

Onslow Caravan Park, Onslow Drive Ferring, BN12 5RX

Planning permission: FG/37/17/PL

Planning Condition Number: 4

Surface Water Drainage Scheme

Condition 4 Surface Water Drainage

Condition 4 on planning permission FG/37/17/PL states:

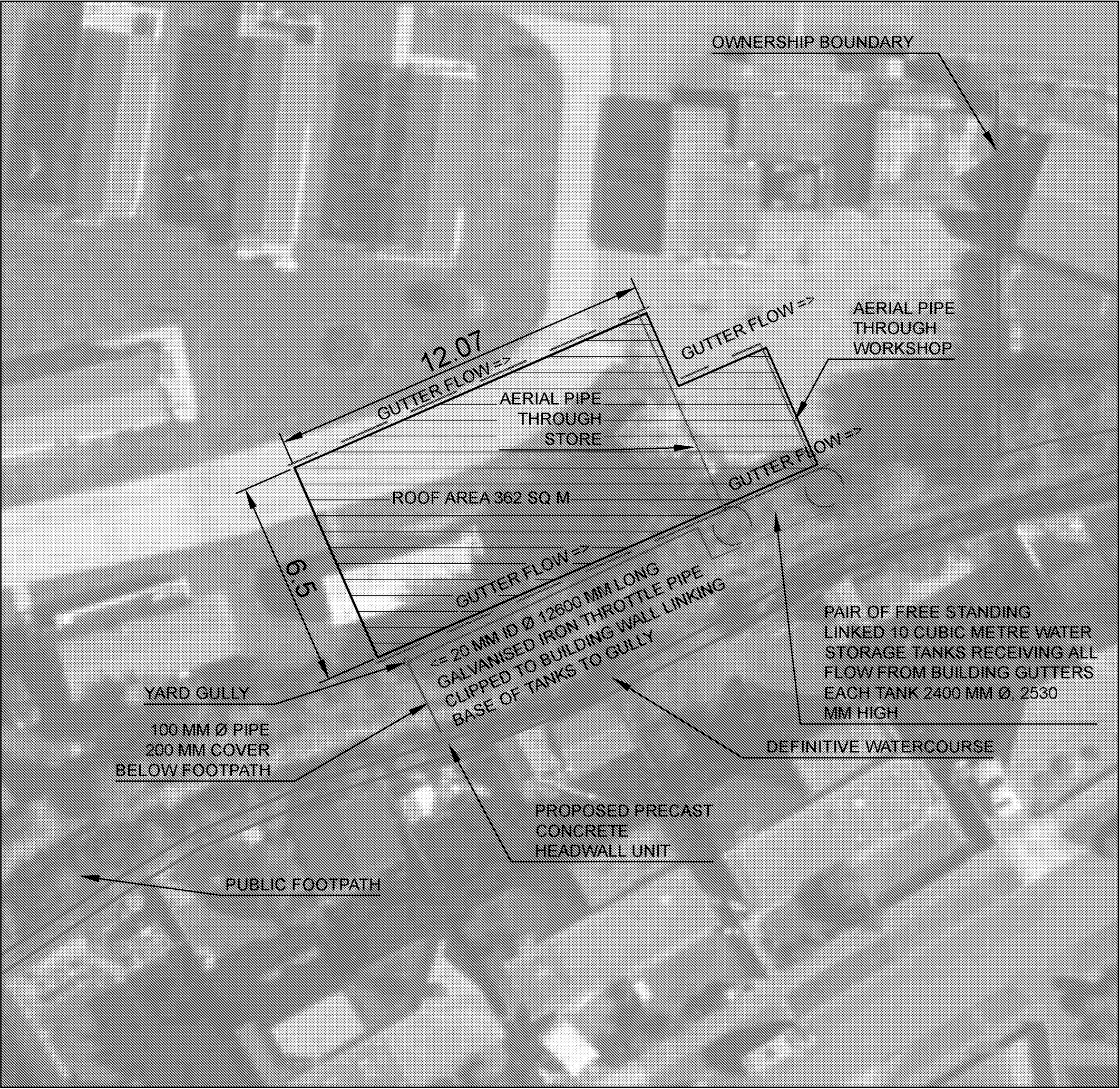
Development shall not commence until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority.

The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, the recommendations of the SUDS Manual produced by CIRIA.

Winter groundwater monitoring to establish highest annual ground water levels and Percolation testing to BRE 365, or similar approved, will be required to support the design of any Infiltration drainage.

