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DRAINAGE AND SUDS STRATEGY

**The Bulmershe School, Woodlands Avenue, Woodley,
Reading RG5 3EU**

Report Title: Drainage and SUDS Strategy for The Bulmershe School Woodlands Avenue,
Woodley, Reading RG5 3EU

Report Status: Final

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Control: Revisions

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V1.0	30/01/2026	A Wallace

Prepared by: **JOMAS ASSOCIATES LTD** For: **Rivington Street Studio**

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Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the originators and approved by a director.

<i>Revision</i>	<i>V01</i>
Date	30/01/2026
Prepared by	A Wallace
Checked by	A Alsop
Authorised by	A Wallace

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The methodology adopted and the sources of information used by JA in providing its services are outlined in this report. The work described in this report was undertaken in **January 2026** and is based on the conditions encountered and the information available during the said period of time. The scope of this report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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Certain statements made in the report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. JA specifically does not guarantee or warrant any estimate or projections contained in this report.

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No allowance has been made for changes in prices or exchange rates or changes in any other conditions which may result in price fluctuations in the future. Where assessments of works or costs necessary to achieve compliance have been made, these are based upon measures which, in JA's experience, could normally be negotiated with the relevant authorities under present legislation and enforcement practice, assuming a proactive and reasonable approach by site management.

Forecast cost estimates do not include such costs associated with any negotiations, appeals or other non-technical actions associated with the agreement on measures to meet the requirements of the authorities, nor are potential business loss and interruption costs considered that may be incurred as part of any technical measures.

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EXECUTIVE SUMMARY

This Drainage Assessment reviews the existing drainage arrangement at the application site and proposes a surface water drainage strategy in line with Local Authority and Lead Local Flood Authority (LLFA) guidance.

The site is located at The Bulmershe School Woodlands Avenue, Woodley, Reading RG5 3EU.

The proposed development comprises the construction of a new SEND classroom and associated external works.

Surface Water Drainage

It is proposed to reduce surface water discharge from the site to no greater than 0.5l/s. Attenuation is provided within cellular storage below the external area and within a rain garden. Discharge will be to the existing sewer in the site via the existing connection, this sewer discharges the Thames Water sewer in the street and will be to Thames Water approval and confirmation of the outfall location.

An additional 10% allowance for urban creep has been included modelled calculations.

Maintenance/management of all onsite drainage infrastructure has been considered within a separate maintenance plan appended to this report. This will be updated through the development process.

The proposed drainage strategy is entirely based on-site.

Overall, the proposed development has an acceptable flood risk within the terms and requirements of the NPPF. The proposals provide a high level of water treatment, runoff reduction and flooding protection for the proposed development and are in accordance with all requirements of the Lead Local Flood Authority (LLFA).

Foul Drainage

It is proposed to discharge the foul drainage from the site into the existing Thames Water sewer in the street via the existing connection.

1 INTRODUCTION

1.1 Background

1.1.1 Jomas was commissioned to undertake a Drainage Assessment for the proposed development of land located at The Bulmershe School Woodlands Avenue, Woodley, Reading RG5 3EU

1.1.2 The proposed development comprises the construction of a new SEND classroom and associated external works.

1.1.3 This Drainage Assessment has been produced in support of a planning application and should be read in conjunction with the other planning documents.

2 SITE DESCRIPTION

2.1.1 The site is approximately 2884 square metres in size and is mainly grass with an area of hardstanding and sports court.

2.1.2 The bulk of the area will remain as existing with the total development area being 960 square metres. Pre-development, the site is 0% impermeable (960 square metres of green area). Post development, the impermeable area increases to 750 square metres (78% of the area of development).

2.1.3 The site location information is as follows:

- Nearest Postcode: RG5 3EU

2.2 Topography

Site Topography

2.2.1 A survey of the site has been completed. The site is irregular in shape and falls towards the southeast. The survey is provided in Appendix A.

3 DESIGN PRINCIPLES AND POLICY REQUIREMENTS

3.1.1 Since April 2015, Lead Local Flood Authorities (LLFA's) have become a statutory consultee on surface water drainage for many planning applications. For this site, the following is considered to be the required level of detail required for planning approval:

3.1.2 Report to be prepared in accordance with the National Planning Policy Framework (NPPF), the accompanying Planning Practice Guidance (PPG), Local Authority and Lead Local Flood Authority (LLFA) guidance and Strategic Flood Risk Assessments.

3.2 General Principles for Surface Water Drainage

3.2.1 The DEFRA Sustainable Drainage Systems Non-Statutory Technical Standards for Sustainable Drainage Systems, the Local Authority Flood Risk Management Strategy, Level 2 Strategic Flood Risk Assessment and the Local Flood Risk Management Strategy require sustainable drainage systems in all development to reduce surface water runoff and provide water treatment on site. This includes but is not limited to addressing the following issues in order of preference:

- Store rainwater for later use.
- Use infiltration techniques, such as porous surfaces in non-clay areas.
- Attenuate rainwater in ponds or open water features for gradual release.
- Attenuate rainwater by storing in tanks or sealed water features for gradual release.
- Discharge rainwater direct to a watercourse.
- Discharge rainwater to a surface water sewer/drain.
- Discharge rainwater to the combined sewer.

3.2.2 Consideration must be given to the direction of water flow across the site and where this may be dispersed and incorporating any features that will help reduce surface water run-off. All developments should follow the drainage hierarchy and aim to achieve greenfield run off with at least a 50% reduction in surface water discharge and this needs to be demonstrated as part of the planning submission.

4 SITE DRAINAGE INFORMATION

4.1.1 The DEFRA Sustainable Drainage Systems Non-Statutory Technical Standards for Sustainable Drainage Systems states that the following options must be considered for disposal of surface water runoff in order of preference:

- Discharge to ground
- Discharge to a surface water body
- Discharge to a surface water sewer
- Discharge to a combined sewer

4.1 Discharge to Ground

4.1.1 The potential for surface water to discharge to ground has been assessed through a review of the likely ground conditions and possible infiltration structures.

4.1.2 The British Geological Survey indicates the following geology for the area:

Bedrock: London Clay Formation - Clay and silt. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period.

Superficial: None recorded

4.1.3 The geology indicates that the ground is likely to be impermeable and so infiltration is not likely to be possible. This will be confirmed via testing prior to detailed design.

4.2 Discharge to Surface Water Body

4.2.1 There nearest watercourse is too far from the site to be used for discharge of surface water.

4.3 Discharge to Surface Water Sewer/Combined Sewer

4.3.1 Discharge to the public sewer network should only be considered once all other options for draining surface water from the site have been exhausted.

4.3.2 There is an existing surface water sewer within the site. It is assumed that this sewer connects into the Thames Water sewers in the surrounding streets. This will be confirmed via survey prior to detailed design.

4.4 Sustainable Drainage Systems (SuDS)

4.4.1 To maximise the potential use of SuDS at the site, a review has been undertaken as shown in Table 1 in accordance with the SuDS Hierarchy. This review highlights the components referenced in the SuDS Hierarchy and provides recommendations on whether the components could be incorporated into the development.

Table 1: SuDS Selection Based on the SuDS Hierarchy

Component	Recommendation
Green/Blue roofs	Whilst the use of green and blue roofs provides additional environmental benefits such as enhanced aesthetics and ecology, its exposure to wind and orientation must be considered. Access to undertake the construction and maintenance easily and safely is also a high priority. If feasible, depending on the roof design, a green/blue roof will provide water quality, biodiversity and aesthetic benefits to the site. Additionally, the green/blue roof/s will offer some attenuation for run-off, reducing volumes of run-off and in higher frequency events (i.e. 1in2 year storms) will result in no run-off for the building. There are no green roofs proposed.
Basins and Ponds	Ponds and attenuation basins can provide overland storage of surface water whilst also providing additional biodiversity and aesthetic/amenity value. There are no open areas on the site which are suitable for basins or ponds.
Filter Strips and Swales	Swales are linear vegetated drainage features, which provide overland conveyance and storage of surface water whilst trapping sediments and hydrocarbons within run-off. They also create biodiverse areas for planting and habitat. Swales are not considered suitable for this site due to the urban setting restricting the availability of space.
Infiltration Devices	Infiltration devices are not suitable for the main drainage system due to the impermeable nature of the existing ground.
Bio retention	Bio retention areas can provide interception of overland flow and storage of surface water whilst also providing additional biodiversity and aesthetic/amenity value. The proposed garden area will act as a bioretention area.
Permeable Paving	Whilst incorporating attenuation storage, permeable paving also provides treatment through filtration of silt (and attached pollutants), settlement and retention of solids, adsorption of pollutants and biodegradation of organic pollutants, including petrol and diesel. There are no external areas suitable for permeable paving.
Tanked Systems	This is the least sustainable option in terms of the SuDS Hierarchy. However, the use of tanked systems would still be of benefit compared to traditional drainage systems as it does allow run-off to be slowed down to an acceptable discharge rate. There is a single tank proposed.

5 SURFACE WATER DRAINAGE DESIGN

5.1 Site Areas

5.1.1 The development area currently comprises greenfield. The existing and proposed areas are summarised below.

Table 2: Site Areas

Parameter	Existing (m2)	Existing (%)	Proposed (m2)	Proposed (%)
Impermeable area	0	0	750	78
Permeable area	960	100	210	22
Total area	960	100	960	100

5.1.2 It is assumed that the surface water runoff from the site currently discharges to the sewer.

5.2 Design Considerations

5.2.1 Consideration has been given to the following when calculating the proposed impermeable areas.

- The 2013 EA 'Rainfall Run-off Management for Developments' Report (SC030219) states that urban creep, the process of gradually increasing impermeable area within an urban area (through paving soft landscaped surfaces and constructed outbuildings etc), is an acknowledged issue. To include an allowance for urban creep, the impermeable area used in the drainage calculations has been increased by 10% in accordance with the recommendation made in SC030219.

5.2.2 The climate change allowance used in the Drainage Strategy is in line with updated EA guidance values published in February 2016 for increased rainfall intensities by 2115.

5.3 Greenfield Runoff Rates

5.3.1 Greenfield runoff rates have been calculated using the Wallingford method and are summarised in the table below with calculations provided in Appendix B.

Table 3: Greenfield and Existing Run-off Rates

Parameter	Greenfield Discharge (l/s)	Proposed Discharge (l/s)
1 year	0.1	0.5
30 year	0.4	0.5
100 year	0.5	0.5
100 year +40%	NA	NA

5.4 Drainage Design

- 5.4.1 As infiltration is not possible on this site and as greenfield rates are low, it is proposed to restrict discharge to 0.5l/s or less. Reducing the post development run-off discharge rate to 0.5l/s is achieved through attenuation. Discharge will be to the existing sewer within the site which is assumed to discharge to the TW sewer in the street.
- 5.4.2 The attenuation will be within a storage system below the external area and a rain garden area.
- 5.4.3 By controlling run-off rates and providing attenuation for all storm events up to and including a 1 in 100-year storm plus 40% climate change allowance, the risk of downstream flooding will be minimised.
- 5.4.4 The total volume of attenuation across the site is sufficient to cater for the 100 year +40% storm event with no overflow.
- 5.4.5 Discharge will be restricted by a pumped outfall to the existing sewers at 0.5l/s. Drainage design details are provided in Appendix B.

5.5 Consents, Offsite Works and Diversions

- 5.5.1 The proposed surface water drainage strategy is accommodated entirely on site.
- 5.5.2 Consent will be required from Thames Water for the discharge via the existing sewer connections.

5.6 Maintenance

- 5.6.1 A SuDS maintenance plan has been prepared to outline the management of the potential SuDS features. The maintenance plan is provided in Appendix C.

5.7 Exceedance Flooding and Overland Flow

- 5.7.1 Thus, the overland flow route for the site drainage will only be in use in the event of drainage network failure, and will follow the existing route. See Appendix B for overland flow plan.

5.8 Foul Drainage

- 5.8.1 Thames Water are the foul sewerage suppliers for the area.
- 5.8.2 The identified point of connection from the site is into the existing sewer in the site which discharges to the TW sewer in the street.

