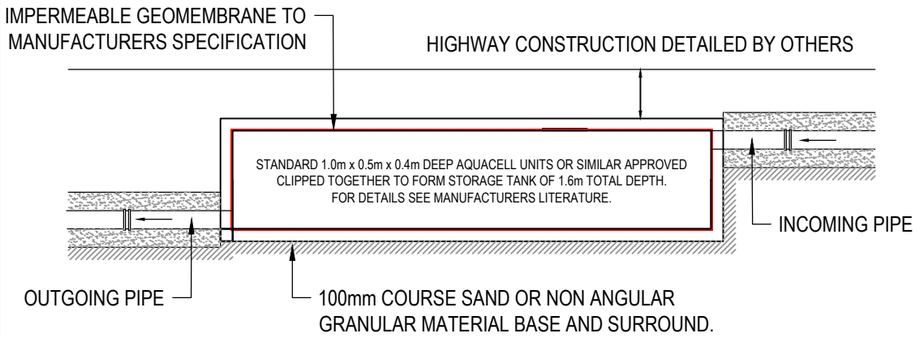
You can get more information about the PCCB from www.propertycodes.org.uk

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

Attachment 5:

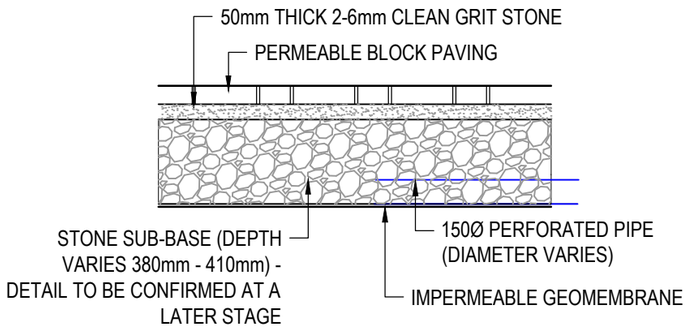
Drainage Strategy Drawing Ref:

47179/4001/002 Rev B



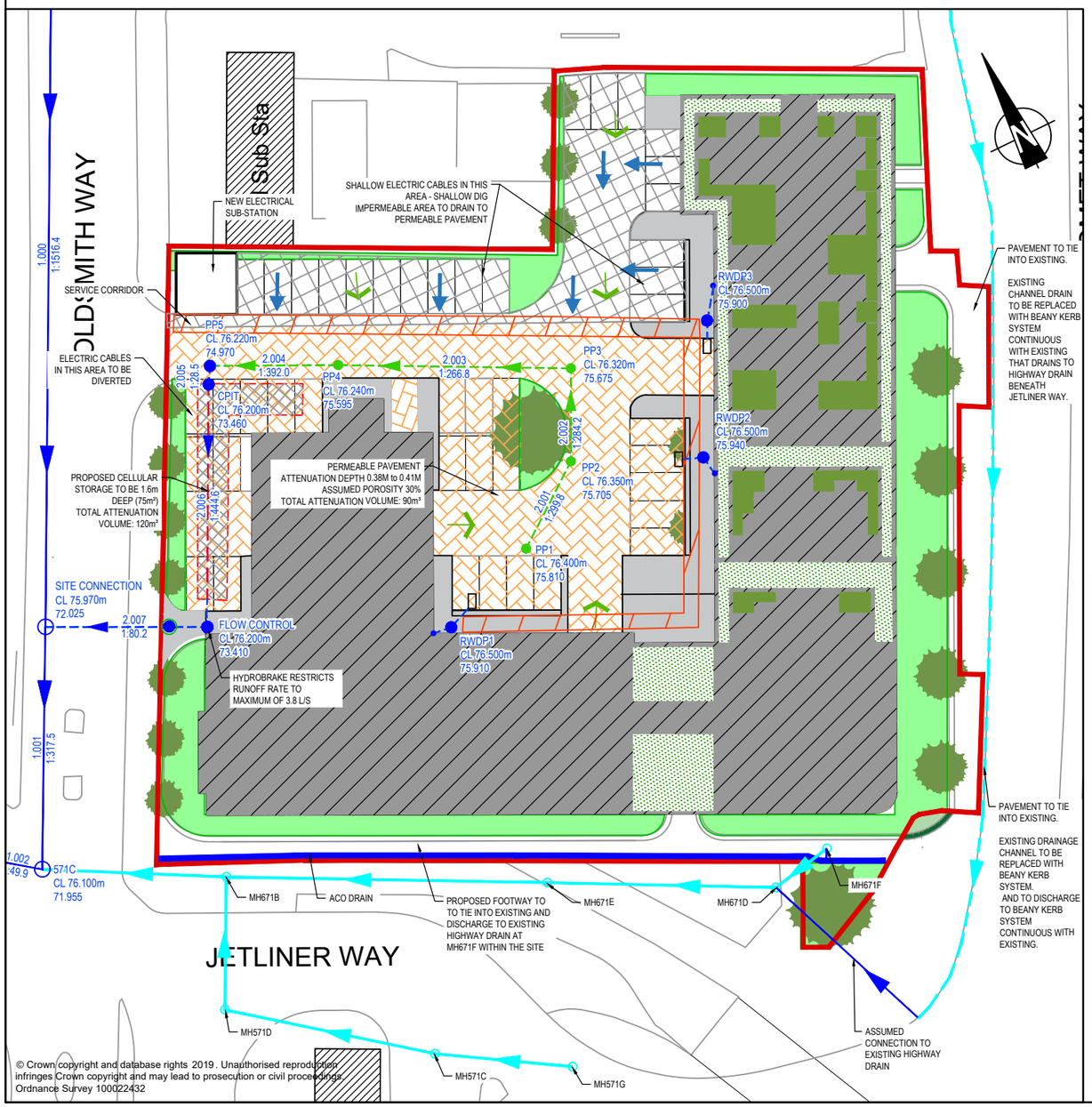
CELLULAR STORAGE DETAIL

NTS



LINED PERMEABLE PAVING DETAIL

NTS



KEY:

- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SURFACE WATER MANHOLE/CATCHPIT
- PROPOSED PERMEABLE PAVING
- IMPERMEABLE SURFACE
- PROPOSED DEVELOPMENT
- PROPOSED GREEN ROOF
- PROPOSED ROOF PLANTERS
- PROPOSED CELLULAR STORAGE
- EXISTING SURFACE WATER MANHOLE
- EXISTING SURFACE WATER DRAINAGE
- PROPOSED PERFORATED PIPE
- BEANY KERB SYSTEM
- EXISTING HIGHWAY DRAIN
- PROPOSED MODEL NODE - SEE NOTE 7
- PROPOSED LANDSCAPE AREAS
- PROPOSED DOWNPIPE CONNECTION
- PROPOSED DEMARCATION CHAMBER
- PROPOSED RAINWATER DIFFUSER UNIT
- EXCEEDANCE FLOW ROUTE
- SITE BOUNDARY
- PROPOSED FOOTPATHS
- PROPOSED DUMMY PIPES - SEE NOTE 7
- IMPERMEABLE SURFACE TO DRAIN TO PERMEABLE PAVING VIA OVERLAND FLOW

CONSTRUCTION (DESIGN & MANAGEMENT) REGULATIONS 2015 (CDM REGULATIONS 2015)

THE PROPOSED SURFACE WATER DRAINAGE ARRANGEMENTS ARE BASED ON THE FOLLOWING INFORMATION AVAILABLE AT THE TIME:

- TOPOGRAPHIC SURVEY HAS BEEN PROVIDED BY SURVEY SOLUTIONS DRAWING REF 25372se-01 DATED 06.11.19.
- PROPOSAL DRAWING PROVIDED BY BRYANT & MOORE ARCHITECTS REF. 19_386_PL07 DATED NOVEMBER 2020

AT THIS STAGE OF DESIGN IT HAS NOT BEEN POSSIBLE TO ELIMINATE ALL THE HEALTH AND SAFETY RISKS AND RESIDUAL RISKS TO THE PROPOSED GROUND WORKS, FOR EXAMPLE, IN RELATION TO THE LOCATION OF UNDERGROUND UTILITIES & GROUND CONDITIONS. SUCH RESIDUAL RISKS NEED TO BE MITIGATED AGAINST BY THE CLIENT AND COMMUNICATED TO FUTURE DESIGN TEAMS SO THAT AN ATTEMPT CAN BE MADE TO DESIGN THEM OUT AS THE DETAILED DESIGN IS PROGRESSED AND SITE CONSTRAINTS ARE FULLY UNDERSTOOD. ANY RISKS THAT ARE NOT DESIGNED OUT DURING THE DETAILED DESIGN STAGE MUST BE COMMUNICATED FURTHER TO THE CONSTRUCTION TEAM AND END USER SO THAT ADEQUATE MITIGATION MEASURES CAN BE PLANNED FOR AND MANAGED.

NOTES

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
3. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
4. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
6. CONNECTION AND LOCATION OF MANHOLE TO PUBLIC SEWER SUBJECT TO AGREEMENT WITH THAMES WATER UTILITIES (TWU) LTD.
7. MODEL NODES ARE FROM MICRODRAINAGE FOR THE INCLUSION OF ATTENUATION FEATURES WITHIN THE DRAINAGE MODEL AND WILL NOT BE CONSTRUCTED.
8. DETAIL DESIGN OF DRAINAGE FOR UNDERCROFT PARKING TO BE AGREED AT LATER STAGE SUBJECT TO TWU LTD APPROVAL.

SCALING NOTE: Do not scale this drawing - any errors or omissions shall be reported to Stantec without delay.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

FOR PLANNING

COMET WAY, HATFIELD

PROPOSED SURFACE WATER DRAINAGE

Client

COMET WAY HATFIELD LTD

Date of 1st Issue	Designed	Drawn
20.07.2021	EE	JS
A3 Scale	Checked	Approved
1:500	EE	-
Drawing Number		Revision
47179/4001/002		B

Stantec
stantec.com/uk

READING
Tel: 01189 500 761