No building shall be occupied until the complete surface water drainage system serving

Attached to this document is a Statement setting out the proposed surface water drainage scheme.



- NOTES
1. INFILTRATION TESTING ON 11 SEPTEMBER 2017, RESULTS APPENDED, DEMONSTRATED THAT A BLANKET SOAKWAY SERVING THE SHED ROOF IS NOT VIABLE.
 2. SHED ROOF GUTTERS WILL BE LINKED TO AN ABOVE GROUND STORAGE TANK SITED IN THE TWO METRE GAP BETWEEN THE SHED AND THE TIMBER CLOSE BOARDED FENCE TO THE PUBLIC FOOTPATH. DETAILS OF A SUITABLE TANK ARE APPENDED.
 3. THE STORAGE TANK WILL BE LINKED TO THE DEFINITIVE WATERCOURSE LOCATED WITHIN THE SAME OWNERSHIP AS THE SITE BY A 100 MM DIAMETER PIPE.
 4. THE MAXIMUM RATE OF FLOW FROM ROOF TO WATERCOURSE WILL BE LIMITED BY A THROTTLE PIPE LOCATED BETWEEN THE TANK AND THE 100 MM DIAMETER PIPE. THE MAXIMUM FLOW IN THE THROTTLE PIPE WILL BE 0.5 LITRES PER SECOND, WHICH IS THE EQUIVALENT OF 14 LITRES PER SECOND PER HECTARE OF ROOF. HYDRAULIC CALCULATIONS FOR THE THROTTLE PIPE ARE APPENDED.
 5. THE TANK IS SIZED TO STORE A 100 YEAR PLUS 20% EXTRA RAINFALL STORM WITHOUT OVERFLOW. THE 20% EXTRA RAINFALL IS AN ALLOWANCE FOR CLIMATE CHANGE IN THE LIFETIME OF THE DEVELOPMENT.
 6. ANNUAL MAINTENANCE OF THE DRAINAGE SYSTEM SHALL COMPRISE CLEANING OUT THE GUTTERS AND REMOVING ANY DEBRIS FROM INSIDE THE TANK. NOTE THAT THE ATMOSPHERE INSIDE THE TANK POTENTIALLY IS HAZARDOUS. THE THROTTLE PIPE SHOULD BE FLUSHED BY WATER MAINS PRESSURE.
 7. THE EXISTING CONCRETE PAVED ESTATE ROAD IS TO BE DIVERTED AS SHOWN ON THE PLANNING CONSENT DRAWINGS. NO SPECIAL DRAINAGE IS PROPOSED AS THE NEW SECTION OF ROAD HAS THE SAME AREA AS EXISTING, WHICH CURRENTLY DRAINS SATISFACTORILY BY OVER THE EDGE FLOW TO THE GRASS ON ITS NORTHERN SIDE.

4. Development shall not commence until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority.
- The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, the recommendations of the SUDS Manual produced by CIRIA.
- Winter groundwater monitoring to establish highest annual ground water levels and