6 DRAINAGE DURING CONSTRUCTION

6.1 Construction Run-off Management

6.1.1 Installing the surface water and foul drainage system, whilst managing temporary run-off, are key aspects of the construction works involved in any development. The information provided below is in accordance with the 'C698 Site handbook for the construction of SUDS' (CIRIA, 2007).

6.1.2 Please note that the measures recommended below are recommendations only and need to be confirmed at the construction stage by the client and the contractor.

6.2 Management of Construction (Including Drainage)

6.2.1 Drainage is typically an early activity in the construction stage of a development, taking form during the earthworks phase. However, final construction i.e. piped drainage system connections to the SuDS devices, should not take place until the end of site development work, unless a robust strategy for silt-removal is implemented prior to occupation of the site.

6.2.2 A plan for the management of construction (including phasing of works, details of any offsite works etc.) cannot be provided at this early stage, as construction work plans are not yet known. However, the following key points are general construction issues associated with SuDS which will be addressed when these plans are complete:

- Silt-laden waters from construction sites represent a common form of waterborne pollution;
- These silt-laden waters cannot enter SUDS drainage systems unless specifically designed to accept this as it can clog the systems and pollute receiving waters. Therefore, piped drainage systems should not be connected to the attenuation SuDS devices until the late stages of construction.
- Any gullies and piped systems should be capped off during construction and fully jetted and cleaned prior to connection to the attenuation SuDS devices.

6.3 Temporary Drainage During Construction

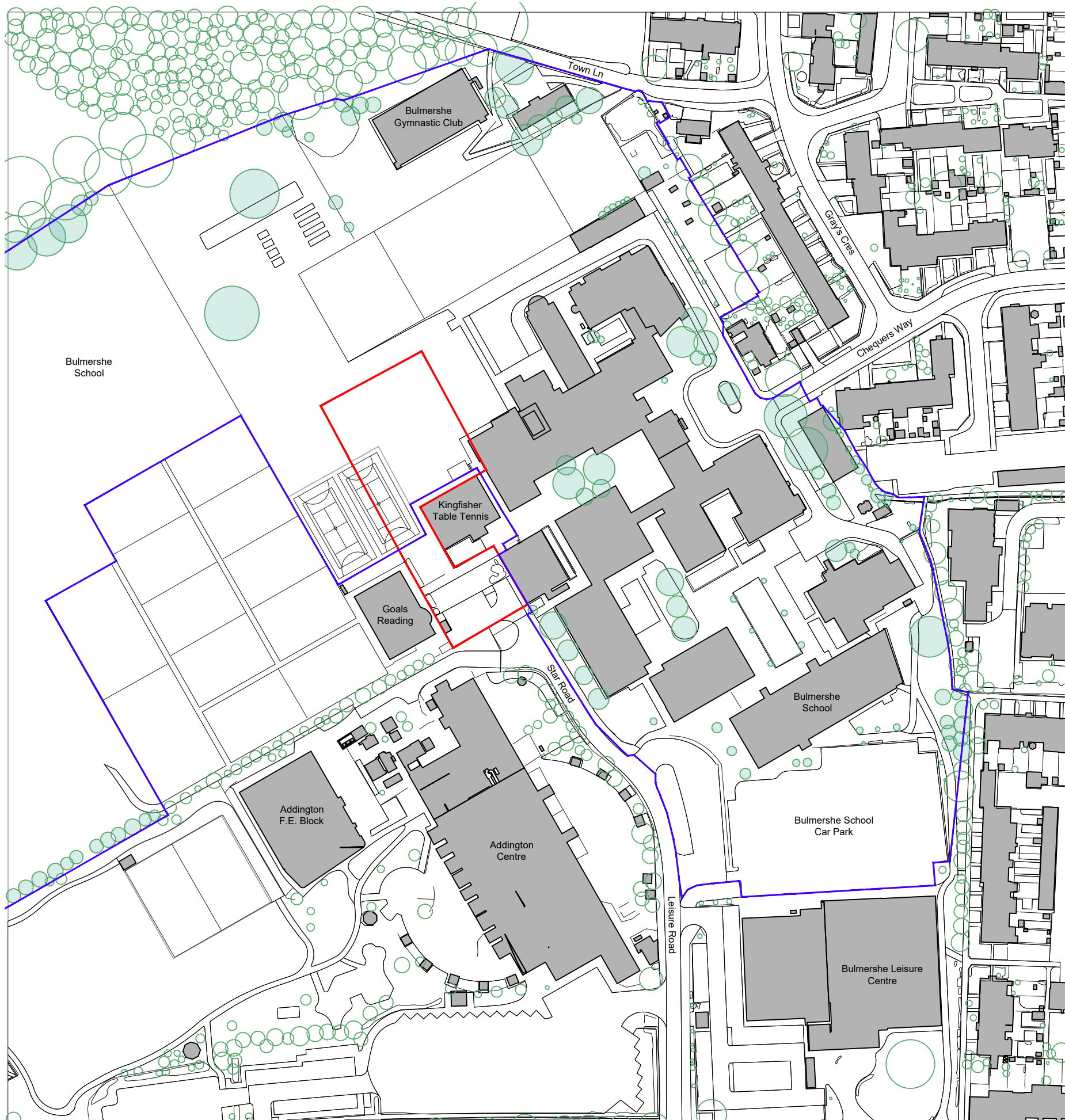
6.3.1 The three principal aspects of drainage control during construction are trapping sediment, conveying run-off, and controlling run-off.

6.3.2 Sediment traps and barriers can include basin traps and sediment fences (with any necessary boundary controls). The principal basins are to be installed after the construction site is accessed. Sediment fences and barriers will then be installed as needed during grading.

6.3.3 Conveyance of run-off can be achieved through small ditches/stream, storm drains, channels and sloped drains with sufficient inlet/outlet protection.

- 6.3.4 Slope stability needs to be considered when using any channels to convey run-off across the site into any basins etc.
- 6.3.5 Run-off control measures will need to be implemented in order not overwhelm the temporary system and cause flooding issues. Run-off rates from the site will be managed so they are no greater than pre-development or in keeping with the best practice guidance to minimise risk of blockage. Any additional conveyance measures are to be installed as needed during grading.
- 6.3.6 Run-off control to include provision of perimeter ditches or appropriate levels grading to direct any water from the construction site to remain on site.
- 6.3.7 Any necessary surface stabilisation measures are to be applied immediately on all disturbed areas where construction work is either delayed or incomplete.
- 6.3.8 Maintenance inspections are to be performed weekly, and maintenance repairs to be made immediately after periods of rainfall.
- 6.4 Protection of Drainage Infrastructure during Construction**
 - 6.4.1 All drainage infrastructure should be protected from damage by construction traffic and heavy machinery through the implementation of measures such as protective barriers, and storing construction materials away from the drainage infrastructure.

APPENDIX A: PROPOSED DEVELOPMENT DETAILS



- DRAWING NOTES
1. filename: 1129 Existing Site Plan Bulmershe.dwg
 2. Do not scale from this drawing in either paper or digital form. Use figured dimensions only. Detailed site survey to be carried out to establish tolerances. Figured dimensions are in mm. All dimensions shall be verified on site before proceeding with the work. The architect shall be notified of any discrepancies.
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REVISIONS

REV	DATE	STATUS
-	-	-

Changes since last issue:

-

- KEYS
- Site Boundary
2,884m²
 - St Pauls Site Boundary

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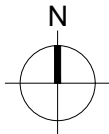
job title **Wokingham SEND Resource
Bulmershe School C&L**

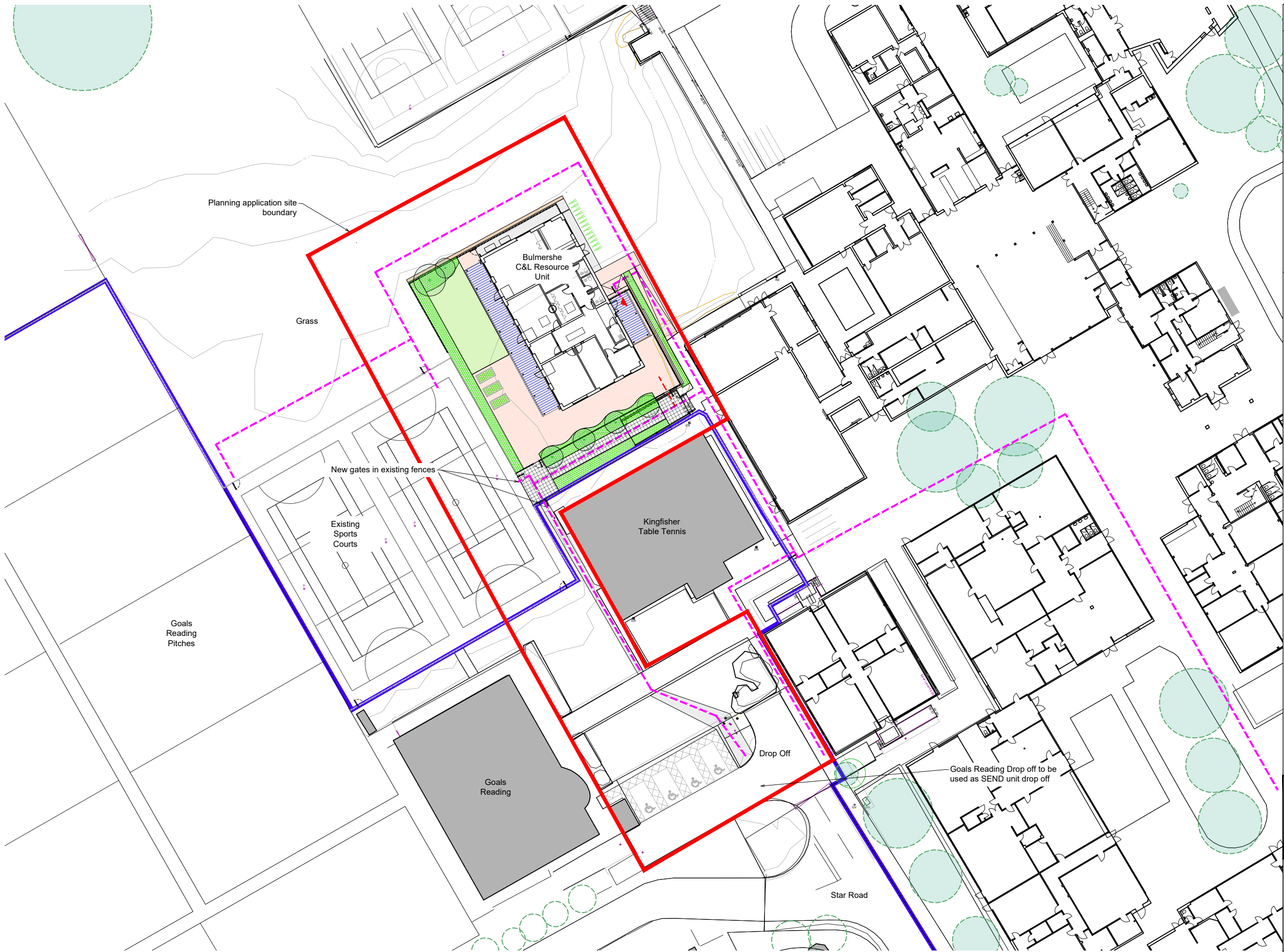
drawing title **Existing Site Location Plan**

scale **1:1500@A3**

drawn by	job no.	suitability	revision
JY	1129	S3	D01

PROJECT	ORIGIN	VOLUME	LEVEL	TYPE	ROLE	NUMBER
WKS	RSS	_ 03	_ 00	_ DR	_ A	_ 1020





DRAWING NOTES

1. filename: 1129 Proposed GF Plan Bulmershe OpD.dwg

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REVISIONS

REV	DATE	STATUS
D03	12.01.26	For Comment

Changes since last issue:
Red line boundary updated

Site Boundary
2,884m2

Bulmershe
Site Boundary

Pedestrian
route

rivingtonstreetstudio

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job title

Wokingham SEND Resource
Bulmershe School C&L

drawing title

Proposed Site Plan

scale

1:500@A3

drawn by

job no.

suitability

revision

JY

1129

S3

D03

PROJECT	ORIGIN	VOLUME	LEVEL	TYPE	ROLE	NUMBER
WKS	RSS	_ 03	_ 00	_ DR	_ A	_ 1221

APPENDIX B: DRAINAGE DRAWINGS AND CALCULATIONS

Wallace Engineering
22 PARK RISE,
HARPENDEN
AL5 3AL

Search address supplied Bulmershe Centre Bungalow
Woodlands Avenue
Woodley
Reading
RG5 3EU

Your reference JOMAS

Our reference ALS/ALS Standard/2026_5276564

Search date 20 January 2026

Keeping you up-to-date

Notification of price changes

We're changing our report prices from 4th June 2025. The price will increase by 3.5% based on Retail Price Index (RPI).

