PROPOSED RESIDENTIAL DEVELOPMENT
LAND SOUTH OF ARUNDEL ROAD, FONTWELL

DRAINAGE STRATEGY
& SUDS STATEMENT-

MAY 2019

ARUN DISTRICT COUNCIL WA/48/19/RES

Document Control Sheet

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1.0 Introduction

Rogers Cory Partnership Limited have been instructed on behalf of Dandara (Southern) to prepare a Surface Water Drainage Strategy and SuDS Statement to support the Reserved Matters submission associated with the redevelopment of the site referred to as the Land South of Arundel Road, Fontwell, West Sussex per the current Outline Planning Notice (WA/22/15/OUT).

This report outlines the development of the Surface Water Drainage and SuDS Strategy following on from the Flood Risk Assessment (FRA) produced by Wormald Burrows Partnership Limited (Report dated April 2015) which formed part of the outline planning submission.

The purpose of this strategy is currently not to seek to discharge the current planning conditions relating to the surface water and SuDS of the Outline Planning Notice (WA/22/15/OUT) but rather to support the Reserved Matters application and to demonstrate that a surface water drainage solution can feasibly be delivered to support the detailed layout.

Further details, including detailed hydraulic calculations, detailed drainage layouts and associated drainage construction details will be developed and submitted as part of a separate and future Discharge of Conditions application.

The drainage strategy outlined and presented in this report build on the principles of the following:

- Flood Risk Assessment by Wormald Burrows Partnership Limited (April 2015);
- BRE 365 Soakaway Testing & Groundwater Levels Monitoring by Deltasimons (April 2014);
- BRE 365 Soakaway Testing by Leap Environmental (October 2018);
- Winter Groundwater Monitoring by Leap Environmental (April 2019);
- BRE 365 Winter Soakaway Testing by Leap Environmental (April 2019)

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2.0 Existing Site

The overall site is located within Fontwell, adjacent to the A29 and Arundel Road (Refer to **Figure 1** below). The development is bounded to the north by existing residential properties and Arundel Road, to the east and south by Wandleys Lane and residential properties including a Care Home, to the west by the A29 and Fontwell racecourse just beyond this.

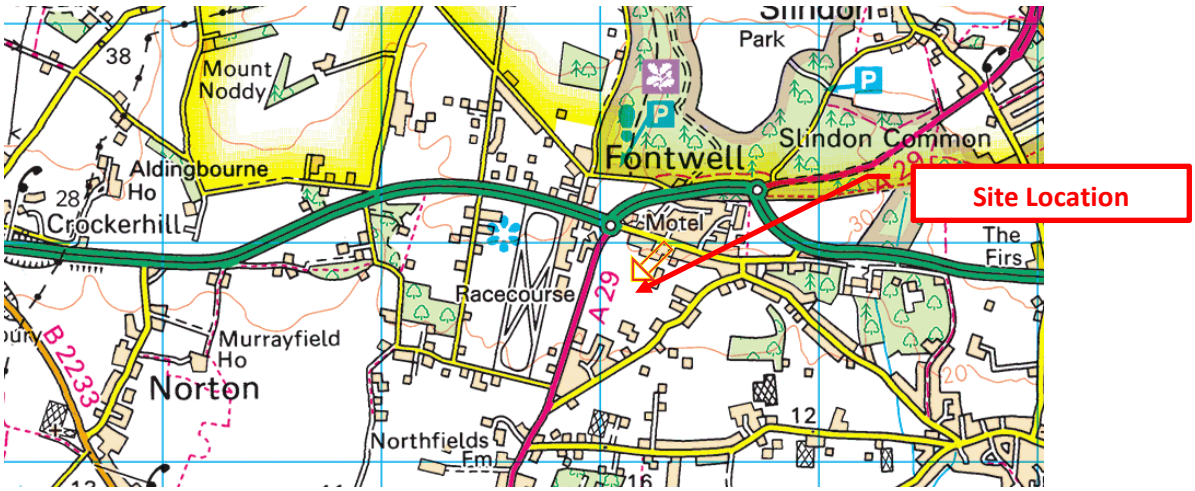


Figure 1: Site Location

The existing site proposed for development covers approximately 16.18ha of greenfield land comprising of open grassed fields. The approximate centre of the site is at Ordnance Survey (OS) Grid Reference 495140; 106820.

The application site generally falls in a southerly direction towards the western, southern and eastern boundaries respectively. An overview of the change in topography in this part of the wider site is presented as **Figure 2** overleaf. A copy of the topographical survey can be found in **Appendix A**.

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Figure 2: Site Topography

Geotechnical

The current review of the geotechnical aspects of the site are based on the following documents:

- Flood Risk Assessment by Wormald Burrows Partnership Limited (April 2015);
- BRE 365 Soakaway Testing & Groundwater Levels Monitoring by Deltasimons (April 2014);
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Ground Conditions

BGS geological maps indicate that the site is underlain by the Lambeth Group Formation comprising of Clay, Silt and Sand with superficial deposits of Head Deposits (comprising of Gravel, Sand, Silt and Clay).

Intrusive investigations carried out by Deltasimons and LEAP report that the site consists of topsoil up to 0.4mbgl, over sandy, silty, clayey GRAVEL, overlying a gravelly, clayey SILT and gravelly CLAY, with some areas of the site the Gravel strata was found to have stiff very gravelly CLAY.

Winter groundwater monitoring indicates the presence of groundwater parts of the site varying from 0.67mbgl to 3.45mbgl. Winter infiltration testing to BRE 365 was carried out and indicated permeability rates ranging from 1.27 $x10^{-6}$ to 2.91 x 10^{-4} m/s.

Investigations on the potential presence and risk of formation of solution features was carried out by Leap Environmental, who have provided recommendations on the minimum offsets for the construction of new plot soakaways from the structural foundations. A copy of the extracts from the Leap Environmental Ground investigation report is contained in **Appendix B**.

Hydrology

There are no existing ordinary watercourses immediately within the vicinity of the site.

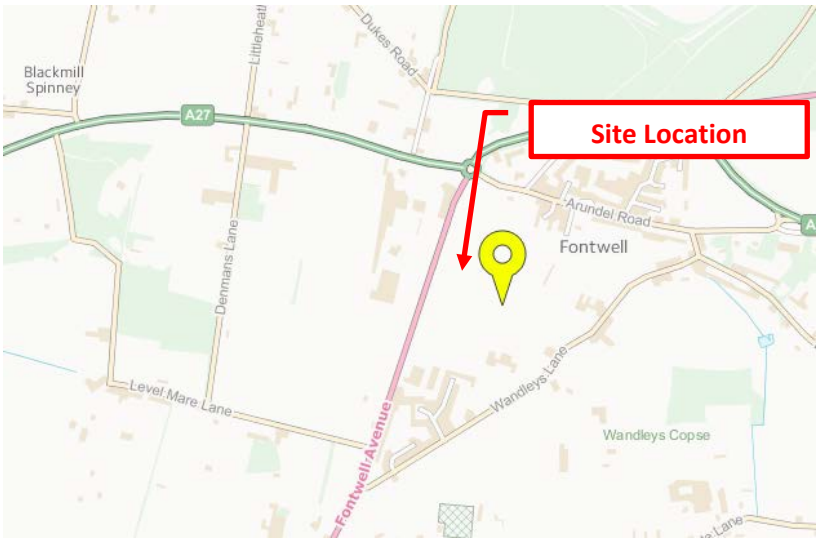


Figure 3: Extract of Flood Map from the EA's website

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Hydrogeology

Groundwater mapping published by the EA indicates that the site is located over a Groundwater Vulnerability Zone designated as a Minor Aquifer Intermediate, with a Secondary A Bedrock and Secondary A Superficial Deposit designation respectively. The site is located over a groundwater source protection Zone 1 (Inner Protection Zone) in the north western part, whilst the remainder lies within Zone 2 (Subsurface Activity)

3.0 Flood Risk and Existing Surface Water Drainage

This report reviews the existing risk of flooding to the site and requirements for a compliant drainage strategy by interrogating the following information:

- Available topographic survey information;
- Arun District Council Strategic Flood Risk Assessment (SFRA);
- West Sussex LLFA Policy for the Management of Surface Water;
- Available mapping from the Environment Agency's website;
- Existing Southern Water sewer service records;
- Wormald Burrows Partnership Limited Flood Risk Assessment (April 2015);

Based on a review of the EA's Flood Zone maps (see **Figure 3**), the development site appears to lie wholly within Flood Zone 1, considered to be at low risk from fluvial and tidal flooding.

The risk of flooding from pluvial sources has been assessed and based on the mapping information provided by the EA is deemed low for the site. Whilst there is a small localised area highlighted as high risk this is due to a localised low point in the site topography which would allow potential exceedance flows to accumulate. The risk to the future development could be mitigated through consideration of proposed finished levels in relation to these existing low points on the site to ensure such localised surface water flooding will not pose a risk to buildings or people, nor increase the risk of surface water flooding elsewhere.

It should be noted that as from April 2015, the Lead Local Flood Authority (LLFA) has now become a statutory consultee with respects to surface water drainage and risk of flooding from surface water, groundwater, reservoirs and sewers. As such West Sussex County Council (WSCC) and Arun District Council (ADC) will become a primary consultee during the Reserved Matter submission and discharging planning conditions relating to localised flood risk and the surface water drainage strategy.

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Existing Site Drainage

A review of the existing topographic information and sewer records has been carried out to assess the existing surface water drainage regime of the site.

The majority of the surface water from fields within the development site appear to drain naturally to ground via infiltration.

4.0 Surface Water Management

The surface water management section should ensure that there is no adverse impact on flood risk elsewhere as a result of a change in the surface water runoff regime from the re-development.

Design Principles

Key design principles in the following guidance documents steer the approach to managing surface water runoff at sites:

- Building Regulations hierarchy of drainage (H3);
- Interim Code of Practice for SuDS; and
- CIRIA best practice guidance, including the use of the 'SuDS management train'.

Building Regulations hierarchy of drainage outlines the preferred methods for the disposal of surface water with infiltration methods being the preferred option. If this is not possible the next favoured option is to drain to an existing watercourse. If neither of these options are feasible, the regulations state that rainwater discharge should be directed to a sewer.

The Interim Code of Practice for SuDS provides guidance about the hydraulic design criteria for Sustainable drainage systems. This in general refers to both peak rate of runoff and the volume of runoff, post development. Prior to mitigation measures such as the use of SuDS attenuation features, both the volume and peak rate of run-off may increase post development.

The design principles for surface water management extend beyond simple hydraulic criteria. CIRIA guidance promotes the use of the SuDS management train, a concept where SuDS techniques are used to treat, convey and store surface water runoff. This approach is considered as part of the SuDS selection methodology.

Sustainable Drainage Systems

To drain the development in a sustainable manner whilst complying with the requirements of the NPPF, the scheme should seek to adopt an appropriate form(s) of sustainable urban drainage systems (SuDS).

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SuDS techniques comprise of implementation of permeable paving and on plot soakaways (where applicable) as well as an infiltration basin in the south western corner of the site.

Surface Water Drainage Strategy

In view of the requirements of the NPPF, PPG, WSCC, ADC the design parameters and constraints associated with redeveloping this site, a surface water drainage strategy design has been devised and hydraulically modelled to demonstrate that the scheme can be suitably implemented without increasing the level of flood risk, when the surface water drainage system experiences a 1:100-year rainfall event (including climate change).

The surface water drainage scheme has been designed to ensure:

- A reduction in the pre development site discharge for peak storm events.
- Sustainable Urban Drainage systems are wholly incorporated within the scheme.
- Consideration is given for the improvement of water quality within the design.
- The designed drainage scheme can satisfactorily retain a critical 1 in 100 Year storm event with climate change.

The development of the onsite surface water drainage strategy has been carried out through ongoing consultation with ADC Drainage Officers to agree the principles of the infiltration rates applicable to parts of the site. As there are some areas where soakage rates vary significantly, it has been agreed with ADC Drainage officers that further location specific testing will be undertaken to inform soakage rates at soakaway locations where this occurs. Further engagement with ADC will be undertaken to agree these additional test locations.

All new access roads, parking bays and access drives will be permeable paving with full infiltration. Run-off from the new plots will be directed to trench soakaways. In the south western part of the site where the infiltration rates were poorer, the runoff from the new buildings will be directed to the new infiltration basin. An outline of the above proposal is provided in drawings DAN/E4736/031-034 in **Appendix D.**

Calculations to demonstrate the feasibility of permeable paving for parking bays, access roads, on plot soakaways and the infiltration basin are provided in **Appendix E.**

It must be noted that the strategy layout and calculations presented at this stage is to demonstrate that the detailed layout can feasibly be drained in terms of surface water. The full details of the drainage layouts including construction details for permeable paving, soakaways and infiltration basin will be provided as part of the separate Discharge of Conditions application of the Outline Consent.

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Water Quality

It is important to address issues with regards to quality when considering surface water management. As part of the surface water is proposed to be discharge to the existing downstream watercourses, treatment is proposed as part of a SuDS Management Train in accordance with the recommendations of the SuDS Manual (CIRIA 753) and as required by the LLFA.

This SuDS management train will be achieved through the use of on plot soakaways, permeable paving and the infiltration basin.

Chapter 26 of the CIRIA SuDS Manual (2015) provides guidance on methods that should be used to design SuDS to meet the water quality design criteria and good practice design standards. Diffuse urban pollution is a significant factor in compromising groundwater and receiving water standards that are required under the EA Water Framework Directive. Chapter 4 of the SuDS Manual summarises factors, which influence pollution levels in urban run-off. This summary is presented in **Table 1 below:**

Factors influencing pollution levels in urban run-off
The amount and type of pollution washed off a surface will depend on many things including: • Planning activities on, above and adjacent to the surface that affect the deposition of pollutants, their retention on the surface and the extent to which they are mixed with runoff (including pollution prevention strategies) • Unplanned activities (accidents and spillages) that can cause temporary unexpected high pollution concentrations • The surface location and type, affecting wash-off rates and contaminant movement mechanisms • The drainage path • The length of the dry weather period before the rainfall event • The intensity and the duration of the rainfall, and the associated flow velocities Any further pollutant transformations occurring during residence and conveyance within gullies, chambers, pipe or channel networks, gravels, soils and vegetation and quiescent bodies of water.

Table 1: Extract of Box 4.1 of the SuDS Manual (CIRIA 753)

Table 4.3 of the SuDS Manual classifies the pollution hazard level for residential sites, including residential car parks, low traffic roads as being “low” and thus only

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requiring a “Simple index approach” in terms of the requirements for the discharge to surface waters, including coasts and estuaries.

The SuDS Manual summarises the steps for the simple index approach:

Step 1 – *Allocate suitable pollution hazard indices for the proposed land use*

Step 2 – *Select SuDS with a total pollution mitigation index that equals or exceeds the pollution index*

Step 3 – *Where the discharge to a protected surface waters or groundwater, consider the need for a more precautionary approach*

The SuDS Manual describes “protected surface waters” as protected surface water resources, which include those designated for drinking water abstraction or for other environmental protection reasons

Table 26.2 of the SuDS manual notes the following pollution hazard indices for residential land use development:

Land Use	Pollution Hazard Level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (eg. cul-de sacs, home zones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie. Less than 300 vehicle movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospital, retail), all roads except low traffic roads and trunk roads/ motorways	Medium	0.7	0.6	0.7

Table 2: Extract of Table 26.2 of SuDS Manual (2015)

Table 26.3 of the SuDS Manual provides details of the SuDS pollution mitigation indices for various types of SuDS components

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	Mitigation indices		
Type of SuDS component	**TSS**	**Metals**	**Hydrocarbons**
Filter Strip	0.4	0.4	0.5
Filter Drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable Paving	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8

Table 3: Extract of Table 26.3 of SuDS Manual (2015)

As such the total SuDS mitigation index (figure 5) must be greater than the pollution hazard index (figure 4), furthermore when used in combination of two or more SuDS components, a factor of 0.5 is used to account for the reduced performance of the secondary or tertiary components associated with the already reduced inflow of concentration, therefore:

Total SuDS mitigation index = mitigation index$_1$ + 0.5 (mitigation index$_2$)

The use of the permeable paving for the access roads and soakaways/infiltration for roof drainage will provide the minimum required level of SuDS mitigation index to the run off from the development.

Long Term Maintenance

Consideration will need to be given to the long-term maintenance of the proposed drainage structures. Permeable paving, soakaways and all associated external pipework, chambers and manholes within the demise of each plot ownership boundaries will be the responsibility of the future occupants. Elsewhere, the surface water networks below the access roads and open space will be the responsibility of the Management Company. Details of the Maintenance Plan will be provided as part of the separate Discharge of Conditions application of the Outline Consent.

Exceedance

Whilst the drainage system has been designed to a very high standard (1 in 100 Year storm event including climate change), it is possible that a more extreme event will occur and that the design standard for the system will be exceeded. It is best practice to design the drainage system to shed water, primarily into landscaped and

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other areas, therefore reducing the risk of flooding areas of built development during extreme events.

A strategy for directing overland flows for the site will be confirmed using overland flow modeling and provided as part of the separate Discharge of Conditions application.

5.0 Foul Drainage

The proposed foul water discharge generated by the site has been calculated at 18.51l/s (based on 400 dwellings at 4000l/dwelling/day) in accordance with Sewers for Adoption 7th Edition.

The foul water drainage will be conveyed via a new below ground foul sewer network through development to a new connection to the Southern Water network within Fontwell Avenue

All domestic foul drainage will be designed in accordance with Part H of the Building Regulations.

6.0 Conclusion

A surface water drainage strategy has been prepared and demonstrates that the development proposal can be successfully implemented and designed to withstand the impact of a 1:100-year rainfall event (including climate change), in accordance with the NPPF, PPG, WSCC and ADC requirements.

In view of this assessment, the report concludes that:

i. The Development can be drained in a sustainable manner utilizing SuDS techniques;

ii. The Development will satisfactorily manage and maintain a 1 in 100 Year storm event with an allowance for climate change;

iii. The detailed drainage strategy generally follows the principles of the approved FRA and Surface Water Drainage Strategy and SuDS Statement;

iv. Further testing will be undertaken to inform soakage rates further in some areas in consultation with ADC drainage officers.

v. The findings of this report identify the opportunity to promote the sustainable re-use of existing resources and potential to implement an appropriate SuDS strategy.

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Appendix (A)

Topographic Survey

Notes :

1. GRID AND LEVELS RELATED TO OSGB36 NATIONAL DATUM DERIVED FROM THE NATIONAL GPS NETWORK. LSF (0.99971) USED IN ALL CALCULATIONS.
2. DRAINAGE INFORMATION HAS BEEN DETERMINED WITHOUT MAN ENTRY INTO CHAMBERS AND WHILST EVERY EFFORT HAS BEEN MADE TO CORRECTLY IDENTIFY THIS INFORMATION, IT SHOULD ALWAYS BE CHECKED IN AREAS THAT ARE CRITICAL TO THE FUTURE PROPOSAL.
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5. BACKGROUND INFORMATION (SHOWN BLUE) IS CURRENT ORDNANCE SURVEY DIGITAL DATA. CROWN COPYRIGHT. ALL RIGHTS RESERVED. LICENCE NUMBER 100022432.
6. BACKGROUND AERIAL IMAGERY (c) Getmapping plc 2014.

Coordinate Table

Station	Description	Easting	Northing	Level
S1	ROAD NAIL	495221.769	107043.742	31.633
S2	ROAD NAIL	495147.491	107064.290	29.326
S3	ROAD NAIL	495083.446	107088.548	27.122
S4	ROAD NAIL	495108.797	107058.953	28.235
S5	ROAD NAIL	495034.023	107066.958	26.414
S6	ROAD NAIL	494989.424	106954.370	23.829
S7	ROAD NAIL	494948.868	106835.924	22.990
S8	ROAD NAIL	494898.698	106651.796	21.392
S9	PEG	494984.817	106660.200	24.555
S10	PEG	495048.688	106670.672	27.316
S11	PEG	495163.848	106829.478	29.513
S12	PEG	495304.854	106878.168	29.678
S13	PEG	495140.971	106744.223	28.097
S14	ROAD NAIL	495300.303	106767.149	27.249
S15	PEG	495382.076	106859.180	29.012
S16	ROAD NAIL	495557.692	106817.401	28.217
S17	ROAD NAIL	495610.185	106837.144	26.872
S18	ROAD NAIL	495342.956	107010.041	31.943
S19	ROAD NAIL	495421.424	106985.761	31.206
S20	ROAD NAIL	495492.656	106967.908	30.971
S21	ROAD NAIL	495544.484	106958.929	30.686
S22	ROAD NAIL	495604.731	106946.996	29.719
S23	ROAD NAIL	495655.204	106940.772	29.797
S24	ROAD NAIL	495675.728	106860.756	26.632

KEY

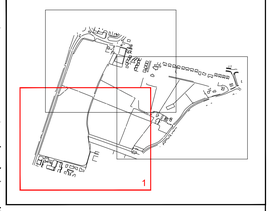
GENERAL ABBREVIATIONS

SURVEY STATION	5	AIR VALVE	AV
	TOP	BACK DROP	BD
BANKING		BRICK	BK
	BOTTOM	BOLLARD	BO
HEDGE SPREADS		BUTT JOINT	BT
		BT INSPECTION COVER	BT
WOODLAND CANOPY		CABLE TV COVER	CATV
		CONTROL BOX	CB
MARSH / WATERLOGGED		COVER LEVEL	CL
		CAST IRON	CIPIT
TREES	SPREAD & GIRTH AS SHOWN TO SCALE	DROP KERB	DK
		ELECTRICITY CONTROL BOX	EB
		ELECTRICITY POLE	EP
		EARTH ROD	ER
		FIRE HYDRANT	FH
		FLOOR LEVEL	FL
		FOUL WATER	FW
		FOUL WATER SEWER	FWS
		GAS VALVE	GV
		GATE POST	GP
GATE		GULLY	GY
		INSPECTION COVER	IC
KERB CHANNEL		INVERT LEVEL	IL
		KERB OUTLET	KO
ROAD UNKERBED		LAMP POST	LP
		LETTER BOX	LB
FOOTPATH		LITTER BIN	BIN
		MANHOLE	MH
CHANGE IN SURFACE		MARKER POST	MP
		METER	MT
FENCE		ORDNANCE SURVEY BENCH MARK	OSBM
		RODDING EYE	RE
WALL		ROAD SIGN	RS
		RAIN WATER PIPE	RWP
OVERHEAD ELECTRIC		RETAINING WALL	RW
		SOIL PIPE	SP
OVERHEAD TELECOM		STREET NAME PLATE	SNP
		STAY CABLES	ST
FOUL SEWER		SURFACE WATER SEWER	SWS
		STOP VALVE	SV
SURFACE SEWER		SOIL VENT PIPE	SVP
		TELEPHONE CALL BOX	TCB
BUILDING		TRIAL HOLE	TH
		TELECOM POLE	TP
		UNABLE TO LIFT	UTL
OPEN SIDED BUILDING		VENT PIPE	VP
		WATER LEVEL	WL
GLASSHOUSE		WATER METER	WM
		WASH OUT	WO

FENCE ABBREVIATIONS

CONTOUR	25.50	BARBED WIRE FENCE	B/W
		CLOSE BOARDED FENCE	C/B
SPOT LEVEL	+ 127.13	CONCRETE PANEL FENCE	CPL
		CORRUGATED IRON FENCE	C/I
BORE HOLE	BH	CHAIN LINK FENCE	CIL
		CHESTNUT PALING	CNP
TRIAL HOLE	TH	IRON RAILINGS	I/R
		POST AND RAIL FENCE	P/R
		POST AND WIRE FENCE	P/W
		WIRE MESH FENCE	W/M

Sheet Layout (not to scale)



Revision	Description	Date
2	Aerial imagery added	August 2014
1	Survey extended around Barn Farm	June 2014

0 5 10 15 20 25 30 35 40 45 50 55

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40 years old in 2012
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Tel 01670 821500 — Nuneaton — nuneaton@mksurveys.co.uk
Tel 01403 243162 — Horsham — horsham@mksurveys.co.uk

dandara

Land at Fontwell Avenue Fontwell West Sussex

Topographical Survey

Scale	Sheet Size:	Sheet Number:	Date:
1:500	A0	1	May 2014
Project Number:	Rev:	Surveyed By:	Approved By:
19734	2	NC/MJW	NL

mks19734 DWG A1 Amended

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S23	ROAD NAIL	495655.204	106940.772	29.797
S24	ROAD NAIL	495675.728	106860.756	26.632

KEY

SURVEY STATION 5

BANKING (TOP / BOTTOM)

HEDGE SPREADS

WOODLAND CANOPY

MARSH / WATERLOGGED

TREES (SPREAD & GIRTH SHOWN TO SCALE)

GATE

KERB CHANNEL

ROAD UNKERBED

FOOTPATH

CHANGE IN SURFACE

FENCE

WALL

OVERHEAD ELECTRIC

OVERHEAD TELECOM

FOUL SEWER

SURFACE SEWER

BUILDING

OPEN SIDED BUILDING

GLASSHOUSE

CONTOUR 25.50

SPOT LEVEL + 127.13

BORE HOLE BH

TRIAL HOLE TH

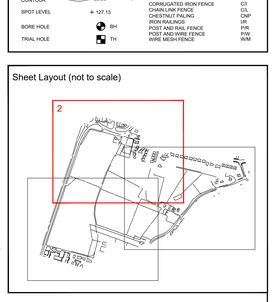
GENERAL ABBREVIATIONS

AIR VALVE	AV
BACK DROP	BD
BRICK	BK
BOLLARD	BO
BUSH	BU
BT INSPECTION COVER	BT
CABLE TV COVER	CATV
CONTROL BOX	CB
COVER LEVEL	CL
CONCRETE	CONT
DROP KERB	DK
ELECTRICITY CONTROL BOX	EB
ELECTRICITY POLE	EP
EARTH ROD	ER
FIRE HYDRANT	FH
FLOOR LEVEL	FL
FOOTPATH	FP
FOUL WATER SEWER	FWS
GAS VALVE	GV
GATE POST	GP
GULLY	GY
INSPECTION COVER	IC
INVERT LEVEL	IL
KERB OUTLET	KO
LAMP POST	LP
LETTER BOX	LB
LITTER BIN	BIN
MANHOLE	MH
MARKER POST	MP
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
ROAD SIGN	RS
RAIN WATER PIPE	RWP
RETAINING WALL	RW
STREET LIGHT	SL
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
STOP VALVE	SV
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TELEGRAPH	TP
TELECOM POLE	TP
UNABLE TO LIFT	UTL
VENT PIPE	VP
WATER LEVEL	WL
WATER METER	WM
WASH OUT	WO

FENCE ABBREVIATIONS

BARBED WIRE FENCE	B/W
CLOSE BOARDED FENCE	C/B
CONCRETE PANEL FENCE	C/PL
CORRUGATED IRON FENCE	C/I
CHAIN LINK FENCE	C/L
CHESTNUT PALING	CNP
IRON RAILINGS	I/R
POST AND RAIL FENCE	P/R
POST AND WIRE FENCE	P/W
WIRE MESH FENCE	W/M

Sheet Layout (not to scale)



Revision	Description	Date
2	Aerial imagery added	August 2014
1	Survey extended around Barn Farm	June 2014

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enquiries@mksurveys.co.uk	oxford@mksurveys.co.uk	mk@mksurveys.co.uk	nuneaton@mksurveys.co.uk	newmarket@mksurveys.co.uk

dandara

Land at Fontwell Avenue Fontwell West Sussex

Topographical Survey

Scale	Sheet Size:	Sheet Number:	Date:
1:500	A0	2	May 2014
Project Number:	Rev:	Surveyed By:	Approved By:
19734	2	NC/MJW	NL

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Notes :

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6. BACKGROUND AERIAL IMAGERY (c) Getmapping plc 2014.

Coordinate Table

Station	Description	Easting	Northing	Level
S1	ROAD NAIL	495221.769	107043.742	31.633
S2	ROAD NAIL	495147.491	107064.290	29.326
S3	ROAD NAIL	495083.446	107088.548	27.122
S4	ROAD NAIL	495108.767	107058.953	28.235
S5	ROAD NAIL	495034.023	107066.958	26.414
S6	ROAD NAIL	494989.424	106954.370	23.829
S7	ROAD NAIL	494948.868	106835.924	22.990
S8	ROAD NAIL	494898.698	106651.796	21.392
S9	PEG	494884.817	106660.200	24.555
S10	PEG	495048.688	106670.672	27.316
S11	PEG	495163.848	106829.478	29.513
S12	PEG	495304.854	106878.168	29.678
S13	PEG	495140.971	106744.223	28.097
S14	ROAD NAIL	495300.303	106767.149	27.249
S15	PEG	495382.076	106859.180	29.012
S16	ROAD NAIL	495557.692	106817.401	28.217
S17	ROAD NAIL	495610.185	106837.144	26.872
S18	ROAD NAIL	495342.956	107010.041	31.943
S19	ROAD NAIL	495421.424	106985.761	31.206
S20	ROAD NAIL	495492.856	106967.908	30.971
S21	ROAD NAIL	495544.484	106958.929	30.686
S22	ROAD NAIL	495604.731	106946.996	29.719
S23	ROAD NAIL	495655.204	106940.772	29.797
S24	ROAD NAIL	495675.728	106860.756	26.632

KEY

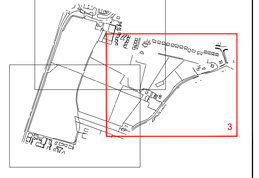
GENERAL ABBREVIATIONS

SURVEY STATION	5	AIR VALVE	AV
BANKING	TOP / BOTTOM	BACK DROP	BD
		BRICK	BK
		BOLLARD	BO
		BUSH	BU
		BT INSPECTION COVER	BT
		CABLE TV COVER	CATV
HEDGE SPREADS		CONTROL BOX	CB
		COVER LEVEL	CL
WOODLAND CANOPY		CONCRETE	CONT
		DROP KERB	DK
MARSH / WATERLOGGED		ELECTRICITY CONTROL BOX	EB
		ELECTRICITY POLE	EP
		EARTH ROD	ER
		FIRE HYDRANT	FH
TREES	SPREAD & GIRTH AS SHOWN TO SCALE	FLOOR LEVEL	FL
		FOUL MANHOLE	FM
		FOUL WATER SEWER	FWS
		GAS VALVE	GV
		GATE POST	GP
GATE		GULLY	GY
		INSPECTION COVER	IC
		INVERT LEVEL	IL
KERB CHANNEL		KERB OUTLET	KO
ROAD UNKERBED		LAMP POST	LP
		LETTER BOX	LB
FOOTPATH		LITTER BIN	BIN
		MANHOLE	MH
CHANGE IN SURFACE		MARKER POST	MP
		METER	MT
FENCE		ORDNANCE SURVEY BENCH MARK	OSBM
		PODDING EYE	PE
WALL		ROAD SIGN	RS
		RAIN WATER PIPE	RWP
OVERHEAD ELECTRIC		RETAINING WALL	RW
		SOIL PIPE	SP
OVERHEAD TELECOM		STREET NAME PLATE	SNP
		STAY CABLES	ST
FOUL SEWER		SURFACE WATER SEWER	SWS
		STOP VALVE	SV
SURFACE SEWER		SOIL VENT PIPE	SVP
		TELEPHONE CALL BOX	TCB
BUILDING		TELEPHONE	TP
		TELECOM POLE	TX
		UNABLE TO LIFT	UTL
OPEN SIDED BUILDING		VENT PIPE	VP
		WATER LEVEL	WL
GLASSHOUSE		WATER METER	WM
		WASH OUT	WO

FENCE ABBREVIATIONS

CONTOUR	25.50	BARBED WIRE FENCE	B/W
		CLOSE BOARDED FENCE	C/B
SPOT LEVEL	127.13	CONCRETE PANEL FENCE	CPL
		CORRUGATED IRON FENCE	C/I
		CHAIN LINK FENCE	CHL
		CHESTNUT PALING	CNP
BORE HOLE	BH	IRON RAILINGS	I/R
		POST AND RAIL FENCE	P/R
TRIAL HOLE	TH	POST AND WIRE FENCE	P/W
		WIRE MESH FENCE	W/M

Sheet Layout (not to scale)



Revision	Description	Date
2	Aerial imagery added	August 2014
1	Survey extended around Barn Farm	June 2014

0 5 10 15 20 25 30 35 40 45 50 55

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dandara

Land at Fontwell Avenue Fontwell West Sussex

Topographical Survey

Scale	Sheet Size:	Sheet Number:	Date:
1:500	A0	3	May 2014
Project Number:	Rev:	Surveyed By:	Approved By:
19734	2	NC/MJW	NL

mks/dwg/19734_Survey.dwg

Notes :

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6. BACKGROUND AERIAL IMAGERY (c) Getmapping plc 2014.

N

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S19	ROAD NAIL	495421.424	106985.761	31.206
S20	ROAD NAIL	495492.856	106967.908	30.971
S21	ROAD NAIL	495544.484	106958.929	30.686
S22	ROAD NAIL	495604.731	106946.996	29.719
S23	ROAD NAIL	495655.204	106940.772	29.797
S24	ROAD NAIL	495675.728	106860.756	26.632

KEY

SURVEY STATION 5

BANKING (TOP / BOTTOM)

HEDGE SPREADS

WOODLAND CANOPY

MARSH / WATERLOGGED

TREES (SPREAD & GIRTH SHOWN TO SCALE)

GATE

KERB CHANNEL

ROAD UNKERBED

FOOTPATH

CHANGE IN SURFACE

FENCE

WALL

OVERHEAD ELECTRIC

OVERHEAD TELECOM

FOUL SEWER

SURFACE SEWER

BUILDING

OPEN SIDED BUILDING

GLASSHOUSE

CONTOUR 25.50

SPOT LEVEL + 127.13

BORE HOLE BH

TRIAL HOLE TH

GENERAL ABBREVIATIONS

AIR VALVE	AV
BACK DROP	BD
BRICK	BK
BOLLARD	BO
BUILDING	BT
BT INSPECTION COVER	BT
CABLE TV COVER	CATV
CONTROL BOX	CB
COVER LEVEL	CL
CONCRETE	CONT
DROP KERB	DK
ELECTRICITY CONTROL BOX	EB
ELECTRICITY POLE	EP
EARTH ROD	ER
FIRE HYDRANT	FH
FLOOR LEVEL	FL
FLAG POLE	FP
FOUL WATER SEWER	FWS
GAS VALVE	GV
GATE POST	GP
GULLY	GY
INSPECTION COVER	IC
INVERT LEVEL	IL
KERB OUTLET	KO
LAMP POST	LP
LETTER BOX	LB
LITTER BIN	BIN
MANHOLE	MH
MARKER POST	MP
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
ROAD SIGN	RS
RAIN WATER PIPE	RWP
RETAINING WALL	RW
STEPS	STP
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
STOP VALVE	SV
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TELEGRAPH	TP
TELECOM POLE	TP
UNABLE TO LIFT	UTL
VENT PIPE	VP
WATER LEVEL	WL
WATER METER	WM
WASH OUT	WO

FENCE ABBREVIATIONS

BARBED WIRE FENCE	B/W
CLOSE BOARDED FENCE	C/B
CONCRETE PANEL FENCE	C/PL
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IRON RAILINGS	I/R
POST AND RAIL FENCE	P/R
POST AND WIRE FENCE	P/W
WIRE MESH FENCE	W/M

Revision	Description	Date
2	Aerial imagery added	August 2014
1	Survey extended around Barn Farm	June 2014

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Tel 02476 017500	Nuneaton	nuneaton@mksurveys.co.uk
Tel 01903 243150	Horsham	horsham@mksurveys.co.uk

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Land at Fontwell Avenue
Fontwell
West Sussex

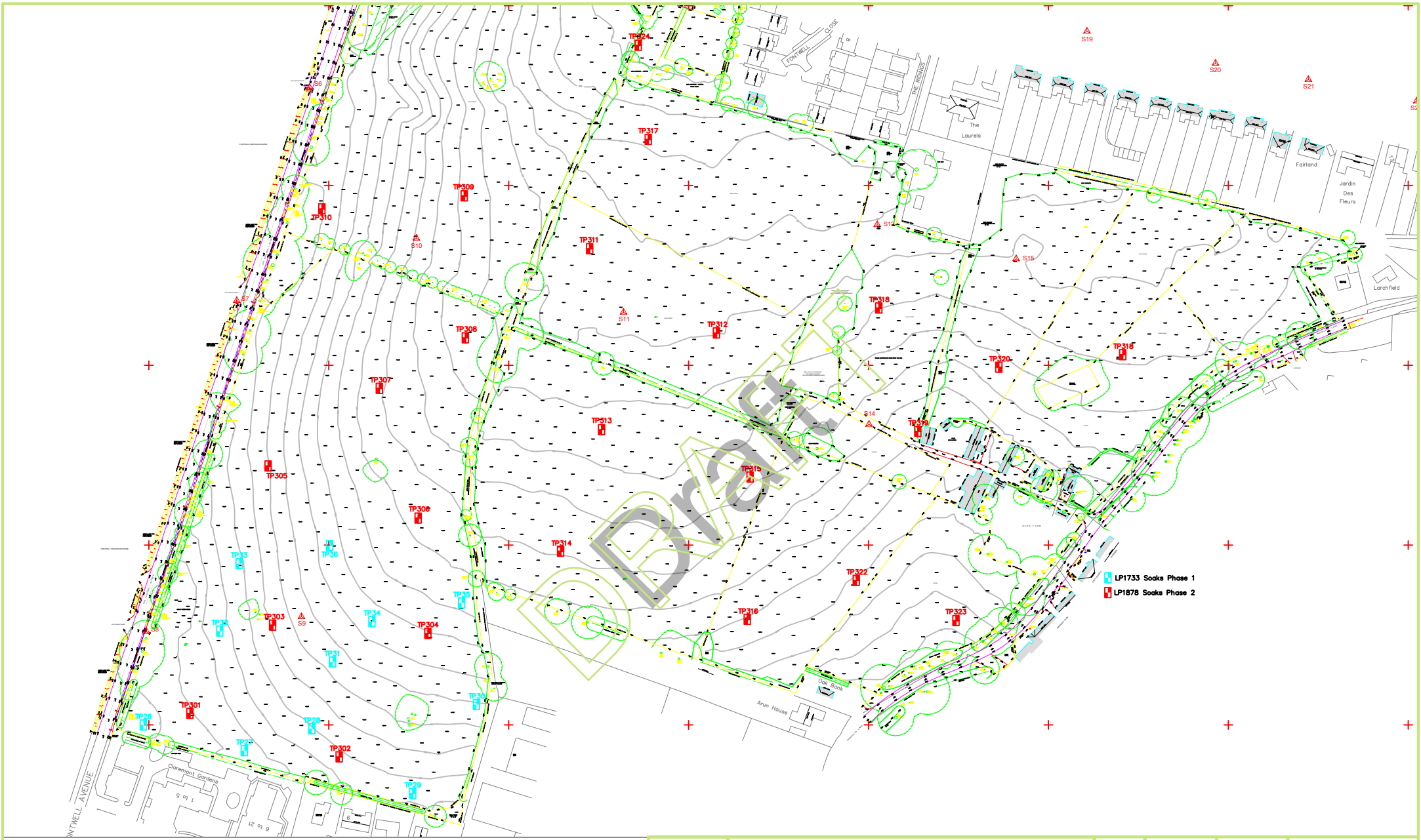
Topographical Survey

Scale	Sheet Size:	Sheet Number:	Date:
1:1000	A0	4	May 2014
Project Number: 19734	Rev: 2	Surveyed By: NC/MJW	Approved By: NL

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Appendix (B)

Geotechnical Information (Extract)



Client	Dandara Properties Ltd	Date	5/4/19	Project Ref.	LP1878
Project	Fontwell Shallow Soaks	Scale at A4	NTS	Fig No.	1
Title	Shallow Soakage Positions				

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
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www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP301
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	175 / 47	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
				0.35			Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.6m = 120kPa
	1.00	B	N=32				*Hand Pen at 1m = 120kPa*
				1.20			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly clayey slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
			N=27				
	1.70	B					
				1.90			Firm to stiff brown silty slightly gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
	2.00	D		2.00			End of pit at 2.00 m

DRAFT

Remarks: Moderate water seepage at 1.5m. Some collapsing below 1.6m. Pit was backfilled with gravel to 0.5mbgl.

Stability: Collapsing below 1.6m.

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
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www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP302
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	185 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	0.80	B	N=28				Dense brown silty very clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
			N=26				*Too gravelly for hand penetrometer test at 1m.*
	2.00	D		1.80			Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
Tel: 01306 646510
www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP303
Sheet 1 of 1

Project Name: Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location: Land near Fontwell, BN18 0SW		Dimensions (m): Depth 2.00 (174 × 47)	Scale 1:25
Client: Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
				0.30			Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.8m = 150kPa
	1.00	B	N=32				*Becoming more gravelly below 1m.*
			N=35	1.50			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly clayey slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
							Too gravelly for hand penetrometer test at 1.5m.
	2.00	D		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
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www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP304
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	182 / 47	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.8m = 175kPa
	1.00	B	N=16				
			N=9				*Hand Pen at 1.5m = 220kPa*
	1.80	B					
				1.90			Pale grey weathered CHALK recovered as slightly clayey slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.8mbgl.

Stability: Stable.

AGS

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The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
Tel: 01306 646510
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Trial Pit Log

Trialpit No
TP305
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	166 / 46	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.5m = 60kPa
	0.80	B	N=27				*Hand Pen at 1m = 160kPa*
				1.20			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly clayey slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
	1.60	D	N=25				
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Moderate water seepage at 1.9m. Some collapsing below 1.6m. Pit was backfilled with gravel to 0.5mbgl.

Stability: Collapsing below 1.6m.

AGS

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Dorking, Surrey RH4 1XA
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www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP306
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	182 / 47	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
	0.80	B					*Hand Pen at 0.8m = 130kPa*
			N=20				
			N=34				*Hand Pen at 1.5m = 190kPa*
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
Tel: 01306 646510
www.leapenvironmental.com

Trial Pit Log

Trialpit No
TP307
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	186 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Dense brown silty very clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
			N=44				*Too gravelly for hand penetrometer test at 1m.*
	1.10	B					
			N=43				
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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Trial Pit Log

Trialpit No
TP308
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	194 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.8m = 275kPa
	1.00	B	N=23				
			N=13				*Hand Pen at 1.5m = 180kPa*
				1.90			
	2.00	D		2.00			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly sandy slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
							End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP309
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	192 / 48	Scale 1:25
Client:	Dandara Ltd			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown gravelly silty TOPSOIL. Gravel of fine to coarse, angular to sub-rounded flint.
	1.00	B	N=27				Medium dense orange brown clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
			N=8				
	1.80	B					*Partings of white grey weathered chalk recovered as slightly clayey slightly gravelly silt at the northern end of the pit below 1.7m. Gravel is rare fine to medium chalk.*
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP310
Sheet 1 of 1

Project Name: Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location: Land near Fontwell, BN18 0SW		Dimensions (m): 190 x 48 Depth 2.00	Scale 1:25
Client: Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints. Occasional roots and rootlets.
	0.80	B	N=6	1.00			Firm to stiff brown slightly silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. *Hand Pen at 0.8m = 100kPa*
	1.50	B	N=15	2.00			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly sandy slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated. End of pit at 2.00 m

DRAFT

Remarks: Slight water seapage at 1.9m. Some collapsing below 1.8m. Pit was backfilled with gravel to 0.2mbgl.

Stability: Collapsing below 1.8m.

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Trial Pit Log

Trialpit No
TP311
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 05/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	177 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
							Hand Pen at 0.6m = 280kPa
	1.00	B	N=57				
			N=50				*Too gravelly for hand penetrometer test at 1.5m.*
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP312
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 06/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	180 / 47	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	0.80	B	N=50				Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
							Too gravelly for hand penetrometer test at 1m.
	1.50	B	N=50				
				2.00			End of pit at 2.00 m

1 2 3 4 5

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP313
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 06/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	173 / 48	Scale 1:25
Client:	Dandara Ltd			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	0.70	D	N=50				Firm orange brown slightly gravelly silty CLAY. Gravel of fine to coarse, sub-angular to sub-rounded flint. *Hand Pen at 0.8m = 70kPa*
				1.20			Firm to stiff brown gravelly silty CLAY. Gravel of fine to coarse, sub-angular to sub-rounded flint
	1.50	B	N=44				*Too gravelly for hand penetrometer test at 1.5m.*
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP314
Sheet 1 of 1

Project Name: Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 06/03/2019
Location: Land near Fontwell, BN18 0SW		Dimensions (m): Depth 2.00 (173 × 48)	Scale 1:25
Client: Dandara Ltd			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Dense pale brown clayey silty GRAVEL with partings of silty gravelly clay. Gravel of fine to coarse, sub-angular to sub-rounded flint.
							Hand Pen at 0.9m = 100kPa
	1.00	B	N=44				
			N=42				*Too gravelly for hand penetrometer test at 1.5m.*
				2.00			End of pit at 2.00 m

1 2 3 4 5

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP315
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 06/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	173 / 48	Scale 1:25
Client:	Dandara Ltd			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm orange brown slightly gravelly silty CLAY. Gravel of fine to coarse, sub-angular to sub-rounded flint.
							Hand Pen at 0.6m = 100kPa
	1.00	D	N=24				
							Becoming very gravelly below 1.3m.
			N=50				*Too gravelly for hand penetrometer test at 1.5m.*
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP316
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 06/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	170 / 49	Scale 1:25
Client:	Dandara Ltd			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm orange brown slightly gravelly silty CLAY. Gravel of fine to coarse, sub-angular to sub-rounded flint.
							Hand Pen at 0.6m = 225kPa
			N=31				*Becoming very gravelly below 1m.*
	1.20	B					
			N=3				*Too gravelly for hand penetrometer test at 1.5m.*
							Partings of white grey weathered chalk recovered as slightly clayey slightly gravelly silt at the eastern end of the pit below 1.8m. Gravel is rare fine to medium chalk.
	2.00	D		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP317
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 07/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	180 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	1.00	B	N=50				Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
			N=54				
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP318
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 07/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	172 / 54	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	1.00	B	N=11				Medium dense brown slightly sandy silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
			N=11				*Too gravelly for hand penetrometer test at 1m.*
	2.00	D		1.85 2.00			Pale grey weathered CHALK recovered as slightly gravelly silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
							End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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Trial Pit Log

Trialpit No
TP319
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 07/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	165 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	0.80	D					Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. *Hand Pen at 0.8m = 90kPa*
				1.20			Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
	1.50	B					*Too gravelly for hand penetrometer test at 1.5m.*
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl. Unable to complete perth penetrometer test.

Stability: Stable.

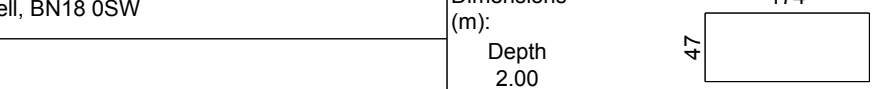
AGS

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Trial Pit Log

Trialpit No
TP320
Sheet 1 of 1

Project Name: Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 11/03/2019
Location: Land near Fontwell, BN18 0SW		Dimensions (m): Depth 2.00	Scale 1:25
Client: Dandara Ltd			Logged SN



Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	1.20	B	N=50 N=45				Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
				2.00			End of pit at 2.00 m

1
2
3
4
5

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

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Trial Pit Log

Trialpit No
TP321
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 11/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	170 / 46	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
	1.00	B	N=38 N=50				Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.3mbgl.

Stability: Stable.

AGS

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Trial Pit Log

Trialpit No
TP322
Sheet 1 of 1

Project Name: Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 11/03/2019
Location: Land near Fontwell, BN18 0SW		Dimensions (m): 172 x 46 Depth 2.00	Scale 1:25
Client: Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
	1.00	B	N=30				*Too gravelly for hand penetrometer test at 1m.*
	1.50	D	N=41	1.40			Pale grey occasionally mottled yellow brown weathered CHALK recovered as slightly gravelly slightly clayey silt. Gravel of extremely weak medium to coarse sub-angular to sub-rounded chalk. Clasts are low density. Matrix dominated.
				2.00			End of pit at 2.00 m

DRAFT

Remarks: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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Trial Pit Log

Trialpit No
TP323
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 11/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	174 / 47	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Too gravelly for hand penetrometer test at 0.8m.
	1.00	B	N=30				
			N=27				*Too gravelly for hand penetrometer test at 1.5m.*
				1.80			Medium dense brown slightly clayey SAND. Sand is fine.
	2.00	B		2.00			End of pit at 2.00 m

DRAFT

Remarks: Slight water seapage at 1.8m. Some collapsing below 1.8m. Pit was backfilled with gravel to 0.5mbgl.

Stability: Collapsing below 1.8m.