FG/37/17/PL

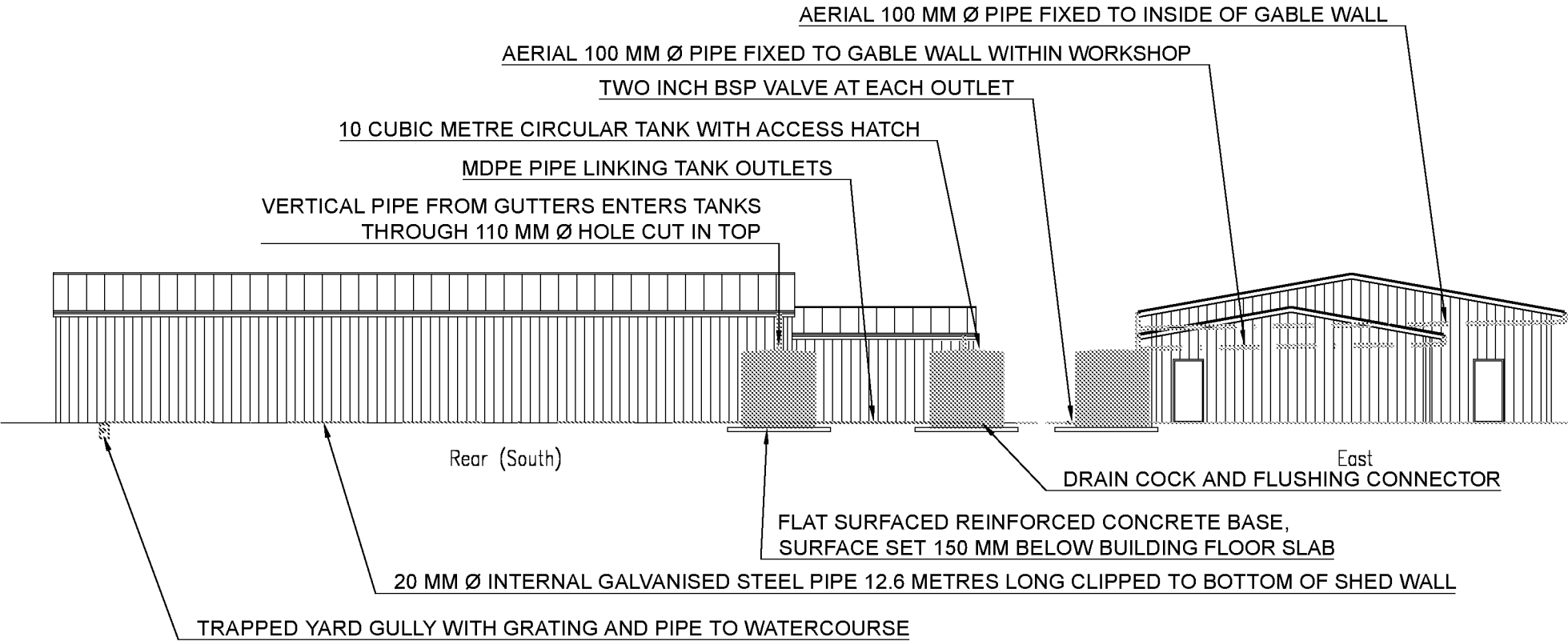
Percolation testing to BRE 365, or similar approved, will be required to support the design of any infiltration drainage.

No building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details.

Reason : To ensure that the proposed development is satisfactorily drained in accordance with policies GEN7 and GEN9 of the Arun District Council Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

Simon Jones-Parry BSc CEng MICE Chartered Civil Engineer Swans Farm Winchfield Hook RG27 8DB Tel 01256 704940			
Island Meadow Parks		DRAINAGE PLAN - PLANNING CONDITION 4	
NEW MACHINERY STORE AT ONSLow DRIVE, FERRING		Scale 1:250	Date 03.11.17 Drawing No 100

- NOTES
- 1. TANK OUTLET VALVES TO BE FULLY OPEN IN NORMAL OPERATION.
 - 2. DRAIN COCK TO BE CLOSED IN NORMAL OPERATION.



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Island Meadow Parks		
NEW MACHINERY STORE AT ONSLOW DRIVE, FERRING		
Scale 1:250	Date 03.11.17	Drawing No 101

DRAINAGE ELEVATIONS -
PLANNING CONDITION 4

NEW MACHINERY SHED AT ONSLOW DRIVE, FERRING

Infiltration test results Weather dry, no recent heavy rain, no groundwater encountered.

Test Pit 1 See drainage plan for test pit location

Pit length	1870 mm	Topsoil Clayey silt
Average pit width	310 mm	
Pit depth	588 mm	

Test 1A

<u>Time</u>	<u>Dip to water</u>	<u>Delta time</u> <u>hh:mm:ss</u>	<u>Delta time</u> <u>hrs</u>	<u>Height loss</u> <u>mm</u>	<u>Volume loss</u> <u>m3</u>	<u>Base area</u> <u>m2</u>	<u>Wall area</u> <u>m2</u>	<u>Total area</u> <u>m2</u>	<u>Infiltration rate</u> <u>m/hr</u>	<u>Infiltration rate</u> <u>m/sec</u>
11/09/2017 08:33:00	Start filing hole with ½ inch hose pipe									
11/09/2017 08:54:00	225 mm									
11/09/2017 09:01:00	308 mm	00:07:00	0.12	83	0.048	0.580	1.402	1.981	2.08E-001	5.78E-005
11/09/2017 09:06:00	352 mm	00:05:00	0.08	44	0.026	0.580	1.125	1.705	1.80E-001	4.99E-005
11/09/2017 09:13:00	405 mm	00:07:00	0.12	53	0.031	0.580	0.913	1.493	1.76E-001	4.90E-005
11/09/2017 09:20:00	432 mm	00:07:00	0.12	27	0.016	0.580	0.739	1.319	1.02E-001	2.83E-005
11/09/2017 09:38:00	488 mm	00:18:00	0.30	56	0.032	0.580	0.558	1.138	9.51E-002	2.64E-005
11/09/2017 09:58:00	530 mm	00:20:00	0.33	42	0.024	0.580	0.344	0.924	7.90E-002	2.20E-005
11/09/2017 10:40:00	588 mm	00:42:00	0.70	58	0.034	0.580	0.126	0.706	6.80E-002	1.89E-005
		01:46:00		363	0.210	cubic metres				

