



ONN POINT
CIVIL ENGINEERING

DRAINAGE **STRATEGY**

Sustainable Urban Drainage Systems

Prepared by

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Civil Engineer

September 2025

Finchampstead Sports Club, RG40 4JU

Project ref: 25-OP-1507

Prepared by: RJS

Client: Q-Help International Ltd

Note ref: 100

Date: 22.09.2025

1. Introduction

- 1.1. Onn Point was commissioned by the client to develop a proposed drainage strategy for the site known as Finchampstead Sports Club located in Wokingham.
- 1.2. This technical note should be read in conjunction with:
 - a) Proposed Drainage Strategy Layout – 25-OP-1507-100-P01
 - b) Construction Details – 25-OP-1507-101-P01
 - c) Simulation Calculations
 - d) Percolation testing BRE365
 - e) Maintenance Strategy

2. Development Proposal

- 2.1. The development proposal includes constructing a single-storey extension to the clubhouse for officials' changing rooms, replacing the demolished detached changing and storage buildings. Additionally, development of a new single-storey workshop and equipment store and the existing clubhouse will be refurbished with a single-storey infill extension and updated fenestration.

3. Surface Water Discharge point

- 3.1. Generally, the aim should be to discharge surface water runoff as high up the following hierarchy of drainage options as reasonably practicable.
 - a) Into the ground via infiltration techniques
 - b) To a surface watercourse
 - c) To a surface water sewer, highway drain, or other drainage systems
 - d) To a combined sewer

3.2. Infiltration

Infiltration testing has been conducted inline with BRE365 confirming ground conditions are not suitable for the use of infiltration techniques.

3.3. Watercourse

The existing watercourse along the western boundary extends from north to south. It is proposed that the surface water runoff generated by the development will be directed into this watercourse. To prevent potential flooding or erosion, the discharge will be managed at a

controlled, restricted rate, ensuring environmental protection and compliance with relevant regulations.

4. SuDS Assessment

- 4.1. As part of the surface water drainage strategy for the site a number of Sustainable Drainage Systems (SuDS) have been considered. Below provides a list of the options considered and a justification for the inclusion or omission.

Table 1. SuDS Assessment

SuDS System	Used	Justification
Rainwater Harvesting	Yes	The use of rainwater butts has been proposed
Green Roofs	No	Green roofs have not been proposed for this site as there is insufficient access to roof areas for maintenance and as such the system could not be effectively maintained to ensure long term performance.
Infiltration Systems	No	Infiltration systems have been discounted from the design due to poor infiltration
Proprietary Treatment Systems	No	The use of proprietary treatment systems is not considered economically viable or required on this site considering installation and operational costs.
Filter Strips	No	Filter strips have not been considered the most effective proposal for this site due to the proposed site layout.
Filter Drains	No	Filter Drains have not been considered the most effective proposal for this site due to the proposed site layout.
Swales	No	Swales are not suitable for this scheme due to available space and proposed land use.
Bioretention Systems	Yes	Bioretention Systems in the form of a rain garden have been incorporated into the proposed drainage strategy.
Porous Pavements	No	The use of porous paving is not considered economically viable on this site considering installation and operational costs.
Attenuation Storage	Yes	Due to reduced falls between the proposed development and the outfall, crate systems have been, discounted and flows will be attenuated within oversized pipework.
Detention Basin	No	There is sufficient space for a detention basin on this site
Ponds & Wetlands	No	There is insufficient space for ponds and wetlands on this site.

5. Runoff Rate

- 5.1. Brownfield sites should seek to discharge surface water from the redeveloped site at Greenfield rates wherever possible. As a minimum, betterment should be offered (in terms of reduced runoff) for all redeveloped sites.
- 5.2. The site is classed as Brownfield the calculated runoff rates can be found below in Table 3.

Table 2. Runoff rates

Return Period	Qbar	1-Year	30-Year	100-Year
Existing Brownfield runoff rate	N.A	0.47l/s	1.14l/s	1.5l/s
Proposed runoff rate		0.49l/s	0.719l/s	0.75l/s

6. Climate Change

- 6.1. The Flood Risk Assessments: Climate Change Allowances guidance (Published Feb 2016 and last updated May 2022) says that climate change allowances should be used to help minimise vulnerability and provide resilience to flooding.

The proposed development is located within the Loddon and Tributaries management catchment area and the peak rainfall allowances are outlined in the below table.

Table 3. Climate Change Allowances

Return Period	Climate Change Allowance
30 Year	35%
100 Year	40%

7. Attenuation Storage

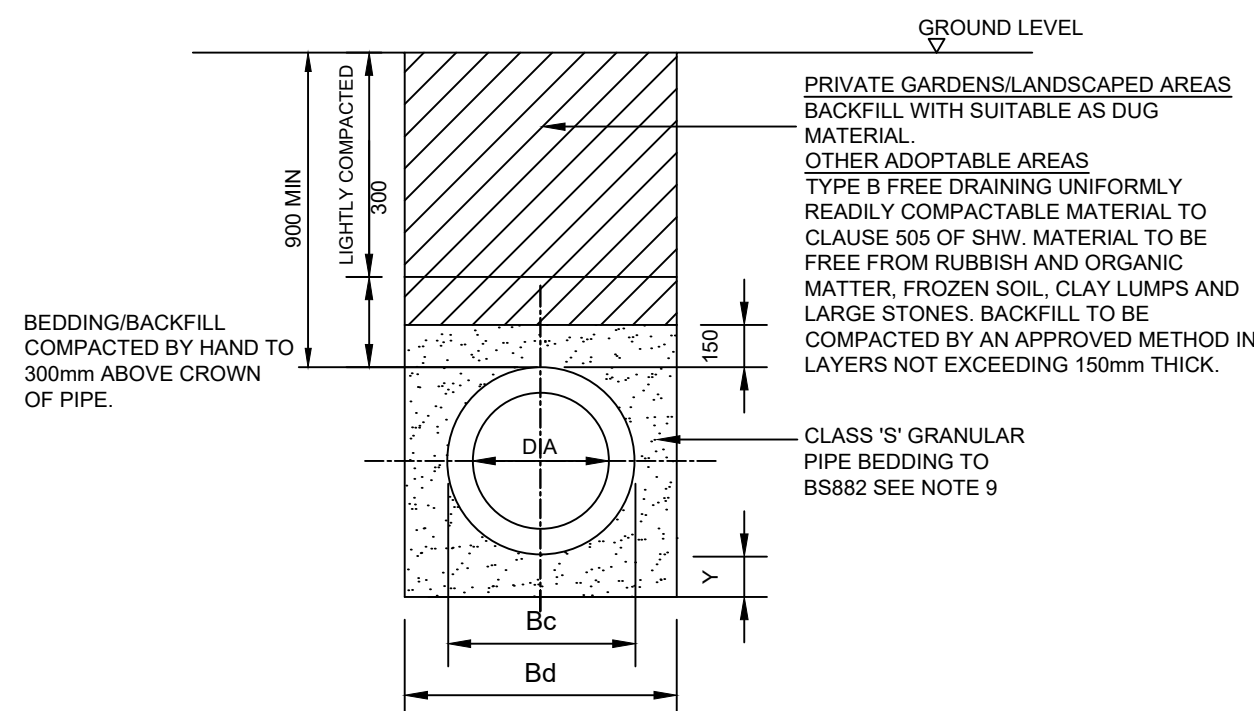
- 7.1. Attenuation storage is provided to enable the runoff rate from the site into the receiving sewer to be limited to an acceptable rate to protect against flooding downstream.
- a) The estimate storage volume has been calculated using FSR hydrological zones and factor for FEH, climate change and hydrological region.
- b) The attenuation storage is provided using oversized pipework, with the proposed rain garden providing 0.74m³ storage.