AGS

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Trial Pit Log

Trialpit No
TP324
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 07/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 1.90	180 / 46	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
			N=50				Dense brown slightly sandy silty slightly clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint. Occasional partings of gravelly silty clay.
	1.20	B					*Becoming more clayey below 1m.*
			N=50				
	2.00	D		1.90			End of pit at 1.90 m

DRAFT

Remarks: No further progress below 1.9m due to dense gravels. Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

AGS

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Trial Pit Log

Trialpit No
TP326
Sheet 1 of 1

Project Name:	Fontwell Additional Shallow Soaks	Project No. LP01878	Co-ords: - Level:	Date 04/03/2019
Location:	Land near Fontwell, BN18 0SW	Dimensions (m): Depth 2.00	194 / 48	Scale 1:25
Client:	Dandara Ltd			Logged SN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Grass over brown slightly gravelly silt TOPSOIL. Gravel of fine to coarse, sub-angular to sub-rounded flints.
							Firm to stiff brown silty gravelly CLAY. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
							Hand Pen at 0.6m = 160kPa
			N=21				
	1.20	B					*Hand Pen at 1.2m = 130kPa*
			N=27				
	2.00	D		2.00			End of pit at 2.00 m

DRAFT

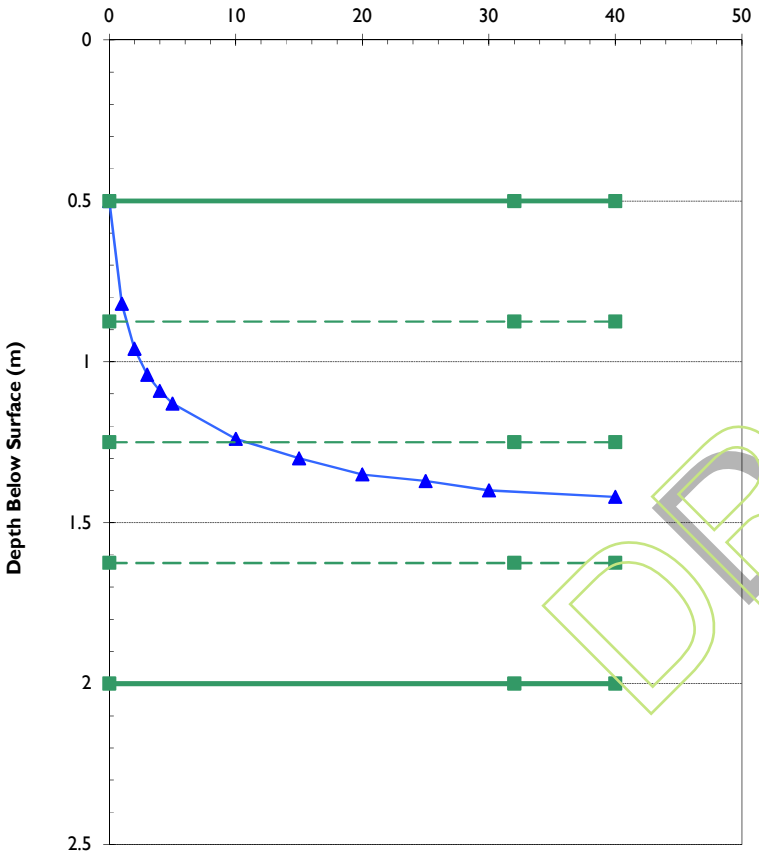
Remarks: Pit remained dry and stable. Pit was backfilled with arising, no soakage testing undertaken.

Stability: Stable.

AGS

BRE Digest 365 - Soakage Test

Test Hole No:	TP301
Test No:	Test No 1



Pit Length (m)	1.75
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.46
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	0.92
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	5.3513
Discharge Rate (litre/min)	9.466594
Soakage Rate (litre/m2/min)	1.769027
BRE Soil Infiltration Rate (m/sec)	2.95E-05

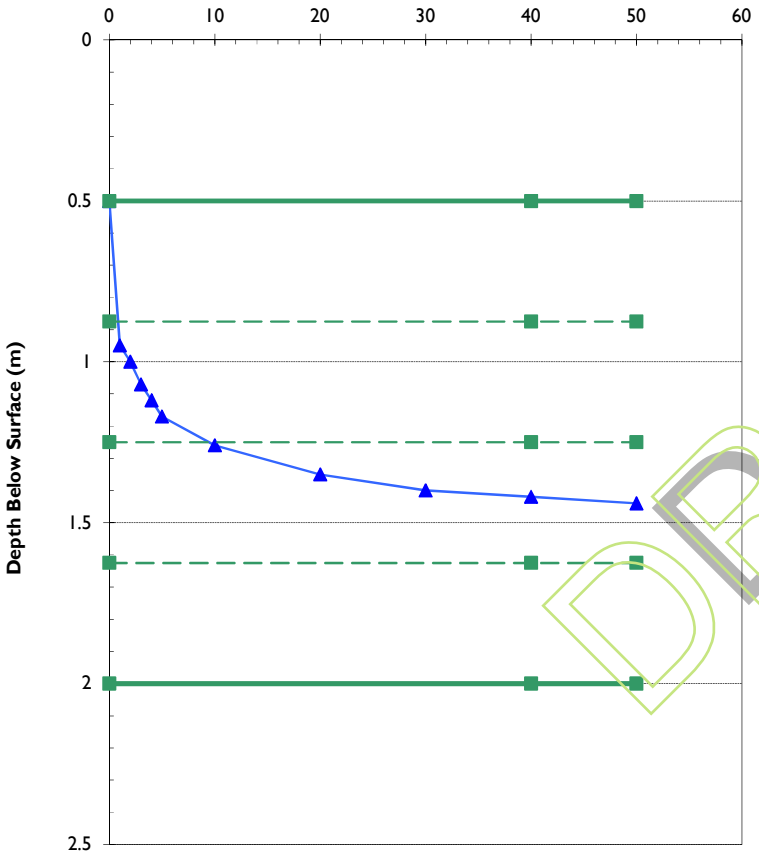
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP301
Test No:	Test No 2



Pit Length (m)	1.75
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.46
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	0.94
Total Soakage Test Time (min)	50
Mean Internal Discharge Area (m2)	5.3513
Discharge Rate (litre/min)	10.89939
Soakage Rate (litre/m2/min)	2.036774
BRE Soil Infiltration Rate (m/sec)	3.39E-05

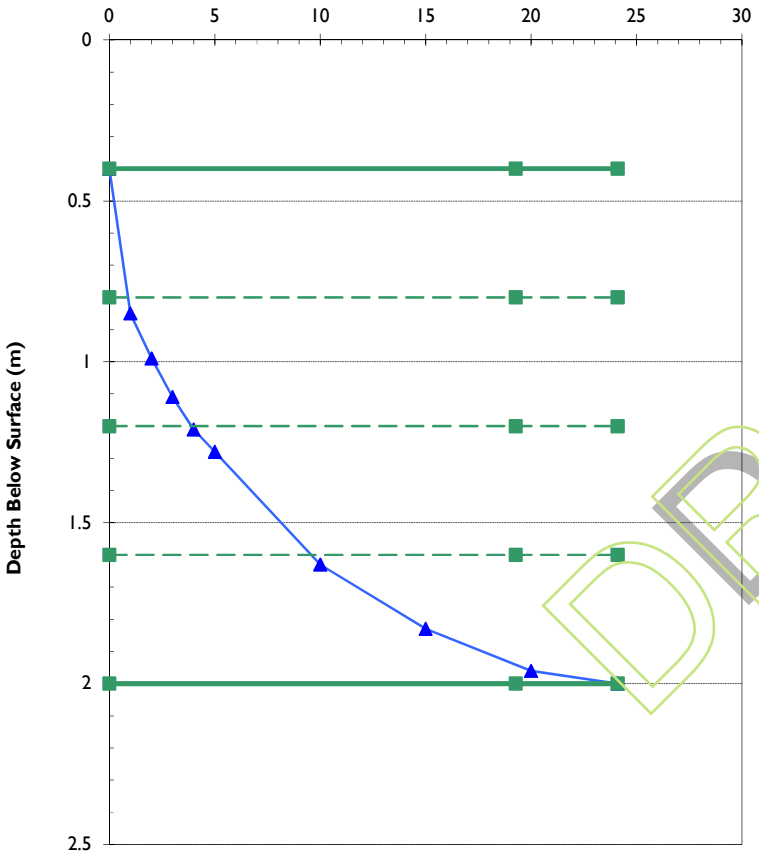
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP301
Test No:	Test No 3



Pit Length (m)	1.75
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.46
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.6
Total Soakage Test Time (min)	24.1
Mean Internal Discharge Area (m2)	5.5733
Discharge Rate (litre/min)	26.73475
Soakage Rate (litre/m2/min)	4.796934
BRE Soil Infiltration Rate (m/sec)	7.99E-05

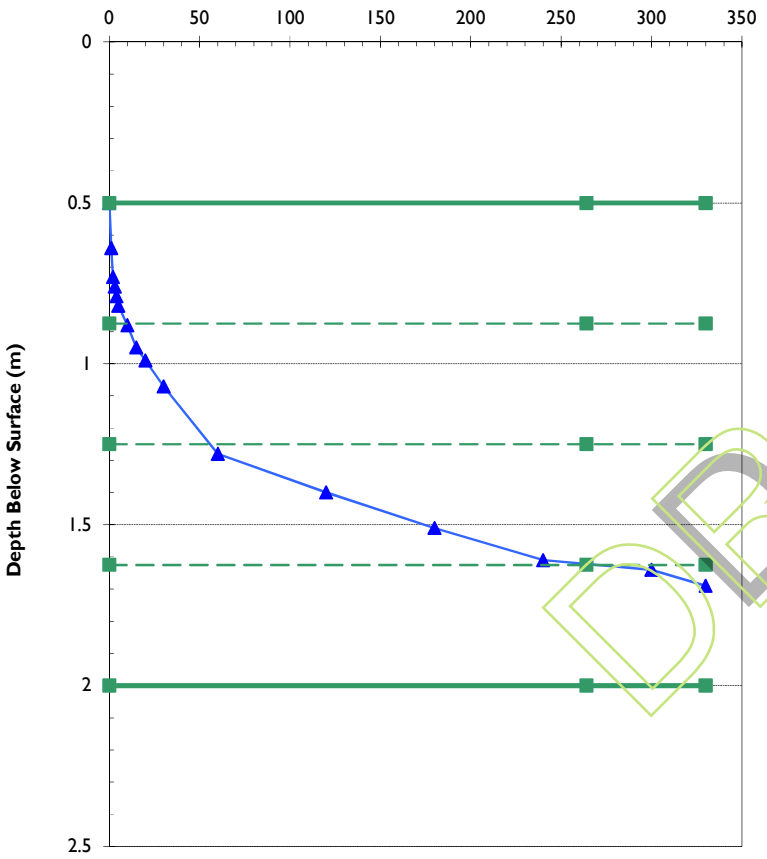
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP302
Test No:	Test No 1



Pit Length (m)	1.85
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.9
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.19
Total Soakage Test Time (min)	330
Mean Internal Discharge Area (m2)	4.616
Discharge Rate (litre/min)	0.632672
Soakage Rate (litre/m2/min)	0.137061
BRE Soil Infiltration Rate (m/sec)	2.28E-06

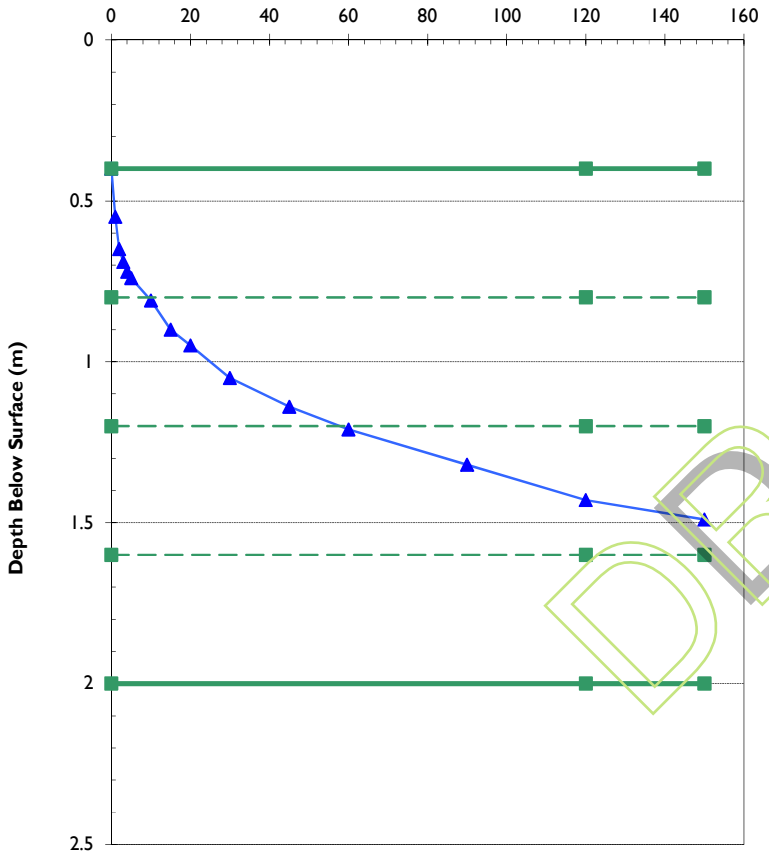
Comments:
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	11/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP302
Test No:	Test No 2



Pit Length (m)	1.85
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.9
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.09
Total Soakage Test Time (min)	150
Mean Internal Discharge Area (m2)	4.93055
Discharge Rate (litre/min)	0.891116
Soakage Rate (litre/m2/min)	0.180734
BRE Soil Infiltration Rate (m/sec)	3.01E-06

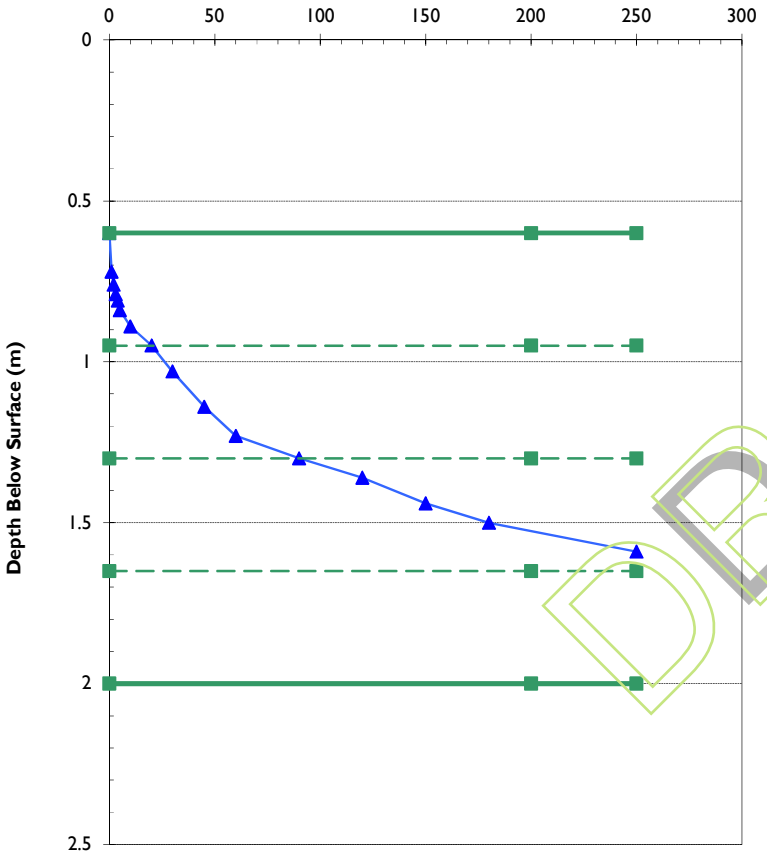
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP302
Test No:	Test No 3



Pit Length (m)	1.85
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.9
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.6
Max Water Dropdown during Test (m)	0.99
Total Soakage Test Time (min)	250
Mean Internal Discharge Area (m2)	4.383
Discharge Rate (litre/min)	0.518831
Soakage Rate (litre/m2/min)	0.118374
BRE Soil Infiltration Rate (m/sec)	1.97E-06

Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	13/03/19

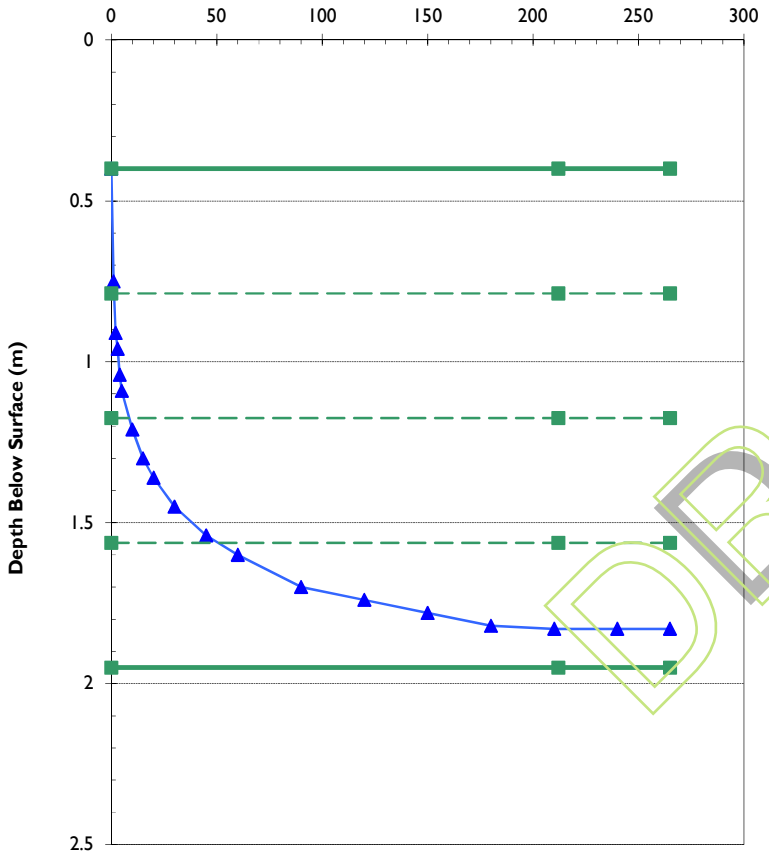
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 1

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.43
Total Soakage Test Time (min)	265
Mean Internal Discharge Area (m2)	4.2433
Discharge Rate (litre/min)	2.566459
Soakage Rate (litre/m2/min)	0.604826
BRE Soil Infiltration Rate (m/sec)	1.01E-05

Comments:

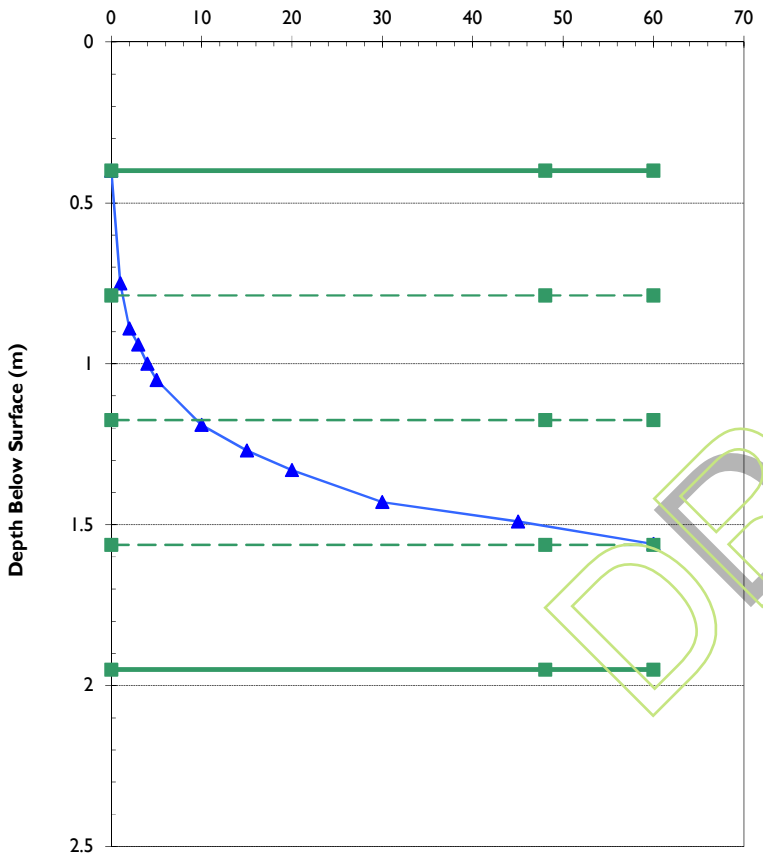
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 2



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.16
Total Soakage Test Time (min)	60
Mean Internal Discharge Area (m2)	4.248825
Discharge Rate (litre/min)	
Soakage Rate (litre/m2/min)	
BRE Soil Infiltration Rate (m/sec)	

Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

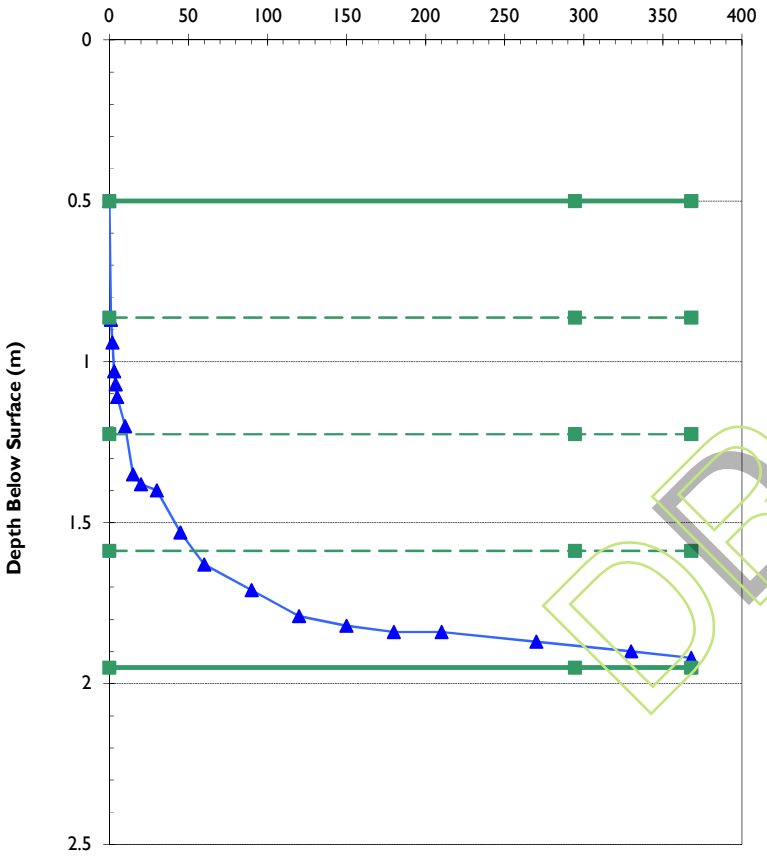
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	368
Mean Internal Discharge Area (m2)	4.0223
Discharge Rate (litre/min)	2.252453
Soakage Rate (litre/m2/min)	0.559991
BRE Soil Infiltration Rate (m/sec)	9.33E-06

Draft

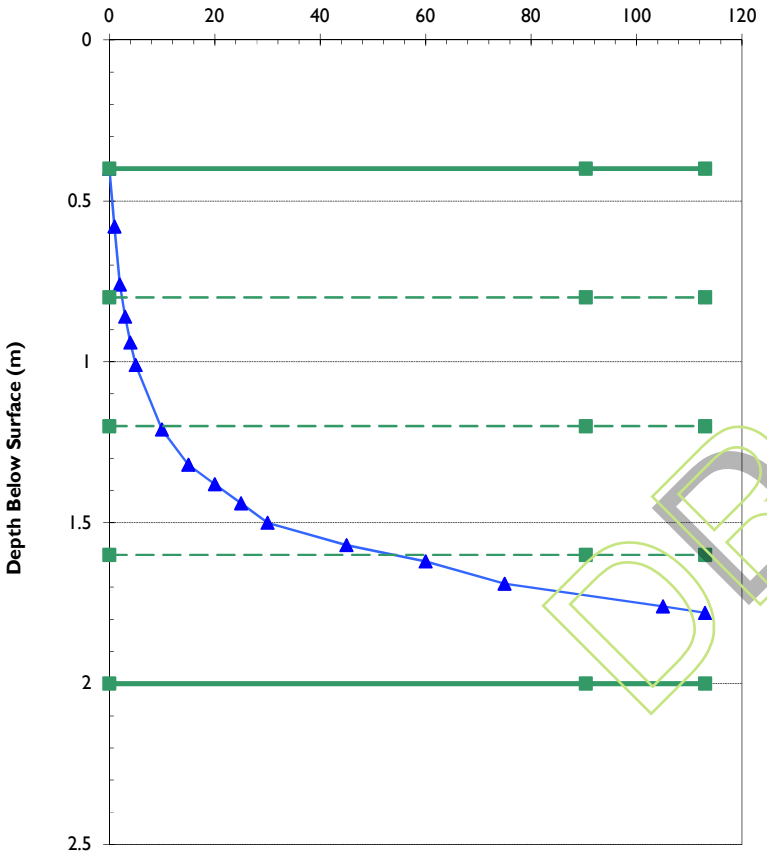
Comments:

Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	11/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
Test No:	Test No 1



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.38
Total Soakage Test Time (min)	113
Mean Internal Discharge Area (m2)	4.5194
Discharge Rate (litre/min)	2.652403
Soakage Rate (litre/m2/min)	0.586893
BRE Soil Infiltration Rate (m/sec)	9.78E-06

Comments:

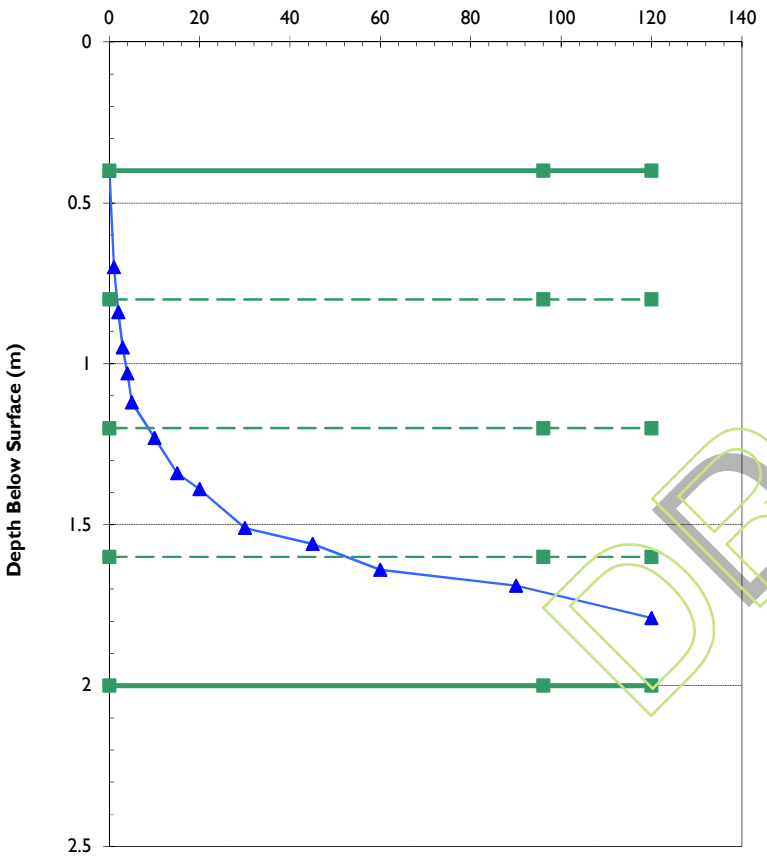
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
Test No:	Test No 2



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.39
Total Soakage Test Time (min)	120
Mean Internal Discharge Area (m2)	4.5194
Discharge Rate (litre/min)	2.694931
Soakage Rate (litre/m2/min)	0.596303
BRE Soil Infiltration Rate (m/sec)	9.94E-06

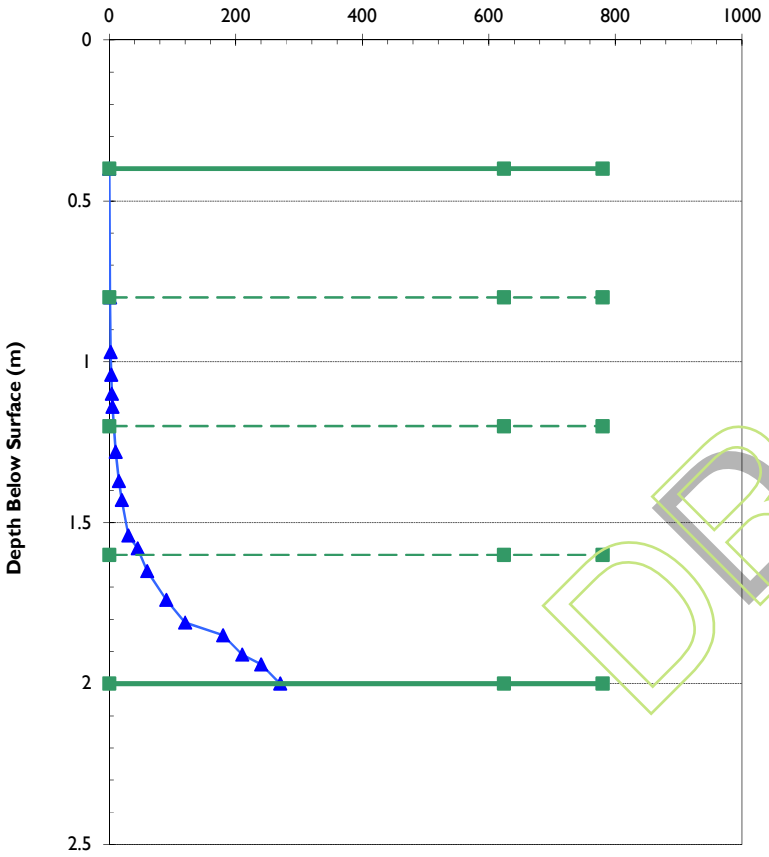
Comments:
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
Test No:	Test No 3



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.6
Total Soakage Test Time (min)	780
Mean Internal Discharge Area (m2)	4.5194
Discharge Rate (litre/min)	2.834462
Soakage Rate (litre/m2/min)	0.627177
BRE Soil Infiltration Rate (m/sec)	1.05E-05

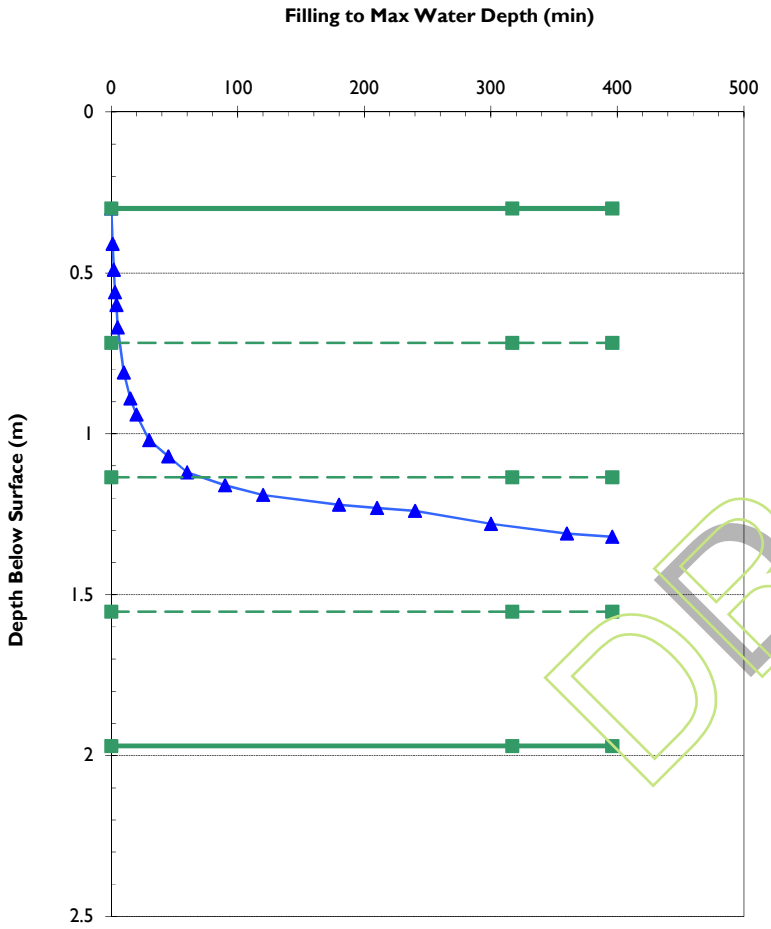
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	11/03/19

DRAFT

BRE Digest 365 - Soakage Test



Test Hole No:	TP305
Test No:	Test No 1

Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.56
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.02
Total Soakage Test Time (min)	396
Mean Internal Discharge Area (m2)	5.1732
Discharge Rate (litre/min)	0.395476
Soakage Rate (litre/m2/min)	0.076447
BRE Soil Infiltration Rate (m/sec)	1.27E-06

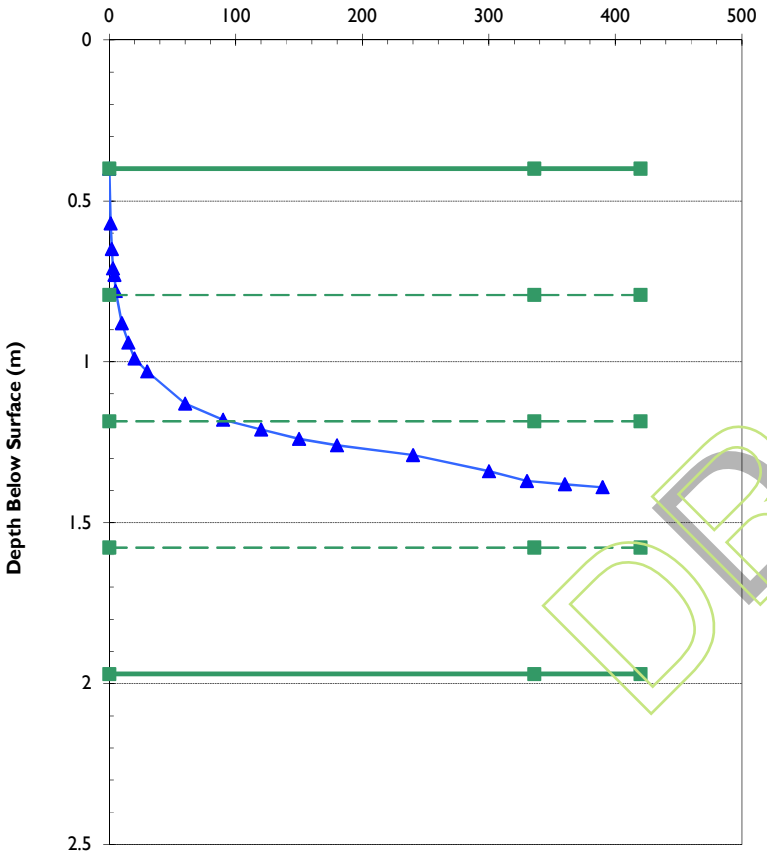
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 2



Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.56
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	0.99
Total Soakage Test Time (min)	420
Mean Internal Discharge Area (m2)	4.9612
Discharge Rate (litre/min)	0.389638
Soakage Rate (litre/m2/min)	0.078537
BRE Soil Infiltration Rate (m/sec)	1.31E-06

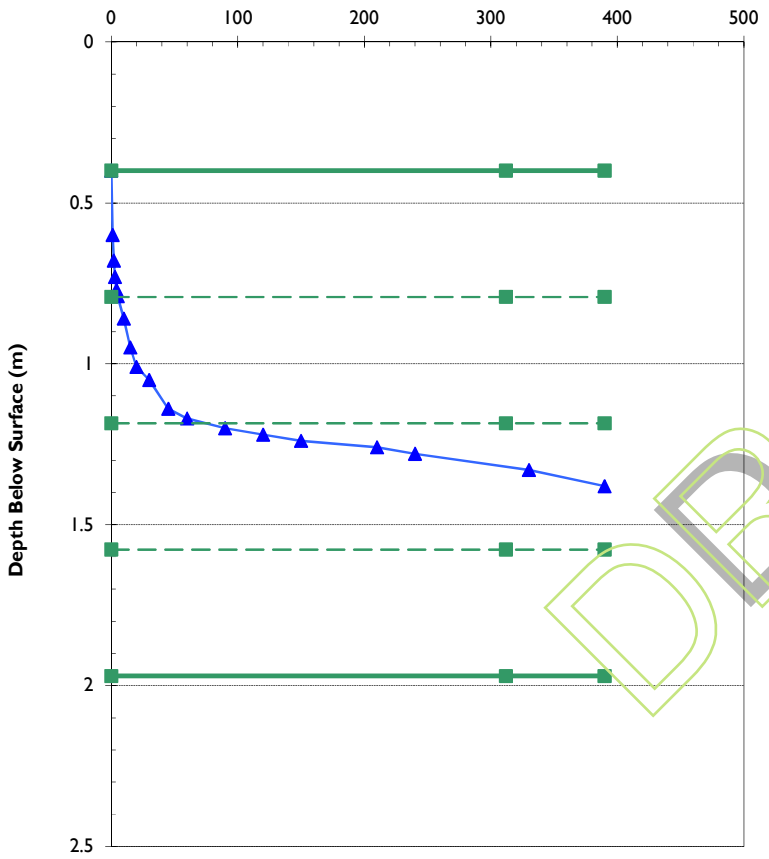
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	11/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 3



Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.56
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	0.98
Total Soakage Test Time (min)	390
Mean Internal Discharge Area (m2)	4.9612
Discharge Rate (litre/min)	0.397566
Soakage Rate (litre/m2/min)	0.080135
BRE Soil Infiltration Rate (m/sec)	1.34E-06

Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

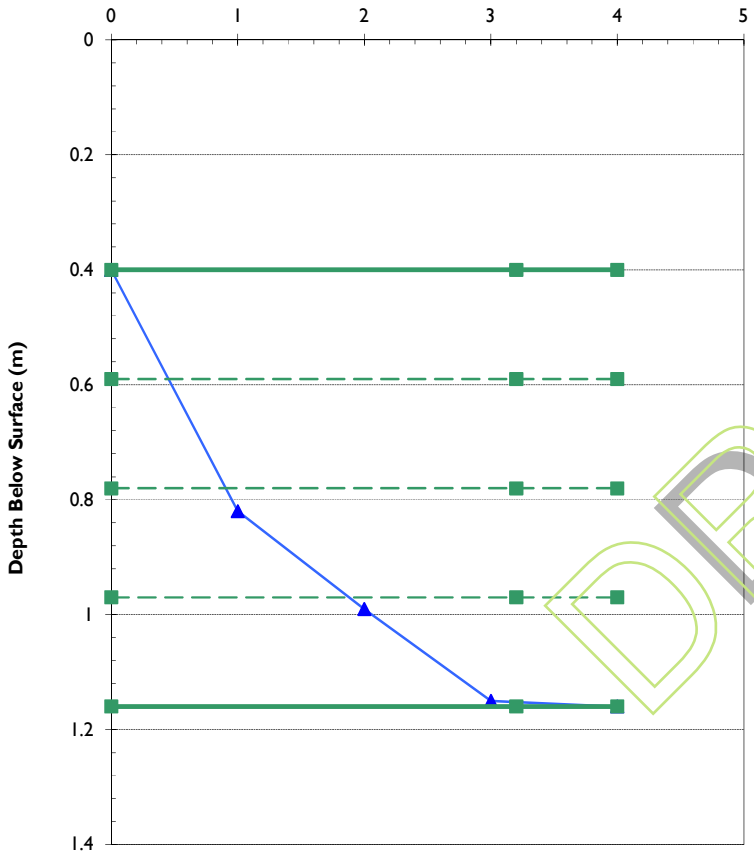
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP306
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	1.16
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	0.76
Total Soakage Test Time (min)	4
Mean Internal Discharge Area (m2)	2.5958
Discharge Rate (litre/min)	45.46271
Soakage Rate (litre/m2/min)	17.51395
BRE Soil Infiltration Rate (m/sec)	0.000292

Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

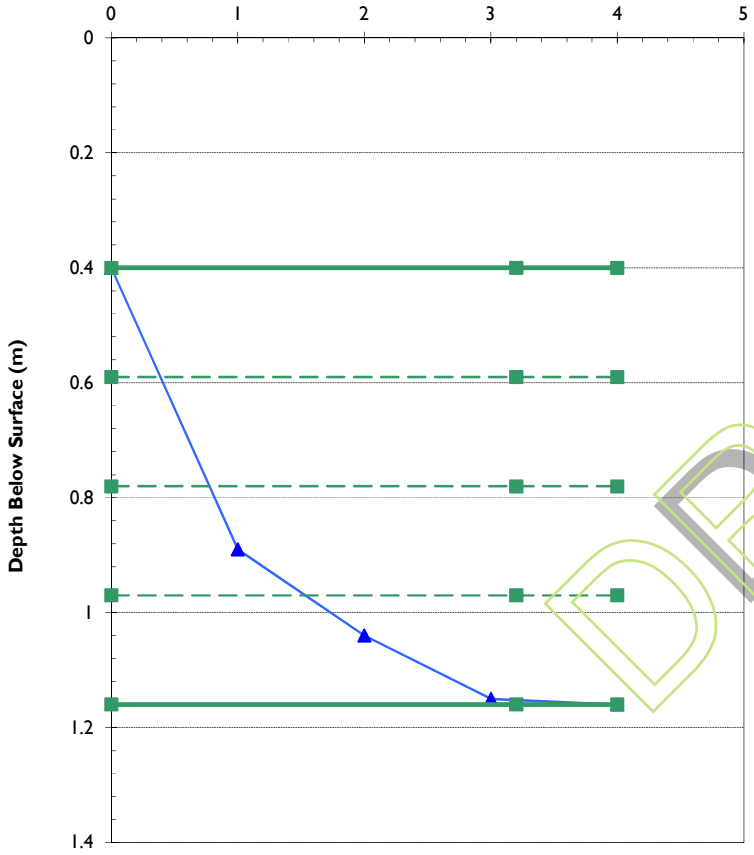
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP306
Test No:	Test No 2

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	1.16
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	0.76
Total Soakage Test Time (min)	4
Mean Internal Discharge Area (m2)	2.5958
Discharge Rate (litre/min)	56.74898
Soakage Rate (litre/m2/min)	21.86185
BRE Soil Infiltration Rate (m/sec)	0.000364

Draft

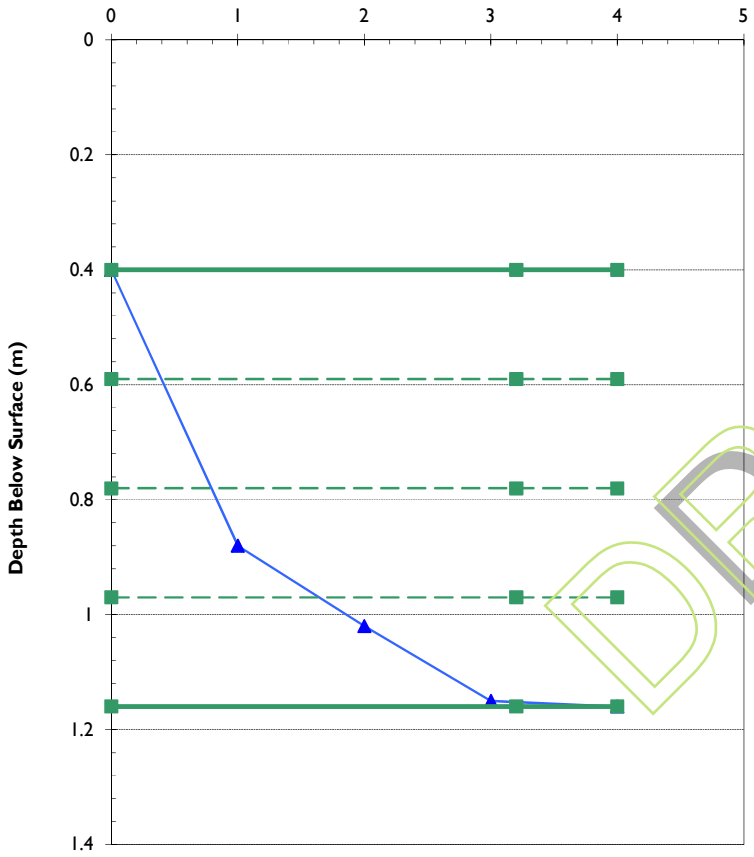
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP306
Test No:	Test No 3



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	1.16
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	0.76
Total Soakage Test Time (min)	4
Mean Internal Discharge Area (m2)	2.5958
Discharge Rate (litre/min)	52.13244
Soakage Rate (litre/m2/min)	20.08338
BRE Soil Infiltration Rate (m/sec)	0.000335

Comments:

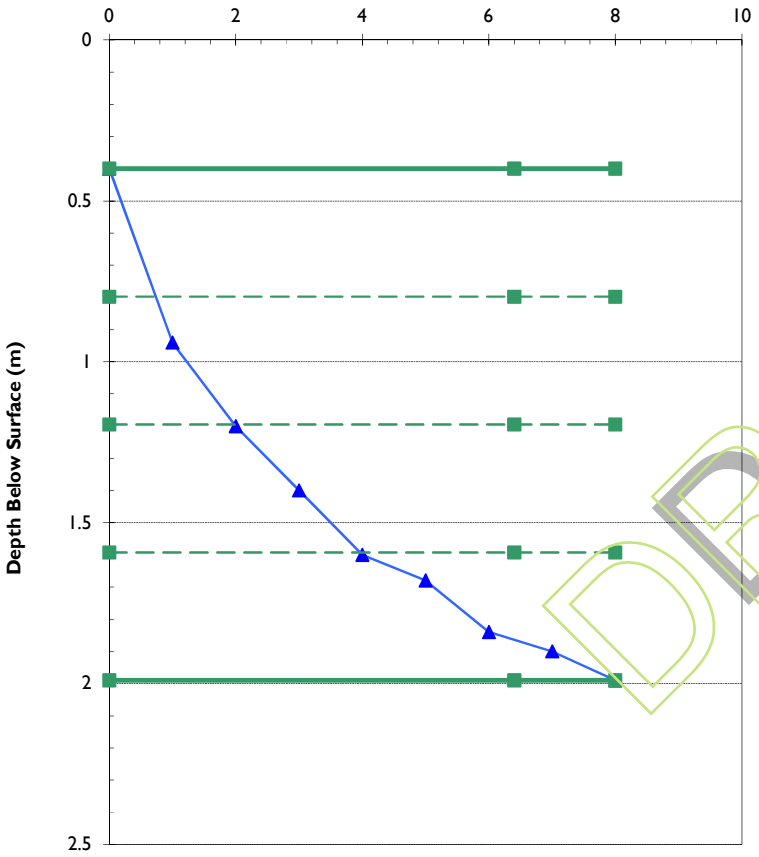
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	08/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 1



Pit Length (m)	1.86
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.59
Total Soakage Test Time (min)	8
Mean Internal Discharge Area (m2)	4.6134
Discharge Rate (litre/min)	43.99817
Soakage Rate (litre/m2/min)	9.537037
BRE Soil Infiltration Rate (m/sec)	0.000159

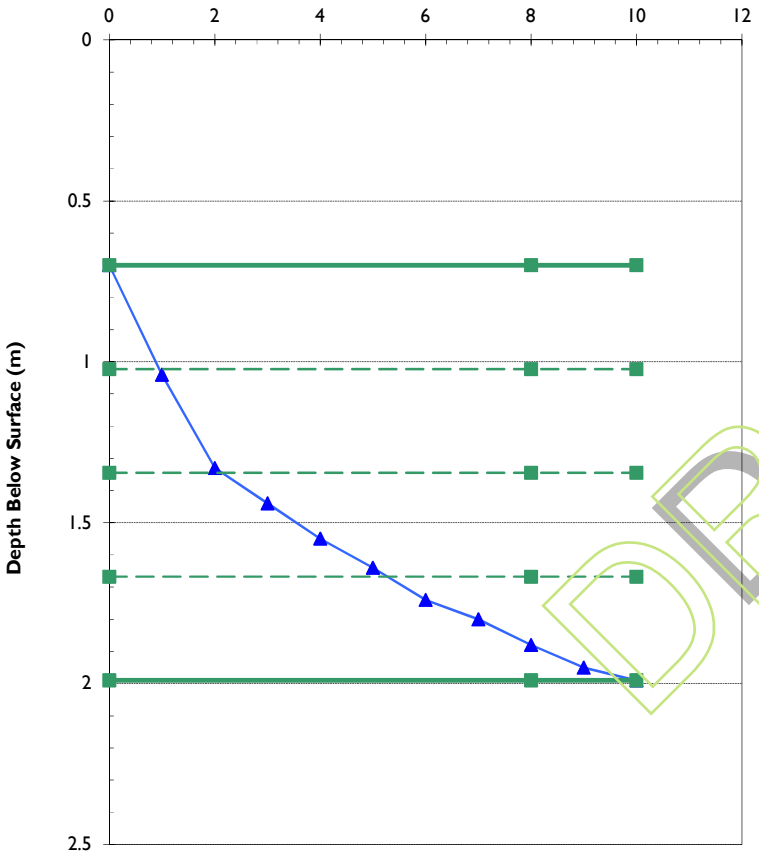
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 2



Pit Length (m)	1.86
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.7
Max Water Dropdown during Test (m)	1.29
Total Soakage Test Time (min)	10
Mean Internal Discharge Area (m2)	3.9114
Discharge Rate (litre/min)	26.62013
Soakage Rate (litre/m2/min)	6.80578
BRE Soil Infiltration Rate (m/sec)	0.000113

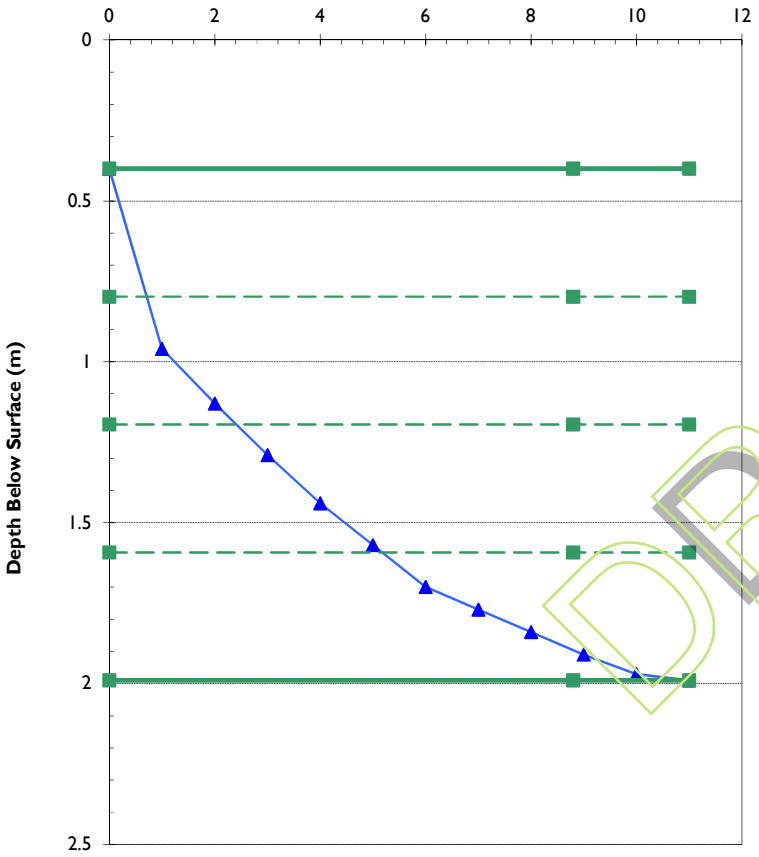
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 3