Find our new prices on our website thameswater.co.uk/property-searches

Any Questions? We're happy to talk through the changes with you – give our Property Searches team a call on 0800 009 4540 .



Thames Water Utilities Ltd
Property Searches,
Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

Search address supplied: Bulmershe Centre Bungalow, Woodlands Avenue, Woodley, Reading, RG5 3EU

Dear Sir / Madam

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

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

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

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

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

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

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the contact details below:

Thames Water Utilities Ltd
Property Searches
Clearwater Court
Vastern Road
Reading
RG1 8DB

Email: property.searches@thameswater.co.uk

Web: thameswater.co.uk/propertysearches

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. The public sewer map 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.

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. You can do this by emailing customer.feedback@thameswater.co.uk with the email subject header 'Enquiry – TWOSA', along with details of the request.

If you have any questions regarding sewer connections, budget estimates, diversions or building over 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

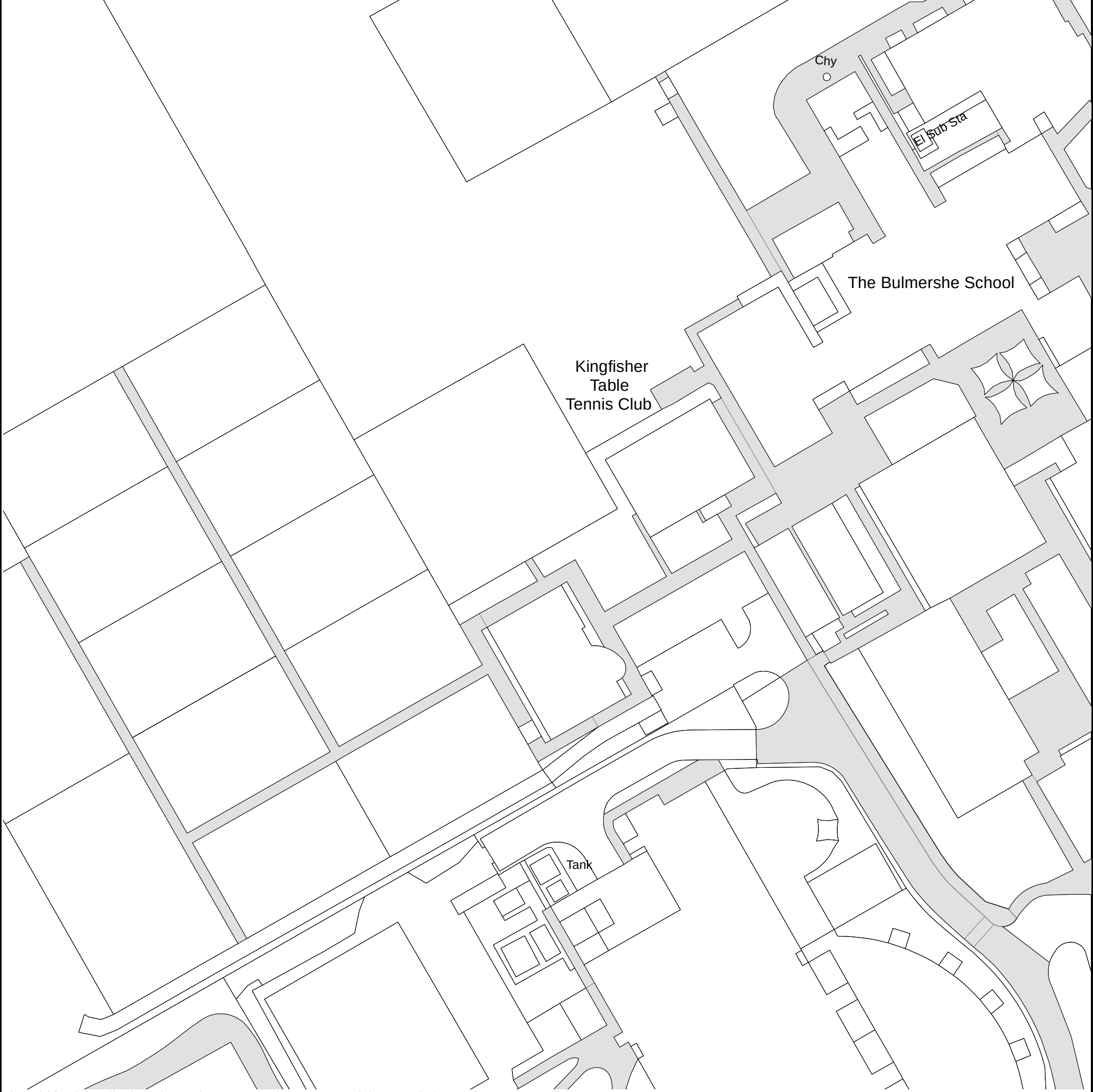
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water 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

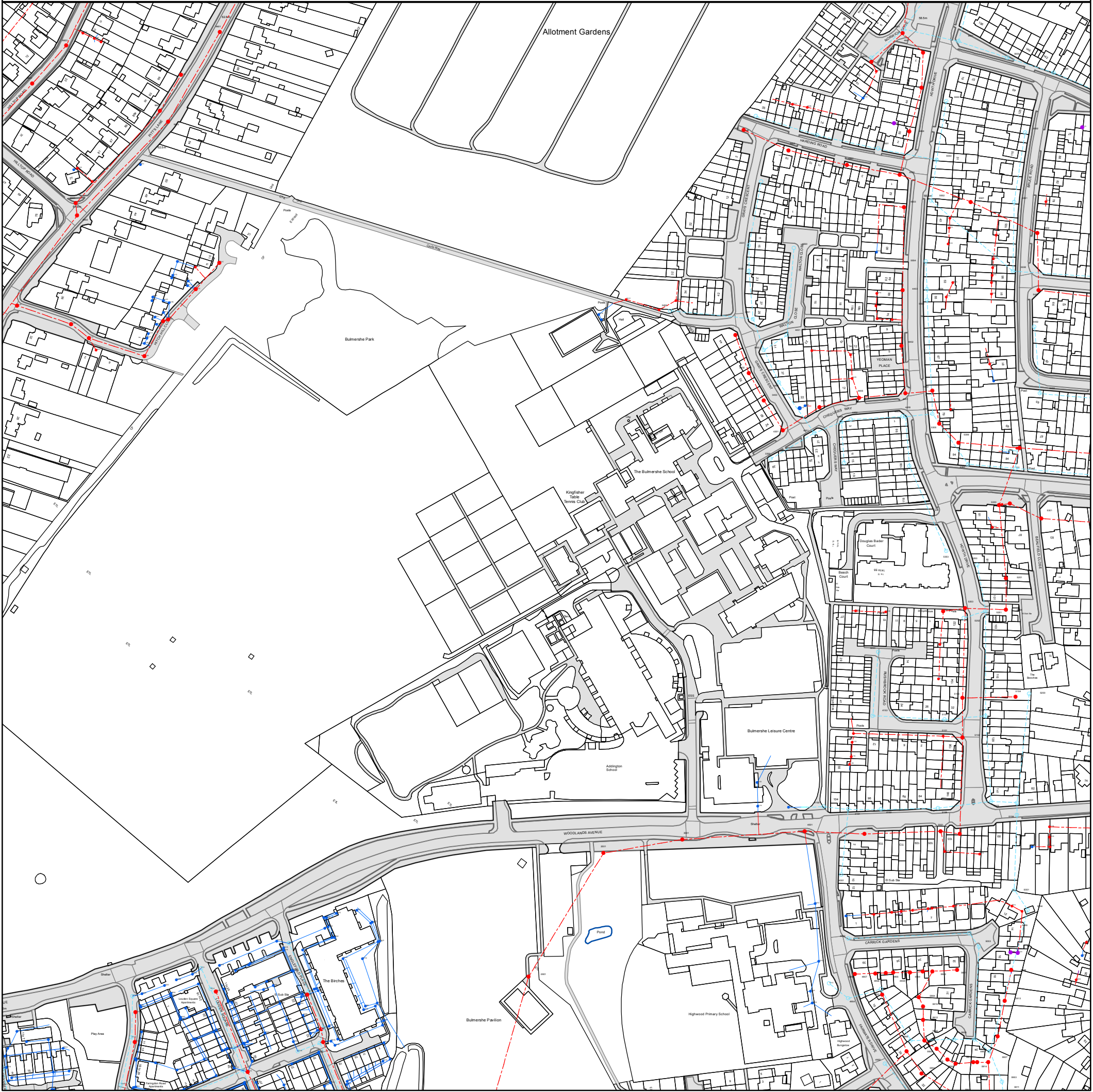


The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 475241,173316
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.

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



0 15 30 60 90 120
Meters

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Scale: 1:2865
Width: 800m
Printed By: SAsbok1
Print Date: 21/01/2026
Map Centre: 475231,173309
Grid Reference: SU7573SW

Comments:

ALS/ALS Standard/2026_5276564

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

REFERENCE	COVER LEVEL	INVERT LEVEL
5401	54.58	51.84
9601	62.91	61.29
4450	56.23	54.48
4451	56.35	55.14
5252		
5052	54.39	53.14
5152	54.6	53.25
5303	55.16	51.47
4402	55.25	52.95
4403	55.13	53.08
4503	55.54	53.37
4001	54.85	53.36
4404	55.99	53.6
2901		
3452	56.72	54.72
5907	54.22	52.47
5906	54.28	52.78
5306		
5002		
5103		
5950	54.14	53.08
9602	62.73	60.68
5904	54.41	53.3
5954		
5919	54.41	53.26
6650	55.83	53.74
5353	55.21	53.63
5915	54.28	52.87
5922	54.19	52.95
5155	54.65	53.38
4401	55.46	52.75
4352	54.86	53.45
4959		
5101	54.72	52.72
3001	55.35	53.98
3550	57.77	55.96
5920		
5402		
3401	57.04	54.84
5554	55.35	53.68
8601		
4651	56.96	55.13
2001		
4152	54.7	53.48
4952	54.23	53.61
5652	55.42	53.57
5054		
5204	54.74	51.99
5650	56.6	54.76
4051		
4353	55.66	53.86
4954	54.15	
5913	54.17	52.84
5914	54.21	52.67
5053	54.38	53.07
8501	62.11	60.93
4002		
4652	58.37	56.46
5154	54.45	53.25
5304	54.79	
5909		
4052	54.3	53.62
4452	55.63	53.48
4405		
5550	54.83	52.81
5551	55.04	53.13
4101	55.12	53.65
3451	57.21	55.31
5454		
5203	54.9	52.07
4351	55.83	53.59
961A		
441B		
441D		
4957		
551C		
551B		
541C		
401B		
551F		
501A		