NOTE: A WATER SERVICE PIPE CROSSED THE BOTTOM OF THE PIT. BECAUSE THE RESULTS WERE MUCH BETTER THAN EXPECTED, A NEW PIT WAS DUG AND TESTED

NEW MACHINERY SHED AT ONSLOW DRIVE, FERRING

Infiltration test results Weather dry, no recent heavy rain, no groundwater encountered.

Test Pit 2 See drainage plan for test pit location

Pit length	1660 mm	Topsoil Clayey silt
Average pit width	305 mm	
Pit depth	652 mm	

Test 2A

<u>Time</u>	<u>Dip to water</u>	<u>Delta time</u> <u>hh:mm:ss</u>	<u>Delta time</u> <u>hrs</u>	<u>Height loss</u> <u>mm</u>	<u>Volume loss</u> <u>m3</u>	<u>Base area</u> <u>m2</u>	<u>Wall area</u> <u>m2</u>	<u>Total area</u> <u>m2</u>	<u>Infiltration rate</u> <u>m/hr</u>	<u>Infiltration rate</u> <u>m/sec</u>
11/09/2017 09:15:00	Start filing hole with ½ inch hose pipe									
11/09/2017 09:23:00	295 mm									
11/09/2017 09:37:00	298 mm	<i>00:14:00</i>		<i>0.23</i>	<i>3</i>	<i>0.002</i>	<i>0.506</i>	<i>1.397</i>	<i>3.42E-003</i>	<i>9.50E-007</i>
11/09/2017 10:00:00	308 mm	<i>00:23:00</i>		<i>0.38</i>	<i>10</i>	<i>0.005</i>	<i>0.506</i>	<i>1.372</i>	<i>7.03E-003</i>	<i>1.95E-006</i>
11/09/2017 10:40:00	320 mm	<i>00:40:00</i>		<i>0.67</i>	<i>12</i>	<i>0.006</i>	<i>0.506</i>	<i>1.328</i>	<i>4.97E-003</i>	<i>1.38E-006</i>
11/09/2017 11:10:00	330 mm	<i>00:30:00</i>		<i>0.50</i>	<i>10</i>	<i>0.005</i>	<i>0.506</i>	<i>1.285</i>	<i>5.65E-003</i>	<i>1.57E-006</i>
		<i>01:47:00</i>			<i>35</i>	<i>0.018</i> cubic metres				

NOTE: THIS TEST CONFIRMED THAT THE TP1 RESULT WAS INFLUENCED BY THE WATER PIPE. THE MEASURED INFILTRATION RATE AT TP2 IS TOO LOW FOR A BLANKET SOAKAWAY SERVING A BUILDING TO BE EITHER PRACTICABLE OR TO MEET THE HALF DRAIN DOWN TIME LIMIT. BASED ON THE OBSERVATIONS MADE IN THE FIRST TWO HOURS OF TESTING, THE TEST WAS ABANDONED.

RESULTS OF BALANCING PROGRAM EXECUTION

PARAMETERS

Project Name:- Onslow Drive, Ferring

Designer:- SJP

Comment:- Tanks serving roof

Time and date:-Fri Nov 24 11:50:04 2017

FSR location indicator:- 0

Gross area:- 362 square metres

Areal reduction factor at D=1:- 0.999429

Nominal impermeable area:- 362 square metres

Base flow:- 0 litres per second

Maximum discharge from balancing device:- 0.5 l/s reducing to 0.5 l/s after six hrs

Estimated ratio of average to maximum discharge from balancing device:- 0.7

UCWI:- 5

Soil index:- 0.45

FSR M5-60:- 20 mm

FSR R:- 0.4

Rainfall uplift factor:- 1.2

RESULTS (FSR RAINFALL)

Contributing area = 267.301 square metres (ie 73.84% of impermeable)