Pit Length (m)	1.86
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.59
Total Soakage Test Time (min)	11
Mean Internal Discharge Area (m2)	4.6134
Discharge Rate (litre/min)	31.8053
Soakage Rate (litre/m2/min)	6.894114
BRE Soil Infiltration Rate (m/sec)	0.000115

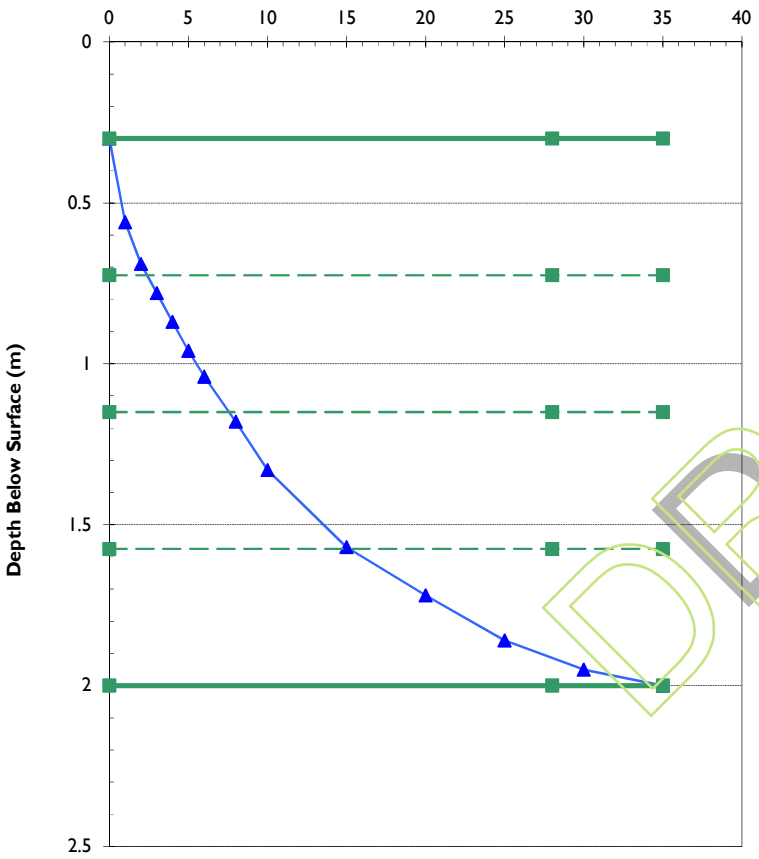
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP308
Test No:	Test No 1



Pit Length (m)	1.94
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.7
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	5.0452
Discharge Rate (litre/min)	12.38901
Soakage Rate (litre/m2/min)	2.455603
BRE Soil Infiltration Rate (m/sec)	4.09E-05

Comments:

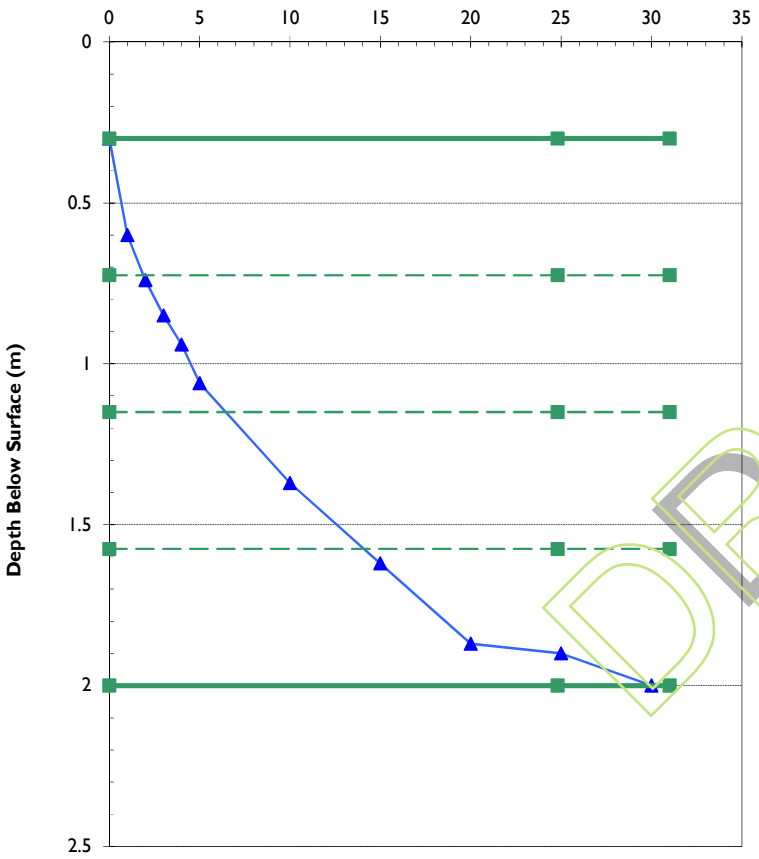
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP308
Test No:	Test No 2



Pit Length (m)	1.94
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.7
Total Soakage Test Time (min)	31
Mean Internal Discharge Area (m2)	5.0452
Discharge Rate (litre/min)	12.96815
Soakage Rate (litre/m2/min)	2.570393
BRE Soil Infiltration Rate (m/sec)	4.28E-05

Comments:

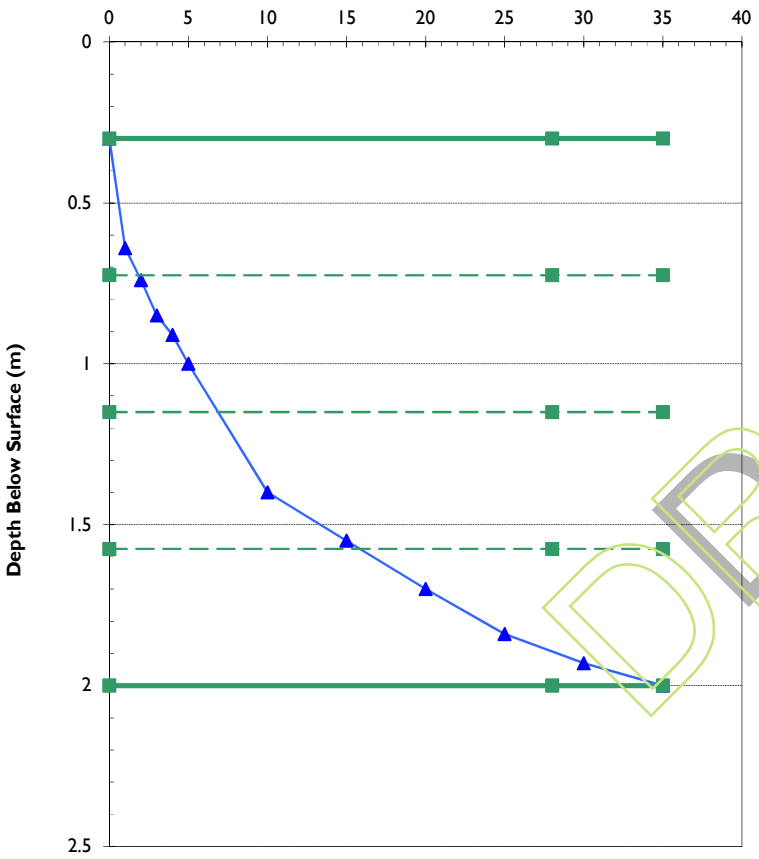
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP308
Test No:	Test No 3



Pit Length (m)	1.94
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.7
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	5.0452
Discharge Rate (litre/min)	11.32091
Soakage Rate (litre/m2/min)	2.243896
BRE Soil Infiltration Rate (m/sec)	3.74E-05

Comments:

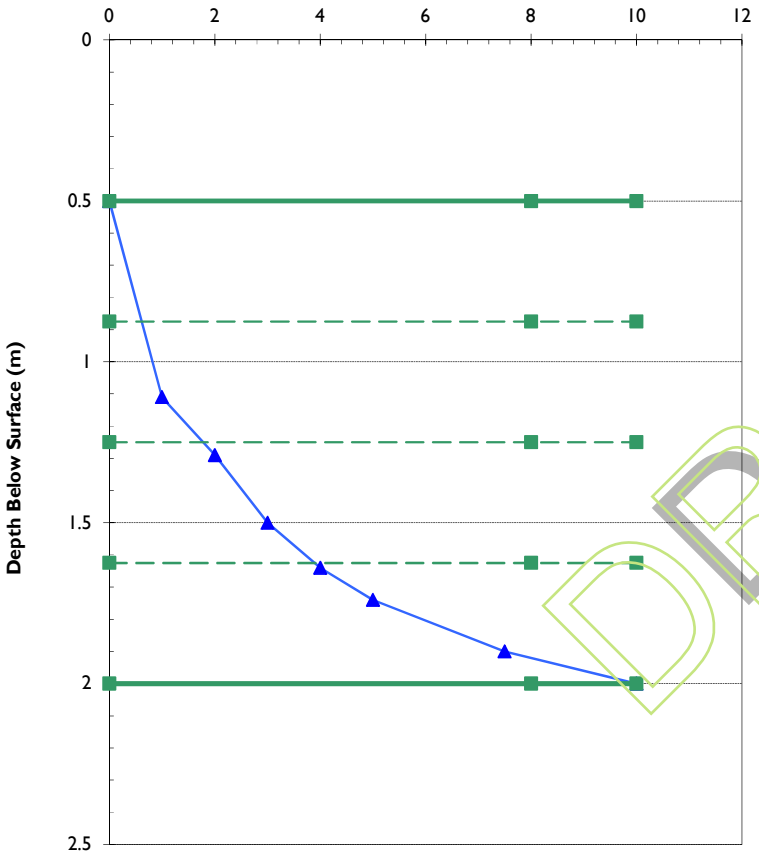
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP309
Test No:	Test No 1



Pit Length (m)	1.92
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	10
Mean Internal Discharge Area (m2)	4.5216
Discharge Rate (litre/min)	42.17073
Soakage Rate (litre/m2/min)	9.326506
BRE Soil Infiltration Rate (m/sec)	0.000155

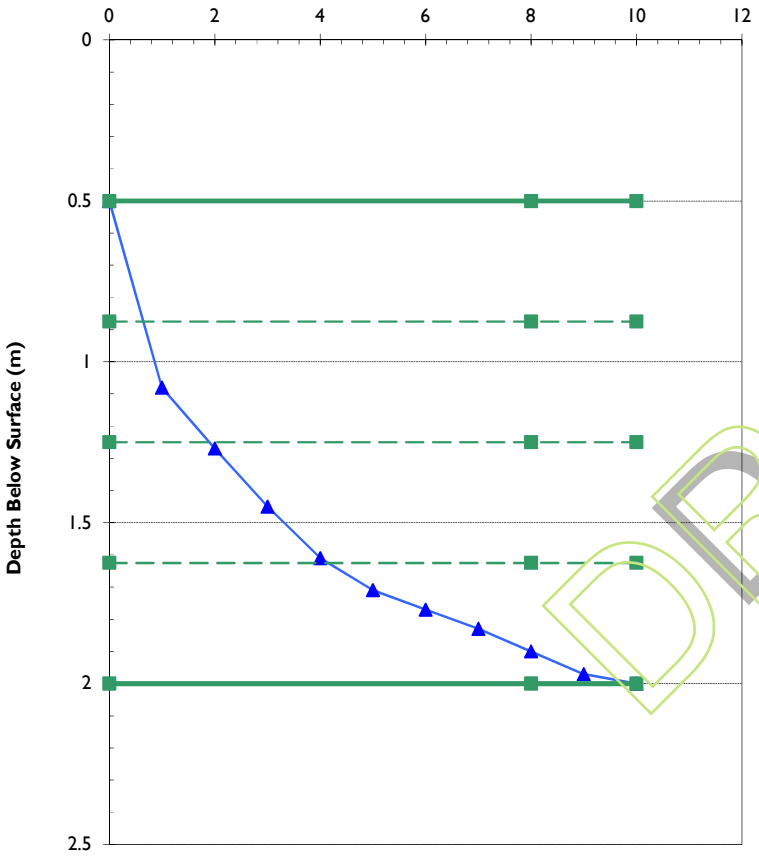
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	05/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP309
Test No:	Test No 2



Pit Length (m)	1.92
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	10
Mean Internal Discharge Area (m2)	4.5216
Discharge Rate (litre/min)	39.45827
Soakage Rate (litre/m2/min)	8.726616
BRE Soil Infiltration Rate (m/sec)	0.000145

Comments:

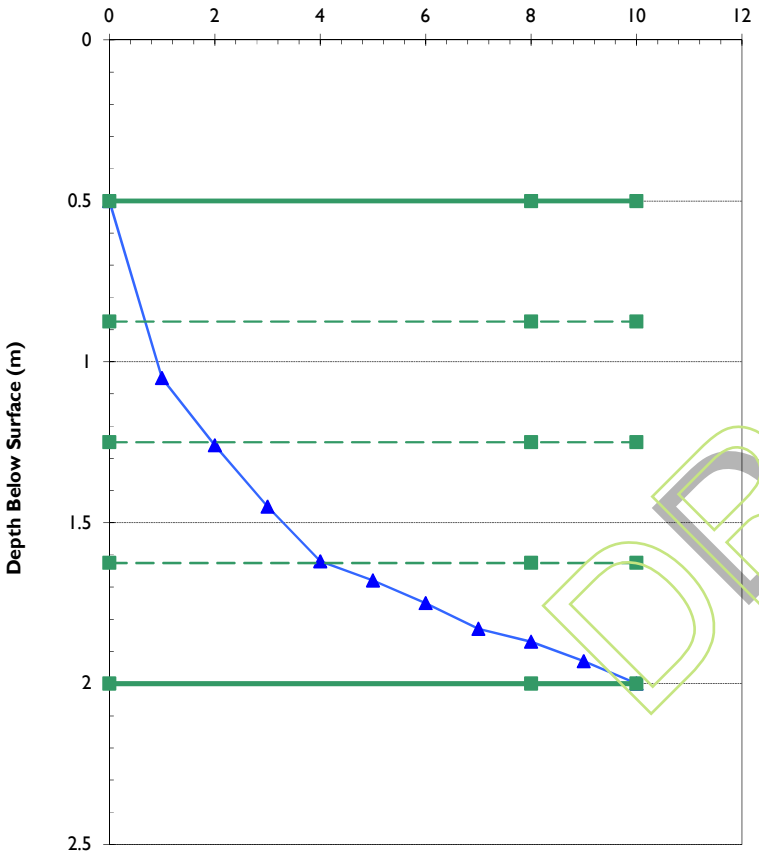
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	05/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP309
Test No:	Test No 3



Pit Length (m)	1.92
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	10
Mean Internal Discharge Area (m2)	4.5216
Discharge Rate (litre/min)	40.64071
Soakage Rate (litre/m2/min)	8.988126
BRE Soil Infiltration Rate (m/sec)	0.00015

Comments:

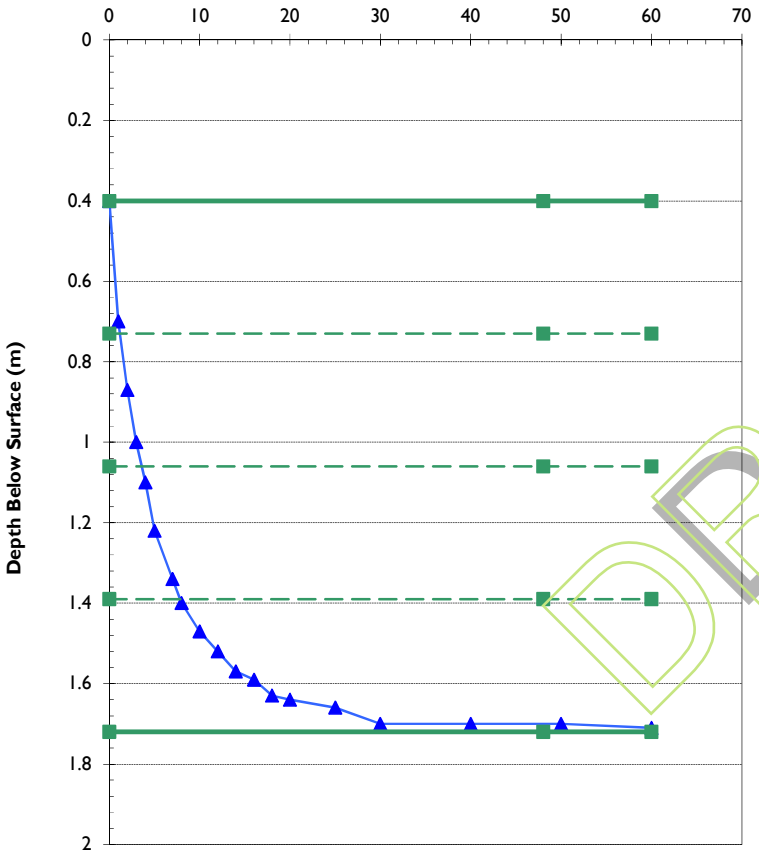
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	05/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 1



Pit Length (m)	1.9
Pit Width (m)	0.48
Depth to Pit Base (m)	1.72
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.92
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.31
Total Soakage Test Time (min)	60
Mean Internal Discharge Area (m2)	3.5776
Discharge Rate (litre/min)	12.23576
Soakage Rate (litre/m2/min)	3.420104
BRE Soil Infiltration Rate (m/sec)	5.7E-05

Comments:

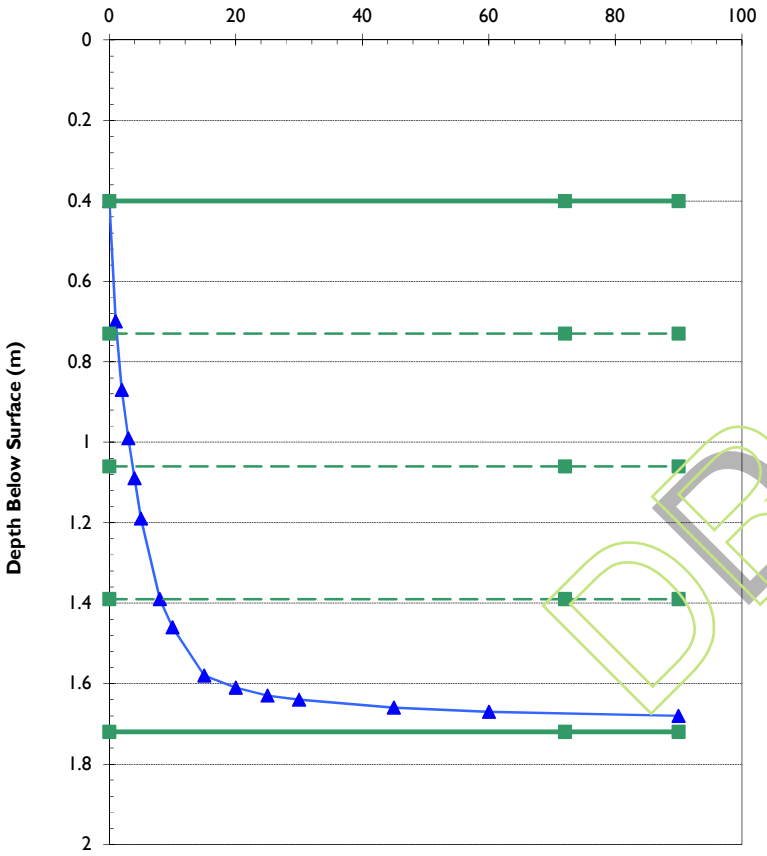
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	05/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 2



Pit Length (m)	1.9
Pit Width (m)	0.48
Depth to Pit Base (m)	1.72
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.92
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.28
Total Soakage Test Time (min)	90
Mean Internal Discharge Area (m2)	3.5776
Discharge Rate (litre/min)	11.68566
Soakage Rate (litre/m2/min)	3.26634
BRE Soil Infiltration Rate (m/sec)	5.44E-05

Comments:

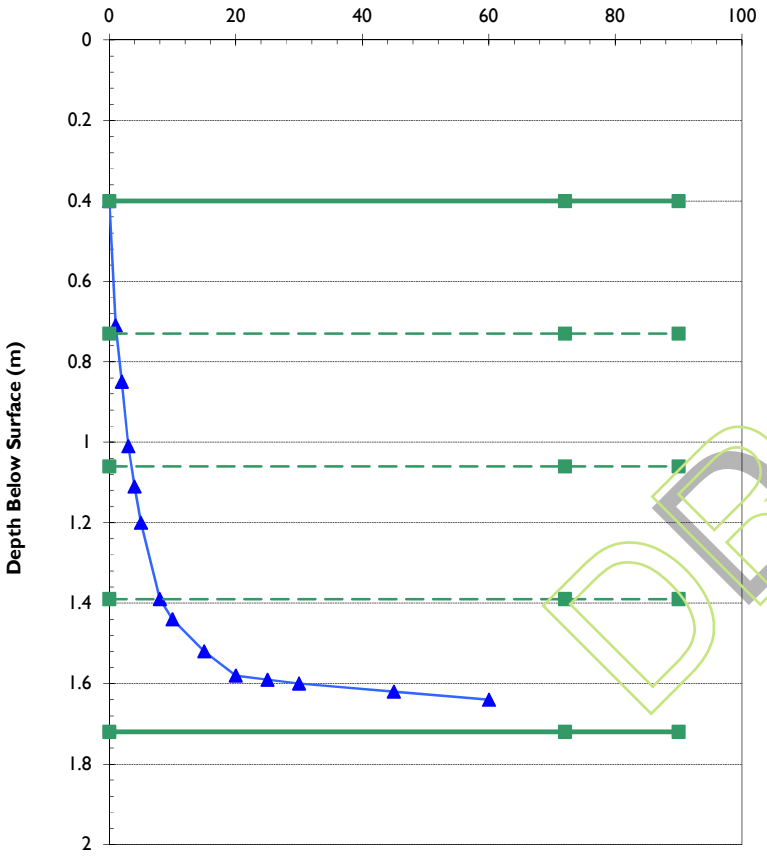
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	06/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 3



Pit Length (m)	1.9
Pit Width (m)	0.48
Depth to Pit Base (m)	1.72
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.92
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.24
Total Soakage Test Time (min)	90
Mean Internal Discharge Area (m2)	3.5776
Discharge Rate (litre/min)	9.140044
Soakage Rate (litre/m2/min)	2.554798
BRE Soil Infiltration Rate (m/sec)	4.26E-05

Comments:

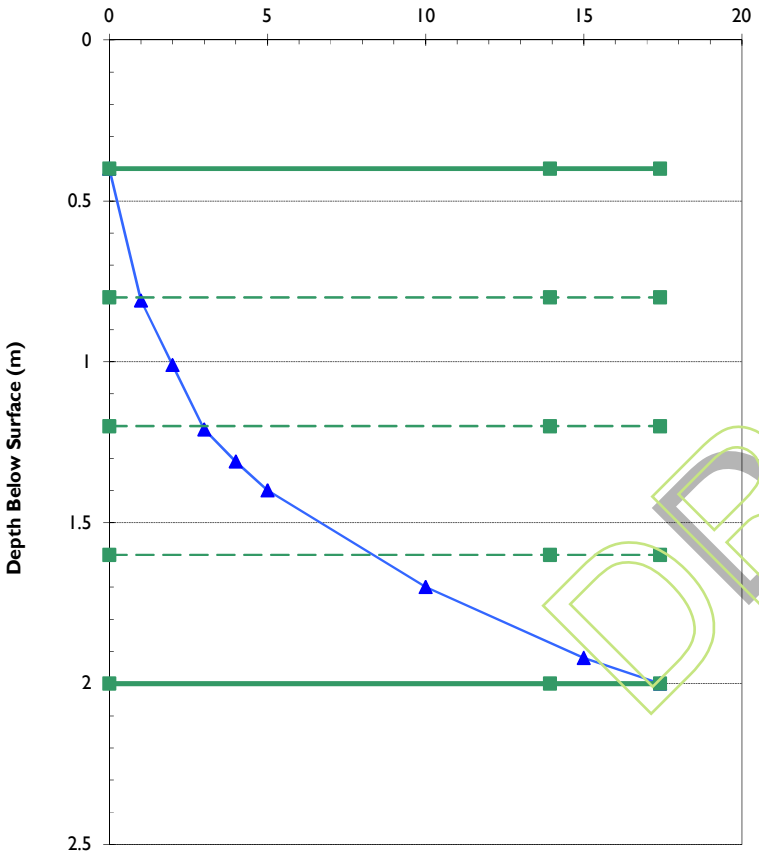
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 1



Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.6
Total Soakage Test Time (min)	17.41
Mean Internal Discharge Area (m2)	4.4496
Discharge Rate (litre/min)	18.47528
Soakage Rate (litre/m2/min)	4.152121
BRE Soil Infiltration Rate (m/sec)	6.92E-05

Draft

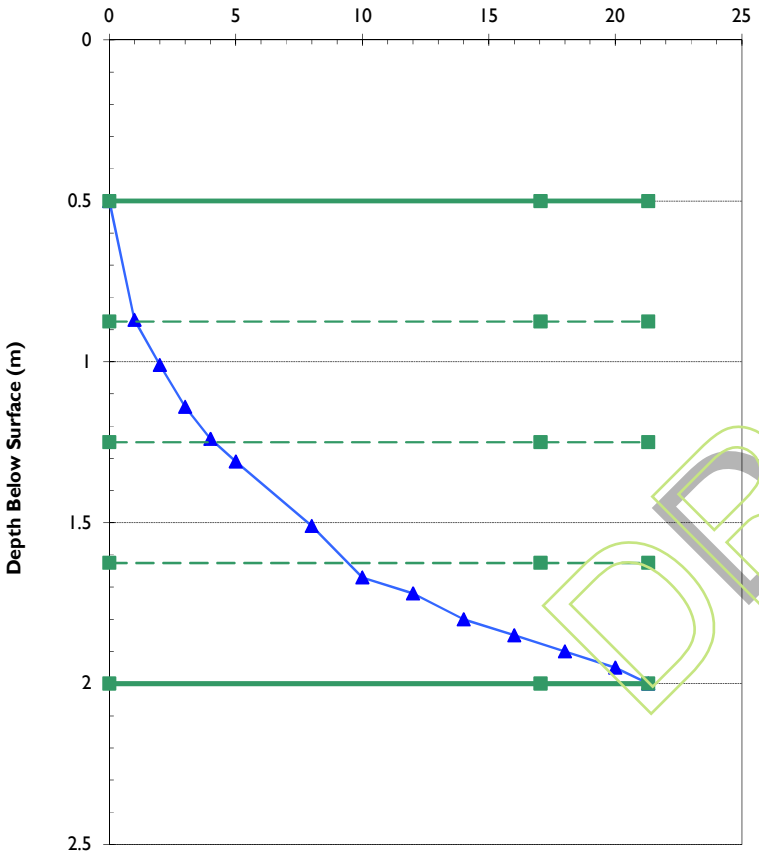
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 2



Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	21.3
Mean Internal Discharge Area (m2)	4.2246
Discharge Rate (litre/min)	15.1682
Soakage Rate (litre/m2/min)	3.590447
BRE Soil Infiltration Rate (m/sec)	5.98E-05

Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

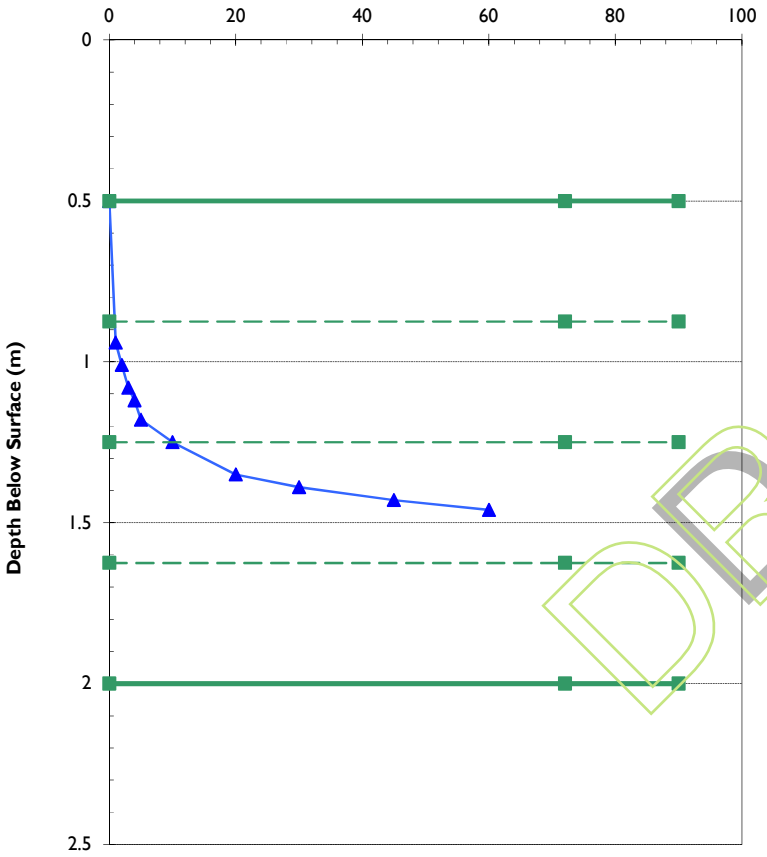
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	0.96
Total Soakage Test Time (min)	90
Mean Internal Discharge Area (m2)	4.59585
Discharge Rate (litre/min)	1.115039
Soakage Rate (litre/m2/min)	0.242619
BRE Soil Infiltration Rate (m/sec)	4.04E-06

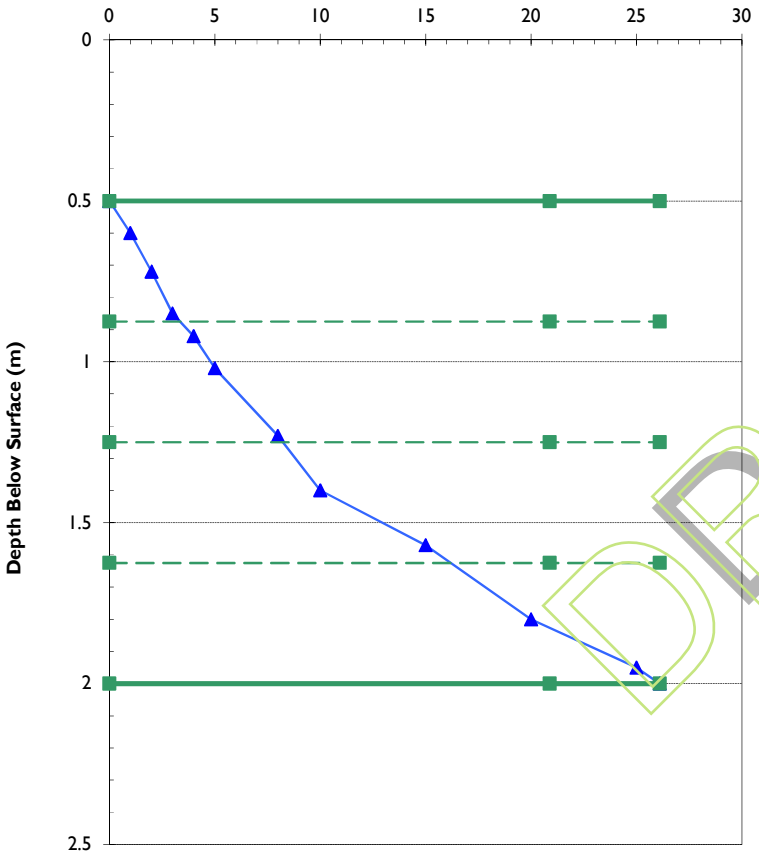
Draft

Comments:	Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP312
Test No:	Test No 1



Pit Length (m)	1.8
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	26.1
Mean Internal Discharge Area (m2)	4.251
Discharge Rate (litre/min)	9.884325
Soakage Rate (litre/m2/min)	2.325176
BRE Soil Infiltration Rate (m/sec)	3.88E-05

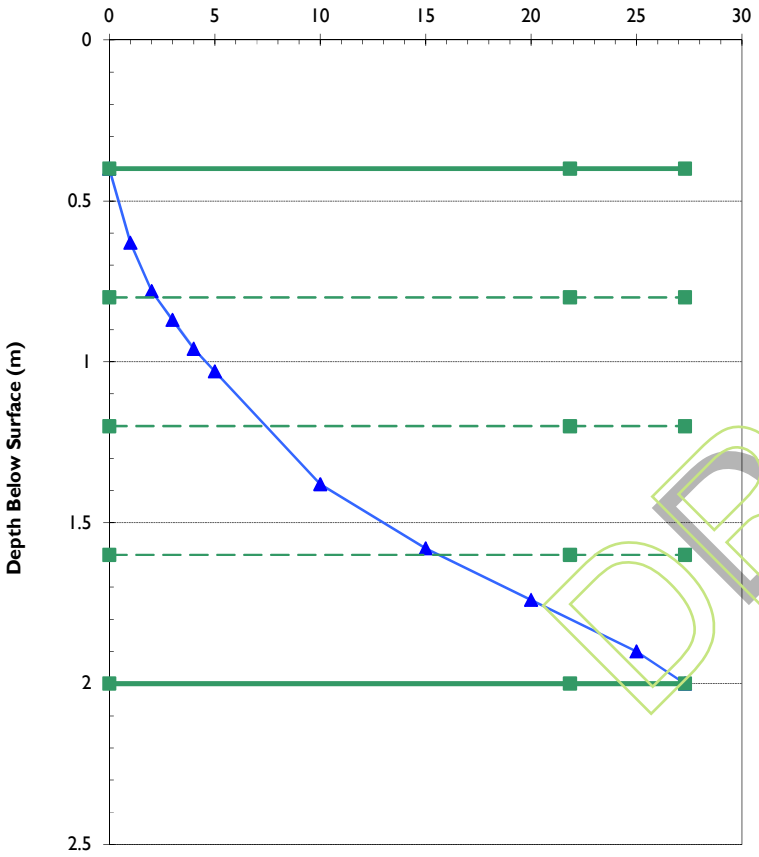
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP312
Test No:	Test No 2



Pit Length (m)	1.8
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.6
Total Soakage Test Time (min)	27.3
Mean Internal Discharge Area (m2)	4.478
Discharge Rate (litre/min)	10.0994
Soakage Rate (litre/m2/min)	2.255337
BRE Soil Infiltration Rate (m/sec)	3.76E-05

DRAFT

Comments:

Pit was emptied at finish of test.

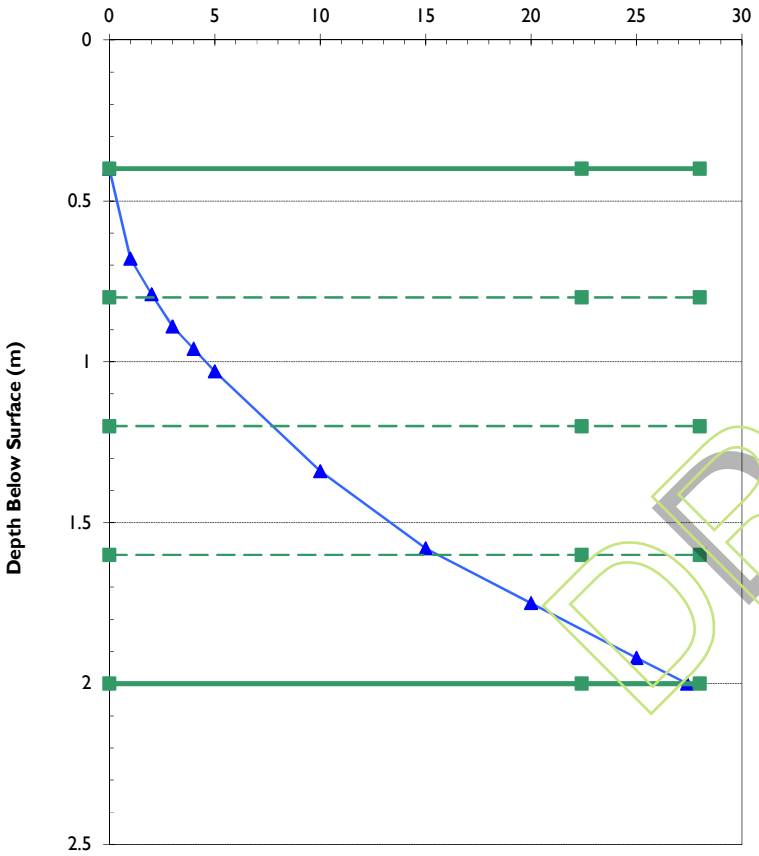
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP312
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.8
Pit Width (m)	0.47
Depth to Pit Base (m)	2
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.6
Total Soakage Test Time (min)	28
Mean Internal Discharge Area (m2)	4.478
Discharge Rate (litre/min)	10.03541
Soakage Rate (litre/m2/min)	2.241048
BRE Soil Infiltration Rate (m/sec)	3.74E-05

DRAFT

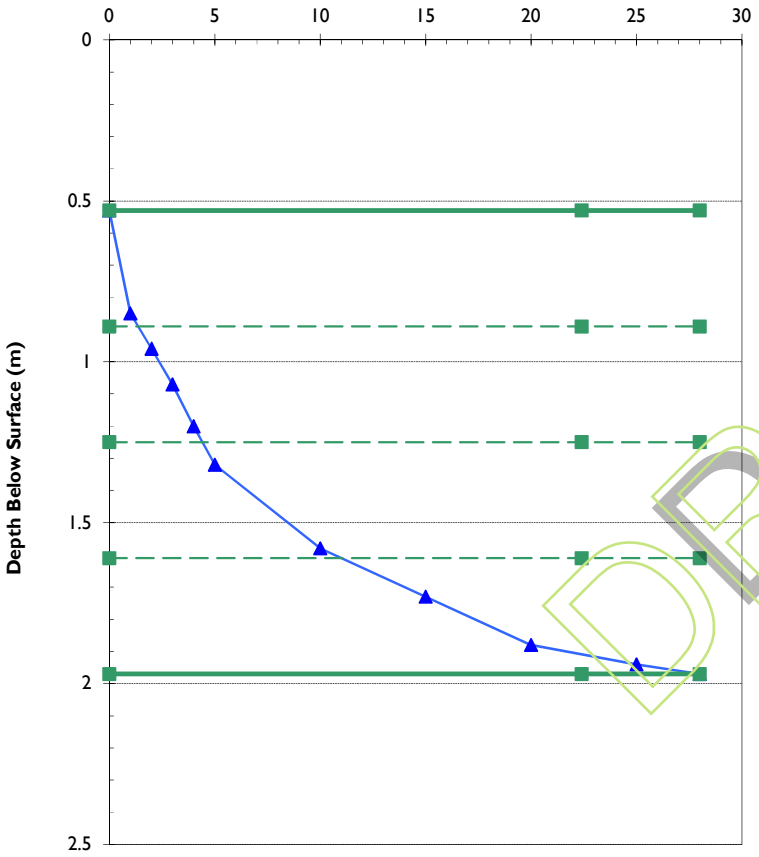
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	12/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP313
Test No:	Test No 1



Pit Length (m)	1.7
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.53
Max Water Dropdown during Test (m)	1.44
Total Soakage Test Time (min)	28
Mean Internal Discharge Area (m2)	3.9552
Discharge Rate (litre/min)	12.19381
Soakage Rate (litre/m2/min)	3.082982
BRE Soil Infiltration Rate (m/sec)	5.14E-05

Comments:

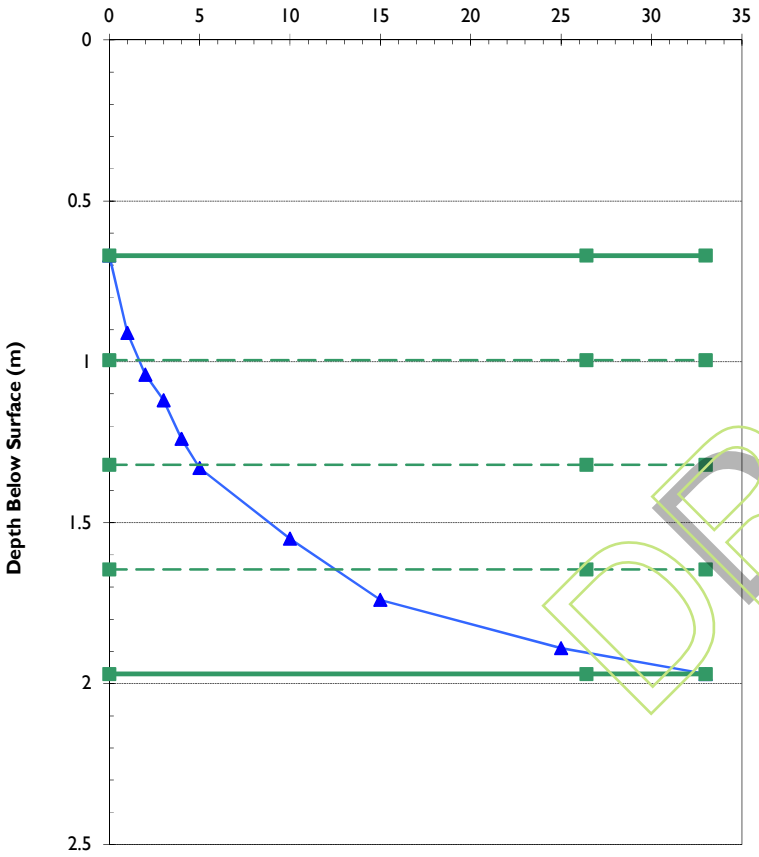
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP313
Test No:	Test No 2



Pit Length (m)	1.7
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.67
Max Water Dropdown during Test (m)	1.3
Total Soakage Test Time (min)	33
Mean Internal Discharge Area (m2)	3.65
Discharge Rate (litre/min)	9.780426
Soakage Rate (litre/m2/min)	2.679569
BRE Soil Infiltration Rate (m/sec)	4.47E-05

Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

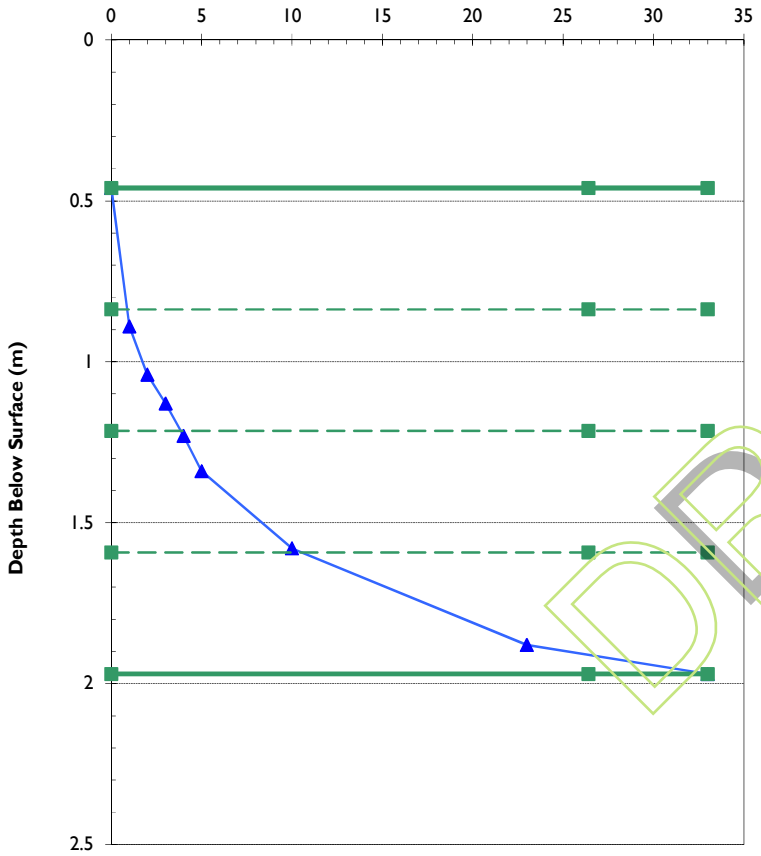
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP313
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.7
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.46
Max Water Dropdown during Test (m)	1.51
Total Soakage Test Time (min)	33
Mean Internal Discharge Area (m2)	4.1078
Discharge Rate (litre/min)	12.75032
Soakage Rate (litre/m2/min)	3.103928
BRE Soil Infiltration Rate (m/sec)	5.17E-05

DRAFT

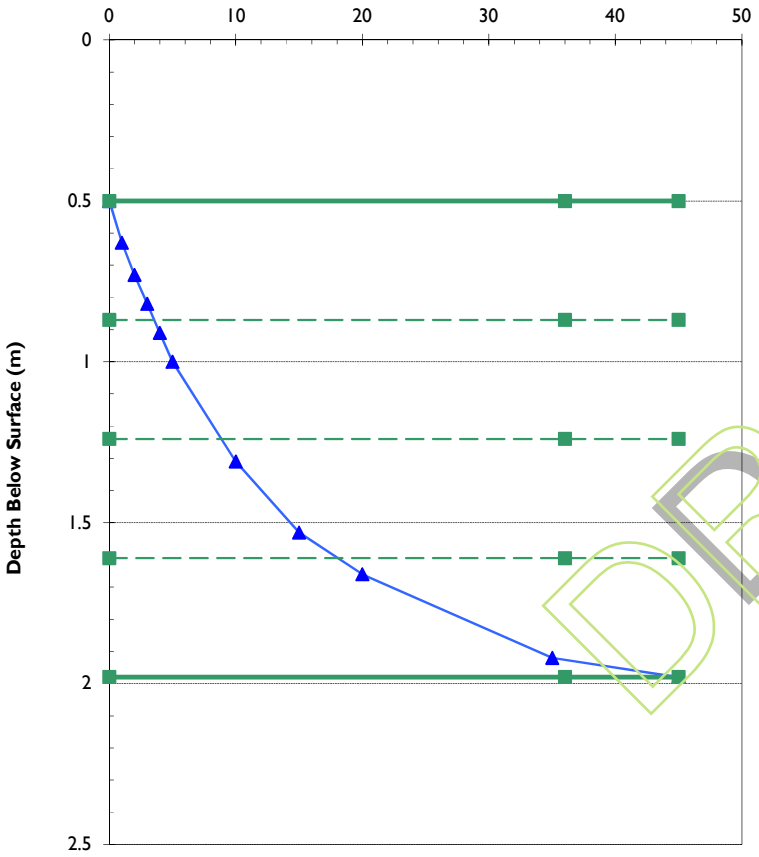
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP314
Test No:	Test No 1



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.48
Total Soakage Test Time (min)	45
Mean Internal Discharge Area (m2)	4.1012
Discharge Rate (litre/min)	8.463335
Soakage Rate (litre/m2/min)	2.063624
BRE Soil Infiltration Rate (m/sec)	3.44E-05

Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

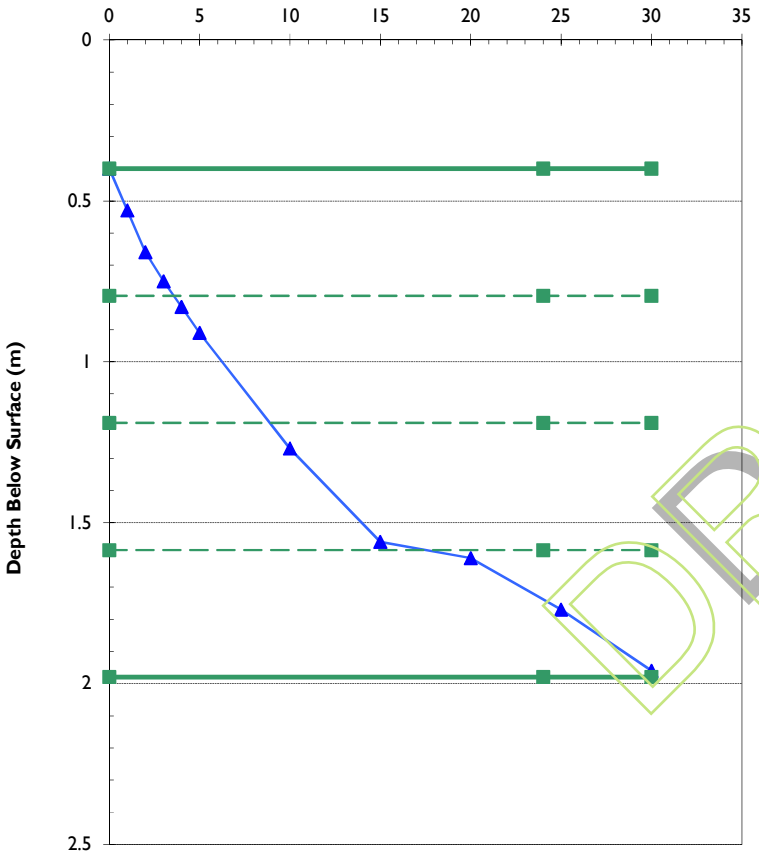
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP314
Test No:	Test No 2

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.56
Total Soakage Test Time (min)	30
Mean Internal Discharge Area (m2)	4.3222
Discharge Rate (litre/min)	9.413683
Soakage Rate (litre/m2/min)	2.177984
BRE Soil Infiltration Rate (m/sec)	3.63E-05