REFERENCE	COVER LEVEL	INVERT LEVEL
5301		
4150	54.81	53.78
4301	55.86	53.88
4603	59.02	55.86
5350	54.71	52.51
5952	54.3	52.61
5908	54.19	52.51
5501		
4453	54.91	52.99
4601	58.09	56.29
4653	58.12	56.04
4650	58.55	56.29
3650	59.98	57.28
3403	56.46	54.34
5251	54.81	53.75
3350	55.74	53.91
5921		
5651	57.76	55.59
5102	54.58	52.51
4502	56.22	53.88
3552	58.88	57.6
5150	54.69	53.41
5901		
5912	54.25	53.2
5602		
5151	54.72	53.58
5653	56.93	54.6
3601	60.42	56.96
5553	56.21	54.31
4455	54.73	52.71
4904	54.38	52.51
4604		
5305		
4956	54.3	53.03
3402	56.63	54.57
3551	59.06	57.54
5451	54.94	52.62
5552	55.71	53.81
5905	54.27	53.16
5450	55.18	53.53
4250	55.19	54.09
3450	58.28	57.05
4955	54.5	53.19
4903		
4958		
4905		
5250		
5201		
4550	56.88	55.98
4454	55.61	53.43
4501	57.3	54.99
5953		
5951	54.1	52.85
5253	54.88	53.73
8603	61.97	59.97
8502	61.99	60.19
4602	58.91	57.57
4153	55.08	53.85
5153	54.67	53.28
5452	54.7	53.05
5006		
4151	54.8	53.65
4906		
5502	54.91	52.03
5051		
5104		
9603	62.78	61.67
5302	54.59	52.54
5917	54.29	52.65
5453	54.78	52.87
501D		
441A		
441C		
5601	57.32	55.09
551E		
541B		
551G		
4004	54.3	53.49
551D		
531A		
501B		

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ALS/ALS Standard/2026_5276564

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

REFERENCE	COVER LEVEL	INVERT LEVEL
5001		
401A		
861B		
4003		
441F		
691B		
5202		
541D		
551I		
5352	54.68	52.38
461B		
541E		
451A		
461D		
401D	54.95	53.94
491B	54.96	54.2
491C		
851D		
601A		
601C		
611A		
311A		
411B		
411D		
441G		
941A	61	60.09
841B	61.17	59.69
841C	60.96	59.88
441I		
501H		
941O		
941N		
941E		
951A		
941C		
951B		
941P		
941H		
951F		
941D		
091G	61.94	59.79
091E	62.98	61.28
991I	63.32	61.82
091B	61.87	58.69
991C	64.49	61.95
991J	63.17	61.5
091D	61.77	59.03
091C	61.84	58.84
091I	61.85	59.84
891A	64.19	62.95
091M		
991W		
001I		
092B		
992B		
191C		
992G		
991L		
001F		
001E		
992A		
091R		
992I		
092D		
001J		
092F		
091L		
992C		
091K		
191D		
992D		
991P		
991S		
991Z		
101B		
001D		
991N		
992O		
092M		
001N		
092P		

REFERENCE	COVER LEVEL	INVERT LEVEL
861A		
501C		
501E		
441E		
421A		
521A		
521B		
551H		
551J		
531B		
461A		
541F		
461C		
401C	54.85	53.69
491A	54.92	54.1
961B		
851C		
851E		
601B		
601D		
501F		
411A		
411C		
311B		
441H		
841A	60.94	59.83
941B	62.15	60.42
421B		
501G		
661A		
941I		
941G		
841D		
941Q		
951G		
951H		
941F		
951D		
941J		
951C		
091J	61.79	59.99
091H	62.37	60.93
991G	64.35	62.32
091F	63.26	61.2
991B	64.34	61.78
991D		
991H	64.23	62.4
091A	63.18	60.29
001B	62.37	60.19
991E	64.46	62.22
991U		
991V		
091U		
091P		
091Y		
091Q		
001K		
091X		
091O		
091N		
001H		
091T		
992H		
091Z		
001G		
092C		
991M		
092E		
091W		
091S		
092G		
991Y		
991O		
101A		
191B		
091V		
891C		
092W		
992T		
093E		
092O		

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ALS/ALS Standard/2026_5276564

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

REFERENCE	COVER LEVEL	INVERT LEVEL
092L		
001M		
993D		
092J		
992M		
891O		
992Y		
092S		
891D		
001R		
901A		
001T		
993H		
191F		
891K		
993C		
092U		
992L		
993A		
092K		
001O		
092I		
092T		
891F		
092Z		
993E		
891P		
891L		
993G		
001Q		
551K		
461E		
341B		
241B		
241C		

REFERENCE	COVER LEVEL	INVERT LEVEL
001P		
891Q		
191G		
992N		
101D		
093F		
093D		
891M		
092H		
001S		
992P		
993I		
993B		
092V		
092X		
992Z		
891B		
191H		
992W		
093B		
993F		
891E		
891G		
093A		
092Y		
191I		
101C		
092N		
891N		
501I		
501J		
951I		
241A		
341A		



Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

	Sewer		Culverted Watercourse
	Proposed		Decommissioned Sewer
	Content of this drainage network is currently unknown		Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

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

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

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

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

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

	Inlet		Outfall
	Undefined End		

Other Symbols

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

	Change of Characteristic Indicator		Public / Private Pumping Station
	Invert Level		Summit

Areas

Lines denoting areas of underground surveys, etc.

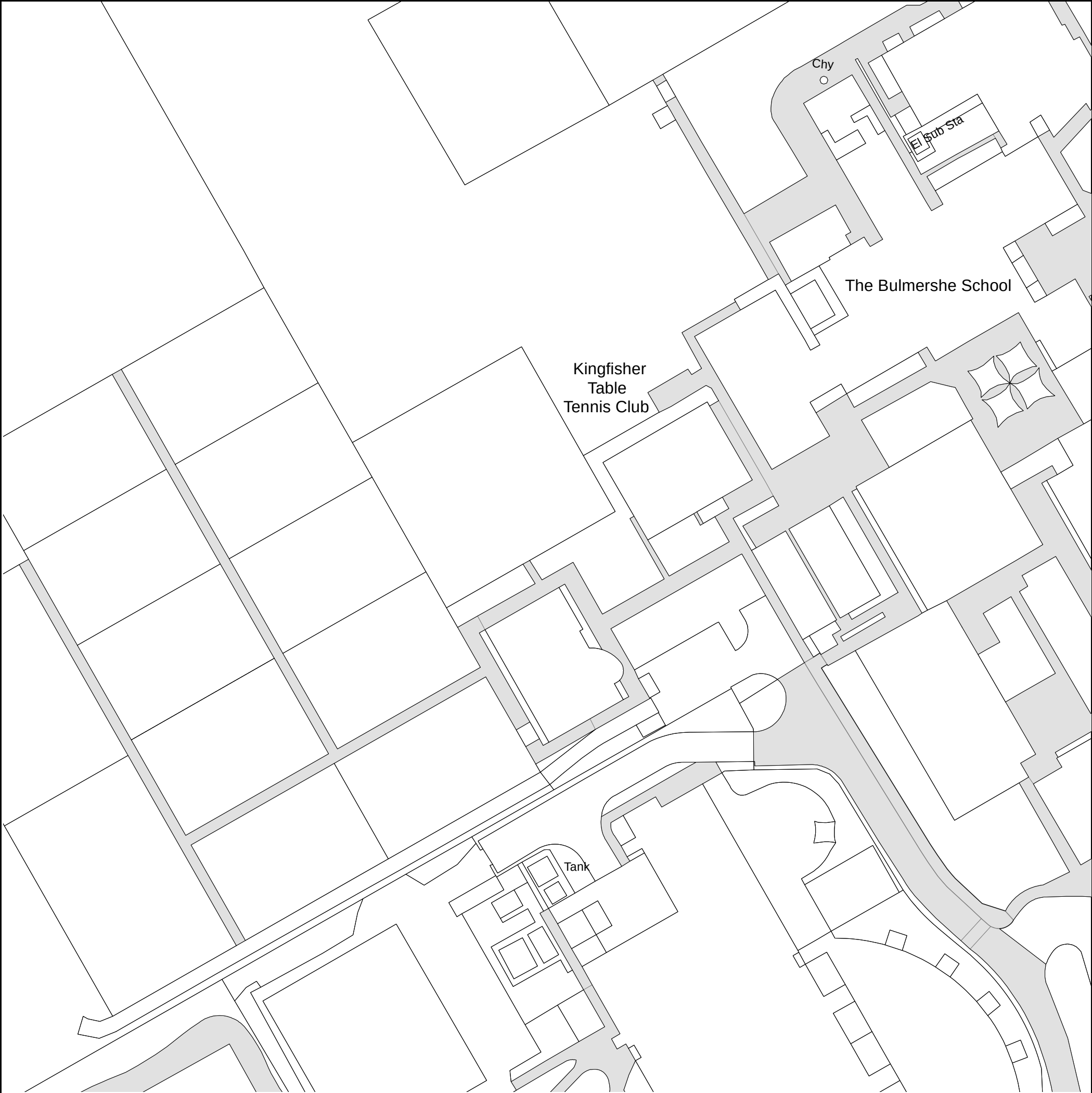
	Agreement
	Chamber
	Operational Site

Ducts or Crossings

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

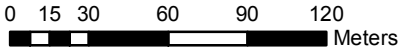
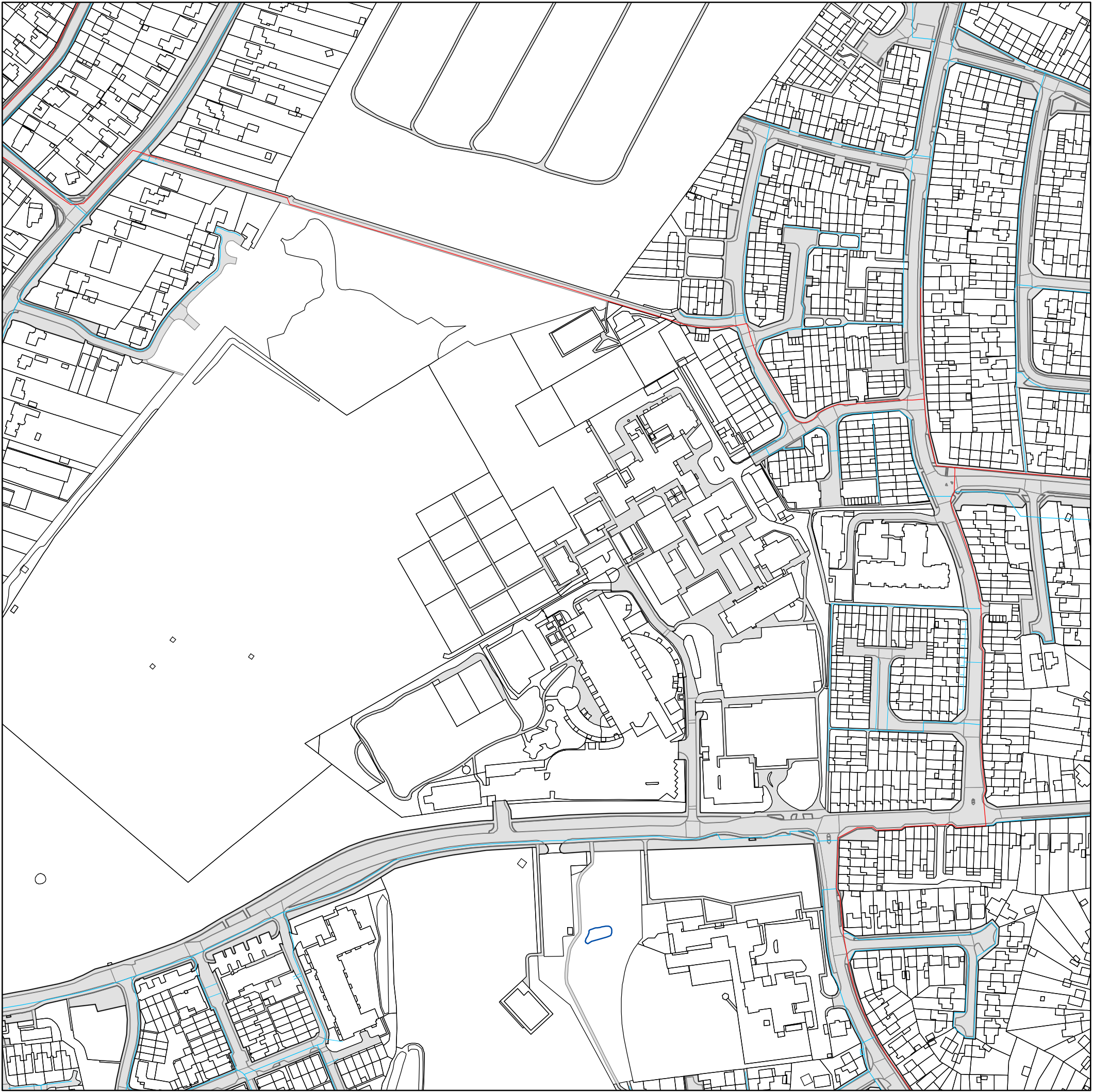
5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 475241, 173316.
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Scale: 1:2865
Width: 800m
Printed By: SAsbok1
Print Date: 21/01/2026
Map Centre: 475231,173309
Grid Reference: SU7573SW