8. Drainage Strategy

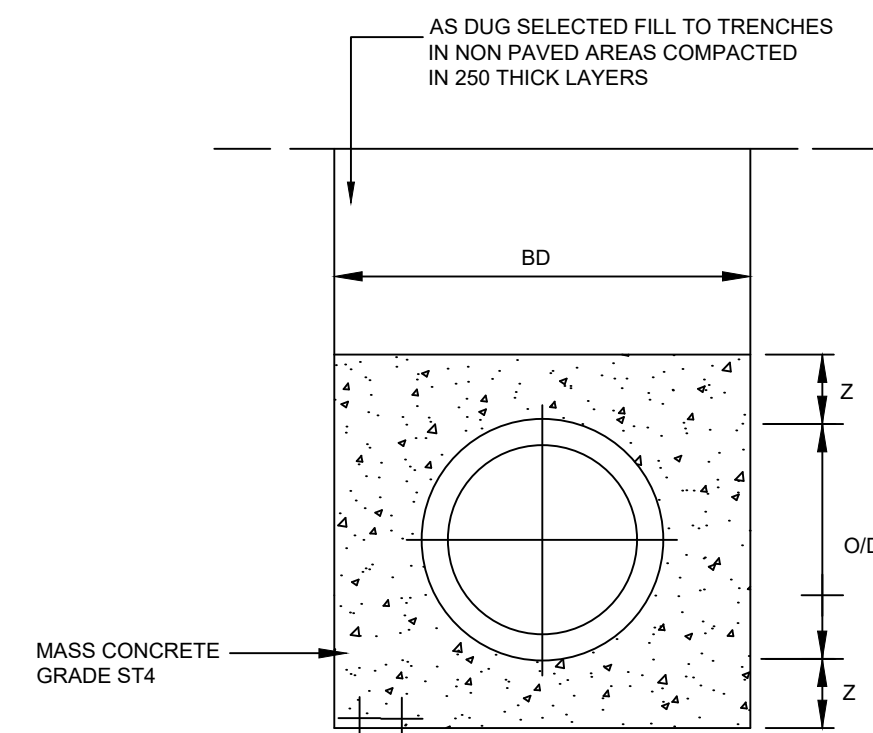
- 8.1. The proposed drainage system will comprise of a traditional drainage network consisting of pipes, manholes but also modern rainwater garden and rainwater butt.
- 8.2. In accordance with the CIRIA SuDS Manual and the LLFA guidance the proposed drainage system has been proposed to discharge to the existing watercourse that runs the western boundary of the site as 0.75 l/s providing a 50% betterment on existing brownfield rates.
- 8.3. To demonstrate the compliance of the proposed drainage strategy a Hydraulic simulation analysis for the drainage system has been carried out using Site3D.
- 8.4. The results of the hydraulic simulation analysis show no flooding during the 1 & 30 and the 100 year storm event including climate change.
- 8.5. The proposed drainage strategy layout has been appended within this technical note.
- 8.6. The hydraulic simulation analysis results have been appended within this technical note.