Draft

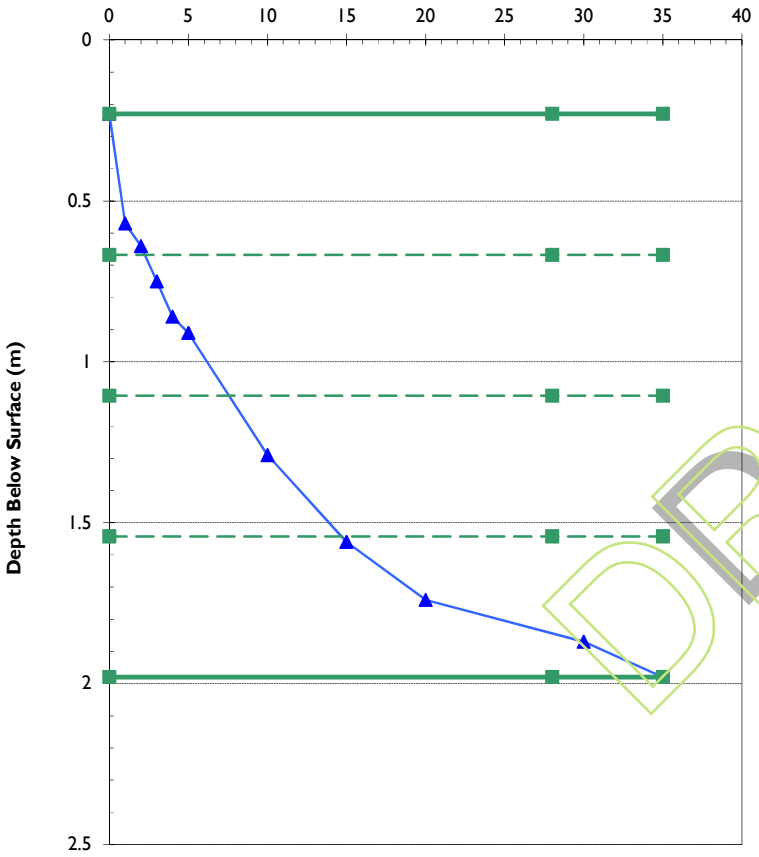
Comments:

Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP314
Test No:	Test No 3



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.23
Max Water Dropdown during Test (m)	1.75
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	4.6979
Discharge Rate (litre/min)	11.6949
Soakage Rate (litre/m2/min)	2.48939
BRE Soil Infiltration Rate (m/sec)	4.15E-05

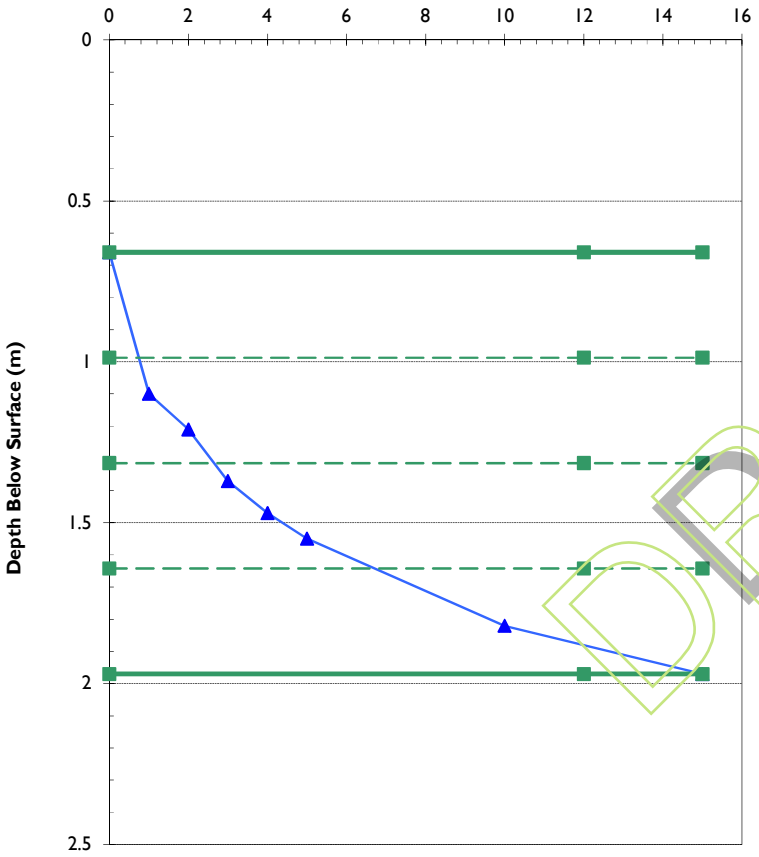
Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP315
Test No:	Test No 1



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.66
Max Water Dropdown during Test (m)	1.31
Total Soakage Test Time (min)	15
Mean Internal Discharge Area (m2)	3.7255
Discharge Rate (litre/min)	18.22564
Soakage Rate (litre/m2/min)	4.892134
BRE Soil Infiltration Rate (m/sec)	8.15E-05

Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

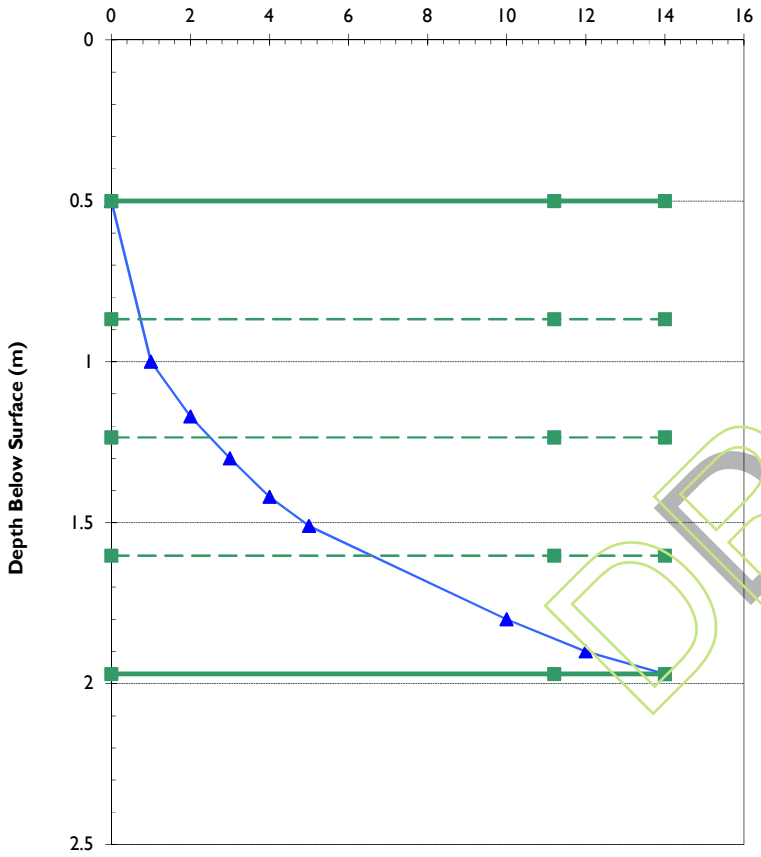
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP315
Test No:	Test No 2

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.47
Total Soakage Test Time (min)	14
Mean Internal Discharge Area (m2)	4.0791
Discharge Rate (litre/min)	20.83147
Soakage Rate (litre/m2/min)	5.106878
BRE Soil Infiltration Rate (m/sec)	8.51E-05

Comments:

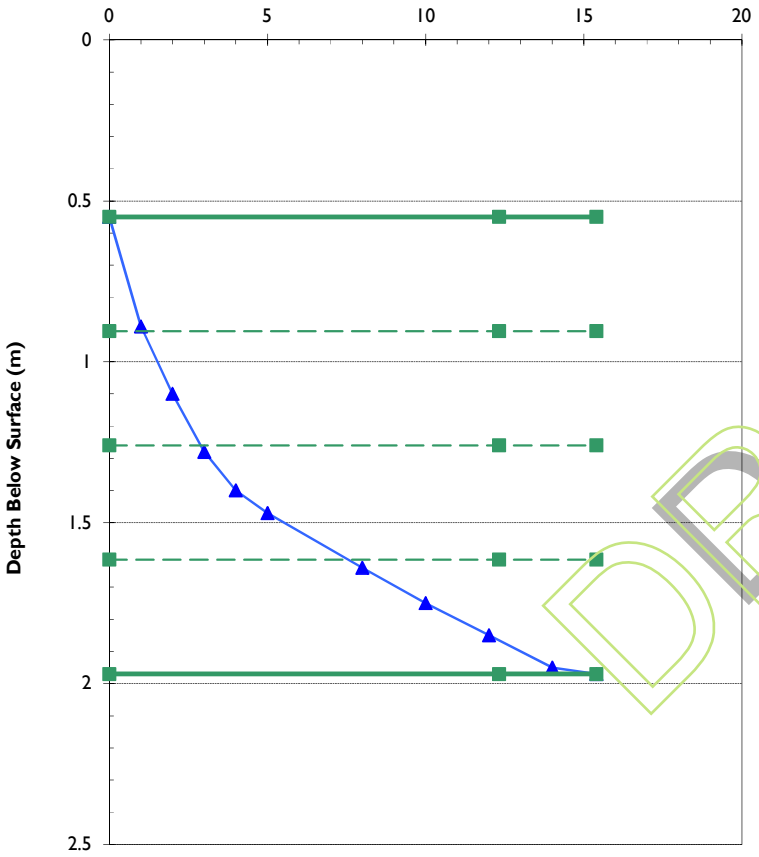
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP315
Test No:	Test No 3



Pit Length (m)	1.73
Pit Width (m)	0.48
Depth to Pit Base (m)	1.97
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.55
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	15.4
Mean Internal Discharge Area (m2)	3.9686
Discharge Rate (litre/min)	18.17629
Soakage Rate (litre/m2/min)	4.580027
BRE Soil Infiltration Rate (m/sec)	7.63E-05

Comments:

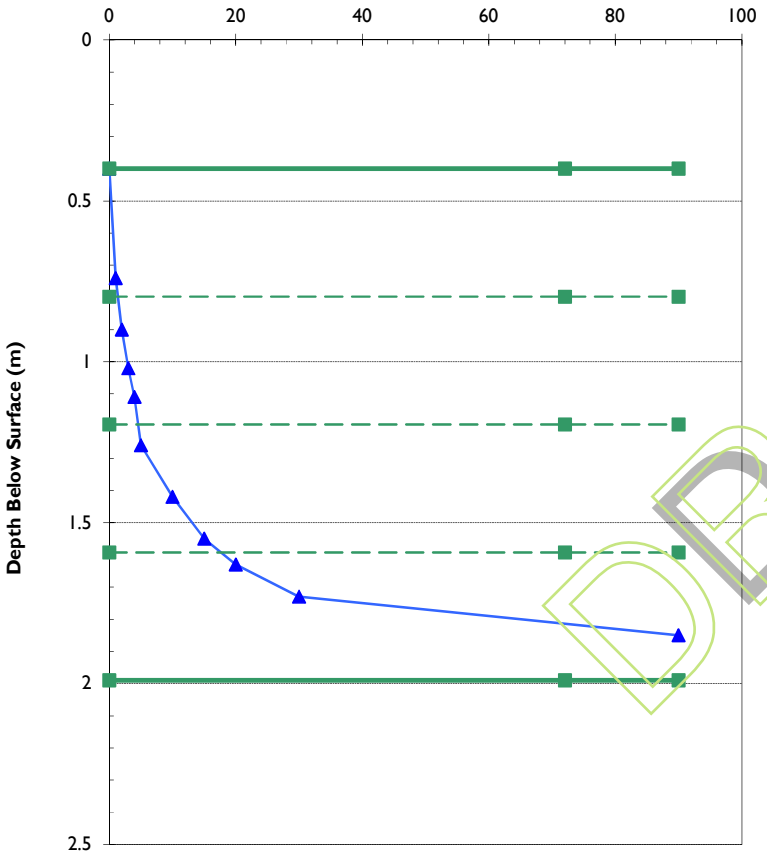
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP316
Test No:	Test No 1



Pit Length (m)	1.7
Pit Width (m)	0.49
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.81
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.45
Total Soakage Test Time (min)	90
Mean Internal Discharge Area (m2)	4.7093
Discharge Rate (litre/min)	11.33259
Soakage Rate (litre/m2/min)	2.406427
BRE Soil Infiltration Rate (m/sec)	4.01E-05

Comments:
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

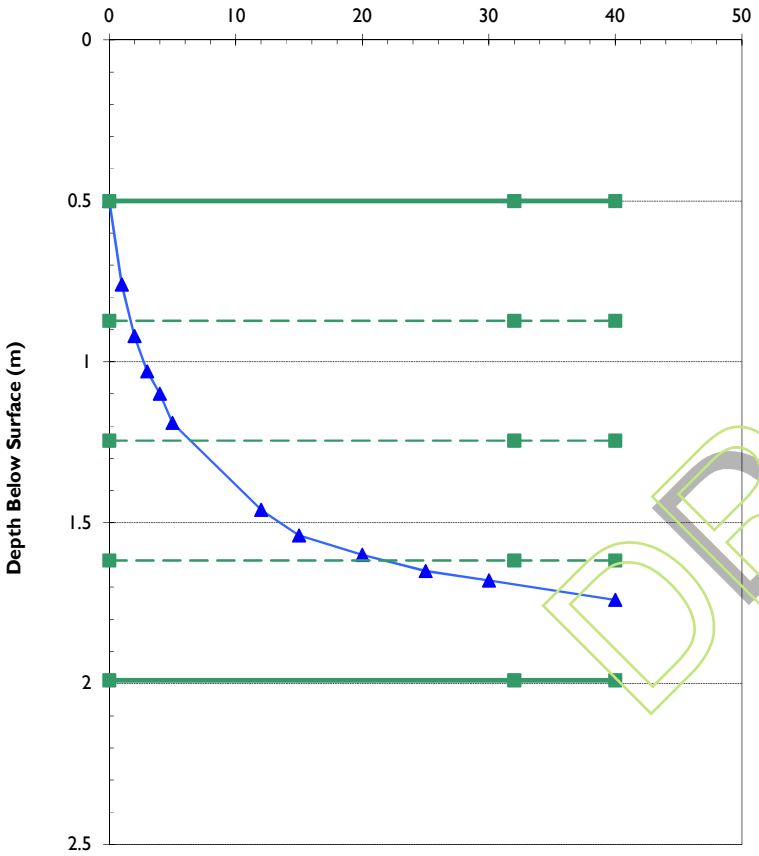
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP316
Test No:	Test No 2

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.7
Pit Width (m)	0.49
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.81
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.24
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.4903
Discharge Rate (litre/min)	9.55386
Soakage Rate (litre/m2/min)	2.127666
BRE Soil Infiltration Rate (m/sec)	3.55E-05

Draft

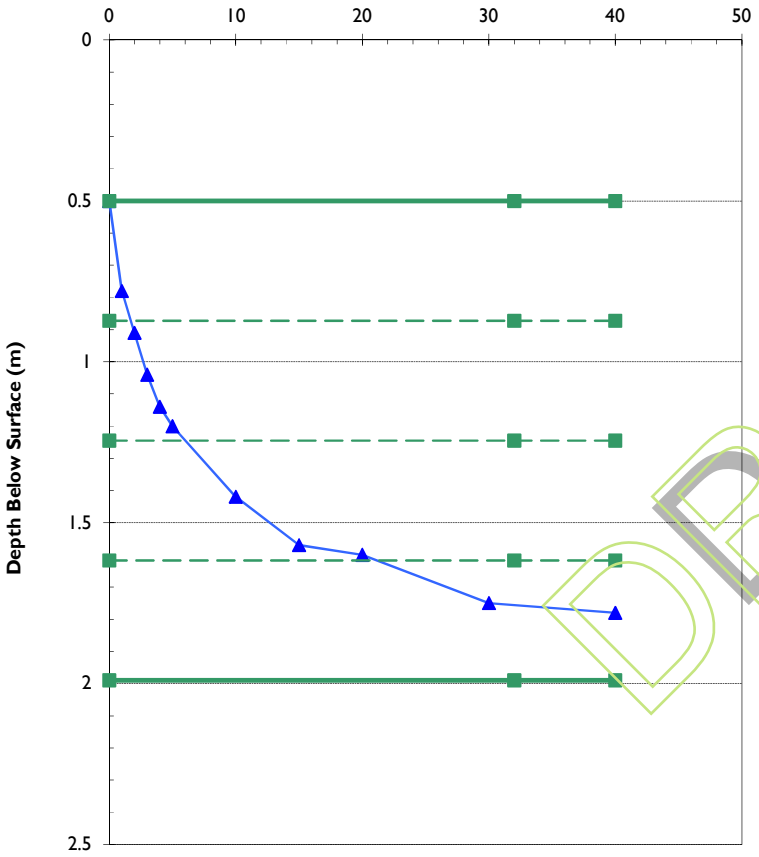
Comments:

Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP316
Test No:	Test No 3



Pit Length (m)	1.7
Pit Width (m)	0.49
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	1.81
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.28
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.4903
Discharge Rate (litre/min)	10.18133
Soakage Rate (litre/m2/min)	2.267406
BRE Soil Infiltration Rate (m/sec)	3.78E-05

Comments:
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

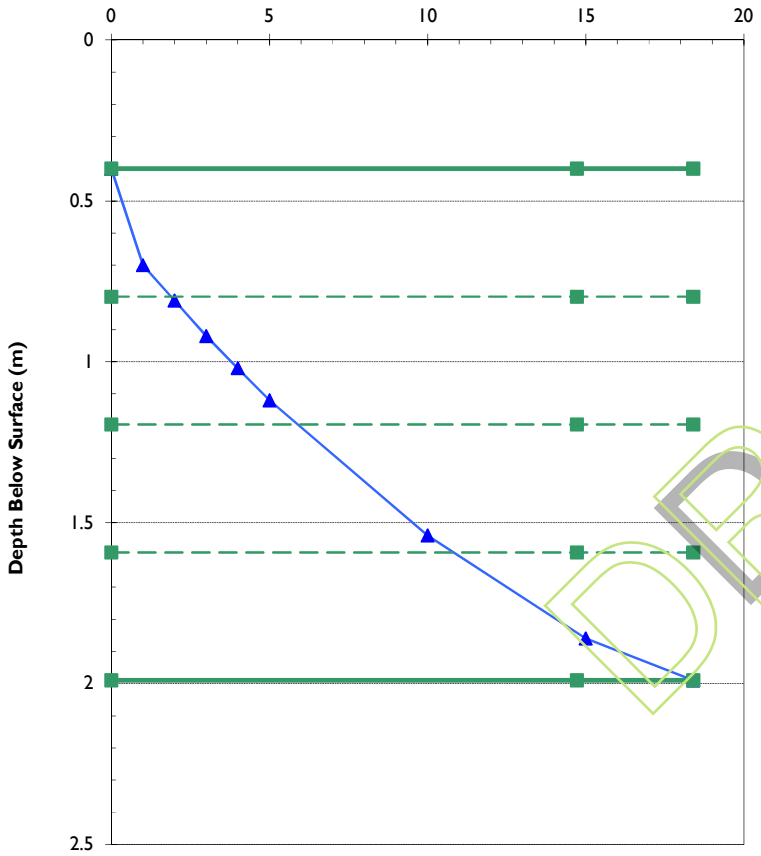
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BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 1

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.8
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.59
Total Soakage Test Time (min)	18.4
Mean Internal Discharge Area (m2)	4.4892
Discharge Rate (litre/min)	15.37685
Soakage Rate (litre/m2/min)	3.425299
BRE Soil Infiltration Rate (m/sec)	5.71E-05

DRAFT

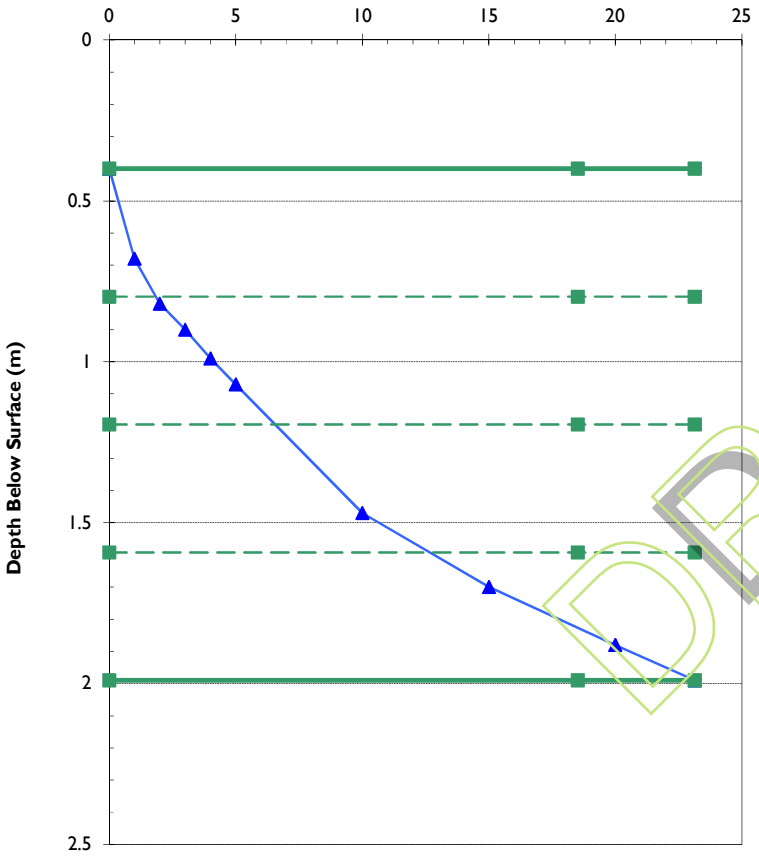
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 2



Pit Length (m)	1.8
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.59
Total Soakage Test Time (min)	23.14
Mean Internal Discharge Area (m2)	4.4892
Discharge Rate (litre/min)	12.69208
Soakage Rate (litre/m2/min)	2.827248
BRE Soil Infiltration Rate (m/sec)	4.71E-05

Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

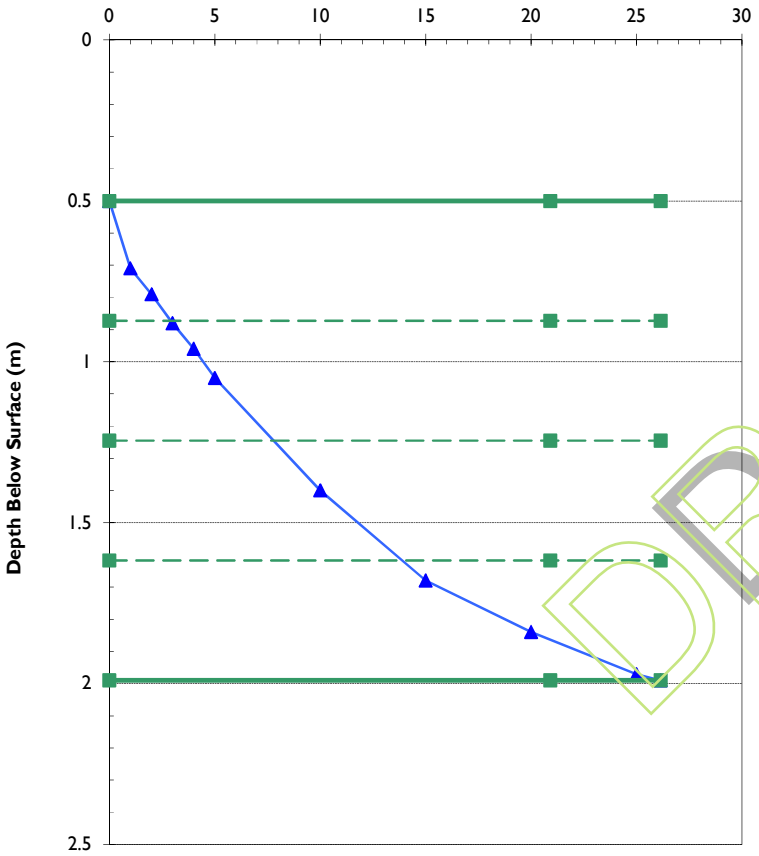
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.8
Pit Width (m)	0.48
Depth to Pit Base (m)	1.99
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.49
Total Soakage Test Time (min)	26.14
Mean Internal Discharge Area (m2)	4.2612
Discharge Rate (litre/min)	11.73821
Soakage Rate (litre/m2/min)	2.754672
BRE Soil Infiltration Rate (m/sec)	4.59E-05

Draft

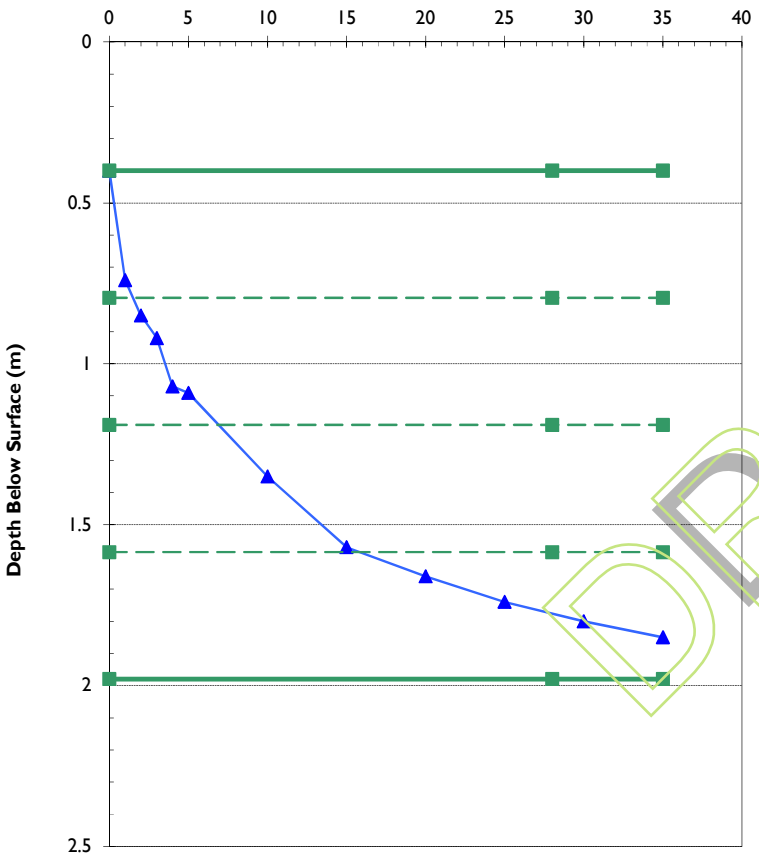
Comments:

Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP318
Test No:	Test No 1



Pit Length (m)	1.72
Pit Width (m)	0.54
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.45
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	4.4996
Discharge Rate (litre/min)	10.2384
Soakage Rate (litre/m2/min)	2.275402
BRE Soil Infiltration Rate (m/sec)	3.79E-05

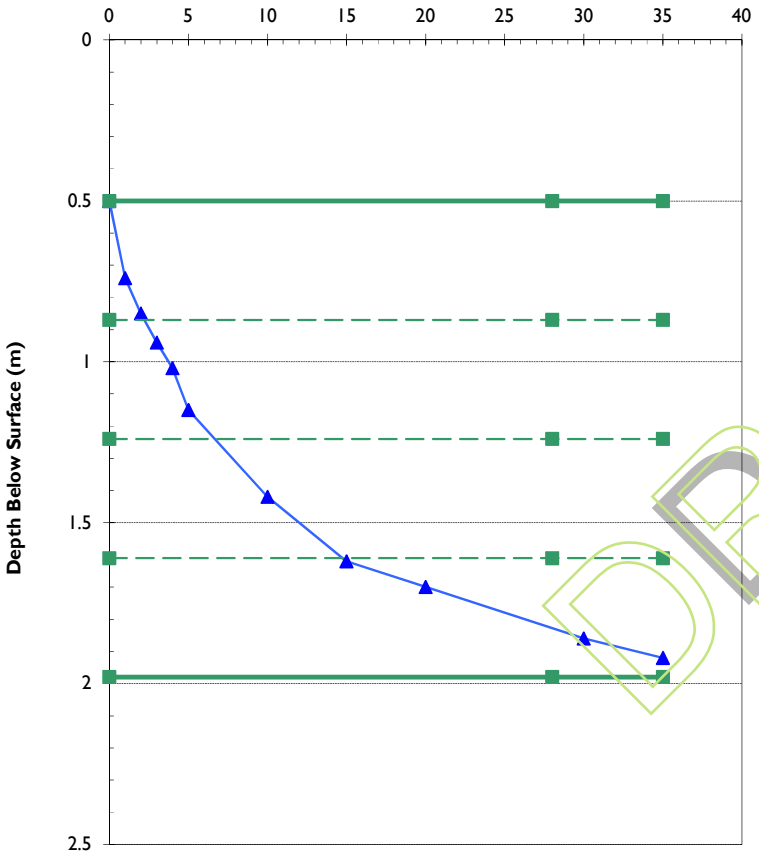
Comments:
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP318
Test No:	Test No 2



Pit Length (m)	1.72
Pit Width (m)	0.54
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	4.2736
Discharge Rate (litre/min)	10.97261
Soakage Rate (litre/m2/min)	2.567533
BRE Soil Infiltration Rate (m/sec)	4.28E-05

Comments:

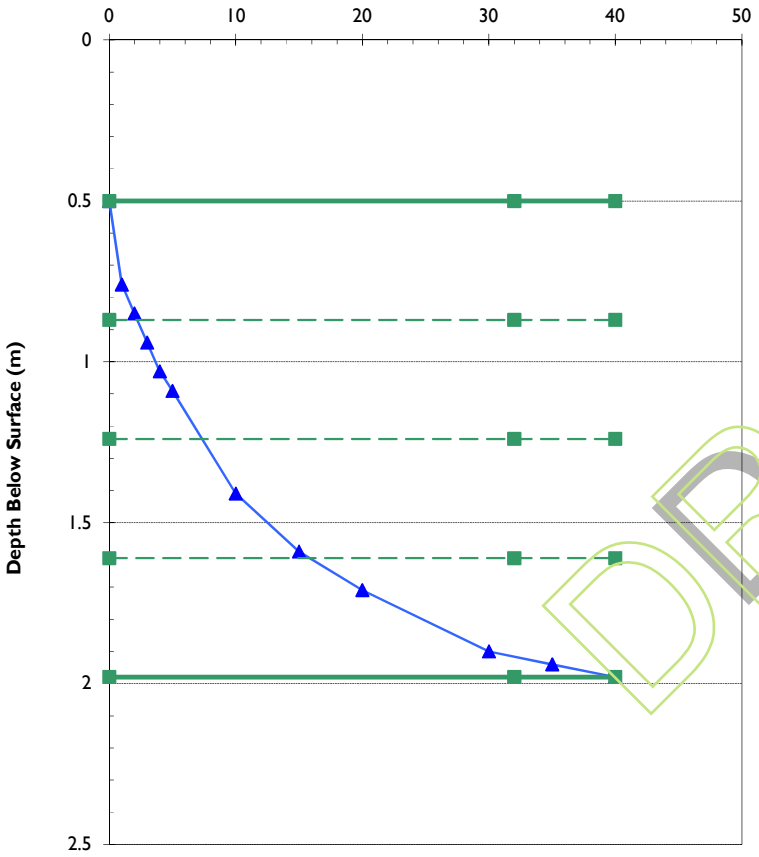
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP318
Test No:	Test No 3



Pit Length (m)	1.72
Pit Width (m)	0.54
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.48
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.2736
Discharge Rate (litre/min)	10.09928
Soakage Rate (litre/m2/min)	2.363178
BRE Soil Infiltration Rate (m/sec)	3.94E-05

Comments:

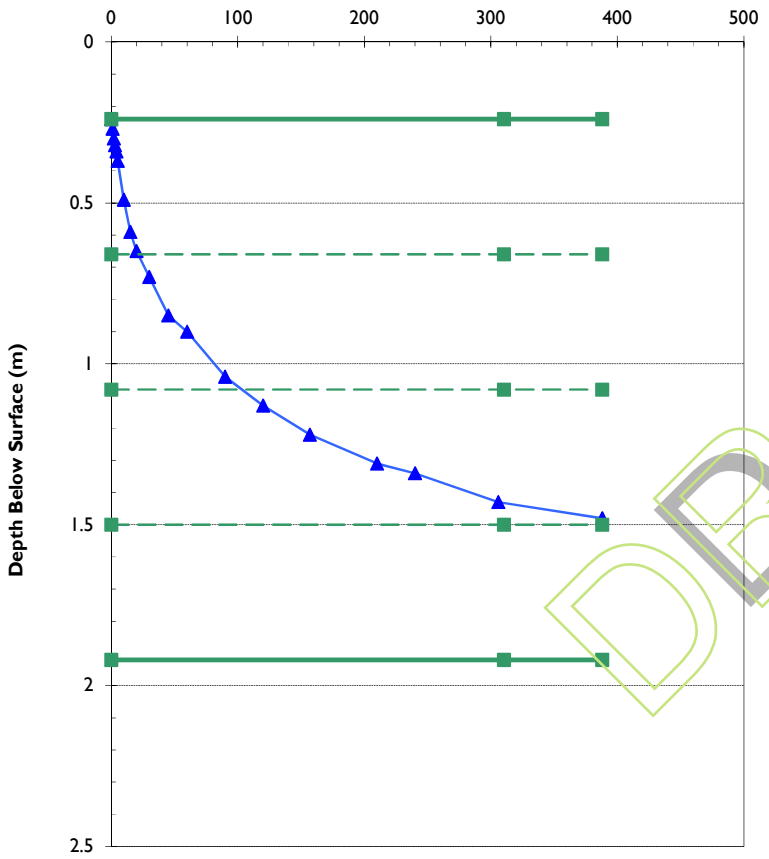
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	14/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 1



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.92
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.24
Max Water Dropdown during Test (m)	1.24
Total Soakage Test Time (min)	388
Mean Internal Discharge Area (m2)	4.413
Discharge Rate (litre/min)	0.35416
Soakage Rate (litre/m2/min)	0.080254
BRE Soil Infiltration Rate (m/sec)	1.34E-06

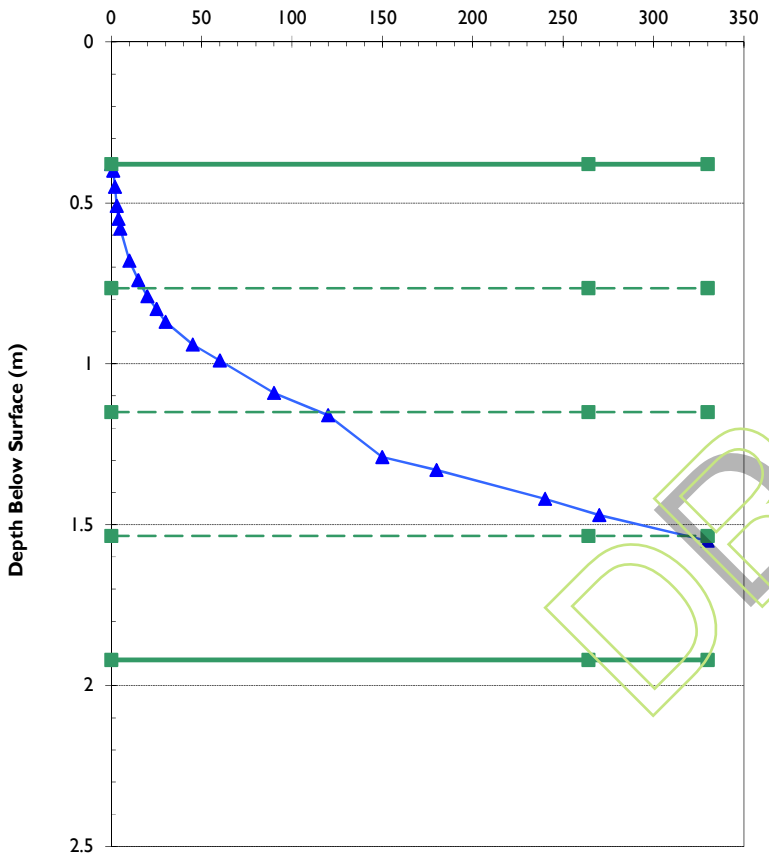
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 2



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.92
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.38
Max Water Dropdown during Test (m)	1.17
Total Soakage Test Time (min)	330
Mean Internal Discharge Area (m2)	4.0722
Discharge Rate (litre/min)	0.404873
Soakage Rate (litre/m2/min)	0.099424
BRE Soil Infiltration Rate (m/sec)	1.66E-06

Comments:

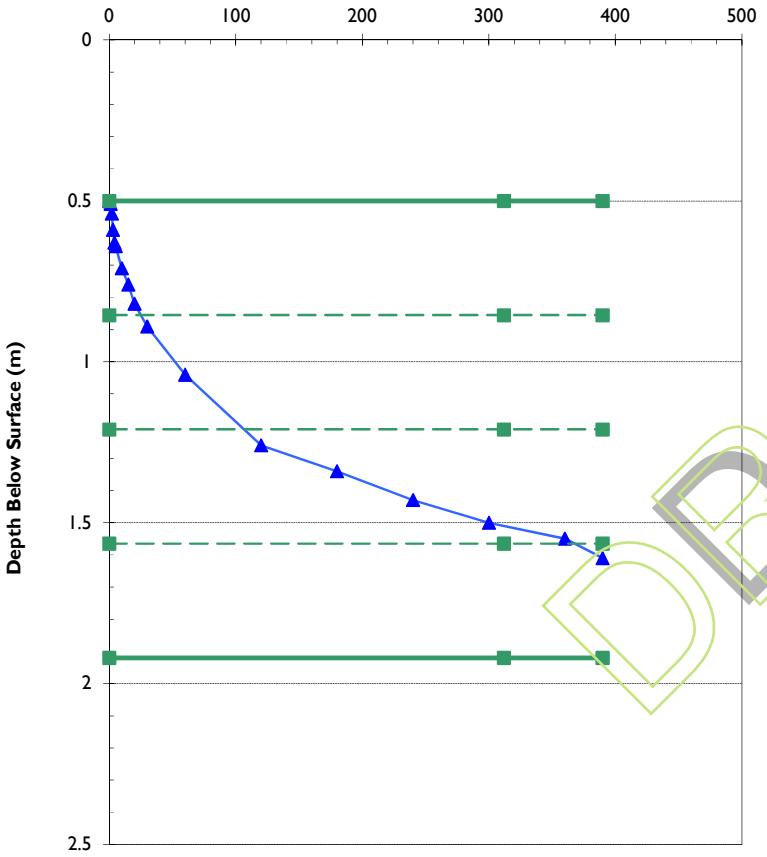
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	18/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 3



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.92
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.11
Total Soakage Test Time (min)	390
Mean Internal Discharge Area (m2)	3.8166
Discharge Rate (litre/min)	0.328362
Soakage Rate (litre/m2/min)	0.086035
BRE Soil Infiltration Rate (m/sec)	1.43E-06

Comments:

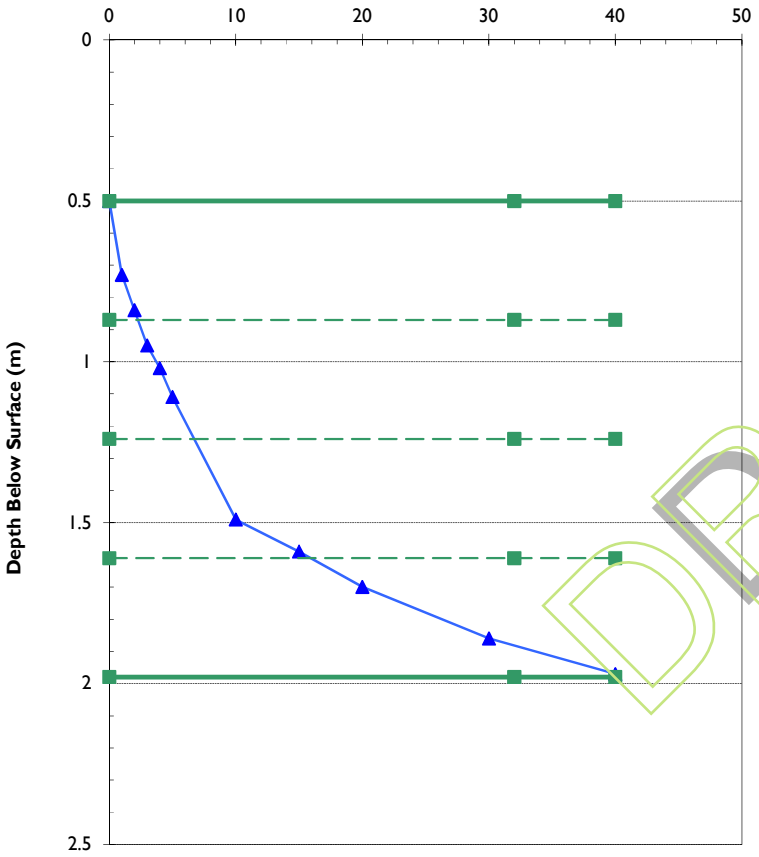
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	19/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP320
Test No:	Test No 1



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.47
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.0886
Discharge Rate (litre/min)	8.875856
Soakage Rate (litre/m2/min)	2.170879
BRE Soil Infiltration Rate (m/sec)	3.62E-05

Comments:

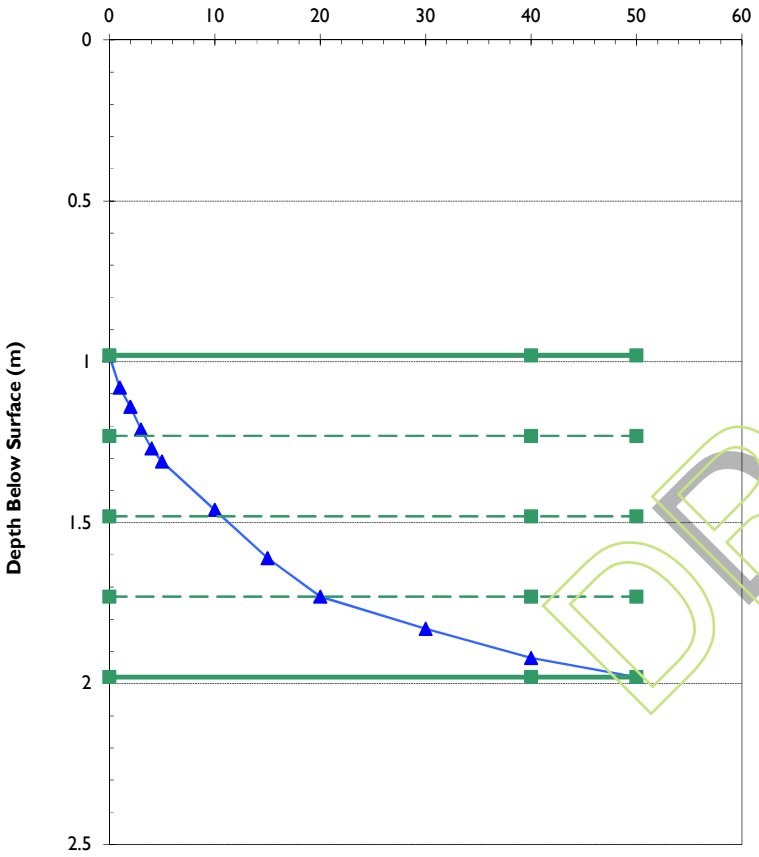
Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP320
Test No:	Test No 2



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.98
Max Water Dropdown during Test (m)	1
Total Soakage Test Time (min)	50
Mean Internal Discharge Area (m2)	3.0278
Discharge Rate (litre/min)	4.9068
Soakage Rate (litre/m2/min)	1.620583
BRE Soil Infiltration Rate (m/sec)	2.7E-05

Comments:
Pit was emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

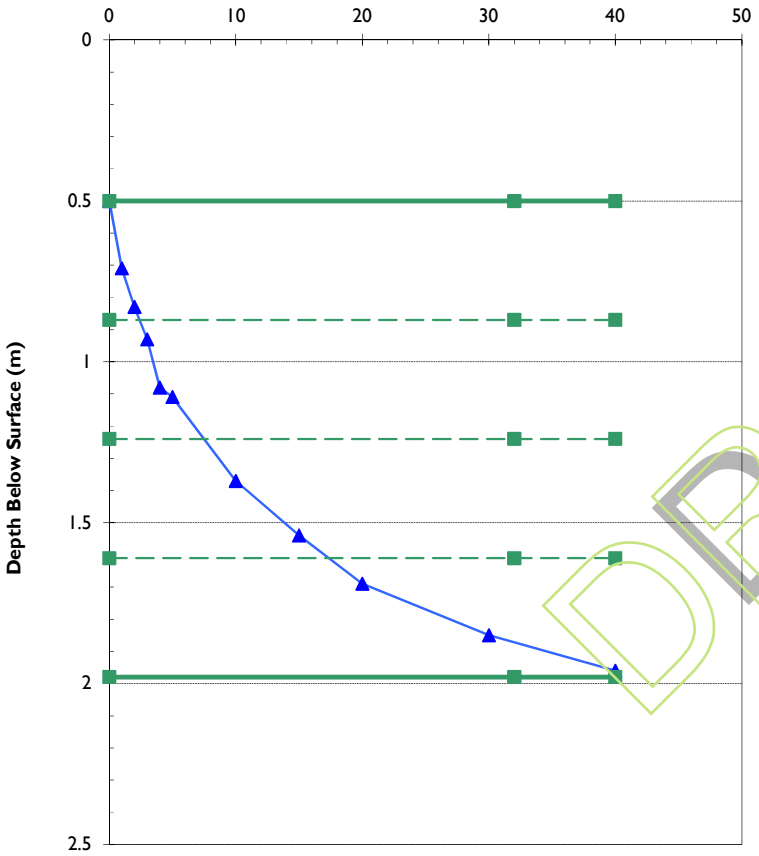
Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP320
Test No:	Test No 3

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.46
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.0886
Discharge Rate (litre/min)	8.104982
Soakage Rate (litre/m2/min)	1.982337
BRE Soil Infiltration Rate (m/sec)	3.3E-05

DRAFT

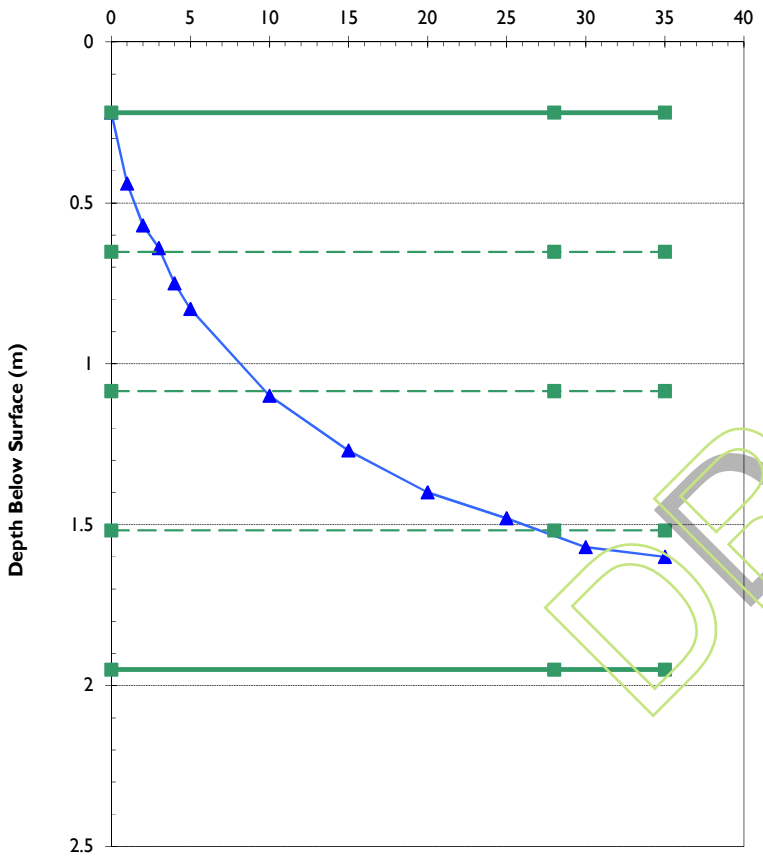
Comments:

Pit was nearly emptied at finish of test.

Client:	
Site:	
Tested By:	
Test Date:	15/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 1



Pit Length (m)	1.7
Pit Width (m)	0.46
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.22
Max Water Dropdown during Test (m)	1.38
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	4.5188
Discharge Rate (litre/min)	5.644043
Soakage Rate (litre/m2/min)	1.249014
BRE Soil Infiltration Rate (m/sec)	2.08E-05

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

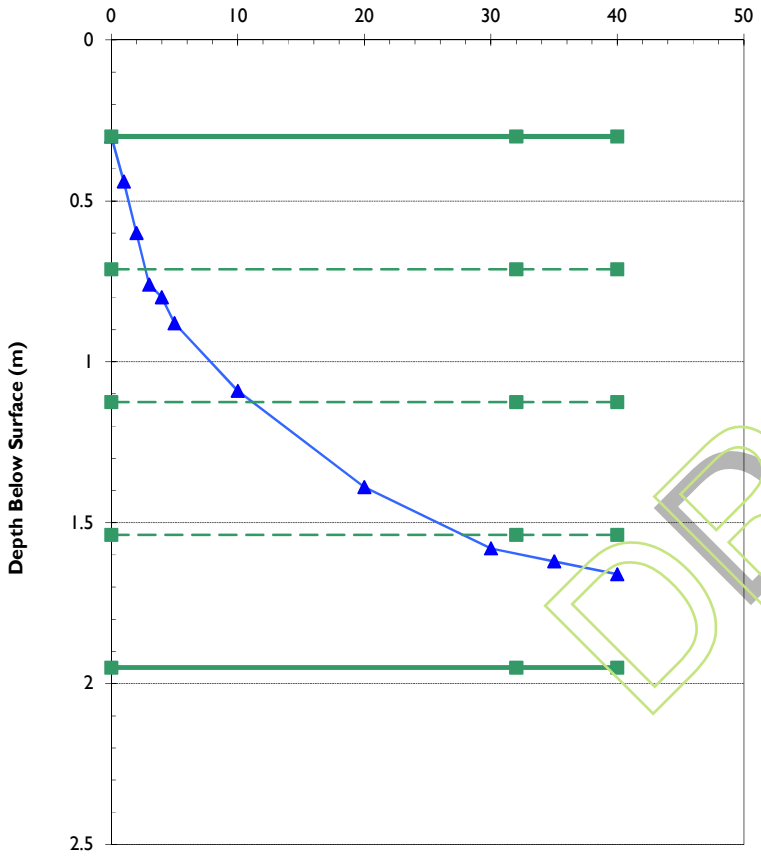
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 2

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.7
Pit Width (m)	0.46
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.36
Total Soakage Test Time (min)	40
Mean Internal Discharge Area (m2)	4.346
Discharge Rate (litre/min)	5.148836
Soakage Rate (litre/m2/min)	1.18473
BRE Soil Infiltration Rate (m/sec)	1.97E-05

DRAFT

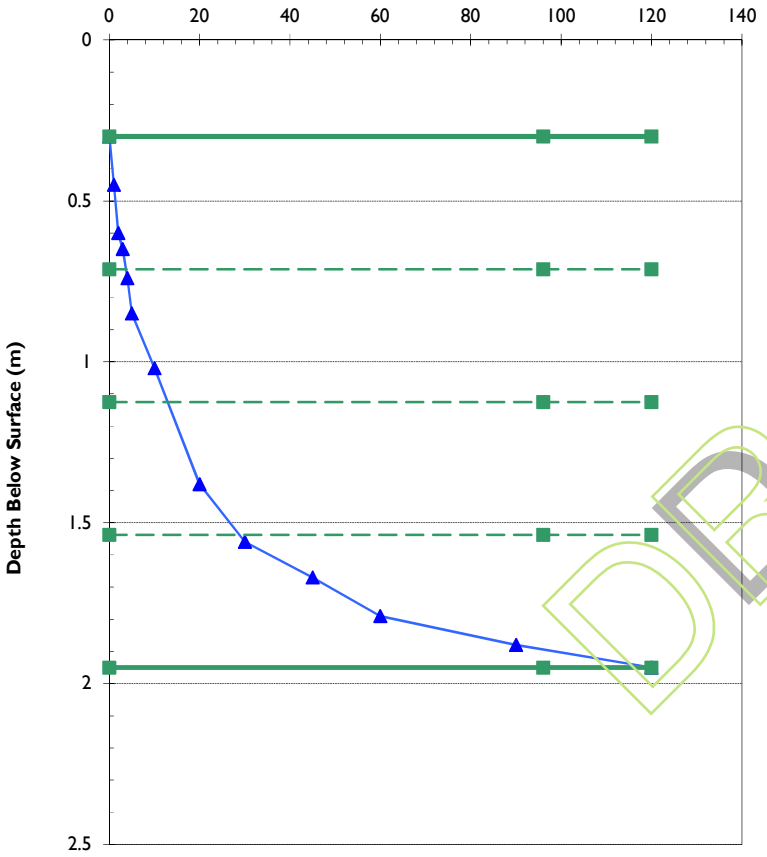
Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 3



Pit Length (m)	1.7
Pit Width (m)	0.46
Depth to Pit Base (m)	1.95
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.65
Total Soakage Test Time (min)	120
Mean Internal Discharge Area (m2)	4.346
Discharge Rate (litre/min)	5.149756
Soakage Rate (litre/m2/min)	1.184942
BRE Soil Infiltration Rate (m/sec)	1.97E-05

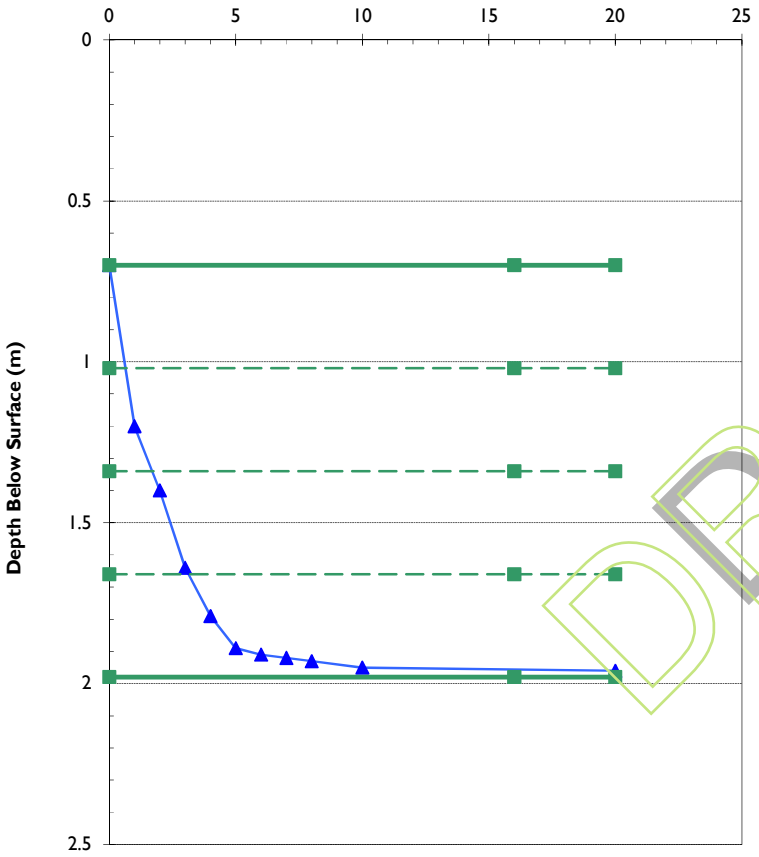
Comments:
Pit was emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP322
Test No:	Test No 1



Pit Length (m)	1.72
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.7
Max Water Dropdown during Test (m)	1.26
Total Soakage Test Time (min)	20
Mean Internal Discharge Area (m2)	3.5816
Discharge Rate (litre/min)	40.61775
Soakage Rate (litre/m2/min)	11.34067
BRE Soil Infiltration Rate (m/sec)	0.000189

Comments:
Pit was nearly emptied at finish of test.

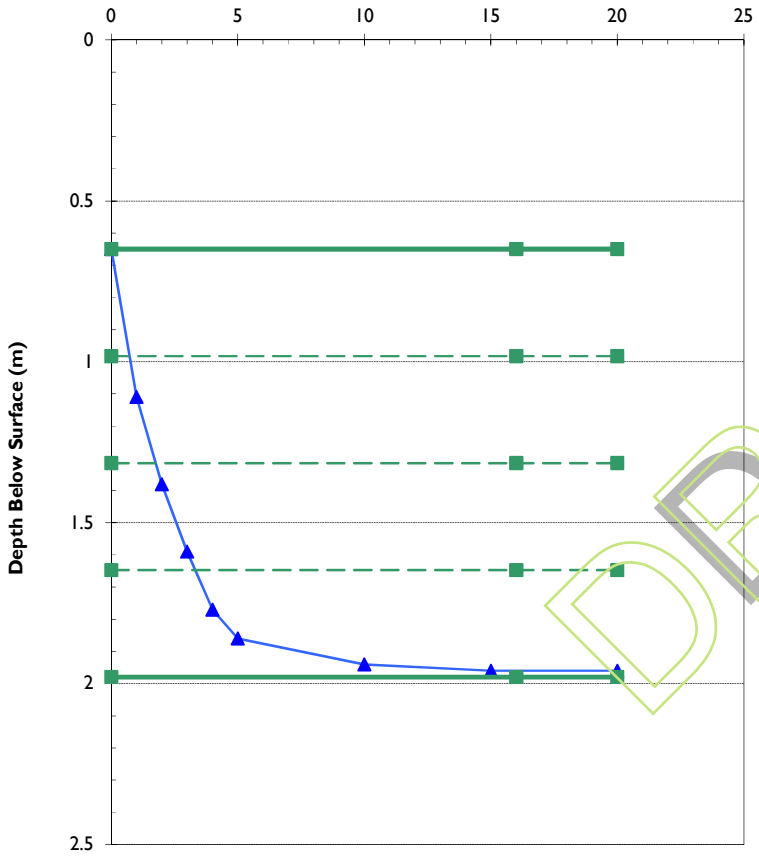
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP322
Test No:	Test No 2

Filling to Max Water Depth (min)



Pit Length (m)	1.72
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.65
Max Water Dropdown during Test (m)	1.31
Total Soakage Test Time (min)	20
Mean Internal Discharge Area (m2)	3.6906
Discharge Rate (litre/min)	40.52563
Soakage Rate (litre/m2/min)	10.98077
BRE Soil Infiltration Rate (m/sec)	0.000183

Comments:

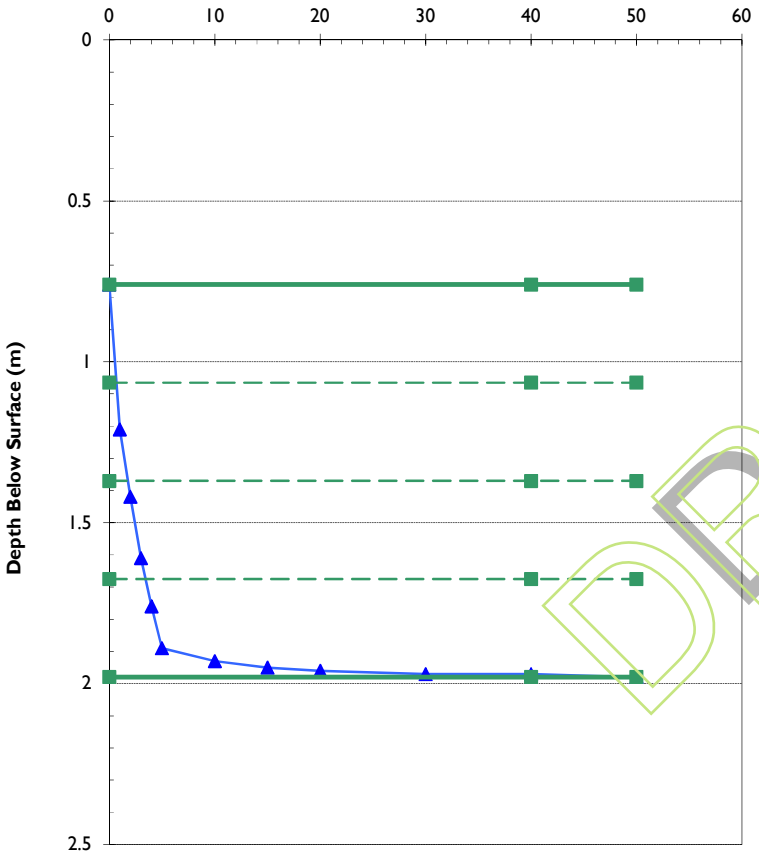
Pit was nearly emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP322
Test No:	Test No 3



Pit Length (m)	1.72
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.76
Max Water Dropdown during Test (m)	1.22
Total Soakage Test Time (min)	50
Mean Internal Discharge Area (m2)	3.4508
Discharge Rate (litre/min)	35.02974
Soakage Rate (litre/m2/min)	10.15119
BRE Soil Infiltration Rate (m/sec)	0.000169

Comments:

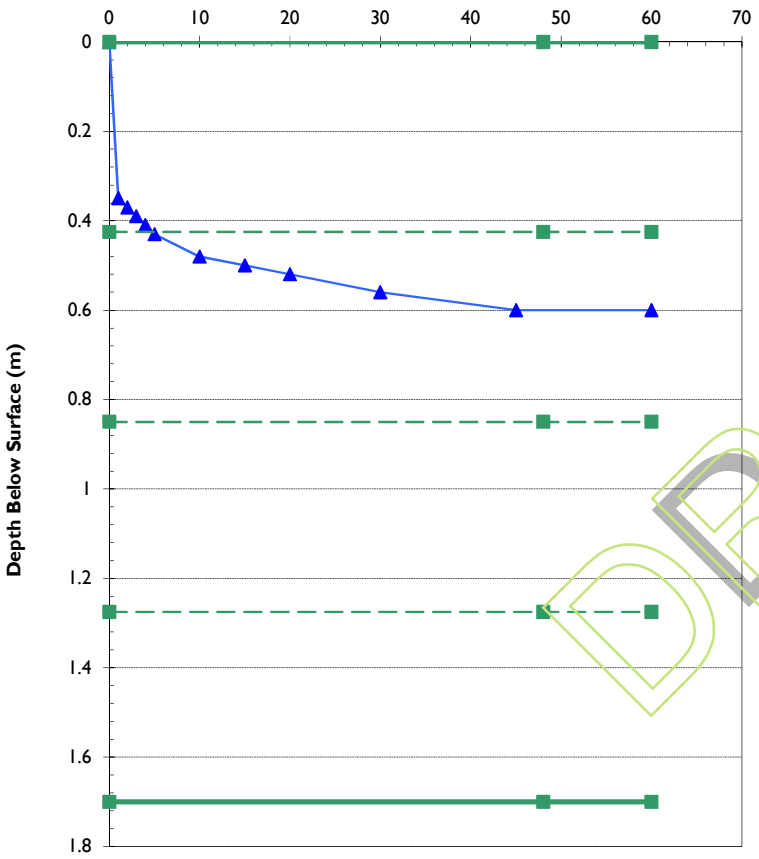
Pit was emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 1



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.7
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	0.8
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0
Max Water Dropdown during Test (m)	0.6
Total Soakage Test Time (min)	60
Mean Internal Discharge Area (m2)	6.5638
Discharge Rate (litre/min)	4.403538
Soakage Rate (litre/m2/min)	0.670882
BRE Soil Infiltration Rate (m/sec)	1.12E-05

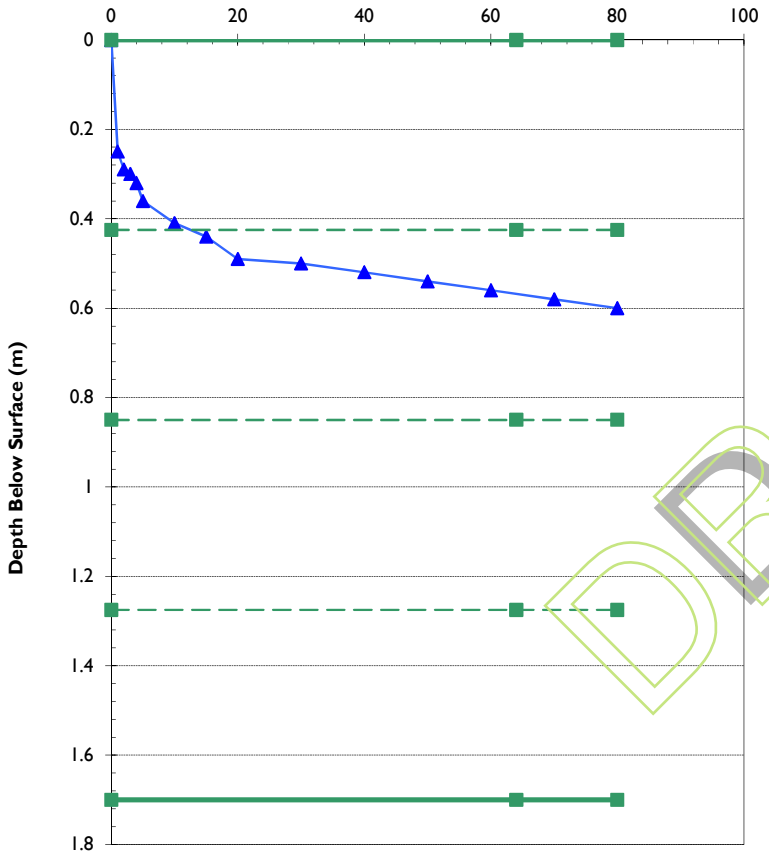
Comments: Water level fell to 75% -- 50% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 2



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.7
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	0.8
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0
Max Water Dropdown during Test (m)	0.6
Total Soakage Test Time (min)	80
Mean Internal Discharge Area (m2)	6.5638
Discharge Rate (litre/min)	3.304242
Soakage Rate (litre/m2/min)	0.503404
BRE Soil Infiltration Rate (m/sec)	8.39E-06

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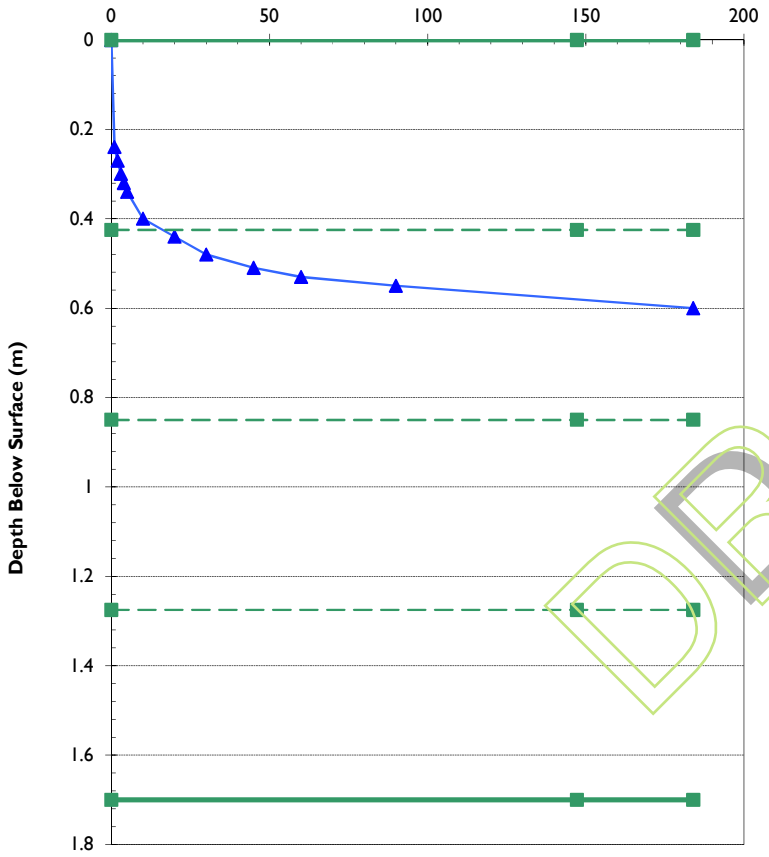
Comments:	Water level fell to 75% -- 50% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 3

leap environmental



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.7
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	0.8
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0
Max Water Dropdown during Test (m)	0.6
Total Soakage Test Time (min)	184
Mean Internal Discharge Area (m2)	6.5638
Discharge Rate (litre/min)	1.428732
Soakage Rate (litre/m2/min)	0.217668
BRE Soil Infiltration Rate (m/sec)	3.63E-06

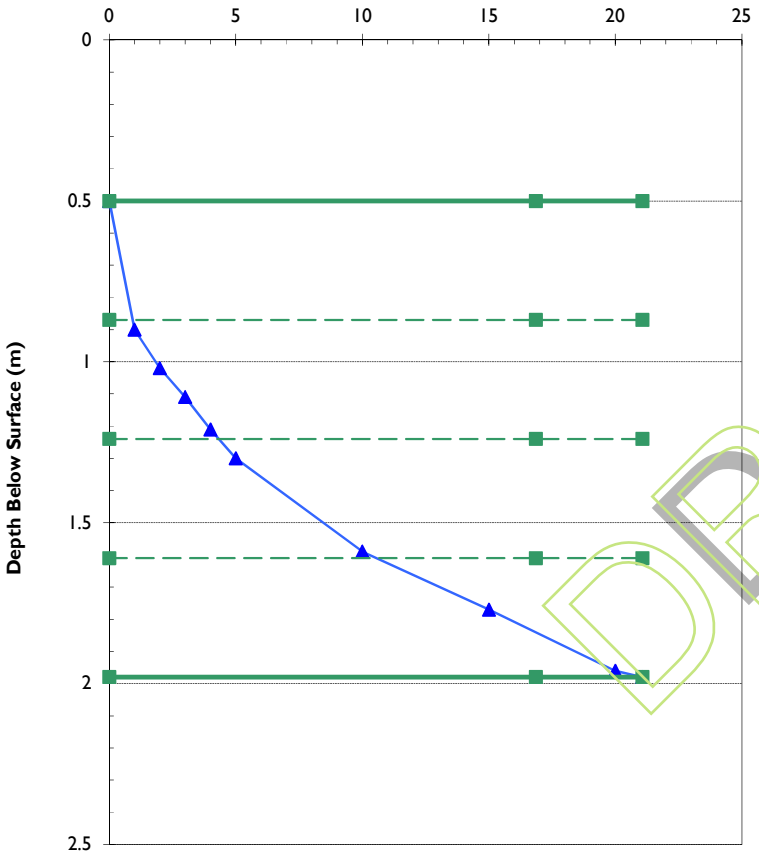
DRaft

Comments:	Water level fell to 75% -- 50% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 1



Pit Length (m)	1.8
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.48
Total Soakage Test Time (min)	21.07
Mean Internal Discharge Area (m2)	4.1728
Discharge Rate (litre/min)	12.7245
Soakage Rate (litre/m2/min)	3.049391
BRE Soil Infiltration Rate (m/sec)	5.08E-05

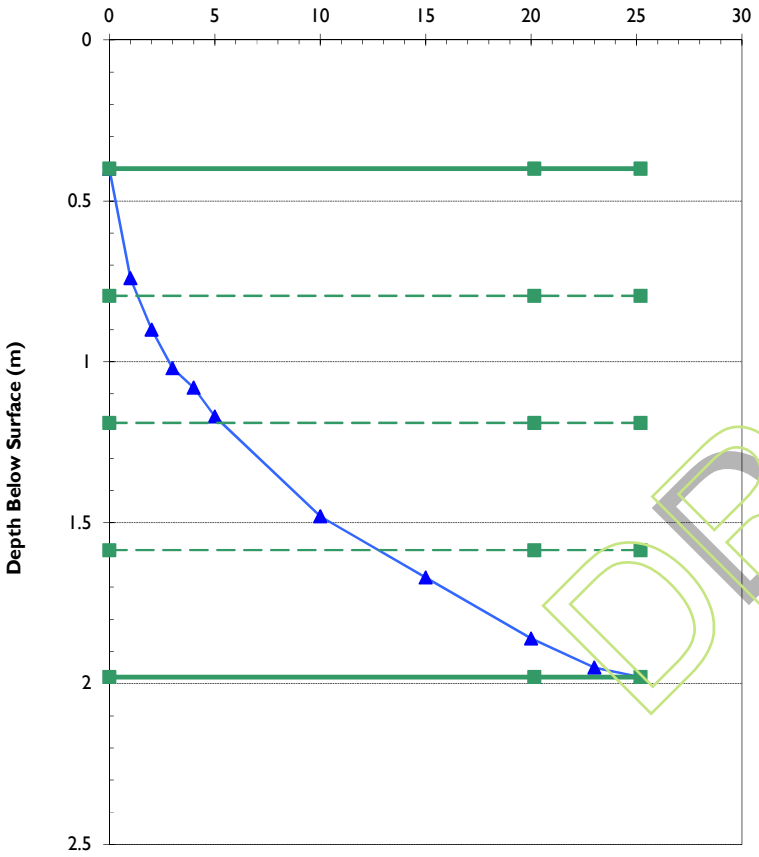
Comments:
Pit was emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	20/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 2



Pit Length (m)	1.8
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.58
Total Soakage Test Time (min)	25.2
Mean Internal Discharge Area (m2)	4.3988
Discharge Rate (litre/min)	11.45629
Soakage Rate (litre/m2/min)	2.604412
BRE Soil Infiltration Rate (m/sec)	4.34E-05

Comments:

Pit was emptied at finish of test.

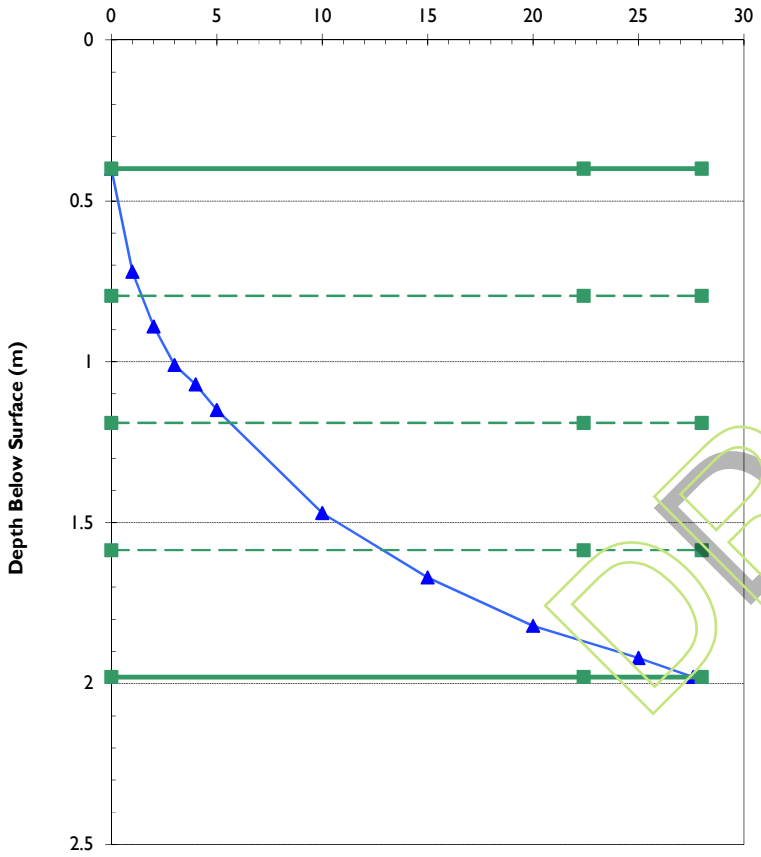
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	20/03/19

Draft

BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 3

leap environmental



Pit Length (m)	1.8
Pit Width (m)	0.46
Depth to Pit Base (m)	1.98
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.5
Voids Assumed for Granular Fill (%)	20%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.58
Total Soakage Test Time (min)	28
Mean Internal Discharge Area (m2)	4.3988
Discharge Rate (litre/min)	11.44184
Soakage Rate (litre/m2/min)	2.601128
BRE Soil Infiltration Rate (m/sec)	4.34E-05

Comments:
Pit was emptied at finish of test.

Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	20/03/19

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Results of BRE Digest 365 Soakage Tests

Site :
Client :
O S Reference

Tested By :
Test Date : 25/03/2019

Hole Number	Test Number	Hole Depth m	Test Soakage Rat litre/m2/min	Design Soakage Rate litre/m2/min	m/sec	End Water Level	Remarks
TP309	No 1	2	9.33	8.73	0.000145444	Empty pit.	
TP309	No 2	2	8.73			Empty pit.	
TP309	No 3	2	8.99			Empty pit.	
TP310	No 1	1.72	3.42	3.27	4.258E-05	Nearly empty pit.	Depth to existing ground water level was 1.92m.
TP310	No 2	1.72	3.27			Nearly empty pit.	Depth to existing ground water level was 1.92m.
TP310	No 3	1.72	2.55			Nearly empty pit.	Depth to existing ground water level was 1.92m.
TP307	No 1	1.99	9.54	6.81	0.00011343	Empty pit.	
TP307	No 2	1.99	6.81			Empty pit.	

DRaft

TP307	No 3	1.99	6.89			Empty pit.	
TP308	No 1	2	2.46	2.46	3.73983E-05	Empty pit.	
TP308	No 2	2	2.57			Empty pit.	
TP308	No 3	2	2.24			Empty pit.	
TP306	No 1	1.16	17.51	17.51	0.000291899	Empty pit.	
TP306	No 2	1.16	21.86			Empty pit.	
TP306	No 3	1.16	20.08			Empty pit.	
TP305	No 1	1.97	0.08	0.08	1.27412E-06	Pit was not empti	Depth to existing ground water level was 1.56m.
TP305	No 2	1.97	0.08			Pit was not empti	Depth to existing ground water level was 1.56m.
TP305	No 3	1.97	0.08			Pit was not empti	Depth to existing ground water level was 1.56m.
TP303	No 1	1.95	0.60	0.60	9.33319E-06	Nearly empty pit.	

DRaft

TP303	No 2	1.95				Pit was not empti	
TP303	No 3	1.95	0.56			Nearly empty pit.	
TP304	No 1	2	0.59	0.59	9.78155E-06	Nearly empty pit.	
TP304	No 2	2	0.60			Nearly empty pit.	
TP304	No 3	2	0.63			Empty pit.	
TP302	No 1	2	0.14	0.14	1.97289E-06	Nearly empty pit.	Depth to existing ground water level was 1.9m.
TP302	No 2	2	0.18			Pit was not empti	Depth to existing ground water level was 1.9m.
TP302	No 3	2	0.12			Pit was not empti	Depth to existing ground water level was 1.9m.
TP311	No 1	2	4.15	3.59	4.04364E-06	Empty pit.	
TP311	No 2	2	3.59			Empty pit.	
TP311	No 3	2	0.24			Pit was not empti	

DRaft

Mean Value of All Calculated Soakage Rates :	4.38 litre/m2/min 6.57156E-05 m/sec	

DRaft

Results of BRE Digest 365 Soakage Tests

Site :
Client :
O S Reference

Tested By :
Test Date : 25/03/2019

Hole Number	Test Number	Hole Depth m	Test Soakage Rate litre/m2/min	Design Soakage Rate litre/m2/min	Design Soakage Rate m/sec	End Water Level	Remarks
TP301	No 1	2	1.77	1.77	2.94838E-05	Pit was not empti	Depth to existing ground water level was 1.46m.
TP301	No 2	2	2.04			Pit was not empti	Depth to existing ground water level was 1.46m.
TP301	No 3	2	4.80			Empty pit.	Depth to existing ground water level was 1.46m.
TP312	No 1	2	2.33	2.26	3.73508E-05	Empty pit.	
TP312	No 2	2	2.26			Empty pit.	
TP312	No 3	2	2.24			Empty pit.	
TP317	No 1	1.99	3.43	2.83	4.59112E-05	Empty pit.	
TP317	No 2	1.99	2.83			Empty pit.	

DRaft

TP317	No 3	1.99	2.75			Empty pit.	
TP318	No 1	1.98	2.28	2.28	3.79234E-05	Nearly empty pit.	
TP318	No 2	1.98	2.57			Nearly empty pit.	
TP318	No 3	1.98	2.36			Empty pit.	
TP319	No 1	1.92	0.08	0.08	1.33756E-06	Pit was not empti	
TP319	No 2	1.92	0.10			Nearly empty pit.	
TP319	No 3	1.92	0.09			Nearly empty pit.	
TP320	No 1	1.98	2.17	1.62	2.70097E-05	Nearly empty pit.	
TP320	No 2	1.98	1.62			Empty pit.	
TP320	No 3	1.98	1.98			Nearly empty pit.	
TP313	No 1	1.97	3.08	2.68	4.46595E-05	Empty pit.	
TP313	No 2	1.97	2.68			Empty pit.	

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TP313	No 3	1.97	3.10			Empty pit.	
TP314	No 1	1.98	2.06	2.06	3.43937E-05	Empty pit.	
TP314	No 2	1.98	2.18			Nearly empty pit.	
TP314	No 3	1.98	2.49			Empty pit.	
TP315	No 1	1.97	4.89	4.89	7.63338E-05	Empty pit.	
TP315	No 2	1.97	5.11			Empty pit.	
TP315	No 3	1.97	4.58			Empty pit.	
TP316	No 1	1.99	2.41	2.13	3.54611E-05	Nearly empty pit.	Depth to existing ground water level was 1.81m.
TP316	No 2	1.99	2.13			Nearly empty pit.	Depth to existing ground water level was 1.81m.
TP316	No 3	1.99	2.27			Nearly empty pit.	Depth to existing ground water level was 1.81m.
Mean Value of All Calculated Soakage Rates :				2.26 litre/m2/min 3.699E-05 m/sec			

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Results of BRE Digest 365 Soakage Tests

Site : Fontwell
Client : Dandara Homes
O S Reference

Tested By : MN
Test Date : 25/03/2019

Hole Number	Test Number	Hole Depth m	Test Soakage Rat litre/m2/min	Design Soakage Rate litre/m2/min	m/sec	End Water Level	Remarks
TP321	No 1	1.95	1.25	1.18	1.97455E-05	Nearly empty pit.	
TP321	No 2	1.95	1.18			Nearly empty pit.	
TP321	No 3	1.95	1.18			Empty pit.	
TP322	No 1	1.98	11.34	10.98	0.000169187	Nearly empty pit.	
TP322	No 2	1.98	10.98			Nearly empty pit.	
TP322	No 3	1.98	10.15			Empty pit.	
TP323	No 1	1.7	0.67	0.50	3.62781E-06	Pit was not empti	Depth to existing ground water level was 0.8m.
TP323	No 2	1.7	0.50			Pit was not empti	Depth to existing ground water level was 0.8m.

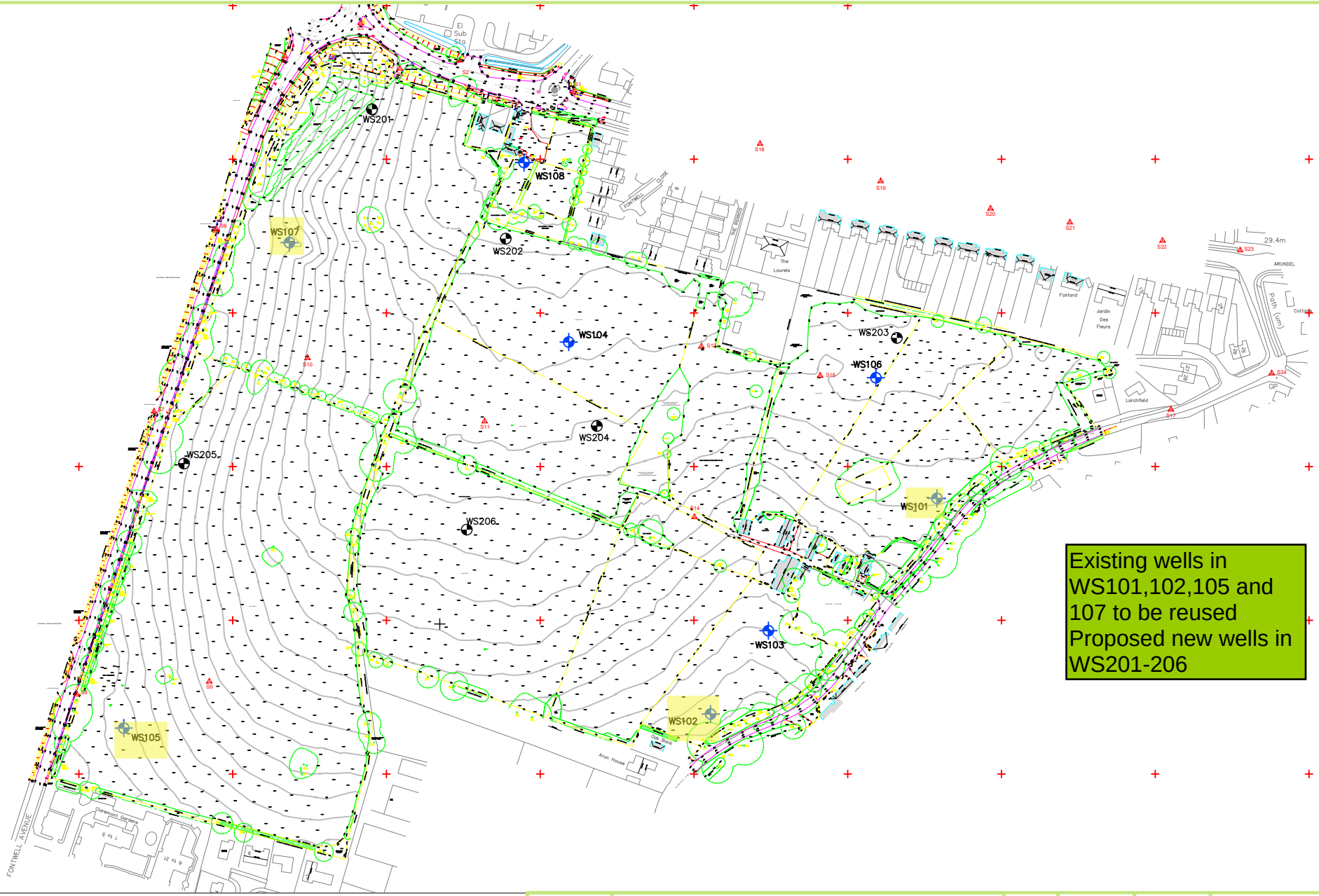
DRaFT

TP323	No 3	1.7	0.22			Pit was not empti	Depth to existing ground water level was 0.8m.
TP324	No 1	1.98	3.05	2.60	4.33521E-05	Empty pit.	
TP324	No 2	1.98	2.60			Empty pit.	
TP324	No 3	1.98	2.60			Empty pit.	
Mean Value of All Calculated Soakage Rates :				3.82 litre/m2/min 5.898E-05 m/sec			

DRaft

Fontwell Groundwater Level (mbgl)

Well depth		Well No.	Elevation	19/12/2018	19/12/2018	04/01/2019	04/01/2019	16/01/2019	16/01/2019	31/01/2019	31/01/2019	15/02/2019	15/02/2019	04/03/2019	04/03/2019	20/03/2019	20/03/2019
mbgl	mAOD		mAOD	mbgl	mAOD	mbgl	mAOD	mbgl	mAOD	mbgl	mAOD	mbgl	mAOD	mbgl	mAOD	mbgl	mAOD
	24.2	WS102	24.2							1.29	22.91	1.01	23.19	0.67	23.53	0.98	23.22
	21.7	WS105	21.7	0.88	20.82	1.39	20.31	1.55	20.15	1.5	20.2	1.2	20.5	1.25	20.45	1.36	20.34
4	23.7	WS201	27.7	3.6	24.1							3.8	23.9				
4	26.65	WS202	30.65										30.65				
4	25.4	WS203	29.4	3.75	25.65	3.25	26.15	3.33	26.07	3.38	26.02	3.05	26.35	2.8	26.6	3.17	26.23
4	24.9	WS204	28.9	3.7	25.2	3.76	25.14					3.92	24.98			3.9	25
3	20.8	WS205	23.8	0.95	22.85	1.45	22.35	1.6	22.2	1.8	22	1.4	22.4	1.6	22.2	1.56	22.24
4	24.15	WS206	28.15	3.5	24.65	3.76	24.39					3.72	24.43			4.02	24.13
4	21.5	WS207	25.5	2.15	23.35	2.89	22.61	3.34	22.16			2.74	22.76	3.45	22.05	3.2	22.3
4	22.8	WS208	26.8	2.13	24.67	2.5	24.3	3.15	23.65	3.6	23.2	2.45	24.35	3.13	23.67	1.83	24.97
4	19.5	WS209	23.5	0.89	22.61	1.22	22.28	2.05	21.45	1.5	22	1.21	22.29	1.97	21.53	2.9	20.6



Client	Dandara Properties Ltd	Date	26/11/18	Project Ref.	LP1649
Project	Northfield Cottages, Fontwell	Scale at A4	NTS	Fig No.	2
Title	Proposed Shallow Groundwater Monitoring Well Locations				

Appendix (C)

Proposed Site Layout



SITE LAYOUT 1:500

Schedule of Accommodation.

Private

Code	Housetype	No.
408	408 - 4 Bed House	15
407	407 - 4 Bed House	15
407A	407 - 4 Bed House	3
406TA	406 Sp - 4 Bed House	1
305A	305 - 3 Bed House	12
305B	305 - 3 Bed House	30
303	303 - 3 Bed Townhouse	6
302A	302A - 3 Bed House	79
204	204 - 2 Bed F.O.G.	4
204B	204 - 2 Bed F.O.G.	2
203	203 - 2 Bed House	87
203A	203 - 2 Bed House	1
J1	2 Bed Maisonette	2
J2	2 Bed Maisonette	2
J3	2 Bed Maisonette	4
J4	2 Bed Maisonette	2
Block C	2 Bed Flat	6
Block H	2 Bed Flat	9
		280

Affordable

Code	Housetype	No.
203	203 - 2 Bed House	35
203A	203 - 2 Bed House	2
204	204 - 2 Bed F.O.G.	3
204A	204 - 2 Bed F.O.G.	2
204B	204 - 2 Bed F.O.G.	1
302	302 - 3 Bed House	9
302B	302 - 3 Bed House	9
A303	303 - 3 Bed Townhouse	3
406	406 - 4 Bed House	3
Block A	1 Bed Flat	16
	2 Bed Flat	2
Block B	2 Bed Flat	6
Block D	1 Bed Flat	6
	2 Bed Flat	3
Block E	1 Bed Flat	3
	2 Bed Flat	3
Block F	2 Bed Flat	6
Block G	1 Bed Flat	5
	2 Bed Flat	3
		120
TOTAL		400

KEY

- SITE BOUNDARY
- 1.8m CLOSE BOARD FENCE
- 0.9m KNEE RAIL FENCE
- 1.2m RAILINGS
- SW 1.8m BRICK SCREEN WALL
- TURF TO GARDENS
- BLOCK PAVED SURFACE
- INDICATIVE TREE PLANTING
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- ROOT PROTECTION AREA
- EXISTING SHRUB PLANTING
- INDICATIVE SHRUB PLANTING
- GATE
- DOOR AND PATIO TO REAR ACCESS
- DOOR/LEVEL THRESHOLD AND PATH IN CONCRETE SLABS
- INTEGRAL GARAGE PARKING
- ACTIVE FRONTAGE / ADDITIONAL WINDOW
- METAL TREE GUARD
- PRIVATE UNITS
- AFFORDABLE UNITS
- BUILDING TO BE REMOVED

Sheet 1 / Sheet 2 / Sheet 3

0m 10m 20m 30m

Rev.	Date	Description	Drawn	Checked
E	17-05-19	Plots 40, 41, 236, 276, 277 & 278 adjusted. Road fronting plot 278 amended and SW removed from plot 327.	DGP	DGP
D	15-05-19	Hogger bus bay added and parking amended.	DGP	DGP
C	09-05-19	Roofscapes revised in village edge character area. Landscaping updated. Position of plots 42-45, 72-75, 255, 278-280, 368-369 & stores to plots 19-39, 121-129 amended to suit drainage requirements.	BAS	DGP
B	02-05-19	Roofscapes amended to plots 69-78, 139, 141, 142 & 172.	BAS	DGP
A	01-05-19	Landscaping and plots 398-399 amended.	DGP	DGP

Client: dandara

aap architecture

Project: Land south of Arundel Road, Fontwell, West Sussex.

Drawing Title: Planning Layout Sheet 1 of 3

Scale: 1:500 @ A0 | Drawn: DGP | Checked: AAP

Date: October 2018 | File: P1549 Layout | Drawing Status: PLANNING

Drg.No: P1549.11 | Rev: E

AAP Architecture Ltd
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ADC DISTRICT COUNCIL AMENDMENTS



SITE LAYOUT 1:500

Schedule of Accommodation.

Private

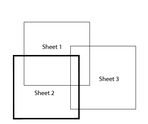
Code	Housetype	No.
408	408 - 4 Bed House	15
407	407 - 4 Bed House	15
407A	407 - 4 Bed House	3
406TA	406 Sp - 4 Bed House	1
305A	305 - 3 Bed House	12
305B	305 - 3 Bed House	30
303	303 - 3 Bed Townhouse	6
302A	302A - 3 Bed House	79
204	204 - 2 Bed F.O.G.	4
204B	204 - 2 Bed F.O.G.	2
203	203 - 2 Bed House	87
203A	203 - 2 Bed House	1
J1	2 Bed Maisonette	2
J2	2 Bed Maisonette	2
J3	2 Bed Maisonette	4
J4	2 Bed Maisonette	2
Block C	2 Bed Flat	6
Block H	2 Bed Flat	9
		280

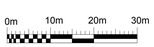
Affordable

Code	Housetype	No.
203	203 - 2 Bed House	35
203A	203 - 2 Bed House	2
204	204 - 2 Bed F.O.G.	3
204A	204 - 2 Bed F.O.G.	2
204B	204 - 2 Bed F.O.G.	1
302	302 - 3 Bed House	9
302B	302 - 3 Bed House	9
A303	303 - 3 Bed Townhouse	3
406	406 - 4 Bed House	3
Block A	1 Bed Flat	16
	2 Bed Flat	2
Block B	2 Bed Flat	6
Block D	1 Bed Flat	6
	2 Bed Flat	3
Block E	1 Bed Flat	3
	2 Bed Flat	3
Block F	2 Bed Flat	6
Block G	1 Bed Flat	5
	2 Bed Flat	3
		120
TOTAL		400

KEY

- SITE BOUNDARY
- 1.8m CLOSE BOARD FENCE
- 0.9m KNEE RAIL FENCE
- 1.2m RAILINGS
- SW 1.8m BRICK SCREEN WALL
- TURF TO GARDENS
- BLOCK PAVED SURFACE
- INDICATIVE TREE PLANTING
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- ROOT PROTECTION AREA
- EXISTING SHRUB PLANTING
- INDICATIVE SHRUB PLANTING
- GATE
- DOOR AND PATIO TO REAR ACCESS
- DOOR/LEVEL THRESHOLD AND PATH IN CONCRETE SLABS
- INTEGRAL GARAGE PARKING
- ACTIVE FRONTAGE / ADDITIONAL WINDOW
- METAL TREE GUARD
- PRIVATE UNITS
- AFFORDABLE UNITS
- BUILDING TO BE REMOVED





Rev.	Date	Description	Drawn	Checked
E	17-05-19	Plots 40, 41, 276, 277 & 278 adjusted. Road fronting plot 278 amended and SW removed from plot 327.	DGP	DGP
D	15-05-19	Hopper Bus bay added and parking amended.	DGP	DGP
C	09-05-19	Roofscapes revised in village edge character area. Landscaping updated. Position of plots 42-45, 72-75, 235, 278-280, 368-369 & stores to plots 19-39, 121-129 amended to suit drainage requirements.	BAS	DGP
B	02-05-19	Roofscapes amended to plots 139, 141, 142, 172 & 179-182.	BAS	DGP
A	01-05-19	Landscaping updated.	DGP	DGP

Client: dandara

aap architecture

Project
Land south of Arundel Road,
Fontwell, West Sussex.

Drawing Title
Planning Layout
Sheet 2 of 3

Scale 1:500 @ A0 | Drawn DGP | Checked AAP

Date October 2018 | File P1549 Layout | Drawing Status

Drg.No. P1549.21 | Rev. E | PLANNING

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ARUN DISTRICT COUNCIL RECEIVED 08/08/19



SITE LAYOUT 1:500

Schedule of Accommodation.

Private

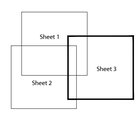
Code	Housetype	No.
408	408 - 4 Bed House	15
407	407 - 4 Bed House	15
407A	407 - 4 Bed House	3
406TA	406 Sp - 4 Bed House	1
305A	305 - 3 Bed House	12
305B	305 - 3 Bed House	30
303	303 - 3 Bed Townhouse	6
302A	302A - 3 Bed House	79
204	204 - 2 Bed F.O.G.	4
204B	204 - 2 Bed F.O.G.	2
203	203 - 2 Bed House	87
203A	203 - 2 Bed House	1
J1	2 Bed Maisonette	2
J2	2 Bed Maisonette	2
J3	2 Bed Maisonette	4
J4	2 Bed Maisonette	2
Block C	2 Bed Flat	6
Block H	2 Bed Flat	9
		280

Affordable

Code	Housetype	No.
203	203 - 2 Bed House	35
203A	203 - 2 Bed House	2
204	204 - 2 Bed F.O.G.	3
204A	204 - 2 Bed F.O.G.	2
204B	204 - 2 Bed F.O.G.	1
302	302 - 3 Bed House	9
302B	302 - 3 Bed House	9
A303	303 - 3 Bed Townhouse	3
406	406 - 4 Bed House	3
Block A	1 Bed Flat	16
	2 Bed Flat	2
Block B	2 Bed Flat	6
Block D	1 Bed Flat	6
	2 Bed Flat	3
Block E	1 Bed Flat	3
	2 Bed Flat	3
Block F	2 Bed Flat	6
Block G	1 Bed Flat	5
	2 Bed Flat	3
		120
TOTAL		400

KEY

- SITE BOUNDARY
- 1.8m CLOSE BOARD FENCE
- 0.9m KNEE RAIL FENCE
- 1.2m RAILINGS
- SW 1.8m BRICK SCREEN WALL
- TURF TO GARDENS
- BLOCK PAVED SURFACE
- INDICATIVE TREE PLANTING
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- ROOT PROTECTION AREA
- EXISTING SHRUB PLANTING
- INDICATIVE SHRUB PLANTING
- GATE
- DOOR AND PATIO TO REAR ACCESS
- DOOR/LEVEL THRESHOLD AND PATH IN CONCRETE SLABS
- INTEGRAL GARAGE PARKING
- ACTIVE FRONTAGE / ADDITIONAL WINDOW
- METAL TREE GUARD
- PRIVATE UNITS
- AFFORDABLE UNITS
- BUILDING TO BE REMOVED



0m 10m 20m 30m

Rev.	Date	Description	Drawn	Checked
D	17-05-19	Plots 40, 41, 276, 277 & 278 adjusted. Road fronting plot 278 amended and SW removed from plot 327.	BAS	DGP
C	09-05-19	Roofscapes revised in village edge character area. Landscaping updated. Position of plots 42-45, 72-75, 255, 278-280, 368-369 & stores to plots 19-39, 121-129 amended to suit drainage requirements.	BAS	DGP
B	02-05-19	Turning heads amended adjacent to plots 385-386 & 398-399.	BAS	DGP
A	01-05-19	Landscaping and plots 398-399 amended.	DGP	DGP

Client: dandara

aap architecture

Project: Land south of Arundel Road, Fontwell, West Sussex.