Comments:



Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

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

Valves

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

Hydrants

- Single Hydrant

Meters

- Meter

End Items

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

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

Operational Sites

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

Other Symbols

- Data Logger
- Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

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

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

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	29/01/2026
Calculated by	AW
Reference	Bulmershe
Model version	2.2.2

Location

Site name	
Site location	Bulmershe



Site easting (British National Grid)	475271
Site northing (British National Grid)	173281

Site details

Total site area (ha)	.096	ha
----------------------	-----------------------------------	----

Greenfield runoff

Method

Method	IH124
--------	-------

IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	645	mm	645
How should SPR be derived?	WRAP soil type		
WRAP soil type	2		2
SPR	0.3		
QBar (IH124) (l/s)	0.2	l/s	

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	6		6
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	IH124	
Flow rate 1 year (l/s)	0.1	l/s
Flow rate 2 year (l/s)	0.1	l/s
Flow rate 10 years (l/s)	0.3	l/s
Flow rate 30 years (l/s)	0.4	l/s
Flow rate 100 years (l/s)	0.5	l/s
Flow rate 200 years (l/s)	0.6	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com/) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

0xx@1:xx>

0xx@1:xx>

0xx>

SMH

Ø1200

CL 80.90

IL 80.00

SWIC

Ø450

RWP

0xx@1:xx>

0xx>

FMH

Ø1200

CL 80.90

IL 80.00

FWIC

Ø450

FO

CWIC

Ø450

Stormwater Pipe - Diameter and fall

Perforated Pipe - Diameter and fall

Rising Main

Manhole type - SMH Surface Water

Diameter

Cover Level

Invert Level

Surface Water Polypropylene Inspection Chamber (PPIC)

Rain Water Pipe

Foul Pipe - Diameter and fall

Rising Main

Manhole type - FMH Foul Water

Diameter

Cover Level

Invert Level

Foul Polypropylene Inspection Chamber (PPIC)

Sewer Vent Pipe/Sub Stack/Foul Outlet

Combined Polypropylene Inspection Chamber (PPIC)

Attenuation Tank

EXTERNAL WORKS KEY

18.30+
FFL

Proposed Level
Finished Floor Level

ALL DIMENSIONS TO BE CHECKED BY CONTRACTOR
NOTE: CONTRACTOR TO NOTE THE LIKELY PRESENCE OF MULTIPLE EXISTING SERVICES.
ALL SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION AND DIVERTED AS NECESSARY

Job No.
P6976J3323

Rev.

DRAINAGE NOTES

1. THIS DRAWING IS FOR PLANNING ONLY AND IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.

2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS.

3. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES ABOVE LOCAL DATUM.

4. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION.

5. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS.

6. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD, FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE.

7. ALL LEVELS SHOWN ARE ASSUMED ONLY AND SUBJECT TO SURVEY AND DETAILED DESIGN.

8. ALL RWP AND FO SHOWN ARE INDICATIVE ONLY AND SUBJECT TO APPROVAL AND SETTING OUT BY THE ARCHITECT.

9. NODE NUMBERS REFER TO DRAINAGE MODEL.

10. UNLESS NOTED OTHERWISE, PIPES TO BE:
FOUL PIPES UNDER BUILDING #100Ø1:40,
FOUL PIPES EXTERNAL #100Ø1:80,
SURFACE WATER PIPES #150Ø1:100

Notes.

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Key dimensions to be checked by engineer before major structural works commence on site.

1. This survey has been computed and drawn about 0 S National Grid.

2. All levels are in metres and relate to 0 S National Datum by GPS instruments.

3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.

Amendments

Rev	Date	By	Chkd

JOMAS

ENGINEERING ENVIRONMENTAL

Jomas Associates Ltd.
Unit 24 Sarum Complex,
Salisbury Road,
Uxbridge, UB8 2RZ

Client

Rivington Street Studio

Project

The Bulmershe School
Woodlands Avenue,
Woodley, Reading RG5 3EU

Drawing

Proposed Drainage Plan

Dwg no

C01

Checked

AW

Surveyor

NA

Date

30.01.26

Scale

1:100 @ A1

Job No.

P6976J3323

Rev.

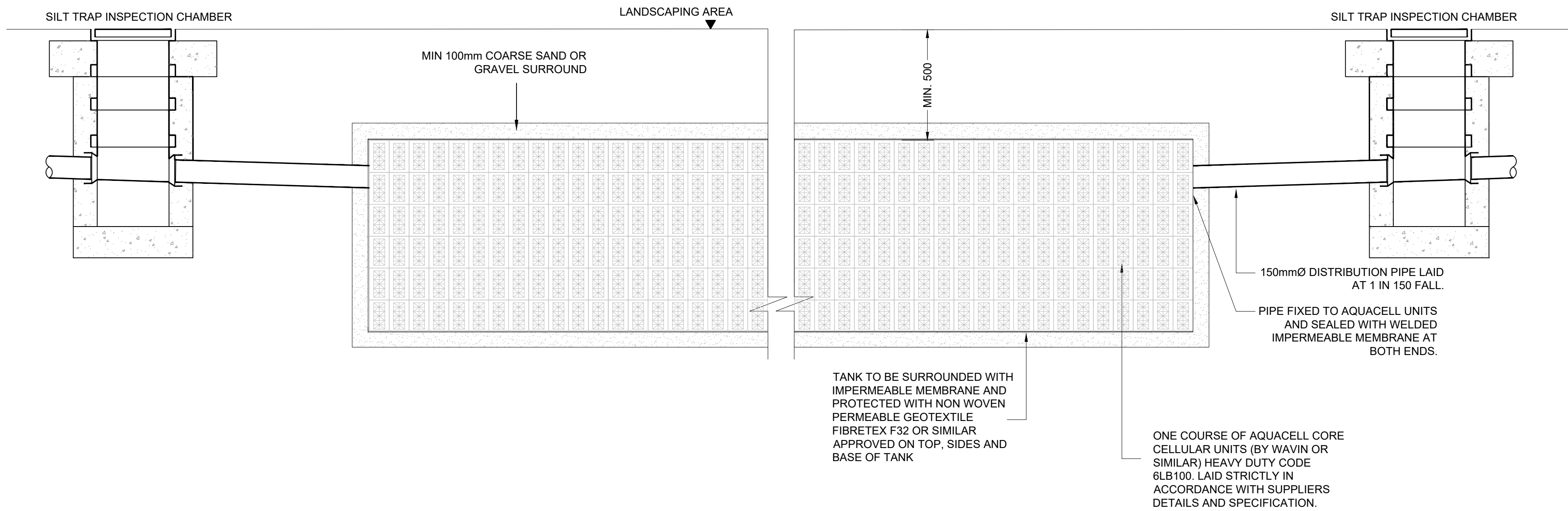
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Grid

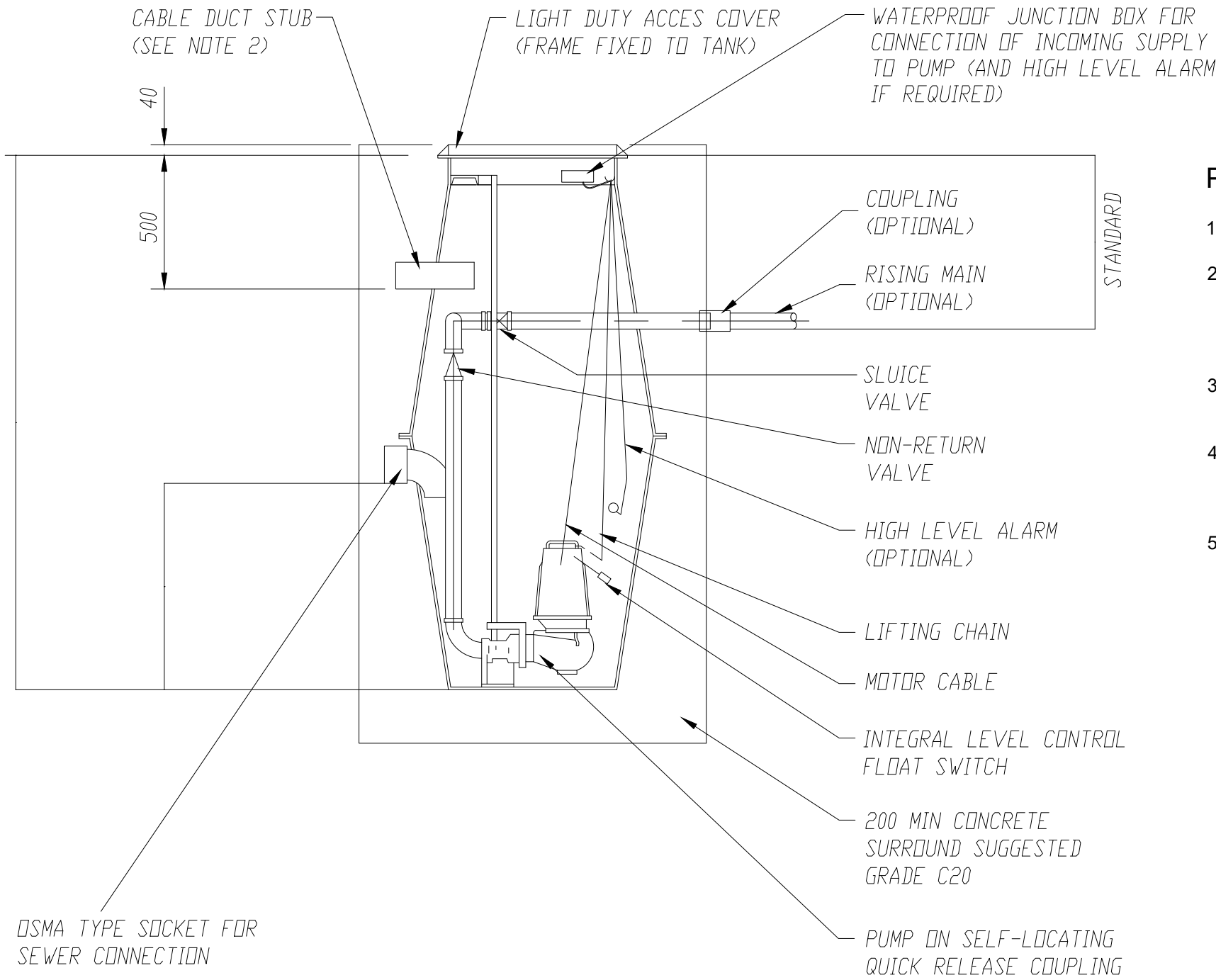
Contours

Level Datum

Client			
Rivington Street Studio			
Project			
The Bulmershe School Woodlands Avenue, Woodley, Reading RG5 3EU			
Drawing			
Proposed Drainage Details			
Dwg no		Checked	Surveyor
C02		AW	NA
Date	30.01.26	Scale	AS SHOWN
Job No.			Rev.
P6976J3323			-
Grid	Contours	Level Datum	