Appendix A - Proposed Drainage Strategy Layout

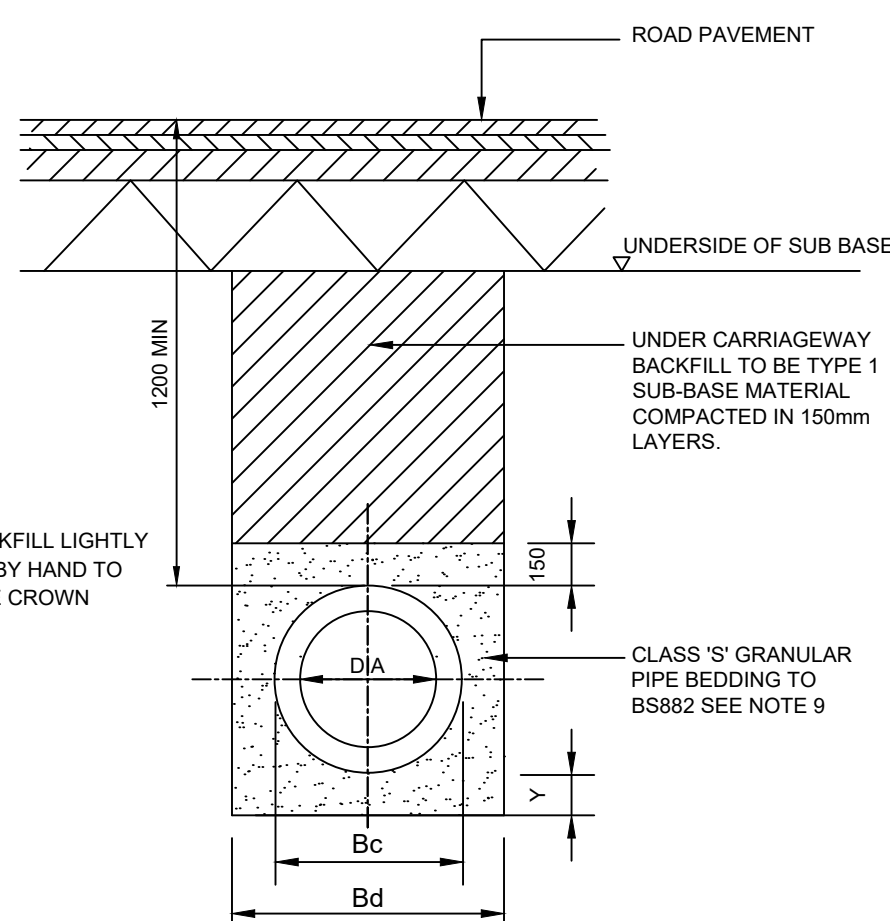
Appendix B - Construction Details



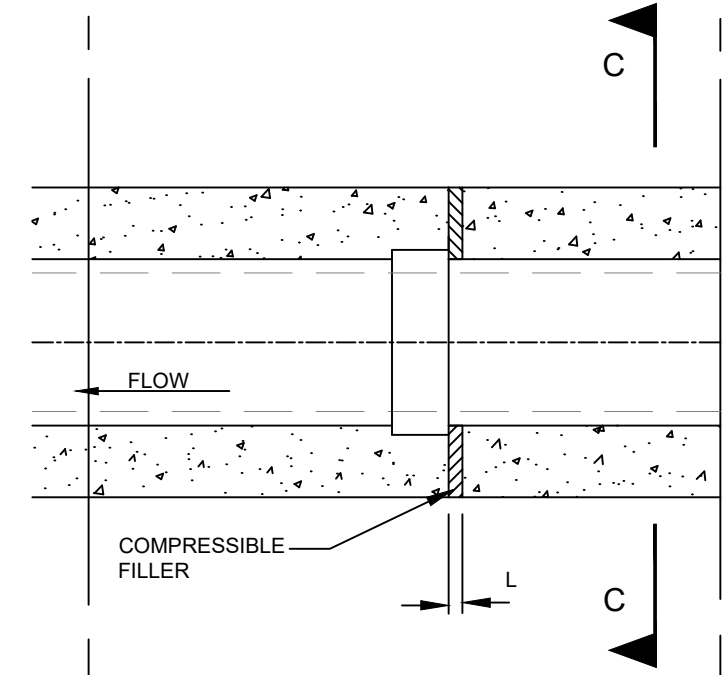
TYPICAL CROSS SECTION THROUGH DRAINAGE TRENCH IN OTHER AREAS
SCALE 1:20



TYPE Z SECTION C-C
SCALE 1:25



TYPICAL CROSS SECTION THROUGH DRAINAGE TRENCH UNDER CARRIAGEWAY/ADOPTABLE AREAS
SCALE 1:20



TYPE Z - FLEXIBLE JOINT DETAIL
CONCRETE BED AND SURROUND
N.T.S

CLASS D400 DUCTILE IRON MANHOLE COVER AND FRAME TO BS EN124 : 1994 WITH CLEAR OPENING COVER AND FRAME TO BE BEDDED ON MORTAR, SUITABLY SIZED TO REMOVE HYDRO-BRAKE

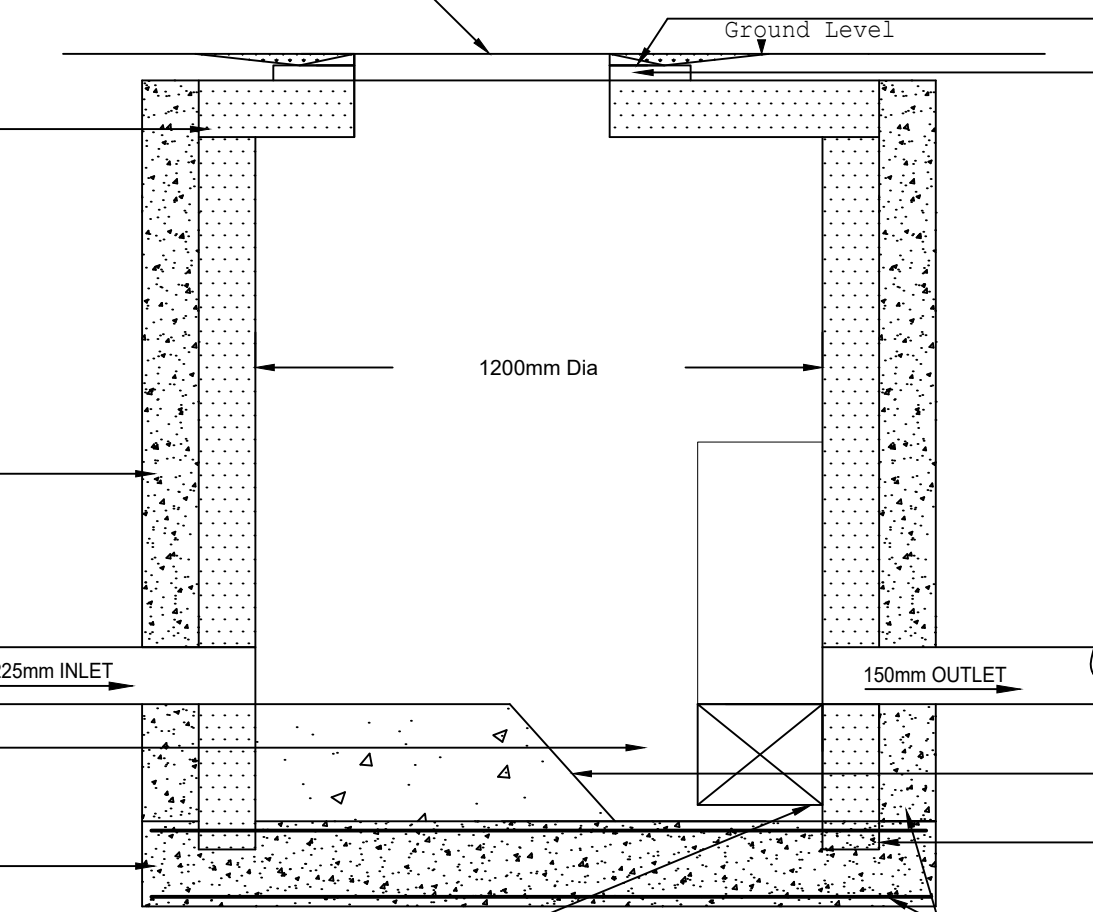
OPENING COVER SLAB BEDDED ON PC CHAMBER SECTION WITH MORTAR, PROPRIETARY BITUMEN OR RESIN MASTIC SEALANT

150 IN SITU CONCRETE SURROUND MIX GEN 3 WITH SULPHATE RESISTANT CEMENT.

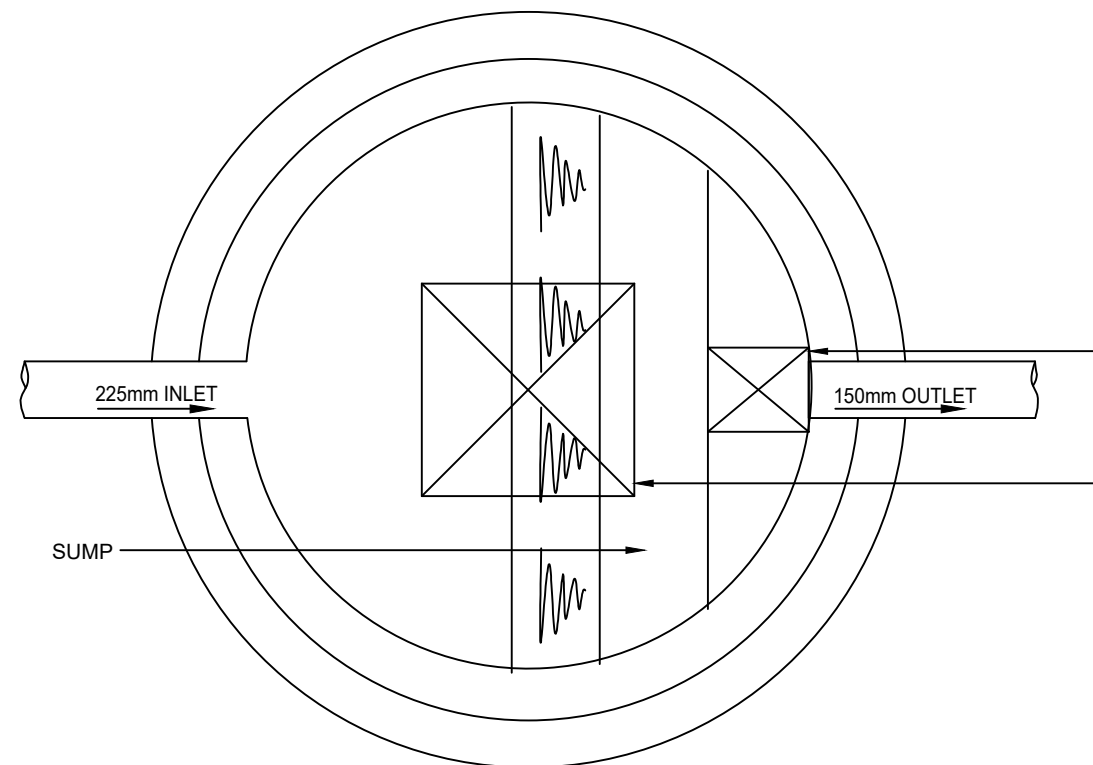
225 IN SITU CONCRETE SURROUND MIX GEN 3 WITH SULPHATE RESISTANT CEMENT.