Drawing Title: Planning Layout Sheet 3 of 3

Scale: 1:500 @ A0 | Drawn: DGP | Checked: AAP

Date: October 2018 | File: P1549 Layout | Drawing Status: PLANNING

Drg.No.: P1549.31 | Rev.: D

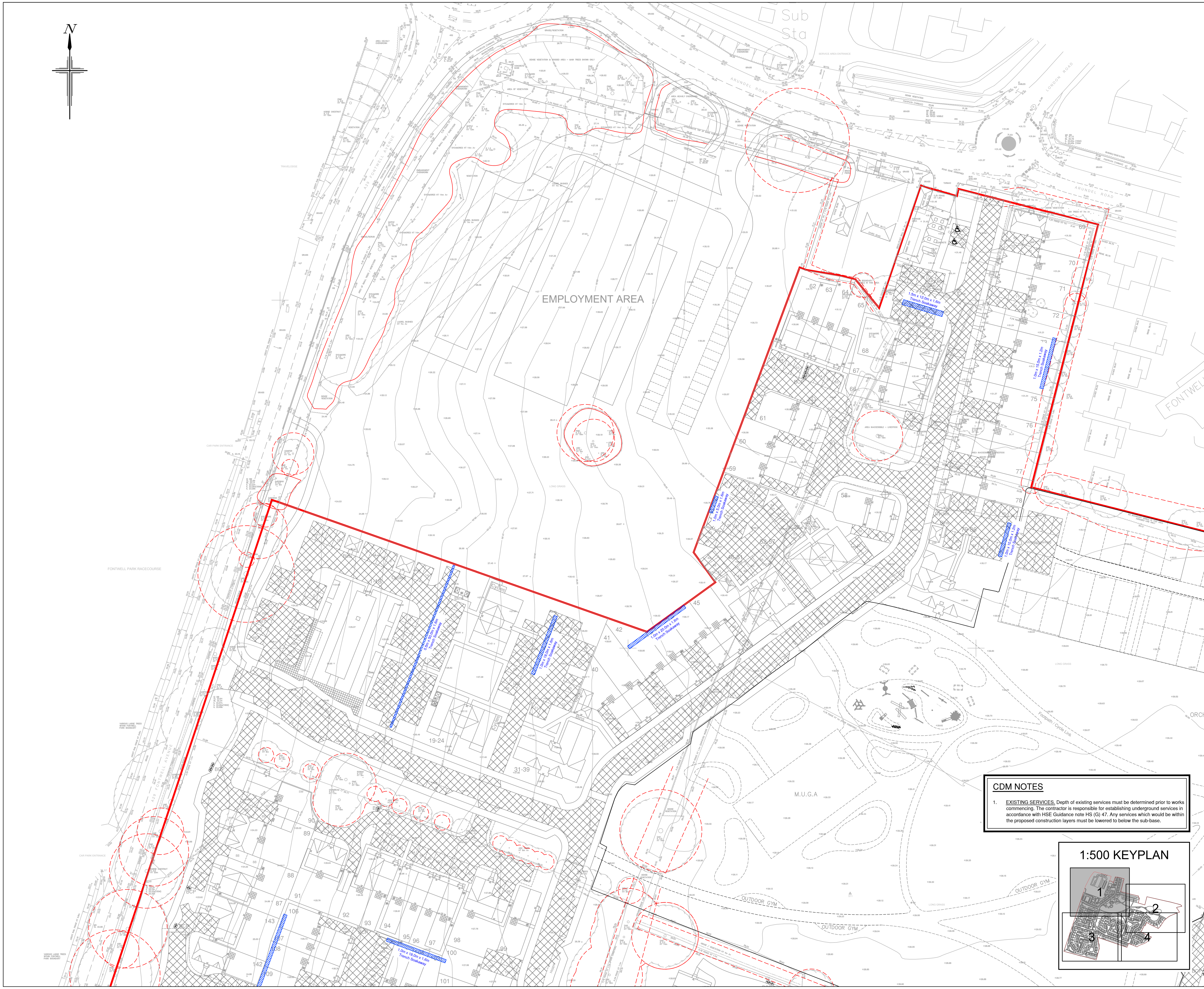
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ARUN DISTRICT COUNCIL PLANNING

Appendix (D)

Proposed Surface Water Strategy



NOTES

1. Site Layout and boundary based on AAP Architecture Proposed Site Layout, drawing number "P1549" revision D .dwg format received on 17/05/2019.
2. Topographic Survey as per MK Surveys Topographical Survey, drawing number 25802 provided in October 2018.
3. The current SURFACE water drainage strategy is indicative only and subject to further design development following receipt of the finalized site layout proposals.
4. FW & SW house drainage is to be constructed in accordance with the Building Regulations & BS8301 & the WRC Guide Sewers for Adoption 6th Edition Drains are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1991 "Super Strength" specification (e.g. Hepworth Supersleve or similar) or uPVC drainage pipework to BS4660 & BS2494, bedded & backfilled in accordance with manufacturers instructions.
5. Location of sewers & lateral drains to be in accordance with the WRC Guide Sewers for Adoption 6th Edition & addendum and specific requirements of ICOSA water.
6. Backfilling of drain trenches adjacent to dwelling or other structure to be in accordance with BS8301-Fig. 9.
7. Access fittings & inspection chambers as table below:-

TYPE	DEPTH RANGE	DESCRIPTION	TYPE	DEPTH RANGE	DESCRIPTION
3	0.6m to 3.0m	min. 450mm diameter Flexible or Rigid access chamber (Non Entry) in areas subject to vehicle loading	6	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)
4	0.6m to 3.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry) in areas subject to light vehicle loading	7	0.6m to 2.0m	min. 450 or 450x450mm diameter Flexible access chamber (Non Entry)
5	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)	8	0.0m to 0.6m	min. 190 or 225x100mm diameter Flexible access chamber (Non Entry)

LOCATION	CODE	COVER GRADE
Road	R	D400
Driveway	D	B125
Garden	G	A15

RE	Rodding point at head of drain

8. As an alternative to the construction of domestic drainage chambers deeper than 1.0m, the "Osma Non - entry Inspection Chamber", 500mm dia. polypropylene chamber to a maximum depth of 3.0m may be used subject to the approval of the local building inspector or the NHBC inspector.
9. Cover levels indicated on the Drainage Schedules are nominal & may be adjusted to suit finished ground levels as necessary.
10. Generally inspection chamber covers should be Grade D400 in trafficked areas Grade B125 in parking areas and occasional traffic and A15 in pedestrian only areas.
11. Rainwater downpipes to be connected direct to drain using an appropriate adaptor & removable section of downpipe to permit rodding access.
12. The positions of SVP's, stub stacks, WC outlets, Back inlet gullies etc. & rainwater downpipes are to be accurately located from the house type working drawings.
13. Generally FW drains are to be laid to falls of 1 in 40, SW drains are to be laid to falls of 1 in 60, both in 100mm diameter pipes, unless stated otherwise, or where a schedule is provided. Connections to Adoptable sewers to be 150mm diameter.
14. Gullies situated in areas accessible to wheeled vehicles to be of suitable construction for trafficked areas.
15. Where land drain is identified on the Architect's details, connect into nearest SW system.
16. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
17. An allowance to be made for all inspection chambers or manholes upstream of attenuation tanks or permeable pavements to have a 500mm sump catch pit within the chamber for silt control
18. ***ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

KEY

- Site Boundary
- Proposed Lined Permeable Paving
- Trench Soakaways with 10m offset to structures
- Plots drained by infiltration basin
- Root Protection Areas
- Tree Protection Fencing

0m 5m 10m 20m 30m 40m 50m

SCALE BAR 1:500 at A1

CDM NOTES

1. EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

1:500 KEYPLAN

Rev.	Date	Details	By	Chkd	Appd
A	17.05.19	Updated to latest Site Layout received 17.05.19, key updated.	WD	LD	TRS

Client:- dandara

Site:- Fontwell Eastergate Arundel

Drawing Title:- PROPOSED SURFACE WATER DRAINAGE STRATEGY

Sheet 1 of 4

Date: May 2019 | Scales: 1:500 at A1

Drawn: WD | Checked: LD | Approved: TRS

Drawing No. DAN/E4736/031 A

FOR INFORMATION ONLY

RCP ARCHITECTURE & CIVIL ENGINEERING

Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
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NOTES

1. Site Layout and boundary based on AAP Architecture Proposed Site Layout, drawing number "P1549" revision D .dwg format received on 17/05/2019.
2. Topographic Survey as per MK Surveys Topographical Survey, drawing number 25802 provided in October 2018.
3. The current SURFACE water drainage strategy is indicative only and subject to further design development following receipt of the finalized site layout proposals.
4. FW & SW house drainage is to be constructed in accordance with the Building Regulations & BS8301 & the WRC Guide Sewers for Adoption 6th Edition Drains are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1991 "Super Strength" specification (e.g. Hepworth Supersleve or similar) or uPVC drainage pipework to BS4660 & BS2494, bedded & backfilled in accordance with manufacturers instructions.
5. Location of sewers & lateral drains to be in accordance with the WRC Guide Sewers for Adoption 6th Edition & addendum and specific requirements of ICOSA water.
6. Backfilling of drain trenches adjacent to dwelling or other structure to be in accordance with BS8301-Fig. 9.
7. Access fittings & inspection chambers as table below:-

TYPE	DEPTH RANGE	DESCRIPTION	TYPE	DEPTH RANGE	DESCRIPTION
3	0.6m to 3.0m	min. 450mm diameter Flexible or Rigid access chamber (Non Entry) in areas subject to vehicle loading	6	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)
4	0.6m to 3.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry) in areas subject to light vehicle loading	7	0.6m to 2.0m	min. 450 or 450x450mm diameter Flexible access chamber (Non Entry)
5	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)	8	0.0m to 0.6m	min. 190 or 225x100mm diameter Flexible access chamber (Non Entry)

LOCATION	CODE	COVER GRADE	RE	Rodding point at head of drain
Road	R	D400		
Driveway	D	B125		
Garden	G	A15		

8. As an alternative to the construction of domestic drainage chambers deeper than 1.0m, the "Osma Non - entry Inspection Chamber", 500mm dia. polypropylene chamber to a maximum depth of 3.0m may be used subject to the approval of the local building inspector or the NHBC inspector.
9. Cover levels indicated on the Drainage Schedules are nominal & may be adjusted to suit finished ground levels as necessary.
10. Generally inspection chamber covers should be Grade D400 in trafficked areas Grade B125 in parking areas and occasional traffic and A15 in pedestrian only areas.
11. Rainwater downpipes to be connected direct to drain using an appropriate adaptor & removable section of downpipe to permit rodding access.
12. The positions of SVP's, stub stacks, WC outlets, Back inlet gullies etc. & rainwater downpipes are to be accurately located from the house type working drawings.
13. Generally FW drains are to be laid to falls of 1 in 40, SW drains are to be laid to falls of 1 in 60, both in 100mm diameter pipes, unless stated otherwise, or where a schedule is provided. Connections to Adoptable sewers to be 150mm diameter.
14. Gullies situated in areas accessible to wheeled vehicles to be of suitable construction for trafficked areas.
15. Where land drain is identified on the Architect's details, connect into nearest SW stystem.
16. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
17. An allowance to be made for all inspection chambers or manholes upstream of attenuation tanks or permeable pavements to have a 500mm sump catch pit within the chamber for silt control
18. ***ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

KEY

- Site Boundary
- Proposed Lined Permeable Paving
- Trench Soakaways with 10m offset to structures
- Plots drained by infiltration basin
- Root Protection Areas
- Tree Protection Fencing

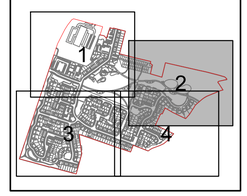
0m 5m 10m 20m 30m 40m 50m

SCALE BAR 1:500 at A1

CDM NOTES

1. EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

1:500 KEYPLAN



Rev.	Date	Details	By	Chkd	Appd
A	17.05.19	Updated to latest Site Layout received 17.05.19, key updated.	WD	LD	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
PROPOSED
SURFACE WATER
DRAINAGE STRATEGY
Sheet 2 of 4

Date:	May 2019	Scales:	1:500 at A1
Drawn:	WD	Checked: LD	Approved: TRS

Drawing No.
DAN/E4736/032 A

FOR INFORMATION ONLY

Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
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N

1.0m x 13.5m x 1.6m Trench Soakaway

1.0m x 19.5m x 1.6m Trench Soakaway

1.0m x 25.0m x 1.6m Trench Soakaway

1.0m x 26.0m x 1.6m Trench Soakaway

1.0m x 28m x 1.6m Trench Soakaway

1.0m x 29m x 1.6m Trench Soakaway

1.0m x 30m x 1.6m Trench Soakaway

1.0m x 30m x 1.6m Trench Soakaway

1.0m x 31m x 1.6m Trench Soakaway

1.0m x 33m x 1.6m Trench Soakaway

1.0m x 17.0m x 1.6m Trench Soakaway

1.0m x 25.0m x 1.6m Trench Soakaway

1.5m x 9m x 1.6m Trench Soakaway

1.5m x 9m x 1.6m Trench Soakaway

1.5m x 13m x 1.6m Trench Soakaway

INFILTRATION BASIN PROVIDES 239m³ OF VOLUME BASE LEVEL = 20.00 TOP LEVEL = 21.50

10m EXCLUSION ZONE FROM INFILTRATION BASIN

OUTDOOR GYM

FONTWELL AVENUE

CLARENCE ROAD

CLARENDON WAY

FONTWELL PARK RACECOURSE

NOTES

1. Site Layout and boundary based on AAP Architecture Proposed Site Layout, drawing number "P1549" revision D .dwg format received on 17/05/2019.
2. Topographic Survey as per MK Surveys Topographical Survey, drawing number 25802 provided in October 2018.
3. The current SURFACE water drainage strategy is indicative only and subject to further design development following receipt of the finalized site layout proposals.
4. FW & SW house drainage is to be constructed in accordance with the Building Regulations & BS8301 & the WRC Guide Sewers for Adoption 6th Edition Drains are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1991 "Super Strength" specification (e.g. Hepworth Supersleve or similar) or uPVC drainage pipework to BS4660 & BS2494, bedded & backfilled in accordance with manufacturers instructions.
5. Location of sewers & lateral drains to be in accordance with the WRC Guide Sewers for Adoption 6th Edition & addendum and specific requirements of ICOSA water.
6. Backfilling of drain trenches adjacent to dwelling or other structure to be in accordance with BS8301-Fig. 9.
7. Access fittings & inspection chambers as table below:-

TYPE	DEPTH RANGE	DESCRIPTION	TYPE	DEPTH RANGE	DESCRIPTION
3	0.6m to 3.0m	min. 450mm diameter Flexible or Rigid access chamber (Non Entry) in areas subject to vehicle loading	6	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)
4	0.6m to 3.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry) in areas subject to light vehicle loading	7	0.6m to 2.0m	min. 450 or 450x450mm diameter Flexible access chamber (Non Entry)
5	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)	8	0.0m to 0.6m	min. 190 or 225x100mm diameter Flexible access chamber (Non Entry)

LOCATION	CODE	COVER GRADE	RE	
Road	R	D400		Rodding point at head of drain
Driveway	D	B125		
Garden	G	A15		

8. As an alternative to the construction of domestic drainage chambers deeper than 1.0m, the "Osma Non - entry Inspection Chamber", 500mm dia. polypropylene chamber to a maximum depth of 3.0m may be used subject to the approval of the local building inspector or the NHBC inspector.
9. Cover levels indicated on the Drainage Schedules are nominal & may be adjusted to suit finished ground levels as necessary.
10. Generally inspection chamber covers should be Grade D400 in trafficked areas Grade B125 in parking areas and occasional traffic and A15 in pedestrian only areas.
11. Rainwater downpipes to be connected direct to drain using an appropriate adaptor & removable section of downpipe to permit rodding access.
12. The positions of SVP's, stub stacks, WC outlets, Back inlet gullies etc. & rainwater downpipes are to be accurately located from the house type working drawings.
13. Generally FW drains are to be laid to falls of 1 in 40, SW drains are to be laid to falls of 1 in 60, both in 100mm diameter pipes, unless stated otherwise, or where a schedule is provided. Connections to Adoptable sewers to be 150mm diameter.
14. Gullies situated in areas accessible to wheeled vehicles to be of suitable construction for trafficked areas.
15. Where land drain is identified on the Architect's details, connect into nearest SW stystem.
16. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
17. An allowance to be made for all inspection chambers or manholes upstream of attenuation tanks or permeable pavements to have a 500mm sump catch pit within the chamber for silt control
18. ***ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

KEY

- Site Boundary
- Proposed Lined Permeable Paving
- Trench Soakaways with 10m offset to structures
- Plots drained by infiltration basin
- Root Protection Areas
- Tree Protection Fencing

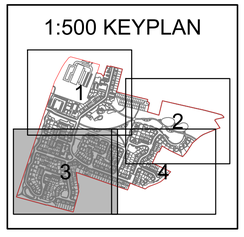
0m 5m 10m 20m 30m 40m 50m

SCALE BAR 1:500 at A1

CDM NOTES

1. EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

1:500 KEYPLAN



Rev.	Date	Details	By	Chkd	Appd
A	17.05.19	Updated to latest Site Layout received 17.05.19, key updated.	WD	LD	TRS

Client:- dandara

Site:- Fontwell Eastergate Arundel

Drawing Title:- PROPOSED SURFACE WATER DRAINAGE STRATEGY

Sheet 3 of 4

Date: May 2019 | Scales: 1:500 at A1

Drawn: WD | Checked: LD | Approved: TRS

Drawing No. DAN/E4736/033 A

FOR INFORMATION ONLY

RCP ARCHITECTURE & CIVIL ENGINEERING
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Architectural and Civil Consultants
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NOTES

1. Site Layout and boundary based on AAP Architecture Proposed Site Layout, drawing number "P1549" revision D .dwg format received on 17/05/2019.
2. Topographic Survey as per MK Surveys Topographical Survey, drawing number 25802 provided in October 2018.
3. The current SURFACE water drainage strategy is indicative only and subject to further design development following receipt of the finalized site layout proposals.
4. FW & SW house drainage is to be constructed in accordance with the Building Regulations & BS8301 & the WRC Guide Sewers for Adoption 6th Edition Drains are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1991 "Super Strength" specification (e.g. Hepworth Supersleve or similar) or uPVC drainage pipework to BS4660 & BS2494, bedded & backfilled in accordance with manufacturers instructions.
5. Location of sewers & lateral drains to be in accordance with the WRC Guide Sewers for Adoption 6th Edition & addendum and specific requirements of ICOSA water.
6. Backfilling of drain trenches adjacent to dwelling or other structure to be in accordance with BS8301-Fig. 9.
7. Access fittings & inspection chambers as table below:-

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4	0.6m to 3.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry) in areas subject to light vehicle loading	7	0.6m to 2.0m	min. 450 or 450x450mm diameter Flexible access chamber (Non Entry)
5	0.6m to 1.0m	min. 450mm diameter Flexible / Rigid access chamber (Non Entry)	8	0.0m to 0.6m	min. 190 or 225x100mm diameter Flexible access chamber (Non Entry)

LOCATION	CODE	COVER GRADE	RE	Rodding point at head of drain
Road	R	D400		
Driveway	D	B125		
Garden	G	A15		

8. As an alternative to the construction of domestic drainage chambers deeper than 1.0m, the "Osma Non - entry Inspection Chamber", 500mm dia. polypropylene chamber to a maximum depth of 3.0m may be used subject to the approval of the local building inspector or the NHBC inspector.
9. Cover levels indicated on the Drainage Schedules are nominal & may be adjusted to suit finished ground levels as necessary.
10. Generally inspection chamber covers should be Grade D400 in trafficked areas Grade B125 in parking areas and occasional traffic and A15 in pedestrian only areas.
11. Rainwater downpipes to be connected direct to drain using an appropriate adaptor & removable section of downpipe to permit rodding access.
12. The positions of SVP's, stub stacks, WC outlets, Back inlet gullies etc. & rainwater downpipes are to be accurately located from the house type working drawings.
13. Generally FW drains are to be laid to falls of 1 in 40, SW drains are to be laid to falls of 1 in 60, both in 100mm diameter pipes, unless stated otherwise, or where a schedule is provided. Connections to Adoptable sewers to be 150mm diameter.
14. Gullies situated in areas accessible to wheeled vehicles to be of suitable construction for trafficked areas.
15. Where land drain is identified on the Architect's details, connect into nearest SW stystem.
16. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
17. An allowance to be made for all inspection chambers or manholes upstream of attenuation tanks or permeable pavements to have a 500mm sump catch pit within the chamber for silt control
18. ***ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

KEY

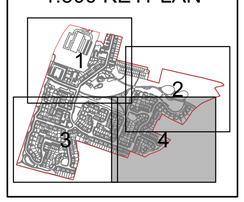
- Site Boundary
- Proposed Lined Permeable Paving
- Trench Soakaways with 10m offset to structures
- Plots drained by infiltration basin
- Root Protection Areas
- Tree Protection Fencing

SCALE BAR 1:500 at A1

CDM NOTES

1. EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

1:500 KEYPLAN



Rev.	Date	Details	By	Chkd	Appd
A	17.05.19	Updated to latest Site Layout received 17.05.19, key updated.	WD	LD	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
PROPOSED
SURFACE WATER
DRAINAGE STRATEGY
Sheet 4 of 4

Date: May 2019 | Scales: 1:500 at A1
Drawn: WD | Checked: LD | Approved: TRS

Drawing No.
DAN/E4736/034 A

FOR INFORMATION ONLY

Rogers Cory Partnership
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Appendix (E)

Micro Drainage Calculations

Fontwell Soakaway Summary List

Area No.	Imp. Area (ha)	Soakaway Size (WxLxD m)	Rate used from TP*	Plot No.
1	0.055	1.5x12x1.6	324	62-68 & Community Centre
2	0.054	1x15x1.5	324	69-78
3	-			
4	0.017	1x5x1.6	317,324	59-61
5	0.024	1x10x1.2	317	79-86
6	0.085	5x50x1.6	309,310	1-18,19-24
7	0.042	1x18x1.6	309	19-24,25-30,31-39
8	0.071	1x20x1.6	309,311,317	40-58
9 &11	0.16	1x58x1.6	305,307	87,88,91,106-114,137-143
10	0.059	1x18x1.6	307,308	92-101
12	0.083	1x26x1.6	305,306,307	115-134
13	0.089	1x28x1.5	36	152-167
14	0.033	1.5x13.5x1.5	303	148-151&192-195
15	0.081	1x27x1.6	31	187-191,196-206
16	0.168	Infiltration Basin	301	144-147,173-182,184-186,206-217
17	0.081	0.5x38x1.6	35	218-233
18	0.11	1x35.5x1.5	318,319	385-400
19	0.087	1.5x24x1.6	318,320	376-384
20	0.082	1x25x1.6	307,308	259-264,266-270,283-285
21	0.088	1x26.5x1.6	313	268-278 &306-308
22	0.076	1x23x1.6	315	286-295,
23	0.057	1x19x1.6	315,316	314-319&337-339
24	0.104	1x28x1.5	319,322	354-374
25	0.038	1x17x1.5	313,314	265-267&301-305
26	0.026	1x8x1.6	315	296-300
27	0.026	1x8x1.2	314,316	332-336
28	0.053	1x17x1.2	316,322	322-331
29	0.058	1x15x1.6	316,322	340-350
30	0.098	1x33x1.6	35,314	234-250
30A	0.029	1.5x9x1.6	35,314	251-256
31	0.012	1x8x0.8	322,323	351&352
31A	0.007	1x6x0.4	322,323	353

*Where more than one rate is indicated the average of those rates was used

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 224 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	30.260	0.760	0.8	12.9	O K
30 min Summer	30.495	0.995	1.0	16.9	O K
60 min Summer	30.713	1.213	1.1	20.6	O K
120 min Summer	30.864	1.364	1.2	23.2	O K
180 min Summer	30.894	1.394	1.2	23.7	O K
240 min Summer	30.897	1.397	1.2	23.8	O K
360 min Summer	30.880	1.380	1.2	23.5	O K
480 min Summer	30.846	1.346	1.2	22.9	O K
600 min Summer	30.805	1.305	1.2	22.2	O K
720 min Summer	30.762	1.262	1.1	21.5	O K
960 min Summer	30.681	1.181	1.1	20.1	O K
1440 min Summer	30.539	1.039	1.0	17.7	O K
2160 min Summer	30.365	0.865	0.9	14.7	O K
2880 min Summer	30.226	0.726	0.8	12.3	O K
4320 min Summer	30.020	0.520	0.7	8.8	O K
5760 min Summer	29.875	0.375	0.6	6.3	O K
7200 min Summer	29.768	0.268	0.5	4.5	O K
8640 min Summer	29.688	0.188	0.5	3.1	O K
10080 min Summer	29.628	0.128	0.5	2.1	O K
15 min Winter	30.354	0.854	0.9	14.5	O K
30 min Winter	30.620	1.120	1.0	19.1	O K
60 min Winter	30.871	1.371	1.2	23.3	O K
120 min Winter	31.055	1.555	1.3	26.5	O K
180 min Winter	31.096	1.596	1.3	27.2	O K
240 min Winter	31.092	1.592	1.3	27.1	O K
360 min Winter	31.067	1.567	1.3	26.7	O K
480 min Winter	31.017	1.517	1.3	25.8	O K
600 min Winter	30.957	1.457	1.2	24.8	O K
720 min Winter	30.894	1.394	1.2	23.7	O K
960 min Winter	30.771	1.271	1.1	21.6	O K
1440 min Winter	30.567	1.067	1.0	18.1	O K
2160 min Winter	30.329	0.829	0.9	14.1	O K
2880 min Winter	30.150	0.650	0.8	11.0	O K
4320 min Winter	29.900	0.400	0.6	6.7	O K
5760 min Winter	29.736	0.236	0.5	3.9	O K
7200 min Winter	29.624	0.124	0.5	2.0	O K
8640 min Winter	29.554	0.054	0.4	0.8	O K
10080 min Winter	29.545	0.045	0.4	0.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	120
180 min Summer	25.216	0.0	156
240 min Summer	20.299	0.0	186
360 min Summer	14.939	0.0	252
480 min Summer	12.007	0.0	322
600 min Summer	10.126	0.0	392
720 min Summer	8.806	0.0	462
960 min Summer	7.057	0.0	598
1440 min Summer	5.155	0.0	866
2160 min Summer	3.758	0.0	1252
2880 min Summer	2.998	0.0	1640
4320 min Summer	2.178	0.0	2376
5760 min Summer	1.733	0.0	3112
7200 min Summer	1.452	0.0	3816
8640 min Summer	1.257	0.0	4504
10080 min Summer	1.113	0.0	5240
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	118
180 min Winter	25.216	0.0	170
240 min Winter	20.299	0.0	192
360 min Winter	14.939	0.0	270
480 min Winter	12.007	0.0	346
600 min Winter	10.126	0.0	422
720 min Winter	8.806	0.0	496
960 min Winter	7.057	0.0	638
1440 min Winter	5.155	0.0	922
2160 min Winter	3.758	0.0	1320
2880 min Winter	2.998	0.0	1700
4320 min Winter	2.178	0.0	2460
5760 min Winter	1.733	0.0	3176
7200 min Winter	1.452	0.0	3888
8640 min Winter	1.257	0.0	4416
10080 min Winter	1.113	0.0	5032

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.057

Time (mins) From:	To:	Area (ha)
0	4	0.057

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Model Details

Storage is Online Cover Level (m) 31.400

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.15606	Invert Level (m)	29.500	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.15606	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	12.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 187 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	30.325	0.575	0.9	12.1	O K
30 min Summer	30.499	0.749	1.0	15.8	O K
60 min Summer	30.657	0.907	1.1	19.2	O K
120 min Summer	30.757	1.007	1.2	21.4	O K
180 min Summer	30.774	1.024	1.2	21.7	O K
240 min Summer	30.770	1.020	1.2	21.6	O K
360 min Summer	30.746	0.996	1.2	21.1	O K
480 min Summer	30.712	0.962	1.2	20.4	O K
600 min Summer	30.676	0.926	1.1	19.6	O K
720 min Summer	30.641	0.891	1.1	18.9	O K
960 min Summer	30.575	0.825	1.1	17.5	O K
1440 min Summer	30.459	0.709	1.0	15.0	O K
2160 min Summer	30.317	0.567	0.9	12.0	O K
2880 min Summer	30.205	0.455	0.8	9.6	O K
4320 min Summer	30.042	0.292	0.7	6.1	O K
5760 min Summer	29.932	0.182	0.6	3.7	O K
7200 min Summer	29.858	0.108	0.6	2.2	O K
8640 min Summer	29.814	0.064	0.5	1.2	O K
10080 min Summer	29.797	0.047	0.5	0.9	O K
15 min Winter	30.396	0.646	0.9	13.6	O K
30 min Winter	30.594	0.844	1.1	17.9	O K
60 min Winter	30.777	1.027	1.2	21.8	O K
120 min Winter	30.903	1.153	1.3	24.5	O K
180 min Winter	30.923	1.173	1.3	24.9	O K
240 min Winter	30.916	1.166	1.3	24.8	O K
360 min Winter	30.884	1.134	1.3	24.1	O K
480 min Winter	30.835	1.085	1.3	23.0	O K
600 min Winter	30.781	1.031	1.2	21.9	O K
720 min Winter	30.728	0.978	1.2	20.7	O K
960 min Winter	30.630	0.880	1.1	18.7	O K
1440 min Winter	30.463	0.713	1.0	15.1	O K
2160 min Winter	30.270	0.520	0.9	11.0	O K
2880 min Winter	30.127	0.377	0.8	7.9	O K
4320 min Winter	29.932	0.182	0.6	3.7	O K
5760 min Winter	29.818	0.068	0.5	1.3	O K
7200 min Winter	29.795	0.045	0.5	0.8	O K
8640 min Winter	29.789	0.039	0.4	0.7	O K
10080 min Winter	29.785	0.035	0.4	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	120
180 min Summer	25.216	0.0	150
240 min Summer	20.299	0.0	182
360 min Summer	14.939	0.0	250
480 min Summer	12.007	0.0	320
600 min Summer	10.126	0.0	388
720 min Summer	8.806	0.0	456
960 min Summer	7.057	0.0	594
1440 min Summer	5.155	0.0	854
2160 min Summer	3.758	0.0	1236
2880 min Summer	2.998	0.0	1616
4320 min Summer	2.178	0.0	2336
5760 min Summer	1.733	0.0	3056
7200 min Summer	1.452	0.0	3752
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	116
180 min Winter	25.216	0.0	168
240 min Winter	20.299	0.0	190
360 min Winter	14.939	0.0	268
480 min Winter	12.007	0.0	344
600 min Winter	10.126	0.0	418
720 min Winter	8.806	0.0	492
960 min Winter	7.057	0.0	636
1440 min Winter	5.155	0.0	910
2160 min Winter	3.758	0.0	1300
2880 min Winter	2.998	0.0	1676
4320 min Winter	2.178	0.0	2420
5760 min Winter	1.733	0.0	3056
7200 min Winter	1.452	0.0	3632
8640 min Winter	1.257	0.0	4400
10080 min Winter	1.113	0.0	5072

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.054

Time (mins) From:	To:	Area (ha)
0	4	0.054

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Model Details

Storage is Online Cover Level (m) 31.350

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.15606	Invert Level (m)	29.750	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.15606	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	15.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 149 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	28.605	0.805	0.3	3.8	O K
30 min Summer	28.845	1.045	0.4	5.0	O K
60 min Summer	29.053	1.253	0.4	5.9	O K
120 min Summer	29.169	1.369	0.5	6.5	O K
180 min Summer	29.196	1.396	0.5	6.6	O K
240 min Summer	29.192	1.392	0.5	6.6	O K
360 min Summer	29.158	1.358	0.5	6.4	O K
480 min Summer	29.108	1.308	0.5	6.2	O K
600 min Summer	29.054	1.254	0.4	5.9	O K
720 min Summer	29.002	1.202	0.4	5.7	O K
960 min Summer	28.906	1.106	0.4	5.2	O K
1440 min Summer	28.747	0.947	0.4	4.5	O K
2160 min Summer	28.568	0.768	0.3	3.6	O K
2880 min Summer	28.435	0.635	0.3	3.0	O K
4320 min Summer	28.248	0.448	0.2	2.1	O K
5760 min Summer	28.124	0.324	0.2	1.5	O K
7200 min Summer	28.035	0.235	0.2	1.1	O K
8640 min Summer	27.969	0.169	0.2	0.8	O K
10080 min Summer	27.918	0.118	0.1	0.5	O K
15 min Winter	28.704	0.904	0.4	4.3	O K
30 min Winter	28.978	1.178	0.4	5.6	O K
60 min Winter	29.219	1.419	0.5	6.7	O K
120 min Winter	29.360	1.560	0.5	7.4	O K
180 min Winter	29.381	1.581	0.5	7.5	O K
240 min Winter	29.370	1.570	0.5	7.4	O K
360 min Winter	29.311	1.511	0.5	7.2	O K
480 min Winter	29.235	1.435	0.5	6.8	O K
600 min Winter	29.155	1.355	0.5	6.4	O K
720 min Winter	29.078	1.278	0.5	6.1	O K
960 min Winter	28.939	1.139	0.4	5.4	O K
1440 min Winter	28.724	0.924	0.4	4.4	O K
2160 min Winter	28.495	0.695	0.3	3.3	O K
2880 min Winter	28.335	0.535	0.3	2.5	O K
4320 min Winter	28.127	0.327	0.2	1.5	O K
5760 min Winter	27.997	0.197	0.2	0.9	O K
7200 min Winter	27.911	0.111	0.1	0.5	O K
8640 min Winter	27.854	0.054	0.1	0.2	O K
10080 min Winter	27.845	0.045	0.1	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	106
180 min Summer	25.216	0.0	136
240 min Summer	20.299	0.0	170
360 min Summer	14.939	0.0	238
480 min Summer	12.007	0.0	308
600 min Summer	10.126	0.0	376
720 min Summer	8.806	0.0	444
960 min Summer	7.057	0.0	578
1440 min Summer	5.155	0.0	838
2160 min Summer	3.758	0.0	1212
2880 min Summer	2.998	0.0	1584
4320 min Summer	2.178	0.0	2332
5760 min Summer	1.733	0.0	3056
7200 min Summer	1.452	0.0	3752
8640 min Summer	1.257	0.0	4496
10080 min Summer	1.113	0.0	5152
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	114
180 min Winter	25.216	0.0	142
240 min Winter	20.299	0.0	180
360 min Winter	14.939	0.0	256
480 min Winter	12.007	0.0	330
600 min Winter	10.126	0.0	404
720 min Winter	8.806	0.0	472
960 min Winter	7.057	0.0	614
1440 min Winter	5.155	0.0	880
2160 min Winter	3.758	0.0	1260
2880 min Winter	2.998	0.0	1644
4320 min Winter	2.178	0.0	2376
5760 min Winter	1.733	0.0	3112
7200 min Winter	1.452	0.0	3816
8640 min Winter	1.257	0.0	4416
10080 min Winter	1.113	0.0	5024

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.017

Time (mins) From:	To:	Area (ha)
0	4	0.017

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Model Details

Storage is Online Cover Level (m) 29.800

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.16000	Invert Level (m)	27.800	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.16000	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	5.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 142 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	29.314	0.614	0.5	5.8	O K
30 min Summer	29.494	0.794	0.6	7.5	O K
60 min Summer	29.647	0.947	0.7	9.0	O K
120 min Summer	29.728	1.028	0.7	9.7	O K
180 min Summer	29.742	1.042	0.8	9.9	O K
240 min Summer	29.734	1.034	0.7	9.8	O K
360 min Summer	29.698	0.998	0.7	9.4	O K
480 min Summer	29.654	0.954	0.7	9.0	O K
600 min Summer	29.610	0.910	0.7	8.6	O K
720 min Summer	29.568	0.868	0.7	8.2	O K
960 min Summer	29.492	0.792	0.6	7.5	O K
1440 min Summer	29.365	0.665	0.6	6.3	O K
2160 min Summer	29.220	0.520	0.5	4.9	O K
2880 min Summer	29.112	0.412	0.4	3.9	O K
4320 min Summer	28.963	0.263	0.4	2.4	O K
5760 min Summer	28.865	0.165	0.3	1.5	O K
7200 min Summer	28.801	0.101	0.3	0.9	O K
8640 min Summer	28.761	0.061	0.3	0.5	O K
10080 min Summer	28.747	0.047	0.2	0.4	O K
15 min Winter	29.390	0.690	0.6	6.5	O K
30 min Winter	29.596	0.896	0.7	8.5	O K
60 min Winter	29.775	1.075	0.8	10.2	O K
120 min Winter	29.874	1.174	0.8	11.1	O K
180 min Winter	29.885	1.185	0.8	11.2	O K
240 min Winter	29.871	1.171	0.8	11.1	O K
360 min Winter	29.815	1.115	0.8	10.5	O K
480 min Winter	29.749	1.049	0.8	9.9	O K
600 min Winter	29.683	0.983	0.7	9.3	O K
720 min Winter	29.621	0.921	0.7	8.7	O K
960 min Winter	29.512	0.812	0.6	7.7	O K
1440 min Winter	29.338	0.638	0.5	6.0	O K
2160 min Winter	29.153	0.453	0.5	4.3	O K
2880 min Winter	29.024	0.324	0.4	3.0	O K
4320 min Winter	28.858	0.158	0.3	1.5	O K
5760 min Winter	28.763	0.063	0.3	0.5	O K
7200 min Winter	28.744	0.044	0.2	0.4	O K
8640 min Winter	28.739	0.039	0.2	0.3	O K
10080 min Winter	28.734	0.034	0.2	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	104
180 min Summer	25.216	0.0	136
240 min Summer	20.299	0.0	168
360 min Summer	14.939	0.0	238
480 min Summer	12.007	0.0	308
600 min Summer	10.126	0.0	376
720 min Summer	8.806	0.0	442
960 min Summer	7.057	0.0	578
1440 min Summer	5.155	0.0	836
2160 min Summer	3.758	0.0	1212
2880 min Summer	2.998	0.0	1584
4320 min Summer	2.178	0.0	2296
5760 min Summer	1.733	0.0	3008
7200 min Summer	1.452	0.0	3744
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5128
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	114
180 min Winter	25.216	0.0	142
240 min Winter	20.299	0.0	180
360 min Winter	14.939	0.0	256
480 min Winter	12.007	0.0	330
600 min Winter	10.126	0.0	404
720 min Winter	8.806	0.0	472
960 min Winter	7.057	0.0	610
1440 min Winter	5.155	0.0	880
2160 min Winter	3.758	0.0	1256
2880 min Winter	2.998	0.0	1640
4320 min Winter	2.178	0.0	2340
5760 min Winter	1.733	0.0	3000
7200 min Winter	1.452	0.0	3576
8640 min Winter	1.257	0.0	4400
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 30.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.16520	Invert Level (m)	28.700	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.16520	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	10.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 157 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.531	0.831	1.6	19.1	O K
30 min Summer	24.773	1.073	1.9	24.9	O K
60 min Summer	24.984	1.284	2.3	29.9	O K
120 min Summer	25.105	1.405	2.4	32.8	O K
180 min Summer	25.138	1.438	2.5	33.6	O K
240 min Summer	25.140	1.440	2.5	33.6	O K
360 min Summer	25.116	1.416	2.4	33.0	O K
480 min Summer	25.074	1.374	2.4	32.0	O K
600 min Summer	25.026	1.326	2.3	30.9	O K
720 min Summer	24.977	1.277	2.2	29.7	O K
960 min Summer	24.883	1.183	2.1	27.5	O K
1440 min Summer	24.727	1.027	1.9	23.8	O K
2160 min Summer	24.557	0.857	1.6	19.8	O K
2880 min Summer	24.433	0.733	1.4	16.8	O K
4320 min Summer	24.259	0.559	1.2	12.7	O K
5760 min Summer	24.145	0.445	1.0	10.0	O K
7200 min Summer	24.062	0.362	0.9	8.0	O K
8640 min Summer	24.000	0.300	0.8	6.5	O K
10080 min Summer	23.951	0.251	0.7	5.4	O K
15 min Winter	24.630	0.930	1.7	21.5	O K
30 min Winter	24.905	1.205	2.1	28.0	O K
60 min Winter	25.148	1.448	2.5	33.8	O K
120 min Winter	25.291	1.591	2.7	37.2	O K
180 min Winter	25.323	1.623	2.8	37.8	O K
240 min Winter	25.312	1.612	2.7	37.7	O K
360 min Winter	25.259	1.559	2.7	36.4	O K
480 min Winter	25.189	1.489	2.6	34.8	O K
600 min Winter	25.115	1.415	2.4	33.0	O K
720 min Winter	25.043	1.343	2.3	31.3	O K
960 min Winter	24.912	1.212	2.1	28.2	O K
1440 min Winter	24.703	1.003	1.8	23.2	O K
2160 min Winter	24.487	0.787	1.5	18.1	O K
2880 min Winter	24.339	0.639	1.3	14.6	O K
4320 min Winter	24.149	0.449	1.0	10.1	O K
5760 min Winter	24.031	0.331	0.8	7.3	O K
7200 min Winter	23.951	0.251	0.7	5.4	O K
8640 min Winter	23.893	0.193	0.6	4.0	O K
10080 min Winter	23.850	0.150	0.5	3.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	104
180 min Summer	25.216	0.0	134
240 min Summer	20.299	0.0	168
360 min Summer	14.939	0.0	238
480 min Summer	12.007	0.0	306
600 min Summer	10.126	0.0	374
720 min Summer	8.806	0.0	442
960 min Summer	7.057	0.0	576
1440 min Summer	5.155	0.0	836
2160 min Summer	3.758	0.0	1212
2880 min Summer	2.998	0.0	1584
4320 min Summer	2.178	0.0	2296
5760 min Summer	1.733	0.0	3056
7200 min Summer	1.452	0.0	3752
8640 min Summer	1.257	0.0	4496
10080 min Summer	1.113	0.0	5240
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	114
180 min Winter	25.216	0.0	140
240 min Winter	20.299	0.0	180
360 min Winter	14.939	0.0	254
480 min Winter	12.007	0.0	328
600 min Winter	10.126	0.0	400
720 min Winter	8.806	0.0	470
960 min Winter	7.057	0.0	606
1440 min Winter	5.155	0.0	868
2160 min Winter	3.758	0.0	1256
2880 min Winter	2.998	0.0	1640
4320 min Winter	2.178	0.0	2376
5760 min Winter	1.733	0.0	3112
7200 min Winter	1.452	0.0	3816
8640 min Winter	1.257	0.0	4576
10080 min Winter	1.113	0.0	5248

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.085

Time (mins) From:	To:	Area (ha)
0	4	0.085

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Model Details

Storage is Online Cover Level (m) 25.900

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.10274	Invert Level (m)	23.700	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.10724	Trench Width (m)	0.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	50.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 480 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.379	0.579	0.3	9.7	O K
30 min Summer	26.567	0.767	0.3	13.0	O K
60 min Summer	26.759	0.959	0.4	16.2	O K
120 min Summer	26.935	1.135	0.4	19.3	O K
180 min Summer	27.013	1.213	0.5	20.6	O K
240 min Summer	27.046	1.246	0.5	21.2	O K
360 min Summer	27.067	1.267	0.5	21.5	O K
480 min Summer	27.073	1.273	0.5	21.6	O K
600 min Summer	27.072	1.272	0.5	21.6	O K
720 min Summer	27.065	1.265	0.5	21.5	O K
960 min Summer	27.043	1.243	0.5	21.1	O K
1440 min Summer	26.978	1.178	0.5	20.0	O K
2160 min Summer	26.878	1.078	0.4	18.3	O K
2880 min Summer	26.789	0.989	0.4	16.8	O K
4320 min Summer	26.642	0.842	0.4	14.2	O K
5760 min Summer	26.526	0.726	0.3	12.3	O K
7200 min Summer	26.431	0.631	0.3	10.6	O K
8640 min Summer	26.352	0.552	0.3	9.3	O K
10080 min Summer	26.286	0.486	0.3	8.2	O K
15 min Winter	26.448	0.648	0.3	10.9	O K
30 min Winter	26.660	0.860	0.4	14.6	O K
60 min Winter	26.878	1.078	0.4	18.3	O K
120 min Winter	27.080	1.280	0.5	21.7	O K
180 min Winter	27.171	1.371	0.5	23.3	O K
240 min Winter	27.215	1.415	0.5	24.0	O K
360 min Winter	27.247	1.447	0.5	24.6	O K
480 min Winter	27.246	1.446	0.5	24.6	O K
600 min Winter	27.244	1.444	0.5	24.5	O K
720 min Winter	27.234	1.434	0.5	24.4	O K
960 min Winter	27.199	1.399	0.5	23.8	O K
1440 min Winter	27.105	1.305	0.5	22.2	O K
2160 min Winter	26.959	1.159	0.4	19.7	O K
2880 min Winter	26.831	1.031	0.4	17.5	O K
4320 min Winter	26.630	0.830	0.4	14.0	O K
5760 min Winter	26.478	0.678	0.3	11.4	O K
7200 min Winter	26.359	0.559	0.3	9.4	O K
8640 min Winter	26.264	0.464	0.3	7.8	O K
10080 min Winter	26.186	0.386	0.2	6.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	19
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	122
180 min Summer	25.216	0.0	182
240 min Summer	20.299	0.0	240
360 min Summer	14.939	0.0	330
480 min Summer	12.007	0.0	386
600 min Summer	10.126	0.0	448
720 min Summer	8.806	0.0	514
960 min Summer	7.057	0.0	654
1440 min Summer	5.155	0.0	926
2160 min Summer	3.758	0.0	1340
2880 min Summer	2.998	0.0	1732
4320 min Summer	2.178	0.0	2512
5760 min Summer	1.733	0.0	3288
7200 min Summer	1.452	0.0	4040
8640 min Summer	1.257	0.0	4760
10080 min Summer	1.113	0.0	5544
15 min Winter	126.541	0.0	19
30 min Winter	85.135	0.0	33
60 min Winter	54.663	0.0	62
120 min Winter	33.875	0.0	120
180 min Winter	25.216	0.0	178
240 min Winter	20.299	0.0	234
360 min Winter	14.939	0.0	342
480 min Winter	12.007	0.0	402
600 min Winter	10.126	0.0	468
720 min Winter	8.806	0.0	544
960 min Winter	7.057	0.0	702
1440 min Winter	5.155	0.0	998
2160 min Winter	3.758	0.0	1432
2880 min Winter	2.998	0.0	1848
4320 min Winter	2.178	0.0	2676
5760 min Winter	1.733	0.0	3456
7200 min Winter	1.452	0.0	4184
8640 min Winter	1.257	0.0	4936
10080 min Winter	1.113	0.0	5744

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.042

Time (mins) From:	To:	Area (ha)
0	4	0.042

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.05235	Invert Level (m)	25.800	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.05235	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	18.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 96 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	28.623	0.823	2.0	15.4	O K
30 min Summer	28.848	1.048	2.4	19.7	O K
60 min Summer	29.015	1.215	2.6	22.9	O K
120 min Summer	29.090	1.290	2.7	24.3	O K
180 min Summer	29.090	1.290	2.7	24.3	O K
240 min Summer	29.059	1.259	2.7	23.7	O K
360 min Summer	28.983	1.183	2.6	22.3	O K
480 min Summer	28.908	1.108	2.5	20.9	O K
600 min Summer	28.839	1.039	2.4	19.6	O K
720 min Summer	28.776	0.976	2.3	18.4	O K
960 min Summer	28.667	0.867	2.1	16.3	O K
1440 min Summer	28.495	0.695	1.8	13.0	O K
2160 min Summer	28.313	0.513	1.5	9.6	O K
2880 min Summer	28.185	0.385	1.3	7.1	O K
4320 min Summer	28.019	0.219	1.1	4.0	O K
5760 min Summer	27.918	0.118	0.9	2.0	O K
7200 min Summer	27.860	0.060	0.8	1.0	O K
8640 min Summer	27.845	0.045	0.7	0.7	O K
10080 min Summer	27.840	0.040	0.6	0.6	O K
15 min Winter	28.725	0.925	2.2	17.4	O K
30 min Winter	28.985	1.185	2.6	22.3	O K
60 min Winter	29.183	1.383	2.9	26.1	Flood Risk
120 min Winter	29.264	1.464	3.0	27.6	Flood Risk
180 min Winter	29.254	1.454	3.0	27.4	Flood Risk
240 min Winter	29.205	1.405	2.9	26.5	Flood Risk
360 min Winter	29.091	1.291	2.7	24.3	O K
480 min Winter	28.978	1.178	2.6	22.2	O K
600 min Winter	28.878	1.078	2.4	20.3	O K
720 min Winter	28.790	0.990	2.3	18.6	O K
960 min Winter	28.641	0.841	2.0	15.8	O K
1440 min Winter	28.420	0.620	1.7	11.6	O K
2160 min Winter	28.204	0.404	1.4	7.5	O K
2880 min Winter	28.063	0.263	1.1	4.8	O K
4320 min Winter	27.894	0.094	0.9	1.6	O K
5760 min Winter	27.845	0.045	0.7	0.7	O K
7200 min Winter	27.838	0.038	0.6	0.5	O K
8640 min Winter	27.833	0.033	0.5	0.4	O K
10080 min Winter	27.829	0.029	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	92
180 min Summer	25.216	0.0	126
240 min Summer	20.299	0.0	160
360 min Summer	14.939	0.0	228
480 min Summer	12.007	0.0	296
600 min Summer	10.126	0.0	362
720 min Summer	8.806	0.0	428
960 min Summer	7.057	0.0	558
1440 min Summer	5.155	0.0	808
2160 min Summer	3.758	0.0	1172
2880 min Summer	2.998	0.0	1552
4320 min Summer	2.178	0.0	2252
5760 min Summer	1.733	0.0	2992
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4296
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	96
180 min Winter	25.216	0.0	134
240 min Winter	20.299	0.0	172
360 min Winter	14.939	0.0	246
480 min Winter	12.007	0.0	316
600 min Winter	10.126	0.0	386
720 min Winter	8.806	0.0	454
960 min Winter	7.057	0.0	586
1440 min Winter	5.155	0.0	840
2160 min Winter	3.758	0.0	1212
2880 min Winter	2.998	0.0	1584
4320 min Winter	2.178	0.0	2292
5760 min Winter	1.733	0.0	2928
7200 min Winter	1.452	0.0	3592
8640 min Winter	1.257	0.0	4352
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.071

Time (mins) From:	To:	Area (ha)
0	4	0.071

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Model Details

Storage is Online Cover Level (m) 29.400

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.26800	Invert Level (m)	27.800	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.26800	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	20.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 96 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	28.623	0.823	2.0	15.4	O K
30 min Summer	28.848	1.048	2.4	19.7	O K
60 min Summer	29.015	1.215	2.6	22.9	O K
120 min Summer	29.090	1.290	2.7	24.3	O K
180 min Summer	29.090	1.290	2.7	24.3	O K
240 min Summer	29.059	1.259	2.7	23.7	O K
360 min Summer	28.983	1.183	2.6	22.3	O K
480 min Summer	28.908	1.108	2.5	20.9	O K
600 min Summer	28.839	1.039	2.4	19.6	O K
720 min Summer	28.776	0.976	2.3	18.4	O K
960 min Summer	28.667	0.867	2.1	16.3	O K
1440 min Summer	28.495	0.695	1.8	13.0	O K
2160 min Summer	28.313	0.513	1.5	9.6	O K
2880 min Summer	28.185	0.385	1.3	7.1	O K
4320 min Summer	28.019	0.219	1.1	4.0	O K
5760 min Summer	27.918	0.118	0.9	2.0	O K
7200 min Summer	27.860	0.060	0.8	1.0	O K
8640 min Summer	27.845	0.045	0.7	0.7	O K
10080 min Summer	27.840	0.040	0.6	0.6	O K
15 min Winter	28.725	0.925	2.2	17.4	O K
30 min Winter	28.985	1.185	2.6	22.3	O K
60 min Winter	29.183	1.383	2.9	26.1	Flood Risk
120 min Winter	29.264	1.464	3.0	27.6	Flood Risk
180 min Winter	29.254	1.454	3.0	27.4	Flood Risk
240 min Winter	29.205	1.405	2.9	26.5	Flood Risk
360 min Winter	29.091	1.291	2.7	24.3	O K
480 min Winter	28.978	1.178	2.6	22.2	O K
600 min Winter	28.878	1.078	2.4	20.3	O K
720 min Winter	28.790	0.990	2.3	18.6	O K
960 min Winter	28.641	0.841	2.0	15.8	O K
1440 min Winter	28.420	0.620	1.7	11.6	O K
2160 min Winter	28.204	0.404	1.4	7.5	O K
2880 min Winter	28.063	0.263	1.1	4.8	O K
4320 min Winter	27.894	0.094	0.9	1.6	O K
5760 min Winter	27.845	0.045	0.7	0.7	O K
7200 min Winter	27.838	0.038	0.6	0.5	O K
8640 min Winter	27.833	0.033	0.5	0.4	O K
10080 min Winter	27.829	0.029	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	92
180 min Summer	25.216	0.0	126
240 min Summer	20.299	0.0	160
360 min Summer	14.939	0.0	228
480 min Summer	12.007	0.0	296
600 min Summer	10.126	0.0	362
720 min Summer	8.806	0.0	428
960 min Summer	7.057	0.0	558
1440 min Summer	5.155	0.0	808
2160 min Summer	3.758	0.0	1172
2880 min Summer	2.998	0.0	1552
4320 min Summer	2.178	0.0	2252
5760 min Summer	1.733	0.0	2992
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4296
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	96
180 min Winter	25.216	0.0	134
240 min Winter	20.299	0.0	172
360 min Winter	14.939	0.0	246
480 min Winter	12.007	0.0	316
600 min Winter	10.126	0.0	386
720 min Winter	8.806	0.0	454
960 min Winter	7.057	0.0	586
1440 min Winter	5.155	0.0	840
2160 min Winter	3.758	0.0	1212
2880 min Winter	2.998	0.0	1584
4320 min Winter	2.178	0.0	2292
5760 min Winter	1.733	0.0	2928
7200 min Winter	1.452	0.0	3592
8640 min Winter	1.257	0.0	4352
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.071

Time (mins) From:	To:	Area (ha)
0	4	0.071

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Model Details

Storage is Online Cover Level (m) 29.400

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.26800	Invert Level (m)	27.800	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.26800	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	20.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 122 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.072	0.772	1.3	13.0	O K
30 min Summer	26.294	0.994	1.6	16.8	O K
60 min Summer	26.475	1.175	1.8	19.9	O K
120 min Summer	26.565	1.265	1.9	21.5	O K
180 min Summer	26.578	1.278	1.9	21.7	O K
240 min Summer	26.563	1.263	1.9	21.4	O K
360 min Summer	26.511	1.211	1.8	20.5	O K
480 min Summer	26.450	1.150	1.8	19.5	O K
600 min Summer	26.391	1.091	1.7	18.5	O K
720 min Summer	26.337	1.037	1.6	17.6	O K
960 min Summer	26.240	0.940	1.5	15.9	O K
1440 min Summer	26.081	0.781	1.4	13.2	O K
2160 min Summer	25.906	0.606	1.2	10.2	O K
2880 min Summer	25.779	0.479	1.0	8.0	O K
4320 min Summer	25.605	0.305	0.8	5.1	O K
5760 min Summer	25.493	0.193	0.7	3.1	O K
7200 min Summer	25.417	0.117	0.6	1.8	O K
8640 min Summer	25.369	0.069	0.6	1.0	O K
10080 min Summer	25.348	0.048	0.5	0.7	O K
15 min Winter	26.168	0.868	1.5	14.7	O K
30 min Winter	26.421	1.121	1.7	19.0	O K
60 min Winter	26.634	1.334	2.0	22.7	O K
120 min Winter	26.737	1.437	2.1	24.4	O K
180 min Winter	26.749	1.449	2.1	24.6	O K
240 min Winter	26.722	1.422	2.1	24.2	O K
360 min Winter	26.642	1.342	2.0	22.8	O K
480 min Winter	26.552	1.252	1.9	21.2	O K
600 min Winter	26.464	1.164	1.8	19.8	O K
720 min Winter	26.384	1.084	1.7	18.4	O K
960 min Winter	26.247	0.947	1.5	16.0	O K
1440 min Winter	26.036	0.736	1.3	12.4	O K
2160 min Winter	25.817	0.517	1.1	8.7	O K
2880 min Winter	25.669	0.369	0.9	6.2	O K
4320 min Winter	25.482	0.182	0.7	3.0	O K
5760 min Winter	25.373	0.073	0.6	1.1	O K
7200 min Winter	25.345	0.045	0.5	0.6	O K
8640 min Winter	25.339	0.039	0.4	0.5	O K
10080 min Winter	25.335	0.035	0.4	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	98
180 min Summer	25.216	0.0	130
240 min Summer	20.299	0.0	166
360 min Summer	14.939	0.0	234
480 min Summer	12.007	0.0	304
600 min Summer	10.126	0.0	370
720 min Summer	8.806	0.0	438
960 min Summer	7.057	0.0	568
1440 min Summer	5.155	0.0	824
2160 min Summer	3.758	0.0	1192
2880 min Summer	2.998	0.0	1560
4320 min Summer	2.178	0.0	2292
5760 min Summer	1.733	0.0	3000
7200 min Summer	1.452	0.0	3744
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	108
180 min Winter	25.216	0.0	138
240 min Winter	20.299	0.0	176
360 min Winter	14.939	0.0	252
480 min Winter	12.007	0.0	324
600 min Winter	10.126	0.0	396
720 min Winter	8.806	0.0	466
960 min Winter	7.057	0.0	600
1440 min Winter	5.155	0.0	866
2160 min Winter	3.758	0.0	1252
2880 min Winter	2.998	0.0	1616
4320 min Winter	2.178	0.0	2336
5760 min Winter	1.733	0.0	3008
7200 min Winter	1.452	0.0	3672
8640 min Winter	1.257	0.0	4320
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.059

Time (mins) From:	To:	Area (ha)
0	4	0.059

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Model Details

Storage is Online Cover Level (m) 27.300

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.20647	Invert Level (m)	25.300	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.20647	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	18.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 48 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.892	0.692	4.2	16.8	O K
30 min Summer	25.044	0.844	4.8	20.5	O K
60 min Summer	25.127	0.927	5.1	22.6	O K
120 min Summer	25.132	0.932	5.1	22.7	O K
180 min Summer	25.085	0.885	4.9	21.5	O K
240 min Summer	25.030	0.830	4.7	20.2	O K
360 min Summer	24.931	0.731	4.4	17.7	O K
480 min Summer	24.847	0.647	4.1	15.7	O K
600 min Summer	24.775	0.575	3.8	13.9	O K
720 min Summer	24.712	0.512	3.6	12.3	O K
960 min Summer	24.610	0.410	3.2	9.8	O K
1440 min Summer	24.465	0.265	2.7	6.2	O K
2160 min Summer	24.334	0.134	2.2	3.0	O K
2880 min Summer	24.264	0.064	1.9	1.3	O K
4320 min Summer	24.239	0.039	1.5	0.6	O K
5760 min Summer	24.232	0.032	1.2	0.5	O K
7200 min Summer	24.227	0.027	1.0	0.3	O K
8640 min Summer	24.225	0.025	0.9	0.3	O K
10080 min Summer	24.223	0.023	0.8	0.3	O K
15 min Winter	24.982	0.782	4.6	19.0	O K
30 min Winter	25.162	0.962	5.2	23.4	O K
60 min Winter	25.255	1.055	5.6	25.7	O K
120 min Winter	25.246	1.046	5.5	25.5	O K
180 min Winter	25.170	0.970	5.3	23.6	O K
240 min Winter	25.085	0.885	4.9	21.5	O K
360 min Winter	24.942	0.742	4.4	18.0	O K
480 min Winter	24.826	0.626	4.0	15.1	O K
600 min Winter	24.730	0.530	3.7	12.8	O K
720 min Winter	24.650	0.450	3.4	10.8	O K
960 min Winter	24.525	0.325	2.9	7.7	O K
1440 min Winter	24.362	0.162	2.3	3.7	O K
2160 min Winter	24.249	0.049	1.8	0.9	O K
2880 min Winter	24.239	0.039	1.5	0.6	O K
4320 min Winter	24.229	0.029	1.1	0.4	O K
5760 min Winter	24.225	0.025	0.9	0.3	O K
7200 min Winter	24.223	0.023	0.7	0.2	O K
8640 min Winter	24.221	0.021	0.6	0.2	O K
10080 min Winter	24.220	0.020	0.6	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	30
60 min Summer	54.663	0.0	46
120 min Summer	33.875	0.0	82
180 min Summer	25.216	0.0	116
240 min Summer	20.299	0.0	150
360 min Summer	14.939	0.0	216
480 min Summer	12.007	0.0	280
600 min Summer	10.126	0.0	344
720 min Summer	8.806	0.0	406
960 min Summer	7.057	0.0	530
1440 min Summer	5.155	0.0	768
2160 min Summer	3.758	0.0	1128
2880 min Summer	2.998	0.0	1472
4320 min Summer	2.178	0.0	2160
5760 min Summer	1.733	0.0	2872
7200 min Summer	1.452	0.0	3616
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	5080
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	30
60 min Winter	54.663	0.0	50
120 min Winter	33.875	0.0	88
180 min Winter	25.216	0.0	124
240 min Winter	20.299	0.0	160
360 min Winter	14.939	0.0	228
480 min Winter	12.007	0.0	296
600 min Winter	10.126	0.0	360
720 min Winter	8.806	0.0	424
960 min Winter	7.057	0.0	548
1440 min Winter	5.155	0.0	792
2160 min Winter	3.758	0.0	1104
2880 min Winter	2.998	0.0	1464
4320 min Winter	2.178	0.0	2136
5760 min Winter	1.733	0.0	2872
7200 min Winter	1.452	0.0	3632
8640 min Winter	1.257	0.0	4352
10080 min Winter	1.113	0.0	5040

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.083

Time (mins) From:	To:	Area (ha)
0	4	0.083

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Model Details

Storage is Online Cover Level (m) 26.200

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.48753	Invert Level (m)	24.200	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.48753	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	26.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 6 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.481	1.181	24.0	9.8	O K
30 min Summer	24.506	1.206	24.4	10.0	O K
60 min Summer	24.343	1.043	22.0	8.6	O K
120 min Summer	24.040	0.740	17.6	6.1	O K
180 min Summer	23.835	0.535	14.6	4.4	O K
240 min Summer	23.690	0.390	12.5	3.2	O K
360 min Summer	23.509	0.209	9.9	1.6	O K
480 min Summer	23.401	0.101	8.3	0.7	O K
600 min Summer	23.349	0.049	7.4	0.3	O K
720 min Summer	23.343	0.043	6.4	0.2	O K
960 min Summer	23.335	0.035	5.2	0.2	O K
1440 min Summer	23.327	0.027	3.9	0.1	O K
2160 min Summer	23.323	0.023	2.7	0.1	O K
2880 min Summer	23.321	0.021	2.3	0.1	O K
4320 min Summer	23.318	0.018	1.7	0.1	O K
5760 min Summer	23.316	0.016	1.3	0.0	O K
7200 min Summer	23.315	0.015	1.1	0.0	O K
8640 min Summer	23.314	0.014	1.1	0.0	O K
10080 min Summer	23.313	0.013	0.9	0.0	O K
15 min Winter	24.611	1.311	25.9	10.9	O K
30 min Winter	24.570	1.270	25.3	10.5	O K
60 min Winter	24.292	0.992	21.2	8.2	O K
120 min Winter	23.900	0.600	15.6	4.9	O K
180 min Winter	23.674	0.374	12.3	3.0	O K
240 min Winter	23.529	0.229	10.2	1.8	O K
360 min Winter	23.363	0.063	7.7	0.4	O K
480 min Winter	23.342	0.042	6.3	0.2	O K
600 min Winter	23.336	0.036	5.3	0.2	O K
720 min Winter	23.331	0.031	4.6	0.1	O K
960 min Winter	23.327	0.027	3.8	0.1	O K
1440 min Winter	23.323	0.023	2.7	0.1	O K
2160 min Winter	23.320	0.020	2.1	0.1	O K
2880 min Winter	23.318	0.018	1.7	0.1	O K
4320 min Winter	23.315	0.015	1.2	0.0	O K
5760 min Winter	23.314	0.014	1.0	0.0	O K
7200 min Winter	23.313	0.013	0.9	0.0	O K
8640 min Winter	23.312	0.012	0.7	0.0	O K
10080 min Winter	23.311	0.011	0.7	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	12
30 min Summer	85.135	0.0	20
60 min Summer	54.663	0.0	36
120 min Summer	33.875	0.0	68
180 min Summer	25.216	0.0	98
240 min Summer	20.299	0.0	128
360 min Summer	14.939	0.0	188
480 min Summer	12.007	0.0	248
600 min Summer	10.126	0.0	306
720 min Summer	8.806	0.0	364
960 min Summer	7.057	0.0	490
1440 min Summer	5.155	0.0	730
2160 min Summer	3.758	0.0	1064
2880 min Summer	2.998	0.0	1452
4320 min Summer	2.178	0.0	2172
5760 min Summer	1.733	0.0	2896
7200 min Summer	1.452	0.0	3632
8640 min Summer	1.257	0.0	4344
10080 min Summer	1.113	0.0	5064
15 min Winter	126.541	0.0	13
30 min Winter	85.135	0.0	21
60 min Winter	54.663	0.0	38
120 min Winter	33.875	0.0	68
180 min Winter	25.216	0.0	100
240 min Winter	20.299	0.0	130
360 min Winter	14.939	0.0	188
480 min Winter	12.007	0.0	242
600 min Winter	10.126	0.0	300
720 min Winter	8.806	0.0	362
960 min Winter	7.057	0.0	494
1440 min Winter	5.155	0.0	736
2160 min Winter	3.758	0.0	1128
2880 min Winter	2.998	0.0	1468
4320 min Winter	2.178	0.0	2212
5760 min Winter	1.733	0.0	2936
7200 min Winter	1.452	0.0	3768
8640 min Winter	1.257	0.0	4256
10080 min Winter	1.113	0.0	4840

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.089

Time (mins) From:	To:	Area (ha)
0	4	0.089

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Model Details

Storage is Online Cover Level (m) 25.200

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	1.80600	Invert Level (m)	23.300	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	1.80600	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	28.0		
Porosity	0.30	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 870 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.278	0.408	0.2	7.7	O K
30 min Summer	23.412	0.542	0.2	10.3	O K
60 min Summer	23.554	0.684	0.2	13.0	O K
120 min Summer	23.692	0.822	0.2	15.7	O K
180 min Summer	23.764	0.894	0.2	17.1	O K
240 min Summer	23.804	0.934	0.2	17.8	O K
360 min Summer	23.850	0.980	0.2	18.7	O K
480 min Summer	23.869	0.999	0.2	19.1	O K
600 min Summer	23.873	1.003	0.2	19.2	O K
720 min Summer	23.873	1.003	0.2	19.2	O K
960 min Summer	23.867	0.997	0.2	19.0	O K
1440 min Summer	23.842	0.972	0.2	18.6	O K
2160 min Summer	23.791	0.921	0.2	17.6	O K
2880 min Summer	23.739	0.869	0.2	16.6	O K
4320 min Summer	23.645	0.775	0.2	14.8	O K
5760 min Summer	23.564	0.694	0.2	13.2	O K
7200 min Summer	23.492	0.622	0.2	11.8	O K
8640 min Summer	23.430	0.560	0.2	10.6	O K
10080 min Summer	23.375	0.505	0.2	9.6	O K
15 min Winter	23.326	0.456	0.2	8.6	O K
30 min Winter	23.477	0.607	0.2	11.6	O K
60 min Winter	23.637	0.767	0.2	14.6	O K
120 min Winter	23.796	0.926	0.2	17.7	O K
180 min Winter	23.878	1.008	0.2	19.3	O K
240 min Winter	23.926	1.056	0.2	20.2	O K
360 min Winter	23.982	1.112	0.2	21.3	O K
480 min Winter	24.010	1.140	0.3	21.8	O K
600 min Winter	24.021	1.151	0.3	22.0	O K
720 min Winter	24.022	1.152	0.3	22.0	O K
960 min Winter	24.010	1.140	0.3	21.8	O K
1440 min Winter	23.980	1.110	0.2	21.2	O K
2160 min Winter	23.909	1.039	0.2	19.9	O K
2880 min Winter	23.833	0.963	0.2	18.4	O K
4320 min Winter	23.697	0.827	0.2	15.8	O K
5760 min Winter	23.581	0.711	0.2	13.5	O K
7200 min Winter	23.482	0.612	0.2	11.6	O K
8640 min Winter	23.398	0.528	0.2	10.0	O K
10080 min Winter	23.325	0.455	0.2	8.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	19
30 min Summer	85.135	0.0	34
60 min Summer	54.663	0.0	64
120 min Summer	33.875	0.0	122
180 min Summer	25.216	0.0	182
240 min Summer	20.299	0.0	242
360 min Summer	14.939	0.0	362
480 min Summer	12.007	0.0	480
600 min Summer	10.126	0.0	584
720 min Summer	8.806	0.0	628
960 min Summer	7.057	0.0	754
1440 min Summer	5.155	0.0	1012
2160 min Summer	3.758	0.0	1428
2880 min Summer	2.998	0.0	1844
4320 min Summer	2.178	0.0	2676
5760 min Summer	1.733	0.0	3464
7200 min Summer	1.452	0.0	4248
8640 min Summer	1.257	0.0	5016
10080 min Summer	1.113	0.0	5752
15 min Winter	126.541	0.0	19
30 min Winter	85.135	0.0	33
60 min Winter	54.663	0.0	62
120 min Winter	33.875	0.0	122
180 min Winter	25.216	0.0	180
240 min Winter	20.299	0.0	238
360 min Winter	14.939	0.0	352
480 min Winter	12.007	0.0	464
600 min Winter	10.126	0.0	574
720 min Winter	8.806	0.0	680
960 min Winter	7.057	0.0	780
1440 min Winter	5.155	0.0	1082
2160 min Winter	3.758	0.0	1540
2880 min Winter	2.998	0.0	1988
4320 min Winter	2.178	0.0	2852
5760 min Winter	1.733	0.0	3688
7200 min Winter	1.452	0.0	4472
8640 min Winter	1.257	0.0	5272
10080 min Winter	1.113	0.0	6048

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.033

Time (mins) From:	To:	Area (ha)
0	4	0.033

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Model Details

Storage is Online Cover Level (m) 24.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.03359	Invert Level (m)	22.870	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.03359	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	13.5		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 134 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	22.652	0.702	1.7	18.0	O K
30 min Summer	22.858	0.908	2.0	23.3	O K
60 min Summer	23.030	1.080	2.3	27.7	O K
120 min Summer	23.119	1.169	2.4	30.0	O K
180 min Summer	23.134	1.184	2.5	30.4	O K
240 min Summer	23.123	1.173	2.4	30.1	O K
360 min Summer	23.079	1.129	2.4	29.0	O K
480 min Summer	23.026	1.076	2.3	27.6	O K
600 min Summer	22.974	1.024	2.2	26.3	O K
720 min Summer	22.925	0.975	2.1	25.0	O K
960 min Summer	22.836	0.886	2.0	22.7	O K
1440 min Summer	22.690	0.740	1.8	19.0	O K
2160 min Summer	22.526	0.576	1.6	14.8	O K
2880 min Summer	22.404	0.454	1.4	11.7	O K
4320 min Summer	22.238	0.288	1.1	7.4	O K
5760 min Summer	22.130	0.180	1.0	4.6	O K
7200 min Summer	22.057	0.107	0.9	2.8	O K
8640 min Summer	22.013	0.063	0.8	1.6	O K
10080 min Summer	21.997	0.047	0.7	1.2	O K
15 min Winter	22.739	0.789	1.9	20.2	O K
30 min Winter	22.975	1.025	2.2	26.3	O K
60 min Winter	23.177	1.227	2.5	31.5	O K
120 min Winter	23.283	1.333	2.7	34.2	O K
180 min Winter	23.295	1.345	2.7	34.5	O K
240 min Winter	23.275	1.325	2.7	34.0	O K
360 min Winter	23.208	1.258	2.6	32.3	O K
480 min Winter	23.129	1.179	2.4	30.2	O K
600 min Winter	23.050	1.100	2.3	28.2	O K
720 min Winter	22.978	1.028	2.2	26.4	O K
960 min Winter	22.852	0.902	2.0	23.1	O K
1440 min Winter	22.654	0.704	1.7	18.1	O K
2160 min Winter	22.446	0.496	1.4	12.7	O K
2880 min Winter	22.303	0.353	1.2	9.1	O K
4320 min Winter	22.120	0.170	1.0	4.4	O K
5760 min Winter	22.015	0.065	0.8	1.7	O K
7200 min Winter	21.994	0.044	0.7	1.1	O K
8640 min Winter	21.988	0.038	0.6	1.0	O K
10080 min Winter	21.984	0.034	0.5	0.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	102
180 min Summer	25.216	0.0	132
240 min Summer	20.299	0.0	168
360 min Summer	14.939	0.0	236
480 min Summer	12.007	0.0	306
600 min Summer	10.126	0.0	374
720 min Summer	8.806	0.0	442
960 min Summer	7.057	0.0	576
1440 min Summer	5.155	0.0	834
2160 min Summer	3.758	0.0	1208
2880 min Summer	2.998	0.0	1584
4320 min Summer	2.178	0.0	2292
5760 min Summer	1.733	0.0	3008
7200 min Summer	1.452	0.0	3744
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5104
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	112
180 min Winter	25.216	0.0	140
240 min Winter	20.299	0.0	178
360 min Winter	14.939	0.0	254
480 min Winter	12.007	0.0	328
600 min Winter	10.126	0.0	400
720 min Winter	8.806	0.0	470
960 min Winter	7.057	0.0	606
1440 min Winter	5.155	0.0	868
2160 min Winter	3.758	0.0	1256
2880 min Winter	2.998	0.0	1616
4320 min Winter	2.178	0.0	2336
5760 min Winter	1.733	0.0	3000
7200 min Winter	1.452	0.0	3672
8640 min Winter	1.257	0.0	4408
10080 min Winter	1.113	0.0	5096

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.081

Time (mins) From:	To:	Area (ha)
0	4	0.081

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Model Details

Storage is Online Cover Level (m) 23.850

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.18940	Invert Level (m)	21.950	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.18940	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	27.0		
Porosity	0.95	Slope (1:X)	0.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 343 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	21.014	0.114	2.1	38.4	O K
30 min Summer	21.050	0.150	2.1	50.8	O K
60 min Summer	21.083	0.183	2.2	63.1	O K
120 min Summer	21.112	0.212	2.3	73.5	O K
180 min Summer	21.122	0.222	2.3	77.3	O K
240 min Summer	21.124	0.224	2.3	78.2	O K
360 min Summer	21.123	0.223	2.3	78.0	O K
480 min Summer	21.121	0.221	2.3	77.0	O K
600 min Summer	21.117	0.217	2.3	75.6	O K
720 min Summer	21.113	0.213	2.3	73.9	O K
960 min Summer	21.102	0.202	2.2	70.1	O K
1440 min Summer	21.081	0.181	2.2	62.2	O K
2160 min Summer	21.051	0.151	2.2	51.2	O K
2880 min Summer	21.024	0.124	2.1	41.7	O K
4320 min Summer	20.983	0.083	2.0	27.4	O K
5760 min Summer	20.957	0.057	2.0	18.8	O K
7200 min Summer	20.947	0.047	1.9	15.3	O K
8640 min Summer	20.942	0.042	1.6	13.6	O K
10080 min Summer	20.937	0.037	1.5	12.2	O K
15 min Winter	21.028	0.128	2.1	43.1	O K
30 min Winter	21.067	0.167	2.2	57.1	O K
60 min Winter	21.105	0.205	2.2	71.2	O K
120 min Winter	21.138	0.238	2.3	83.5	O K
180 min Winter	21.151	0.251	2.3	88.4	O K
240 min Winter	21.155	0.255	2.3	90.1	O K
360 min Winter	21.155	0.255	2.3	90.0	O K
480 min Winter	21.151	0.251	2.3	88.3	O K
600 min Winter	21.145	0.245	2.3	86.4	O K
720 min Winter	21.139	0.239	2.3	83.9	O K
960 min Winter	21.124	0.224	2.3	78.2	O K
1440 min Winter	21.092	0.192	2.2	66.2	O K
2160 min Winter	21.046	0.146	2.1	49.5	O K
2880 min Winter	21.007	0.107	2.1	35.7	O K
4320 min Winter	20.954	0.054	2.0	17.8	O K
5760 min Winter	20.943	0.043	1.7	13.9	O K
7200 min Winter	20.936	0.036	1.4	11.7	O K
8640 min Winter	20.932	0.032	1.2	10.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	122
180 min Summer	25.216	0.0	180
240 min Summer	20.299	0.0	240
360 min Summer	14.939	0.0	298
480 min Summer	12.007	0.0	360
600 min Summer	10.126	0.0	426
720 min Summer	8.806	0.0	494
960 min Summer	7.057	0.0	634
1440 min Summer	5.155	0.0	906
2160 min Summer	3.758	0.0	1296
2880 min Summer	2.998	0.0	1672
4320 min Summer	2.178	0.0	2376
5760 min Summer	1.733	0.0	3008
7200 min Summer	1.452	0.0	3680
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5144
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	33
60 min Winter	54.663	0.0	62
120 min Winter	33.875	0.0	120
180 min Winter	25.216	0.0	176
240 min Winter	20.299	0.0	232
360 min Winter	14.939	0.0	338
480 min Winter	12.007	0.0	382
600 min Winter	10.126	0.0	458
720 min Winter	8.806	0.0	536
960 min Winter	7.057	0.0	686
1440 min Winter	5.155	0.0	980
2160 min Winter	3.758	0.0	1384
2880 min Winter	2.998	0.0	1756
4320 min Winter	2.178	0.0	2336
5760 min Winter	1.733	0.0	2992
7200 min Winter	1.452	0.0	3728
8640 min Winter	1.257	0.0	4496

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
10080 min Winter	20.928	0.028	1.1	9.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
10080 min Winter	1.113	0.0	5200

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.168

Time (mins) From:	To:	Area (ha)
0	4	0.168

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Model Details

Storage is Online Cover Level (m) 21.500

Infiltration Basin Structure

Invert Level (m) 20.900 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.10700 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	321.0	0.600	484.0

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 47 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.503	0.903	4.8	16.3	O K
30 min Summer	24.692	1.092	5.6	19.7	O K
60 min Summer	24.805	1.205	6.1	21.7	O K
120 min Summer	24.813	1.213	6.1	21.9	O K
180 min Summer	24.750	1.150	5.8	20.7	O K
240 min Summer	24.673	1.073	5.5	19.4	O K
360 min Summer	24.541	0.941	5.0	17.0	O K
480 min Summer	24.437	0.837	4.5	15.1	O K
600 min Summer	24.352	0.752	4.2	13.6	O K
720 min Summer	24.280	0.680	3.9	12.3	O K
960 min Summer	24.167	0.567	3.4	10.2	O K
1440 min Summer	24.012	0.412	2.8	7.4	O K
2160 min Summer	23.872	0.272	2.2	4.9	O K
2880 min Summer	23.784	0.184	1.8	3.3	O K
4320 min Summer	23.685	0.085	1.4	1.5	O K
5760 min Summer	23.646	0.046	1.1	0.8	O K
7200 min Summer	23.639	0.039	1.0	0.7	O K
8640 min Summer	23.634	0.034	0.8	0.6	O K
10080 min Summer	23.630	0.030	0.7	0.5	O K
15 min Winter	24.619	1.019	5.3	18.4	O K
30 min Winter	24.839	1.239	6.2	22.4	O K
60 min Winter	24.952	1.352	6.7	24.4	O K
120 min Winter	24.925	1.325	6.6	23.9	O K
180 min Winter	24.820	1.220	6.1	22.0	O K
240 min Winter	24.708	1.108	5.7	20.0	O K
360 min Winter	24.526	0.926	4.9	16.7	O K
480 min Winter	24.390	0.790	4.3	14.3	O K
600 min Winter	24.283	0.683	3.9	12.3	O K
720 min Winter	24.196	0.596	3.5	10.8	O K
960 min Winter	24.066	0.466	3.0	8.4	O K
1440 min Winter	23.902	0.302	2.3	5.5	O K
2160 min Winter	23.767	0.167	1.7	3.0	O K
2880 min Winter	23.689	0.089	1.4	1.6	O K
4320 min Winter	23.642	0.042	1.0	0.8	O K
5760 min Winter	23.634	0.034	0.8	0.6	O K
7200 min Winter	23.628	0.028	0.7	0.5	O K
8640 min Winter	23.624	0.024	0.6	0.4	O K
10080 min Winter	23.622	0.022	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	28
60 min Summer	54.663	0.0	44
120 min Summer	33.875	0.0	78
180 min Summer	25.216	0.0	112
240 min Summer	20.299	0.0	146
360 min Summer	14.939	0.0	210
480 min Summer	12.007	0.0	274
600 min Summer	10.126	0.0	336
720 min Summer	8.806	0.0	398
960 min Summer	7.057	0.0	520
1440 min Summer	5.155	0.0	764
2160 min Summer	3.758	0.0	1124
2880 min Summer	2.998	0.0	1496
4320 min Summer	2.178	0.0	2204
5760 min Summer	1.733	0.0	2920
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4368
10080 min Summer	1.113	0.0	5032
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	29
60 min Winter	54.663	0.0	46
120 min Winter	33.875	0.0	84
180 min Winter	25.216	0.0	120
240 min Winter	20.299	0.0	154
360 min Winter	14.939	0.0	222
480 min Winter	12.007	0.0	286
600 min Winter	10.126	0.0	350
720 min Winter	8.806	0.0	412
960 min Winter	7.057	0.0	538
1440 min Winter	5.155	0.0	780
2160 min Winter	3.758	0.0	1144
2880 min Winter	2.998	0.0	1500
4320 min Winter	2.178	0.0	2168
5760 min Winter	1.733	0.0	2912
7200 min Winter	1.452	0.0	3632
8640 min Winter	1.257	0.0	4360
10080 min Winter	1.113	0.0	4984

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.081

Time (mins) From:	To:	Area (ha)
0	4	0.081

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Model Details

Storage is Online Cover Level (m) 25.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.39135	Invert Level (m)	23.600	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.39135	Trench Width (m)	0.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	38.0		
Porosity	0.95	Slope (1:X)	0.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 434 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.893	0.493	0.9	25.4	O K
30 min Summer	27.048	0.648	1.0	33.6	O K
60 min Summer	27.204	0.804	1.2	42.0	O K
120 min Summer	27.343	0.943	1.3	49.4	O K
180 min Summer	27.400	1.000	1.3	52.4	O K
240 min Summer	27.420	1.020	1.3	53.5	O K
360 min Summer	27.427	1.027	1.3	53.9	O K
480 min Summer	27.423	1.023	1.3	53.7	O K
600 min Summer	27.413	1.013	1.3	53.1	O K
720 min Summer	27.400	1.000	1.3	52.4	O K
960 min Summer	27.367	0.967	1.3	50.7	O K
1440 min Summer	27.298	0.898	1.2	47.0	O K
2160 min Summer	27.206	0.806	1.2	42.1	O K
2880 min Summer	27.125	0.725	1.1	37.7	O K
4320 min Summer	26.987	0.587	1.0	30.4	O K
5760 min Summer	26.877	0.477	0.9	24.5	O K
7200 min Summer	26.788	0.388	0.8	19.7	O K
8640 min Summer	26.716	0.316	0.8	15.9	O K
10080 min Summer	26.657	0.257	0.7	12.7	O K
15 min Winter	26.951	0.551	1.0	28.5	O K
30 min Winter	27.126	0.726	1.1	37.8	O K
60 min Winter	27.305	0.905	1.2	47.3	O K
120 min Winter	27.466	1.066	1.4	55.9	O K
180 min Winter	27.535	1.135	1.4	59.7	O K
240 min Winter	27.564	1.164	1.4	61.2	O K
360 min Winter	27.580	1.180	1.4	62.0	O K
480 min Winter	27.570	1.170	1.4	61.5	O K
600 min Winter	27.560	1.160	1.4	61.0	O K
720 min Winter	27.543	1.143	1.4	60.1	O K
960 min Winter	27.498	1.098	1.4	57.7	O K
1440 min Winter	27.397	0.997	1.3	52.3	O K
2160 min Winter	27.261	0.861	1.2	45.0	O K
2880 min Winter	27.144	0.744	1.1	38.7	O K
4320 min Winter	26.955	0.555	1.0	28.6	O K
5760 min Winter	26.811	0.411	0.9	21.0	O K
7200 min Winter	26.701	0.301	0.8	15.1	O K
8640 min Winter	26.614	0.214	0.7	10.4	O K
10080 min Winter	26.546	0.146	0.6	6.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	19
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	122
180 min Summer	25.216	0.0	182
240 min Summer	20.299	0.0	240
360 min Summer	14.939	0.0	314
480 min Summer	12.007	0.0	378
600 min Summer	10.126	0.0	440
720 min Summer	8.806	0.0	508
960 min Summer	7.057	0.0	648
1440 min Summer	5.155	0.0	924
2160 min Summer	3.758	0.0	1340
2880 min Summer	2.998	0.0	1732
4320 min Summer	2.178	0.0	2508
5760 min Summer	1.733	0.0	3280
7200 min Summer	1.452	0.0	3968
8640 min Summer	1.257	0.0	4752
10080 min Summer	1.113	0.0	5448
15 min Winter	126.541	0.0	19
30 min Winter	85.135	0.0	33
60 min Winter	54.663	0.0	62
120 min Winter	33.875	0.0	120
180 min Winter	25.216	0.0	178
240 min Winter	20.299	0.0	234
360 min Winter	14.939	0.0	340
480 min Winter	12.007	0.0	392
600 min Winter	10.126	0.0	464
720 min Winter	8.806	0.0	542
960 min Winter	7.057	0.0	696
1440 min Winter	5.155	0.0	996
2160 min Winter	3.758	0.0	1428
2880 min Winter	2.998	0.0	1844
4320 min Winter	2.178	0.0	2640
5760 min Winter	1.733	0.0	3408
7200 min Winter	1.452	0.0	4176
8640 min Winter	1.257	0.0	4848
10080 min Winter	1.113	0.0	5552

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.110

Time (mins) From:	To:	Area (ha)
0	4	0.110

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.07056	Invert Level (m)	26.400	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.07056	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	37.5		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 272 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.841	0.591	1.1	19.8	O K
30 min Summer	26.025	0.775	1.2	26.1	O K
60 min Summer	26.201	0.951	1.4	32.1	O K
120 min Summer	26.337	1.087	1.5	36.8	O K
180 min Summer	26.373	1.123	1.5	38.0	O K
240 min Summer	26.377	1.127	1.5	38.1	O K
360 min Summer	26.370	1.120	1.5	37.9	O K
480 min Summer	26.351	1.101	1.5	37.2	O K
600 min Summer	26.325	1.075	1.5	36.3	O K
720 min Summer	26.296	1.046	1.4	35.4	O K
960 min Summer	26.239	0.989	1.4	33.4	O K
1440 min Summer	26.137	0.887	1.3	29.9	O K
2160 min Summer	26.005	0.755	1.2	25.4	O K
2880 min Summer	25.895	0.645	1.1	21.6	O K
4320 min Summer	25.724	0.474	1.0	15.8	O K
5760 min Summer	25.599	0.349	0.9	11.5	O K
7200 min Summer	25.504	0.254	0.8	8.3	O K
8640 min Summer	25.433	0.183	0.7	5.9	O K
10080 min Summer	25.379	0.129	0.7	4.0	O K
15 min Winter	25.913	0.663	1.1	22.3	O K
30 min Winter	26.121	0.871	1.3	29.4	O K
60 min Winter	26.323	1.073	1.5	36.3	O K
120 min Winter	26.486	1.236	1.6	41.9	O K
180 min Winter	26.537	1.287	1.6	43.6	O K
240 min Winter	26.543	1.293	1.6	43.8	O K
360 min Winter	26.530	1.280	1.6	43.4	O K
480 min Winter	26.505	1.255	1.6	42.5	O K
600 min Winter	26.468	1.218	1.6	41.2	O K
720 min Winter	26.427	1.177	1.5	39.8	O K
960 min Winter	26.341	1.091	1.5	36.9	O K
1440 min Winter	26.189	0.939	1.4	31.7	O K
2160 min Winter	26.003	0.753	1.2	25.3	O K
2880 min Winter	25.854	0.604	1.1	20.3	O K
4320 min Winter	25.637	0.387	0.9	12.8	O K
5760 min Winter	25.487	0.237	0.8	7.7	O K
7200 min Winter	25.382	0.132	0.7	4.1	O K
8640 min Winter	25.312	0.062	0.6	1.7	O K
10080 min Winter	25.297	0.047	0.6	1.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	122
180 min Summer	25.216	0.0	178
240 min Summer	20.299	0.0	204
360 min Summer	14.939	0.0	268
480 min Summer	12.007	0.0	336
600 min Summer	10.126	0.0	404
720 min Summer	8.806	0.0	476
960 min Summer	7.057	0.0	614
1440 min Summer	5.155	0.0	882
2160 min Summer	3.758	0.0	1276
2880 min Summer	2.998	0.0	1672
4320 min Summer	2.178	0.0	2420
5760 min Summer	1.733	0.0	3120
7200 min Summer	1.452	0.0	3888
8640 min Summer	1.257	0.0	4584
10080 min Summer	1.113	0.0	5248
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	33
60 min Winter	54.663	0.0	62
120 min Winter	33.875	0.0	118
180 min Winter	25.216	0.0	174
240 min Winter	20.299	0.0	226
360 min Winter	14.939	0.0	280
480 min Winter	12.007	0.0	358
600 min Winter	10.126	0.0	434
720 min Winter	8.806	0.0	512
960 min Winter	7.057	0.0	662
1440 min Winter	5.155	0.0	940
2160 min Winter	3.758	0.0	1360
2880 min Winter	2.998	0.0	1756
4320 min Winter	2.178	0.0	2508
5760 min Winter	1.733	0.0	3232
7200 min Winter	1.452	0.0	3896
8640 min Winter	1.257	0.0	4504
10080 min Winter	1.113	0.0	5128

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.087

Time (mins) From:	To:	Area (ha)
0	4	0.087

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Model Details

Storage is Online Cover Level (m) 27.250

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.11687	Invert Level (m)	25.250	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.11687	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	24.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 95 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.361	0.761	2.4	17.8	O K
30 min Summer	26.568	0.968	2.8	22.7	O K
60 min Summer	26.719	1.119	3.1	26.3	O K
120 min Summer	26.786	1.186	3.2	27.9	O K
180 min Summer	26.783	1.183	3.2	27.8	O K
240 min Summer	26.752	1.152	3.1	27.1	O K
360 min Summer	26.679	1.079	3.0	25.3	O K
480 min Summer	26.609	1.009	2.9	23.7	O K
600 min Summer	26.545	0.945	2.7	22.2	O K
720 min Summer	26.487	0.887	2.6	20.8	O K
960 min Summer	26.384	0.784	2.4	18.3	O K
1440 min Summer	26.223	0.623	2.1	14.5	O K
2160 min Summer	26.052	0.452	1.8	10.4	O K
2880 min Summer	25.933	0.333	1.5	7.6	O K
4320 min Summer	25.779	0.179	1.2	4.0	O K
5760 min Summer	25.689	0.089	1.1	1.8	O K
7200 min Summer	25.649	0.049	1.0	0.9	O K
8640 min Summer	25.642	0.042	0.8	0.7	O K
10080 min Summer	25.638	0.038	0.7	0.6	O K
15 min Winter	26.456	0.856	2.6	20.0	O K
30 min Winter	26.695	1.095	3.0	25.7	O K
60 min Winter	26.875	1.275	3.4	30.0	O K
120 min Winter	26.947	1.347	3.5	31.7	O K
180 min Winter	26.934	1.334	3.5	31.4	O K
240 min Winter	26.887	1.287	3.4	30.3	O K
360 min Winter	26.778	1.178	3.2	27.7	O K
480 min Winter	26.672	1.072	3.0	25.2	O K
600 min Winter	26.579	0.979	2.8	23.0	O K
720 min Winter	26.497	0.897	2.6	21.0	O K
960 min Winter	26.357	0.757	2.4	17.7	O K
1440 min Winter	26.150	0.550	2.0	12.8	O K
2160 min Winter	25.948	0.348	1.6	8.0	O K
2880 min Winter	25.817	0.217	1.3	4.9	O K
4320 min Winter	25.664	0.064	1.0	1.2	O K
5760 min Winter	25.642	0.042	0.8	0.7	O K
7200 min Winter	25.636	0.036	0.7	0.5	O K
8640 min Winter	25.631	0.031	0.6	0.4	O K
10080 min Winter	25.628	0.028	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	90
180 min Summer	25.216	0.0	124
240 min Summer	20.299	0.0	160
360 min Summer	14.939	0.0	228
480 min Summer	12.007	0.0	296
600 min Summer	10.126	0.0	362
720 min Summer	8.806	0.0	428
960 min Summer	7.057	0.0	558
1440 min Summer	5.155	0.0	808
2160 min Summer	3.758	0.0	1172
2880 min Summer	2.998	0.0	1532
4320 min Summer	2.178	0.0	2252
5760 min Summer	1.733	0.0	2944
7200 min Summer	1.452	0.0	3616
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	5040
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	94
180 min Winter	25.216	0.0	134
240 min Winter	20.299	0.0	172
360 min Winter	14.939	0.0	246
480 min Winter	12.007	0.0	316
600 min Winter	10.126	0.0	386
720 min Winter	8.806	0.0	454
960 min Winter	7.057	0.0	586
1440 min Winter	5.155	0.0	838
2160 min Winter	3.758	0.0	1212
2880 min Winter	2.998	0.0	1584
4320 min Winter	2.178	0.0	2248
5760 min Winter	1.733	0.0	2920
7200 min Winter	1.452	0.0	3576
8640 min Winter	1.257	0.0	4376
10080 min Winter	1.113	0.0	5048

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.082

Time (mins) From:	To:	Area (ha)
0	4	0.082

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Model Details

Storage is Online Cover Level (m) 27.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.26710	Invert Level (m)	25.600	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.26710	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	25.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 167 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.798	0.798	1.6	19.8	O K
30 min Summer	27.036	1.036	1.8	25.8	O K
60 min Summer	27.247	1.247	2.1	31.1	O K
120 min Summer	27.371	1.371	2.3	34.2	O K
180 min Summer	27.398	1.398	2.3	34.9	O K
240 min Summer	27.396	1.396	2.3	34.8	O K
360 min Summer	27.367	1.367	2.3	34.1	O K
480 min Summer	27.322	1.322	2.2	32.9	O K
600 min Summer	27.272	1.272	2.1	31.7	O K
720 min Summer	27.222	1.222	2.1	30.4	O K
960 min Summer	27.130	1.130	2.0	28.1	O K
1440 min Summer	26.976	0.976	1.8	24.2	O K
2160 min Summer	26.798	0.798	1.6	19.8	O K
2880 min Summer	26.664	0.664	1.4	16.4	O K
4320 min Summer	26.472	0.472	1.2	11.6	O K
5760 min Summer	26.341	0.341	1.0	8.3	O K
7200 min Summer	26.246	0.246	0.9	5.9	O K
8640 min Summer	26.177	0.177	0.8	4.1	O K
10080 min Summer	26.123	0.123	0.7	2.8	O K
15 min Winter	26.896	0.896	1.7	22.2	O K
30 min Winter	27.167	1.167	2.0	29.0	O K
60 min Winter	27.411	1.411	2.3	35.2	O K
120 min Winter	27.564	1.564	2.5	39.0	O K
180 min Winter	27.587	1.587	2.5	39.6	O K
240 min Winter	27.581	1.581	2.5	39.5	O K
360 min Winter	27.532	1.532	2.5	38.2	O K
480 min Winter	27.463	1.463	2.4	36.5	O K
600 min Winter	27.389	1.389	2.3	34.6	O K
720 min Winter	27.316	1.316	2.2	32.8	O K
960 min Winter	27.181	1.181	2.0	29.4	O K
1440 min Winter	26.968	0.968	1.8	24.0	O K
2160 min Winter	26.736	0.736	1.5	18.2	O K
2880 min Winter	26.570	0.570	1.3	14.0	O K
4320 min Winter	26.350	0.350	1.0	8.5	O K
5760 min Winter	26.211	0.211	0.8	5.0	O K
7200 min Winter	26.117	0.117	0.7	2.6	O K
8640 min Winter	26.056	0.056	0.6	1.1	O K
10080 min Winter	26.046	0.046	0.6	0.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	112
180 min Summer	25.216	0.0	142
240 min Summer	20.299	0.0	174
360 min Summer	14.939	0.0	242
480 min Summer	12.007	0.0	312
600 min Summer	10.126	0.0	380
720 min Summer	8.806	0.0	448
960 min Summer	7.057	0.0	584
1440 min Summer	5.155	0.0	848
2160 min Summer	3.758	0.0	1232
2880 min Summer	2.998	0.0	1588
4320 min Summer	2.178	0.0	2336
5760 min Summer	1.733	0.0	3056
7200 min Summer	1.452	0.0	3752
8640 min Summer	1.257	0.0	4496
10080 min Summer	1.113	0.0	5240
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	116
180 min Winter	25.216	0.0	146
240 min Winter	20.299	0.0	184
360 min Winter	14.939	0.0	260
480 min Winter	12.007	0.0	336
600 min Winter	10.126	0.0	408
720 min Winter	8.806	0.0	480
960 min Winter	7.057	0.0	618
1440 min Winter	5.155	0.0	892
2160 min Winter	3.758	0.0	1276
2880 min Winter	2.998	0.0	1648
4320 min Winter	2.178	0.0	2380
5760 min Winter	1.733	0.0	3120
7200 min Winter	1.452	0.0	3824
8640 min Winter	1.257	0.0	4416
10080 min Winter	1.113	0.0	5016

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.088

Time (mins) From:	To:	Area (ha)
0	4	0.088

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.16077	Invert Level (m)	26.000	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.16077	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	26.5		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 90 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.562	0.712	2.3	16.6	O K
30 min Summer	26.753	0.903	2.7	21.1	O K
60 min Summer	26.888	1.038	3.0	24.3	O K
120 min Summer	26.946	1.096	3.1	25.7	O K
180 min Summer	26.938	1.088	3.1	25.6	O K
240 min Summer	26.906	1.056	3.0	24.8	O K
360 min Summer	26.834	0.984	2.9	23.1	O K
480 min Summer	26.767	0.917	2.7	21.5	O K
600 min Summer	26.705	0.855	2.6	20.0	O K
720 min Summer	26.649	0.799	2.5	18.7	O K
960 min Summer	26.551	0.701	2.3	16.3	O K
1440 min Summer	26.398	0.548	2.0	12.7	O K
2160 min Summer	26.238	0.388	1.7	8.9	O K
2880 min Summer	26.127	0.277	1.5	6.3	O K
4320 min Summer	25.987	0.137	1.2	2.9	O K
5760 min Summer	25.912	0.062	1.1	1.2	O K
7200 min Summer	25.895	0.045	0.9	0.8	O K
8640 min Summer	25.889	0.039	0.8	0.6	O K
10080 min Summer	25.885	0.035	0.7	0.5	O K
15 min Winter	26.651	0.801	2.5	18.7	O K
30 min Winter	26.871	1.021	3.0	24.0	O K
60 min Winter	27.034	1.184	3.3	27.8	O K
120 min Winter	27.095	1.245	3.4	29.3	O K
180 min Winter	27.077	1.227	3.4	28.9	O K
240 min Winter	27.029	1.179	3.3	27.7	O K
360 min Winter	26.920	1.070	3.1	25.1	O K
480 min Winter	26.819	0.969	2.9	22.7	O K
600 min Winter	26.730	0.880	2.7	20.6	O K
720 min Winter	26.651	0.801	2.5	18.7	O K
960 min Winter	26.519	0.669	2.3	15.6	O K
1440 min Winter	26.324	0.474	1.9	11.0	O K
2160 min Winter	26.135	0.285	1.5	6.5	O K
2880 min Winter	26.014	0.164	1.3	3.6	O K
4320 min Winter	25.898	0.048	1.0	0.8	O K
5760 min Winter	25.889	0.039	0.8	0.6	O K
7200 min Winter	25.883	0.033	0.7	0.5	O K
8640 min Winter	25.878	0.028	0.6	0.4	O K
10080 min Winter	25.875	0.025	0.5	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	90
180 min Summer	25.216	0.0	124
240 min Summer	20.299	0.0	158
360 min Summer	14.939	0.0	228
480 min Summer	12.007	0.0	296
600 min Summer	10.126	0.0	362
720 min Summer	8.806	0.0	428
960 min Summer	7.057	0.0	558
1440 min Summer	5.155	0.0	808
2160 min Summer	3.758	0.0	1168
2880 min Summer	2.998	0.0	1532
4320 min Summer	2.178	0.0	2248
5760 min Summer	1.733	0.0	2936
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4288
10080 min Summer	1.113	0.0	5040
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	94
180 min Winter	25.216	0.0	132
240 min Winter	20.299	0.0	170
360 min Winter	14.939	0.0	244
480 min Winter	12.007	0.0	314
600 min Winter	10.126	0.0	384
720 min Winter	8.806	0.0	450
960 min Winter	7.057	0.0	580
1440 min Winter	5.155	0.0	838
2160 min Winter	3.758	0.0	1212
2880 min Winter	2.998	0.0	1560
4320 min Winter	2.178	0.0	2148
5760 min Winter	1.733	0.0	2896
7200 min Winter	1.452	0.0	3616
8640 min Winter	1.257	0.0	4408
10080 min Winter	1.113	0.0	5056

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.077

Time (mins) From:	To:	Area (ha)
0	4	0.077

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Model Details

Storage is Online Cover Level (m) 27.750

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.27480	Invert Level (m)	25.850	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.27480	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	25.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 81 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.085	0.685	1.9	12.2	O K
30 min Summer	25.265	0.865	2.2	15.4	O K
60 min Summer	25.386	0.986	2.4	17.6	O K
120 min Summer	25.435	1.035	2.5	18.5	O K
180 min Summer	25.422	1.022	2.4	18.3	O K
240 min Summer	25.386	0.986	2.4	17.6	O K
360 min Summer	25.311	0.911	2.3	16.3	O K
480 min Summer	25.243	0.843	2.2	15.0	O K
600 min Summer	25.181	0.781	2.0	13.9	O K
720 min Summer	25.125	0.725	2.0	12.9	O K
960 min Summer	25.028	0.628	1.8	11.2	O K
1440 min Summer	24.878	0.478	1.6	8.5	O K
2160 min Summer	24.725	0.325	1.3	5.7	O K
2880 min Summer	24.621	0.221	1.1	3.8	O K
4320 min Summer	24.495	0.095	0.9	1.5	O K
5760 min Summer	24.448	0.048	0.8	0.7	O K
7200 min Summer	24.440	0.040	0.7	0.6	O K
8640 min Summer	24.435	0.035	0.6	0.5	O K
10080 min Summer	24.431	0.031	0.5	0.4	O K
15 min Winter	25.171	0.771	2.0	13.7	O K
30 min Winter	25.380	0.980	2.4	17.5	O K
60 min Winter	25.527	1.127	2.6	20.2	O K
120 min Winter	25.576	1.176	2.7	21.1	O K
180 min Winter	25.549	1.149	2.7	20.6	O K
240 min Winter	25.495	1.095	2.6	19.6	O K
360 min Winter	25.381	0.981	2.4	17.5	O K
480 min Winter	25.280	0.880	2.2	15.7	O K
600 min Winter	25.192	0.792	2.1	14.1	O K
720 min Winter	25.115	0.715	1.9	12.7	O K
960 min Winter	24.985	0.585	1.7	10.4	O K
1440 min Winter	24.798	0.398	1.4	7.0	O K
2160 min Winter	24.621	0.221	1.1	3.8	O K
2880 min Winter	24.511	0.111	0.9	1.8	O K
4320 min Winter	24.443	0.043	0.7	0.6	O K
5760 min Winter	24.435	0.035	0.6	0.5	O K
7200 min Winter	24.429	0.029	0.5	0.4	O K
8640 min Winter	24.426	0.026	0.4	0.3	O K
10080 min Winter	24.423	0.023	0.4	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	31
60 min Summer	54.663	0.0	56
120 min Summer	33.875	0.0	88
180 min Summer	25.216	0.0	122
240 min Summer	20.299	0.0	158
360 min Summer	14.939	0.0	226
480 min Summer	12.007	0.0	292
600 min Summer	10.126	0.0	358
720 min Summer	8.806	0.0	424
960 min Summer	7.057	0.0	550
1440 min Summer	5.155	0.0	796
2160 min Summer	3.758	0.0	1168
2880 min Summer	2.998	0.0	1528
4320 min Summer	2.178	0.0	2244
5760 min Summer	1.733	0.0	2928
7200 min Summer	1.452	0.0	3640
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	5072
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	92
180 min Winter	25.216	0.0	132
240 min Winter	20.299	0.0	170
360 min Winter	14.939	0.0	242
480 min Winter	12.007	0.0	312
600 min Winter	10.126	0.0	380
720 min Winter	8.806	0.0	448
960 min Winter	7.057	0.0	578
1440 min Winter	5.155	0.0	826
2160 min Winter	3.758	0.0	1192
2880 min Winter	2.998	0.0	1556
4320 min Winter	2.178	0.0	2204
5760 min Winter	1.733	0.0	2936
7200 min Winter	1.452	0.0	3624
8640 min Winter	1.257	0.0	4312
10080 min Winter	1.113	0.0	5128

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.057

Time (mins) From:	To:	Area (ha)
0	4	0.057

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Model Details

Storage is Online Cover Level (m) 26.300

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.29600	Invert Level (m)	24.400	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.29600	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	19.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 83 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.493	0.843	3.3	22.4	O K
30 min Summer	24.720	1.070	3.9	28.5	O K
60 min Summer	24.876	1.226	4.3	32.6	O K
120 min Summer	24.947	1.297	4.4	34.5	O K
180 min Summer	24.937	1.287	4.4	34.2	O K
240 min Summer	24.898	1.248	4.3	33.2	O K
360 min Summer	24.809	1.159	4.1	30.8	O K
480 min Summer	24.726	1.076	3.9	28.6	O K
600 min Summer	24.652	1.002	3.7	26.7	O K
720 min Summer	24.585	0.935	3.5	24.9	O K
960 min Summer	24.468	0.818	3.2	21.8	O K
1440 min Summer	24.289	0.639	2.8	17.0	O K
2160 min Summer	24.105	0.455	2.3	12.1	O K
2880 min Summer	23.978	0.328	2.0	8.7	O K
4320 min Summer	23.817	0.167	1.6	4.5	O K
5760 min Summer	23.727	0.077	1.4	2.0	O K
7200 min Summer	23.696	0.046	1.2	1.2	O K
8640 min Summer	23.690	0.040	1.1	1.1	O K
10080 min Summer	23.686	0.036	1.0	0.9	O K
15 min Winter	24.599	0.949	3.6	25.2	O K
30 min Winter	24.862	1.212	4.2	32.2	O K
60 min Winter	25.051	1.401	4.7	37.3	O K
120 min Winter	25.120	1.470	4.9	39.1	O K
180 min Winter	25.095	1.445	4.8	38.4	O K
240 min Winter	25.034	1.384	4.7	36.8	O K
360 min Winter	24.901	1.251	4.3	33.3	O K
480 min Winter	24.778	1.128	4.0	30.0	O K
600 min Winter	24.672	1.022	3.8	27.2	O K
720 min Winter	24.579	0.929	3.5	24.7	O K
960 min Winter	24.423	0.773	3.1	20.6	O K
1440 min Winter	24.199	0.549	2.6	14.6	O K
2160 min Winter	23.985	0.335	2.0	8.9	O K
2880 min Winter	23.850	0.200	1.7	5.3	O K
4320 min Winter	23.701	0.051	1.3	1.3	O K
5760 min Winter	23.690	0.040	1.1	1.1	O K
7200 min Winter	23.684	0.034	0.9	0.9	O K
8640 min Winter	23.679	0.029	0.8	0.8	O K
10080 min Winter	23.676	0.026	0.7	0.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	58
120 min Summer	33.875	0.0	88
180 min Summer	25.216	0.0	122
240 min Summer	20.299	0.0	158
360 min Summer	14.939	0.0	226
480 min Summer	12.007	0.0	292
600 min Summer	10.126	0.0	360
720 min Summer	8.806	0.0	424
960 min Summer	7.057	0.0	550
1440 min Summer	5.155	0.0	796
2160 min Summer	3.758	0.0	1168
2880 min Summer	2.998	0.0	1528
4320 min Summer	2.178	0.0	2248
5760 min Summer	1.733	0.0	2944
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4376
10080 min Summer	1.113	0.0	5104
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	58
120 min Winter	33.875	0.0	94
180 min Winter	25.216	0.0	132
240 min Winter	20.299	0.0	170
360 min Winter	14.939	0.0	242
480 min Winter	12.007	0.0	312
600 min Winter	10.126	0.0	380
720 min Winter	8.806	0.0	448
960 min Winter	7.057	0.0	578
1440 min Winter	5.155	0.0	836
2160 min Winter	3.758	0.0	1208
2880 min Winter	2.998	0.0	1560
4320 min Winter	2.178	0.0	2204
5760 min Winter	1.733	0.0	2904
7200 min Winter	1.452	0.0	3584
8640 min Winter	1.257	0.0	4304
10080 min Winter	1.113	0.0	5096

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.104

Time (mins) From:	To:	Area (ha)
0	4	0.104

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Model Details

Storage is Online Cover Level (m) 25.650

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.31000	Invert Level (m)	23.650	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.31000	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	28.0		
Porosity	0.95	Slope (1:X)	0.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 165 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.235	0.535	0.7	8.5	O K
30 min Summer	26.393	0.693	0.8	11.1	O K
60 min Summer	26.532	0.832	0.9	13.3	O K
120 min Summer	26.610	0.910	1.0	14.6	O K
180 min Summer	26.625	0.925	1.0	14.8	O K
240 min Summer	26.620	0.920	1.0	14.7	O K
360 min Summer	26.593	0.893	1.0	14.3	O K
480 min Summer	26.559	0.859	0.9	13.7	O K
600 min Summer	26.523	0.823	0.9	13.2	O K
720 min Summer	26.488	0.788	0.9	12.6	O K
960 min Summer	26.424	0.724	0.8	11.6	O K
1440 min Summer	26.315	0.615	0.8	9.8	O K
2160 min Summer	26.187	0.487	0.7	7.7	O K
2880 min Summer	26.090	0.390	0.6	6.2	O K
4320 min Summer	25.952	0.252	0.5	3.9	O K
5760 min Summer	25.860	0.160	0.4	2.4	O K
7200 min Summer	25.799	0.099	0.4	1.5	O K
8640 min Summer	25.762	0.062	0.4	0.9	O K
10080 min Summer	25.747	0.047	0.3	0.6	O K
15 min Winter	26.300	0.600	0.8	9.6	O K
30 min Winter	26.481	0.781	0.9	12.5	O K
60 min Winter	26.643	0.943	1.0	15.1	O K
120 min Winter	26.742	1.042	1.1	16.7	O K
180 min Winter	26.753	1.053	1.1	16.9	O K
240 min Winter	26.746	1.046	1.1	16.8	O K
360 min Winter	26.706	1.006	1.0	16.1	O K
480 min Winter	26.654	0.954	1.0	15.3	O K
600 min Winter	26.600	0.900	1.0	14.4	O K
720 min Winter	26.548	0.848	0.9	13.6	O K
960 min Winter	26.455	0.755	0.9	12.1	O K
1440 min Winter	26.303	0.603	0.8	9.6	O K
2160 min Winter	26.135	0.435	0.6	6.9	O K
2880 min Winter	26.015	0.315	0.6	4.9	O K
4320 min Winter	25.857	0.157	0.4	2.4	O K
5760 min Winter	25.764	0.064	0.4	0.9	O K
7200 min Winter	25.745	0.045	0.3	0.6	O K
8640 min Winter	25.739	0.039	0.3	0.5	O K
10080 min Winter	25.735	0.035	0.3	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	112
180 min Summer	25.216	0.0	142
240 min Summer	20.299	0.0	174
360 min Summer	14.939	0.0	242
480 min Summer	12.007	0.0	312
600 min Summer	10.126	0.0	380
720 min Summer	8.806	0.0	448
960 min Summer	7.057	0.0	584
1440 min Summer	5.155	0.0	840
2160 min Summer	3.758	0.0	1228
2880 min Summer	2.998	0.0	1588
4320 min Summer	2.178	0.0	2332
5760 min Summer	1.733	0.0	3048
7200 min Summer	1.452	0.0	3744
8640 min Summer	1.257	0.0	4408
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	116
180 min Winter	25.216	0.0	146
240 min Winter	20.299	0.0	184
360 min Winter	14.939	0.0	260
480 min Winter	12.007	0.0	336
600 min Winter	10.126	0.0	410
720 min Winter	8.806	0.0	482
960 min Winter	7.057	0.0	620
1440 min Winter	5.155	0.0	894
2160 min Winter	3.758	0.0	1276
2880 min Winter	2.998	0.0	1648
4320 min Winter	2.178	0.0	2376
5760 min Winter	1.733	0.0	3048
7200 min Winter	1.452	0.0	3608
8640 min Winter	1.257	0.0	4280
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.038

Time (mins) From:	To:	Area (ha)
0	4	0.038

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Model Details

Storage is Online Cover Level (m) 27.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.14229	Invert Level (m)	25.700	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.14229	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	17.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 202 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.180	0.780	0.4	5.9	O K
30 min Summer	26.421	1.021	0.5	7.7	O K
60 min Summer	26.644	1.244	0.5	9.4	O K
120 min Summer	26.793	1.393	0.6	10.6	O K
180 min Summer	26.828	1.428	0.6	10.8	O K
240 min Summer	26.834	1.434	0.6	10.9	O K
360 min Summer	26.822	1.422	0.6	10.8	O K
480 min Summer	26.792	1.392	0.6	10.5	O K
600 min Summer	26.753	1.353	0.6	10.3	O K
720 min Summer	26.711	1.311	0.6	9.9	O K
960 min Summer	26.627	1.227	0.5	9.3	O K
1440 min Summer	26.482	1.082	0.5	8.2	O K
2160 min Summer	26.311	0.911	0.4	6.9	O K
2880 min Summer	26.179	0.779	0.4	5.9	O K
4320 min Summer	25.984	0.584	0.3	4.4	O K
5760 min Summer	25.848	0.448	0.3	3.4	O K
7200 min Summer	25.749	0.349	0.2	2.6	O K
8640 min Summer	25.671	0.271	0.2	2.0	O K
10080 min Summer	25.612	0.212	0.2	1.6	O K
15 min Winter	26.276	0.876	0.4	6.6	O K
30 min Winter	26.549	1.149	0.5	8.7	O K
60 min Winter	26.804	1.404	0.6	10.6	O K
120 min Winter	26.986	1.586	0.6	12.0	O K
180 min Winter	27.150	1.750	0.6	12.3	O K
240 min Winter	27.168	1.768	0.6	12.3	O K
360 min Winter	27.001	1.601	0.6	12.1	O K
480 min Winter	26.951	1.551	0.6	11.8	O K
600 min Winter	26.892	1.492	0.6	11.3	O K
720 min Winter	26.829	1.429	0.6	10.8	O K
960 min Winter	26.708	1.308	0.5	9.9	O K
1440 min Winter	26.501	1.101	0.5	8.3	O K
2160 min Winter	26.273	0.873	0.4	6.6	O K
2880 min Winter	26.104	0.704	0.4	5.3	O K
4320 min Winter	25.874	0.474	0.3	3.6	O K
5760 min Winter	25.724	0.324	0.2	2.4	O K
7200 min Winter	25.619	0.219	0.2	1.6	O K
8640 min Winter	25.543	0.143	0.2	1.1	O K
10080 min Winter	25.486	0.086	0.2	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	120
180 min Summer	25.216	0.0	150
240 min Summer	20.299	0.0	182
360 min Summer	14.939	0.0	248
480 min Summer	12.007	0.0	318
600 min Summer	10.126	0.0	386
720 min Summer	8.806	0.0	456
960 min Summer	7.057	0.0	590
1440 min Summer	5.155	0.0	854
2160 min Summer	3.758	0.0	1236
2880 min Summer	2.998	0.0	1616
4320 min Summer	2.178	0.0	2376
5760 min Summer	1.733	0.0	3104
7200 min Summer	1.452	0.0	3816
8640 min Summer	1.257	0.0	4504
10080 min Summer	1.113	0.0	5248
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	116
180 min Winter	25.216	0.0	168
240 min Winter	20.299	0.0	190
360 min Winter	14.939	0.0	266
480 min Winter	12.007	0.0	342
600 min Winter	10.126	0.0	416
720 min Winter	8.806	0.0	490
960 min Winter	7.057	0.0	634
1440 min Winter	5.155	0.0	908
2160 min Winter	3.758	0.0	1300
2880 min Winter	2.998	0.0	1676
4320 min Winter	2.178	0.0	2424
5760 min Winter	1.733	0.0	3168
7200 min Winter	1.452	0.0	3888
8640 min Winter	1.257	0.0	4584
10080 min Winter	1.113	0.0	5256

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 27.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.12572	Invert Level (m)	25.400	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.12572	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	8.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 68 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.470	0.720	1.1	5.4	O K
30 min Summer	25.648	0.898	1.2	6.8	O K
60 min Summer	25.755	1.005	1.3	7.6	O K
120 min Summer	25.791	1.041	1.4	7.9	O K
180 min Summer	25.760	1.010	1.3	7.6	O K
240 min Summer	25.712	0.962	1.3	7.3	O K
360 min Summer	25.621	0.871	1.2	6.6	O K
480 min Summer	25.542	0.792	1.1	6.0	O K
600 min Summer	25.472	0.722	1.1	5.5	O K
720 min Summer	25.409	0.659	1.0	5.0	O K
960 min Summer	25.305	0.555	0.9	4.2	O K
1440 min Summer	25.152	0.402	0.8	3.0	O K
2160 min Summer	25.002	0.252	0.6	1.9	O K
2880 min Summer	24.906	0.156	0.5	1.2	O K
4320 min Summer	24.805	0.055	0.5	0.4	O K
5760 min Summer	24.791	0.041	0.4	0.3	O K
7200 min Summer	24.784	0.034	0.3	0.2	O K
8640 min Summer	24.780	0.030	0.3	0.2	O K
10080 min Summer	24.777	0.027	0.2	0.2	O K
15 min Winter	25.563	0.813	1.2	6.1	O K
30 min Winter	25.770	1.020	1.3	7.7	O K
60 min Winter	25.894	1.144	1.5	8.7	O K
120 min Winter	25.924	1.174	1.5	8.9	O K
180 min Winter	25.872	1.122	1.4	8.5	O K
240 min Winter	25.799	1.049	1.4	7.9	O K
360 min Winter	25.663	0.913	1.2	6.9	O K
480 min Winter	25.549	0.799	1.1	6.0	O K
600 min Winter	25.453	0.703	1.1	5.3	O K
720 min Winter	25.371	0.621	1.0	4.7	O K
960 min Winter	25.238	0.488	0.9	3.7	O K
1440 min Winter	25.056	0.306	0.7	2.3	O K
2160 min Winter	24.893	0.143	0.5	1.1	O K
2880 min Winter	24.803	0.053	0.5	0.4	O K
4320 min Winter	24.787	0.037	0.3	0.3	O K
5760 min Winter	24.780	0.030	0.3	0.2	O K
7200 min Winter	24.775	0.025	0.2	0.2	O K
8640 min Winter	24.772	0.022	0.2	0.1	O K
10080 min Winter	24.769	0.019	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	31
60 min Summer	54.663	0.0	50
120 min Summer	33.875	0.0	84
180 min Summer	25.216	0.0	118
240 min Summer	20.299	0.0	154
360 min Summer	14.939	0.0	220
480 min Summer	12.007	0.0	286
600 min Summer	10.126	0.0	350
720 min Summer	8.806	0.0	414
960 min Summer	7.057	0.0	540
1440 min Summer	5.155	0.0	782
2160 min Summer	3.758	0.0	1148
2880 min Summer	2.998	0.0	1500
4320 min Summer	2.178	0.0	2204
5760 min Summer	1.733	0.0	2920
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	5136
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	56
120 min Winter	33.875	0.0	90
180 min Winter	25.216	0.0	128
240 min Winter	20.299	0.0	164
360 min Winter	14.939	0.0	234
480 min Winter	12.007	0.0	302
600 min Winter	10.126	0.0	368
720 min Winter	8.806	0.0	434
960 min Winter	7.057	0.0	560
1440 min Winter	5.155	0.0	808
2160 min Winter	3.758	0.0	1168
2880 min Winter	2.998	0.0	1476
4320 min Winter	2.178	0.0	2188
5760 min Winter	1.733	0.0	2864
7200 min Winter	1.452	0.0	3632
8640 min Winter	1.257	0.0	4272
10080 min Winter	1.113	0.0	5112

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 26.350

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.36800	Invert Level (m)	24.750	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.36800	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	8.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 63 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.445	0.695	2.1	11.1	O K
30 min Summer	25.617	0.867	2.4	13.9	O K
60 min Summer	25.721	0.971	2.6	15.5	O K
120 min Summer	25.755	1.005	2.7	16.1	O K
180 min Summer	25.726	0.976	2.6	15.6	O K
240 min Summer	25.680	0.930	2.6	14.9	O K
360 min Summer	25.593	0.843	2.4	13.5	O K
480 min Summer	25.517	0.767	2.3	12.2	O K
600 min Summer	25.449	0.699	2.1	11.2	O K
720 min Summer	25.389	0.639	2.0	10.2	O K
960 min Summer	25.287	0.537	1.8	8.5	O K
1440 min Summer	25.136	0.386	1.6	6.1	O K
2160 min Summer	24.989	0.239	1.3	3.7	O K
2880 min Summer	24.894	0.144	1.1	2.2	O K
4320 min Summer	24.800	0.050	0.9	0.7	O K
5760 min Summer	24.790	0.040	0.8	0.5	O K
7200 min Summer	24.784	0.034	0.6	0.4	O K
8640 min Summer	24.779	0.029	0.5	0.3	O K
10080 min Summer	24.776	0.026	0.5	0.3	O K
15 min Winter	25.535	0.785	2.3	12.5	O K
30 min Winter	25.735	0.985	2.7	15.8	O K
60 min Winter	25.857	1.107	2.9	17.7	O K
120 min Winter	25.887	1.137	2.9	18.2	O K
180 min Winter	25.838	1.088	2.9	17.4	O K
240 min Winter	25.767	1.017	2.7	16.3	O K
360 min Winter	25.637	0.887	2.5	14.2	O K
480 min Winter	25.527	0.777	2.3	12.4	O K
600 min Winter	25.434	0.684	2.1	10.9	O K
720 min Winter	25.353	0.603	2.0	9.6	O K
960 min Winter	25.223	0.473	1.7	7.5	O K
1440 min Winter	25.042	0.292	1.4	4.6	O K
2160 min Winter	24.881	0.131	1.1	2.0	O K
2880 min Winter	24.800	0.050	0.9	0.7	O K
4320 min Winter	24.786	0.036	0.7	0.4	O K
5760 min Winter	24.779	0.029	0.5	0.3	O K
7200 min Winter	24.775	0.025	0.5	0.3	O K
8640 min Winter	24.771	0.021	0.4	0.2	O K
10080 min Winter	24.769	0.019	0.4	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	31
60 min Summer	54.663	0.0	52
120 min Summer	33.875	0.0	84
180 min Summer	25.216	0.0	120
240 min Summer	20.299	0.0	154
360 min Summer	14.939	0.0	222
480 min Summer	12.007	0.0	288
600 min Summer	10.126	0.0	352
720 min Summer	8.806	0.0	416
960 min Summer	7.057	0.0	540
1440 min Summer	5.155	0.0	782
2160 min Summer	3.758	0.0	1148
2880 min Summer	2.998	0.0	1500
4320 min Summer	2.178	0.0	2200
5760 min Summer	1.733	0.0	2912
7200 min Summer	1.452	0.0	3672
8640 min Summer	1.257	0.0	4288
10080 min Summer	1.113	0.0	5096
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	56
120 min Winter	33.875	0.0	90
180 min Winter	25.216	0.0	128
240 min Winter	20.299	0.0	164
360 min Winter	14.939	0.0	236
480 min Winter	12.007	0.0	304
600 min Winter	10.126	0.0	370
720 min Winter	8.806	0.0	436
960 min Winter	7.057	0.0	566
1440 min Winter	5.155	0.0	810
2160 min Winter	3.758	0.0	1168
2880 min Winter	2.998	0.0	1444
4320 min Winter	2.178	0.0	2240
5760 min Winter	1.733	0.0	2912
7200 min Winter	1.452	0.0	3600
8640 min Winter	1.257	0.0	4400
10080 min Winter	1.113	0.0	5064

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.053

Time (mins) From:	To:	Area (ha)
0	4	0.053

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Model Details

Storage is Online Cover Level (m) 26.350

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.36800	Invert Level (m)	24.750	Cap Volume Depth (m)	1.200
Infiltration Coefficient Side (m/hr)	0.36800	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.200
Safety Factor	2.0	Trench Length (m)	17.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 76 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.269	0.869	2.2	12.3	O K
30 min Summer	24.490	1.090	2.5	15.4	O K
60 min Summer	24.630	1.230	2.8	17.4	O K
120 min Summer	24.685	1.285	2.9	18.2	O K
180 min Summer	24.660	1.260	2.8	17.8	O K
240 min Summer	24.608	1.208	2.7	17.1	O K
360 min Summer	24.505	1.105	2.6	15.6	O K
480 min Summer	24.414	1.014	2.4	14.3	O K
600 min Summer	24.334	0.934	2.3	13.2	O K
720 min Summer	24.262	0.862	2.2	12.2	O K
960 min Summer	24.141	0.741	2.0	10.5	O K
1440 min Summer	23.961	0.561	1.7	7.9	O K
2160 min Summer	23.780	0.380	1.4	5.3	O K
2880 min Summer	23.660	0.260	1.2	3.6	O K
4320 min Summer	23.514	0.114	0.9	1.5	O K
5760 min Summer	23.449	0.049	0.8	0.6	O K
7200 min Summer	23.441	0.041	0.7	0.5	O K
8640 min Summer	23.436	0.036	0.6	0.4	O K
10080 min Summer	23.432	0.032	0.5	0.3	O K
15 min Winter	24.380	0.980	2.4	13.9	O K
30 min Winter	24.636	1.236	2.8	17.5	O K
60 min Winter	24.800	1.400	3.0	19.8	O K
120 min Winter	24.851	1.451	3.1	20.6	O K
180 min Winter	24.803	1.403	3.0	19.9	O K
240 min Winter	24.724	1.324	2.9	18.8	O K
360 min Winter	24.570	1.170	2.7	16.6	O K
480 min Winter	24.438	1.038	2.5	14.7	O K
600 min Winter	24.327	0.927	2.3	13.1	O K
720 min Winter	24.231	0.831	2.1	11.7	O K
960 min Winter	24.074	0.674	1.9	9.5	O K
1440 min Winter	23.856	0.456	1.5	6.4	O K
2160 min Winter	23.656	0.256	1.2	3.5	O K
2880 min Winter	23.534	0.134	1.0	1.8	O K
4320 min Winter	23.445	0.045	0.7	0.5	O K
5760 min Winter	23.436	0.036	0.6	0.4	O K
7200 min Winter	23.430	0.030	0.5	0.3	O K
8640 min Winter	23.426	0.026	0.4	0.3	O K
10080 min Winter	23.423	0.023	0.4	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	31
60 min Summer	54.663	0.0	52
120 min Summer	33.875	0.0	86
180 min Summer	25.216	0.0	120
240 min Summer	20.299	0.0	154
360 min Summer	14.939	0.0	222
480 min Summer	12.007	0.0	288
600 min Summer	10.126	0.0	354
720 min Summer	8.806	0.0	418
960 min Summer	7.057	0.0	542
1440 min Summer	5.155	0.0	792
2160 min Summer	3.758	0.0	1148
2880 min Summer	2.998	0.0	1524
4320 min Summer	2.178	0.0	2244
5760 min Summer	1.733	0.0	2936
7200 min Summer	1.452	0.0	3576
8640 min Summer	1.257	0.0	4392
10080 min Summer	1.113	0.0	5112
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	31
60 min Winter	54.663	0.0	56
120 min Winter	33.875	0.0	90
180 min Winter	25.216	0.0	128
240 min Winter	20.299	0.0	166
360 min Winter	14.939	0.0	236
480 min Winter	12.007	0.0	306
600 min Winter	10.126	0.0	372
720 min Winter	8.806	0.0	438
960 min Winter	7.057	0.0	568
1440 min Winter	5.155	0.0	820
2160 min Winter	3.758	0.0	1188
2880 min Winter	2.998	0.0	1532
4320 min Winter	2.178	0.0	2156
5760 min Winter	1.733	0.0	2848
7200 min Winter	1.452	0.0	3680
8640 min Winter	1.257	0.0	4320
10080 min Winter	1.113	0.0	5024

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.058

Time (mins) From:	To:	Area (ha)
0	4	0.058

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Model Details

Storage is Online Cover Level (m) 25.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.36800	Invert Level (m)	23.400	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.36800	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	15.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 211 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.225	0.725	1.4	22.2	O K
30 min Summer	25.446	0.946	1.7	29.1	O K
60 min Summer	25.651	1.151	1.9	35.6	O K
120 min Summer	25.791	1.291	2.1	39.9	O K
180 min Summer	25.821	1.321	2.1	40.9	O K
240 min Summer	25.826	1.326	2.1	41.1	O K
360 min Summer	25.814	1.314	2.1	40.7	O K
480 min Summer	25.785	1.285	2.1	39.8	O K
600 min Summer	25.749	1.249	2.0	38.6	O K
720 min Summer	25.710	1.210	2.0	37.4	O K
960 min Summer	25.634	1.134	1.9	35.0	O K
1440 min Summer	25.502	1.002	1.7	30.9	O K
2160 min Summer	25.344	0.844	1.6	26.0	O K
2880 min Summer	25.220	0.720	1.4	22.1	O K
4320 min Summer	25.037	0.537	1.2	16.3	O K
5760 min Summer	24.907	0.407	1.0	12.3	O K
7200 min Summer	24.812	0.312	0.9	9.3	O K
8640 min Summer	24.738	0.238	0.8	6.9	O K
10080 min Summer	24.681	0.181	0.8	5.2	O K
15 min Winter	25.313	0.813	1.5	25.0	O K
30 min Winter	25.563	1.063	1.8	32.8	O K
60 min Winter	25.798	1.298	2.1	40.2	O K
120 min Winter	25.968	1.468	2.3	45.5	O K
180 min Winter	26.005	1.505	2.3	46.7	O K
240 min Winter	26.005	1.505	2.3	46.7	O K
360 min Winter	25.984	1.484	2.3	46.0	O K
480 min Winter	25.939	1.439	2.3	44.6	O K
600 min Winter	25.885	1.385	2.2	42.9	O K
720 min Winter	25.828	1.328	2.1	41.1	O K
960 min Winter	25.716	1.216	2.0	37.6	O K
1440 min Winter	25.527	1.027	1.8	31.7	O K
2160 min Winter	25.313	0.813	1.5	25.0	O K
2880 min Winter	25.154	0.654	1.3	20.0	O K
4320 min Winter	24.933	0.433	1.1	13.1	O K
5760 min Winter	24.789	0.289	0.9	8.5	O K
7200 min Winter	24.687	0.187	0.8	5.4	O K
8640 min Winter	24.614	0.114	0.7	3.1	O K
10080 min Winter	24.562	0.062	0.6	1.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	120
180 min Summer	25.216	0.0	154
240 min Summer	20.299	0.0	184
360 min Summer	14.939	0.0	250
480 min Summer	12.007	0.0	320
600 min Summer	10.126	0.0	390
720 min Summer	8.806	0.0	458
960 min Summer	7.057	0.0	596
1440 min Summer	5.155	0.0	864
2160 min Summer	3.758	0.0	1252
2880 min Summer	2.998	0.0	1616
4320 min Summer	2.178	0.0	2376
5760 min Summer	1.733	0.0	3112
7200 min Summer	1.452	0.0	3824
8640 min Summer	1.257	0.0	4576
10080 min Summer	1.113	0.0	5248
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	116
180 min Winter	25.216	0.0	168
240 min Winter	20.299	0.0	192
360 min Winter	14.939	0.0	268
480 min Winter	12.007	0.0	344
600 min Winter	10.126	0.0	420
720 min Winter	8.806	0.0	492
960 min Winter	7.057	0.0	636
1440 min Winter	5.155	0.0	910
2160 min Winter	3.758	0.0	1316
2880 min Winter	2.998	0.0	1700
4320 min Winter	2.178	0.0	2460
5760 min Winter	1.733	0.0	3176
7200 min Winter	1.452	0.0	3896
8640 min Winter	1.257	0.0	4584
10080 min Winter	1.113	0.0	5240

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.098

Time (mins) From:	To:	Area (ha)
0	4	0.098

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Model Details

Storage is Online Cover Level (m) 26.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.12570	Invert Level (m)	24.500	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.12570	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	33.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 221 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.516	0.516	0.4	6.6	O K
30 min Summer	24.675	0.675	0.5	8.6	O K
60 min Summer	24.824	0.824	0.5	10.5	O K
120 min Summer	24.928	0.928	0.6	11.8	O K
180 min Summer	24.949	0.949	0.6	12.1	O K
240 min Summer	24.949	0.949	0.6	12.1	O K
360 min Summer	24.935	0.935	0.6	11.9	O K
480 min Summer	24.910	0.910	0.6	11.6	O K
600 min Summer	24.882	0.882	0.6	11.2	O K
720 min Summer	24.853	0.853	0.5	10.9	O K
960 min Summer	24.797	0.797	0.5	10.2	O K
1440 min Summer	24.698	0.698	0.5	8.9	O K
2160 min Summer	24.573	0.573	0.4	7.3	O K
2880 min Summer	24.471	0.471	0.4	6.0	O K
4320 min Summer	24.321	0.321	0.4	4.1	O K
5760 min Summer	24.214	0.214	0.3	2.7	O K
7200 min Summer	24.140	0.140	0.3	1.7	O K
8640 min Summer	24.089	0.089	0.3	1.1	O K
10080 min Summer	24.057	0.057	0.3	0.7	O K
15 min Winter	24.579	0.579	0.4	7.4	O K
30 min Winter	24.760	0.760	0.5	9.7	O K
60 min Winter	24.931	0.931	0.6	11.9	O K
120 min Winter	25.059	1.059	0.6	13.5	O K
180 min Winter	25.090	1.090	0.6	13.9	O K
240 min Winter	25.085	1.085	0.6	13.9	O K
360 min Winter	25.067	1.067	0.6	13.6	O K
480 min Winter	25.032	1.032	0.6	13.2	O K
600 min Winter	24.990	0.990	0.6	12.6	O K
720 min Winter	24.946	0.946	0.6	12.1	O K
960 min Winter	24.863	0.863	0.6	11.0	O K
1440 min Winter	24.718	0.718	0.5	9.2	O K
2160 min Winter	24.545	0.545	0.4	6.9	O K
2880 min Winter	24.413	0.413	0.4	5.2	O K
4320 min Winter	24.227	0.227	0.3	2.8	O K
5760 min Winter	24.108	0.108	0.3	1.3	O K
7200 min Winter	24.049	0.049	0.2	0.6	O K
8640 min Winter	24.043	0.043	0.2	0.5	O K
10080 min Winter	24.038	0.038	0.2	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	33
60 min Summer	54.663	0.0	62
120 min Summer	33.875	0.0	120
180 min Summer	25.216	0.0	160
240 min Summer	20.299	0.0	192
360 min Summer	14.939	0.0	256
480 min Summer	12.007	0.0	326
600 min Summer	10.126	0.0	394
720 min Summer	8.806	0.0	464
960 min Summer	7.057	0.0	600
1440 min Summer	5.155	0.0	866
2160 min Summer	3.758	0.0	1256
2880 min Summer	2.998	0.0	1640
4320 min Summer	2.178	0.0	2376
5760 min Summer	1.733	0.0	3104
7200 min Summer	1.452	0.0	3816
8640 min Summer	1.257	0.0	4496
10080 min Summer	1.113	0.0	5144
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	118
180 min Winter	25.216	0.0	172
240 min Winter	20.299	0.0	198
360 min Winter	14.939	0.0	272
480 min Winter	12.007	0.0	350
600 min Winter	10.126	0.0	426
720 min Winter	8.806	0.0	500
960 min Winter	7.057	0.0	646
1440 min Winter	5.155	0.0	924
2160 min Winter	3.758	0.0	1320
2880 min Winter	2.998	0.0	1704
4320 min Winter	2.178	0.0	2460
5760 min Winter	1.733	0.0	3120
7200 min Winter	1.452	0.0	3600
8640 min Winter	1.257	0.0	4320
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.029

Time (mins) From:	To:	Area (ha)
0	4	0.029

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Model Details

Storage is Online Cover Level (m) 26.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.12570	Invert Level (m)	24.000	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.12570	Trench Width (m)	1.5	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	9.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 53 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.124	0.324	0.6	2.4	O K
30 min Summer	24.197	0.397	0.6	3.0	O K
60 min Summer	24.237	0.437	0.7	3.3	O K
120 min Summer	24.240	0.440	0.7	3.3	O K
180 min Summer	24.218	0.418	0.7	3.1	O K
240 min Summer	24.191	0.391	0.6	2.9	O K
360 min Summer	24.140	0.340	0.6	2.6	O K
480 min Summer	24.095	0.295	0.6	2.2	O K
600 min Summer	24.056	0.256	0.5	1.9	O K
720 min Summer	24.022	0.222	0.5	1.7	O K
960 min Summer	23.967	0.167	0.5	1.2	O K
1440 min Summer	23.893	0.093	0.4	0.7	O K
2160 min Summer	23.848	0.048	0.4	0.3	O K
2880 min Summer	23.839	0.039	0.3	0.3	O K
4320 min Summer	23.828	0.028	0.2	0.2	O K
5760 min Summer	23.823	0.023	0.2	0.1	O K
7200 min Summer	23.819	0.019	0.1	0.1	O K
8640 min Summer	23.817	0.017	0.1	0.1	O K
10080 min Summer	23.815	0.015	0.1	0.1	O K
15 min Winter	24.167	0.367	0.6	2.8	O K
30 min Winter	24.254	0.454	0.7	3.4	O K
60 min Winter	24.300	0.500	0.7	3.8	O K
120 min Winter	24.297	0.497	0.7	3.7	O K
180 min Winter	24.261	0.461	0.7	3.5	O K
240 min Winter	24.219	0.419	0.7	3.2	O K
360 min Winter	24.144	0.344	0.6	2.6	O K
480 min Winter	24.080	0.280	0.6	2.1	O K
600 min Winter	24.027	0.227	0.5	1.7	O K
720 min Winter	23.983	0.183	0.5	1.4	O K
960 min Winter	23.913	0.113	0.4	0.8	O K
1440 min Winter	23.848	0.048	0.4	0.3	O K
2160 min Winter	23.835	0.035	0.3	0.2	O K
2880 min Winter	23.828	0.028	0.2	0.2	O K
4320 min Winter	23.821	0.021	0.2	0.1	O K
5760 min Winter	23.817	0.017	0.1	0.1	O K
7200 min Winter	23.814	0.014	0.1	0.1	O K
8640 min Winter	23.812	0.012	0.1	0.1	O K
10080 min Winter	23.811	0.011	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	31
60 min Summer	54.663	0.0	48
120 min Summer	33.875	0.0	82
180 min Summer	25.216	0.0	118
240 min Summer	20.299	0.0	152
360 min Summer	14.939	0.0	218
480 min Summer	12.007	0.0	282
600 min Summer	10.126	0.0	344
720 min Summer	8.806	0.0	406
960 min Summer	7.057	0.0	530
1440 min Summer	5.155	0.0	764
2160 min Summer	3.758	0.0	1100
2880 min Summer	2.998	0.0	1460
4320 min Summer	2.178	0.0	2156
5760 min Summer	1.733	0.0	2920
7200 min Summer	1.452	0.0	3656
8640 min Summer	1.257	0.0	4360
10080 min Summer	1.113	0.0	5032
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	30
60 min Winter	54.663	0.0	50
120 min Winter	33.875	0.0	88
180 min Winter	25.216	0.0	126
240 min Winter	20.299	0.0	162
360 min Winter	14.939	0.0	232
480 min Winter	12.007	0.0	298
600 min Winter	10.126	0.0	362
720 min Winter	8.806	0.0	426
960 min Winter	7.057	0.0	542
1440 min Winter	5.155	0.0	736
2160 min Winter	3.758	0.0	1092
2880 min Winter	2.998	0.0	1448
4320 min Winter	2.178	0.0	2152
5760 min Winter	1.733	0.0	2880
7200 min Winter	1.452	0.0	3672
8640 min Winter	1.257	0.0	4320
10080 min Winter	1.113	0.0	5056

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins) From:	To:	Area (ha)
0	4	0.012

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Model Details

Storage is Online Cover Level (m) 24.750

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.31008	Invert Level (m)	23.800	Cap Volume Depth (m)	0.800
Infiltration Coefficient Side (m/hr)	0.31008	Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.800
Safety Factor	2.0	Trench Length (m)	8.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 43 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.045	0.245	0.4	1.4	O K
30 min Summer	24.097	0.297	0.4	1.7	O K
60 min Summer	24.124	0.324	0.5	1.8	O K
120 min Summer	24.120	0.320	0.4	1.8	O K
180 min Summer	24.098	0.298	0.4	1.7	O K
240 min Summer	24.073	0.273	0.4	1.5	O K
360 min Summer	24.029	0.229	0.4	1.3	O K
480 min Summer	23.991	0.191	0.4	1.1	O K
600 min Summer	23.959	0.159	0.4	0.9	O K
720 min Summer	23.932	0.132	0.3	0.7	O K
960 min Summer	23.891	0.091	0.3	0.5	O K
1440 min Summer	23.850	0.050	0.3	0.3	O K
2160 min Summer	23.837	0.037	0.2	0.2	O K
2880 min Summer	23.830	0.030	0.2	0.2	O K
4320 min Summer	23.822	0.022	0.1	0.1	O K
5760 min Summer	23.818	0.018	0.1	0.1	O K
7200 min Summer	23.815	0.015	0.1	0.1	O K
8640 min Summer	23.813	0.013	0.1	0.1	O K
10080 min Summer	23.812	0.012	0.1	0.0	O K
15 min Winter	24.078	0.278	0.4	1.6	O K
30 min Winter	24.141	0.341	0.5	1.9	O K
60 min Winter	24.169	0.369	0.5	2.1	O K
120 min Winter	24.157	0.357	0.5	2.0	O K
180 min Winter	24.123	0.323	0.5	1.8	O K
240 min Winter	24.085	0.285	0.4	1.6	O K
360 min Winter	24.020	0.220	0.4	1.2	O K
480 min Winter	23.967	0.167	0.4	0.9	O K
600 min Winter	23.925	0.125	0.3	0.7	O K
720 min Winter	23.891	0.091	0.3	0.5	O K
960 min Winter	23.850	0.050	0.3	0.3	O K
1440 min Winter	23.837	0.037	0.2	0.2	O K
2160 min Winter	23.827	0.027	0.2	0.1	O K
2880 min Winter	23.822	0.022	0.1	0.1	O K
4320 min Winter	23.816	0.016	0.1	0.1	O K
5760 min Winter	23.813	0.013	0.1	0.1	O K
7200 min Winter	23.811	0.011	0.1	0.0	O K
8640 min Winter	23.810	0.010	0.1	0.0	O K
10080 min Winter	23.808	0.008	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	17
30 min Summer	85.135	0.0	30
60 min Summer	54.663	0.0	46
120 min Summer	33.875	0.0	80
180 min Summer	25.216	0.0	116
240 min Summer	20.299	0.0	148
360 min Summer	14.939	0.0	214
480 min Summer	12.007	0.0	276
600 min Summer	10.126	0.0	338
720 min Summer	8.806	0.0	398
960 min Summer	7.057	0.0	512
1440 min Summer	5.155	0.0	736
2160 min Summer	3.758	0.0	1100
2880 min Summer	2.998	0.0	1468
4320 min Summer	2.178	0.0	2200
5760 min Summer	1.733	0.0	2880
7200 min Summer	1.452	0.0	3632
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	5120
15 min Winter	126.541	0.0	17
30 min Winter	85.135	0.0	30
60 min Winter	54.663	0.0	48
120 min Winter	33.875	0.0	88
180 min Winter	25.216	0.0	124
240 min Winter	20.299	0.0	160
360 min Winter	14.939	0.0	226
480 min Winter	12.007	0.0	290
600 min Winter	10.126	0.0	350
720 min Winter	8.806	0.0	408
960 min Winter	7.057	0.0	500
1440 min Winter	5.155	0.0	736
2160 min Winter	3.758	0.0	1080
2880 min Winter	2.998	0.0	1468
4320 min Winter	2.178	0.0	2176
5760 min Winter	1.733	0.0	2912
7200 min Winter	1.452	0.0	3640
8640 min Winter	1.257	0.0	4344
10080 min Winter	1.113	0.0	5144

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.007

Time (mins) From:	To:	Area (ha)
0	4	0.007

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Model Details

Storage is Online Cover Level (m) 24.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.31008	Invert Level (m)	23.800	Cap Volume Depth (m)	0.400
Infiltration Coefficient Side (m/hr)	0.31008	Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.400
Safety Factor	2.0	Trench Length (m)	6.0		
Porosity	0.95	Slope (1:X)	1000.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 120 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.317	0.667	3.8	35.2	O K
30 min Summer	23.502	0.852	4.4	45.3	O K
60 min Summer	23.649	0.999	4.9	53.4	O K
120 min Summer	23.718	1.068	5.2	57.3	O K
180 min Summer	23.725	1.075	5.2	57.6	O K
240 min Summer	23.707	1.057	5.1	56.7	O K
360 min Summer	23.656	1.006	5.0	53.8	O K
480 min Summer	23.602	0.952	4.8	50.9	O K
600 min Summer	23.552	0.902	4.6	48.1	O K
720 min Summer	23.505	0.855	4.5	45.5	O K
960 min Summer	23.421	0.771	4.2	40.9	O K
1440 min Summer	23.284	0.634	3.7	33.3	O K
2160 min Summer	23.131	0.481	3.2	24.9	O K
2880 min Summer	23.020	0.370	2.8	18.8	O K
4320 min Summer	22.871	0.221	2.3	10.6	O K
5760 min Summer	22.779	0.129	2.0	5.5	O K
7200 min Summer	22.724	0.074	1.8	2.5	O K
8640 min Summer	22.704	0.054	1.6	1.4	O K
10080 min Summer	22.699	0.049	1.5	1.1	O K
15 min Winter	23.398	0.748	4.1	39.6	O K
30 min Winter	23.609	0.959	4.8	51.3	O K
60 min Winter	23.784	1.134	5.4	60.9	O K
120 min Winter	23.864	1.214	5.7	65.3	O K
180 min Winter	23.870	1.220	5.7	65.6	O K
240 min Winter	23.843	1.193	5.6	64.1	O K
360 min Winter	23.767	1.117	5.3	60.0	O K
480 min Winter	23.686	1.036	5.1	55.5	O K
600 min Winter	23.610	0.960	4.8	51.3	O K
720 min Winter	23.542	0.892	4.6	47.5	O K
960 min Winter	23.423	0.773	4.2	41.0	O K
1440 min Winter	23.239	0.589	3.6	30.9	O K
2160 min Winter	23.049	0.399	2.9	20.4	O K
2880 min Winter	22.921	0.271	2.5	13.3	O K
4320 min Winter	22.761	0.111	1.9	4.5	O K
5760 min Winter	22.704	0.054	1.6	1.4	O K
7200 min Winter	22.698	0.048	1.4	1.1	O K
8640 min Winter	22.695	0.045	1.2	0.9	O K
10080 min Winter	22.692	0.042	1.1	0.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	126.541	0.0	18
30 min Summer	85.135	0.0	32
60 min Summer	54.663	0.0	60
120 min Summer	33.875	0.0	98
180 min Summer	25.216	0.0	130
240 min Summer	20.299	0.0	164
360 min Summer	14.939	0.0	234
480 min Summer	12.007	0.0	304
600 min Summer	10.126	0.0	370
720 min Summer	8.806	0.0	438
960 min Summer	7.057	0.0	568
1440 min Summer	5.155	0.0	824
2160 min Summer	3.758	0.0	1192
2880 min Summer	2.998	0.0	1560
4320 min Summer	2.178	0.0	2292
5760 min Summer	1.733	0.0	3000
7200 min Summer	1.452	0.0	3680
8640 min Summer	1.257	0.0	4400
10080 min Summer	1.113	0.0	4992
15 min Winter	126.541	0.0	18
30 min Winter	85.135	0.0	32
60 min Winter	54.663	0.0	60
120 min Winter	33.875	0.0	102
180 min Winter	25.216	0.0	138
240 min Winter	20.299	0.0	176
360 min Winter	14.939	0.0	252
480 min Winter	12.007	0.0	326
600 min Winter	10.126	0.0	396
720 min Winter	8.806	0.0	466
960 min Winter	7.057	0.0	600
1440 min Winter	5.155	0.0	866
2160 min Winter	3.758	0.0	1236
2880 min Winter	2.998	0.0	1612
4320 min Winter	2.178	0.0	2332
5760 min Winter	1.733	0.0	2904
7200 min Winter	1.452	0.0	3664
8640 min Winter	1.257	0.0	4312
10080 min Winter	1.113	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Ratio R	0.348	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
Region	England and Wales	Winter Storms	Yes	Longest Storm (mins)	10080
M5-60 (mm)	19.300	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.160

Time (mins) From:	To:	Area (ha)
0	4	0.160

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Model Details

Storage is Online Cover Level (m) 24.250

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.20635	Invert Level (m)	22.650	Cap Volume Depth (m)	1.600
Infiltration Coefficient Side (m/hr)	0.20635	Trench Width (m)	1.0	Cap Infiltration Depth (m)	1.600
Safety Factor	2.0	Trench Length (m)	58.0		
Porosity	0.95	Slope (1:X)	1000.0		

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