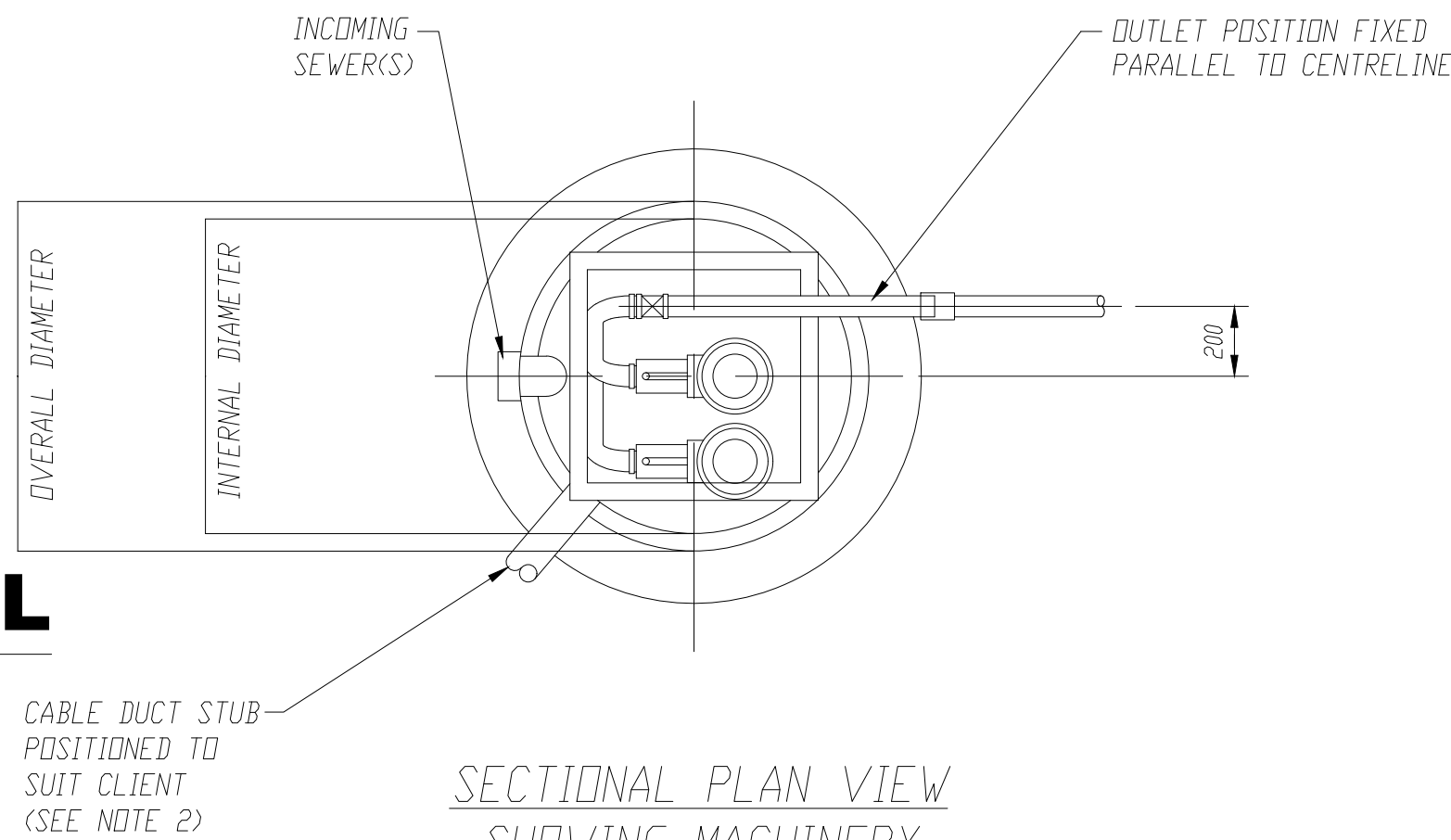


TYPICAL SECTION THROUGH
ATTENUATION TANK
SCALE 1:20



PUMP NOTES

- ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE STATED.
- CABLE DUCT AND INLET SEWER(S) MAY BE POSITIONED AROUND PERIPHERY TO SUIT CLIENTS REASONABLE REQUIREMENTS. WHERE A PIPE POSITION COINCIDES WITH A STRUCTURAL JOINT IT WILL BE PLACED IN THE NEAREST POSSIBLE LOWER AND/OR ADJACENT LOCATION.
- THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATIVELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
- A HIGH WATER LEVEL FLOAT SHALL BE PROVIDED AT A HIGH LEVEL WHICH IS APPROXIMATELY 300mm BELOW THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING
- AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED WITHIN A COMMON AREA. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE. CONTACT DETAILS FOR THE ORGANISATION RESPONSIBLE FOR MAINTAINING THE PUMP TO BE PROVIDED NEARBY TO THE ALARM SYSTEM

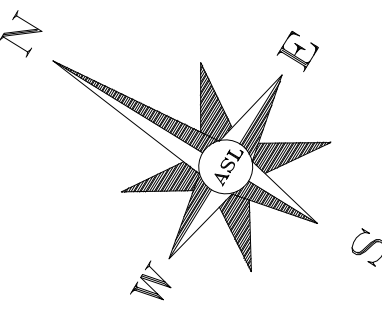
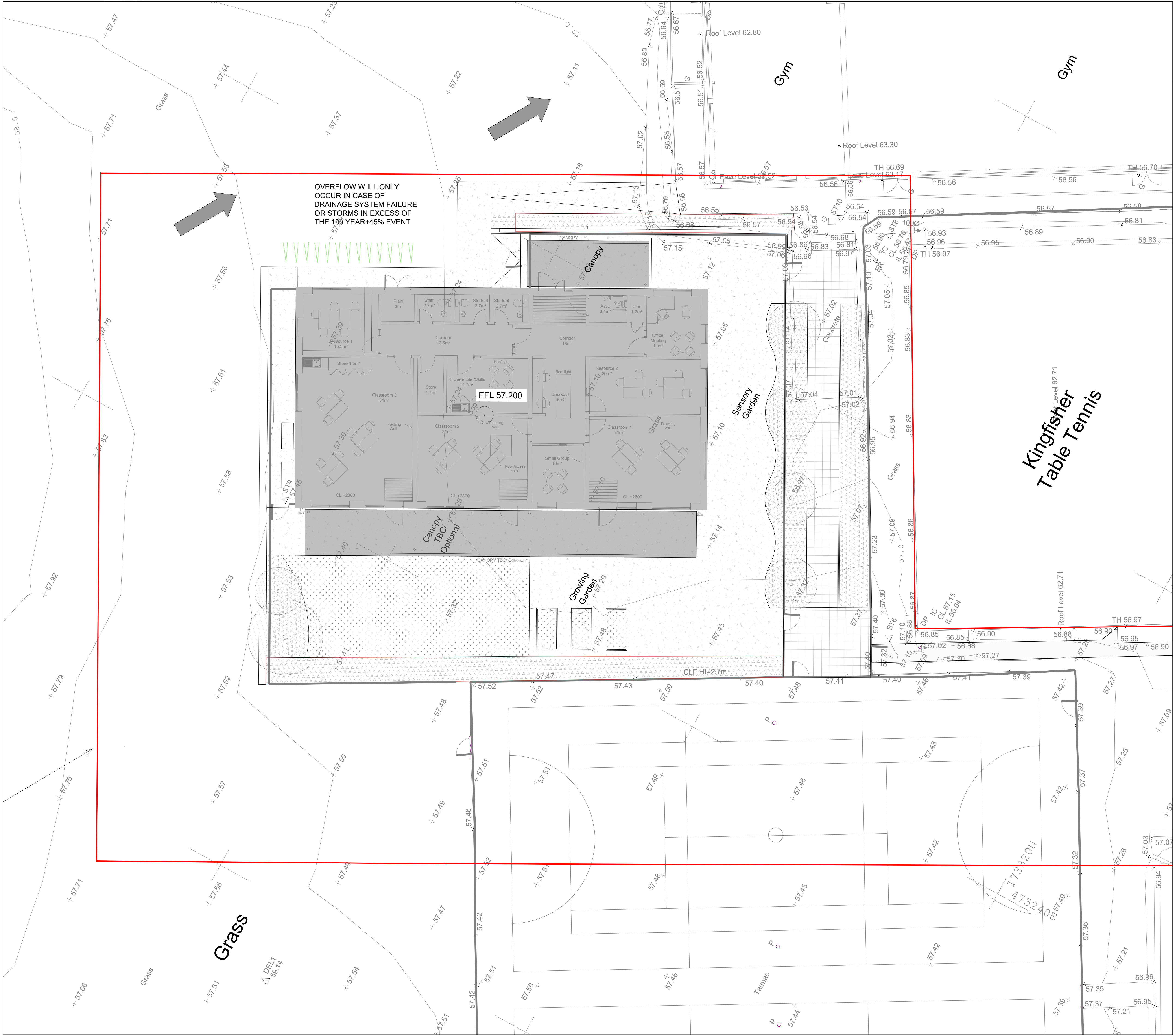


TYPICAL PACKAGE PUMP STATION DETAIL

SCALE 1:20

NOTE: PUMP DETAILS SHOWN INDICATIVELY ONLY AND DETAILED DESIGN SHOULD BE BY A SPECIALIST PUMP ORGANISATION SUCH AS DUTY POINT PUMPS

Job. No.	P6976J3323	Rev.	
NOTES			
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION. 2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS. 3. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION 4. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS. 5. FOR GRAVITY SEWERS, ALL DRAINAGE AND FITTINGS ARE TO BE FLEXIBLY JOINTED UPVC TO BS EN 1401-1 OR CLAYWARE TO BS EN295 OR CONCRETE TO BS5911 PART 100 6. CHAMBER WALLS 225 THICK TO BE CONSTRUCTED IN CLASS B ENGINEERING BRICKS TO SHW SERIES 2400 IN DESIGNATION (I) MORTAR OR IN-SITU STRENGTH CLASS C16/20 CONCRETE TO CLAUSE 2602 7. CHAMBER WALLS AND COVER SLAB TO BE CONSTRUCTED IN PRECAST CONCRETE TO BS EN 1917 AND BS 5911-3. 8. CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES IN ACCORDANCE WITH BS8500-1:2006. ALL CONCRETE TO BE SULPHATE RESISTANT 9. BACKFILL TO ALL TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL. ELSEWHERE BACKFILL TO BE IN ACCORDANCE WITH THE SPECIFICATION, FREE DRAINING READILY COMPACTIBLE MATERIAL, FREE FROM RUBBISH AND ORGANIC MATTER, FROZEN SOIL, CLAY LUMPS AND LARGE STONES. TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICK. 10. A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, IN ACCORDANCE WITH THE DETAIL. 11. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD, FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE. 12. ALL PIPES TO BE LAID SOFFIT TO SOFFIT UNLESS NOTED OTHERWISE. 13. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH BS EN124 AND SHALL BE OF A NON-ROCKING DESIGN WHICH DOES NOT RELY ON THE USE OF CUSHION INSERTS. CLASS D COVERS SHALL BE USED IN CARRIAGEWAYS, HARD SHOULDERS AND PARKING AREAS USED BY ALL TYPE OF ROAD VEHICLES. CLASS C SHALL BE USED IN FOOTWAYS, PEDESTRIAN AREAS AND ALL COMPARABLE LOCATIONS.			
Notes.			
Copyright of this plan is held by Jomas Associates Ltd. No responsibility is taken for amendments by others. Do not scale from copies or PDF's. Key dimensions to be checked by engineer before major structural works commence on site. 1. This survey has been computed and drawn about 0 S National Grid. 2. All levels are in metres and relate to 0 S National Datum by GPS instruments. 3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.			
Amendments			
Rev	Date	By	Chkd
JOMAS ENGINEERING ENVIRONMENTAL Jomas Associates Ltd. Unit 24 Sarum Complex, Salisbury Road, Uxbridge, UB8 2RZ			
Client			
Rivington Street Studio			
Project			
The Bulmershe School Woodlands Avenue, Woodley, Reading RG5 3EU			
Drawing			
Proposed Drainage Details 2			
Dwg no	Checked	Surveyor	
C03	AW	NA	
Date	30.01.26	Scale	AS SHOWN
Job No.	P6976J3323	Rev.	-
Grid	Contours	Level Datum	



Job. No.