Storm length hours	100 year rain mm	Average inflow m3/hr	Base flow m3/hr	100 year storage cu.metre	Empty-empty time hours
1.0	48.496	12.96	0.000	11.7	10.3
2.0	58.597	7.83	0.000	13.1	12.4
3.0	64.563	5.75	0.000	13.5	13.7
4.0	68.739	4.59	0.000	13.3	14.6
5.0	72.038	3.85	0.000	13.0	15.3
6.0	74.912	3.34	0.000	12.5	15.9
7.0	77.402	2.96	0.000	11.3	
8.0	79.605	2.66	0.000	10.1	
9.0	81.584	2.42	0.000	8.8	
10.0	83.383	2.23	0.000	7.5	
11.0	85.035	2.07	0.000	6.2	
12.0	86.564	1.93	0.000	4.8	
13.0	87.987	1.81	0.000	3.4	
14.0	89.321	1.71	0.000	1.9	
15.0	90.575	1.61	0.000	0.5	

The maximum storage is 13.5 cubic metres at 3.1 hours

C++ Program (c) Simon Jones-Parry 2003-8 (Tel +44 1256 702429)

FEHPOND.EXE Version (2.10) 15 September 2008

Diameter 20 mm
Gradient 20 per cent
Roughness 0.15 mm
Flow stages 1 nr

Flow depth		Velocity	Flow rate
	/mm	/m.s-1	/litres.sec-1
20	1.45	0.457	

C++ Program (c) Simon Jones-Parry 1997,1998,2000 (Tel +44 1256 702429)
Version (1.03)



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Enduramaxx 10,000 Litre Water Tank



Non Potable

Colour Options *

Tank Outlet Choice * Includes 1 x FOC Outlet

Lid Options

Tank - Tank Joining Kit

Filter**

Float Valve (supplied loose, customer to drill and install)

Free Valve

Artic Delivery *

Delivery will on a 44' articulated lorry. Delivery on a smaller vehicle is available for an additional fee

☐

Artic access is confirmed.

Customer Offloading *

It is the customers responsibility to offload, a HIAB is available for an additional fee

☐

Customer offloading confirmed

* Required Fields

QUANTITY

-

+

60.00

£52.00 Inc. Vat)

Delivery

ain postcodes in Wales, Scotland, Highlands and Islands may cost

,

K HERE for details)

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Product Details

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Shipping Estimate

Product Details

10000 Litre Water Tank Non Potable.

This 10000 ltr (2200 Gallon) Above ground water tank is made from a Medium Density Polymer (MDPE).

This tank comes with a 2 year guarantee. Lifting eyes to make unloading and moving the tank easier. This above ground water storage tank is ideal as a sprayer tank, rain water harvesting collector. Suitable for agricultural, commercial and domestic use. Has unique upstand area for installing float valve on site, this allows maximum use of capacity rather than installing float valve in side wall of tank which causes a loss of capacity

Large 455mm screw lid for easy access and inspection. This tank is also available in a WRAS approved potable drinking water version see product code 172222

Optional extras:

- Basket Filter
- Tank to Tank joining kit for use when buying 2 tanks
- Variety of taps, valves and float valves available
- Stainless steel or plastic lockable lids

Cost includes shipping to most UK postcodes (certain postcodes may cost more, see our terms page for more details).

Note if ordering the 'Tank to Tank Kit' please complete the 'Outlet Position' pdf on the more Download tab

Downloads

Shipping Estimate

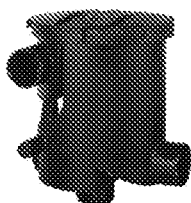
To use the shipping estimator please select the * Required Fields (if applicable) shown on product above, then enter the quantity required (below) to obtain a carriage estimate.

Please call us for delivery to postcodes in Wales, Scotland, Highlands and Islands.

Quantity *

GET A QUOTE

Items you may also be interested in



3P Volume Filter Combi

£275.00

(£330.00 Inc. Vat)

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Twin Filter

£595.00

(£714.00 Inc. Vat)

ADD TO BASKET

SPECIFICATION

Product Code:	172122
Height (mm):	2530
Diameter (mm):	2400
Capacity (Litres):	10000
Capacity (Gallons):	2200
Weight (Kg):	200.00
Colour:	Black
Shape:	Vertical
Material:	MDPE
Potable:	Non Potable
Tank Use:	Above Ground
Lid size (mm):	620

SKU:

172122...

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+

[Enquiry Form](#)

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