HYDRO-BRAKE FLOW CONTROL UNIT. MAXIMUM PERMITTED DISCHARGE 0.75 L/S FROM 0.6m HEAD. FIXED TO MANHOLE WALL. SIZE TO BE CHECKED PRIOR TO ORDERING TO CONFIRM SPACE OF CHOSEN HYDRO-BRAKE FITS.

TABLE APPLIES FOR TRENCHES UNDER CARRIAGEWAY AND IN LANDSCAPED AREAS			
PIPE DIA/TYPE	TRENCH WIDTH Bd	APPROX. EXT PIPE DIA Bc	BEDDING THICKNESS Y
150	600	190	100
225	700	280	100
300	850	380	100
450	1150	575	100
525	1200	670	125
600	1350	770	130
900	1900	1100	185

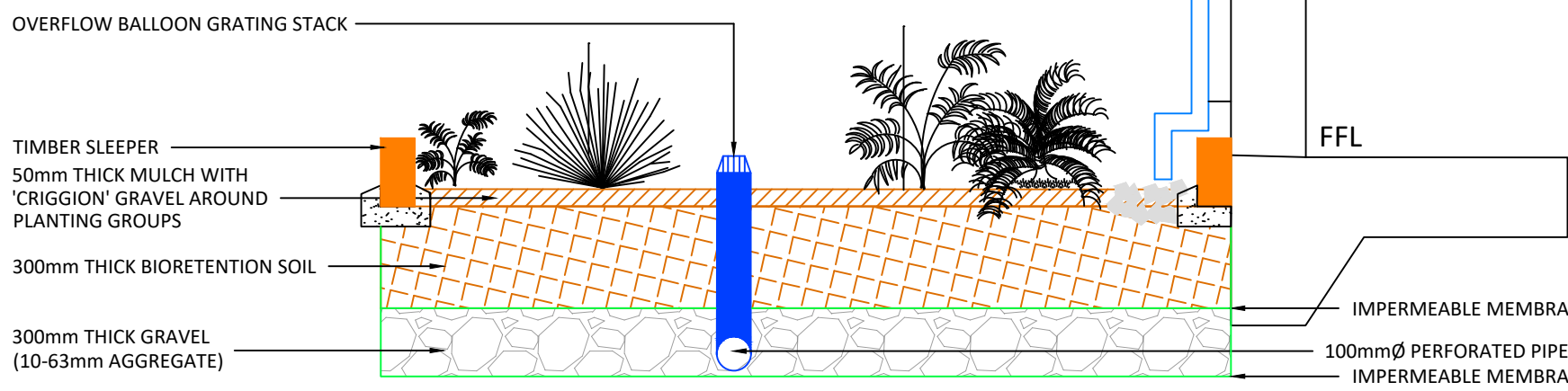


SECTION A-A
SCALE 1:20

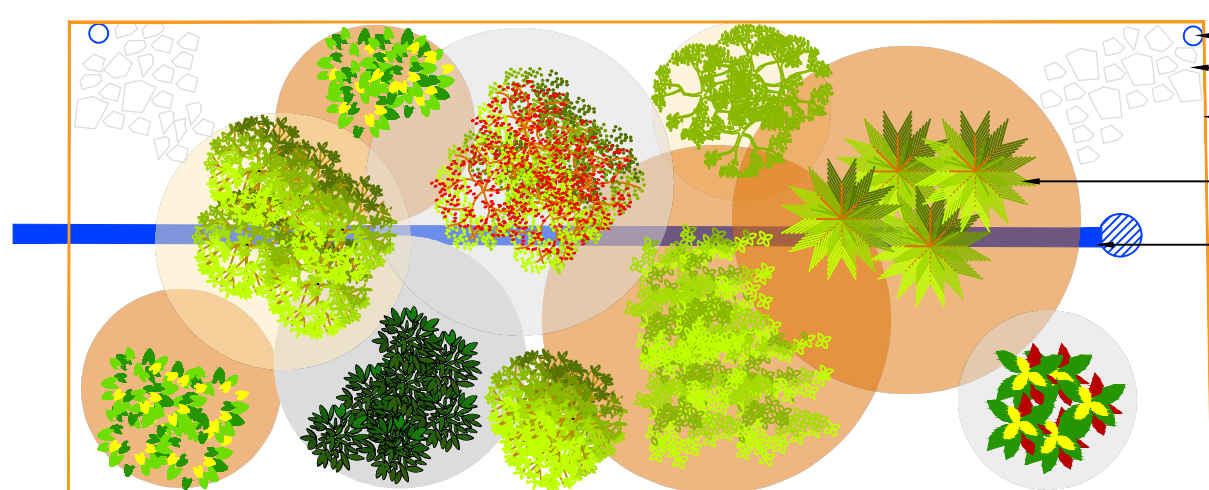


HYDRO-BRAKE FLOW CONTROL UNIT. MAXIMUM PERMITTED DISCHARGE 0.75L/S FROM 0.6m HEAD. FIXED TO THE MANHOLE WALL.

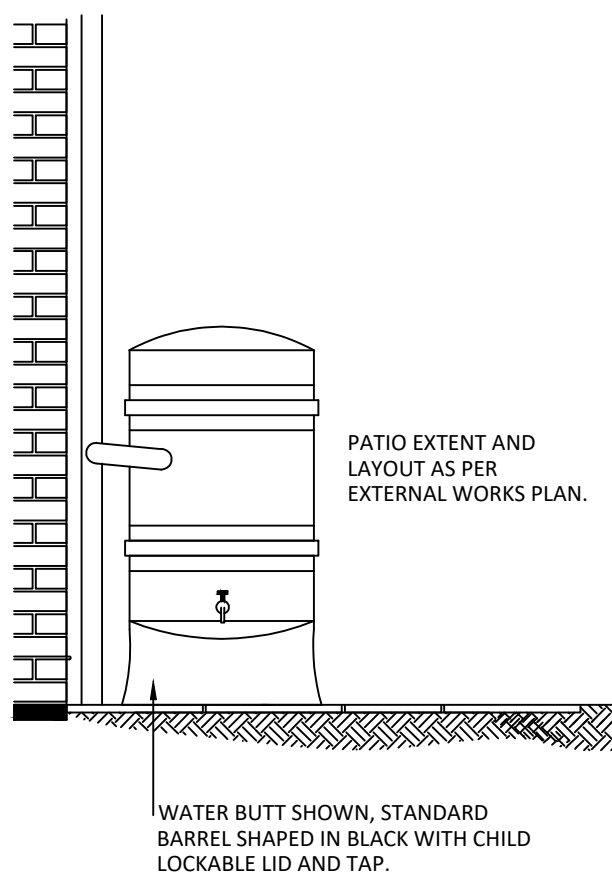
CLASS D400 DUCTILE IRON MANHOLE COVER AND FRAME TO BS EN124 : 1994 WITH 600x600 CLEAR OPENING COVER AND FRAME TO BE BEDDED ON MORTAR.