P6976J3323

Rev.

DRAINAGE NOTES

1. THIS DRAWING IS FOR PLANNING ONLY AND IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.

2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS.

3. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES ABOVE LOCAL DATUM.

4. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION.

5. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS.

6. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD, FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE.

7. ALL RWP AND FO SHOWN ARE INDICATIVE ONLY AND SUBJECT TO APPROVAL AND SETTING OUT BY THE ARCHITECT.

8. UNLESS NOTED OTHERWISE, PIPES TO BE:

Foul PIPES UNDER BUILDING #100@1:40,
FOUL PIPES EXTERNAL #100@1:80
SURFACE WATER PIPES #150@1:100

STORMWATER CONCEPT

LEGEND

Overland flow

Notes.

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Key dimensions to be checked by engineer before major structural works commence on site.

1. This survey has been computed and drawn about 0 S National Grid.

2. All levels are in metres and relate to 0 S National Datum by GPS instruments.

3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.

Amendments

Rev	Date		By	Chkd

JOMAS

ENGINEERING ENVIRONMENTAL

Jomas Associates Ltd.
Unit 24 Sarum Complex,
Salisbury Road,
Uxbridge, UB8 2RZ

Client

Rivington Street Studio

Project

The Bulmershe School
Woodlands Avenue,
Woodley, Reading RG5 3EU

Drawing

Proposed Overland Flow

Dwg no

C04

Checked

AW

Surveyor

NA

Date

30.01.26

Scale

1:100 @ A1

Job No.

P6976J3323

Rev.

-

Grid

Contours

Level Datum

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	10	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	2.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Circular Link Type

Template	Freeform Carrier	Auto Increment (mm)	75
Shape	Circular	Follow Ground	x
Barrels	1		

Available Diameters (mm)

100 | 150

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1			56.760	450	100.000	100.000	0.330
2	0.017	2.00	56.900	1200	105.000	100.000	1.700
3	0.030	2.00	57.200	450	107.000	84.000	1.000
4	0.015	2.00	57.200	450	129.000	84.000	0.800
5	0.015	2.00	57.200	450	105.000	95.000	0.750

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.002	2	1	5.000	0.600	55.200	56.430	-1.230	-4.1	100	19.91	50.0
1.001	3	2	16.125	0.600	56.200	55.200	1.000	16.1	150	2.49	50.0
1.000	4	3	22.000	0.600	56.400	56.200	0.200	110.0	150	2.38	50.0
2.000	5	2	5.000	0.600	56.450	55.200	1.250	4.0	150	2.02	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.002	0.005	0.0	10.4	1.600	0.230	0.077	0.0	100	0.000
1.001	2.521	44.5	6.1	0.850	1.550	0.045	0.0	37	1.768
1.000	0.957	16.9	2.0	0.650	0.850	0.015	0.0	35	0.644
2.000	5.074	89.7	2.0	0.600	1.550	0.015	0.0	16	2.083

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.002	5.000	-4.1	100	Circular	56.900	55.200	1.600	56.760	56.430	0.230
1.001	16.125	16.1	150	Circular	57.200	56.200	0.850	56.900	55.200	1.550
1.000	22.000	110.0	150	Circular	57.200	56.400	0.650	57.200	56.200	0.850
2.000	5.000	4.0	150	Circular	57.200	56.450	0.600	56.900	55.200	1.550

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.002	2	1200	Manhole	Adoptable	1	450	Manhole	Adoptable
1.001	3	450	Manhole	Adoptable	2	1200	Manhole	Adoptable
1.000	4	450	Manhole	Adoptable	3	450	Manhole	Adoptable
2.000	5	450	Manhole	Adoptable	2	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	MH Type	Connections	Link	IL (m)	Dia (mm)	
1	100.000	100.000	56.760	0.330	450	Adoptable		1	1.002	56.430	100
2	105.000	100.000	56.900	1.700	1200	Adoptable		1 2 0	2.000 1.001 1.002	55.200 55.200 55.200	150 150 100
3	107.000	84.000	57.200	1.000	450	Adoptable		1 0	1.000 1.001	56.200 56.200	150 150
4	129.000	84.000	57.200	0.800	450	Adoptable		0 0	 1.000	 56.400	 150
5	105.000	95.000	57.200	0.750	450	Adoptable		0 0	 2.000	 56.450	 150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
10	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Node 2 Online Depth/Flow Control

Flap Valve x | Replaces Downstream Link ✓ | Invert Level (m) 55.200

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.500	2.000	0.500

Node 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr) 0.00000 | Safety Factor 2.0 | Invert Level (m) 55.300
Side Inf Coefficient (m/hr) 0.00000 | Porosity 0.95 | Time to half empty (mins)

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	40.0	0.0	1.200	40.0	0.0	1.201	0.1	0.0

Node 5 Depth/Area Storage Structure

Base Inf Coefficient (m/hr) 0.00000 | Safety Factor 2.0 | Invert Level (m) 56.500
Side Inf Coefficient (m/hr) 0.00000 | Porosity 0.10 | Time to half empty (mins) 48

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	70.0	0.0	0.400	70.0	0.0	0.401	0.1	0.0

Approval Settings

Node Size	✓	Minimum Full Bore Velocity (m/s)	
Node Losses	✓	Maximum Full Bore Velocity (m/s)	3.000
Link Size	✓	Proportional Velocity	✓
Minimum Diameter (mm)	150	Return Period (years)	
Link Length	✓	Minimum Proportional Velocity (m/s)	0.750
Maximum Length (m)	100.000	Maximum Proportional Velocity (m/s)	3.000
Coordinates	✓	Surcharged Depth	✓
Accuracy (m)	1.000	Return Period (years)	
Crossings	✓	Maximum Surcharged Depth (m)	0.100
Cover Depth	✓	Flooding	✓
Minimum Cover Depth (m)		Return Period (years)	30
Maximum Cover Depth (m)	3.000	Time to Half Empty	x
Backdrops	✓	Discharge Rates	✓
Minimum Backdrop Height (m)		Discharge Volume	✓
Maximum Backdrop Height (m)	1.500	100 year 360 minute (m ³)	
Full Bore Velocity	✓		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	79.762	22.570
1 year 15 minute winter	55.973	22.570
1 year 30 minute summer	50.483	14.285
1 year 30 minute winter	35.427	14.285
1 year 60 minute summer	33.021	8.727
1 year 60 minute winter	21.939	8.727
1 year 120 minute summer	23.540	6.221
1 year 120 minute winter	15.640	6.221
1 year 180 minute summer	19.074	4.908
1 year 180 minute winter	12.399	4.908
1 year 240 minute summer	15.445	4.082
1 year 240 minute winter	10.261	4.082
1 year 360 minute summer	11.948	3.075
1 year 360 minute winter	7.766	3.075
1 year 480 minute summer	9.415	2.488
1 year 480 minute winter	6.255	2.488
1 year 600 minute summer	7.697	2.105
1 year 600 minute winter	5.259	2.105
1 year 720 minute summer	6.844	1.834
1 year 720 minute winter	4.599	1.834
1 year 960 minute summer	5.606	1.476
1 year 960 minute winter	3.713	1.476
1 year 1440 minute summer	4.063	1.089
1 year 1440 minute winter	2.731	1.089
1 year 2160 minute summer	2.927	0.809
1 year 2160 minute winter	2.017	0.809
1 year 2880 minute summer	2.462	0.660
1 year 2880 minute winter	1.655	0.660
1 year 4320 minute summer	1.926	0.504
1 year 4320 minute winter	1.268	0.504
1 year 5760 minute summer	1.647	0.422
1 year 5760 minute winter	1.066	0.422
1 year 7200 minute summer	1.459	0.372
1 year 7200 minute winter	0.942	0.372
1 year 8640 minute summer	1.327	0.339
1 year 8640 minute winter	0.857	0.339
1 year 10080 minute summer	1.232	0.314
1 year 10080 minute winter	0.795	0.314
10 year 15 minute summer	246.485	69.747
10 year 15 minute winter	172.972	69.747
10 year 30 minute summer	156.910	44.400
10 year 30 minute winter	110.112	44.400
10 year 60 minute summer	102.685	27.137
10 year 60 minute winter	68.222	27.137
10 year 120 minute summer	62.424	16.497
10 year 120 minute winter	41.473	16.497
10 year 180 minute summer	47.163	12.137
10 year 180 minute winter	30.657	12.137
10 year 240 minute summer	36.693	9.697
10 year 240 minute winter	24.378	9.697
10 year 360 minute summer	27.208	7.001
10 year 360 minute winter	17.686	7.001

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
10 year 480 minute summer	20.879	5.518
10 year 480 minute winter	13.872	5.518
10 year 600 minute summer	16.738	4.578
10 year 600 minute winter	11.437	4.578
10 year 720 minute summer	14.656	3.928
10 year 720 minute winter	9.850	3.928
10 year 960 minute summer	11.717	3.085
10 year 960 minute winter	7.762	3.085
10 year 1440 minute summer	8.230	2.206
10 year 1440 minute winter	5.531	2.206
10 year 2160 minute summer	5.740	1.586
10 year 2160 minute winter	3.955	1.586
10 year 2880 minute summer	4.711	1.262
10 year 2880 minute winter	3.166	1.262
10 year 4320 minute summer	3.542	0.926
10 year 4320 minute winter	2.332	0.926
10 year 5760 minute summer	2.934	0.751
10 year 5760 minute winter	1.899	0.751
10 year 7200 minute summer	2.526	0.644
10 year 7200 minute winter	1.630	0.644
10 year 8640 minute summer	2.242	0.572
10 year 8640 minute winter	1.447	0.572
10 year 10080 minute summer	2.036	0.519
10 year 10080 minute winter	1.314	0.519
30 year 15 minute summer	331.574	93.824
30 year 15 minute winter	232.684	93.824
30 year 30 minute summer	212.425	60.109
30 year 30 minute winter	149.071	60.109
30 year 60 minute summer	138.857	36.696
30 year 60 minute winter	92.253	36.696
30 year 120 minute summer	82.237	21.733
30 year 120 minute winter	54.636	21.733
30 year 180 minute summer	61.546	15.838
30 year 180 minute winter	40.007	15.838
30 year 240 minute summer	47.587	12.576
30 year 240 minute winter	31.616	12.576
30 year 360 minute summer	34.934	8.990
30 year 360 minute winter	22.708	8.990
30 year 480 minute summer	26.682	7.051
30 year 480 minute winter	17.727	7.051
30 year 600 minute summer	21.331	5.835
30 year 600 minute winter	14.575	5.835
30 year 720 minute summer	18.644	4.997
30 year 720 minute winter	12.530	4.997
30 year 960 minute summer	14.881	3.918
30 year 960 minute winter	9.857	3.918
30 year 1440 minute summer	10.388	2.784
30 year 1440 minute winter	6.981	2.784
30 year 2160 minute summer	7.177	1.983
30 year 2160 minute winter	4.945	1.983
30 year 2880 minute summer	5.842	1.566
30 year 2880 minute winter	3.926	1.566

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year 4320 minute summer	4.329	1.132
30 year 4320 minute winter	2.851	1.132
30 year 5760 minute summer	3.545	0.907
30 year 5760 minute winter	2.294	0.907
30 year 7200 minute summer	3.025	0.772
30 year 7200 minute winter	1.952	0.772
30 year 8640 minute summer	2.665	0.680
30 year 8640 minute winter	1.720	0.680
30 year 10080 minute summer	2.405	0.614
30 year 10080 minute winter	1.552	0.614
100 year 15 minute summer	430.183	121.727
100 year 15 minute winter	301.883	121.727
100 year 30 minute summer	278.294	78.748
100 year 30 minute winter	195.294	78.748
100 year 60 minute summer	182.728	48.290
100 year 60 minute winter	121.400	48.290
100 year 120 minute summer	106.459	28.134
100 year 120 minute winter	70.729	28.134
100 year 180 minute summer	79.131	20.363
100 year 180 minute winter	51.437	20.363
100 year 240 minute summer	61.001	16.121
100 year 240 minute winter	40.528	16.121
100 year 360 minute summer	44.736	11.512
100 year 360 minute winter	29.080	11.512
100 year 480 minute summer	34.207	9.040
100 year 480 minute winter	22.726	9.040
100 year 600 minute summer	27.356	7.483
100 year 600 minute winter	18.692	7.483
100 year 720 minute summer	23.901	6.406
100 year 720 minute winter	16.063	6.406
100 year 960 minute summer	19.003	5.004
100 year 960 minute winter	12.588	5.004
100 year 1440 minute summer	13.162	3.528
100 year 1440 minute winter	8.846	3.528
100 year 2160 minute summer	8.999	2.487
100 year 2160 minute winter	6.200	2.487
100 year 2880 minute summer	7.258	1.945
100 year 2880 minute winter	4.878	1.945
100 year 4320 minute summer	5.297	1.385
100 year 4320 minute winter	3.488	1.385
100 year 5760 minute summer	4.283	1.096
100 year 5760 minute winter	2.772	1.096
100 year 7200 minute summer	3.619	0.923
100 year 7200 minute winter	2.336	0.923
100 year 8640 minute summer	3.162	0.807
100 year 8640 minute winter	2.041	0.807
100 year 10080 minute summer	2.833	0.723
100 year 10080 minute winter	1.828	0.723
100 year +40% CC 15 minute summer	602.257	170.418
100 year +40% CC 15 minute winter	422.636	170.418
100 year +40% CC 30 minute summer	389.612	110.247
100 year +40% CC 30 minute winter	273.412	110.247

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 60 minute summer	255.819	67.606
100 year +40% CC 60 minute winter	169.960	67.606
100 year +40% CC 120 minute summer	149.043	39.388
100 year +40% CC 120 minute winter	99.021	39.388
100 year +40% CC 180 minute summer	110.784	28.508
100 year +40% CC 180 minute winter	72.012	28.508
100 year +40% CC 240 minute summer	85.402	22.569
100 year +40% CC 240 minute winter	56.739	22.569
100 year +40% CC 360 minute summer	62.631	16.117
100 year +40% CC 360 minute winter	40.712	16.117
100 year +40% CC 480 minute summer	47.889	12.656
100 year +40% CC 480 minute winter	31.817	12.656
100 year +40% CC 600 minute summer	38.299	10.476
100 year +40% CC 600 minute winter	26.168	10.476
100 year +40% CC 720 minute summer	33.461	8.968
100 year +40% CC 720 minute winter	22.488	8.968
100 year +40% CC 960 minute summer	26.604	7.006
100 year +40% CC 960 minute winter	17.623	7.006
100 year +40% CC 1440 minute summer	18.427	4.939
100 year +40% CC 1440 minute winter	12.384	4.939
100 year +40% CC 2160 minute summer	12.598	3.482
100 year +40% CC 2160 minute winter	8.680	3.482
100 year +40% CC 2880 minute summer	10.162	2.723
100 year +40% CC 2880 minute winter	6.829	2.723
100 year +40% CC 4320 minute summer	7.415	1.939
100 year +40% CC 4320 minute winter	4.883	1.939
100 year +40% CC 5760 minute summer	5.996	1.535
100 year +40% CC 5760 minute winter	3.881	1.535
100 year +40% CC 7200 minute summer	5.066	1.292
100 year +40% CC 7200 minute winter	3.270	1.292
100 year +40% CC 8640 minute summer	4.427	1.129
100 year +40% CC 8640 minute winter	2.857	1.129
100 year +40% CC 10080 minute summer	3.966	1.012
100 year +40% CC 10080 minute winter	2.560	1.012

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	56.430	0.000	0.5	0.0000	0.0000	OK
180 minute winter	2	140	55.422	0.222	2.2	4.9057	0.0000	SURCHARGED
15 minute summer	3	9	56.238	0.038	6.1	0.0060	0.0000	OK
15 minute summer	4	9	56.435	0.035	2.0	0.0055	0.0000	OK
15 minute summer	5	9	56.465	0.015	2.0	0.0025	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	2	Depth/Flow	1	0.5				9.8
15 minute summer	3	1.001	2	6.1	0.652	0.137	0.1619	
15 minute summer	4	1.000	3	2.0	0.612	0.118	0.0720	
15 minute summer	5	2.000	2	2.0	0.400	0.022	0.0453	

Results for 10 year Critical Storm Duration. Lowest mass balance: 99.28%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	56.430	0.000	0.5	0.0000	0.0000	OK
240 minute winter	2	232	55.761	0.561	4.5	18.1900	0.0000	SURCHARGED
15 minute summer	3	9	56.268	0.068	19.0	0.0109	0.0000	OK
15 minute summer	4	9	56.465	0.065	6.3	0.0103	0.0000	OK
15 minute summer	5	9	56.477	0.027	6.3	0.0043	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	2	Depth/Flow	1	0.5				14.0
15 minute summer	3	1.001	2	19.0	1.292	0.427	0.2050	
15 minute summer	4	1.000	3	6.3	0.836	0.372	0.1659	
15 minute summer	5	2.000	2	6.3	0.530	0.070	0.0493	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	56.430	0.000	0.5	0.0000	0.0000	OK
240 minute winter	2	236	55.938	0.738	5.7	25.0896	0.0000	SURCHARGED
15 minute summer	3	9	56.281	0.081	25.5	0.0129	0.0000	OK
15 minute summer	4	9	56.477	0.077	8.5	0.0123	0.0000	OK
15 minute summer	5	9	56.481	0.031	8.5	0.0049	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	2	Depth/Flow	1	0.5				14.1
15 minute summer	3	1.001	2	25.5	1.647	0.572	0.2206	
15 minute summer	4	1.000	3	8.5	0.899	0.502	0.2079	
15 minute summer	5	2.000	2	8.5	0.697	0.095	0.0506	

Results for 100 year Critical Storm Duration. Lowest mass balance: 98.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	56.430	0.000	0.5	0.0000	0.0000	OK
240 minute winter	2	236	56.169	0.969	7.2	34.1512	0.0000	SURCHARGED
15 minute summer	3	9	56.304	0.104	33.2	0.0165	0.0000	OK
15 minute summer	4	9	56.492	0.092	11.1	0.0146	0.0000	OK
15 minute summer	5	9	56.485	0.035	11.1	0.0056	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	2	Depth/Flow	1	0.5				14.1
15 minute summer	3	1.001	2	32.9	1.979	0.740	0.2470	
15 minute summer	4	1.000	3	11.1	0.912	0.656	0.2675	
15 minute summer	5	2.000	2	11.1	0.888	0.124	0.0520	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	56.430	0.000	0.5	0.0000	0.0000	OK
360 minute winter	2	360	56.817	1.617	7.2	47.4972	0.0000	FLOOD RISK
360 minute winter	3	360	56.817	0.617	4.2	0.0981	0.0000	SURCHARGED
360 minute winter	4	360	56.817	0.417	1.4	0.0664	0.0000	SURCHARGED
360 minute winter	5	360	56.817	0.367	1.4	2.2830	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	2	Depth/Flow	1	0.5				17.6
360 minute winter	3	1.001	2	4.2	0.344	0.094	0.2839	
360 minute winter	4	1.000	3	1.4	0.555	0.083	0.3873	
360 minute winter	5	2.000	2	1.4	0.129	0.016	0.0880	

APPENDIX B: DRAINAGE DRAWINGS AND CALCULATIONS

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DRAINAGE MAINTENANCE PLAN

**The Bulmershe School, Woodlands Avenue, Woodley,
Reading RG5 3EU**

Report Title: Drainage Maintenance Report for The Bulmershe School Woodlands Avenue,
Woodley, Reading RG5 3EU

Report Status: Final

Job No: P6976J3323

Date: January 2026

Control: Previous Release

Version	Date	Issued By
V1.0	30/01/2026	A Wallace

Prepared by: **JOMAS ASSOCIATES LTD** For: **Rivington Street Studio**

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1.1 General

1.1.1 Sustainable Drainage Systems (SuDS) are an environmentally friendly approach to managing rainfall. SuDS techniques use landscape features to deal with surface water with the aim to:

- Control the flow, volume and frequency of water leaving a development.
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces.
- Provide attractive surroundings for the community.

1.1.2 The surface water drainage strategy for this development utilises an attenuation tank and bioretention area as the main SUDS features. The following sections provides a brief description of these features and outlines the maintenance programme that should be adopted.

1.2 Cleaning of the Drainage System

1.2.1 Drainage systems should be inspected at regular intervals and where necessary, thoroughly cleaned out at the same time. Any defects discovered should be made good.

1.2.2 The following operations should be carried out during the periodic cleaning of a drainage system.

Table 1: Drainage Maintenance

Product Type	Period	Responsibility	Maintenance Methods
Silt Trap	As necessary and before wet season	Site Owner	• Sediment and debris that accumulated during summer needs to be removed before the wet season. • Inspect and clean out routinely prior to inlet pipework to minimise debris reaching the tank. • Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed.
Standard Manholes/ Inspection Chambers	As necessary	Site Owner	• Remove and clean any soil and vegetation that covers the manhole cover to prevent blockage of the drainage system at the manhole. • Renew/replace any damaged/missing bolts and damaged/missing manhole covers.
Drainage Pipes	Six monthly interval	Site Owner	• Inspect underground drainage pipes to ensure that the distribution pipework arrangement is operational and free from blockages. If required, take remedial action.

Product Type	Period	Responsibility	Maintenance Methods
Pumps	As required	Site Owner	• Inspection/check of all inlets to ensure that they are in good condition and operating as designed. • Debris removal from catchment surface (where may cause risks to performance). • Renew/replace any damaged/missing bolts and damaged/missing manhole covers. • Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed. • Regular pump maintenance as recommended by pump manufacturer
Bio retention Garden	As required	Site Owner	• Inspect the garden after any precipitation to ensure no displacement of any debris onto the surface. • Inspection/check of all inlets to ensure that they are in good condition and operating as designed • Regular plant maintenance as required
Attenuation tank	Six monthly (Ideally, this activity to be carried out in spring and autumn seasons)	Site Owner	• Debris removal from catchment surface (where may cause risks to performance).
	Annually and after large storms	Site Owner	• Inspection/check of all inlets to ensure that they are in good condition and operating as designed
	As required (minimum annually)	Site Owner	• CCTV survey of tank and cleaning as required

1.3 Sketches and Plans

- 1.3.1 The locations of the above features can be found by examining Drawing P6976J3323-C01

1.4 Maintenance Checklist

- 1.4.1 As well as the above checklist, the below Inspection Regime should be completed on a 6 monthly basis and the above inspection checklist table updated as required.

Inspection date								
	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date Completed
General inspection items								
Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?								
Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?								
Have any health and safety risks been identified to either the public or maintenance operatives?								
Is there any deterioration in the surface of permeable or porous surfaces (eg rutting, spreading of blocks or signs of ponding water)?								

Silt/sediment accumulation								
Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and within proprietary devices)? If yes, state depth (mm) and extent.								

Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (eg underdrained swale or infiltration basin)?								
Does permeable or porous surfacing require sweeping to remove silt?								
System blockages and litter build-up								
Is there evidence of litter accumulation in the								
Is there any evidence of any other clogging or								
Vegetation								
Is the vegetation condition satisfactory								
Does any part of the system require weeding, pruning or mowing? (Check against maintenance frequency stated in approved design.)								
Is there any evidence of invasive species								
Infrastructure								
Are any check dams or weirs in good condition?								
Is there evidence of any accidental damage to the system (eg wheel ruts?)								
Is there any evidence of cross connections or other unauthorised inflows?								
Is there any evidence of tampering with the flow controls?								

Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects? (Specify.)								
Other observations								
Information appended (eg photos)								
Suitability of current maintenance regime								
Continue as current								
Increase maintenance								
Next inspection								
Proposed date for next inspection								

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