TYPICAL RAIN GARDEN DETAIL
SCALE 1:25

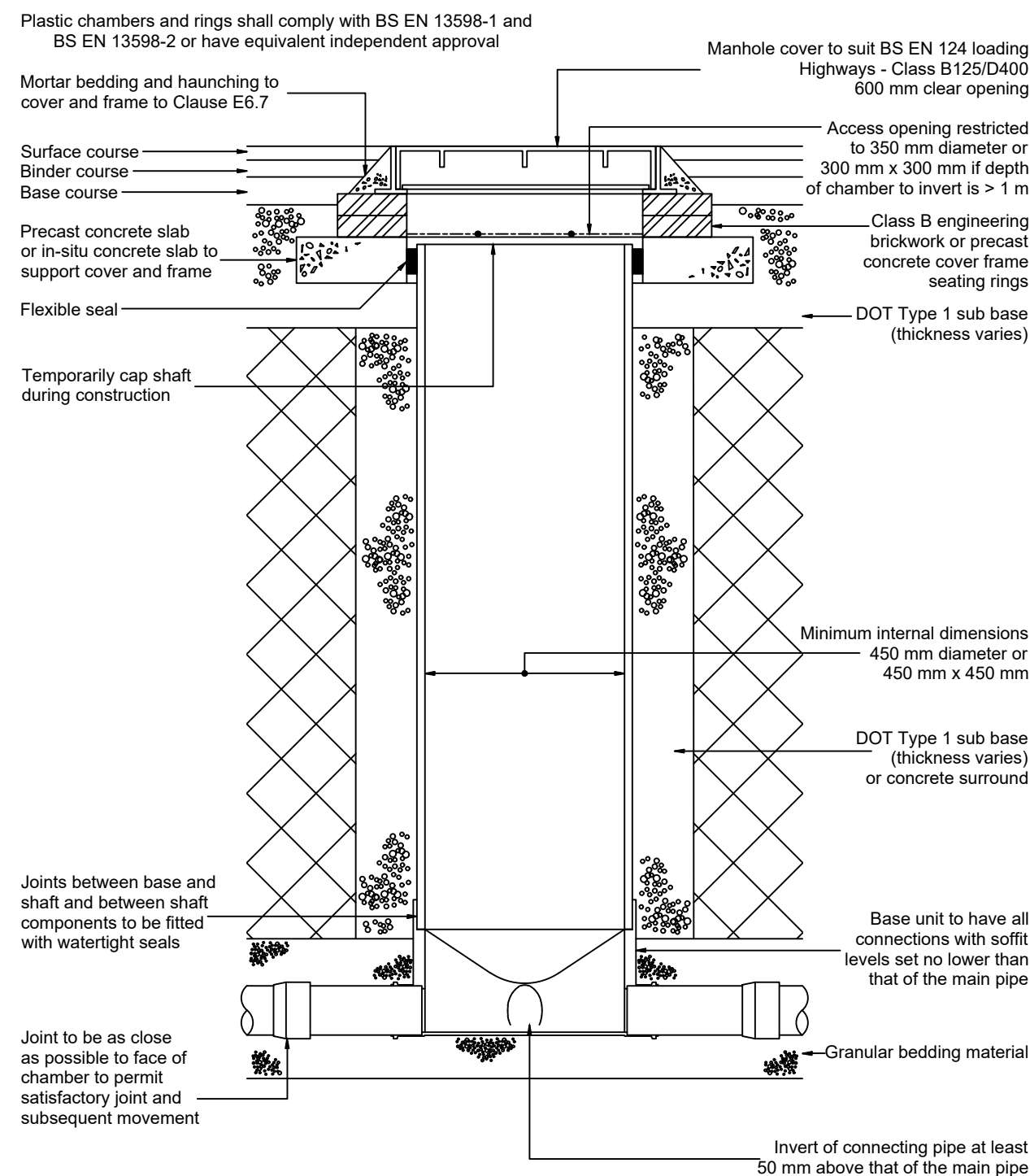


TYPICAL RAIN GARDEN DETAIL - PLAN VIEW
NOT TO SCALE



TYPICAL WATER BUTT DETAIL
NOT TO SCALE

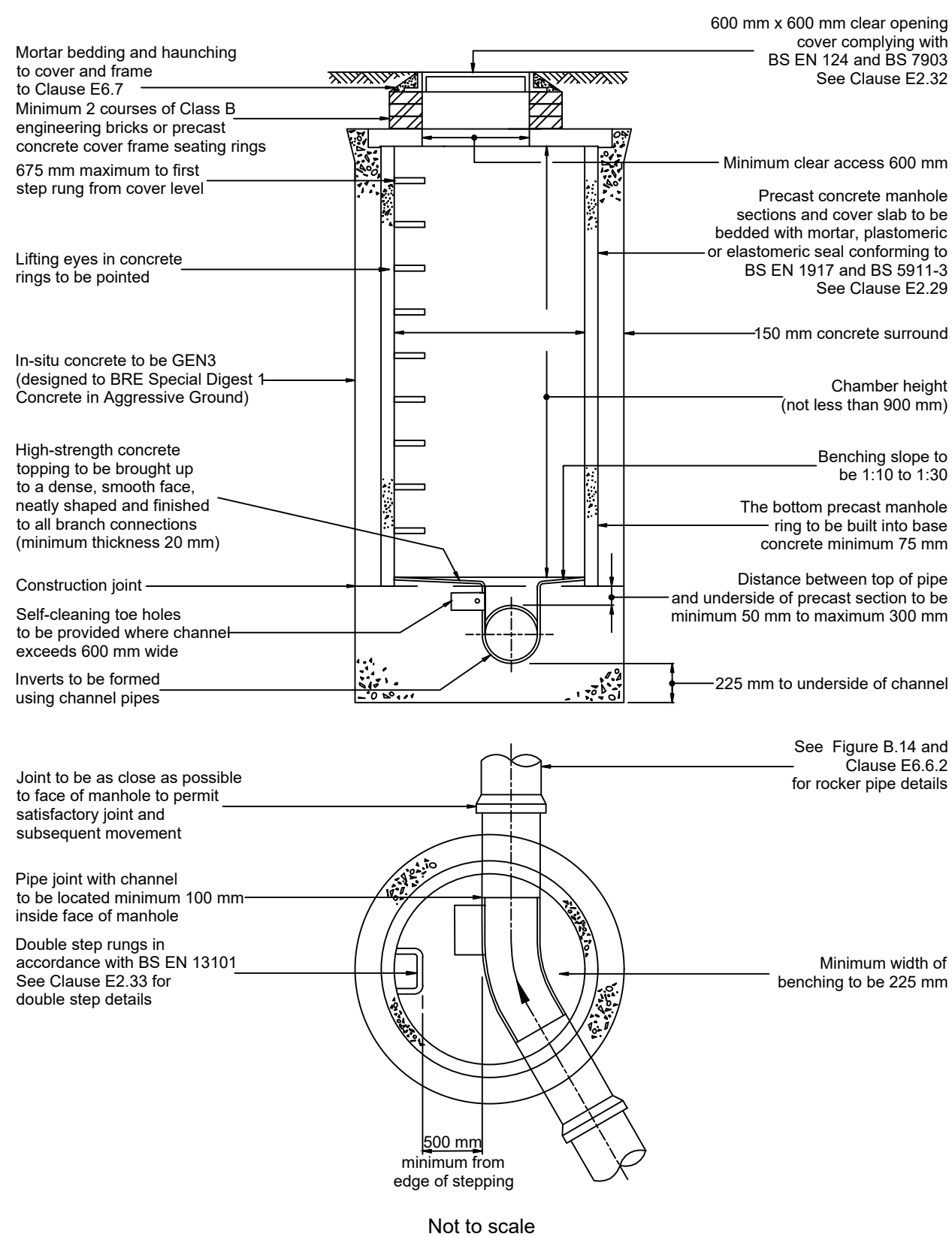
FIGURE B.16
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Flexible material detail)
Maximum depth from cover level to soffit of pipe in areas subject to vehicle loading 3 m, non-entry



Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.2.5
TYPICAL MANHOLE DETAIL - TYPE B
Maximum depth from cover level to soffit of pipe 3.0 m



Not to scale

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2. WORK TO FIGURED DIMENSIONS ONLY.

3. ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

4. ALL PRIVATE DRAINAGE WORKS ARE TO COMPLY WITH THE REQUIREMENTS OF BS 752 BUILDING DRAINAGE AND BUILDING REGULATIONS 2010 APPROVED DOCUMENT H 2002 EDITION. ALL ADAPTABLE DRAINAGE TO COMPLY WITH THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY AND SEWERS FOR ADOPTION (7th EDITION), INCLUDING THE RELEVANT PROVISIONS OF THE COMBINED ADDENDUM.

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

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

7. ALL EXISTING SERVICES TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY DRAINAGE WORKS WHERE NECESSARY PROTECTION OR DIVERSIONS TO BE UNDERTAKEN TO AVOID CONFLICT WITH THE PROPOSED WORKS.

8. TYPICAL PIPE BEDDING TO DRAINAGE WHERE DEPTH TO SOFFIT IS GREATER THAN 600mm IN LANDSCAPED AREAS AND GREATER THAN 1200mm IN ADOPTABLE HIGHWAYS AND 900mm IN OTHER TRAFFICKED AREAS IS TO BE CLASS S (I.E. 10-14mm GRADED IMPORTED GRANULAR BED AND SURROUND FOR PIPES UP TO 525 Dia AND 30 - 40mm GRADED IMPORTED GRANULAR BED AND SURROUND FOR PIPES GREATER THAN 525 Dia)

9. BACKFILL TO DRAINAGE TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL. ELSEWHERE BACKFILL TO BE FREE DRAINING READY 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, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENT OF THE JOINT. THE LENGTH OF THE NEXT PIPE (ROCKER PIPE) AWAY FROM THE STRUCTURE SHALL BE AS SHOWN IN THE TABLE BELOW.

NOMINAL DIAMETER (mm)	EFFECTIVE LENGTH (m)
150-600	0.8
675-750	1.0
825 AND OVER	1.25

11. WHERE COVER TO PIPE WORK IS LESS THAN 600mm IN PRIVATE AREAS CONCRETE BED AND SURROUND IS TO BE USED.

12. PRECAST CONCRETE MANHOLE RINGS MUST NOT BE CUT UNDER ANY CIRCUMSTANCES

13.13. IN AREAS OF LESS THAN 1.2m COVER, PIPEWORK IS TO HAVE CONCRETE BED AND SURROUND

P02	Initial Issue - Preliminary	RJS	31.10.25
P01	Initial Issue - Preliminary	RJS	22.09.25
Rev	Description	By	Date

Status **FOR PLANNING**

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CLIENT **Q-HELP INTERNATIONAL LTD**

PROJECT **FINCHAMPSTEAD SPORTS CLUB, WOKINGHAM, RG40 4JU**

DRAWING **PROPOSED SURFACE WATER DRAINAGE STRATEGY**

SCALE @ A1	DATE	DRAWN BY	CHECKED BY
NTS	SEPT 25	BS	RJS
PROJECT NO.	DWG NO.	REV.	
25-OP-1507	101		P02

Appendix C - Simulation Calculations

	Project:	25 - OP - 1507 - Finchampstead Sports Club		By:
	Calculation:	Rainfall and Runoff Calculator		BS
	Wallingford Procedure			Approved:
	Sheet Number:	1	Date:	22.09.25

Catchment Details

Catchment Area			157	m²
Location			England & Wales	
City/Town			Wokingham	
M5-60	18.57	Override-		
r Ratio	0.4	Override-		
SAAR	650	Override-		
WRAP SOIL Index	0.45	Override-		
Percentage Impermeable (PIMP)			100	%
Routing Coefficient			1.3	

Design Storm Details

Storm Duration	120	mins
Return Period	100	years
Climate Change Allowance	1.4	
Season	Winter	

Results

Design Rainfall Intensity:	0.0088 l/s/m²	31.83mm/hr
Percentage Runoff:	108.35 %	
Total Design Runoff:	1.50 l/s	

Design Runoff (l/s)

Return Period

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S1	0.005	1.200	Type E	61.841	61.024	0.592	479211.384	163237.169
S2	0.000	1.500	Type E	61.680	60.926	0.604	479217.460	163213.276
S3	0.000	0.000	Type E	61.282	60.800	0.332	479203.732	163200.366

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S1	61.024	S2	60.926	Circ	0.225mØ	24.654	250.0	0.600	0.592	0.529
1.001	S2	60.926	S3	60.800	Circ	0.15mØ	18.845	150.0	0.600	0.604	0.332

Outfall Details

Outfall Manhole S3 : Free Discharge

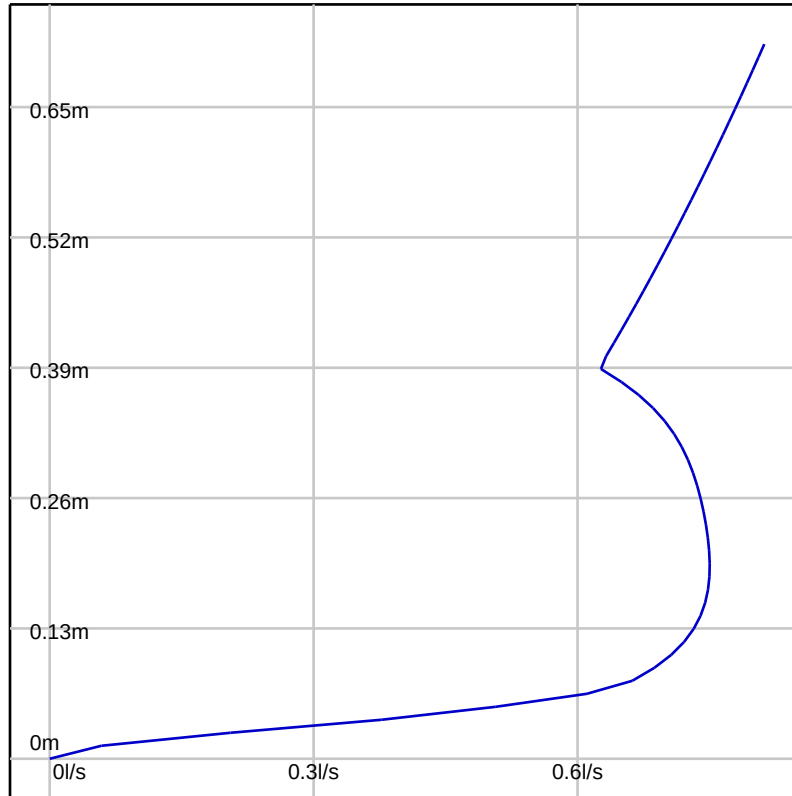
Flow Control Details

Controls within Manhole S2

Hydro-Brake® Optimum Control at Manhole S2

Model Ref	Design Depth (m)	Design Flow (l/s)	Depth Above Invert (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0045-7500-0600-7500	0.600	0.750	0.000	0.192	0.750	0.389	0.624

Hydro-Brake® Optimum Control at S2



Simulation Settings

FSR: M5-60=20.00, R=0.40, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160

Return Periods (yrs) + Climate Change: (1, +0%), (10, +0%), (30, +0%), (100, +40%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	36.405	0.00	0.00	30Yr 15Min Summer	76.035	0.00	0.00
1Yr 15Min Summer	36.405	0.00	0.00	30Yr 15Min Winter	76.035	0.00	0.00
1Yr 30Min Winter	23.138	0.00	0.00	30Yr 30Min Summer	49.499	0.00	0.00
1Yr 30Min Summer	23.138	0.00	0.00	30Yr 30Min Winter	49.499	0.00	0.00
1Yr 60Min Winter	14.222	0.00	0.00	30Yr 60Min Summer	30.811	0.00	0.00
1Yr 60Min Summer	14.222	0.00	0.00	30Yr 60Min Winter	30.811	0.00	0.00
1Yr 120Min Winter	8.605	0.00	0.00	30Yr 120Min Summer	18.615	0.00	0.00
1Yr 120Min Summer	8.605	0.00	0.00	30Yr 120Min Winter	18.615	0.00	0.00
1Yr 180Min Winter	6.400	0.00	0.00	30Yr 180Min Summer	13.715	0.00	0.00
1Yr 180Min Summer	6.400	0.00	0.00	30Yr 180Min Winter	13.715	0.00	0.00
1Yr 240Min Winter	5.190	0.00	0.00	30Yr 240Min Summer	10.995	0.00	0.00
1Yr 240Min Summer	5.190	0.00	0.00	30Yr 240Min Winter	10.995	0.00	0.00
1Yr 360Min Winter	3.857	0.00	0.00	30Yr 360Min Summer	8.034	0.00	0.00
1Yr 360Min Summer	3.857	0.00	0.00	30Yr 360Min Winter	8.034	0.00	0.00
1Yr 480Min Winter	3.121	0.00	0.00	30Yr 480Min Summer	6.428	0.00	0.00
1Yr 480Min Summer	3.121	0.00	0.00	30Yr 480Min Winter	6.428	0.00	0.00
1Yr 600Min Winter	2.648	0.00	0.00	30Yr 600Min Summer	5.404	0.00	0.00
1Yr 600Min Summer	2.648	0.00	0.00	30Yr 600Min Winter	5.404	0.00	0.00
1Yr 720Min Summer	2.315	0.00	0.00	30Yr 720Min Summer	4.687	0.00	0.00
1Yr 720Min Winter	2.315	0.00	0.00	30Yr 720Min Winter	4.687	0.00	0.00
1Yr 960Min Winter	1.872	0.00	0.00	30Yr 960Min Summer	3.743	0.00	0.00
1Yr 960Min Summer	1.872	0.00	0.00	30Yr 960Min Winter	3.743	0.00	0.00
1Yr 1440Min Summer	1.389	0.00	0.00	30Yr 1440Min Summer	2.723	0.00	0.00
1Yr 1440Min Winter	1.389	0.00	0.00	30Yr 1440Min Winter	2.723	0.00	0.00
1Yr 2160Min Winter	1.030	0.00	0.00	30Yr 2160Min Summer	1.979	0.00	0.00
1Yr 2160Min Summer	1.030	0.00	0.00	30Yr 2160Min Winter	1.979	0.00	0.00
10Yr 15Min Summer	59.937	0.00	0.00	100Yr+40% 15Min Summer	138.153	0.00	0.00
10Yr 15Min Winter	59.937	0.00	0.00	100Yr+40% 15Min Winter	138.153	0.00	0.00
10Yr 30Min Summer	38.718	0.00	0.00	100Yr+40% 30Min Summer	90.705	0.00	0.00
10Yr 30Min Winter	38.718	0.00	0.00	100Yr+40% 30Min Winter	90.705	0.00	0.00
10Yr 60Min Summer	24.003	0.00	0.00	100Yr+40% 60Min Summer	56.713	0.00	0.00
10Yr 60Min Winter	24.003	0.00	0.00	100Yr+40% 60Min Winter	56.713	0.00	0.00
10Yr 120Min Summer	14.508	0.00	0.00	100Yr+40% 120Min Summer	34.246	0.00	0.00
10Yr 120Min Winter	14.508	0.00	0.00	100Yr+40% 120Min Winter	34.246	0.00	0.00
10Yr 180Min Winter	10.722	0.00	0.00	100Yr+40% 180Min Summer	25.149	0.00	0.00
10Yr 180Min Summer	10.722	0.00	0.00	100Yr+40% 180Min Winter	25.149	0.00	0.00
10Yr 240Min Summer	8.627	0.00	0.00	100Yr+40% 240Min Summer	20.078	0.00	0.00
10Yr 240Min Winter	8.627	0.00	0.00	100Yr+40% 240Min Winter	20.078	0.00	0.00
10Yr 360Min Summer	6.339	0.00	0.00	100Yr+40% 360Min Summer	14.585	0.00	0.00
10Yr 360Min Winter	6.339	0.00	0.00	100Yr+40% 360Min Winter	14.585	0.00	0.00
10Yr 480Min Summer	5.090	0.00	0.00	100Yr+40% 480Min Summer	11.622	0.00	0.00
10Yr 480Min Winter	5.090	0.00	0.00	100Yr+40% 480Min Winter	11.622	0.00	0.00
10Yr 600Min Summer	4.291	0.00	0.00	100Yr+40% 600Min Summer	9.738	0.00	0.00
10Yr 600Min Winter	4.291	0.00	0.00	100Yr+40% 600Min Winter	9.738	0.00	0.00
10Yr 720Min Winter	3.732	0.00	0.00	100Yr+40% 720Min Summer	8.424	0.00	0.00
10Yr 720Min Summer	3.732	0.00	0.00	100Yr+40% 720Min Winter	8.424	0.00	0.00
10Yr 960Min Summer	2.993	0.00	0.00	100Yr+40% 960Min Summer	6.697	0.00	0.00
10Yr 960Min Winter	2.993	0.00	0.00	100Yr+40% 960Min Winter	6.697	0.00	0.00
10Yr 1440Min Winter	2.191	0.00	0.00	100Yr+40% 1440Min Summer	4.839	0.00	0.00
10Yr 1440Min Summer	2.191	0.00	0.00	100Yr+40% 1440Min Winter	4.839	0.00	0.00
10Yr 2160Min Summer	1.603	0.00	0.00	100Yr+40% 2160Min Winter	3.490	0.00	0.00
10Yr 2160Min Winter	1.603	0.00	0.00	100Yr+40% 2160Min Summer	3.490	0.00	0.00

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	9	61.051	0.026	0.965		OK
S2	15 min Winter	12	60.995	0.069	0.564		OK
S3	15 min Winter	13	60.819	0.019	0.493		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	11	S1	S2	0.045	0.351	0.985	0.030	OK
1.001	15 min Winter	13	S2	S3	0.019	0.385	0.493	0.034	OK

Return Period Yrs: 10.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	9	61.058	0.034	1.590		OK
S2	30 min Winter	22	61.036	0.110	0.618		OK
S3	30 min Winter	22	60.822	0.022	0.683		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	12	S1	S2	0.067	0.372	1.626	0.050	OK
1.001	30 min Winter	22	S2	S3	0.022	0.424	0.683	0.047	OK

Return Period Yrs: 30.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	30 min Winter	22	61.064	0.040	0.651		OK
S2	30 min Winter	21	61.064	0.138	0.733		OK
S3	30 min Winter	21	60.823	0.023	0.719		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	30 min Winter	22	S1	S2	0.088	0.317	1.595	0.049	OK
1.001	30 min Winter	21	S2	S3	0.023	0.430	0.719	0.050	OK

Return Period Yrs: 100.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	30 min Winter	26	61.166	0.141	0.544		OK
S2	30 min Winter	24	61.170	0.244	0.699		Surcharged
S3	60 min Winter	49	60.823	0.023	0.750		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	30 min Winter	26	S1	S2	0.183	0.354	2.824	0.087	OK
1.001	60 min Winter	49	S2	S3	0.023	0.435	0.750	0.052	OK

Appendix D - Percolation testing BRE365



PERCOLATIONTESTS.CO.UK

SOAKAWAY ASSESSMENT

Project Number: PT1703 - OP	Site Address: Finchampstead Sports Club - The Village, Finchampstead, Berkshire, RG40 4JU	
Weather: Dry	Date Of Testing: 31/08/2025	Client: Q-Help

Site Location GPS



Site Photo



PT (West Midlands) Ltd, 17 Goldthorn Avenue, Penn, Wolverhampton, WV4 5AA

48406C45-DA02-4D99-B15B-9498E4CD73E6



OBJECTIVE:

Infiltration tests have been carry out on site to support the design of foul and/or surface water drainage design, it should be noted that the following should be considered.

- Surface water Soakaways should not normally be constructed closer than 5m to foundations.
- Foul Field drainage should not be constructed closer than 15m to buildings.
- In chalk, or other soil and fill (made ground) material subject to modification or instability, the advice of a specialist geotechnologist should be sought as to the advisability and siting of a soakaway.
- Site investigations must be undertaken so that all aspects of soil properties, geotechnology and hydrogeology are adequately reviewed alongside the hydraulic design of soakaways.
- Consider the impact of development (of a soakaway) on pollution risk to groundwater and / or mobilisation of groundwater contamination.
- Soakaways should not be located within 1m of the ground water table.



SITE PLAN



PT (West Midlands) Ltd, 17 Goldthorn Avenue, Penn, Wolverhampton, WV4 5AA

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RESULTS

Percolation Tests In Line With BRE365

Trial Pit Ref:

A

Length:

1000

Width:

300

Depth:

1500

Depth of water (at 100%)

1000



Results - Test 1

Time:	Fall (mm)
10:26 AM	0
11:00 AM	40
11:30 AM	55
12:00 PM	60
01:00 PM	70
02:00 PM	80
03:00 PM	90
04:00 PM	100

Notes:

Further testing abandoned due to poor infiltration.

Ground Water Encroached During Excavation

PT (West Midlands) Ltd, 17 Goldthorn Avenue, Penn, Wolverhampton, WV4 5AA



PERCOLATIONTESTS.CO.UK

No

Additional Photos

Conclusion

Percolation testing carried out in line with BRE 365, further testing abandoned due to poor infiltration

PT (West Midlands) Ltd, 17 Goldthorn Avenue, Penn, Wolverhampton, WV4 5AA

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Appendix E - Maintenance Strategy

SuDS Maintenance Strategy

Finchampstead Sports Club

1. Responsibility

- 1.1. The landowners of the proposed development shall be responsible for the maintenance and operation of the drainage system, including any attenuation and flow control devices.

2. Maintenance of Pipe Networks

- 2.1. Maintenance and management of main storm sewers and chambers inclusive of pipework from paved areas and buildings (but excluding internal building drainage) should be visually inspected and jetted/cleaned as required. As a minimum, this should be carried out every 5 years. Methods of inspection to give indications of blockages may include:
 - a) CCTV Drainage survey;
 - b) Flushing/jetting;
 - c) Measurement of water depths in pipe entries, catchpits or interceptors along a drain run;
 - d) Pulling a mandrel through the pipe to identify physical faults (e.g. disjointed pipes);
- 2.2. Gully gratings, manhole gratings and channel gratings shall be visually inspected at least once every year and replaced or re-set if damaged or dislodged. Gullies should be inspected at least once every year, ideally during springtime as the autumn and winter seasons produce the most detritus build up in the form of leaves, litter, and silt. This material should be removed from the channels and disposed of at a licensed tip. This material should not be tipped in other areas of the development as it may pose a pollution threat to the surrounding drainage system.
- 2.3. Jetting should only be carried out after removal of the silt and debris, as jetting alone will simply wash the debris further downstream without removing the problem.

3. Maintenance of SuDS features

- 3.1. The regular and correct maintenance of the SuDS features is essential to the continued performance. The SuDS Manual C753 provides advice on the management of the system.
- 3.2. It should be noted that maintenance regimes detailed below are initial recommendations and the actual maintenance work undertaken should be adapted to suit the system performance by the maintenance provider.

- 3.3. The recommended maintenance regimes for the drainage systems, as highlighted in the below tables, is given in the SuDS Manual C753, which will form the basis of the strategy for the provided development.

4. Bioretention Systems

Table 1. Operation and maintenance requirements for bioretention systems (CIRIA SuDS Manual 2015 Table 18.3)

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter, and debris build-up from around inlets or from forebays	Quarterly to biannually
Occasional maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial Actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years
Monitoring	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly