RCP

ARCHITECTURE & CIVIL ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT
LAND SOUTH OF ARUNDEL ROAD, FONTWELL

DRAINAGE STRATEGY
& SUDS STATEMENT-

JUNE 2020

ARUN DISTRICT COUNCIL WA/48/19/RES

Document Control Sheet

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Project ref: DAN/E4736

Report Title Drainage Strategy & SuDS Statement

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Date: 25th June 2020

	Name	Position	Signature	Date
Prepared by:	Terry Seymour	Director	TRS	May 2019
Reviewed by:	Leon Darrell	Principal Engineer	LD	May 2019
Approved by:	Terry Seymour	Director	TRS	May 2019

Revision	Date	Description	Prepared	Approved
1	23.05.19	Issued for Planning.	LD	TRS
2	23.01.19	Updated layout	TRS	TRS
3	25.06.20	Update to new submission	TRS	TRS

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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.

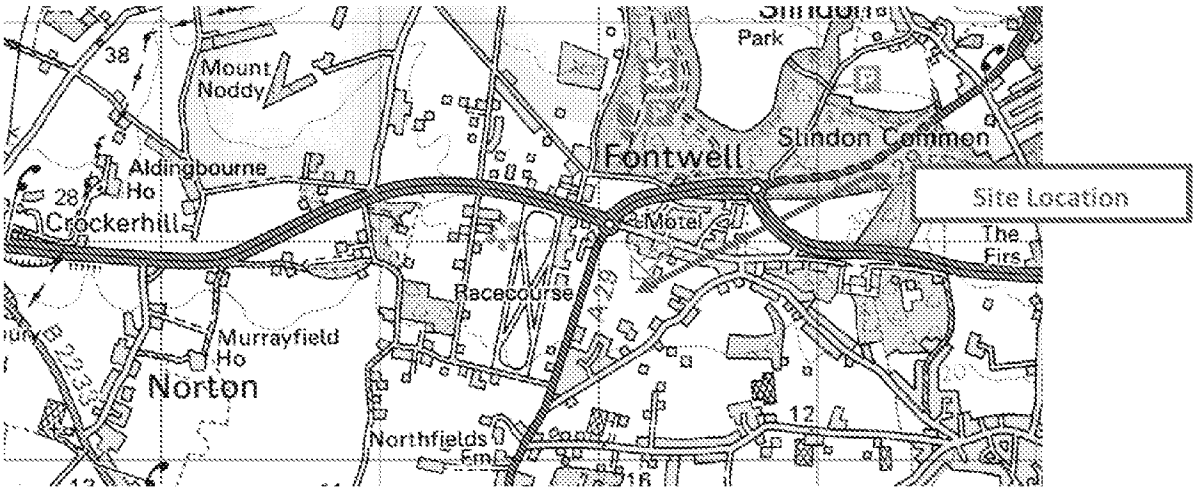


Figure 1: Site Location

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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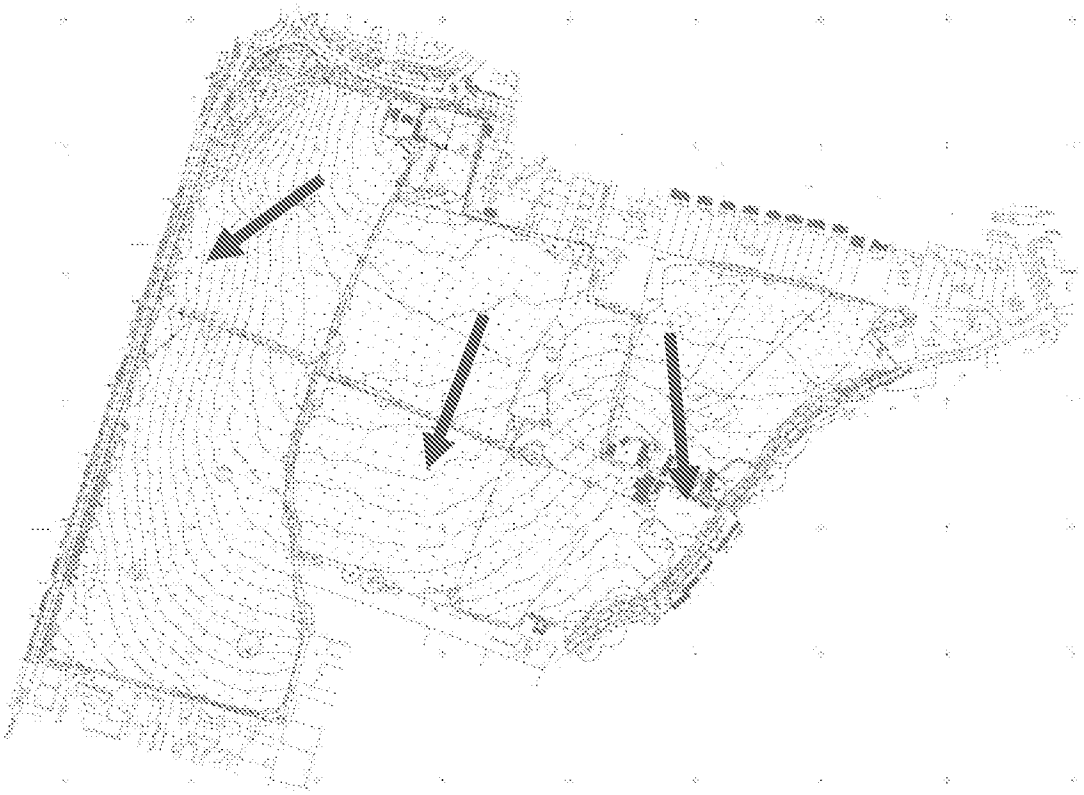


Figure 2: Site Topography

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. Following additional infiltration testing a further round of consultation was carried out with the Drainage Officer. Details of the final requirements set out by the Officer are provided in **Appendix E**.

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 parts of the site where the infiltration rates were poorer, the runoff from the new buildings will be directed to the new infiltration basin located in the south western corner of the site. An outline of the above proposal is provided in drawings DAN/E4736/031-034 in **Appendix C.**

Calculations to demonstrate the feasibility of permeable paving for parking bays, access roads, on plot soakaways and the infiltration basin are provided in **Appendix D.** The drainage strategy has been developed in accordance with the agreed criteria set with ADC Drainage Officer as per the correspondence 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;

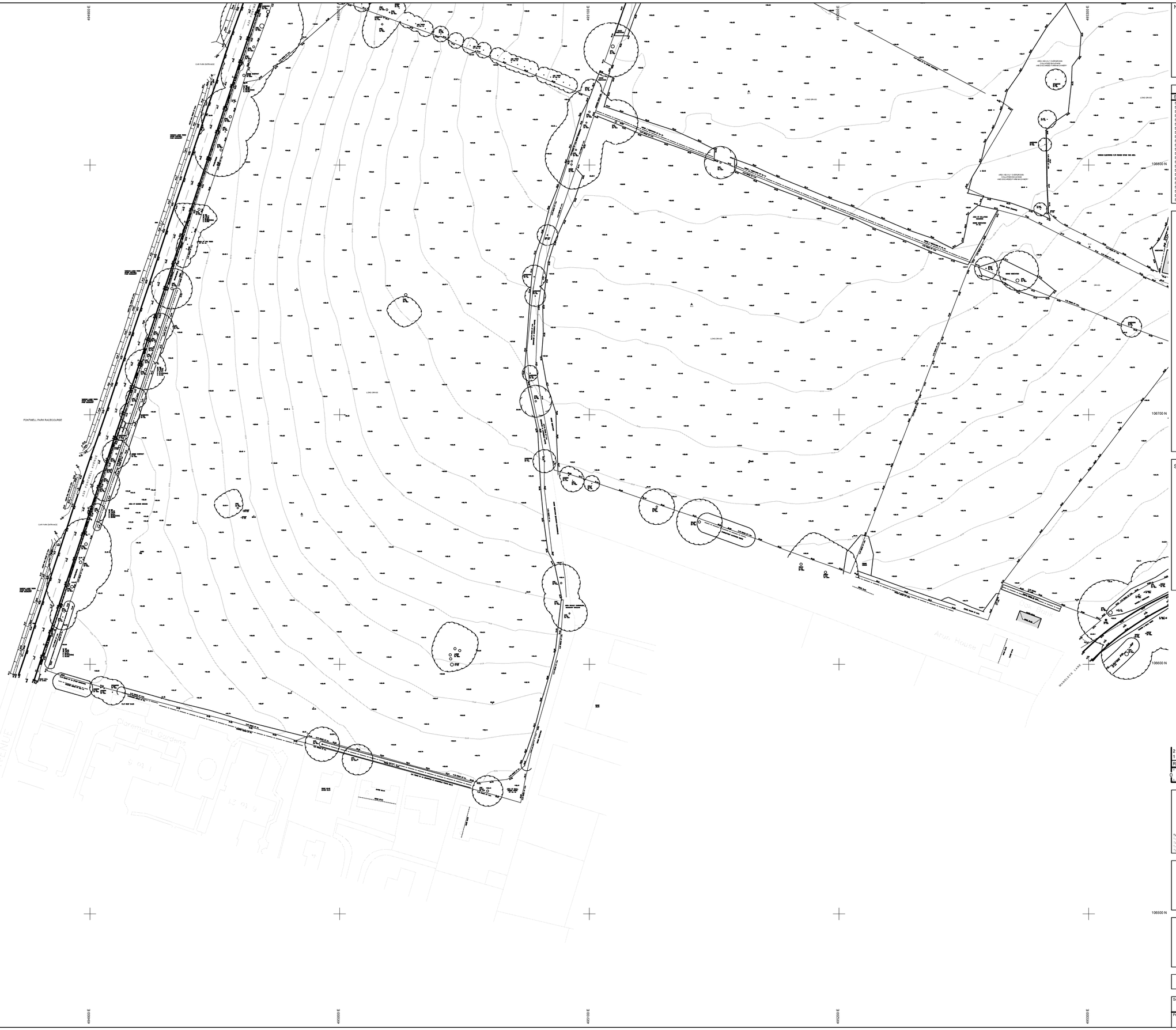
iv. The drainage strategy has been developed in consultation with the ADC Drainage Officer.

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.
3. ALL SEWERS ARE PRESUMED TO BE STRAIGHT BETWEEN CHAMBERS.
4. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.
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	495221.789	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	107058.553	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	494886.696	106651.786	21.392
S9	PEG	494884.817	106680.200	24.555
S10	PEG	495048.688	106670.672	27.316
S11	PEG	495183.848	106629.478	29.513
S12	PEG	495304.854	106578.168	29.678
S13	PEG	495140.971	106744.223	28.097
S14	ROAD NAIL	495300.303	106787.149	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	28.872
S18	ROAD NAIL	495342.956	107010.041	31.943
S19	ROAD NAIL	495421.424	106985.781	31.206
S20	ROAD NAIL	495492.958	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	106880.756	28.632

KEY

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
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
MAN-HOLE	MH
MARKER POST	MP
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
ROAD SIGN	RS
RAIN WATER PIPE	RWP
RETAINING WALL	RW
SOIL PIPE	SP
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
STOP VALVE	SV
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TELEGRAPH	TG
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	CHP
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

40 years old in 2012
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dandara

Land at Fontwell Avenue
Fontwell
West Sussex

Topographical Survey

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

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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

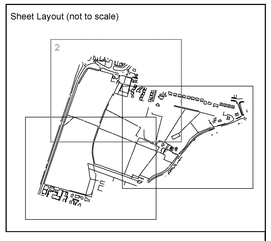
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BOLLARD	BO
BOTTOM	BT
BT INSPECTION COVER	BT
CABLE TV COVER	CATV
CONTROL BOX	CB
COVER LEVEL	CL
CONCRETE	CNT
DROP KERB	DK
ELECTRICITY CONTROL BOX	EB
ELECTRICITY POLE	EP
EARTH ROD	ER
FIRE HYDRANT	FH
FLOOR LEVEL	FL
FENCE POST	FP
FOUL WATER SEWER	FWS
GAS 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
MAN-HOLE	MH
MARKER POST	MP
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
ROAD SIGN	RS
RAIN WATER PIPE	RWP
RETAINING WALL	RW
STUMP	SU
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
STOP VALVE	SV
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TOP	TP
TELECOM POLE	TR
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	CHP
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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Newbury
Tel 01635 262182
enquiries@mksurveys.co.uk
oxford@mksurveys.co.uk
northampton@mksurveys.co.uk
nuneaton@mksurveys.co.uk
newbury@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



Notes :

1. GRID AND LEVELS RELATED TO OSGB36 NATIONAL DATUM DERIVED FROM THE NATIONAL GPS NETWORK. LSF (0.99971) USED IN ALL CALCULATIONS.
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6. BACKGROUND AERIAL IMAGERY (c) Getmapping plc 2014.

Coordinate Table

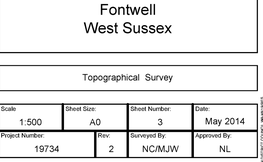
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S2	ROAD NAIL	495147.491	107064.290	29.326
S3	ROAD NAIL	495083.446	107088.548	27.122
S4	ROAD NAIL	495108.787	107058.553	28.235
S5	ROAD NAIL	495034.023	107066.958	26.414
S6	ROAD NAIL	494989.424	106954.370	23.829
S7	ROAD NAIL	494948.868	106835.924	22.990
S8	ROAD NAIL	494886.698	106651.796	21.392
S9	PEG	494884.817	106680.200	24.555
S10	PEG	495046.688	106670.672	27.316
S11	PEG	495183.848	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	106787.149	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	28.872
S18	ROAD NAIL	495342.956	107010.041	31.943
S19	ROAD NAIL	495421.424	106985.781	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	106880.756	28.632

KEY

GENERAL ABBREVIATIONS

SURVEY STATION	5	AIR VALVE	AV
BANKING	TOP / BOTTOM	BACK DROP	BD
		BRICK	BK
		BOLLARD	BO
		BT INSPECTION COVER	BT
		CABLE TV COVER	CATV
HEDGE SPREADS		CONTROL BOX	CB
		COVER LEVEL	CL
WOODLAND CANOPY		CONCRETE	CNT
		DROP KERB	DK
MARSH / WATERLOGGED		ELECTRICITY CONTROL BOX	EB
		ELECTRICITY POLE	EP
		EARTH ROD	ER
TREES	SPREAD & GIRTH SHOWN TO SCALE	FIRE HYDRANT	FH
		FLOOR LEVEL	FL
		FENCE POST	FP
		FOUL WATER SEWER	FWS
		GAS VALVE	GV
GATE		GATE POST	GP
		GULLY	GY
		INSPECTION COVER	IC
KERB CHANNEL		INVERT LEVEL	IL
ROAD UNKERBED		KERB OUTLET	KO
		LAMP POST	LP
FOOTPATH		LETTER BOX	LB
		LITTER BIN	BIN
CHANGE IN SURFACE		MAN-HOLE	MH
		MARKER POST	MP
FENCE		METER	MT
		ORDNANCE SURVEY BENCH MARK	OSBM
WALL		RODDING EYE	RE
		ROAD SIGN	RS
OVERHEAD ELECTRIC		RAIN WATER PIPE	RWP
		RETAINING WALL	RW
OVERHEAD TELECOM		SOIL PIPE	SP
		STREET NAME PLATE	SNP
FOUL SEWER		STAY CABLES	ST
		SURFACE WATER SEWER	SWS
SURFACE SEWER		STOP VALVE	SV
		SOIL VENT PIPE	SVP
BUILDING		TELEPHONE CALL BOX	TCB
		TREE	TR
OPEN SIDED BUILDING		TELEGRAM POLE	TP
		UNABLE TO LIFT	UTL
GLASSHOUSE		VENT PIPE	VP
		WATER LEVEL	WL
CONTOUR	25.50	WATER METER	WM
		WASH OUT	WO
SPOT LEVEL	+ 127.13	FENCE ABBREVIATIONS	
BORE HOLE	BH	BARBED WIRE FENCE	B/W
		CLOSE BOARDED FENCE	C/B
TRIAL HOLE	TH	CONCRETE PANEL FENCE	C/PL
		CORRUGATED IRON FENCE	C/I
		CHAIN LINK FENCE	C/L
		CHESTNUT PALING	CHP
		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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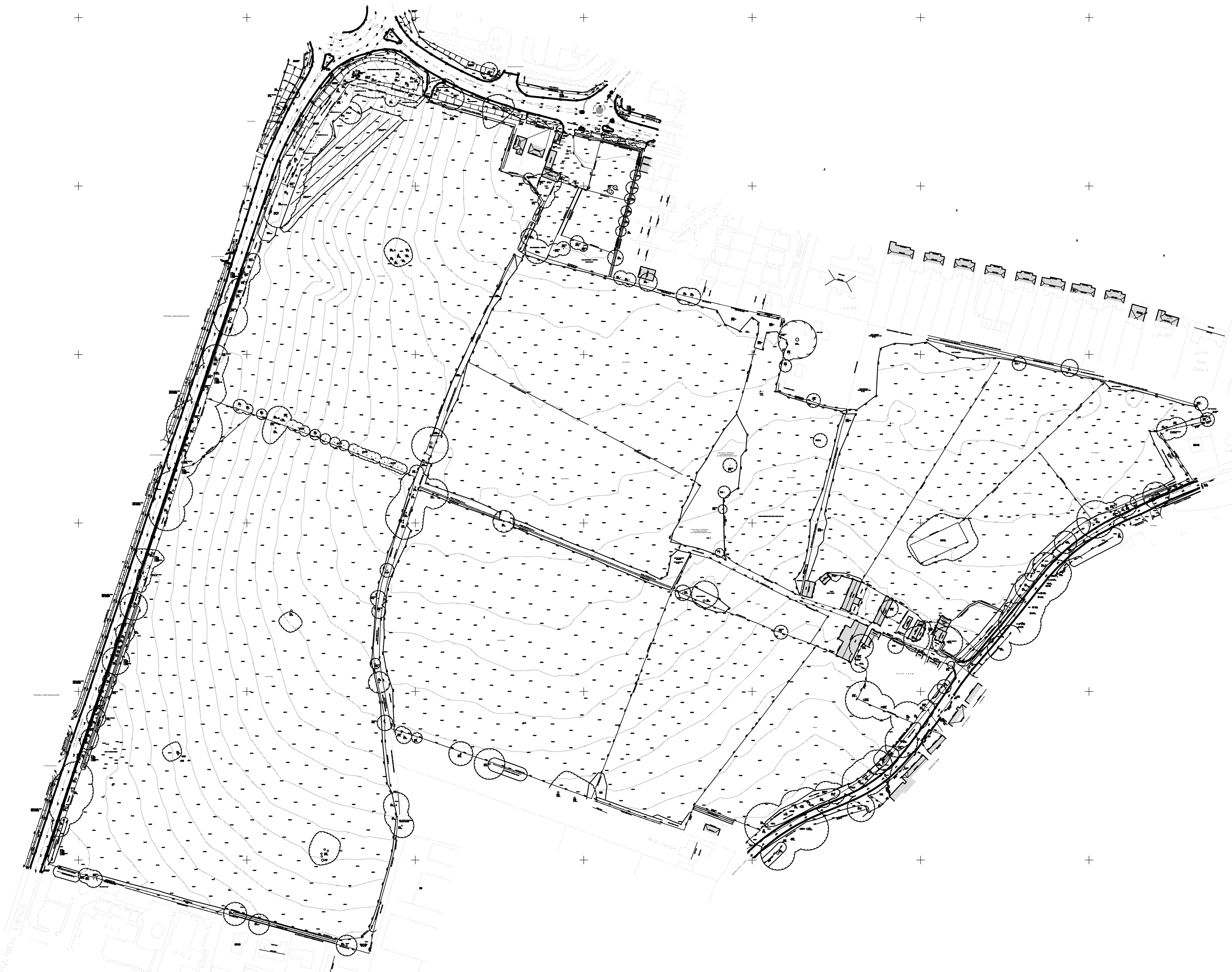
dandara

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

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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
BUS STOP	BS
BT INSPECTION COVER	BT
CABLE TV COVER	CATV
CONTROL BOX	CB
COVER LEVEL	CL
CATCH PIT	C/PIT
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	MK
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
ROAD SIGN	RS
RAIN WATER PIPE	RWP
RETAINING WALL	RW
STOP COCK	SC
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
STOP VALVE	SV
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TRAFFIC LIGHT	TL
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	CPL
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

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

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Land at Fontwell Avenue
Fontwell
West Sussex

Topographical Survey

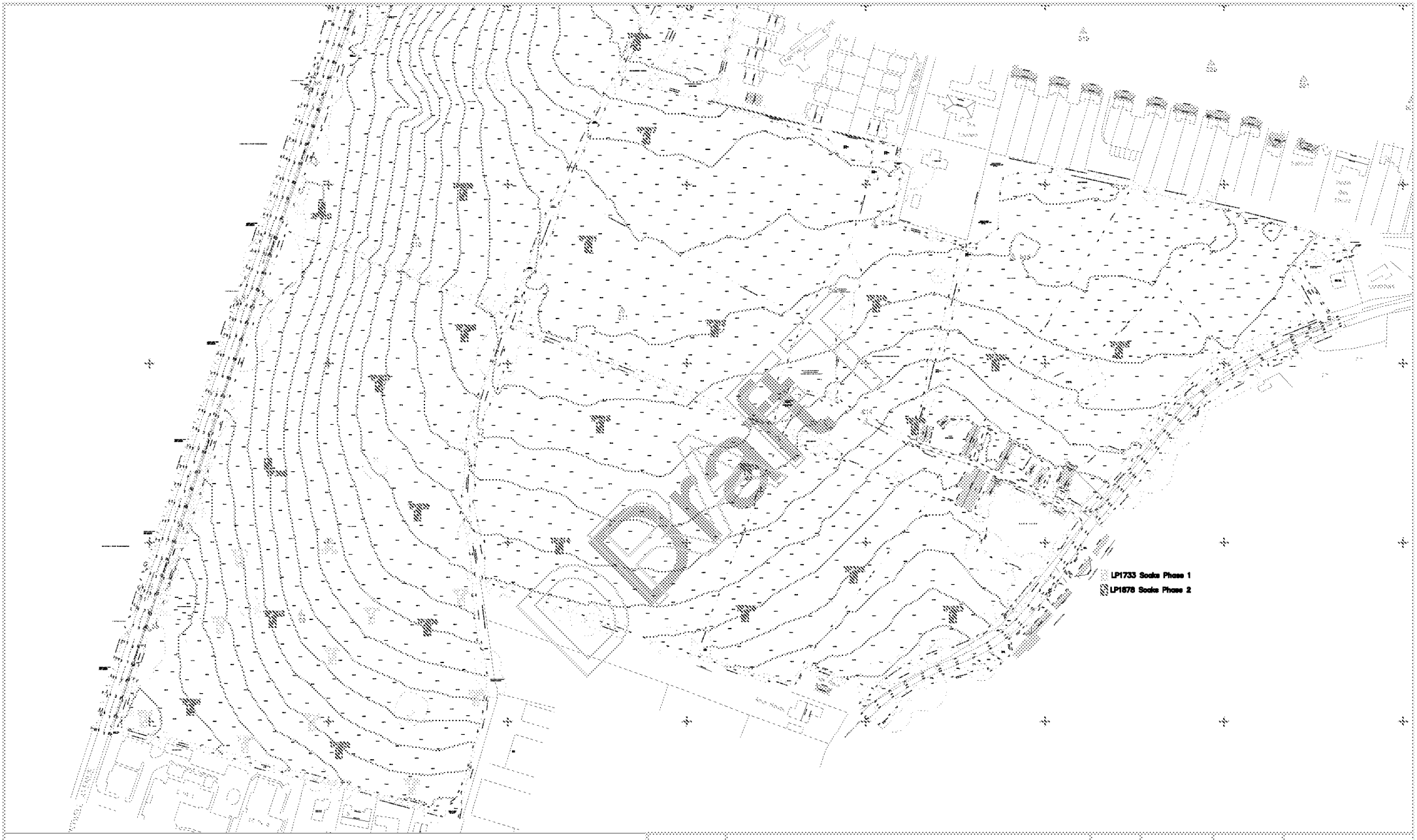
Scale	Sheet Size:	Sheet Number:	Date:
1:1000	A0	4	May 2014

Project Number:	Rev:	Surveyed By:	Approved By:
19734	2	NC/MJW	NL

ARUN DISTRICT COUNCIL WA/48/19/RES

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				

ARUN DISTRICT COUNCIL WA/48/19/RES

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
T [redacted]

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): 175 x 47, 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
				0.35			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 = 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
[redacted]

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): 185 × 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.
	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.
							Too gravelly for hand penetrometer test at 1m.
			N=26				
				1.80			Firm to stiff brown silty 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: Pit remained dry and stable. Pit was backfilled to 0.5mbgl.

Stability: Stable.

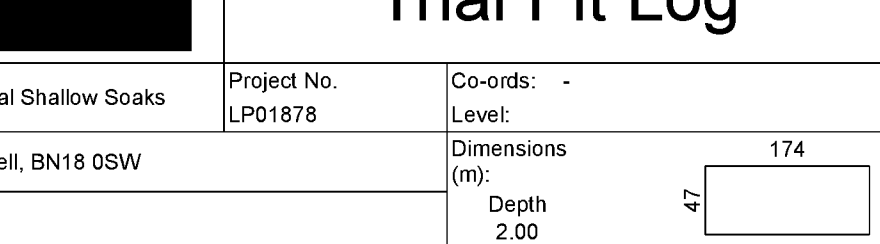
AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

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	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

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

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): 182 x 47, 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.
							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

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

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 seapage at 1.9m. 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
[redacted]

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	N=20				*Hand Pen at 0.8m = 130kPa*
			N=34				*Hand Pen at 1.5m = 190kPa*
	2.00	B		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.

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

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): 186 × 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
				0.25			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.

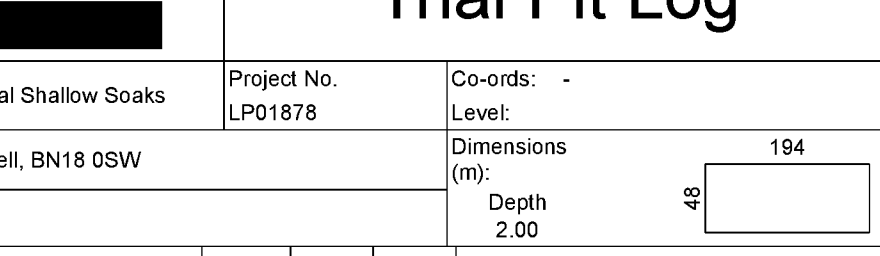
AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

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	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 = 275kPa
	1.00	B	N=23				
			N=13				*Hand Pen at 1.5m = 180kPa*
				1.90			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.
	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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[redacted]

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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Tel: [redacted]

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.

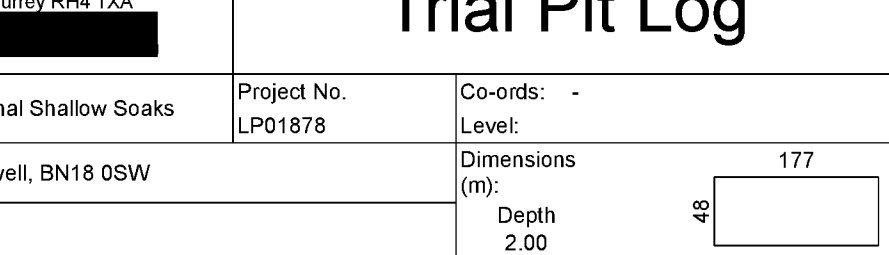
AGS

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[redacted]

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	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.

AGS

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[redacted]

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): 180 x 47 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.
	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

DRAFT

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

Stability: Stable.

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[redacted]

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.

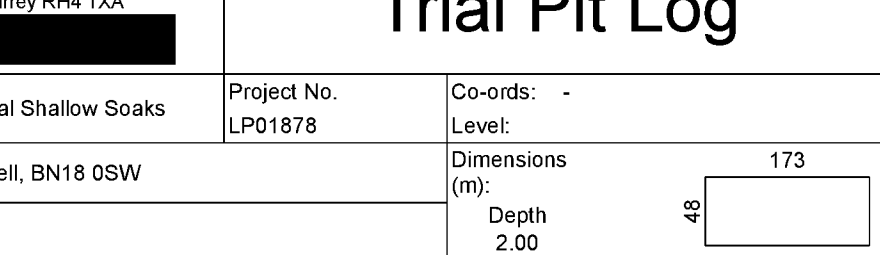
AGS

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Dorking, Surrey RH4 1XA
[redacted]

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	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.
	1.00	B	N=44				*Hand Pen at 0.9m = 100kPa*
			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.

AGS

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[redacted]

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.

AGS

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[redacted]

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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[redacted]

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.

AGS

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Tel [redacted]

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): 172 × 54, 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.
	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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[redacted]

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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[redacted]

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 (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.
							Dense brown silty clayey GRAVEL. Gravel of fine to coarse and occasional cobbles, angular to sub-rounded flint.
	1.20	B	N=50				
			N=45				
				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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[redacted]

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.

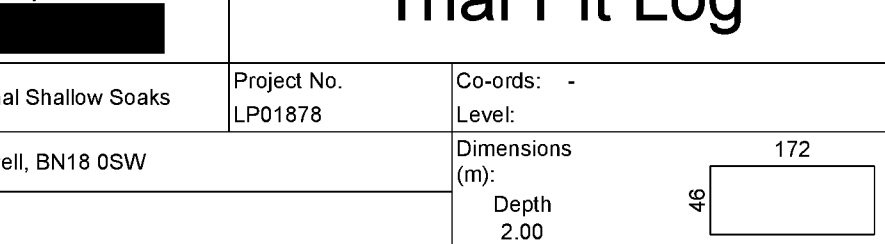
AGS

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Dorking, Surrey RH4 1XA
[redacted]

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): 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.*
				1.40			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.
	1.50	D	N=41				
				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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Dorking, Surrey RH4 1XA
[redacted]

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

1 2 3 4 5

DRAFT

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

Stability: Collapsing below 1.8m.

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Dorking, Surrey RH4 1XA
[redacted]

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.
							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.
			N=50				*Becoming more clayey below 1m.*
	1.20	B					
			N=50				
				1.90			End of pit at 1.90 m
	2.00	D					

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

Leap Environmental Ltd The Atrium, Curtis Road Dorking, Surrey RH4 1XA [redacted]	**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 (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				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.

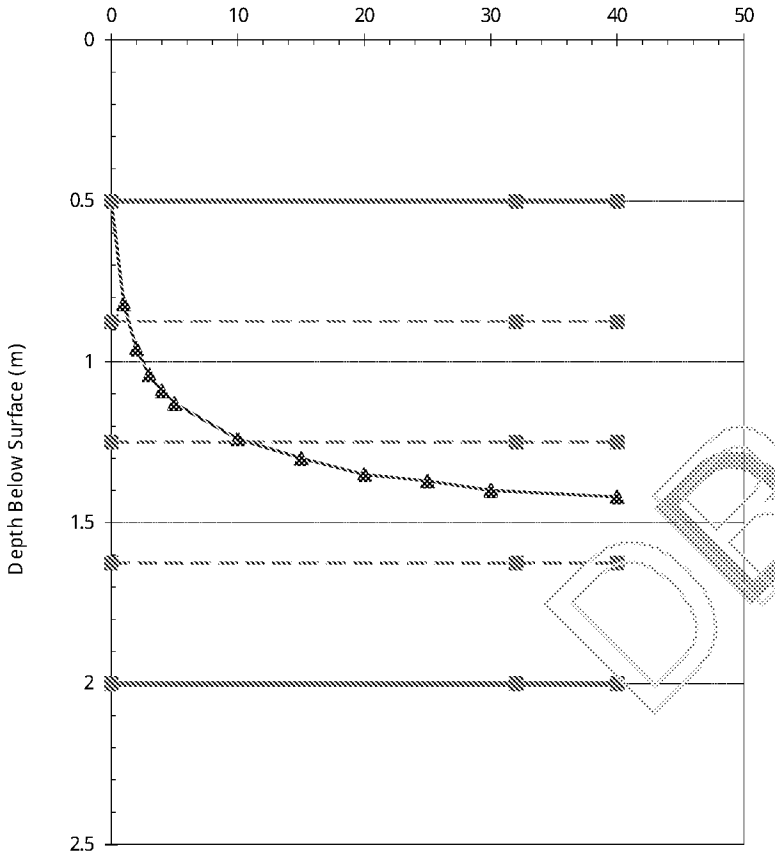
Stability: Stable.

AGS

BRE Digest 365 - Soakage Test

Test Hole No:	TP301
Test No:	Test No 1

Filling to Max Water Depth (min)



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.

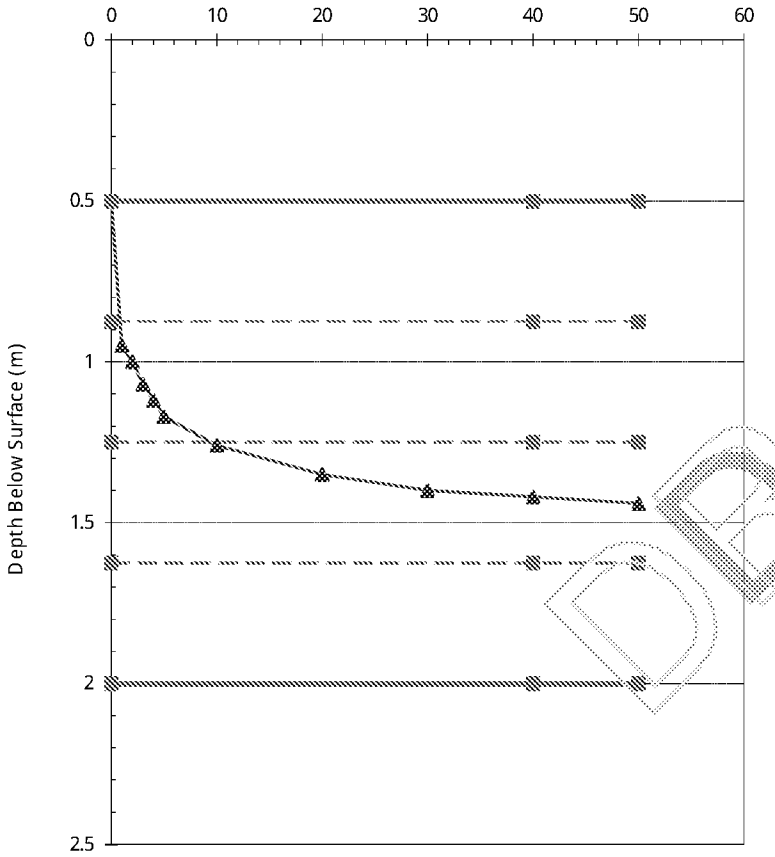
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP301
Test No:	Test No 2

Filling to Max Water Depth (min)



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

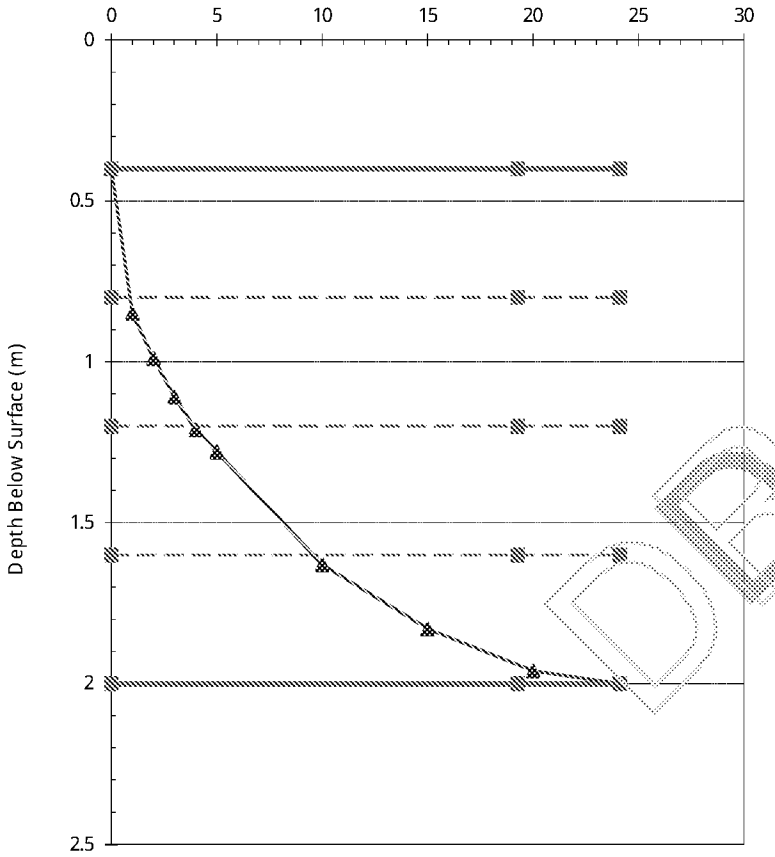
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

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

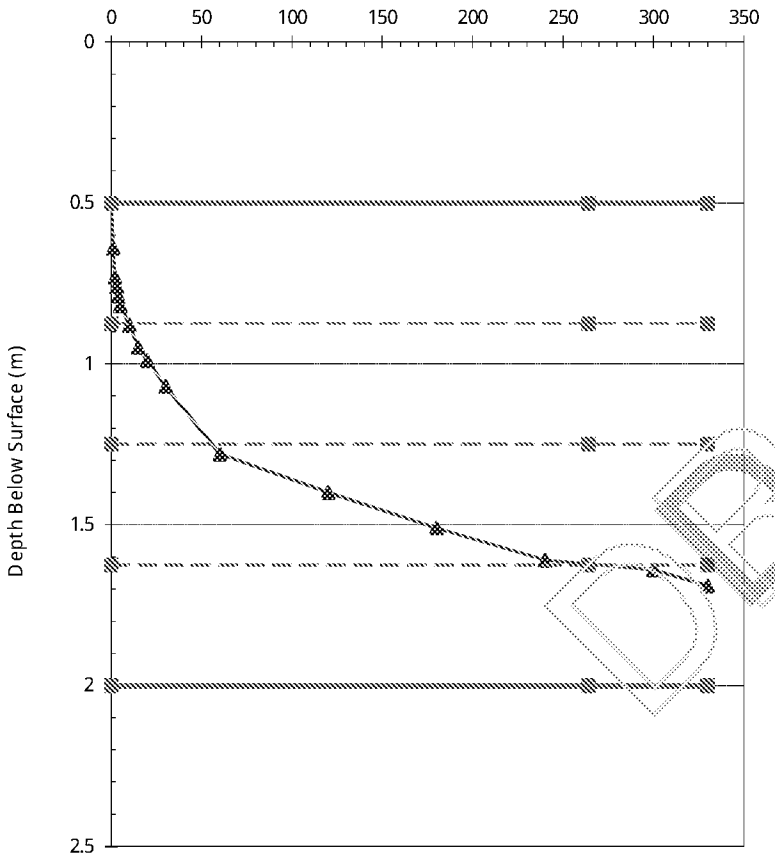
Comments:
Pit was emptied at finish of test.

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.

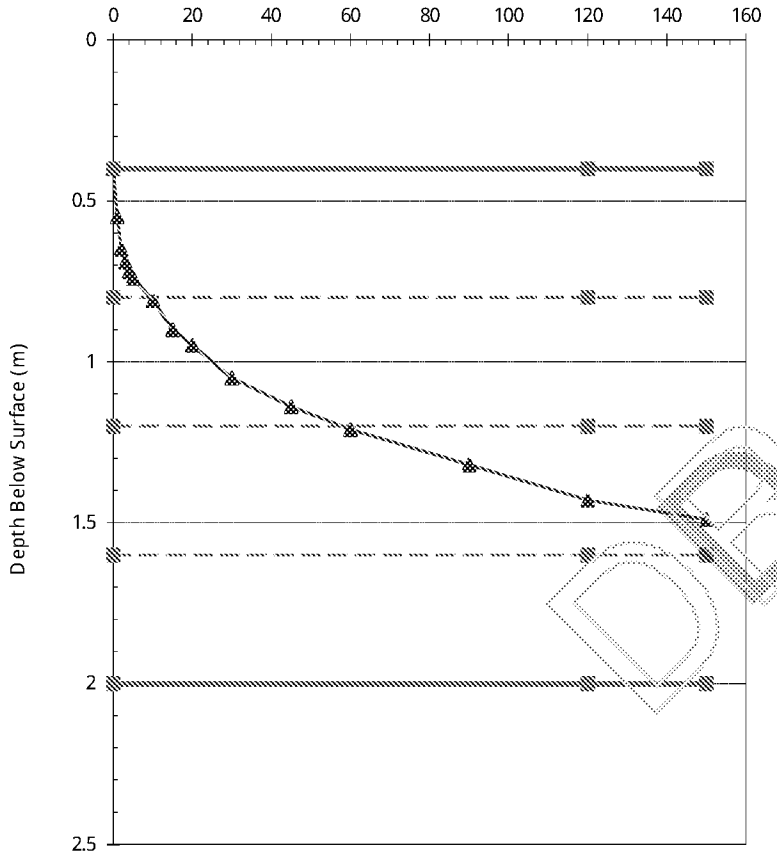
Client:	
Site:	
Tested By:	
Test Date:	11/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP302
Test No:	Test No 2

Filling to Max Water Depth (min)



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

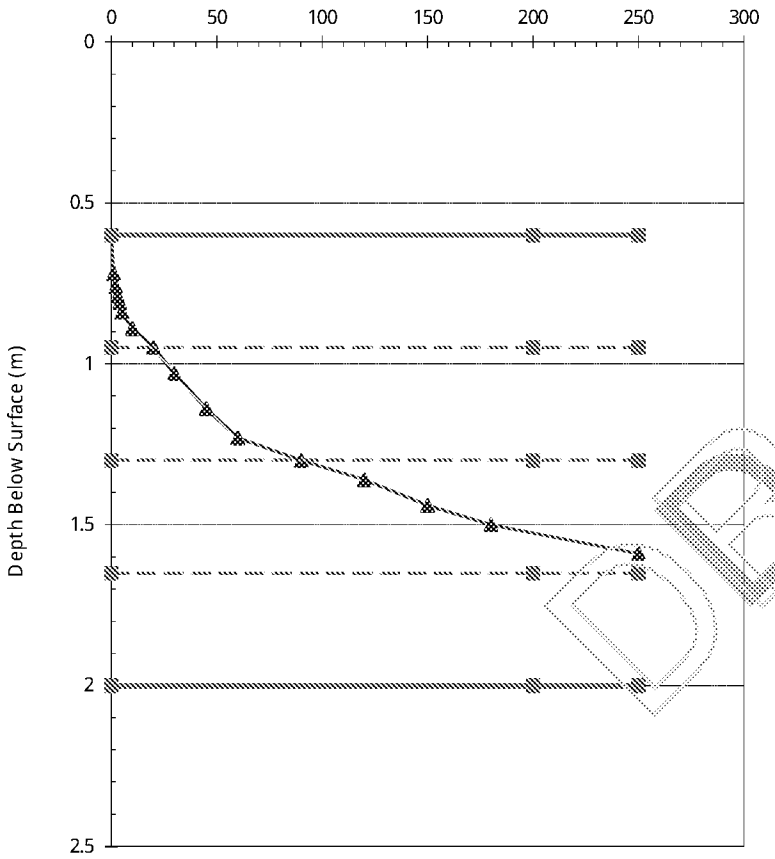
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

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.

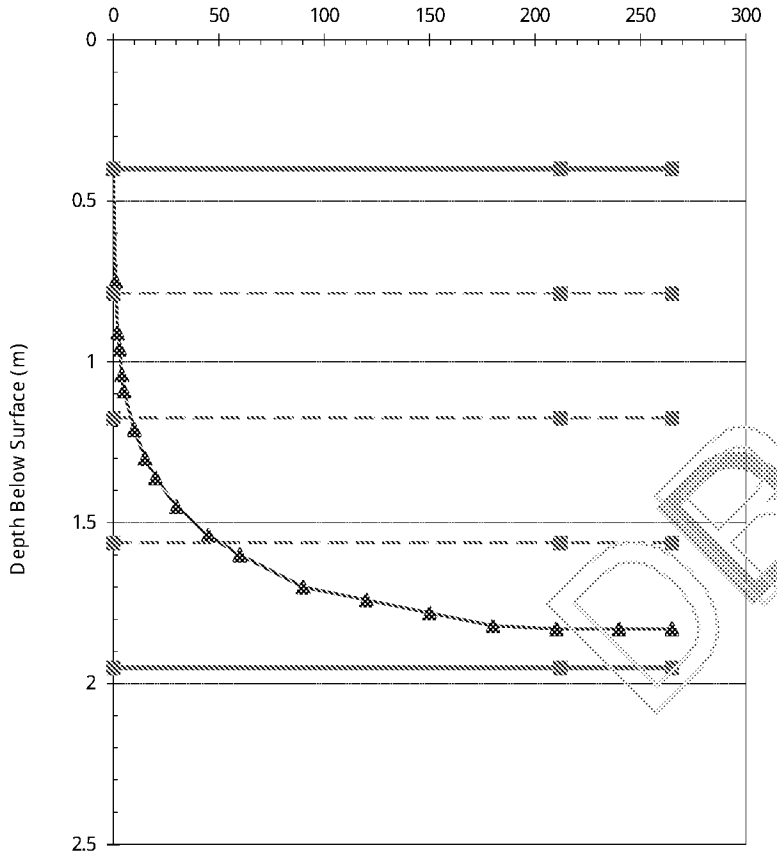
Client:	
Site:	
Tested By:	
Test Date:	13/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 1

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.

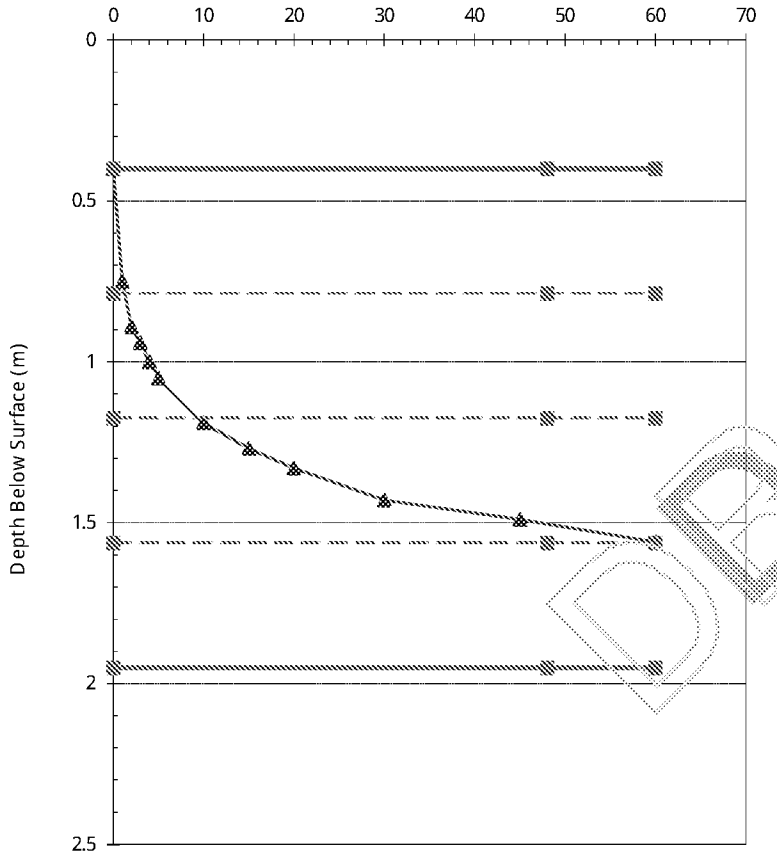
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

OBJECT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 2

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)	1.16
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.

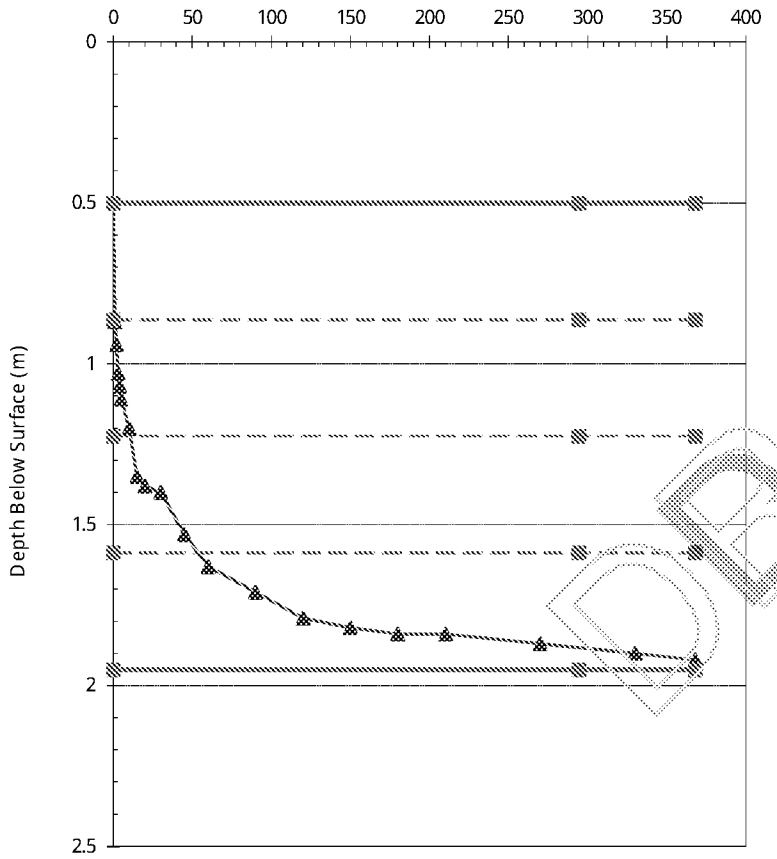
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 3

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

Comments:

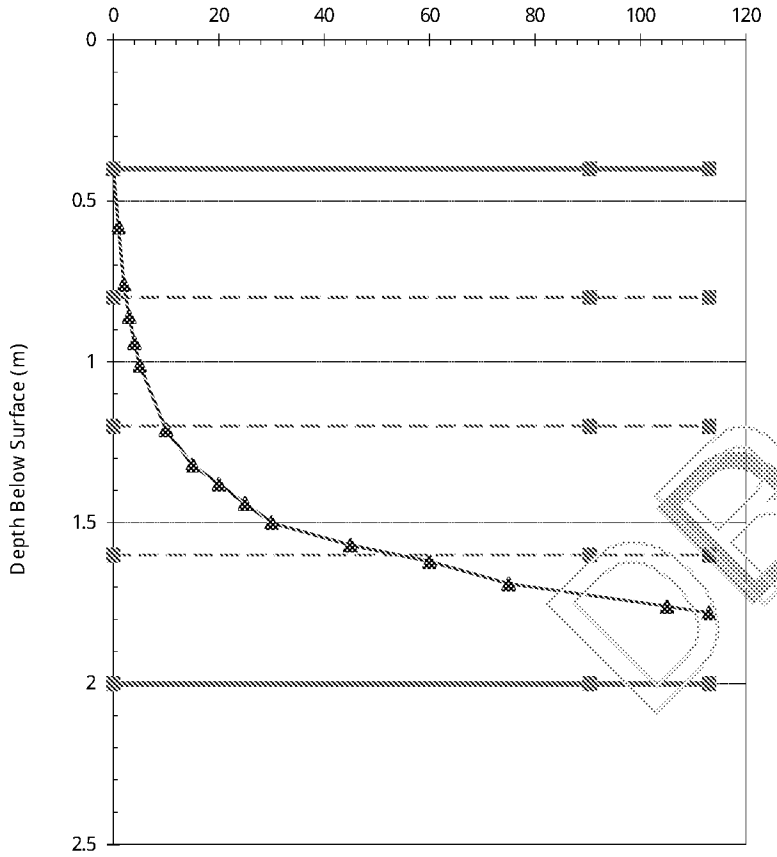
Pit was nearly emptied at finish of test.

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

OBJECTION

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

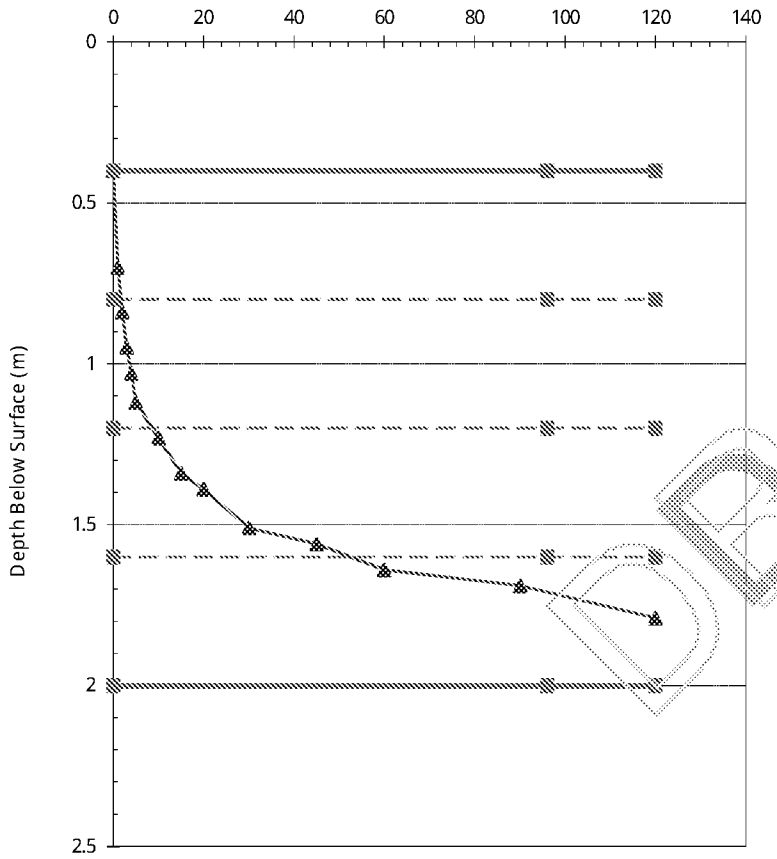
Comments:
Pit was nearly emptied at finish of test.

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.

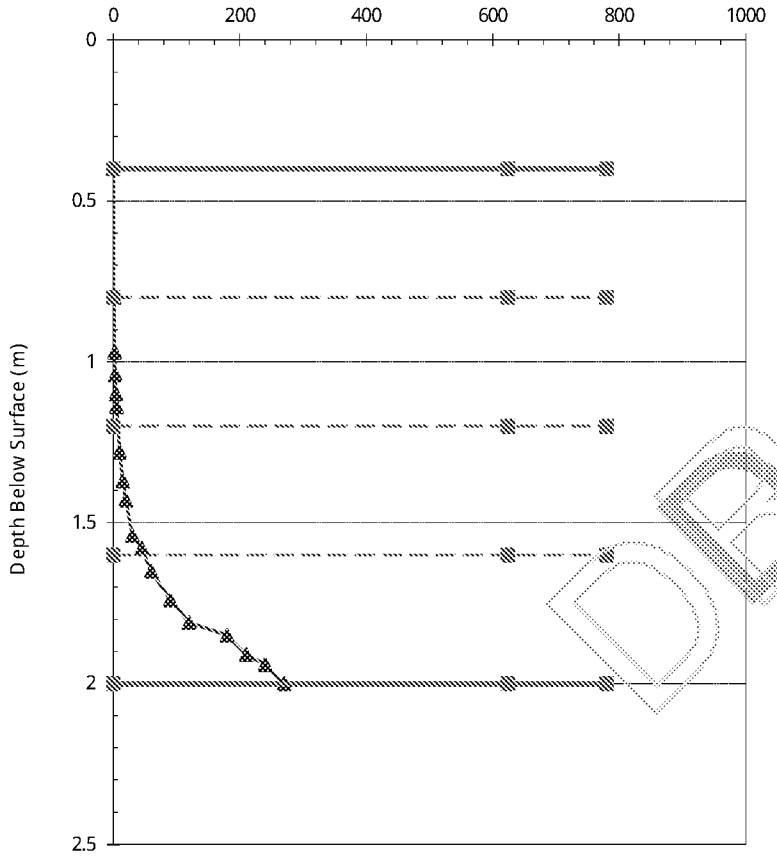
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

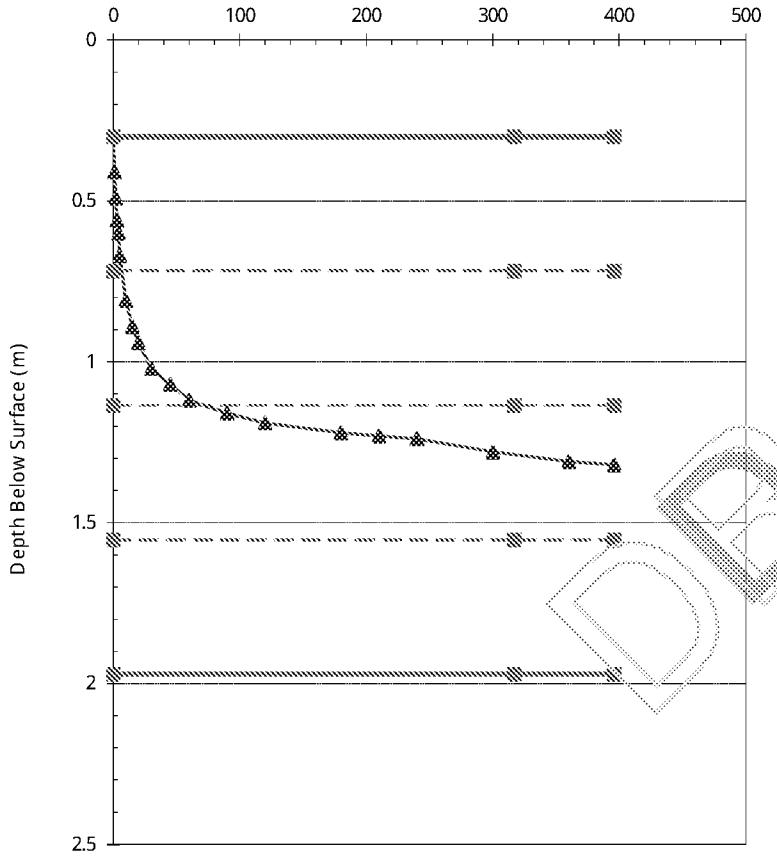
Client:	
Site:	
Tested By:	
Test Date:	11/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 1

Filling to Max Water Depth (min)



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.

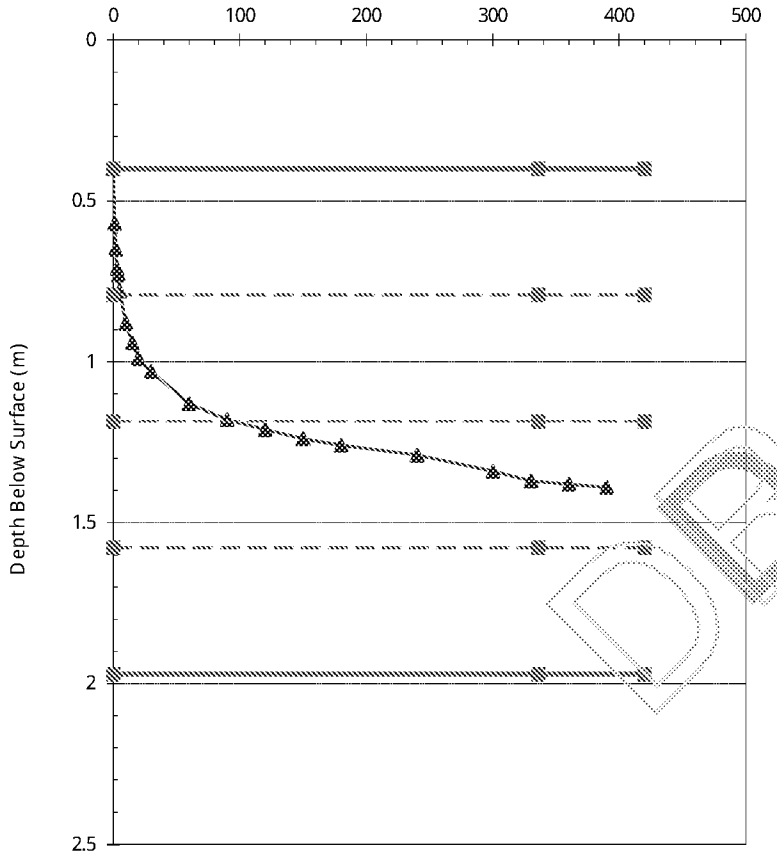
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 2

Filling to Max Water Depth (min)



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.

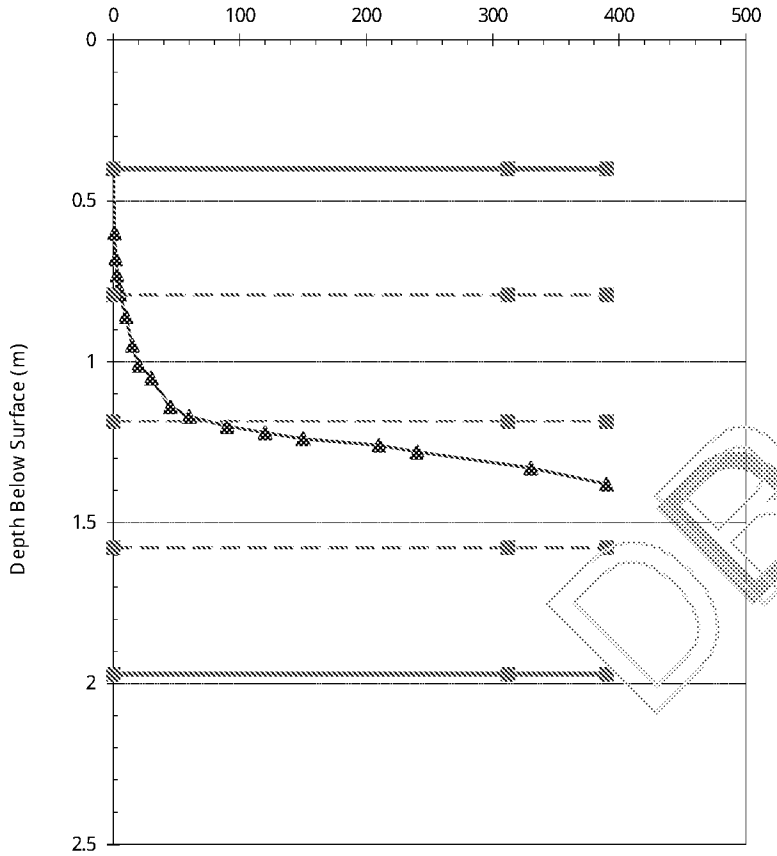
Client:	
Site:	
Tested By:	
Test Date:	11/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

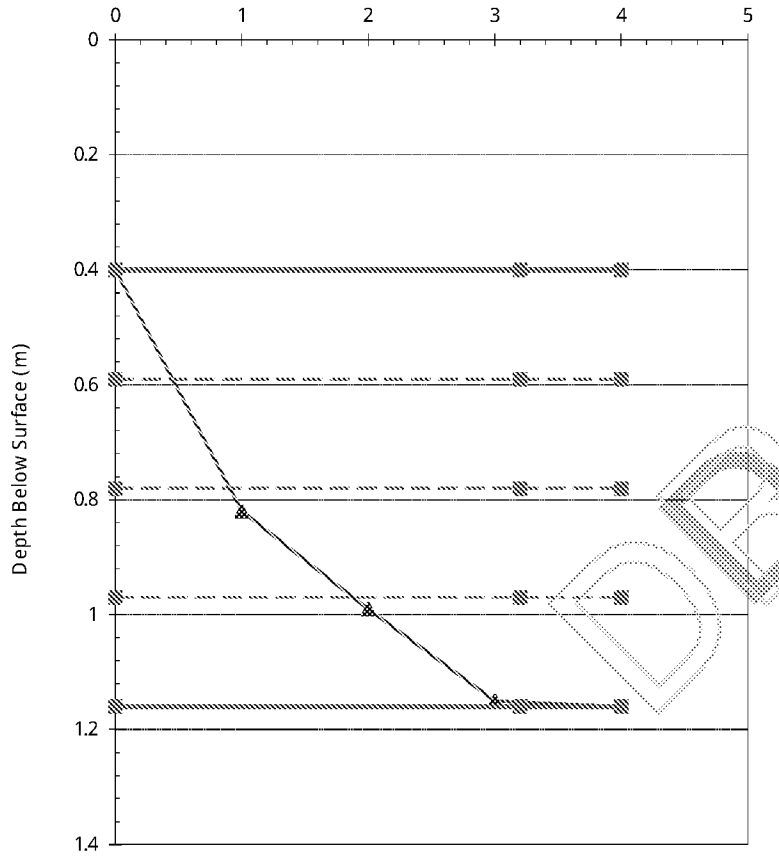
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

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.

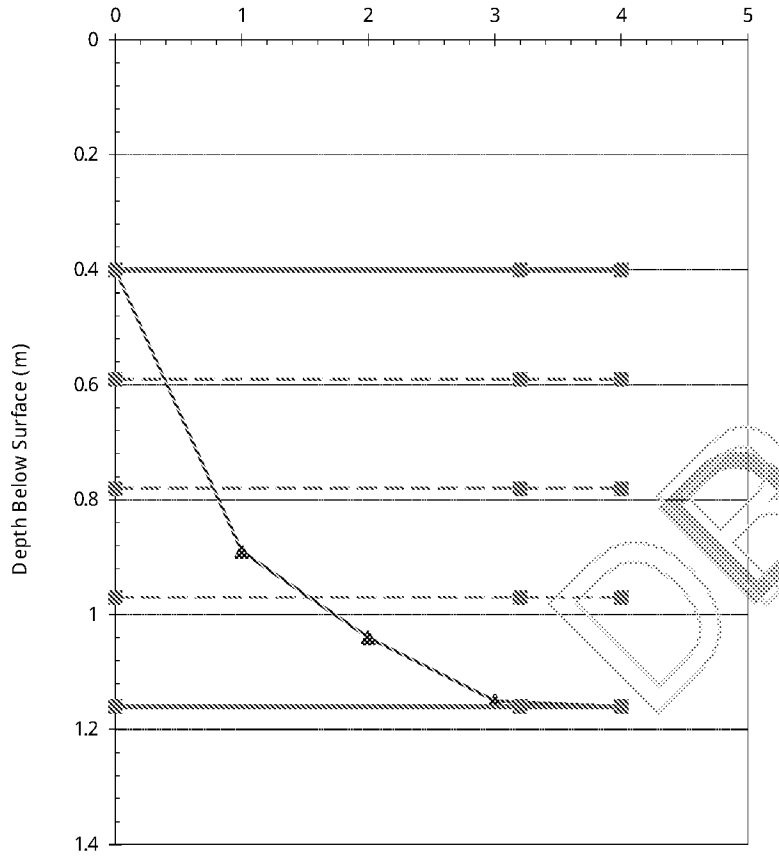
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP306
Test No:	Test No 2

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

Comments:
Pit was emptied at finish of test.

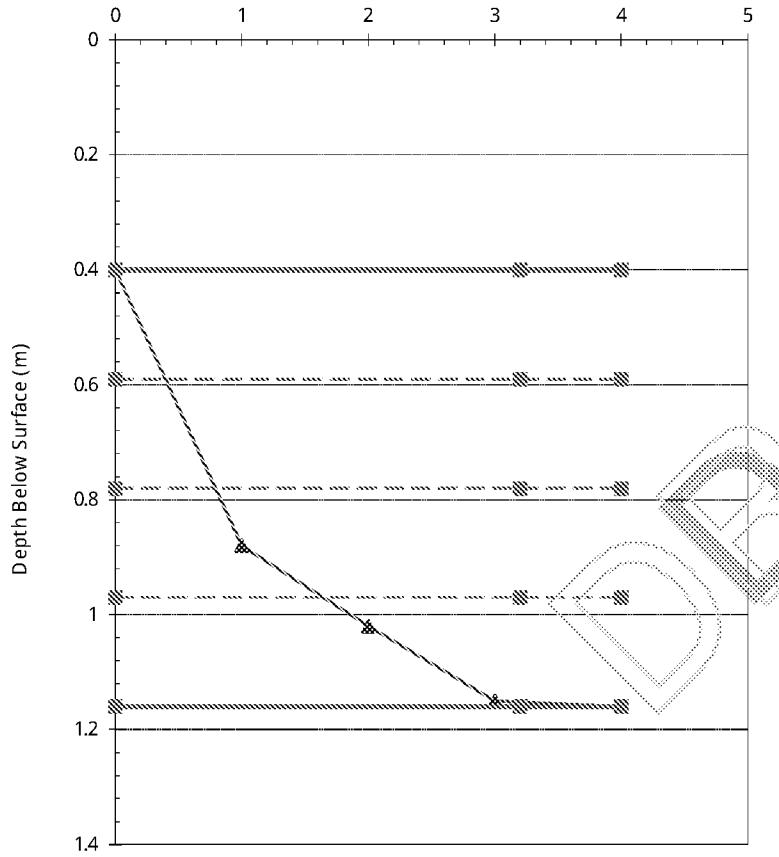
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP306
Test No:	Test No 3

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)	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.

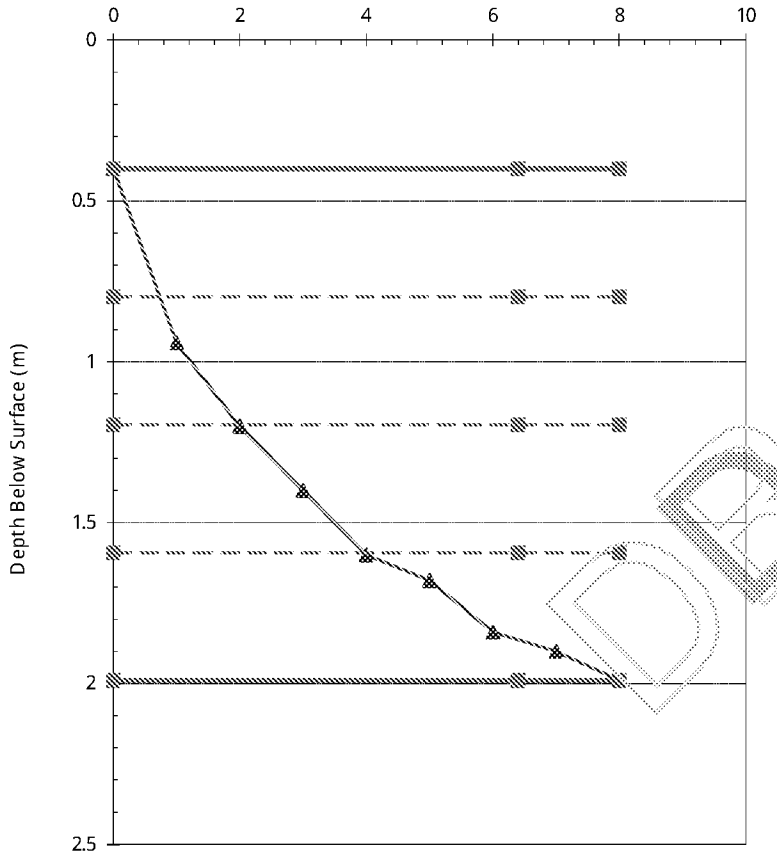
Client:	
Site:	
Tested By:	
Test Date:	08/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 1

Filling to Max Water Depth (min)



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.

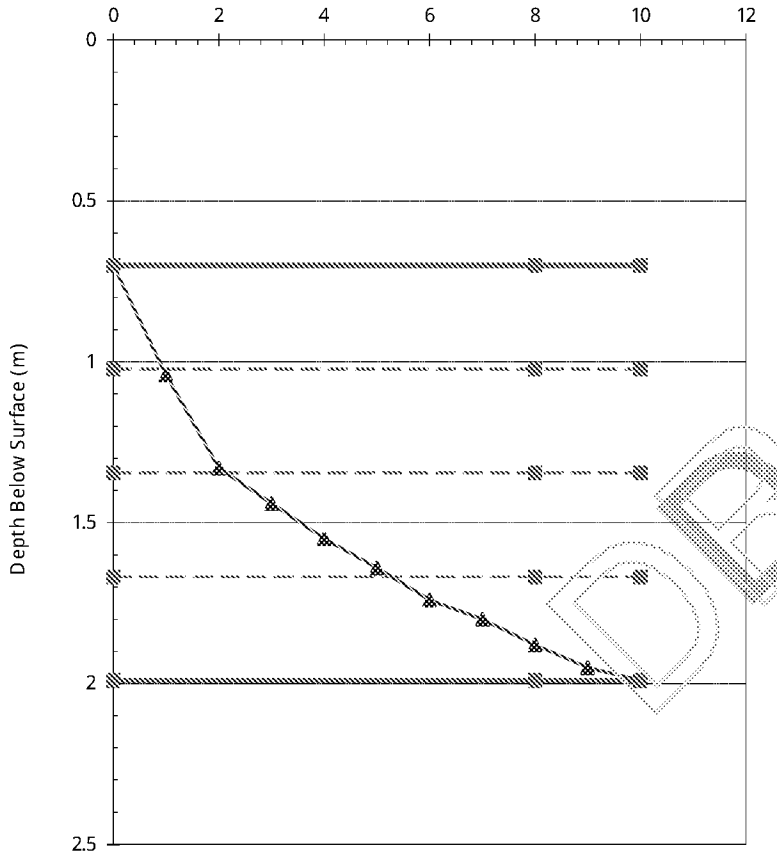
Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 2

Filling to Max Water Depth (min)



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.

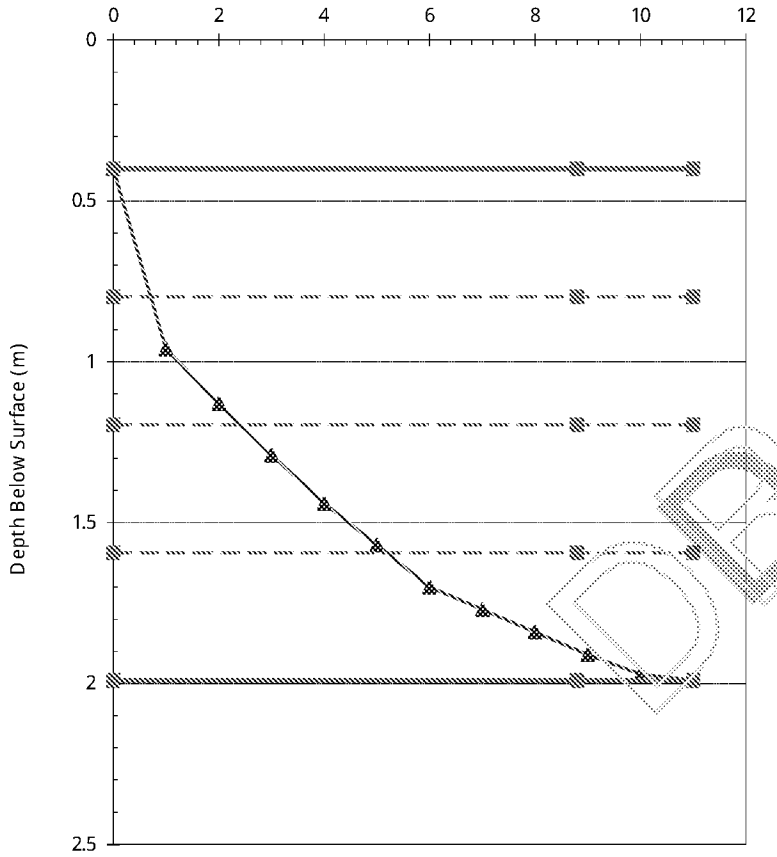
Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP307
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

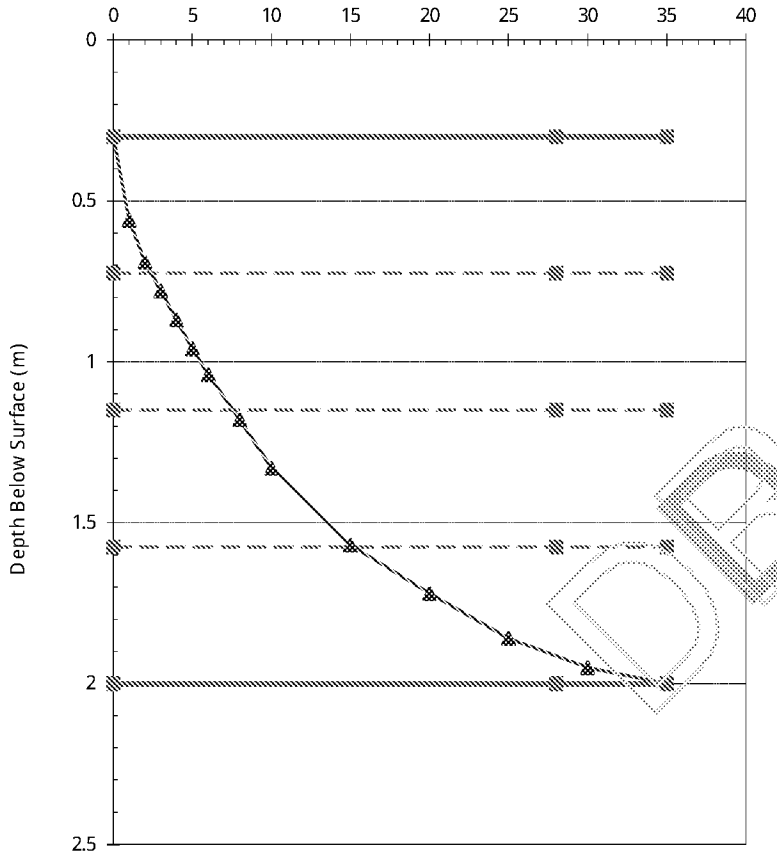
Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP308
Test No:	Test No 1

Filling to Max Water Depth (min)



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:

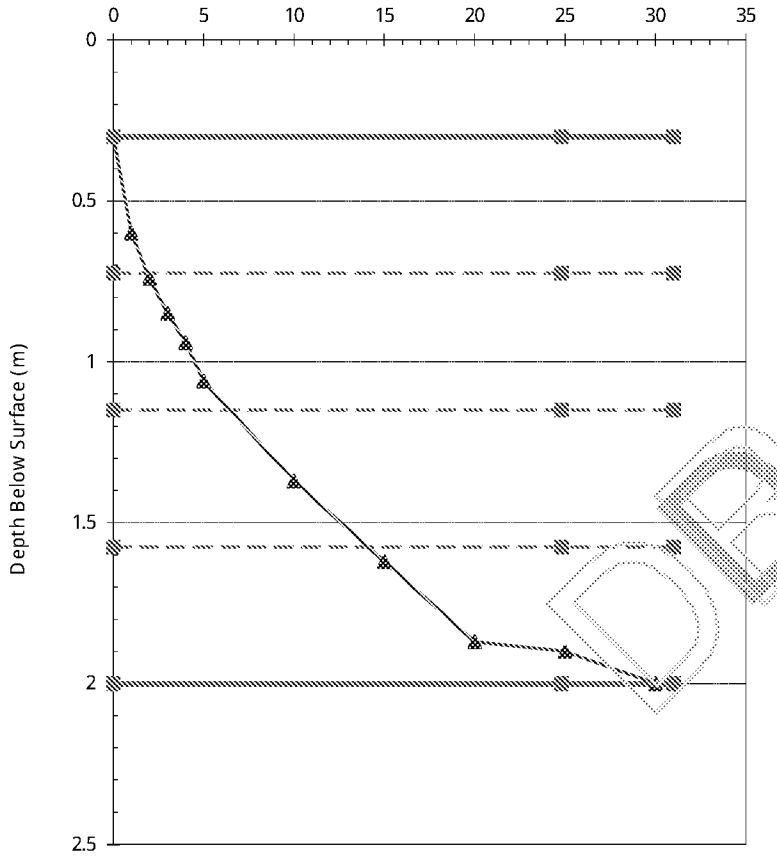
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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:

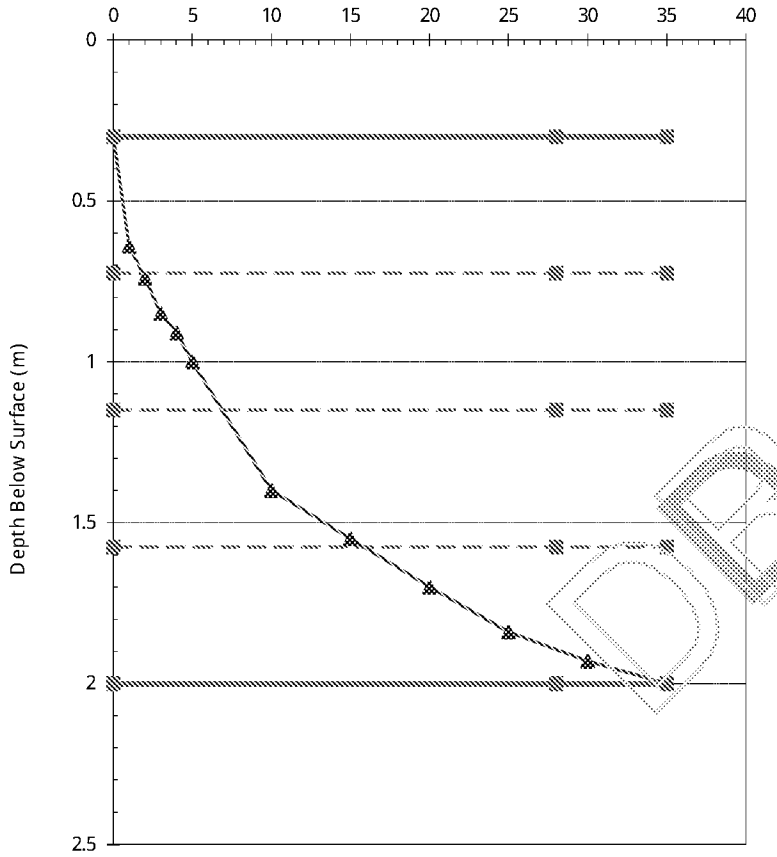
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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:

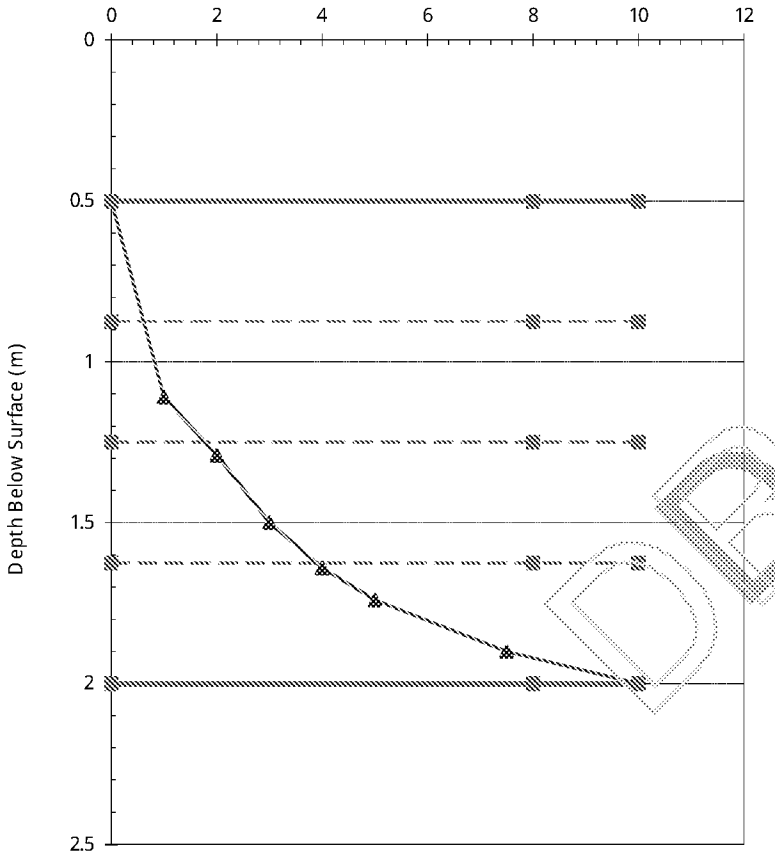
Pit was emptied at finish of test.

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

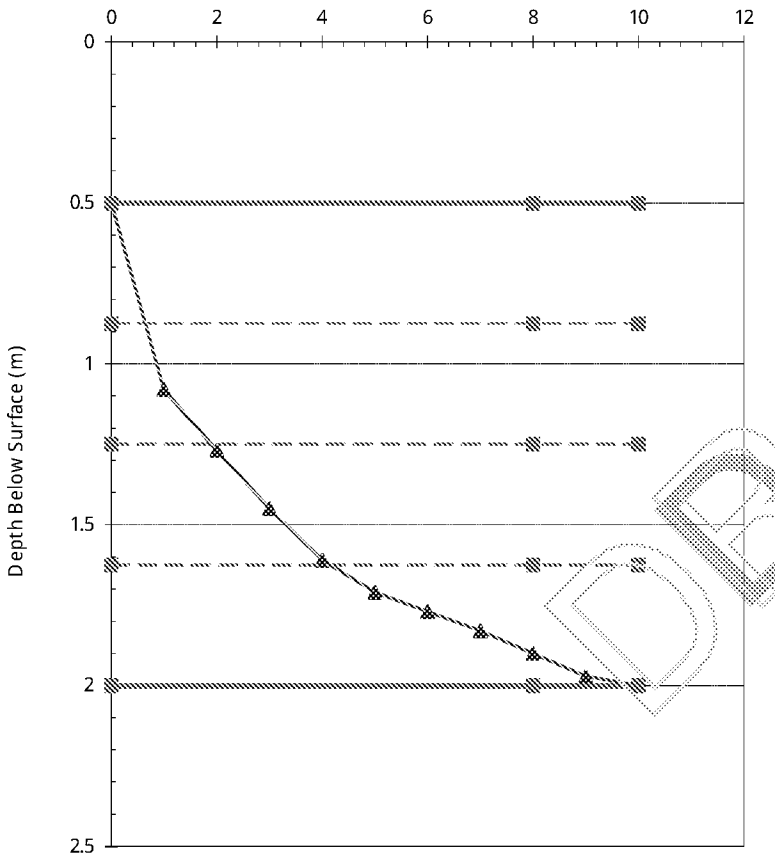
Comments:
Pit was emptied at finish of test.

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.

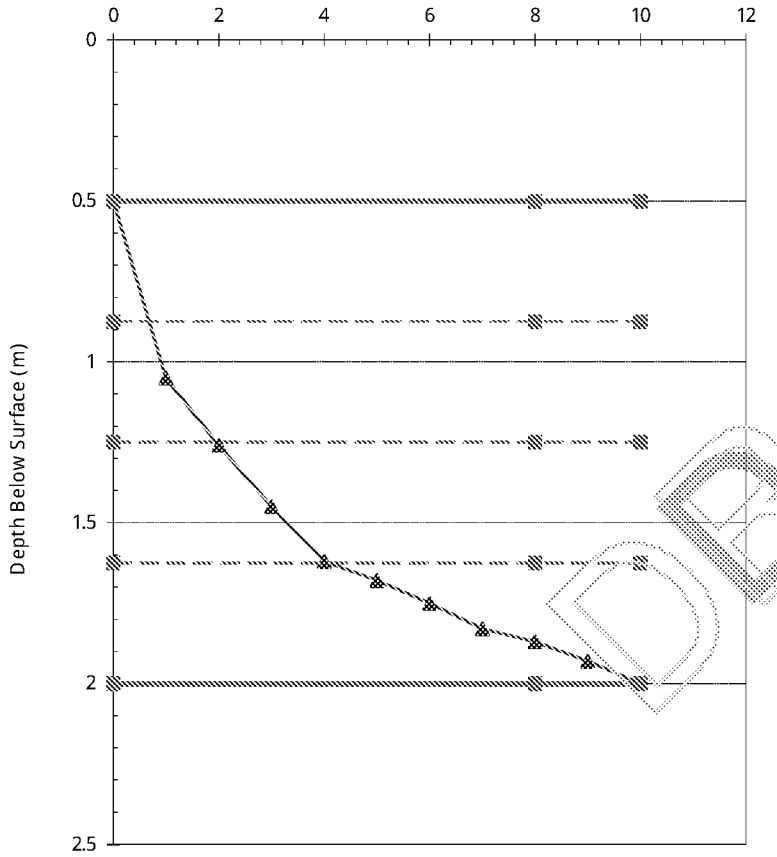
Client:	
Site:	
Tested By:	
Test Date:	05/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP309
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

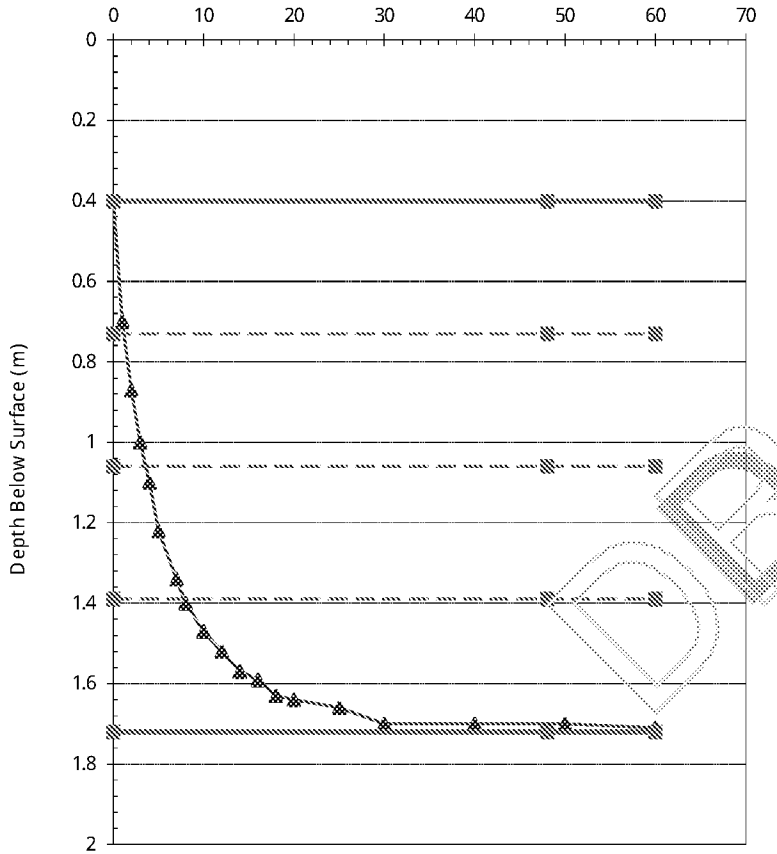
Client:	
Site:	
Tested By:	
Test Date:	05/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 1

Filling to Max Water Depth (min)



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.

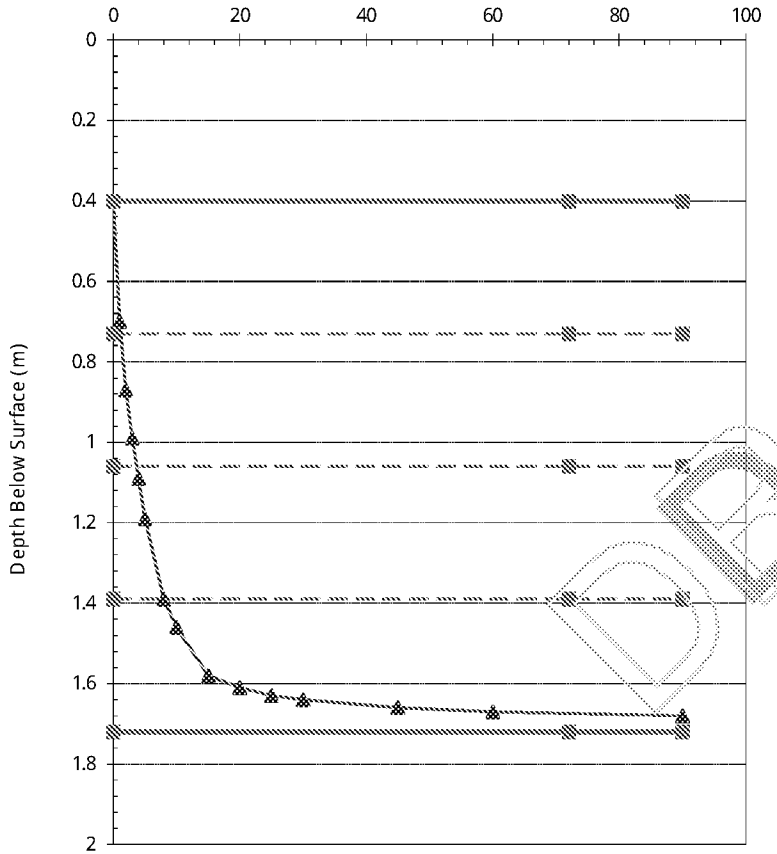
Client:	
Site:	
Tested By:	
Test Date:	05/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 2

Filling to Max Water Depth (min)



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.

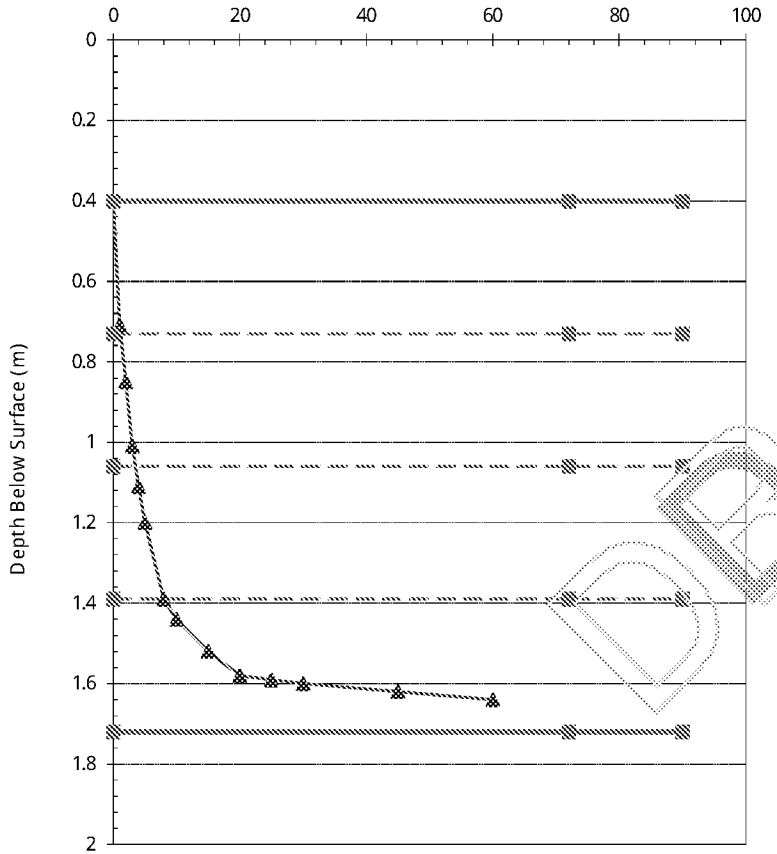
Client:	
Site:	
Tested By:	
Test Date:	06/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP310
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

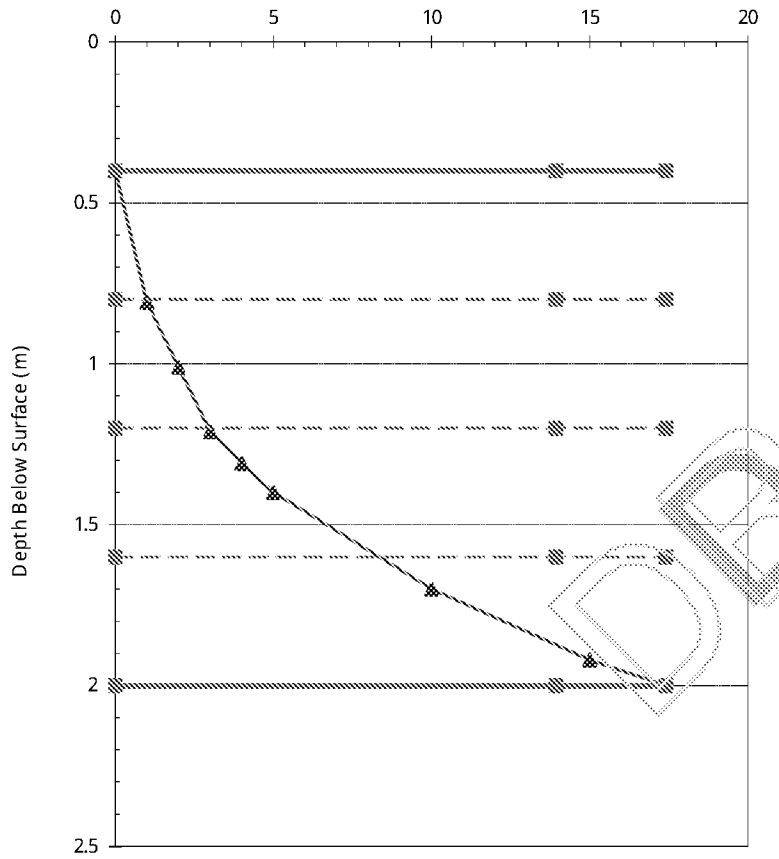
Client:	
Site:	
Tested By:	
Test Date:	07/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 1

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)	0.4
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

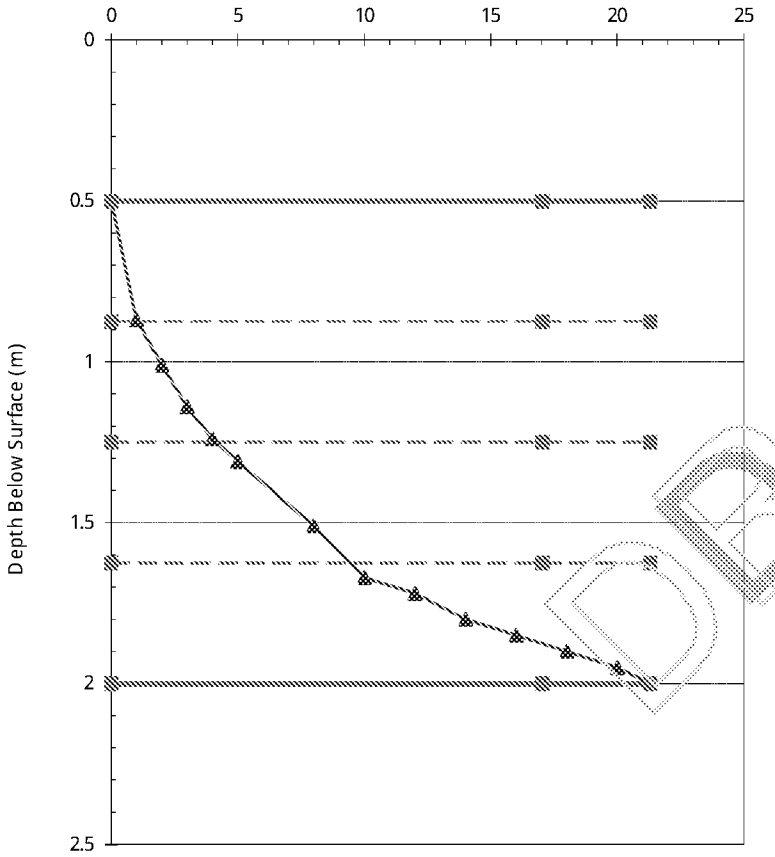
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 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.

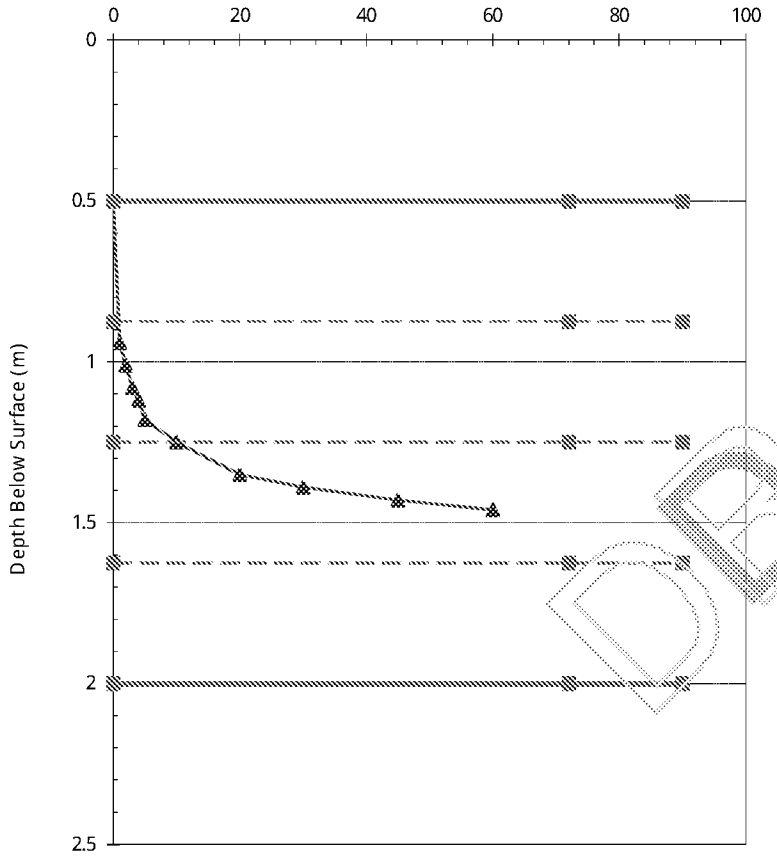
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 3

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

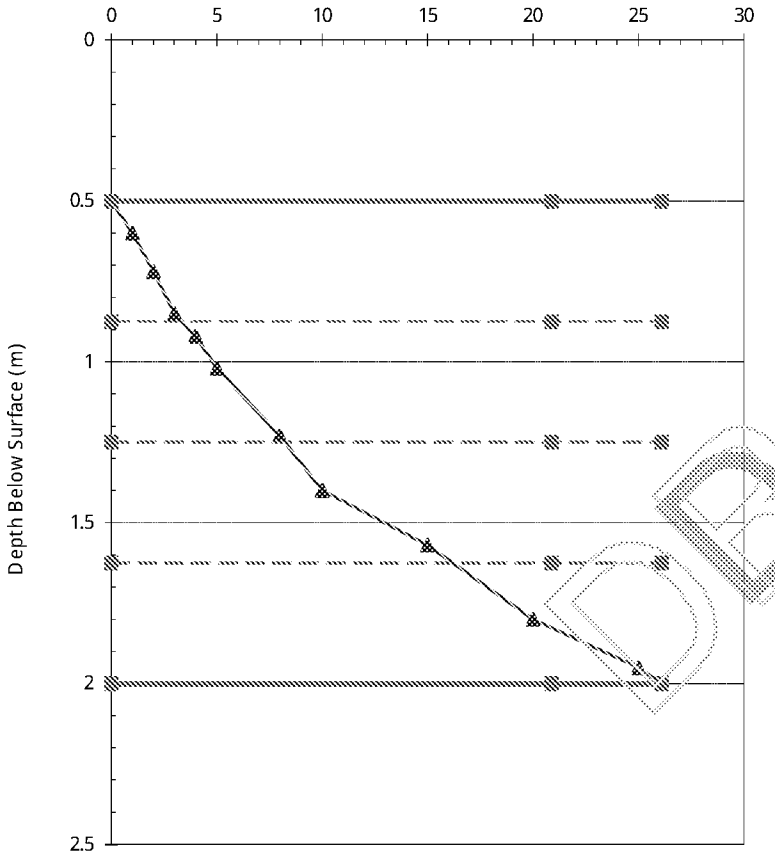
Comments: Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

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

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	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.

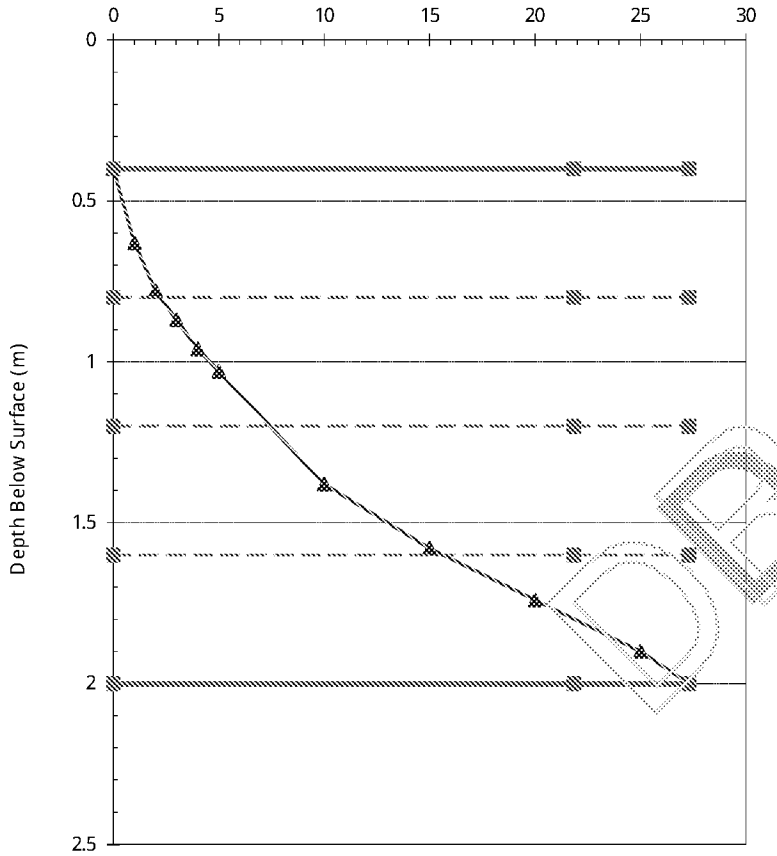
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP312
Test No:	Test No 2

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)	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

Comments:
Pit was emptied at finish of test.

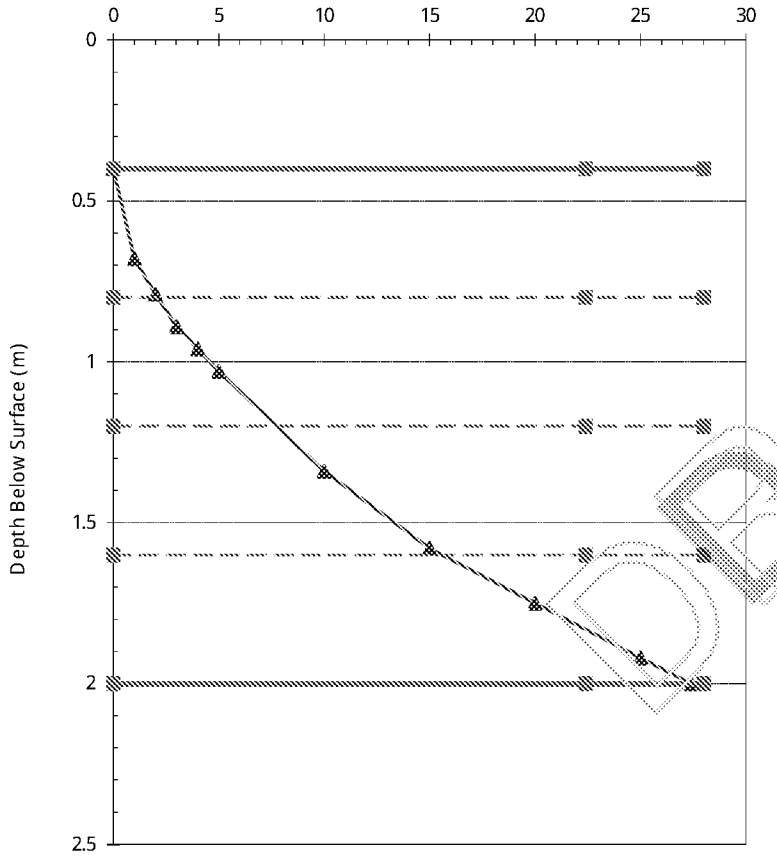
Client:	
Site:	
Tested By:	
Test Date:	12/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP312
Test No:	Test No 3

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

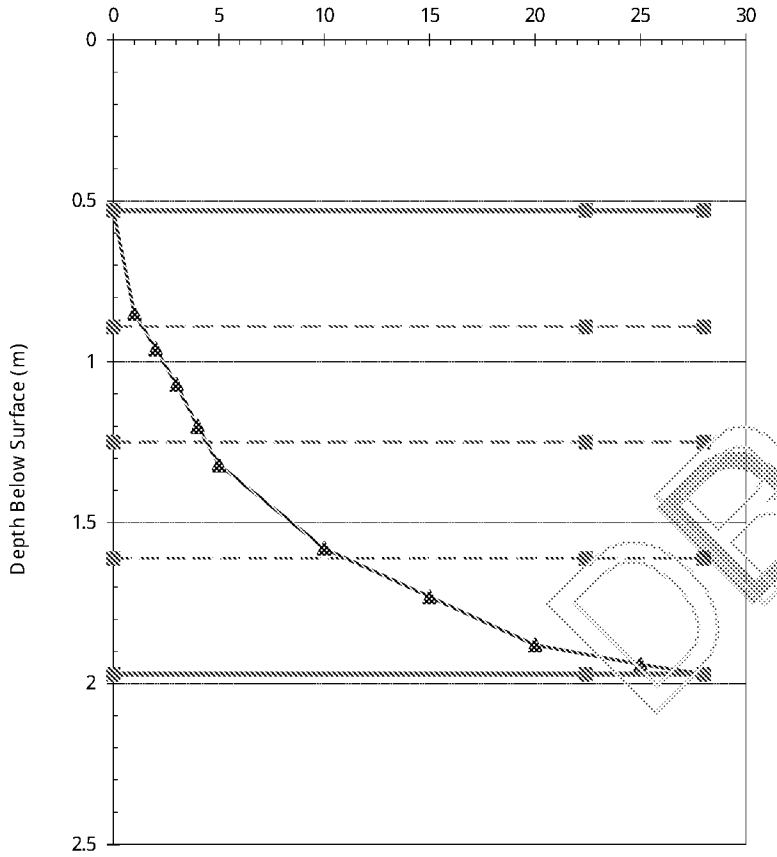
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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:

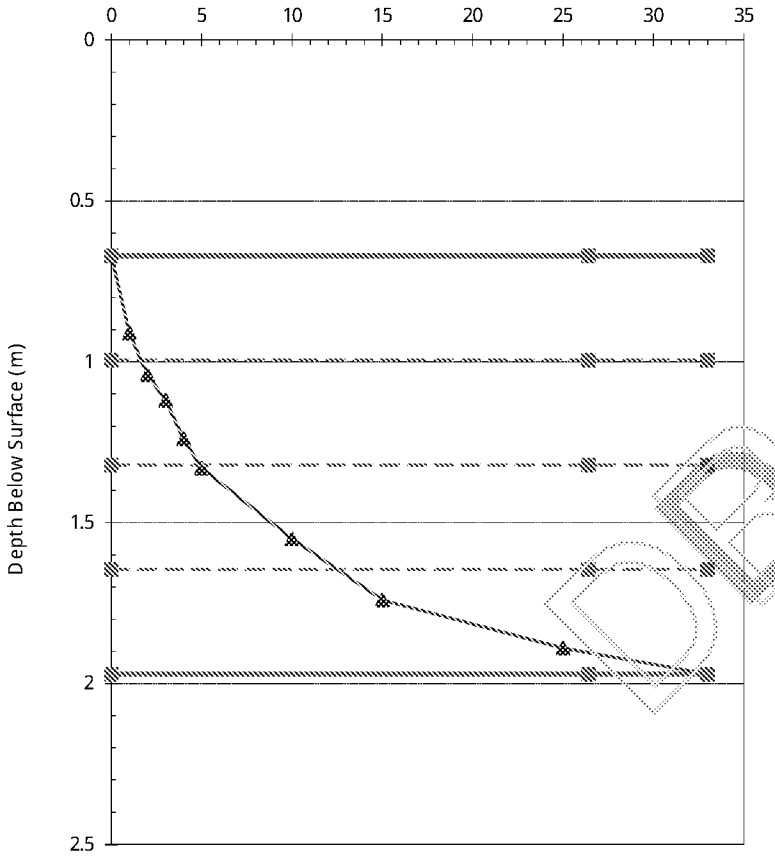
Pit was emptied at finish of test.

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

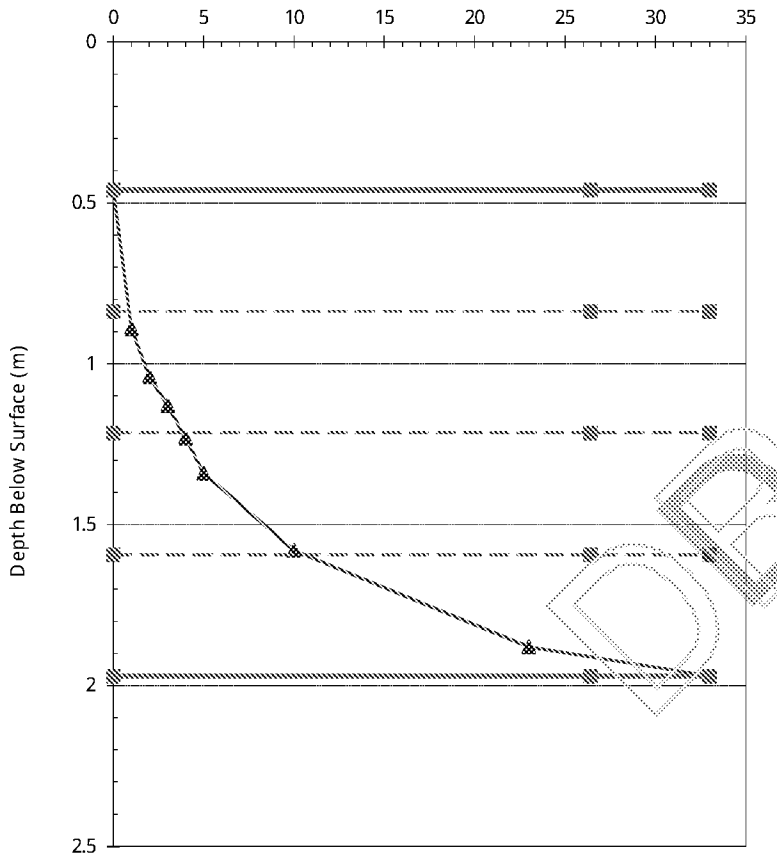
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP313
Test No:	Test No 3



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

Comments:
Pit was emptied at finish of test.

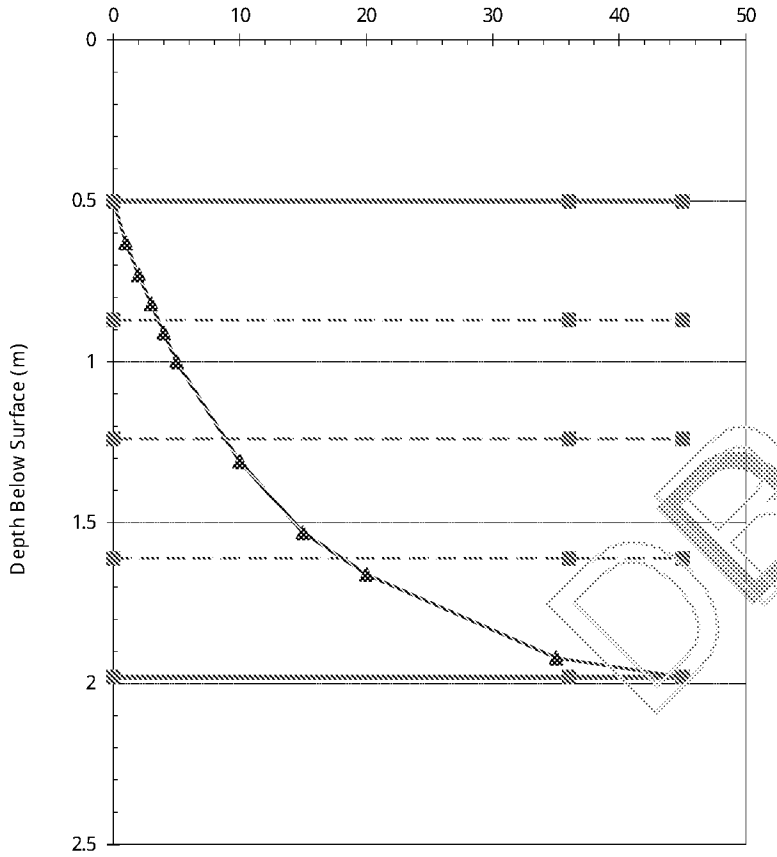
Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP314
Test No:	Test No 1

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)	0.5
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:

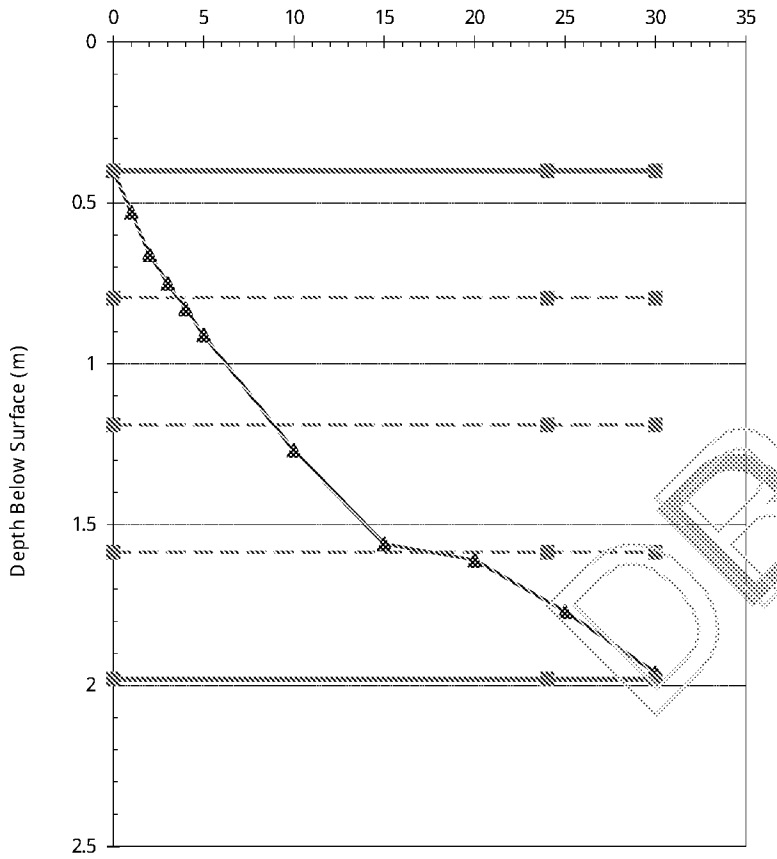
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP314
Test No:	Test No 2



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

Comments:

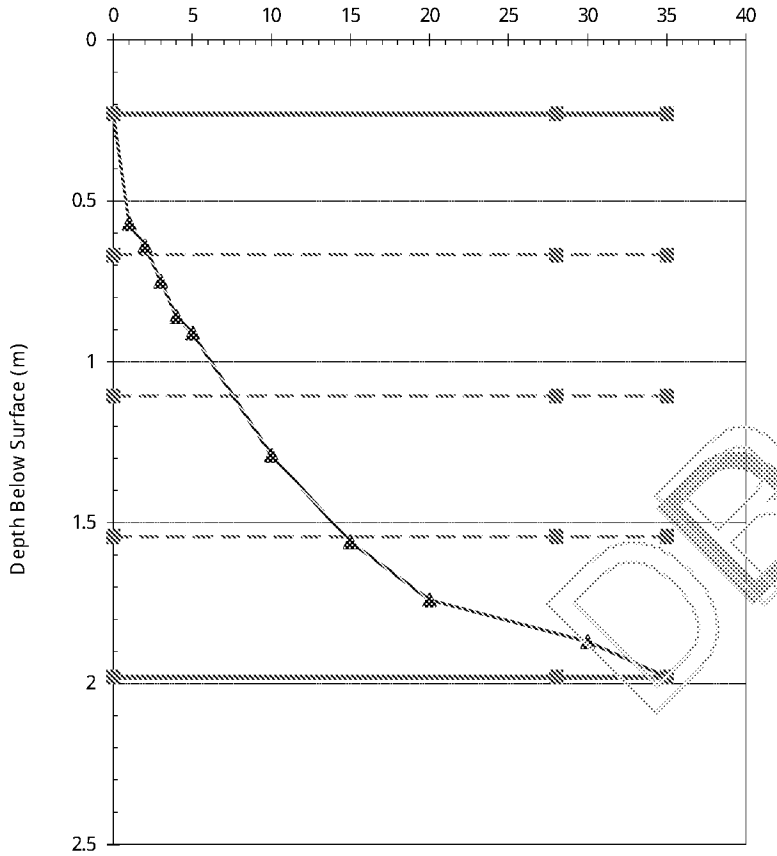
Pit was nearly emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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:

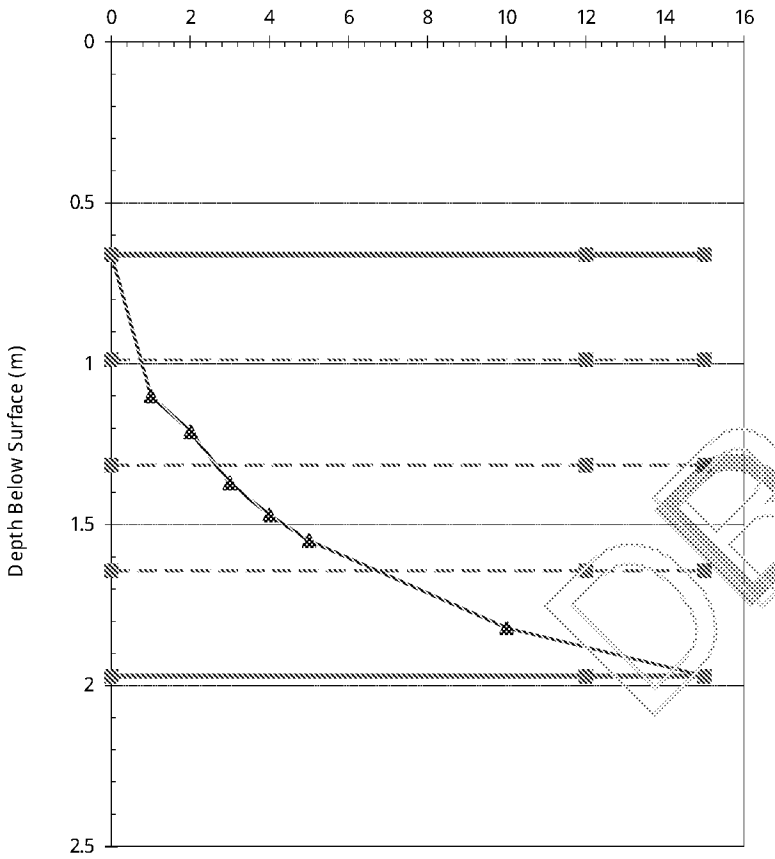
Pit was emptied at finish of test.

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.

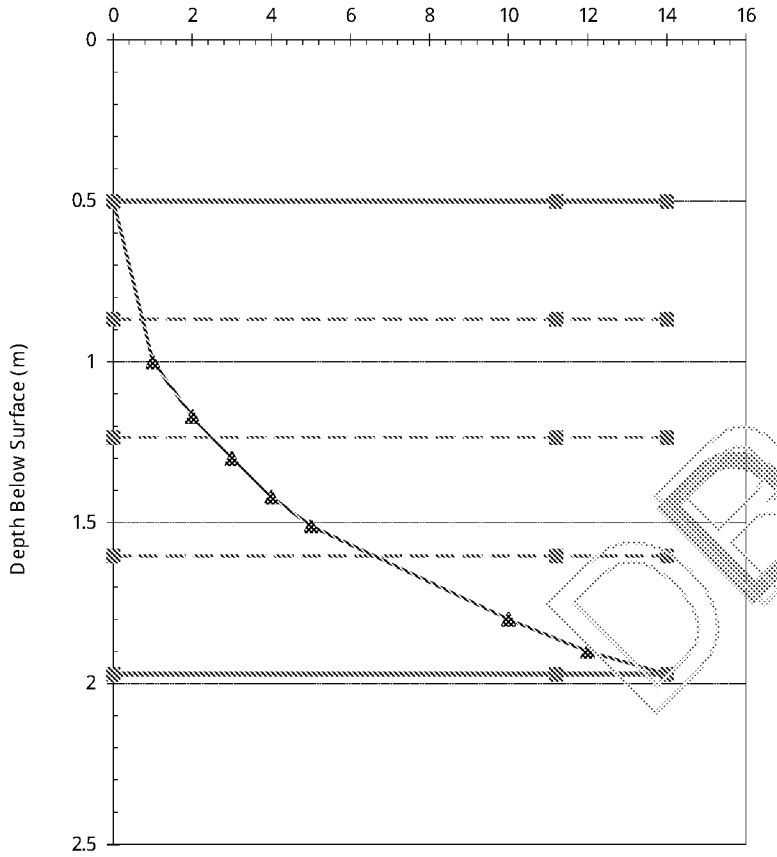
Client:	
Site:	
Tested By:	
Test Date:	15/03/19

OBJECTION

BRE Digest 365 - Soakage Test

Test Hole No:	TP315
Test No:	Test No 2

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:

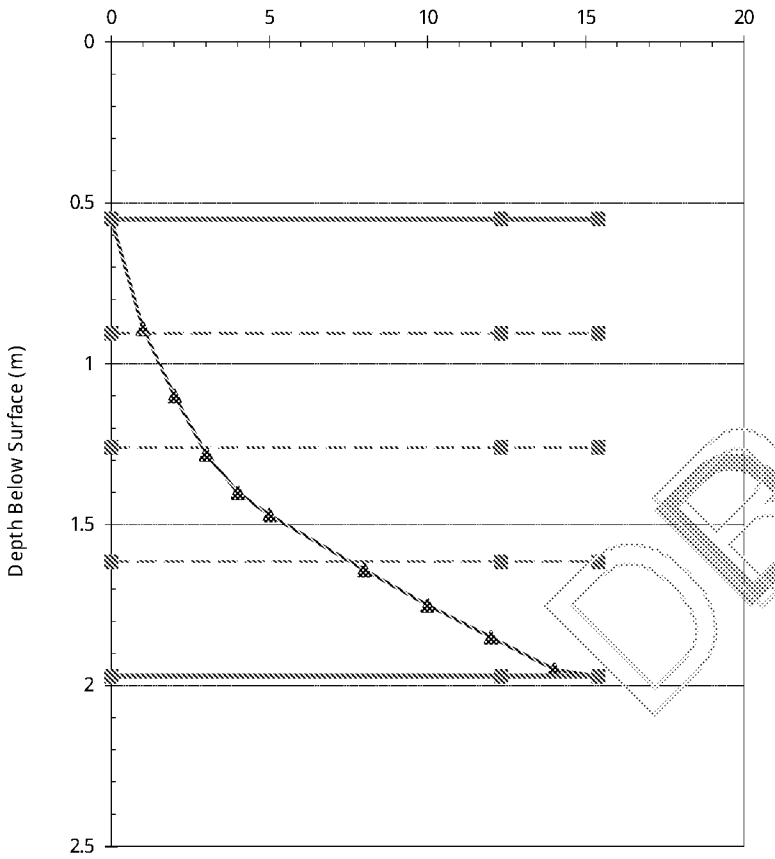
Pit was emptied at finish of test.

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

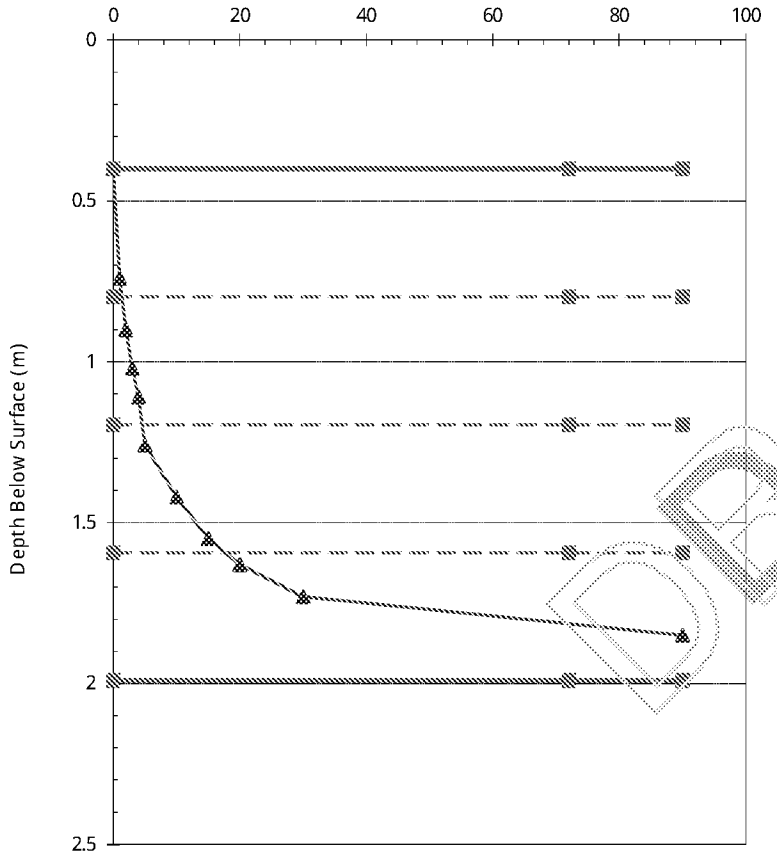
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



Test Hole No:	TP316
Test No:	Test No 1

leap environmental

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.

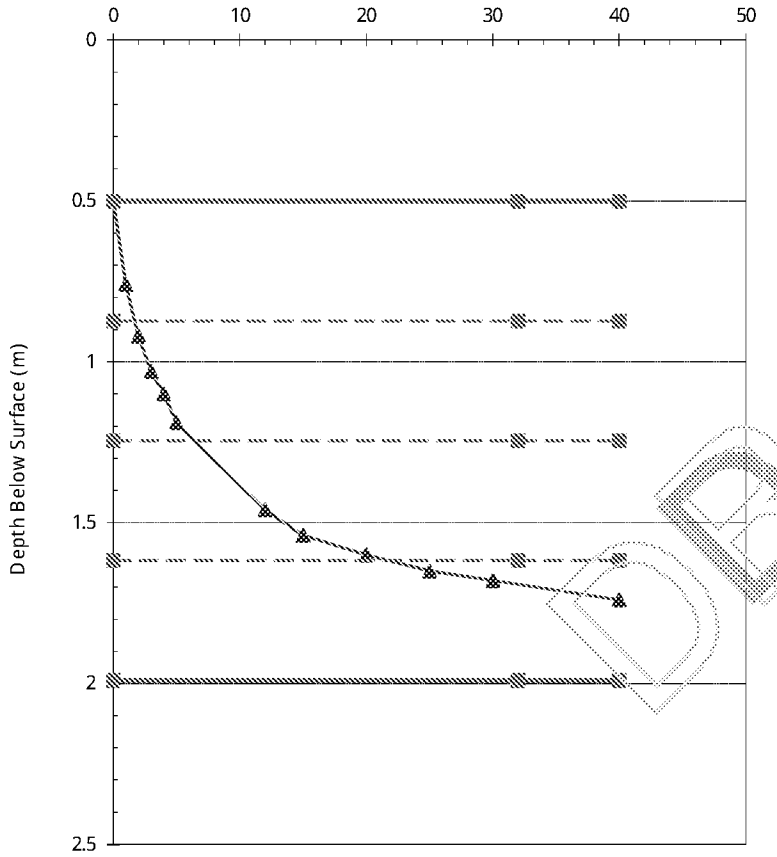
Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP316
Test No:	Test No 2

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

Comments:

Pit was nearly emptied at finish of test.

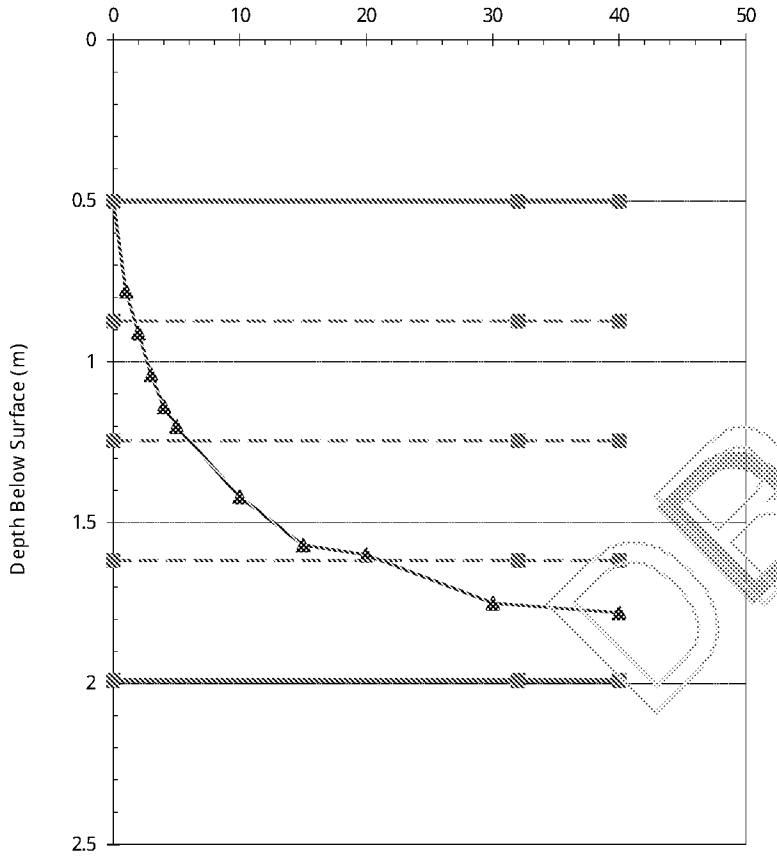
Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP316
Test No:	Test No 3

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)	1.28
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.

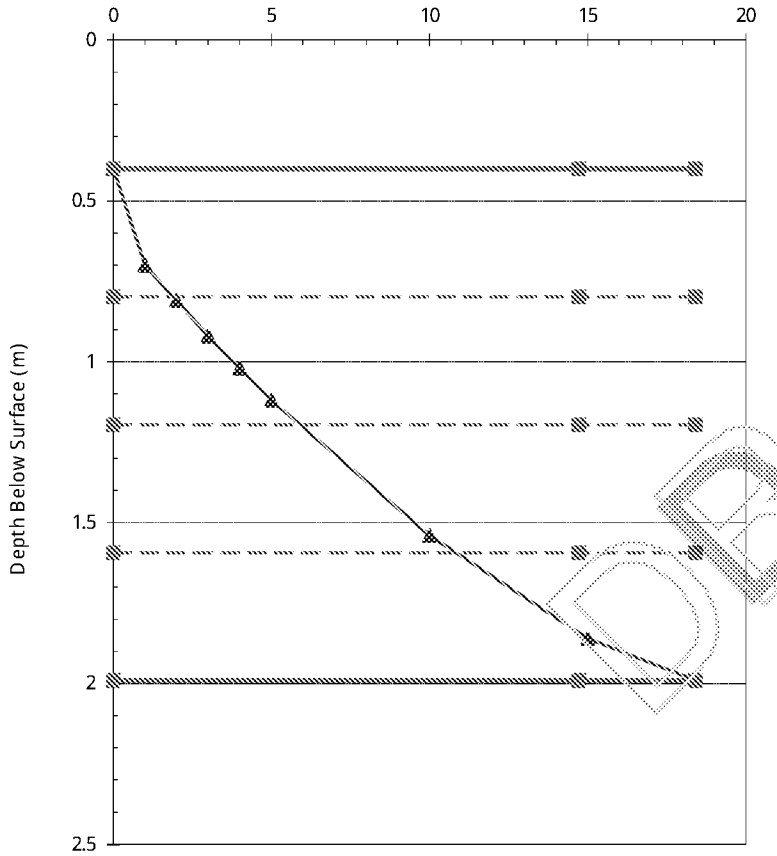
Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 1

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

Comments:
Pit was emptied at finish of test.

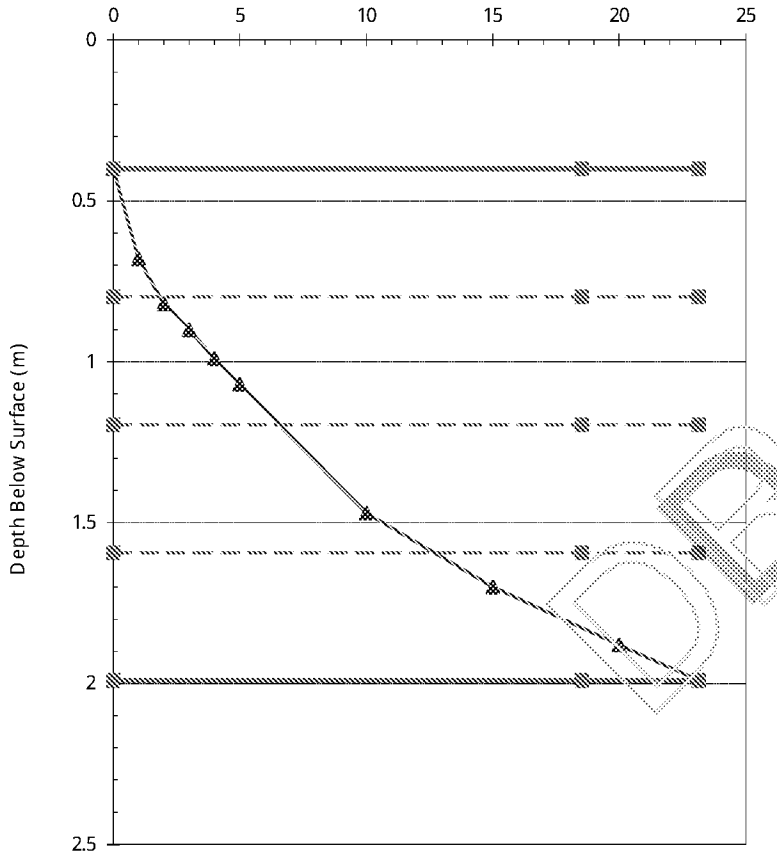
Client:	
Site:	
Tested By:	
Test Date:	14/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 2

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)	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

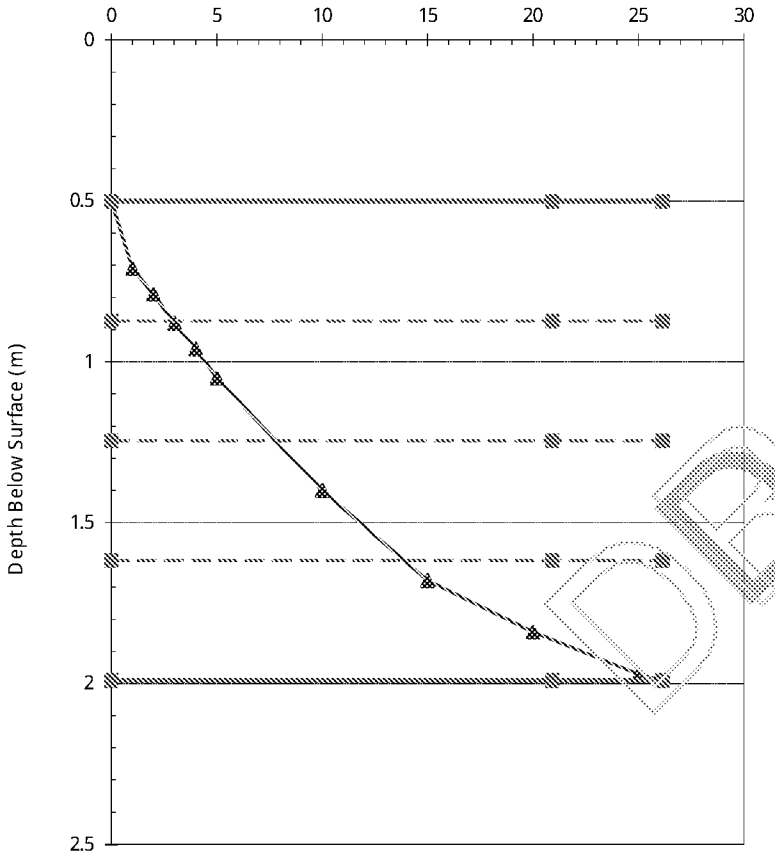
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP317
Test No:	Test No 3



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

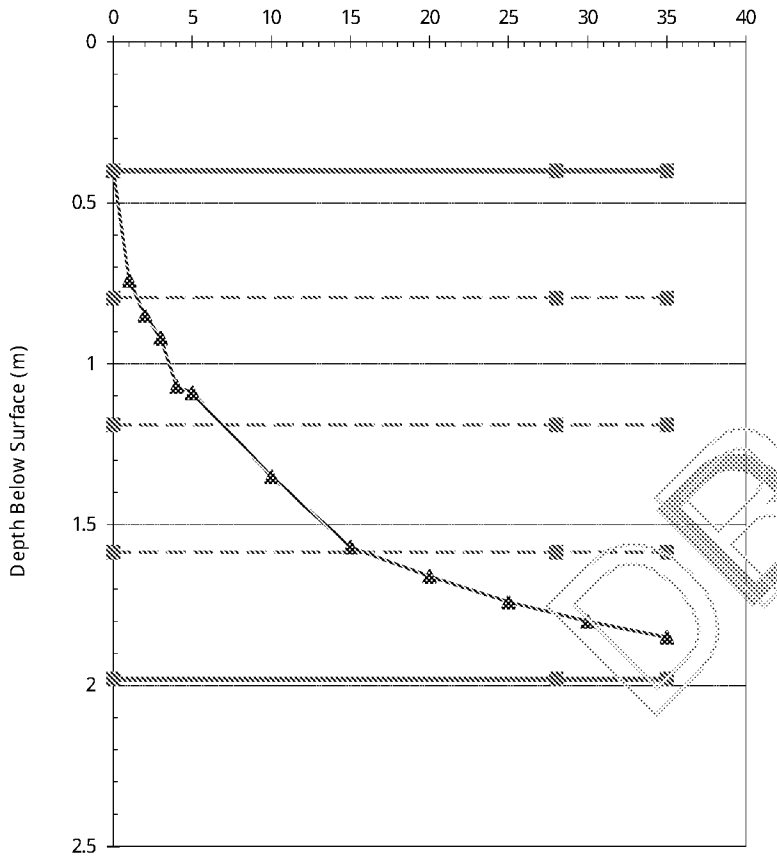
Comments:
Pit was emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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.

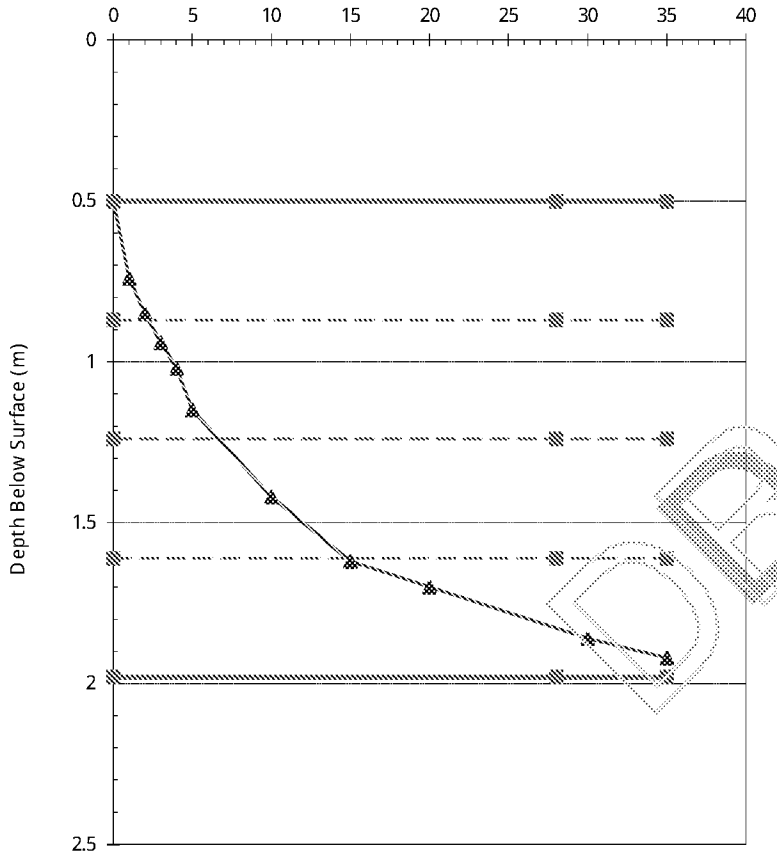
Client:	
Site:	
Tested By:	
Test Date:	14/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP318
Test No:	Test No 2

Filling to Max Water Depth (min)



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:

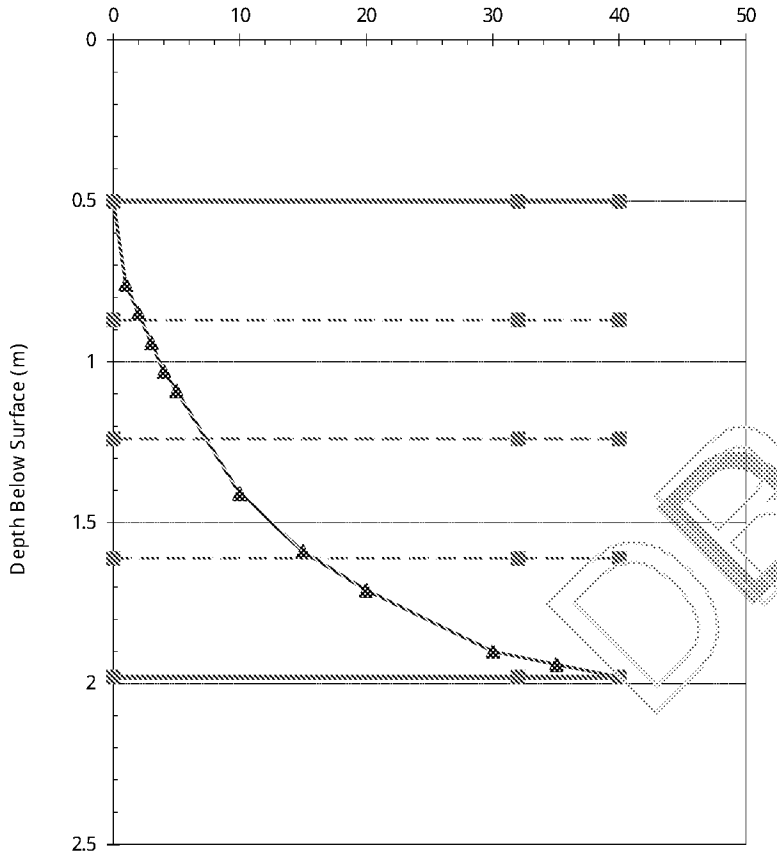
Pit was nearly emptied at finish of test.

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

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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:

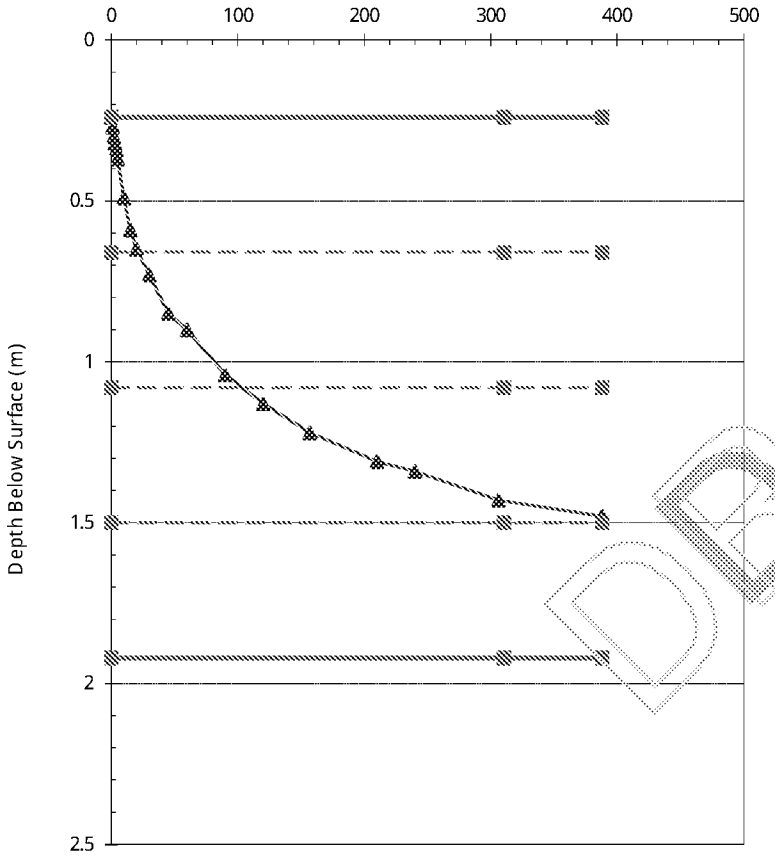
Pit was emptied at finish of test.

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.

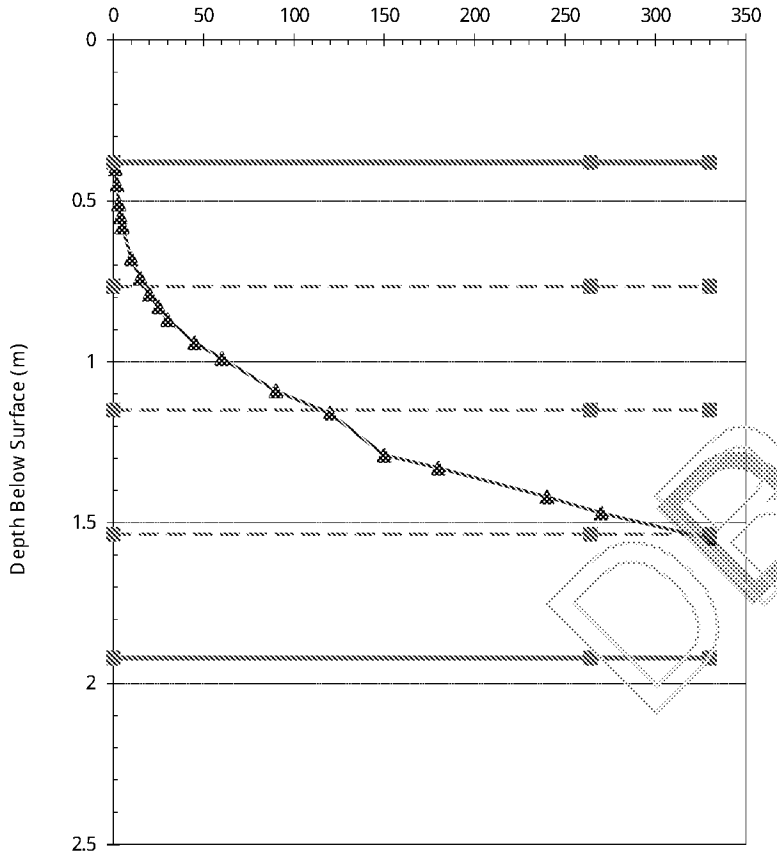
Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 2

Filling to Max Water Depth (min)



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.

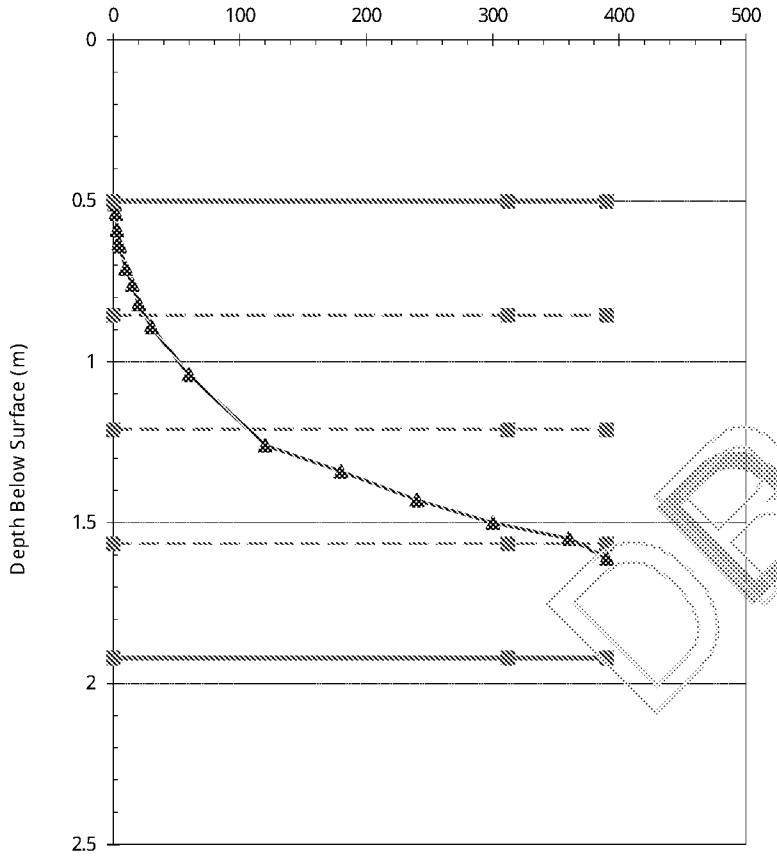
Client:	
Site:	
Tested By:	
Test Date:	18/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 3

Filling to Max Water Depth (min)



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.

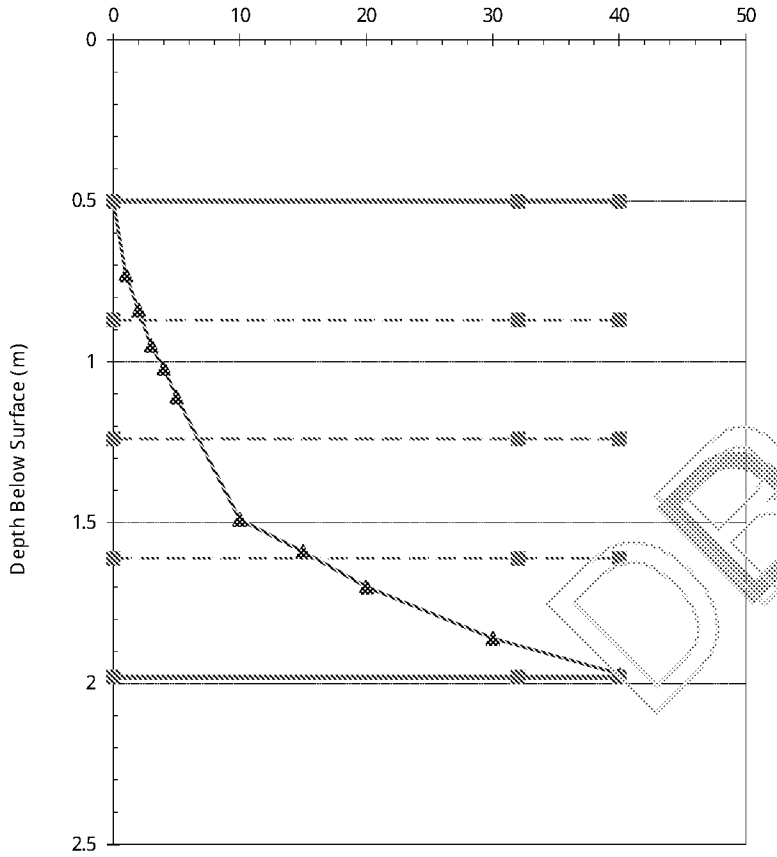
Client:	
Site:	
Tested By:	
Test Date:	19/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP320
Test No:	Test No 1

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)	1.47
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:

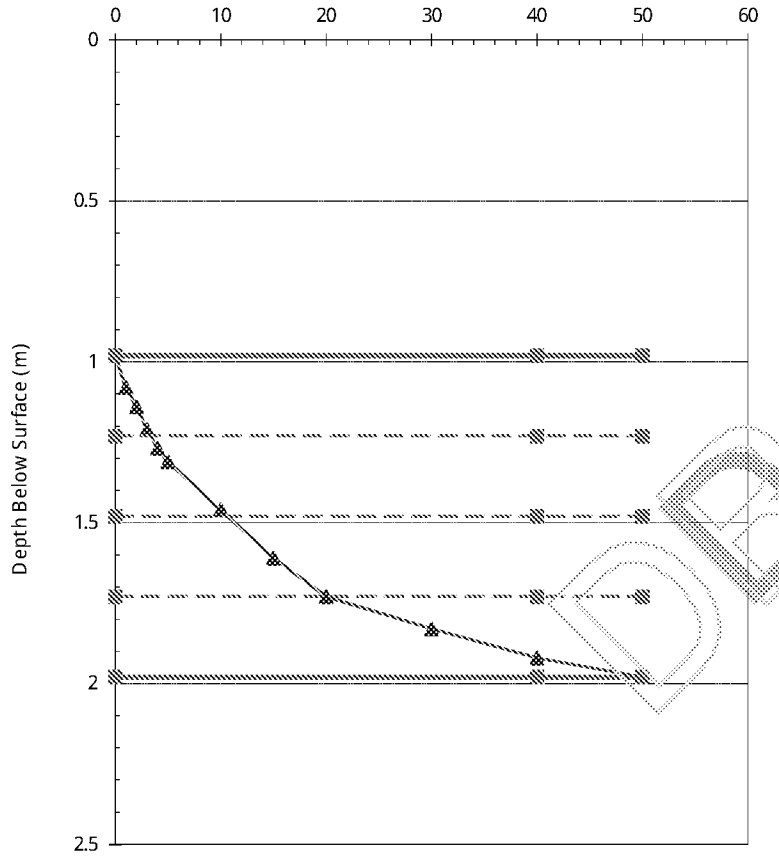
Pit was nearly emptied at finish of test.

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

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BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



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.

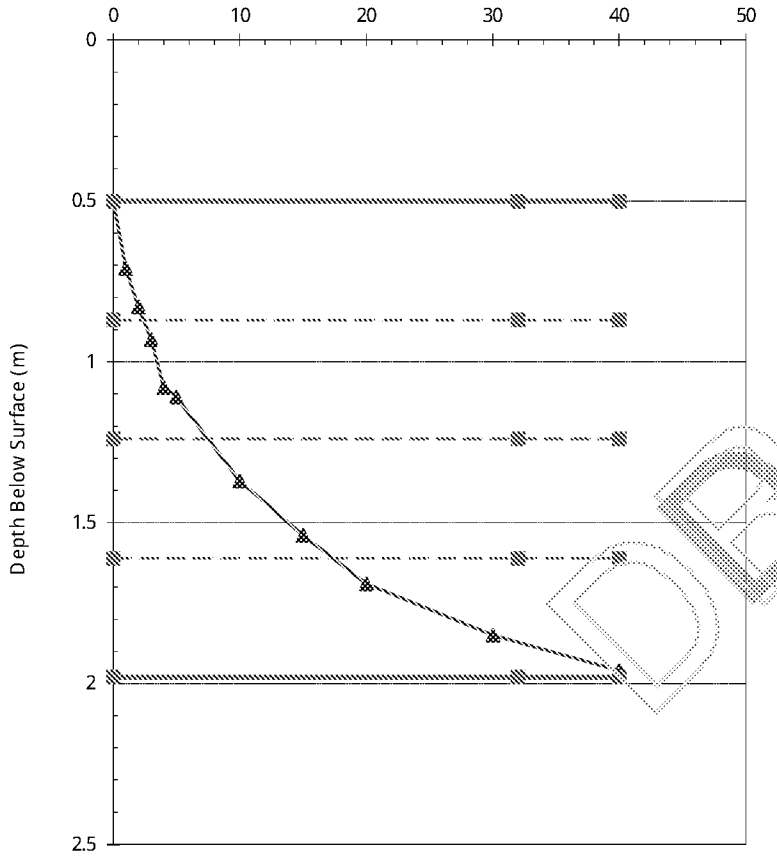
Client:	
Site:	
Tested By:	
Test Date:	15/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP320
Test No:	Test No 3

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

Comments:

Pit was nearly emptied at finish of test.

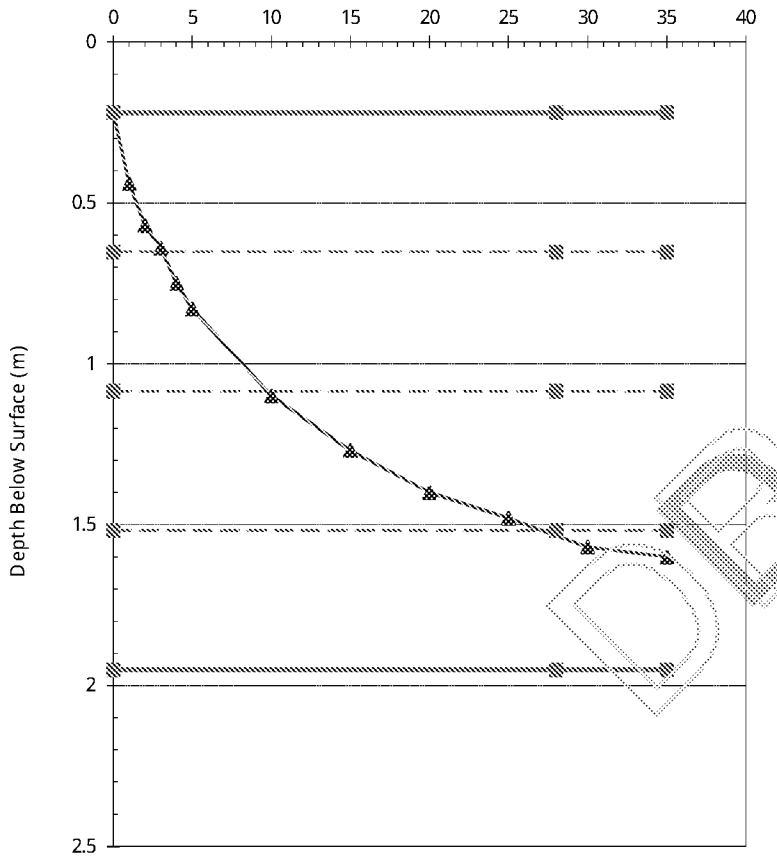
Client:	
Site:	
Tested By:	
Test Date:	15/03/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 1

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)	0.22
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:

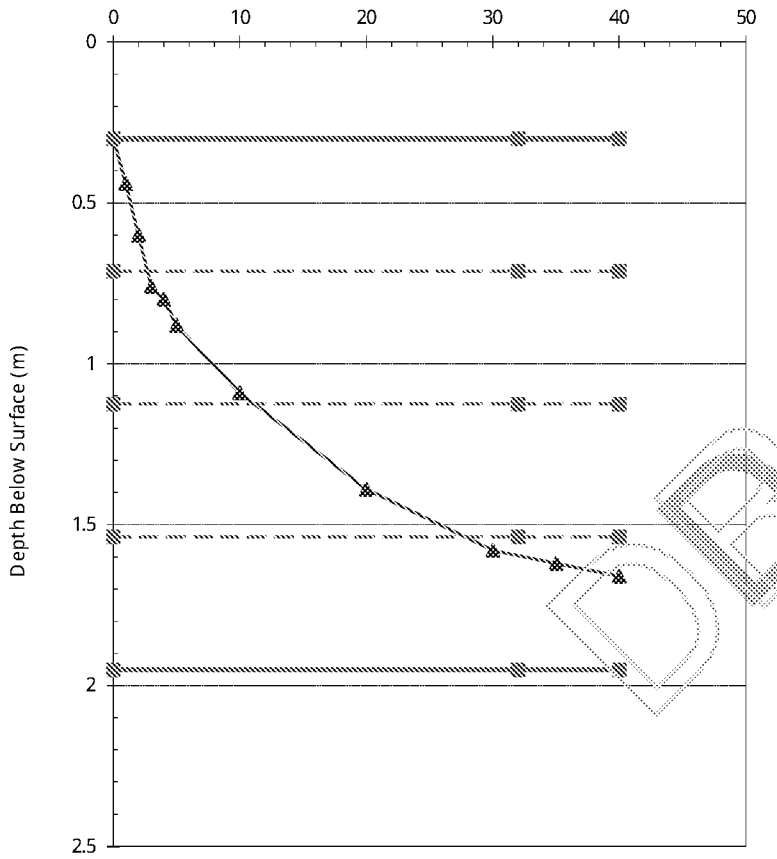
Pit was nearly emptied at finish of test.

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

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BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 2



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

Comments:

Pit was nearly emptied at finish of test.

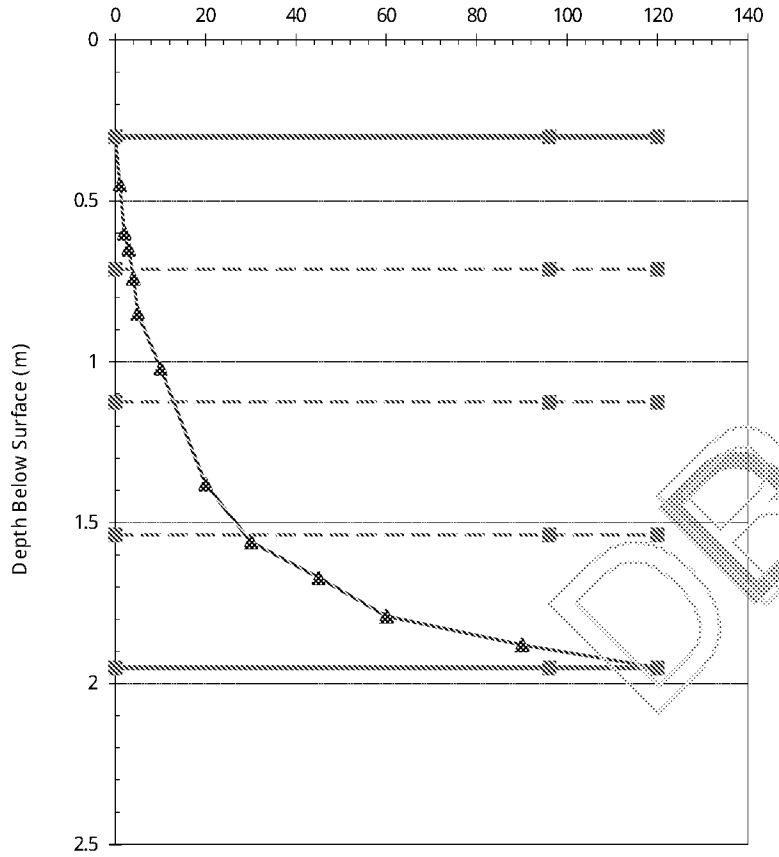
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP321
Test No:	Test No 3

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)	1.65
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.

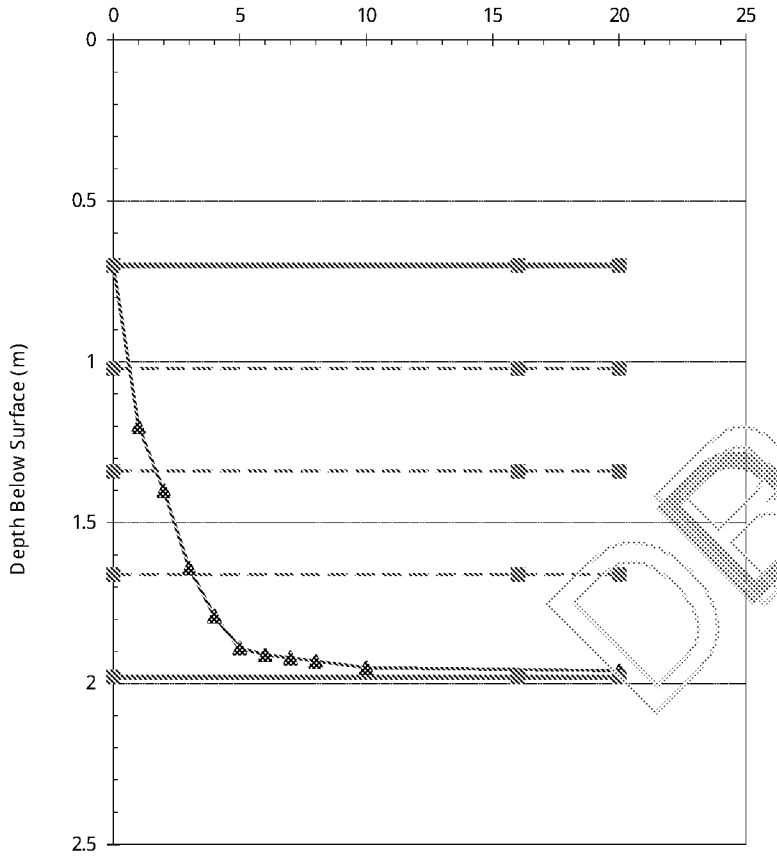
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP322
Test No:	Test No 1

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)	0.7
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.

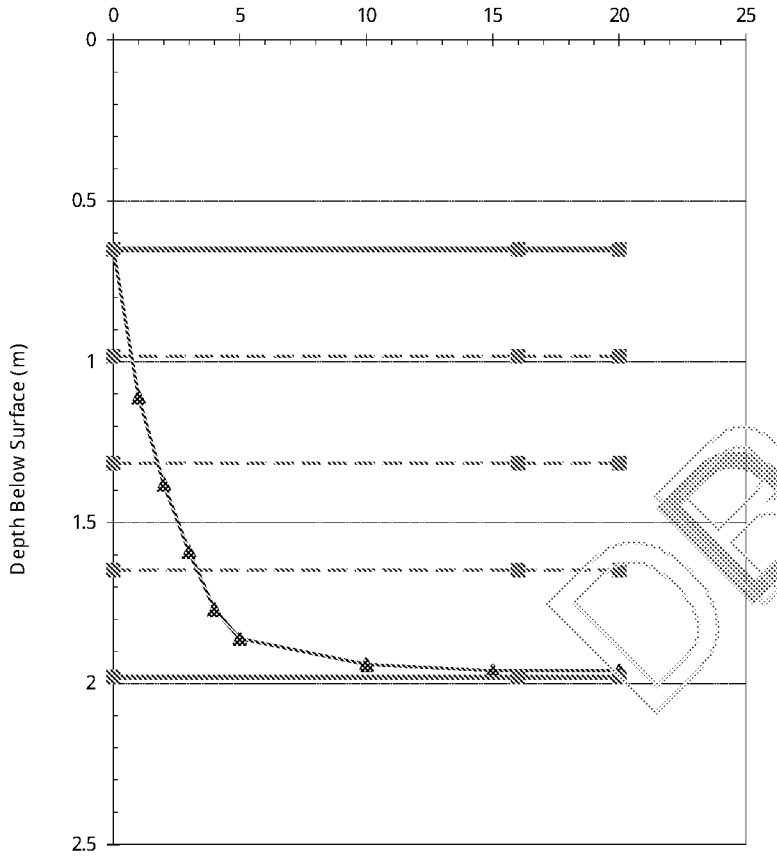
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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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.

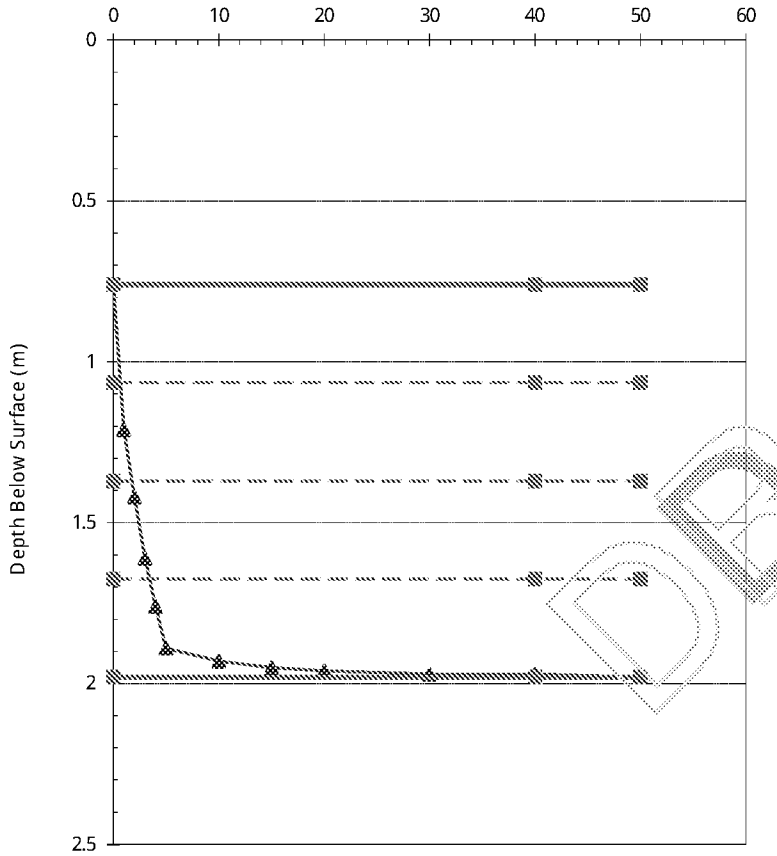
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP322
Test No:	Test No 3

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)	0.76
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.

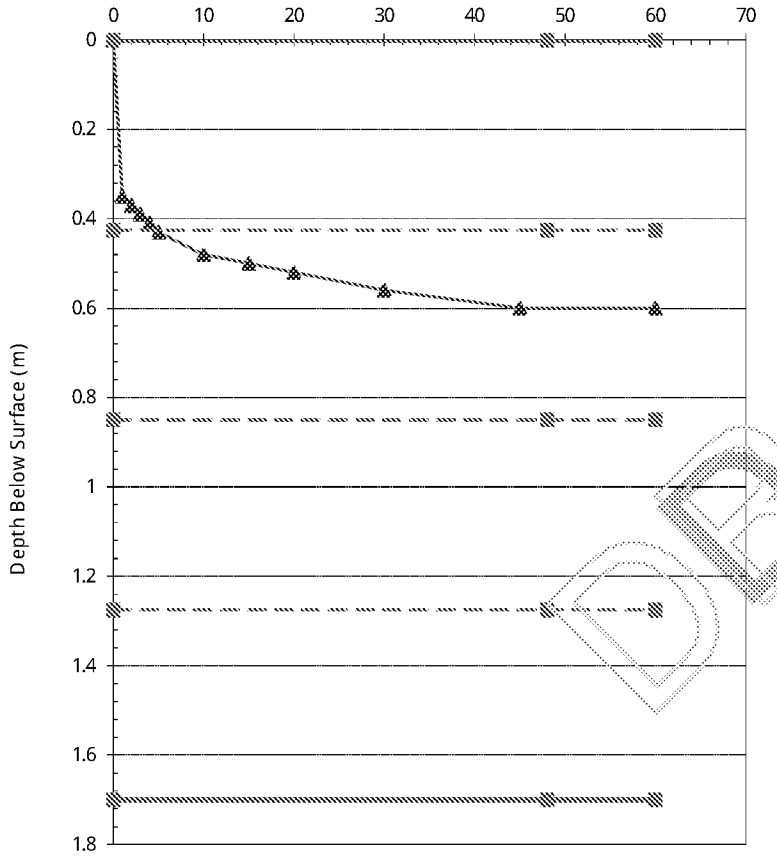
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 1

Filling to Max Water Depth (min)



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

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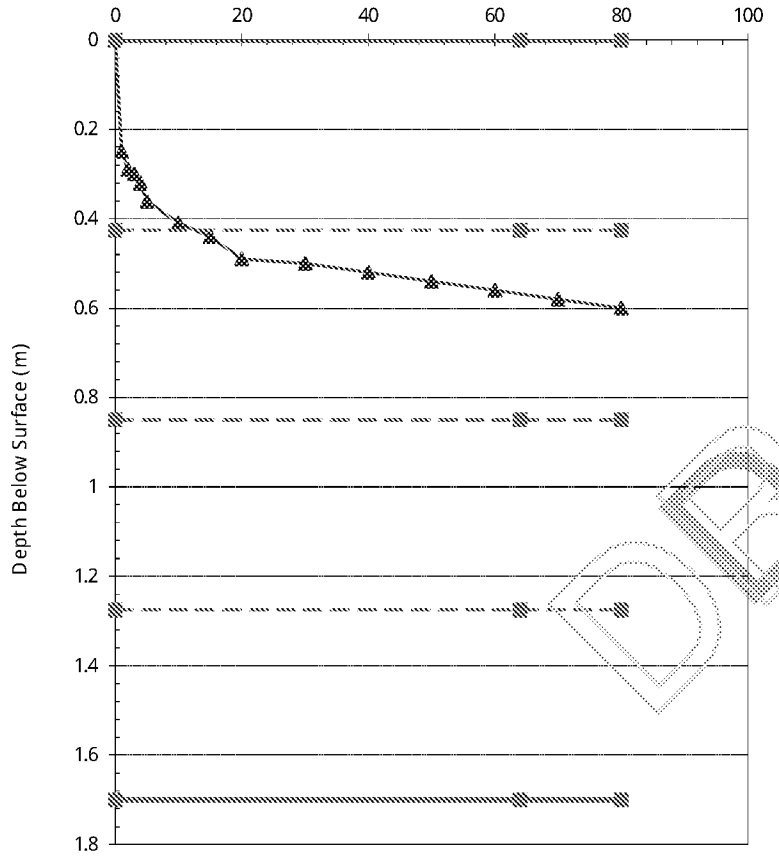
Comments:	Water level fell to 75% -- 50% max water depth, calculations were based on actual fall of water level Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

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 2

Filling to Max Water Depth (min)



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

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.

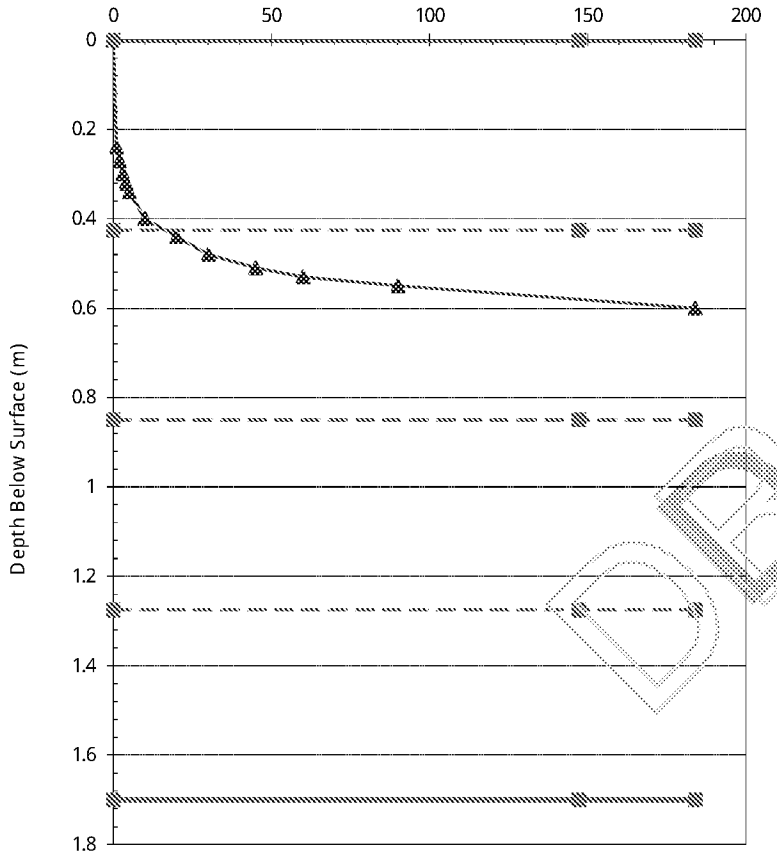
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 3

Filling to Max Water Depth (min)



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

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.

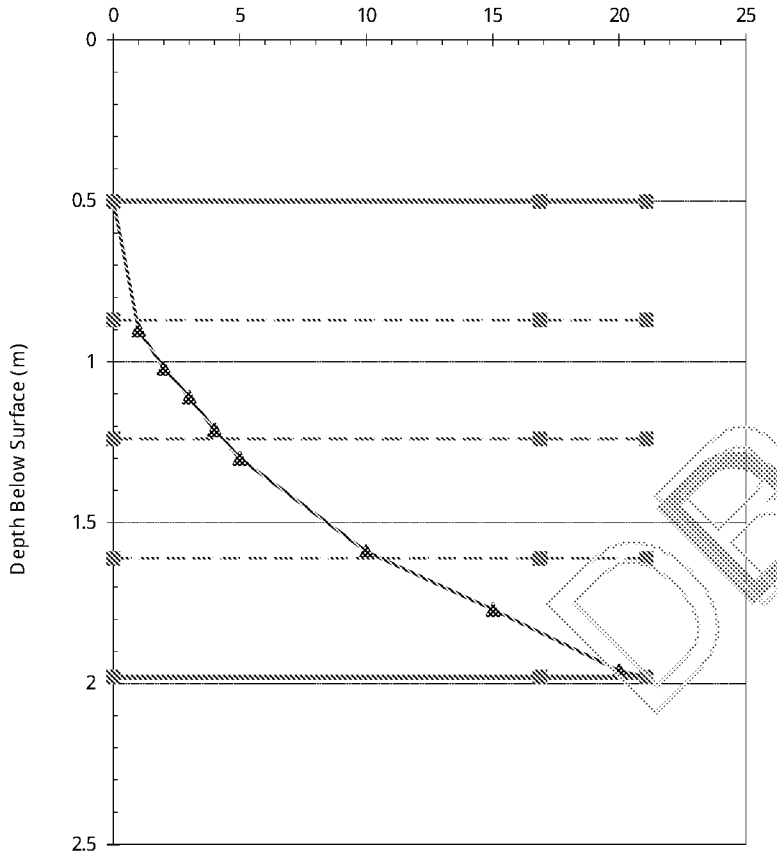
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	19/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 1

Filling to Max Water Depth (min)



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.

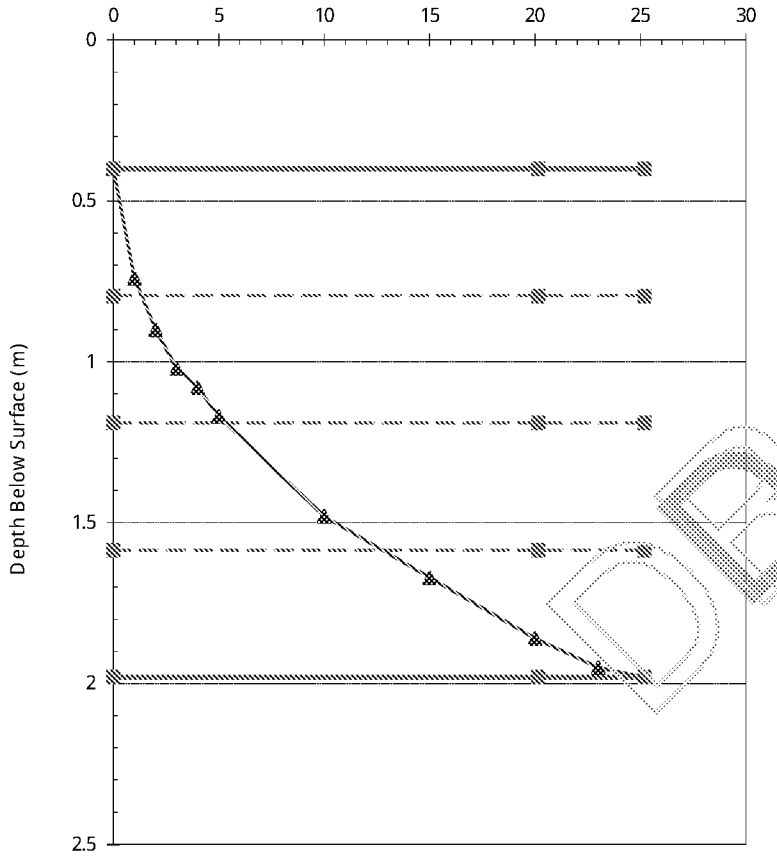
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	20/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 2

Filling to Max Water Depth (min)



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.

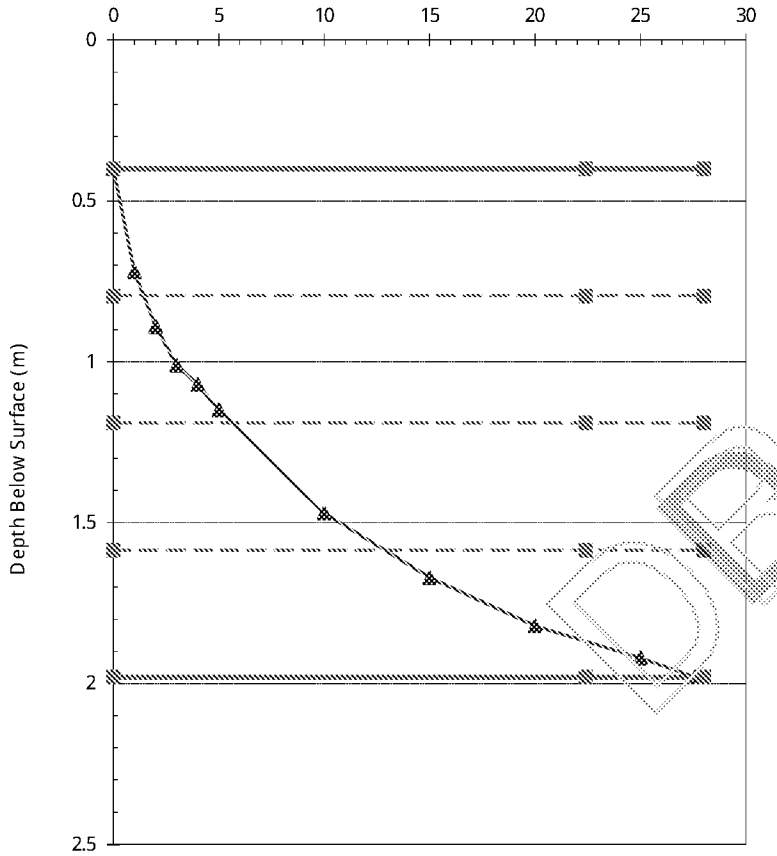
Client:	Dandara Homes
Site:	Fontwell
Tested By:	MN
Test Date:	20/03/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP324
Test No:	Test No 3

Filling to Max Water Depth (min)



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.	

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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.	

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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	

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

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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 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.	

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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			

DRAFT

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.

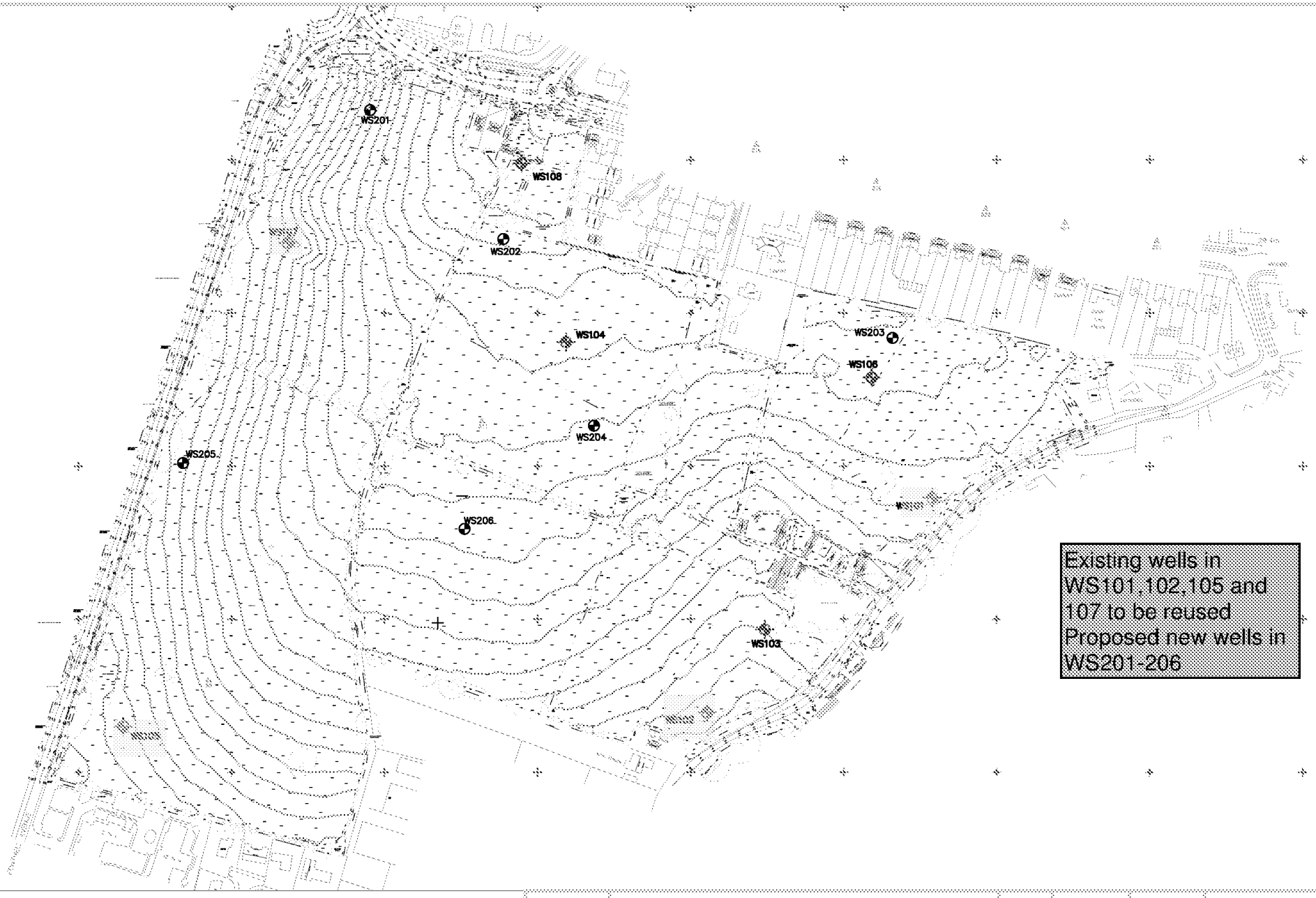
DRAFT

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

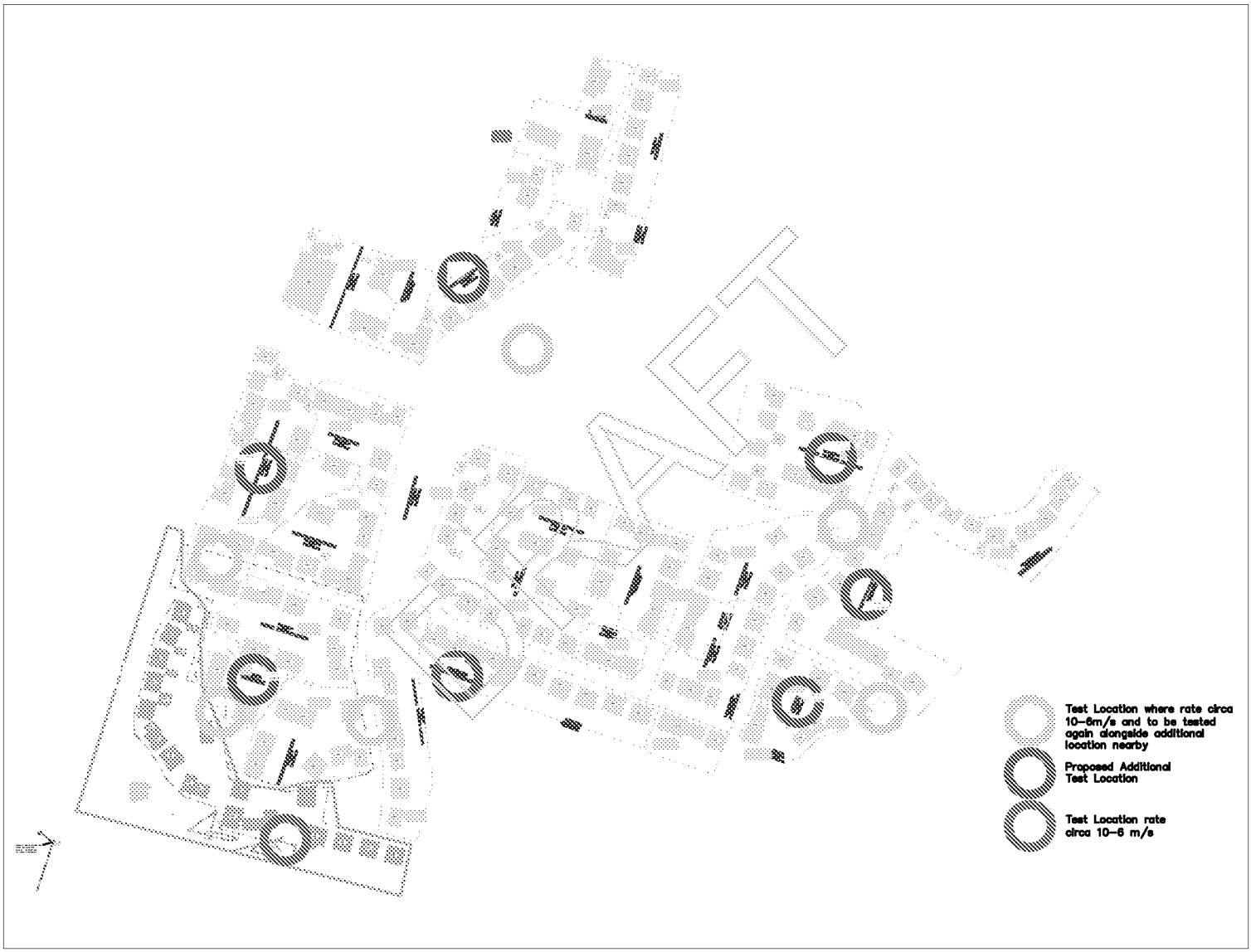
Fontwell Groundwater Level (mbgl)

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				

ARUN DISTRICT COUNCIL WA/48/19/RES


Test Location where rate circa 10–6m/s and to be tested again alongside additional location nearby
Proposed Additional Test Location
Test Location rate circa 10–6 m/s



leap environmental	Client:	Dandara Homes	Date:	10/07/19	Project ID:	LP1981
	Project:	Fontwell Avenue, Fontwell.	Title:	Proposed Development	Fig. No.	1

ARUN DISTRICT COUNCIL WA/48/19/RES

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP401
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 01/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): Depth 2.00 — 2.15 × 0.53	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Light greyish brown slightly gravelly silty TOPSOIL with abundant rootlets.
							Medium dense - dense greyish brown slightly clayey silty GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded flint with occasional cobbles. Becomes orange-brown with depth.
				2.00			End of pit at 2.00 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

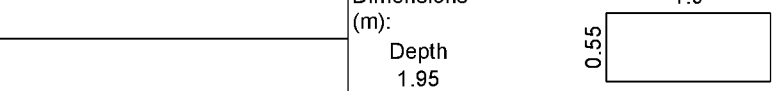
AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]m

Trial Pit Log

Trialpit No
TP402
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 01/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): Depth 1.95	Scale 1:25
Client: Dandara Homes			Logged ADC



Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Light greyish silty TOPSOIL with occasional gravel of fine to coarse flint.
				0.90			Medium dense reddish brown clayey GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded flint.
				1.60			Firm becoming stiff dark orangish brown slightly gravelly slightly silty CLAY. Gravel of fine - medium sub-angular flint. *Hand Pen at 1 m = 230 kPa*
				1.95			Stiff off-white mottled pale yellow slightly sandy clayey SILT (Chalk Head)
							End of pit at 1.95 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

AGS

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The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP403
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 01/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): Depth 2.00 — 1.9 × 0.34	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Light greyish brown slightly gravelly clayey silty TOPSOIL. Gravel is fine to medium flint
				1.80			Medium dense dark orangish brown slightly silty clayey GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded flint.
				2.00			Light yellowish white clayey SILT (Chalk Head)
							End of pit at 2.00 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP404
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 01/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): Depth 2.00 — 2.2 × 0.55	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Light brown slightly gravelly slightly clayey TOPSOIL. Gravel is fine to medium flint. Contains frequent rootlets
				0.65			Light orangish brown slightly gravelly clayey silty SUBSOIL. Gravel is fine to medium flint. *Roots to 0.3m*
				1.70			Medium dense dark orangish brown slightly silty gravelly CLAY. Gravel is fine to coarse, angular to sub-rounded flint with occasional cobbles .
				2.00			Off white mottled light yellow clayey SILT with pockets of dark brown clay (Chalk Head). End of pit at 2.00 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP405
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 02/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): Depth 2.00 — 1.9 × 0.32	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Light greyish brown slightly gravelly clayey silty TOPSOIL with abundant rootlets. Gravel is fine to medium flint
							Light brownish grey gravelly silty CLAY. Gravel is fine to coarse, sub-angular to sub-rounded flint
							Hand Pen at 0.9 m = 210 kPa
				1.10			Firm to stiff dark orangish brown slightly silty gravelly CLAY. Gravel ranges from fine to cobbles of angular to sub rounded flint
				1.20			Greyish white mottled pale yellow slightly gravelly clayey SILT
							Hand Pen at 1.2 m = 180 kPa
				2.00			End of pit at 2.00 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

AGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP406
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 02/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): 1.83 × 0.5, Depth 2.00	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Light grey clayey silty TOPSOIL
				0.90			Medium dense orangish brown gravelly CLAY. Gravel is fine to medium, angular to sub-angular flint.
							Firm to stiff yellowish grey mottled pale brown slightly gravelly slightly silty CLAY. Gravel is fine sub-rounded flint
							Hand Pen at 1.5 m = 160 kPa
							Hand Pen at 1.8 m = 160 kPa
				2.00			End of pit at 2.00 m

1 2 3 4 5

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

AGS

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The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
[redacted]

Trial Pit Log

Trialpit No
TP407
Sheet 1 of 1

Project Name: Fontwell Shallow Soaks	Project No. LP1981	Co-ords: - Level:	Date 02/07/2019
Location: Fontwell Avenue, Fontwell		Dimensions (m): 1.8 × 0.53, Depth 1.97	Scale 1:25
Client: Dandara Homes			Logged ADC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25			Light brown clayey silty TOPSOIL
				0.60			Light brownish grey gravelly silty clay SUBSOIL. Gravel is fine to coarse, angular to sub-angular flint.
				1.68			Medium dense orangish brown slightly silty clayey GRAVEL. Gravel is fine to coarse with occasional cobbles of sub-angular to sub-rounded flint.
				1.97			Firm off white mottled pale orange slightly gravelly clayey SILT with pockets of silty clay. Gravel of rare fine to medium flint. (Chalk Head) *Hand Pen at 1.7 m = 220 kPa* End of pit at 1.97 m

DRAFT

Remarks: End of trial pit. Trial pit remained dry and stable

Stability:

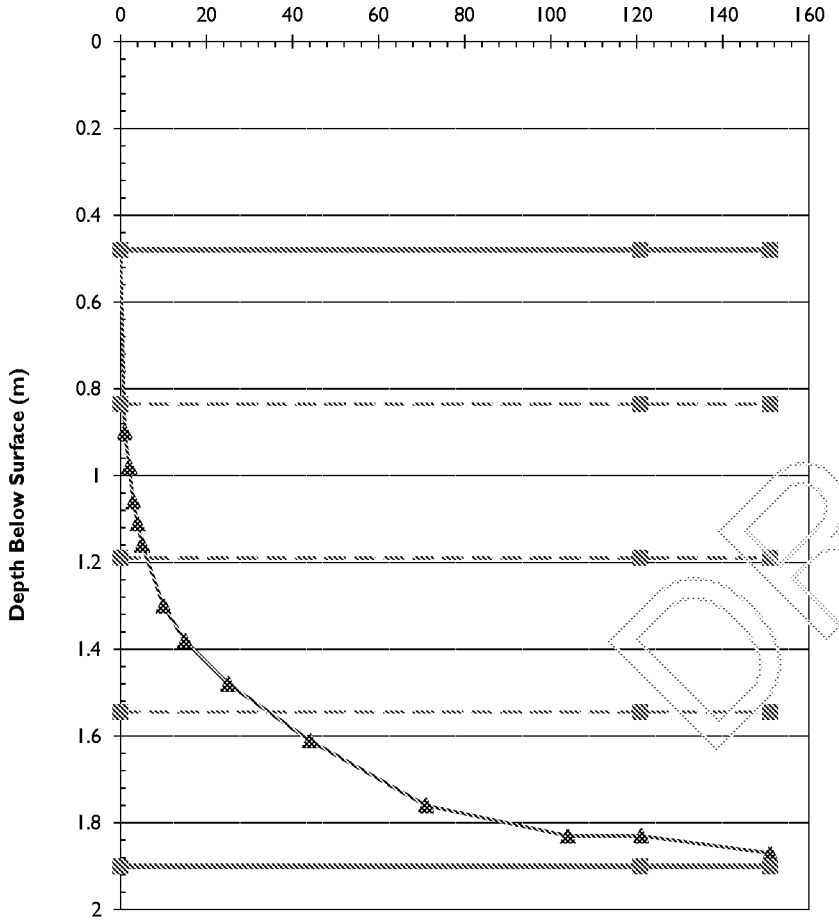
AGS

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)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.48
Max Water Dropdown during Test (m)	1.39
Total Soakage Test Time (min)	151
Mean Internal Discharge Area (m2)	3.956
Discharge Rate (litre/min)	6.0384709
Soakage Rate (litre/m2/min)	1.5264082
BRE Soil Infiltration Rate (m/sec)	2.544E-05

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

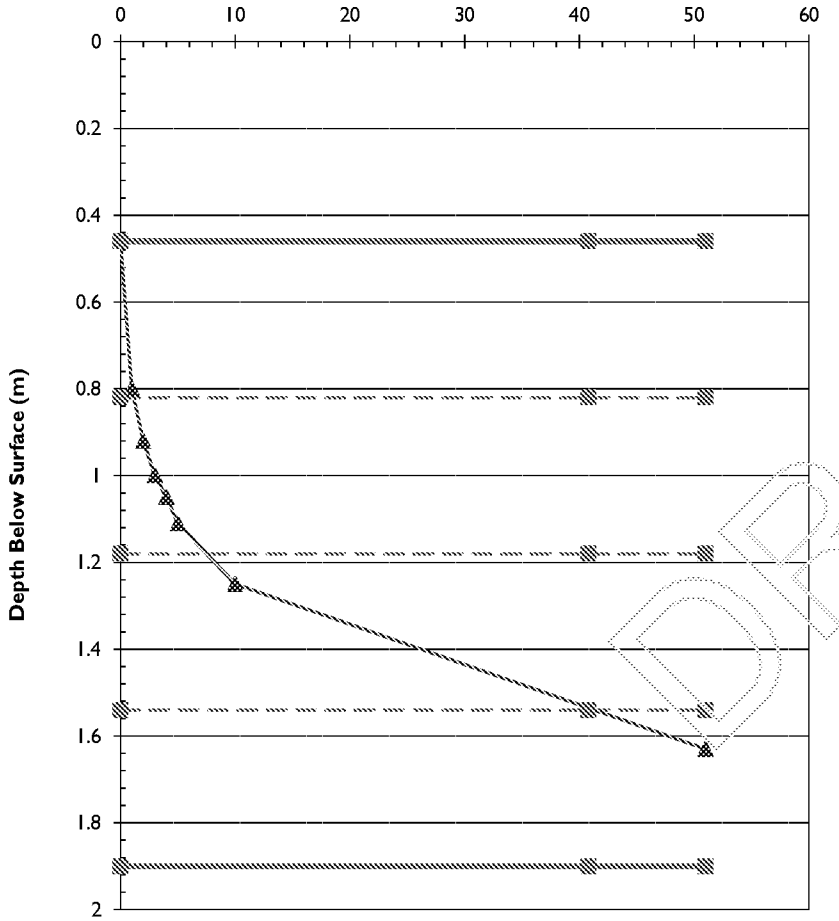
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 2

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.46
Max Water Dropdown during Test (m)	1.17
Total Soakage Test Time (min)	51
Mean Internal Discharge Area (m2)	4.0002
Discharge Rate (litre/min)	5.1363704
Soakage Rate (litre/m2/min)	1.2840284
BRE Soil Infiltration Rate (m/sec)	2.14E-05

Comments:

Pit was nearly emptied at finish of test.

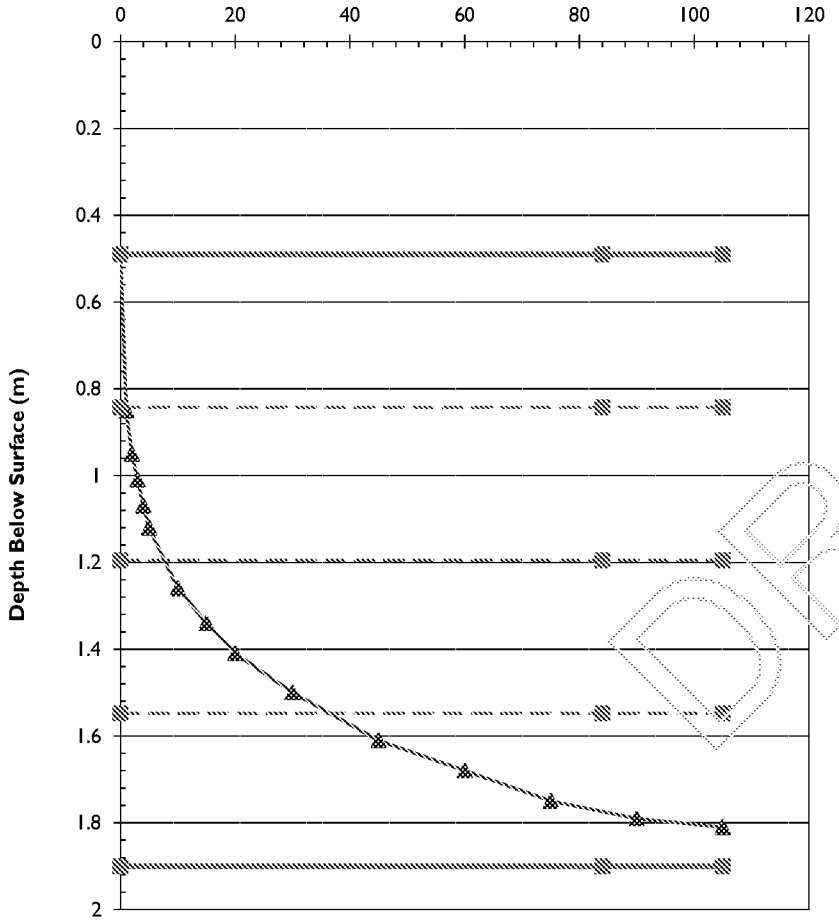
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP303
Test No:	Test No 3

(repeated)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.49
Max Water Dropdown during Test (m)	1.32
Total Soakage Test Time (min)	105
Mean Internal Discharge Area (m2)	3.9339
Discharge Rate (litre/min)	5.6845892
Soakage Rate (litre/m2/min)	1.4450264
BRE Soil Infiltration Rate (m/sec)	2.408E-05

Comments:

Pit was nearly emptied at finish of test.

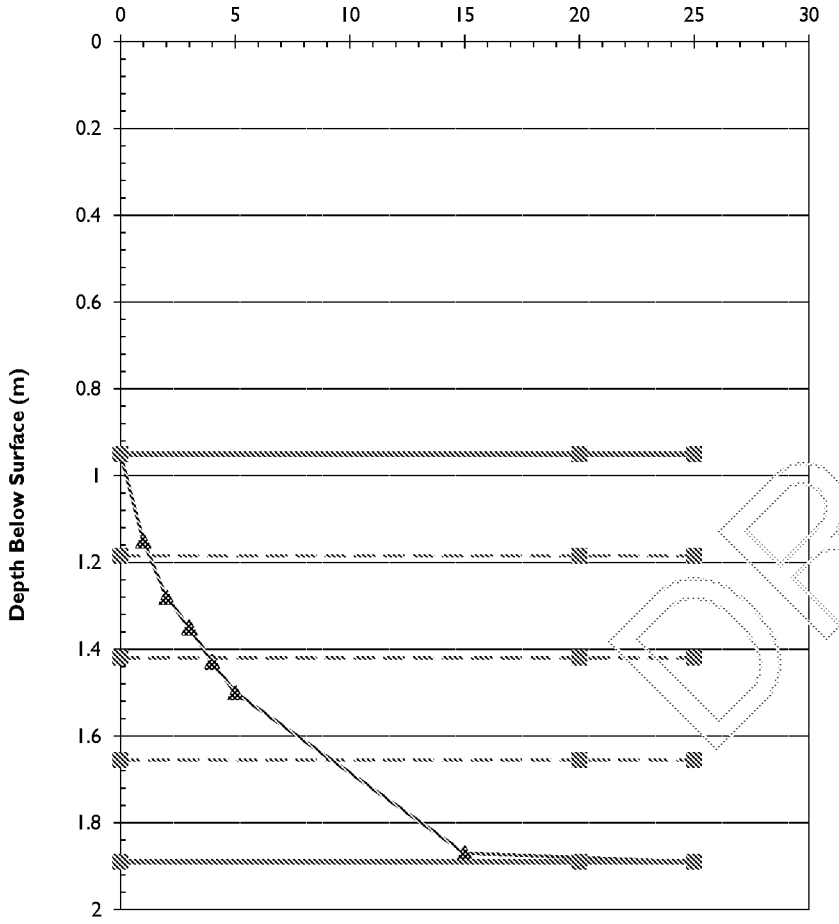
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
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)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.95
Max Water Dropdown during Test (m)	0.94
Total Soakage Test Time (min)	25
Mean Internal Discharge Area (m2)	3.008
Discharge Rate (litre/min)	17.766924
Soakage Rate (litre/m2/min)	5.9065572
BRE Soil Infiltration Rate (m/sec)	9.844E-05

Comments:

Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

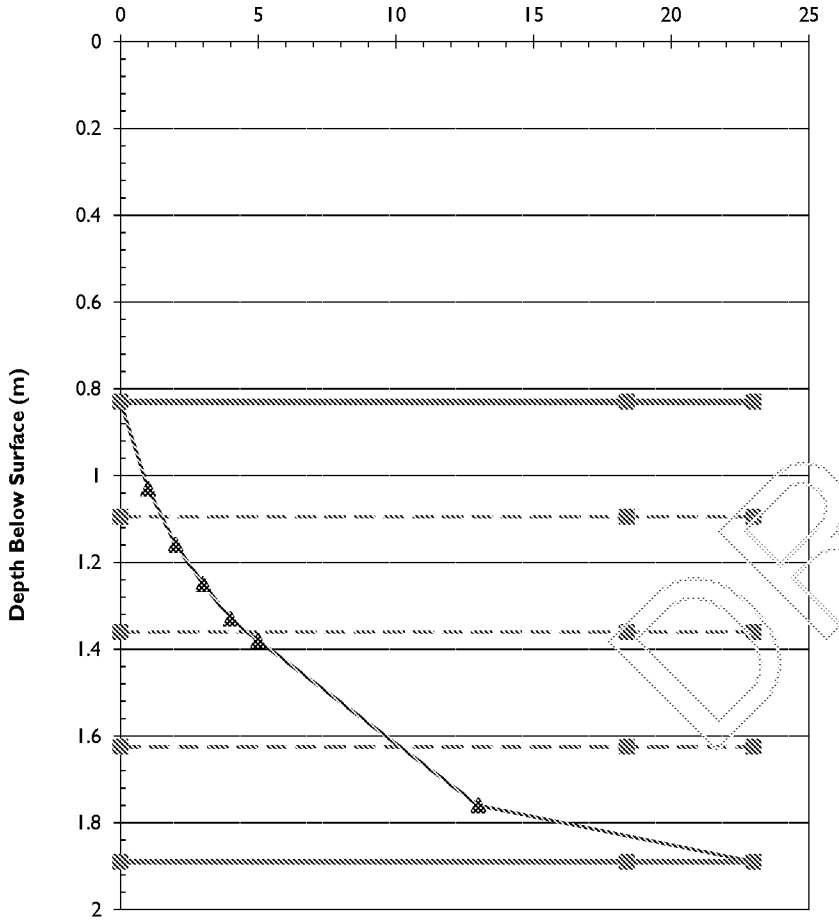
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP304
Test No:	Test No 2

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.83
Max Water Dropdown during Test (m)	1.06
Total Soakage Test Time (min)	23
Mean Internal Discharge Area (m2)	3.2828
Discharge Rate (litre/min)	18.3274
Soakage Rate (litre/m2/min)	5.5828561
BRE Soil Infiltration Rate (m/sec)	9.305E-05

Comments:

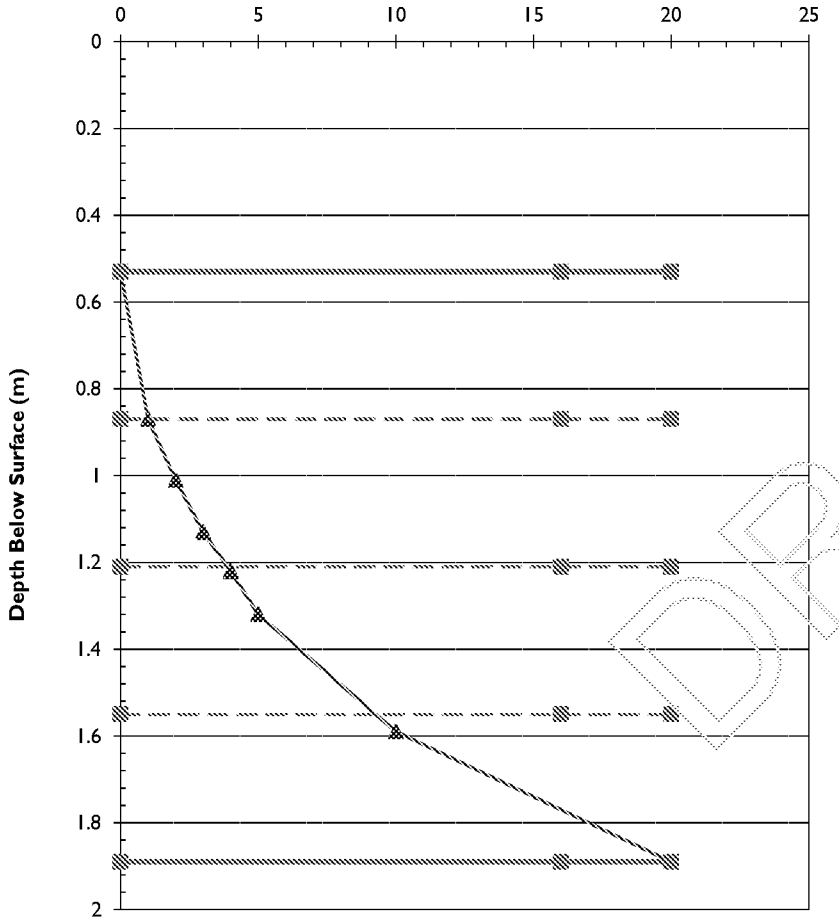
Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



Test Hole No:	TP304
Test No:	Test No 3

(repeated)

Pit Length (m)	1.82
Pit Width (m)	0.47
Depth to Pit Base (m)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.53
Max Water Dropdown during Test (m)	1.36
Total Soakage Test Time (min)	20
Mean Internal Discharge Area (m2)	3.9698
Discharge Rate (litre/min)	24.649329
Soakage Rate (litre/m2/min)	6.2092118
BRE Soil Infiltration Rate (m/sec)	0.0001035

Comments:

Pit was emptied at finish of test.

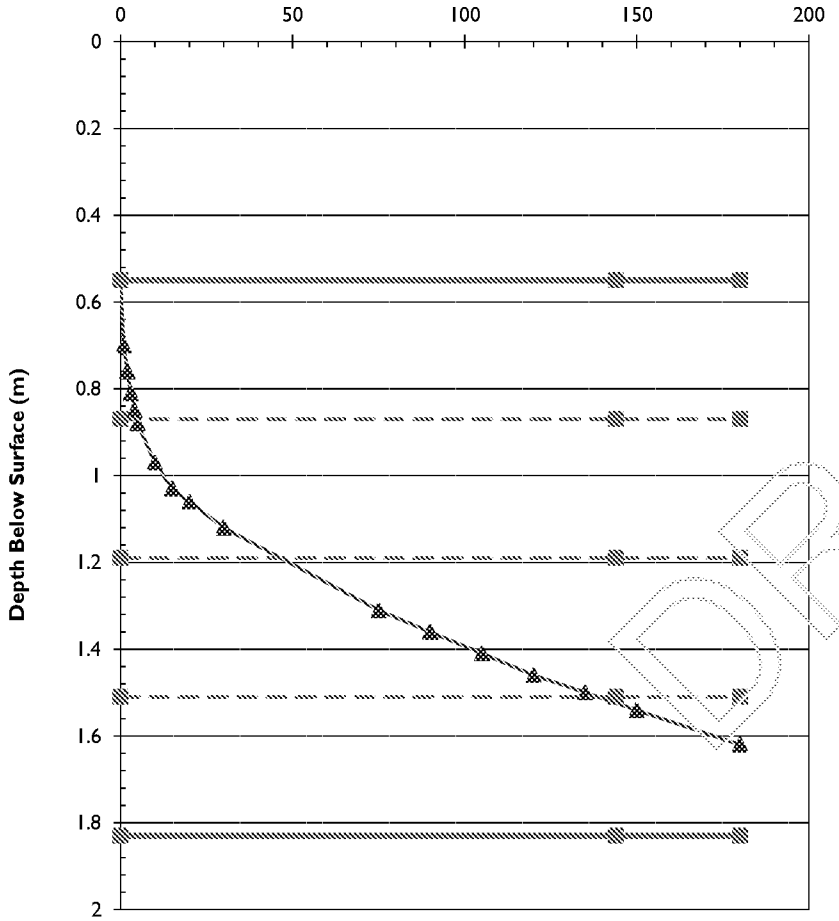
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.83
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.55
Max Water Dropdown during Test (m)	1.07
Total Soakage Test Time (min)	180
Mean Internal Discharge Area (m2)	3.4772
Discharge Rate (litre/min)	1.2756723
Soakage Rate (litre/m2/min)	0.3668677
BRE Soil Infiltration Rate (m/sec)	6.114E-06

Comments:

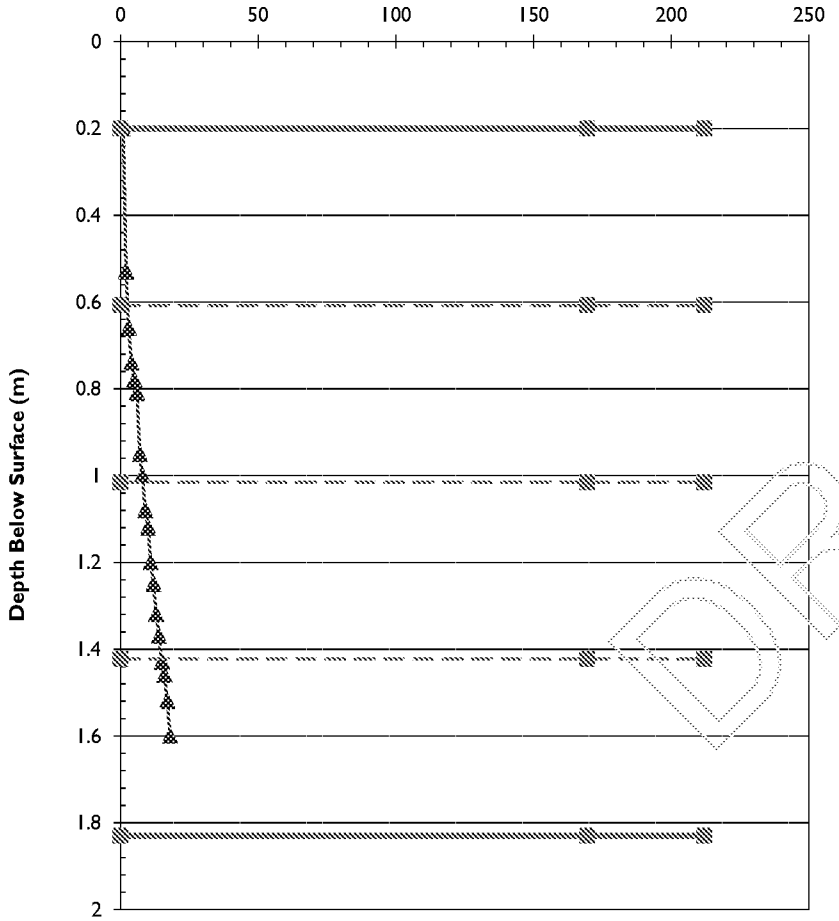
Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



Test Hole No:	TP305
Test No:	Test No 2

(repeated)

leap environmental

Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.83
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.2
Max Water Dropdown during Test (m)	1.52
Total Soakage Test Time (min)	212
Mean Internal Discharge Area (m2)	4.2192
Discharge Rate (litre/min)	2.1453696
Soakage Rate (litre/m2/min)	0.5084778
BRE Soil Infiltration Rate (m/sec)	8.475E-06

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	02/07/19

DRAFT

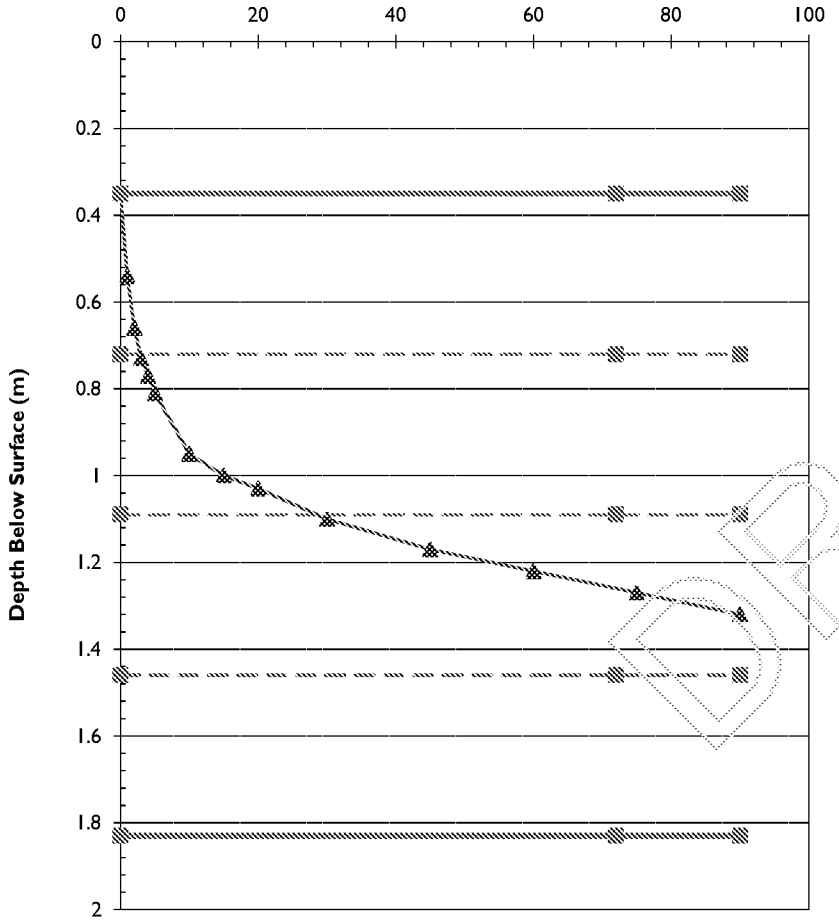
BRE Digest 365 - Soakage Test

Test Hole No:	TP305
Test No:	Test No 3

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.66
Pit Width (m)	0.46
Depth to Pit Base (m)	1.83
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.35
Max Water Dropdown during Test (m)	0.97
Total Soakage Test Time (min)	90
Mean Internal Discharge Area (m2)	4.198
Discharge Rate (litre/min)	1.8401508
Soakage Rate (litre/m2/min)	0.4383399
BRE Soil Infiltration Rate (m/sec)	7.306E-06

Comments:

Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

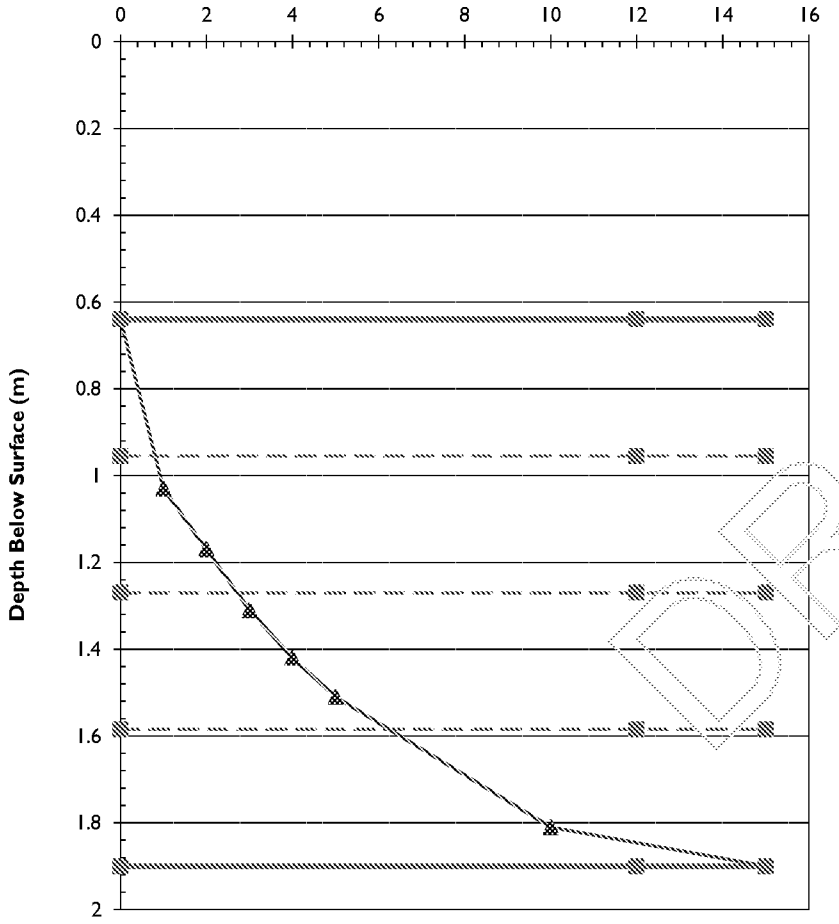
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	02/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.64
Max Water Dropdown during Test (m)	1.26
Total Soakage Test Time (min)	15
Mean Internal Discharge Area (m2)	3.6846
Discharge Rate (litre/min)	98.349456
Soakage Rate (litre/m2/min)	26.692031
BRE Soil Infiltration Rate (m/sec)	0.0004449

Comments:

Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

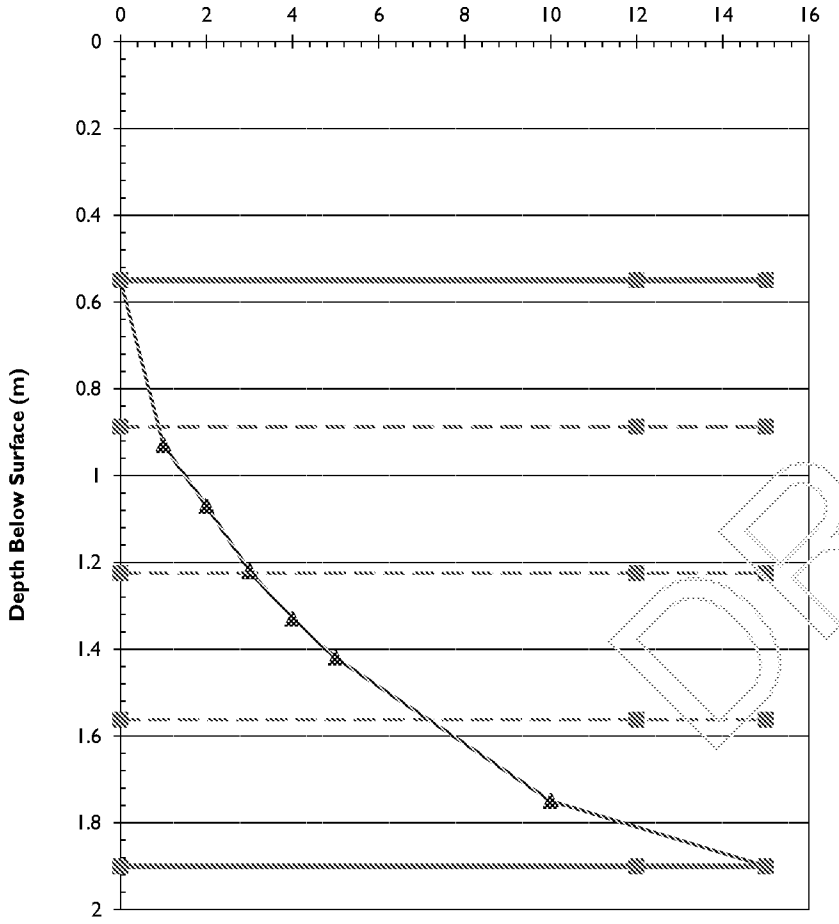
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP311
Test No:	Test No 2

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.55
Max Water Dropdown during Test (m)	1.35
Total Soakage Test Time (min)	15
Mean Internal Discharge Area (m2)	3.8871
Discharge Rate (litre/min)	91.450506
Soakage Rate (litre/m2/min)	23.526667
BRE Soil Infiltration Rate (m/sec)	0.0003921

Comments:

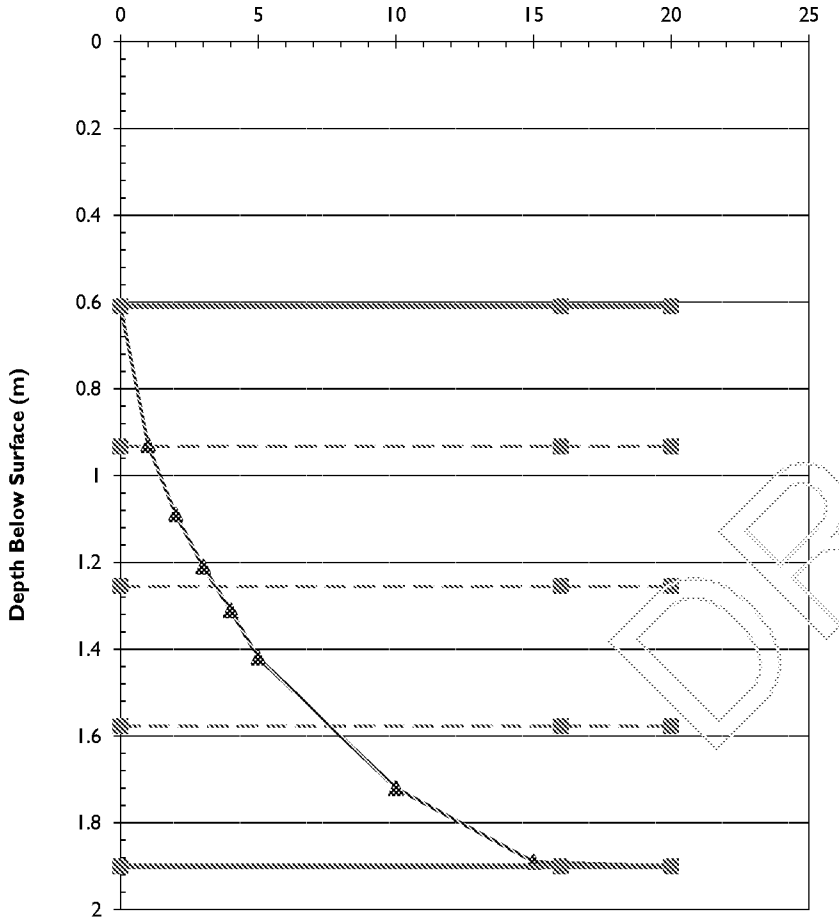
Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



Test Hole No:	TP311
Test No:	Test No 3

(repeated)

leap environmental

Pit Length (m)	1.77
Pit Width (m)	0.48
Depth to Pit Base (m)	1.9
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.61
Max Water Dropdown during Test (m)	1.29
Total Soakage Test Time (min)	20
Mean Internal Discharge Area (m2)	3.7521
Discharge Rate (litre/min)	82.911319
Soakage Rate (litre/m2/min)	22.097311
BRE Soil Infiltration Rate (m/sec)	0.0003683

Comments:

Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

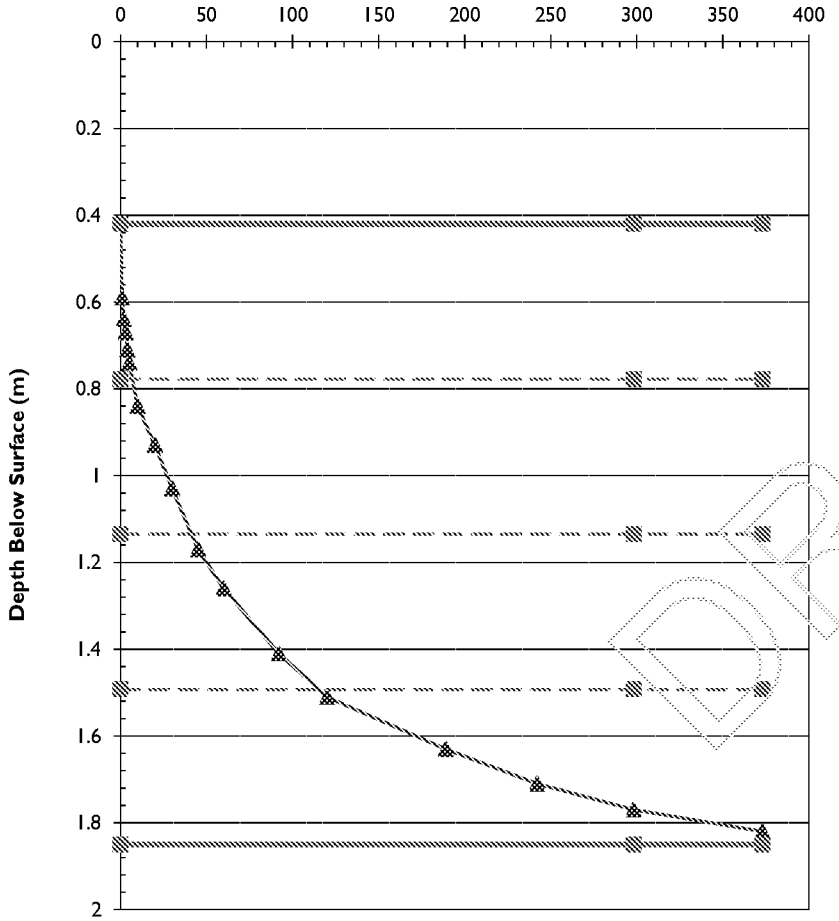
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 1

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.85
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.42
Max Water Dropdown during Test (m)	1.4
Total Soakage Test Time (min)	373
Mean Internal Discharge Area (m2)	3.8379
Discharge Rate (litre/min)	5.2324324
Soakage Rate (litre/m2/min)	1.3633582
BRE Soil Infiltration Rate (m/sec)	2.272E-05

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

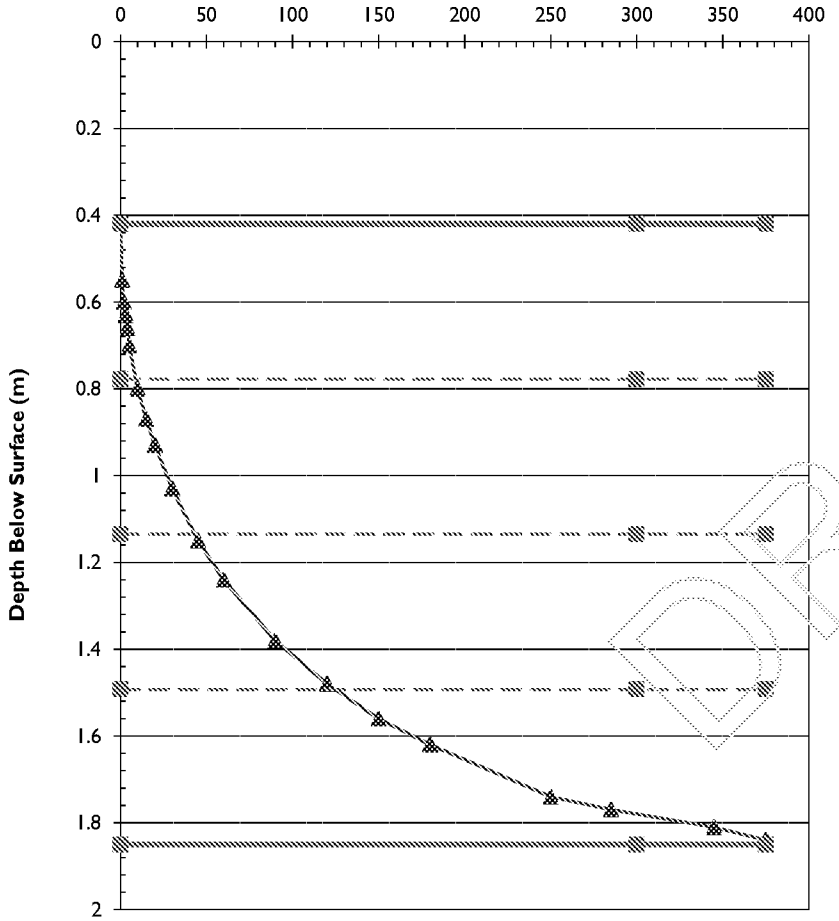
BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 2

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.85
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.42
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	375
Mean Internal Discharge Area (m2)	3.8379
Discharge Rate (litre/min)	4.8896276
Soakage Rate (litre/m2/min)	1.2740373
BRE Soil Infiltration Rate (m/sec)	2.123E-05

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	08/07/19

DRAFT

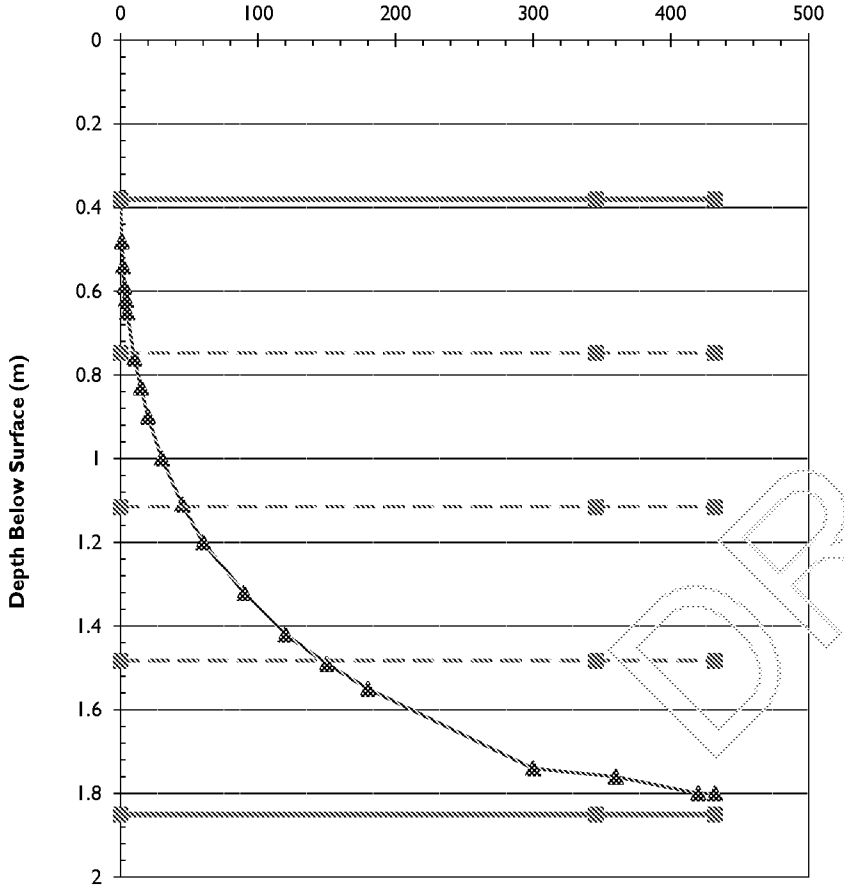
BRE Digest 365 - Soakage Test

Test Hole No:	TP319
Test No:	Test No 3

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.65
Pit Width (m)	0.48
Depth to Pit Base (m)	1.85
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.38
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	432
Mean Internal Discharge Area (m2)	3.9231
Discharge Rate (litre/min)	4.2381033
Soakage Rate (litre/m2/min)	1.0802945
BRE Soil Infiltration Rate (m/sec)	1.8E-05

Comments:

Pit was nearly emptied at finish of test.

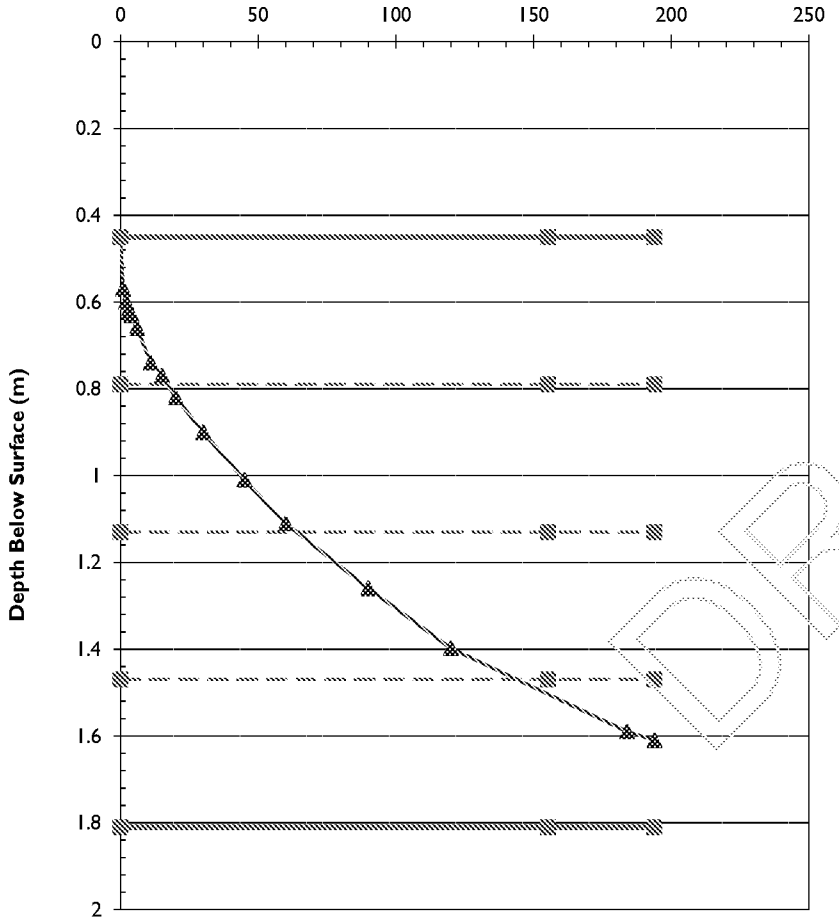
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	09/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.81
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.45
Max Water Dropdown during Test (m)	1.16
Total Soakage Test Time (min)	194
Mean Internal Discharge Area (m2)	3.8234
Discharge Rate (litre/min)	4.3787717
Soakage Rate (litre/m2/min)	1.145256
BRE Soil Infiltration Rate (m/sec)	1.909E-05

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	08/07/19

DRAFT

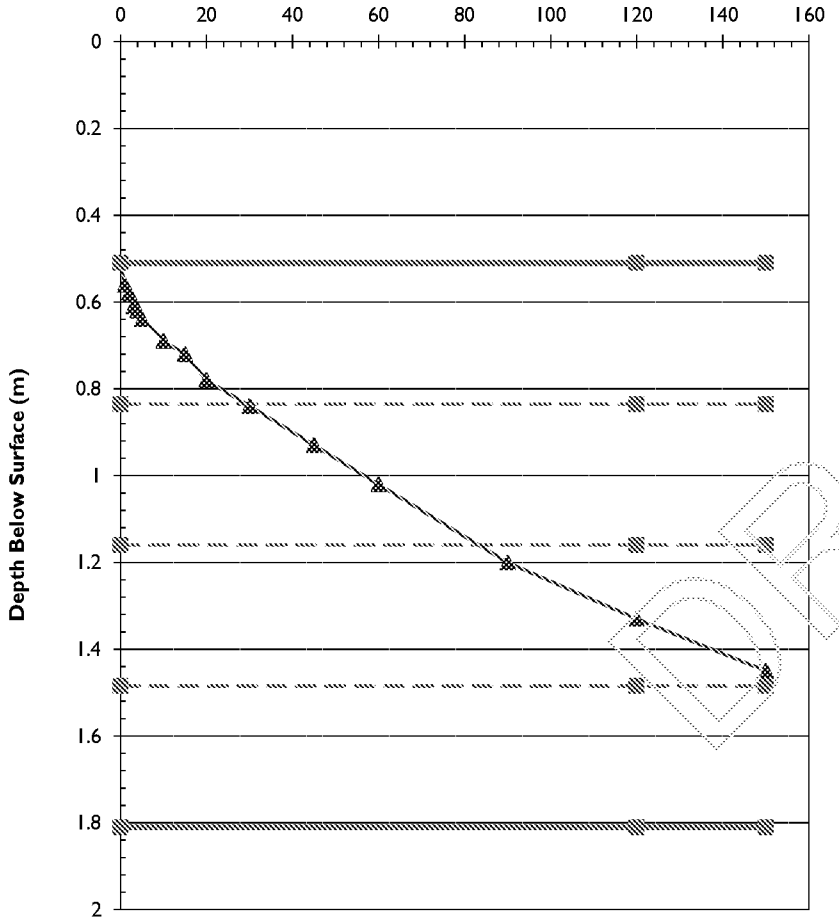
BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 2

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.81
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.51
Max Water Dropdown during Test (m)	0.94
Total Soakage Test Time (min)	150
Mean Internal Discharge Area (m2)	3.76815
Discharge Rate (litre/min)	4.16232
Soakage Rate (litre/m2/min)	1.1046057
BRE Soil Infiltration Rate (m/sec)	1.841E-05

Comments:

Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	08/07/19

DRAFT

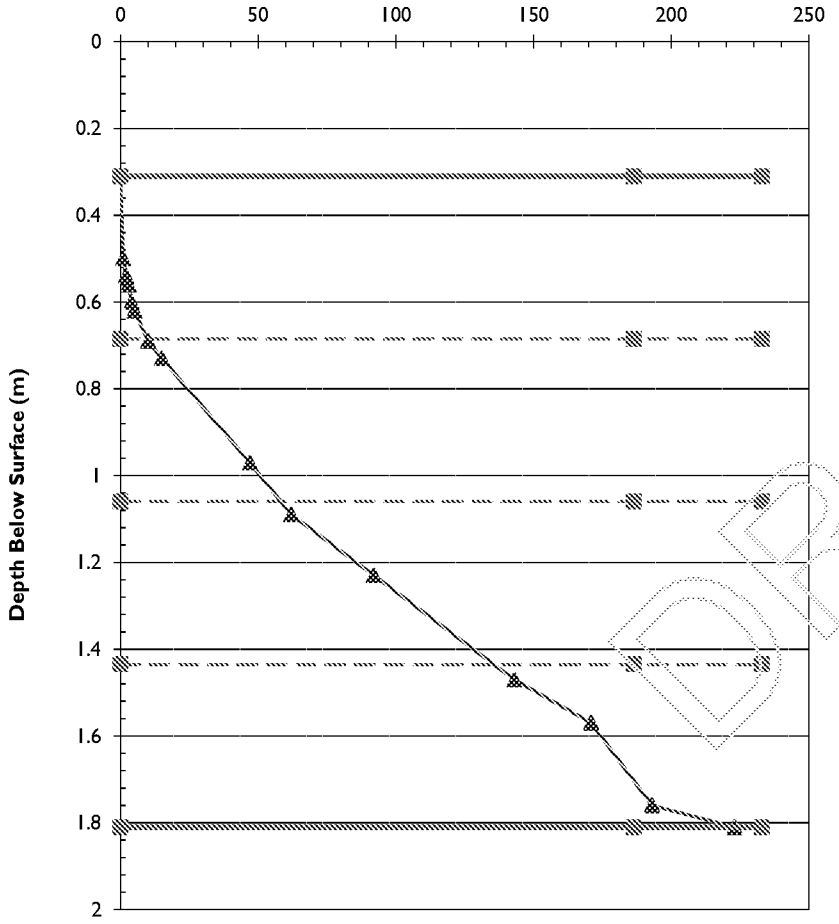
BRE Digest 365 - Soakage Test

Test Hole No:	TP323
Test No:	Test No 3

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.74
Pit Width (m)	0.47
Depth to Pit Base (m)	1.81
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	100%

Depth of Water at Start of Test (m)	0.31
Max Water Dropdown during Test (m)	1.5
Total Soakage Test Time (min)	233
Mean Internal Discharge Area (m2)	4.1328
Discharge Rate (litre/min)	4.8709636
Soakage Rate (litre/m2/min)	1.178611
BRE Soil Infiltration Rate (m/sec)	1.964E-05

Comments:

Pit was emptied at finish of test.

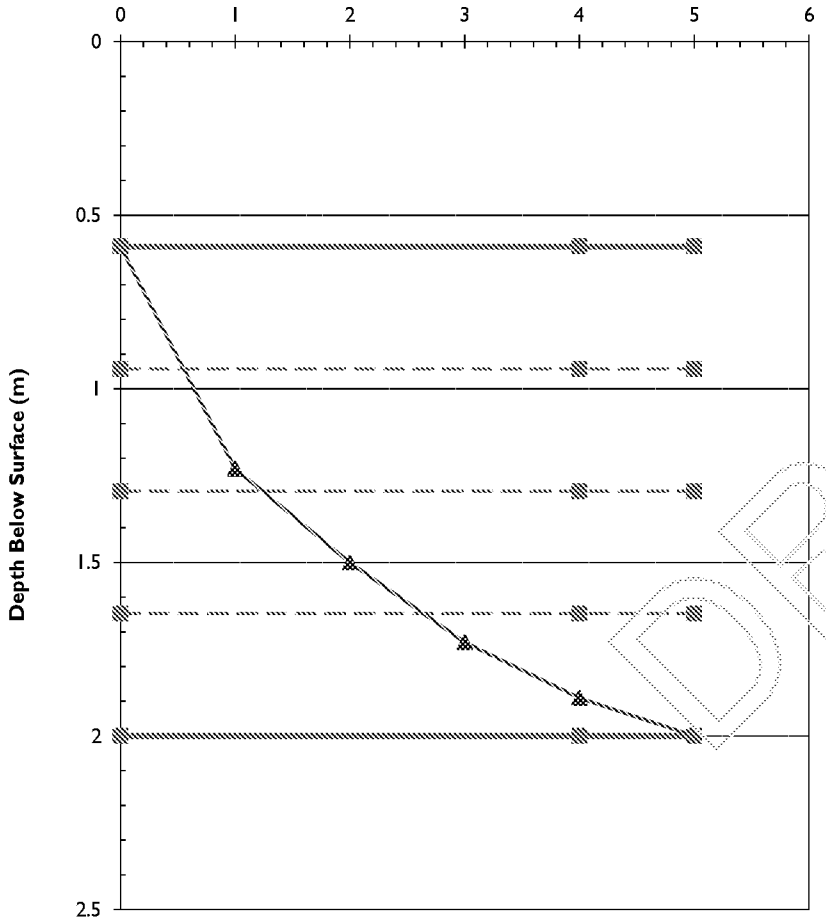
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	09/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP401
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	2.15
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.59
Max Water Dropdown during Test (m)	1.41
Total Soakage Test Time (min)	5
Mean Internal Discharge Area (m2)	4.9183
Discharge Rate (litre/min)	134.49821
Soakage Rate (litre/m2/min)	27.346485
BRE Soil Infiltration Rate (m/sec)	0.0004558

Comments:

Pit was emptied at finish of test.

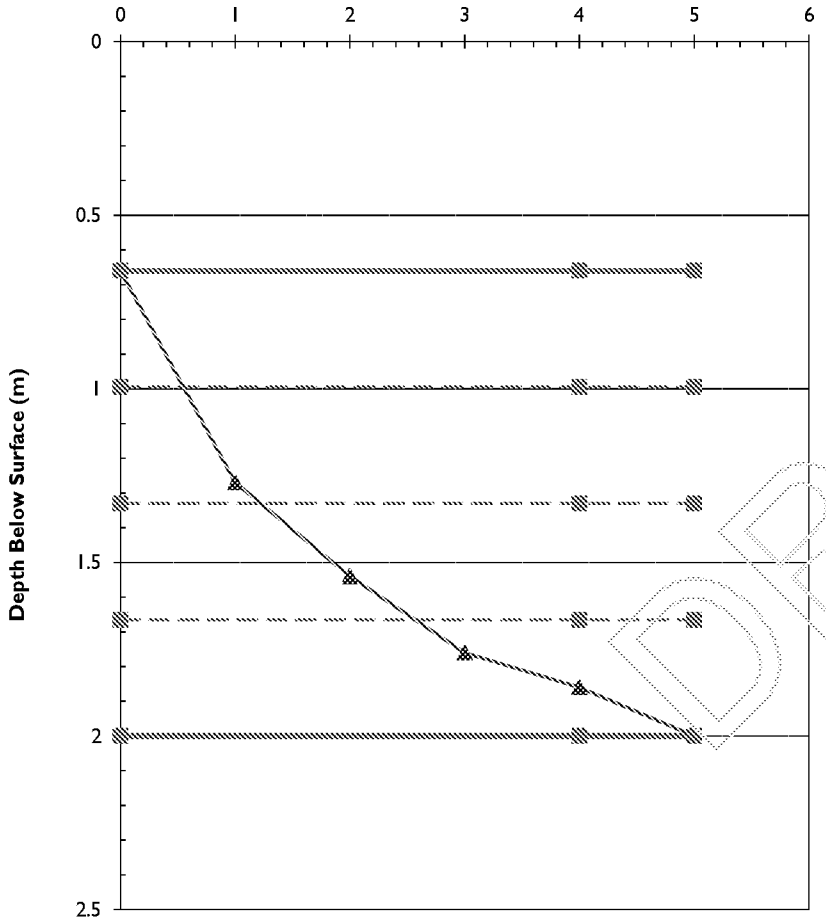
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP401
Test No:	Test No 2

(repeated)



Pit Length (m)	2.15
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.66
Max Water Dropdown during Test (m)	1.34
Total Soakage Test Time (min)	5
Mean Internal Discharge Area (m2)	4.7307
Discharge Rate (litre/min)	132.34896
Soakage Rate (litre/m2/min)	27.976613
BRE Soil Infiltration Rate (m/sec)	0.0004663

Comments:

Pit was emptied at finish of test.

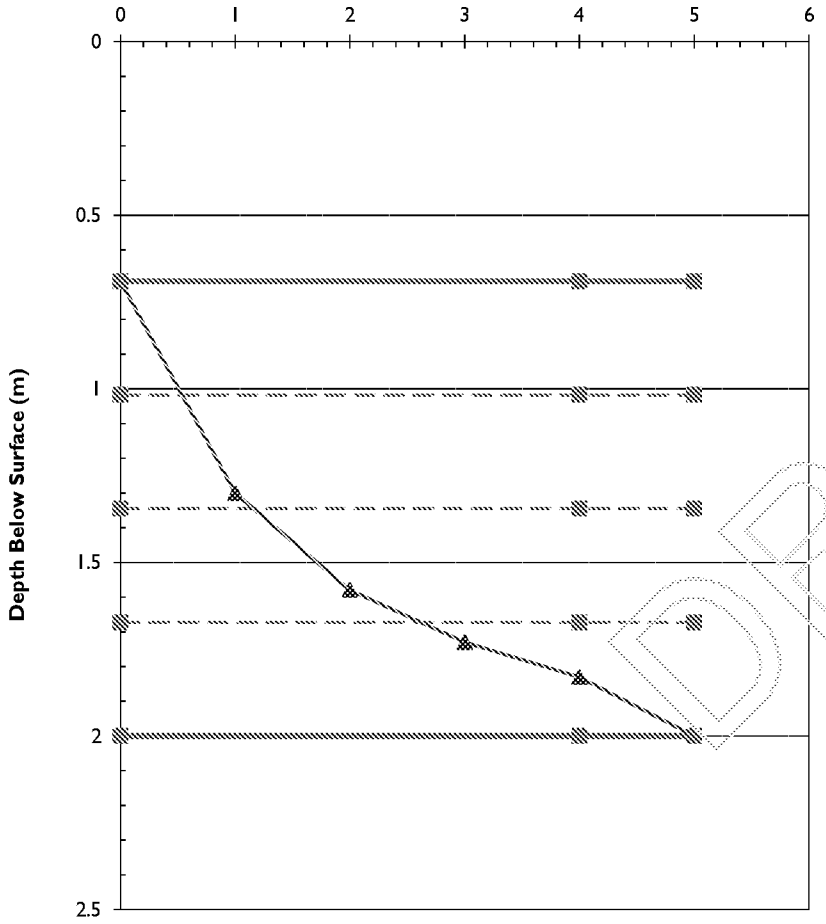
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP401
Test No:	Test No 3

(repeated)



Pit Length (m)	2.15
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.69
Max Water Dropdown during Test (m)	1.31
Total Soakage Test Time (min)	5
Mean Internal Discharge Area (m2)	4.6503
Discharge Rate (litre/min)	125.60473
Soakage Rate (litre/m2/min)	27.010026
BRE Soil Infiltration Rate (m/sec)	0.0004502

Comments:

Pit was emptied at finish of test.

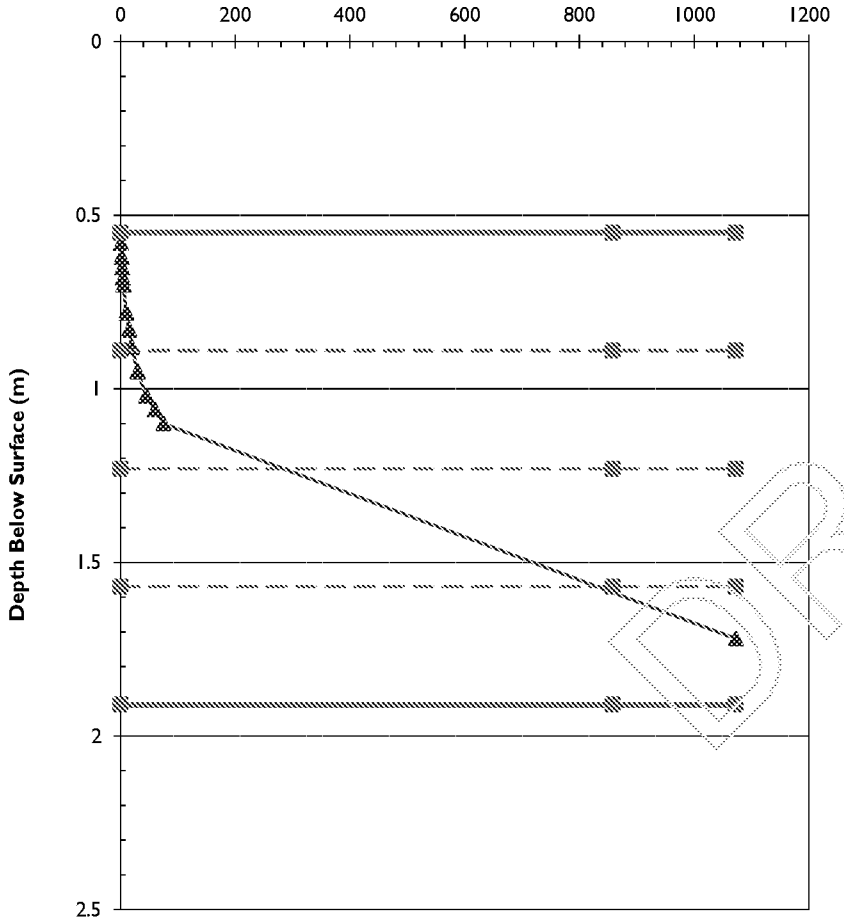
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP402
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.9
Pit Width (m)	0.55
Depth to Pit Base (m)	1.91
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.55
Max Water Dropdown during Test (m)	1.17
Total Soakage Test Time (min)	1073
Mean Internal Discharge Area (m2)	4.377
Discharge Rate (litre/min)	0.307004
Soakage Rate (litre/m2/min)	0.0701403
BRE Soil Infiltration Rate (m/sec)	1.169E-06

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

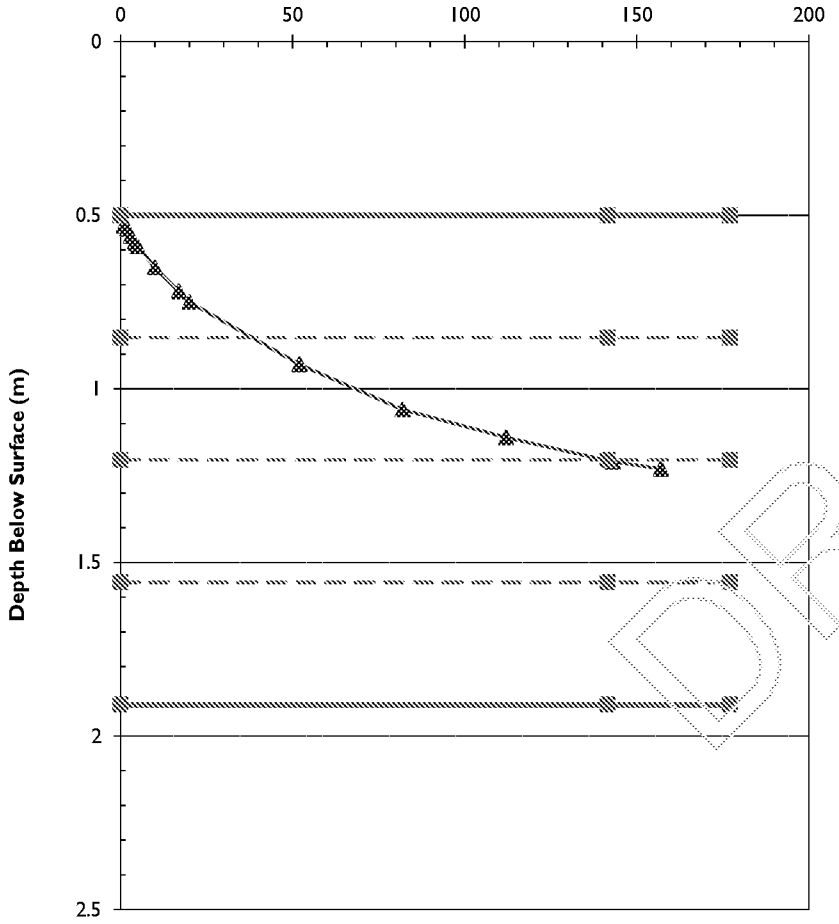
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP402
Test No:	Test No 2

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.9
Pit Width (m)	0.55
Depth to Pit Base (m)	1.91
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	0.73
Total Soakage Test Time (min)	177
Mean Internal Discharge Area (m2)	5.301875
Discharge Rate (litre/min)	1.0838514
Soakage Rate (litre/m2/min)	0.2044279
BRE Soil Infiltration Rate (m/sec)	3.407E-06

Comments:

Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	01/07/19

DRAFT

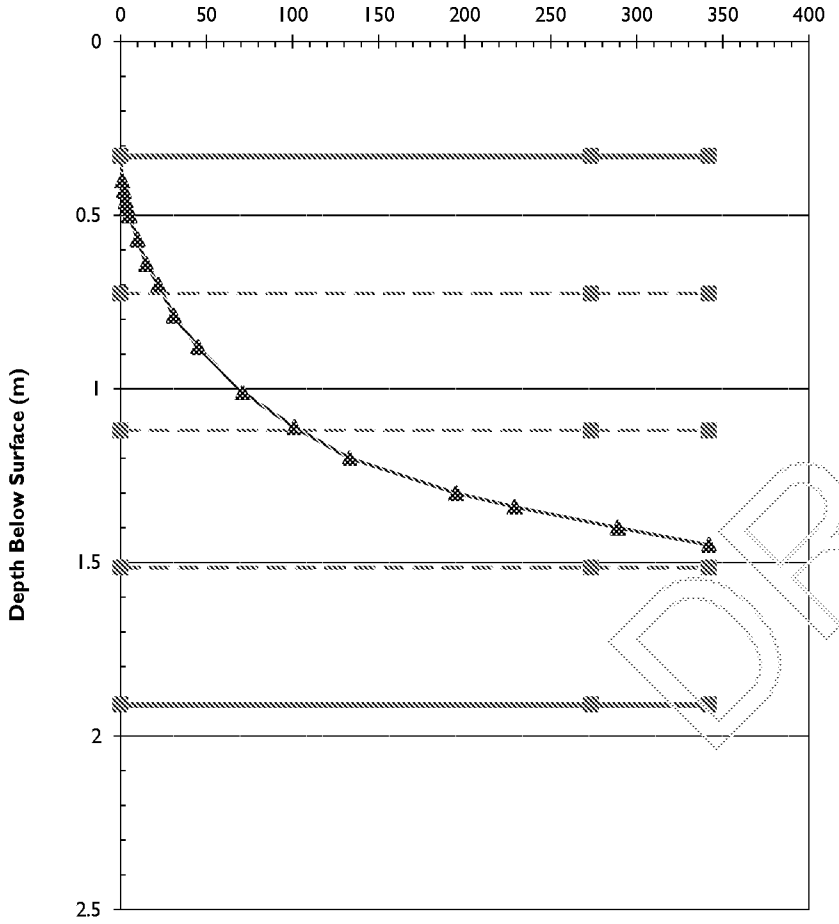
BRE Digest 365 - Soakage Test

Test Hole No:	TP402
Test No:	Test No 3

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	1.9
Pit Width (m)	0.55
Depth to Pit Base (m)	1.91
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.33
Max Water Dropdown during Test (m)	1.12
Total Soakage Test Time (min)	342
Mean Internal Discharge Area (m2)	5.07525
Discharge Rate (litre/min)	0.8351772
Soakage Rate (litre/m2/min)	0.1645588
BRE Soil Infiltration Rate (m/sec)	2.743E-06

Comments:

Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

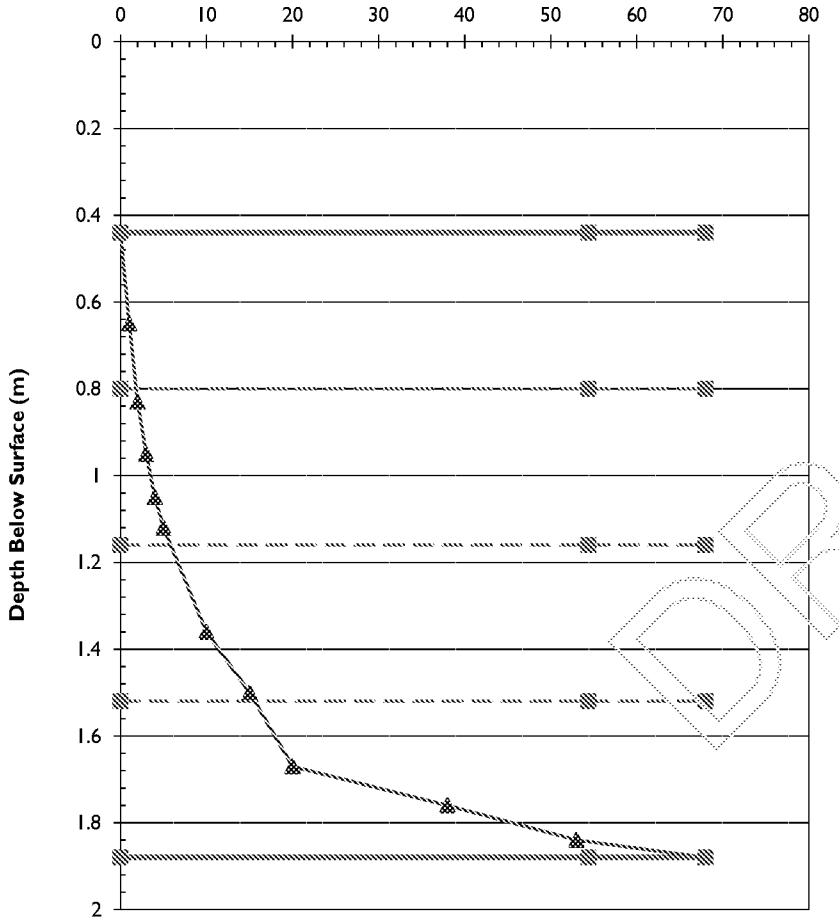
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	04/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP403
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.9
Pit Width (m)	0.34
Depth to Pit Base (m)	1.88
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.44
Max Water Dropdown during Test (m)	1.44
Total Soakage Test Time (min)	68
Mean Internal Discharge Area (m2)	3.8716
Discharge Rate (litre/min)	11.835199
Soakage Rate (litre/m2/min)	3.0569271
BRE Soil Infiltration Rate (m/sec)	5.095E-05

Comments:

Pit was emptied at finish of test.

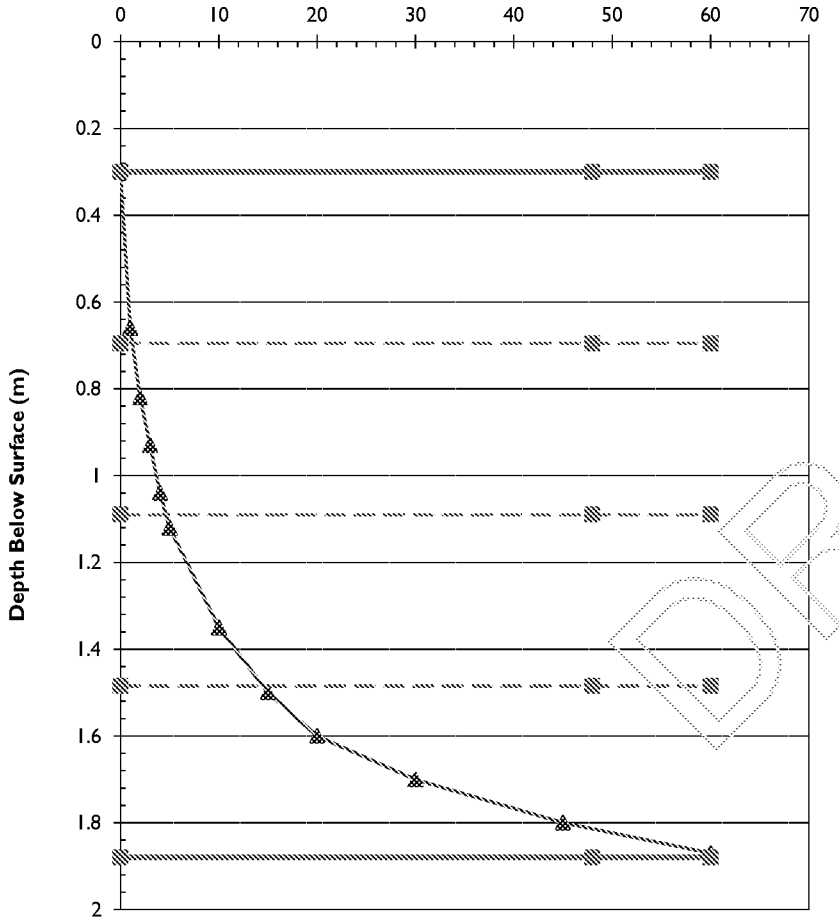
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	02/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP403
Test No:	Test No 2

(repeated)



Pit Length (m)	1.9
Pit Width (m)	0.34
Depth to Pit Base (m)	1.88
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.57
Total Soakage Test Time (min)	60
Mean Internal Discharge Area (m2)	4.1852
Discharge Rate (litre/min)	13.44896
Soakage Rate (litre/m2/min)	3.2134569
BRE Soil Infiltration Rate (m/sec)	5.356E-05

Comments:

Pit was nearly emptied at finish of test.

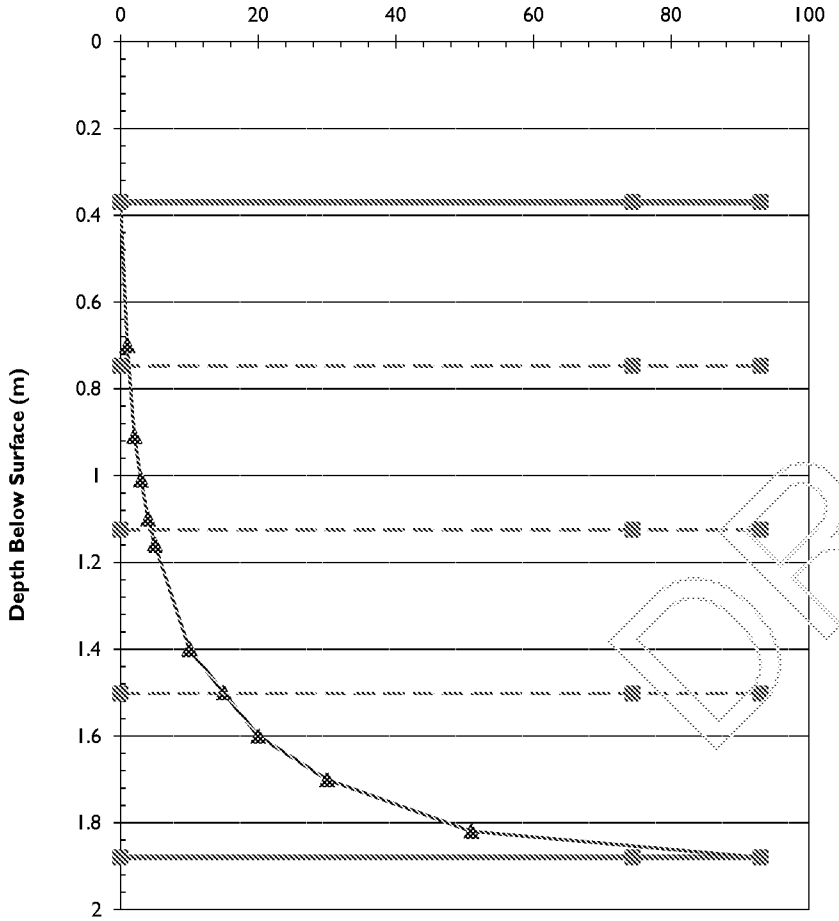
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	02/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP403
Test No:	Test No 3

(repeated)



Pit Length (m)	1.9
Pit Width (m)	0.34
Depth to Pit Base (m)	1.88
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.37
Max Water Dropdown during Test (m)	1.51
Total Soakage Test Time (min)	93
Mean Internal Discharge Area (m2)	4.0284
Discharge Rate (litre/min)	12.282023
Soakage Rate (litre/m2/min)	3.0488589
BRE Soil Infiltration Rate (m/sec)	5.081E-05

Comments:

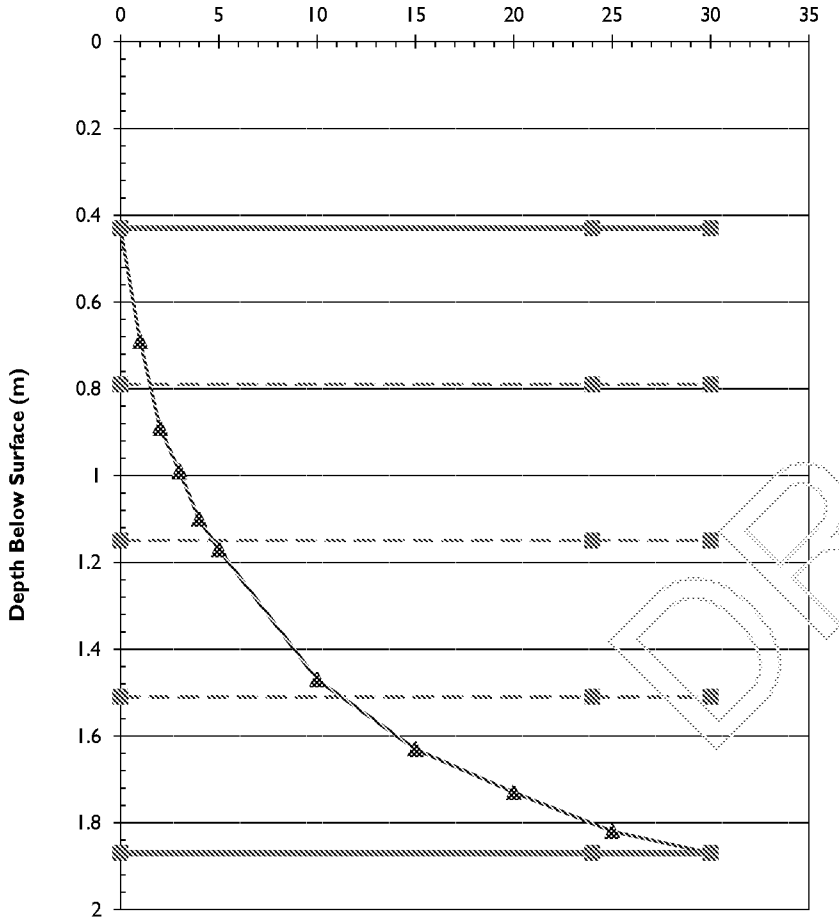
Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	02/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP404
Test No:	Test No 1



Pit Length (m)	2.2
Pit Width (m)	0.55
Depth to Pit Base (m)	1.87
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.43
Max Water Dropdown during Test (m)	1.44
Total Soakage Test Time (min)	30
Mean Internal Discharge Area (m2)	5.17
Discharge Rate (litre/min)	31.273846
Soakage Rate (litre/m2/min)	6.0490998
BRE Soil Infiltration Rate (m/sec)	0.0001008

Comments:

Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

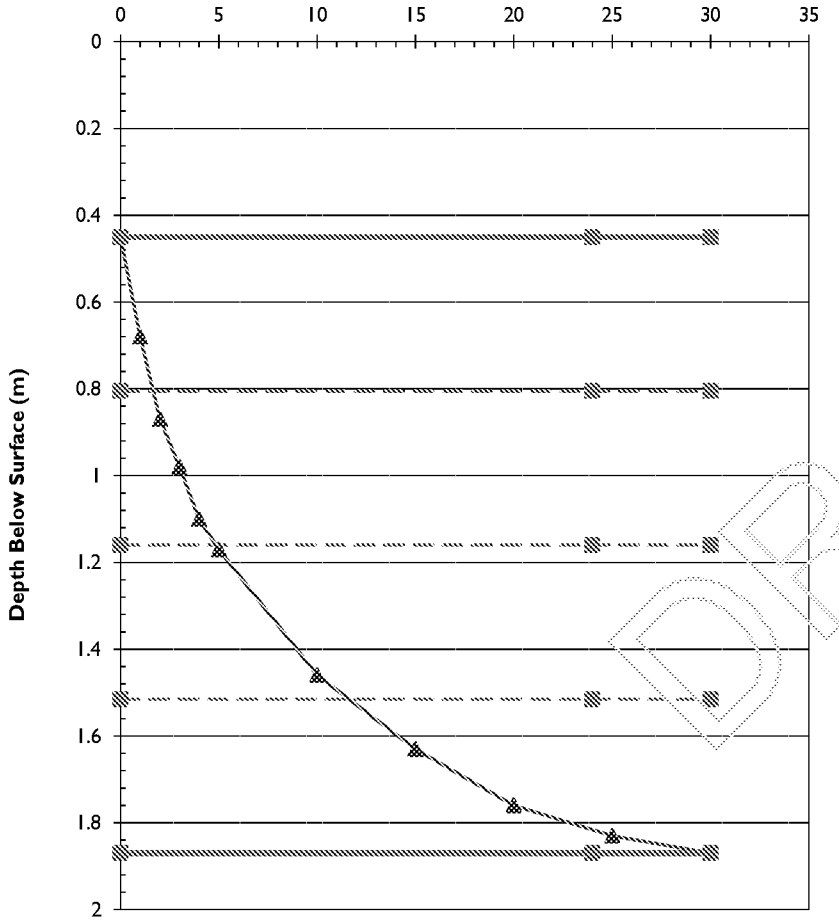
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP404
Test No:	Test No 2

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	2.2
Pit Width (m)	0.55
Depth to Pit Base (m)	1.87
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.45
Max Water Dropdown during Test (m)	1.42
Total Soakage Test Time (min)	30
Mean Internal Discharge Area (m2)	5.115
Discharge Rate (litre/min)	30.190008
Soakage Rate (litre/m2/min)	5.9022498
BRE Soil Infiltration Rate (m/sec)	9.837E-05

Comments:

Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

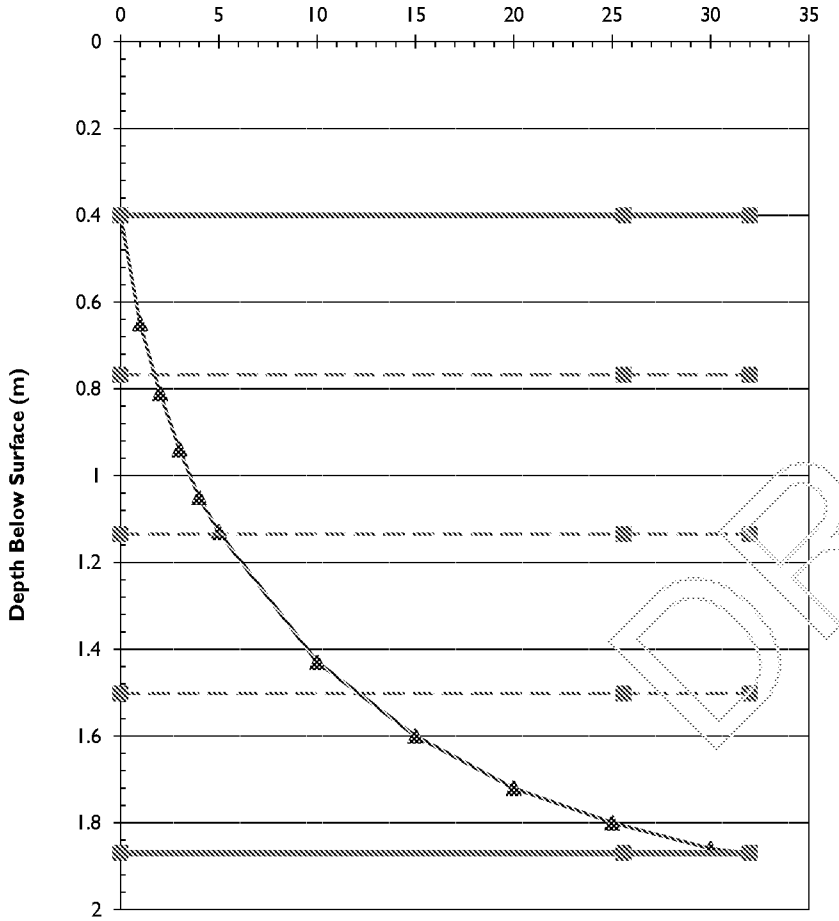
BRE Digest 365 - Soakage Test

Test Hole No:	TP404
Test No:	Test No 3

(repeated)

leap environmental

Filling to Max Water Depth (min)



Pit Length (m)	2.2
Pit Width (m)	0.55
Depth to Pit Base (m)	1.87
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.4
Max Water Dropdown during Test (m)	1.47
Total Soakage Test Time (min)	32
Mean Internal Discharge Area (m2)	5.2525
Discharge Rate (litre/min)	29.935868
Soakage Rate (litre/m2/min)	5.6993562
BRE Soil Infiltration Rate (m/sec)	9.499E-05

Comments:

Pit was emptied at finish of test.

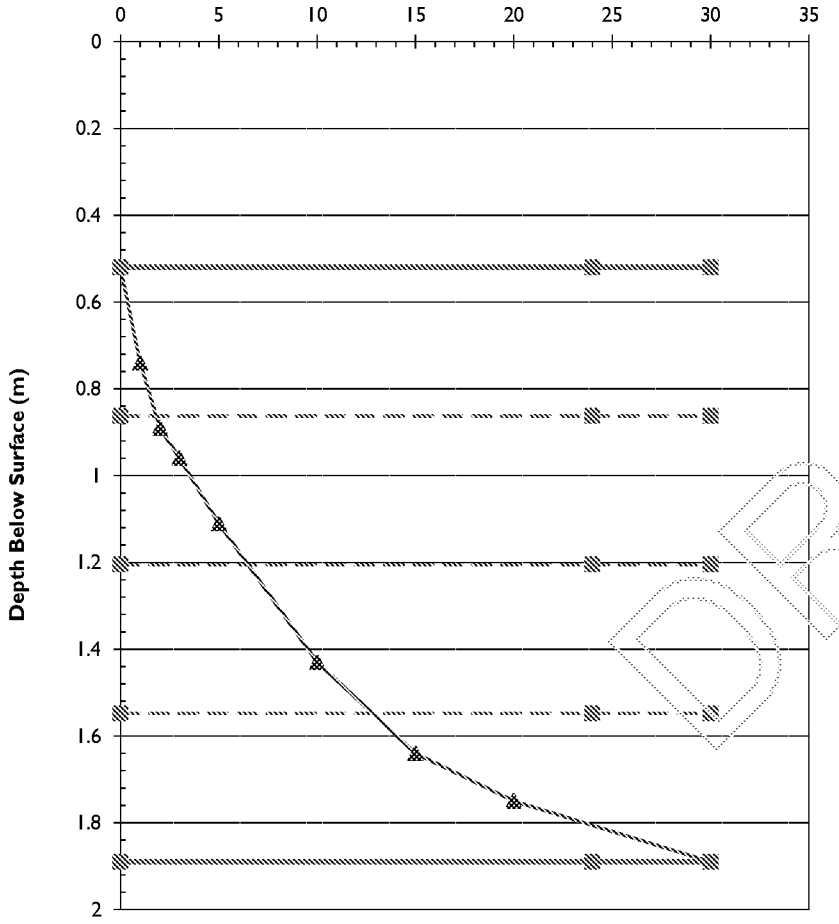
Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP405
Test No:	Test No 1

Filling to Max Water Depth (min)



Pit Length (m)	1.9
Pit Width (m)	0.32
Depth to Pit Base (m)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.52
Max Water Dropdown during Test (m)	1.37
Total Soakage Test Time (min)	30
Mean Internal Discharge Area (m2)	3.6494
Discharge Rate (litre/min)	13.274623
Soakage Rate (litre/m2/min)	3.6374809
BRE Soil Infiltration Rate (m/sec)	6.062E-05

Comments:

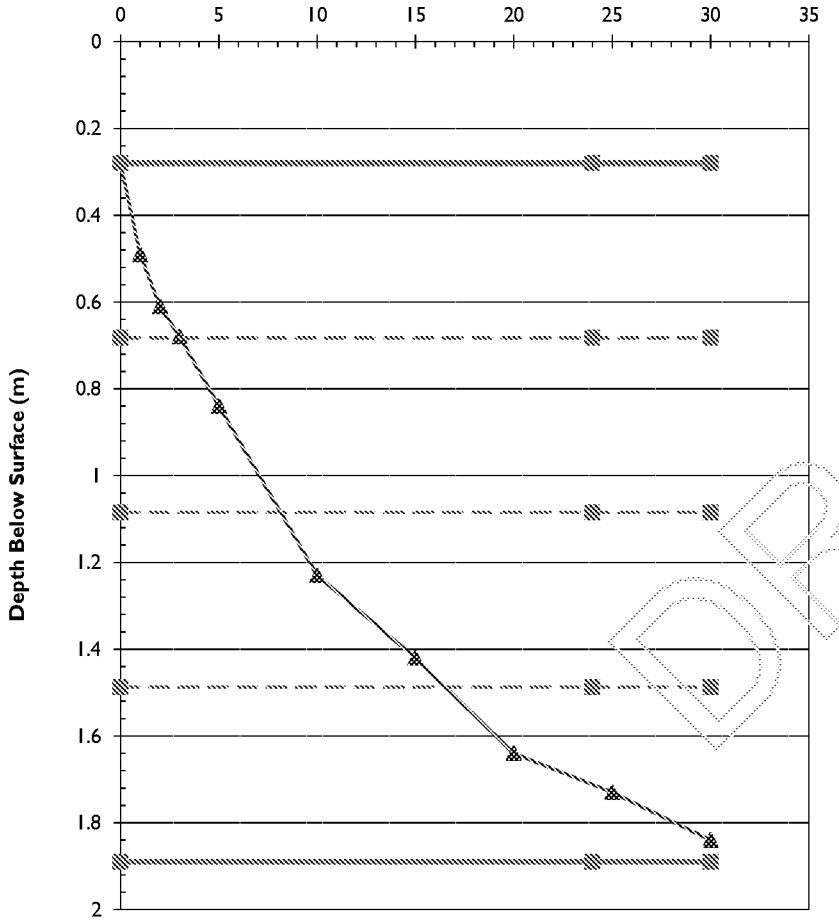
Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



Test Hole No:	TP405
Test No:	Test No 2

(repeated)

leap environmental

Pit Length (m)	1.9
Pit Width (m)	0.32
Depth to Pit Base (m)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.28
Max Water Dropdown during Test (m)	1.56
Total Soakage Test Time (min)	30
Mean Internal Discharge Area (m2)	4.1822
Discharge Rate (litre/min)	12.686515
Soakage Rate (litre/m2/min)	3.033455
BRE Soil Infiltration Rate (m/sec)	5.056E-05

Comments:

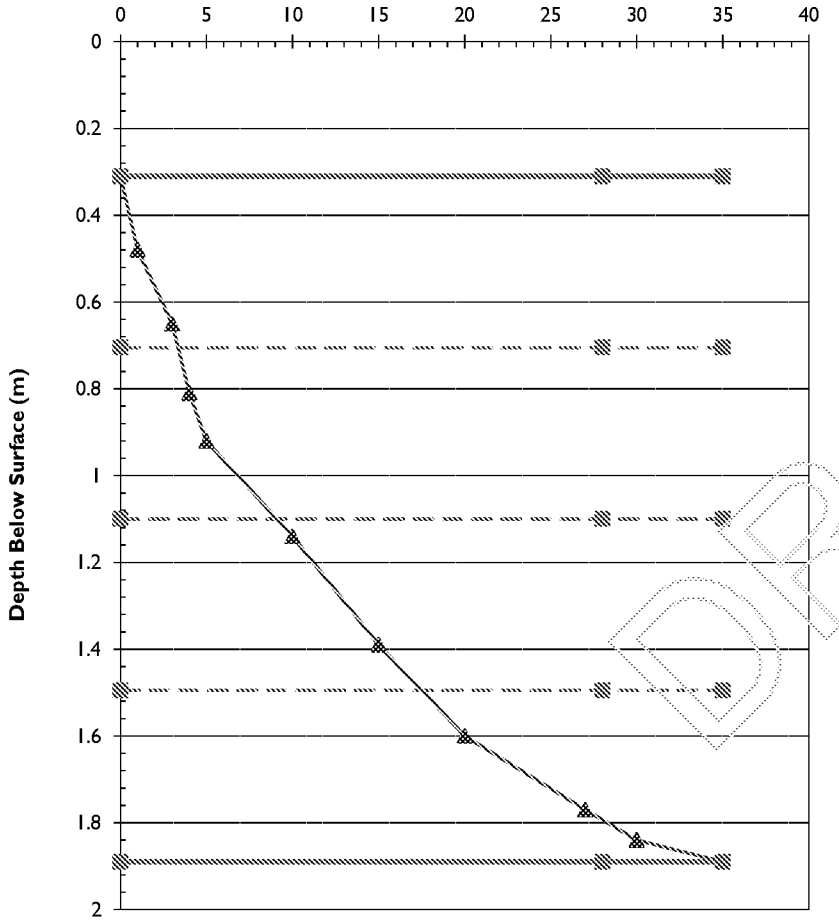
Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



lepeated)

Test Hole No:	TP405
Test No:	Test No 3

leap environmental

Pit Length (m)	1.9
Pit Width (m)	0.32
Depth to Pit Base (m)	1.89
Depth to Top of Permeable Soils (m)	
Depth to Groundwater Surface (m)	
Depth to Top of Granular Fill (m)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.31
Max Water Dropdown during Test (m)	1.58
Total Soakage Test Time (min)	35
Mean Internal Discharge Area (m2)	4.1156
Discharge Rate (litre/min)	11.875461
Soakage Rate (litre/m2/min)	2.8854751
BRE Soil Infiltration Rate (m/sec)	4.809E-05

Comments:

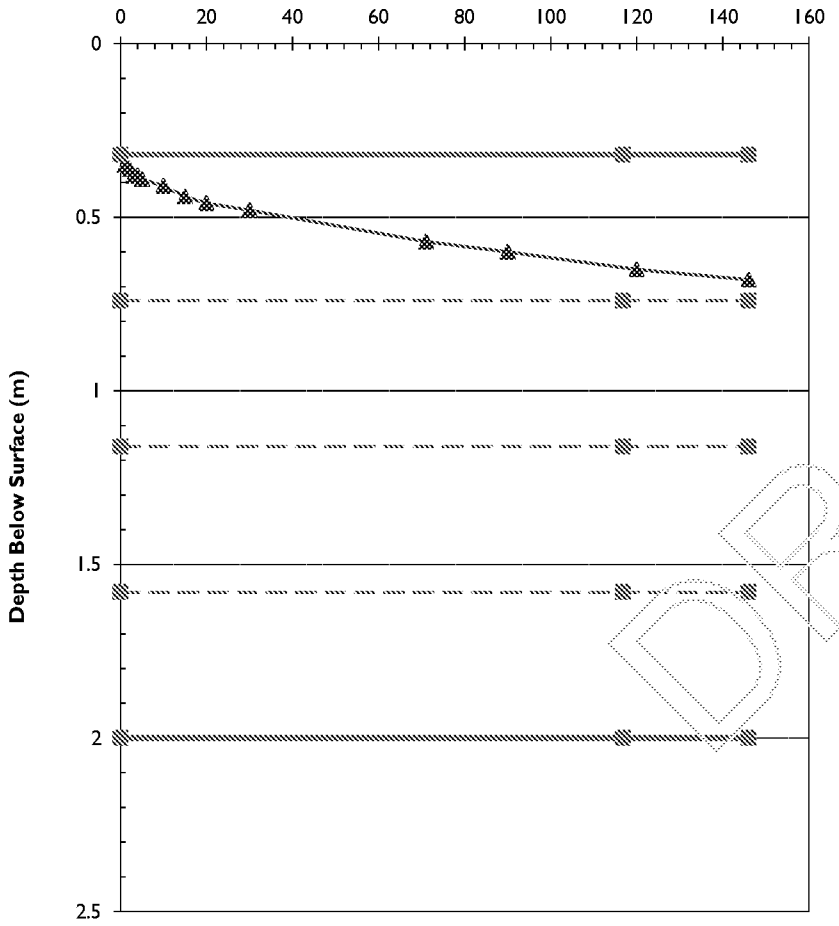
Pit was emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP406
Test No:	Test No 1



Pit Length (m)	1.8
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.32
Max Water Dropdown during Test (m)	0.36
Total Soakage Test Time (min)	146
Mean Internal Discharge Area (m2)	7.3149
Discharge Rate (litre/min)	0.4821016
Soakage Rate (litre/m2/min)	0.0659068
BRE Soil Infiltration Rate (m/sec)	1.098E-06

Comments:

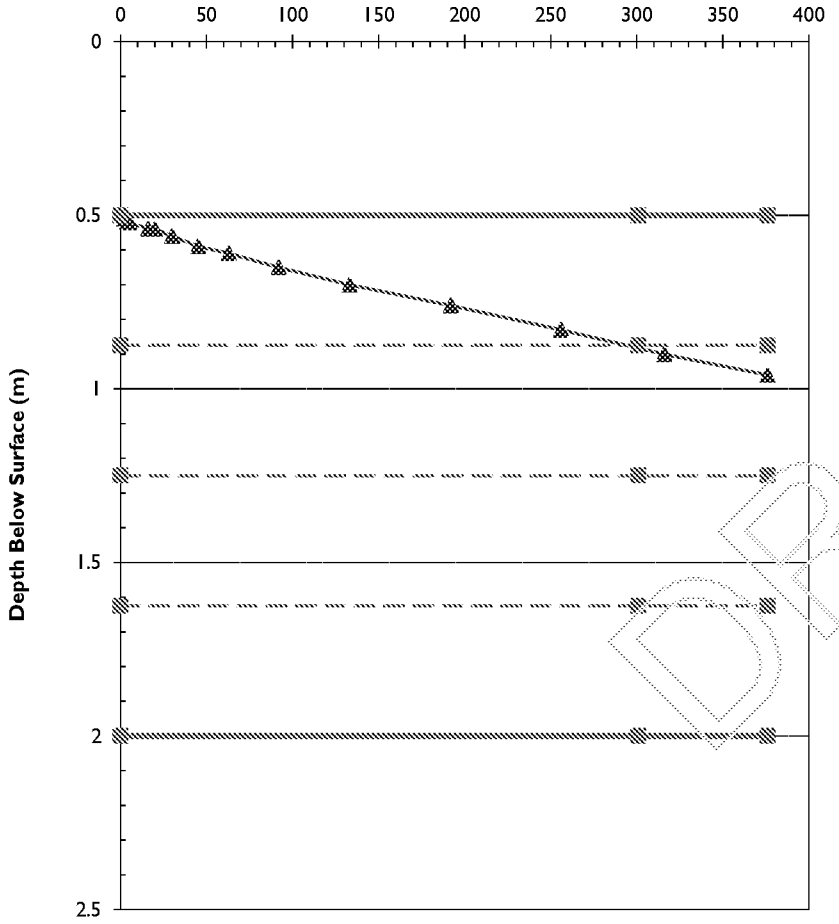
Water level did not fall to 75% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

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BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



lepeated)

Test Hole No:	TP406
Test No:	Test No 2

Pit Length (m)	1.8
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	0.46
Total Soakage Test Time (min)	376
Mean Internal Discharge Area (m2)	6.06835
Discharge Rate (litre/min)	0.358386
Soakage Rate (litre/m2/min)	0.0590582
BRE Soil Infiltration Rate (m/sec)	9.843E-07

Comments:

Water level fell to 75% -- 50% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	08/07/19

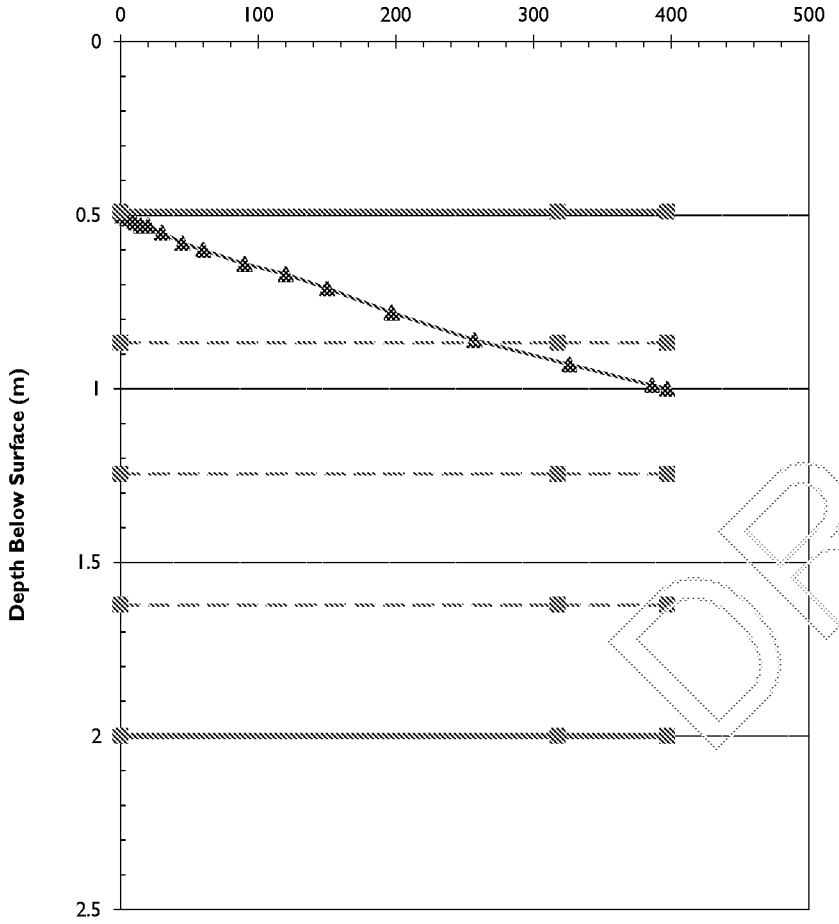
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP406
Test No:	Test No 3

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.8
Pit Width (m)	0.53
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.49
Max Water Dropdown during Test (m)	0.51
Total Soakage Test Time (min)	397
Mean Internal Discharge Area (m2)	5.922725
Discharge Rate (litre/min)	0.3336302
Soakage Rate (litre/m2/min)	0.0563305
BRE Soil Infiltration Rate (m/sec)	9.388E-07

Comments:

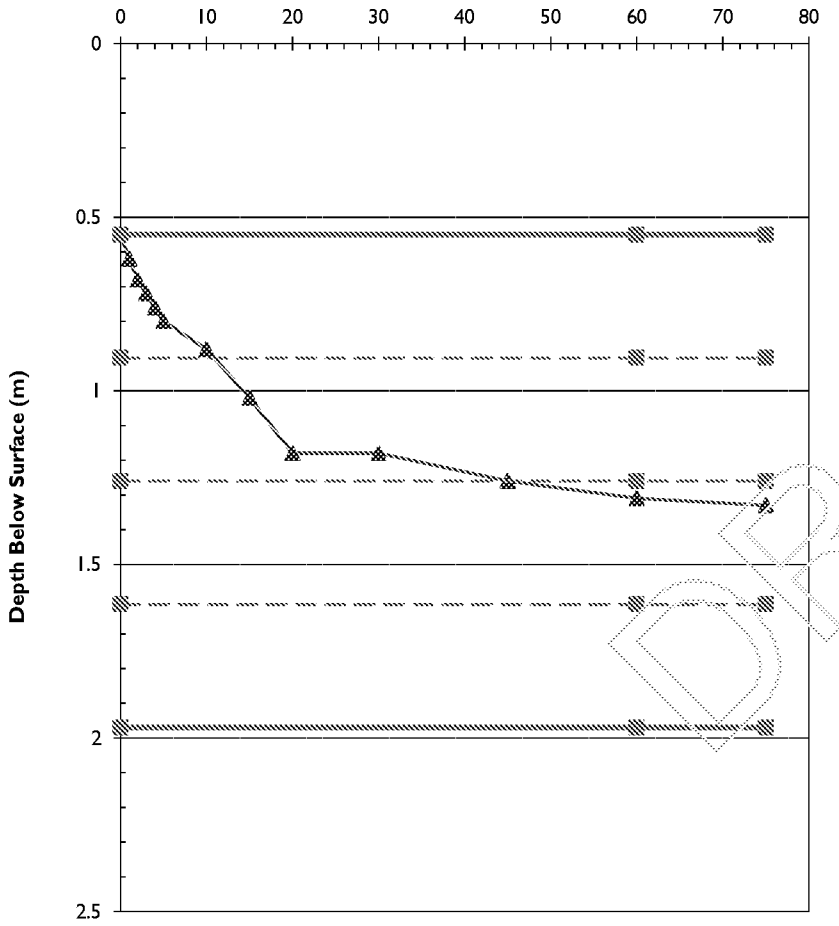
Water level fell to 75% -- 50% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	09/07/19

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BRE Digest 365 - Soakage Test

Test Hole No:	TP407
Test No:	Test No 1



Pit Length (m)	1.83
Pit Width (m)	0.5
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.55
Max Water Dropdown during Test (m)	0.78
Total Soakage Test Time (min)	75
Mean Internal Discharge Area (m2)	4.88765
Discharge Rate (litre/min)	2.1231058
Soakage Rate (litre/m2/min)	0.4343817
BRE Soil Infiltration Rate (m/sec)	7.24E-06

Comments:

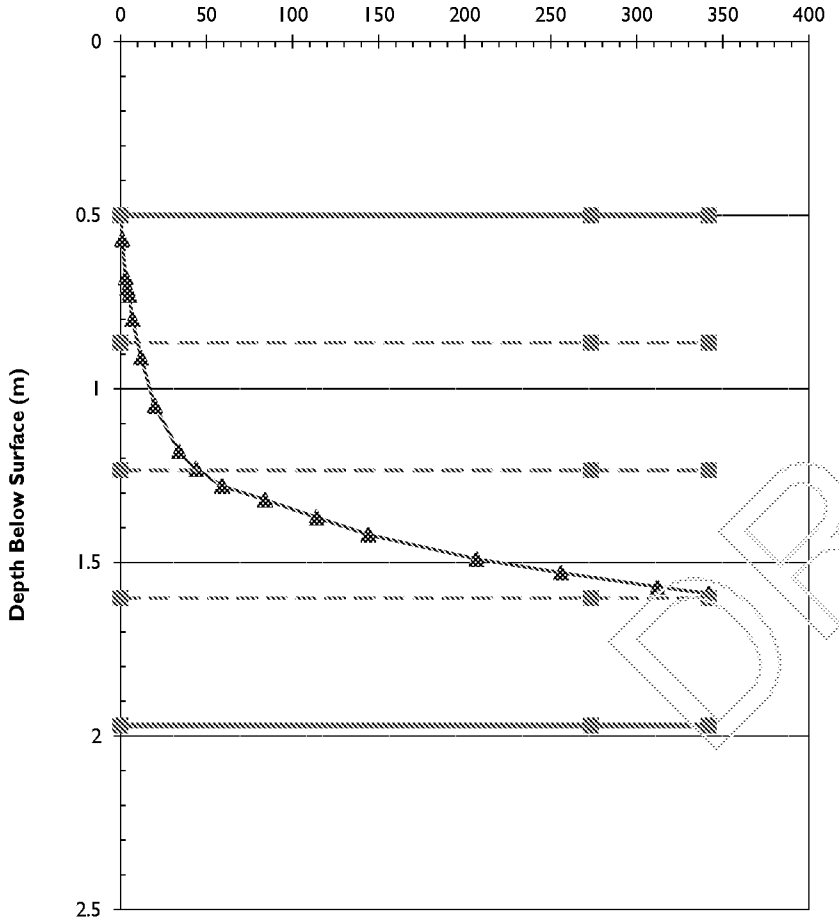
Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	05/07/19

DRAFT

BRE Digest 365 - Soakage Test

Filling to Max Water Depth (min)



(epeated)

Test Hole No:	TP407
Test No:	Test No 2

leap environmental

Pit Length (m)	1.83
Pit Width (m)	0.5
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.5
Max Water Dropdown during Test (m)	1.09
Total Soakage Test Time (min)	342
Mean Internal Discharge Area (m2)	4.369225
Discharge Rate (litre/min)	0.6970727
Soakage Rate (litre/m2/min)	0.1595415
BRE Soil Infiltration Rate (m/sec)	2.659E-06

Comments:

Water level fell to 50% -- 25% max water depth,
Result not compliant with BRE365 requirement

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	08/07/19

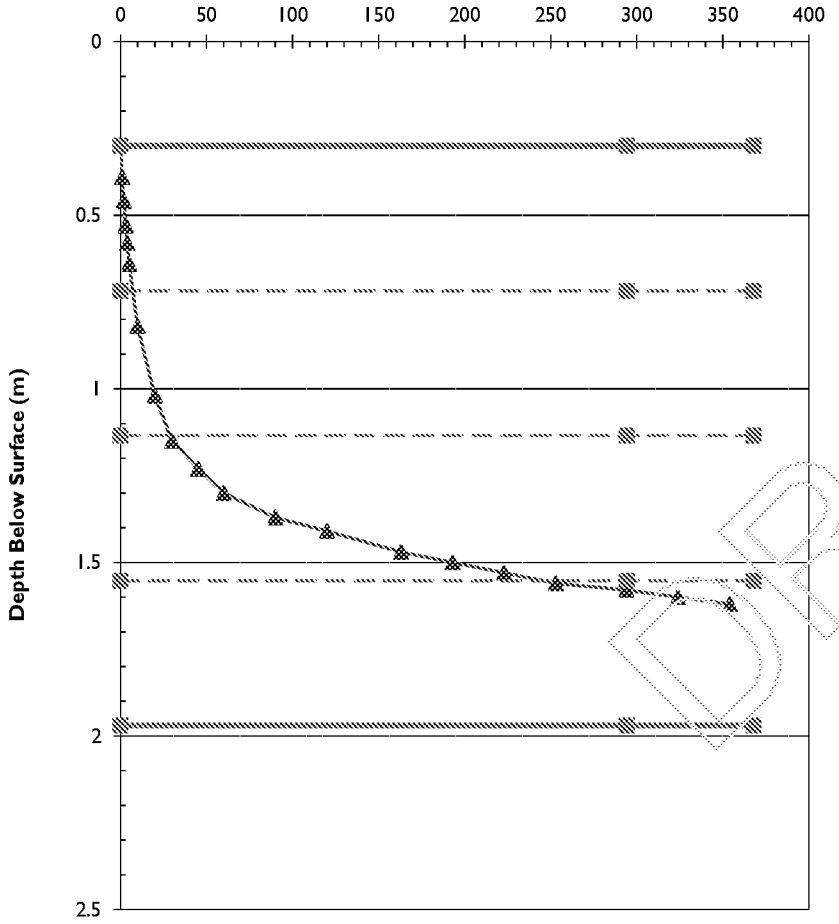
DRAFT

BRE Digest 365 - Soakage Test

Test Hole No:	TP407
Test No:	Test No 3

(repeated)

Filling to Max Water Depth (min)



Pit Length (m)	1.83
Pit Width (m)	0.5
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)	0.3
Voids Assumed for Granular Fill (%)	35%

Depth of Water at Start of Test (m)	0.3
Max Water Dropdown during Test (m)	1.33
Total Soakage Test Time (min)	368
Mean Internal Discharge Area (m2)	4.8061
Discharge Rate (litre/min)	1.1219294
Soakage Rate (litre/m2/min)	0.2334386
BRE Soil Infiltration Rate (m/sec)	3.891E-06

Comments:

Pit was nearly emptied at finish of test.

Client:	Dandara Home
Site:	Fontwell Avenue
Tested By:	ADC/KT
Test Date:	09/07/19

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Results of BRE Digest 365 Soakage Tests

Site : Fontwell Avenue
Client : Dandara Home
O S Reference :

Tested By : ADC/KT
Test Date : 10/07/2019

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
TP401	No 1	2	27.35	27.35	0.000450167	Empty pit.	
TP401	No 2	2	27.98			Empty pit.	
TP401	No 3	2	27.01			Empty pit.	
TP402	No 1	1.91	0.07	0.07	1.169E-06	Nearly empty pit.	
TP402	No 2	1.91	0.20			Pit was not emptie	
TP402	No 3	1.91	0.16			Pit was not emptie	
TP403	No 1	1.88	3.06	3.06	5.08143E-05	Empty pit.	
TP403	No 2	1.88	3.21			Nearly empty pit.	
TP403	No 3	1.88	3.05			Empty pit.	
TP404	No 1	1.87	6.05	5.90	9.49893E-05	Empty pit.	
TP404	No 2	1.87	5.90			Empty pit.	
TP404	No 3	1.87	5.70			Empty pit.	
TP405	No 1	1.89	3.64	3.03	4.80913E-05	Empty pit.	
TP405	No 2	1.89	3.03			Nearly empty pit.	

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TP405	No 3	1.89	2.89			Empty pit.	
TP406	No 1	2	0.07	0.06	9.38842E-07	Pit was not emptie	
TP406	No 2	2	0.06			Pit was not emptie	
TP406	No 3	2	0.06			Pit was not emptie	
TP407	No 1	1.97	0.43	0.16	2.65903E-06	Pit was not emptie	
TP407	No 2	1.97	0.16			Nearly empty pit.	
TP407	No 3	1.97	0.23			Nearly empty pit.	
TP305	No 1	1.83	0.37	0.37	6.11446E-06	Nearly empty pit.	
TP305	No 2	1.83	0.51			Nearly empty pit.	
TP305	No 3	1.83	0.44			Pit was not emptie	
TP303	No 1	1.9	1.53	1.28	2.14005E-05	Nearly empty pit.	
TP303	No 2	1.9	1.28			Nearly empty pit.	
TP303	No 3	1.9	1.45			Nearly empty pit.	
TP304	No 1	1.89	5.91	5.58	9.30476E-05	Empty pit.	
TP304	No 2	1.89	5.58			Empty pit.	
TP304	No 3	1.89	6.21			Empty pit.	
TP311	No 1	1.9	26.69	23.53	0.000368289	Empty pit.	

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TP311	No 2	1.9	23.53			Empty pit.	
TP311	No 3	1.9	22.10			Empty pit.	
TP319	No 1	1.85	1.36	1.27	1.80049E-05	Nearly empty pit.	
TP319	No 2	1.85	1.27			Nearly empty pit.	
TP319	No 3	1.85	1.08			Nearly empty pit.	
TP323	No 1	1.81	1.15	1.10	1.84101E-05	Nearly empty pit.	
TP323	No 2	1.81	1.10			Pit was not emptie	
TP323	No 3	1.81	1.18			Empty pit.	
Mean Value of All Calculated Soakage Rates :				5.60 litre/m2/min 9.0315E-05 m/sec			

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Appendix (C)

Proposed Surface Water Drainage Strategy

N

NOTES

Contributing area for infiltration basin : 9,610m²
Area 1, Area 2, Area 4, Area 8, Area 9 (part) , Area 11 (part), Area 24, Area 17, Area 30, Area 30A
Area of basin: 1,217m²
Total Area contributing to basin: 10,827m²

Area 5: 229.38m²

Area 7: 618m²

Area 6: 679m²

Area 10: 1,318m²

Area 13: 1,779m²

Area 15: 588m²

Area 21: 1,350m²

Area 26: 915m²

Area 22: 1,221m²

Area 29: 1,839m²

Area 18: 1,277m²

Area 19: 960m²

Sub Sta

ARUNDEL ROAD

A27 FONTWELL AVENUE

New site paving to tie into existing

Community Building

Cycles

Area 1

Area 2

Area 3

Area 4

Area 5

Area 7

Area 8

Area 9

Area 10

Area 11

Area 24

Area 30

Area 30A

Block A 1-4

Block B 1-12

Block C 13-30

Block D 39-50

Block E 51-57

Block F 58-63

Block G 64-73

Block H 82-105

Block J 74-81

Deliveries

Bins

BCP

Allotment parking

Refer to Landscape Master Plans for details

Timber Posts

Footpath / Cycle Link

Outdoor Gym

M.U.G.A

SCALE BAR 1:500 at A1

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Rev.	Date	Details	By	Chkd	Appd
C	25.06.20	Updated to suite latest site layout	TRS	TRS	TRS
B	26.05.20	Key Updated with areas	TRS	TRS	TRS
A	12.03.20	Plots 115 - 118 Areas revised.	LD	PJ	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
Area
Take Off Plan

Sheet 1 of 4

Date: January 2020 | Scales: 1:500 at A1

Drawn: CD-I | Checked: LD | Approved: TRS

Drawing No. DAN/E4736/046 C

FOR INFORMATION ONLY

1:500 KEYPLAN

Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769769 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk

NOTES

Contributing area for infiltration basin : 9,610m²
Area 1, Area 2, Area 4, Area 8, Area 9 (part) , Area 11 (part), Area 24, Area 17, Area 30, Area 30A
Area of basin: 1,217m²
Total Area contributing to basin: 10.827m²

Area 5: 229.38m²

Area 7: 618m²

Area 6: 679m²

Area 10: 1,318m²

Area 13: 1,779m²

Area 15: 588m²

Area 21: 1,350m²

Area 26: 915m²

Area 22: 1,221m²

Area 29: 1,839m²

Area 18: 1,277m²

Area 19: 960m²

SCALE BAR 1:500 at A1

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Rev.	Date	Details	By	Chkd	Appd
B	25.06.20	Updated to suite latest site layout	TRS	TRS	TRS
A	26.05.20	Key Updated with areas	TRS	TRS	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
Area
Take Off Plan

Sheet 2 of 4

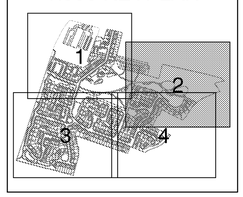
Date: January 2020 | Scales: 1:500 at A1
Drawn: GdeI | Checked: LD | Approved: TRS

Drawing No.
DAN/E4736/047B

FOR INFORMATION ONLY

Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769269 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk

1:500 KEYPLAN



N

FONTWELL PARK RACECOURSE

A29 FONTWELL AVENUE

Area 10 | Area 11 | Area 13 | Area 15 | Area 21 | Area 22 | Area 25 | Area 30

Outdoor Gym
Footpath / Cycle Link

Bins

De-mountable bollards

Attenuation Pond

Basin

Claremont Gardens

1 to 5

6 to 21

NOTES

Contributing area for infiltration basin : 9,610m²
Area 1, Area 2, Area 4, Area 8, Area 9 (part) , Area 11 (part), Area 24, Area 17, Area 30, Area 30A
Area of basin: 1,217m²
Total Area contributing to basin: 10,827m²

Area 5: 229.38m²

Area 7: 618m²

Area 6: 679m²

Area 10: 1,318m²

Area 13: 1,779m²

Area 15: 588m²

Area 21: 1,350m²

Area 26: 915m²

Area 22: 1,221m²

Area 29: 1,839m²

Area 18: 1,277m²

Area 19: 960m²

SCALE BAR 1:500 at A1

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Rev.	Date	Details	By	Chkd	Appd
C	25.06.20	Updated to suite latest site layout	TRS	TRS	TRS
B	26.05.20	Key Updated with areas	TRS	TRS	TRS
A	12.03.20	Plots 115 - 117 Areas revised.	WD	LD	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
Area
Take Off Plan

Sheet 3 of 4

Date: January 2020 | Scales: 1:500 at A1
Drawn: GD-I | Checked: LD | Approved: TRS

Drawing No. DAN/E4736/048 C

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1:500 KEYPLAN

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Hook Hampshire RG27 9NJ
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Area 18: 1,277m²

Area 19: 960m²

Area 22

Area 24

Area 19

Area 29

Area 30A

Block F 391-400

Block G 382-390

Footpath / Cycle Link

Bats

Cyclists

Timber Posts

BCP

2.4m x 90m Visibility splay for cyclists joining Wandleys Lane

Potential for future access to Wandleys Lane

Oak Bank

Arun House

WANDLEYS LANE

N

SCALE BAR 1:500 at A1

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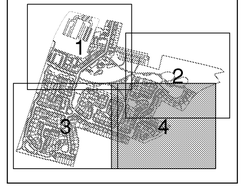
Sheet 4 of 4

Date:	January 2020	Scales:	1:500 at A1
Drawn:	GD–I	Checked: LD	Approved: TRS

Drawing No.
DAN/E4736/049B

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1:500 KEYPLAN



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N

Sub Sta

ARUNDEL ROAD

A259 CHICHESTER ROAD

New site paving to tie into existing

Community Building

Area 1

Area 2

Area 3

Area 4

Area 5

Area 6

Area 7

Area 8

Area 9

Block A 1-12

Block B 13-30

Block C 31-38

Block D 39-50

Block E 51-57

Block F 58-69

Block G 70-73

Block H 82-105

Cycles

Bins

Refer to Landscape Master Plans for details

Allotment parking

Footpath / Cycle Link

Timber Posts

Outdoor Gym

LOWG GRASS

KEY

Soakaway10m offset

Root Protection Areas

Tree Protection Fencing

Plot drained by Infiltration Basin

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

1 2 3 4

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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 Driveway Parking	R D P	D400 B125 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.
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KEY

- Site Boundary
- Proposed Permeable Paving
- Private Surface Water Sewers
- Trench Soakaways with 10m offset to structures (colour coded to suit catchment)
- Cellular Storage (colour coded to suit catchment)

Rev.	Date	Details	By	Chkd	Appd
D	25.06.20	Updated to latest Site Layout received 25.06.20, key updated.	TRS	TRS	TRS
C	12.03.20	Phase 1 Mains and domestic drainage indicated. Key updated.	LD	PJ	TRS
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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 D

FOR INFORMATION ONLY

RCP ARCHITECTURE & CIVIL ENGINEERING
Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road Hook Hampshire RG27 9NJ
T: 01256 769269 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk



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

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KEY

Site Boundary

Proposed Permeable Paving

Private Surface Water Sewers

Trench Soakaways with 10m offset to structures (colour coded to suit catchment)

Cellular Storage (colour coded to suit catchment)

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.

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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 C

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Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769269 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk

N

HEADWALL OUTFALL INTO INFILTRATION BASIN

INFILTRATION BASIN PROVIDES 584m³ OF VOLUME
BASE LEVEL = 20.90
TOP LEVEL = 21.50

10m EXCLUSION ZONE FROM INFILTRATION BASIN

HEADWALL OUTFALL INTO INFILTRATION BASIN

Claremont Gardens

Area 21 | Area 22 | Area 25 | Area 30

Outdoor Gym
Footpath / Cycle Link

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

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Cellular Storage (colour coded to suit catchment)

KEY

Soakaway10m offset

Root Protection Areas

Tree Protection Fencing

Plot drained by Infiltration Basin

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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 D

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

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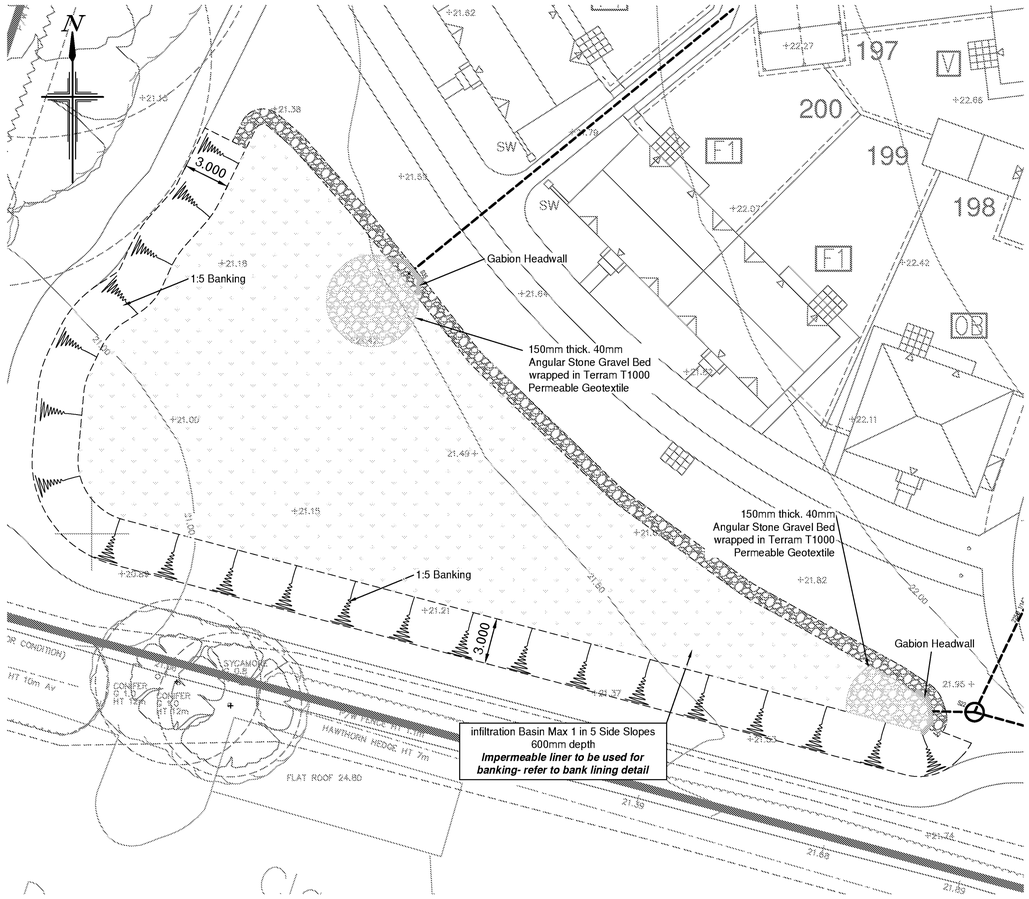
Drawing Title:-
PROPOSED
SURFACE WATER
DRAINAGE STRATEGY
Sheet 4 of 4

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

Drawing No.
DAN/E4736/034 C

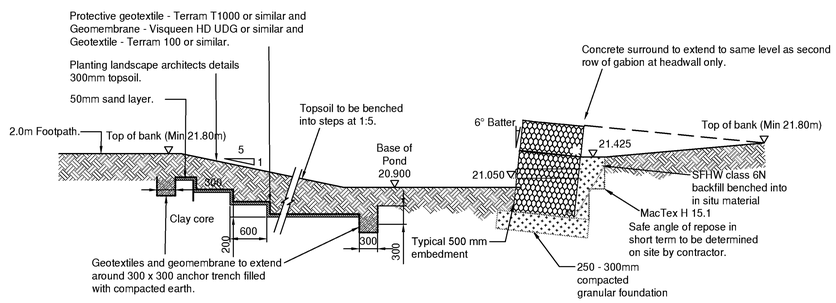
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Infiltration Basin Plan

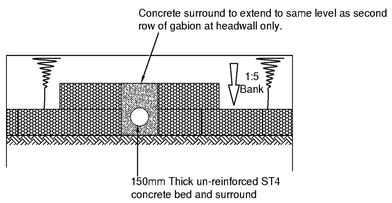
Scale 1:200



2.0m x 1.0m x 1.0m Gabion basket supplied by Environmesh or similar approved.
Fill to gabion to comprise of Class 6G material to the Series 600 of the S.H.W (MCDHW Vol 1)
The grading of the stone to vary from a minimum size larger than the gabion apertures up to 200mm size stone. Gabin to be Hexagonal Woven Mesh (ENV-P27-HEX (Polymer powder coated grey). Mesh fabric to have net pattern of nominal size 80mmx100mm. Nominal wire diameter shall be 2.7mm to 3.4mm to BS EN 10218:2012 and BS EN 10223-3:2013 with an ultimate tensile strength that falls in the range of 350 to 550 N/mm²
Reference must be made to the gabion manufacturers specification and installation guidance

Typical Gabion Headwall and Basin Bank Benching Detail

Scale 1:20



Typical Gabion Headwall Elevation Detail Scale 1:20

NOTES

1. All dimensions are in metres unless stated otherwise.
2. Do not scale from this drawing. Only written dimensions are to be used.
3. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
17. Site Layout and boundary based on AAP Architecture Proposed Site Layout, drawing numbers P1549.11 Revision K, P1549.21 Revision K and P1549.31 Revision J received on 21/01/2020.
18. Topographic Survey taken from mksurveys Topographical Survey drawing number 25802, Sheets 1-3, dated 05.10.18.
19. For Root Protection Areas refer to fpcr Environment & Design Ltd drawing number 6233-A (01-04) (dated July 2014).
20. All concrete products should be sulphate resisting.
21. Pipework should have spigot and socket flexible joints.
22. Refer to Geotechnical report for sulphate resisting class and ACEC class.
23. ***ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

DEPTH OF PIPE COVER

The minimum depth of pipe cover to the crown of gravity pipes without protection should be as follows:

- domestic gardens and pathways without any possibility of vehicular access, 0.35m;
- domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross weight in access of 7.5 tonnes, 0.5m;
- domestic driveways, parking areas and narrow streets without footways (e.g., mews developments) with limited access for vehicles with a gross weight in excess of 7.5 tonnes, 0.9m;
- agricultural land and public open space, 0.9m;
- other highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes, 1.2m.

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.

SCALE BAR 1:200 at A1

Rev.	Date	Details	By	Chkd	Appd
A	26.05.20	Gabion Details and outfall elevation added	TRS	TRS	TRS

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
SUDS
FEATURE
DETAILS

Sheet 1 of 2

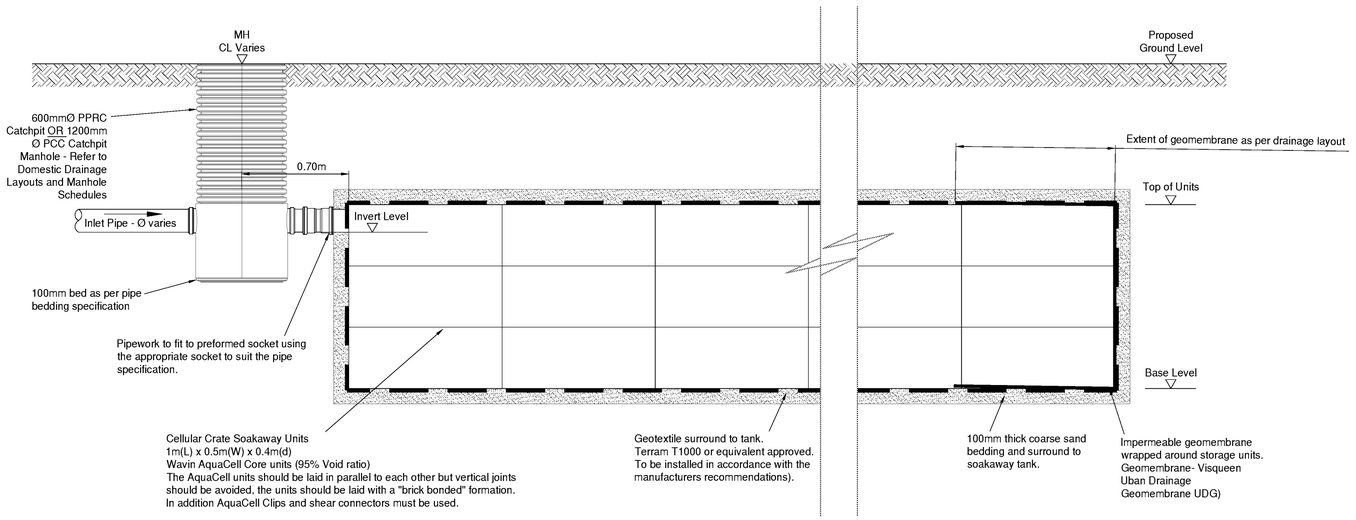
Date:	March 2020	Scales:	As Shown at A1
Drawn:	GD-I	Checked: LD	Approved: TRS

Drawing No.
FON-183-01-A

INITIAL TENDER ISSUE
SUBJECT TO PLANNING APPROVAL

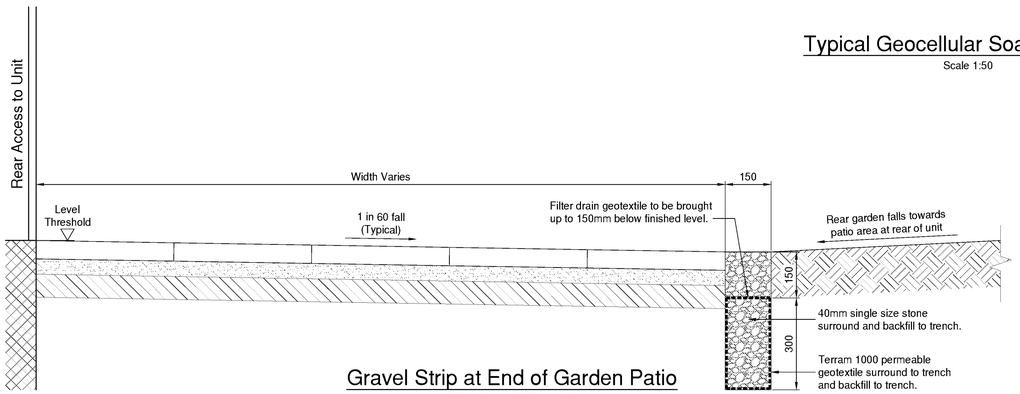
RCP ARCHITECTURE & CIVIL ENGINEERING
Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769269 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk

ARUN DISTRICT COUNCIL WA/45/19/RES

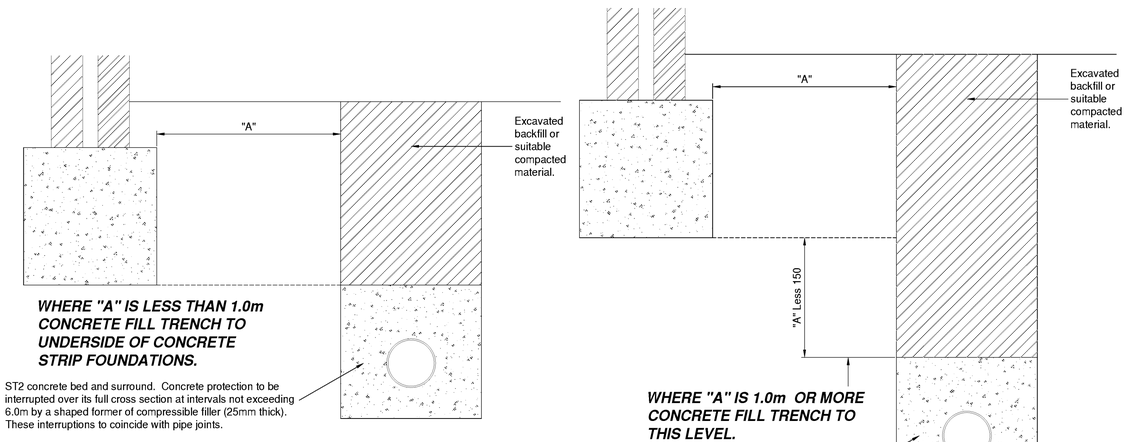


Typical Geocellular Soakway Detail

Scale 1:50



Gravel Strip at End of Garden Patio Typical Detail



Pipe Runs Near Buildings

NOTE: THIS DETAIL IS NOT APPLICABLE WHERE BUILDINGS HAVE PILED FOUNDATIONS.

NOTES

1. This drawing is to be read in conjunction with Foul Water Sewer Longitudinal Sections (FON-160-01 to 04), Surface Water Sewer Longitudinal Sections (FON-161-01 to 03), Highways Construction Details (FON-180-01 to 02), Highways Contours Layouts (FON/121-01 to 18), Highways Setting out Layout (FON-113-01 to 02), Highways Setting Out Coordinate Listings (FON-113-03), Drainage Construction Details (FON-181-01 to 02), Foul Water Manhole Schedules (FON-141-01 to 03), Surface Water Manhole Schedules (FON-140-01 to 02), Domestic Drainage Layouts (FON-130-01 to 18), Domestic Drainage Construction Details (FON-182-01 to 02), Surface Water Attenuation Details (FON-183-01 to 02) and Building Setting Out Layouts (FON-110-01 to 18).
2. All dimensions are in millimetres unless stated otherwise.
3. Do not scale from this drawing. Only written dimensions are to be used.
8. **All construction to be in accordance with Sewers for Adoption - 6th Edition & Interim Addendum and ICOSA Water specific requirements,** and Part H of the Building Regulations
9. Refer to geotechnical report for sulphate resisting class and ACEC class.
10. Insitu concrete generally to be GEN 4 Designated Mix.
11. Insitu reinforced concrete to be RC 35 Designated Mix only when specified.
12. Where sulphates present, Consulting Engineer to confirm concrete and mortar specification.
13. All insitu concrete to be thoroughly compacted.
14. Typical domestic inspection chamber and manhole details shown on this drawing, widths and lengths will vary as follows:-
15. All covers to be stamped "FW" or "SW", as appropriate.
16. For Manufacturer and specification of pipes and fittings refer to drainage layout and schedule.
17. Drainage pipes and fittings to be Hepworth vitrified clay and PVCu or Wavin Osma PVCu or other equavalent approved. Refer to drainage layout and schedules for details of manufacturer and specification.
18. Mild steel fabrication to be hot dip galvanised to BS EN 1461.
19. ***Outgoing pipes greater than 600mm dia. should be fitted with guard bars, safety chains [to BS4942;pt 2 and BS 729] or other safety devices in accordance with the Southern Water safety policy.***

DEPTH OF PIPE COVER

The minimum depth of pipe cover to the crown of gravity pipes without protection should be as follows:

- domestic gardens and pathways without any possibility of vehicular access, 0.35m;
- domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross weight in access of 7.5 tonnes, 0.5m;
- domestic driveways, parking areas and narrow streets without footways (e.g., mews developments) with limited access for vehicles with a gross weight in excess of 7.5 tonnes, 0.9m;
- agricultural land and public open space, 0.9m;
- other highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes, 1.2m.

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.

Rev.	Date	Details	By	Chkd	Appd
A	26.05.20	Soakaway details updated, Drawing number revised	TRS	TRS	TRS

Client:- dandara

Site:- Fontwell Eastergate Arundel

Drawing Title:- DOMESTIC DRAINAGE CONSTRUCTION DETAILS

SHEET 2 OF 2

Date: March 2020 | Scales: Not to scale at A1

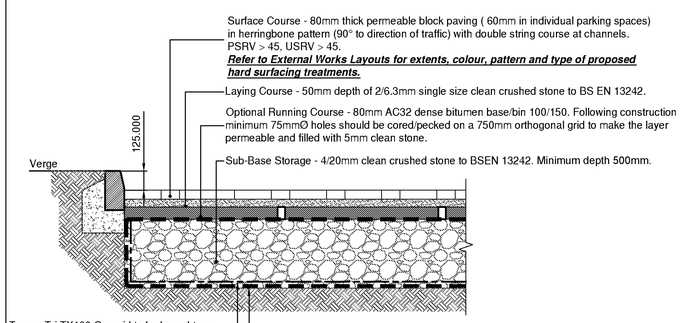
Drawn: GD-I | Checked: LD | Approved: TRS

Drawing No. FON-182-02-A

INITIAL TENDER ISSUE

SUBJECT TO PLANNING APPROVAL

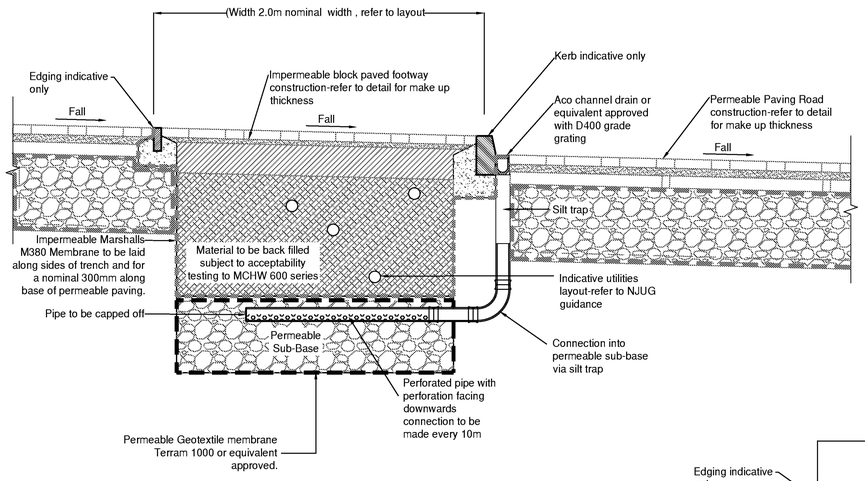
RCP ARCHITECTURE & CIVIL ENGINEERING
Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769769 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk



Infiltration Permeable Paving
(Design CBR value 4.0%)

Permeable Block Paving Construction - Roads

Allowance to be made for check dams with longitudinal gradients no steeper than 1 in 20. Allowance also to be made for regulating sub-base between minimum depth and formation level to ensure longitudinal gradients of formation are no steeper than 1 in 100.

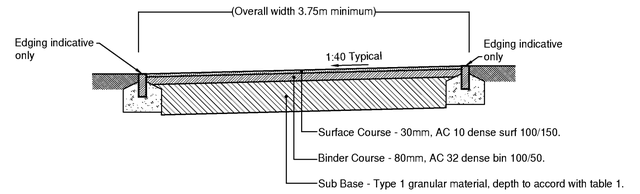


Typical Section Through Service Trench Located in Impermeable Block Paving

NOTE: Sub-base Construction depths indicated are based on an assumed design value of 4%. Actual CBR value to be confirmed and subject to CBR Testing to inform design depths noted in Table 1

AFTER BUILDING WORK IS COMPLETED

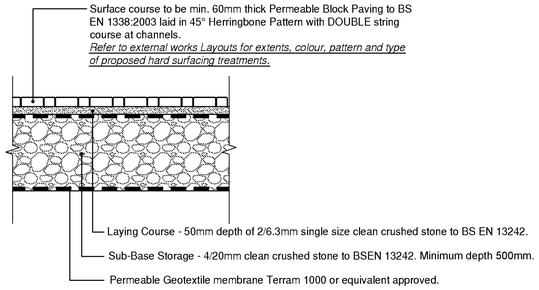
- Clean tarmac surface.
- Cut 75mm diameter holes at 750mm centres through tarmac surface into sub-base.
- Fill holes with 2/6.3mm single size clean crushed stone stone.
- Lay permeable membrane 5mm laying course and blocks.
- PERMEABLE PAVING TO BE INSTALLED IN ACCORDANCE WIITH MANUFACTURERS GUIDANCE AND RECOMMENDATIONS.



Flexible Construction for Fire Tender Access

NOTES

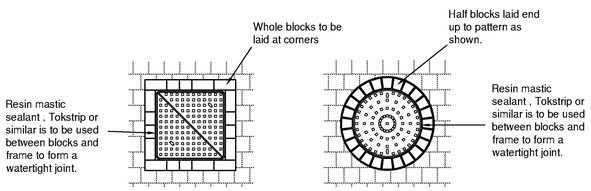
1. This drawing is to be read in conjunction with other highways construction details
2. All dimensions are in millimetres unless stated otherwise.
3. Do not scale from this drawing. Only written dimensions are to be used.
4. A design CBR value of 4% has been assumed, this is subject to test results from geotechnical engineer.
5. Adoptable highways works to be constructed in accordance with West Sussex County Council standards and specifications and the Department of Transport "Specification for Highway Works".
6. Clause numbers refer to clauses in the Department of Transport's Specification for Highway Works 2005 and WSCC Model Contract Specification.
7. No works shall commence within the existing public highway until the Agreement is signed.
8. An approved weedkiller (harmless to humans, animals and insects) is to be applied (as per manufacturer's recommendations) to all prepared formation levels of new carriageway and footways and/or as directed by the Highways Inspector.
9. Any damage caused to the existing highway during the course of the works to be repaired as directed by the Highways Inspector and/or Area Engineer.
10. No private surface water runoff shall be permitted to discharge onto the adoptable highway, or vice versa. Cut-off drains, channels and/or gullies shall be used to intercept any conflicting water.
11. Any new trees within 3.0m of the proposed highway shall have their roots restrained by root barriers as directed by the Highways Inspector.
12. Contractor to provide suitable and effective wheel washing facilities to prevent mud from being conveyed onto the public highway and to provide the means to clean the highway to the satisfaction of the Highways Inspector, Area Engineer and/or Local Authority.
13. No concrete to be poured or laid in temperatures below 2 deg C on a falling max/min thermometer or before the temperature reaches 2 deg C on a rising max/min thermometer (to be provided by the Contractor and displayed in a position agreed by the Highways Inspector).
14. All bollards shall be approved by the highways inspector prior to their installation.
15. No private apparatus (gullies, rodding eyes, boxes, chambers, ect.) shall be allowed to be located within the adoptable highway.
16. All road signs and markings to comply with The Traffic Signs Regulations and General Directions 2016. Road Markings to be thermoplastic.
17. Contractor to comply with Chapter 8 of the Traffic Signs Manual 2009.
18. Tactile paving to comply with the Guidance on the use of Tactile Paving Surfaces 1998. Tactile Pedestrian Crossings to have a 6mm (maximum) upstand (not flush). Actual layout of tactile paving to be agreed on site with the Highways Inspector prior to laying slabs.
19. All street lighting to be installed per West Sussex County Council's lighting specification.
20. Supplies to street lighting columns are to be provided by the DNO.
21. Kerbs to be butt jointed. Where kerb alignments incur 'minor open joint tapers' between formed surfaces mortar jointing shall be used as directed by Highway Inspector.
22. All full length PCC kerbs are to be mechanically handled.
23. All precast Kerbs & Edgings shall be to BS EN 1340 & laid to BS 7533-6.
24. All setts of natural stone shall be to BS EN 1342 and laid to BS 7533-7.
25. All kerb and edging bed and backing to be concrete Class ST1 (C6/8) well compacted. Unless otherwise stated this shall be a minimum bed thickness of 150mm. Carriageway marking demarcation CS1 / concrete setts to be ST4 (C16/20).
26. The minimum length of any cut kerb shall be 450mm.
27. The correct radius kerbs shall be used for all radii of 12m or less. For radii between 12m and 20m, 600mm long straight units shall be used. Radius kerbs shall be used to form corners of laybys and tapers.
28. The appropriate 914mm long precast concrete transition kerb shall be installed at each change in kerb type, tie-ins to existing and at terminations.
29. All external angles on HB kerbs to be quadrants. Suitable quadrant kerbs shall be used to form corners of square areas and refuge islands.
30. Bituminous materials to comply with relevant Clause No. in BS4987 : 2001.
31. Grading of granular sub-base material to comply with BS1377 : 1975.
32. Where the Subgrade is shrinkable clay and trees have been removed or are to be planted/retained within 10m of the carriageway, geogrids shall be installed between the the capping & the sub-base layers, eg Tensar Triax TX160 or similar approved.
33. On heavy clay soils, or where new planting is to be undertaken adjacent the footway, the sub-base/capping layer beneath the footways shall be as for the adjacent carriageway and a geotextile will be required surrounding the sub-base/cappinglayer to limit problems with cracks arising from shrinkage or swelling.
34. Overall thickness should not be less than 450mm due to frost susceptibility.
35. Cut blocks to be no less then 1/3 block.
36. Block pavers to be specified in terms of minimum 'Polished Paver Value' (PPV) and results submitted to engineer. Min value of 55.
37. A water based biodegradable sealant from approved supplier shall be used to prevent loss of sand.
38. Kiln dried sand jointing to be used in accordance with BS7533
39. Refer to geotechnical report for sulphate resisting class and ACEC class.
40. Mortars shall be designation (ii) or (iii). Clause 2404 SHW.
41. Mortar pigments shall comply with BS EN 12878.
42. Bricks to be engineering Class B to BS EN 771-1 and Clause 2406 laid in Class 1 mortar to Clause 2404 in radial bond.
43. All gully grating and frames to be 'hinged' heavy duty ductile iron minimum grade D400 in accordance with BS EN 124: 1994 of section 508 of the Specification of Highways Works.
44. Gully pots used for carriageway gullies, shall be of precast concrete using sulphate resisting cement (SRC) in accordance with BS 5911, part 230, 2004.
45. All buried concrete to be Cii(A or B)-S or Ciii A or B to BS 8500-2, Table 1 and Annex A.
46. Unless specified on the layout drawing, where the outlet pipe is under the carriageway, or in the verge less than 2000 from the carriageway edge, it shall be given a min. 600mm cover and shall have a bed Type Z. Where the outlet pipe is under the verge and is greater than 2000 from the edge of carriageway it shall have a min. 450mm cover.
47. Concrete lintels are not to be used.
48. Total Carriageway construction depth must be greater than 450mm to negate susceptibility to frost penetration, irrespective of CBR value.



Permeable Block Paved Private Driveway/Footway Construction Detail

Table 1

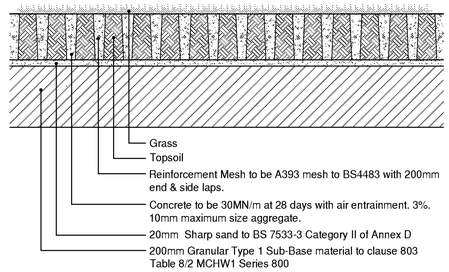
CBR VALUE (%)	Minimum sub-base thickness (mm) Consolidated in accordance with MCHW Volume 1 clause 801, Table 8/1	
	Without geotextile underneath	With geotextile underneath
less than 2	n/a	300
2 - 3	325	225
3 - 5	250	150
5 - 7	150	
7 - 20	100	

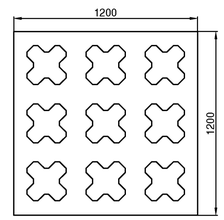


Typical Detail Around Manhole Covers in Permeable Block Paving

Grasscrete Installation Guidance

1. Formers laid on consolidated Type 1 Sub-Base of Material and 20mm sand Sharp sand. Topsoil and any soft spots should be removed and replaced with consolidated Type 1 to finished levels up to existing. 25mm thick planed softwood expansion joints to be laid at 10m centres.
2. Mesh reinforcement to be laid
3. Concrete to be 28MN/m at 28 days with air entrainment. 3% Cement to be OPC, 10mm nom. size aggregate. All edges & joints to have 100mm trowelled border.
4. Melt former tops with flame gun
5. Top soil and seed to Landscape architects specification





Grasscrete GC2
150mm Deep Former

Grasscrete Construction Detail from Grascrete Maximum Vehicle Weight 30-40 tonnes

(Used for Fire Tender Access and subject to agreement with utilities provider)

Refer to External Finishes Layouts for extents

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.

Rev.	Date	Details	By	Chkd	Appd

Client:- dandara

Site:-
Fontwell
Eastergate
Arundel

Drawing Title:-
HIGHWAYS CONSTRUCTION DETAILS
Sheet 1 of 2

Date: March 2020 | Scales: Not to scale
Drawn: PJ | Checked: LD | Approved: TRS

Drawing No.
FON-180-01

INITIAL TENDER ISSUE
SUBJECT TO PLANNING APPROVAL

Rogers Cory Partnership
Architectural and Civil Consultants
The Old School Old School Road
Hook Hampshire RG27 9NJ
T: 01256 769769 E: mail@rcpconsultants.co.uk W: rcpconsultants.co.uk

Appendix (D)

MicroDrainage Calculations

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	19.300	Add Flow / Climate Change (%)	10
Ratio R	0.348	Minimum Backdrop Height (m)	0.600
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.328	4-8	0.390	8-12	0.321	12-16	0.044

Total Area Contributing (ha) = 1.083

Total Pipe Volume (m^3) = 98.914

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	10.000
Areal Reduction Factor	1.000	MADD Factor * 10m^3/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	2
Number of Online Controls	2	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Storm Duration (mins)	30
Ratio R	0.348		

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Online Controls for Storm

Orifice Manhole: S17, DS/PN: S2.002, Volume (m³): 2.0

Diameter (m) 0.225 Discharge Coefficient 0.600 Invert Level (m) 23.255

Depth/Flow Relationship Manhole: S22, DS/PN: S1.022, Volume (m³): 4.4

Invert Level (m) 21.050

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.0000	0.400	0.0000	0.700	0.0000	1.000	0.0000
0.200	0.0000	0.500	0.0000	0.800	0.0000	1.100	0.0000
0.300	0.0000	0.600	0.0000	0.900	0.0000	1.200	0.0000

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Offline Controls for Storm

Orifice Manhole: S20, DS/PN: S1.019, Loop to PN: None

Diameter (m) 0.225 Discharge Coefficient 0.600 Invert Level (m) 21.322

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Storage Structures for Storm

Tank or Pond Manhole: S17, DS/PN: S2.002

Invert Level (m) 23.255

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	43.5	0.400	43.5	0.401	0.0

Infiltration Basin Manhole: S22, DS/PN: S1.022

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

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	749.0	0.600	1217.0

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

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	10.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	2
Number of Online Controls	2	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.348
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.300	Cv (Winter)	0.840

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	100
Climate Change (%)	40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	100	+40%					29.988
S1.001	S2	15 Winter	100	+40%					28.964
S1.002	S3	15 Winter	100	+40%					28.573
S1.003	S4	15 Winter	100	+40%					28.178
S1.004	S5	15 Winter	100	+40%					27.333
S1.005	S6	15 Winter	100	+40%	100/15 Summer				26.641
S1.006	S7	15 Winter	100	+40%					26.269
S1.007	S8	15 Winter	100	+40%	100/15 Summer				24.927
S1.008	S9	15 Winter	100	+40%	100/15 Winter				24.762
S2.000	S15	30 Winter	100	+40%	100/15 Winter				24.218
S2.001	S16	30 Winter	100	+40%	100/15 Winter				24.216
S2.002	S17	30 Winter	100	+40%	100/15 Summer				24.214
S2.003	S18	30 Winter	100	+40%	100/15 Summer				24.216
S2.004	S19	30 Winter	100	+40%	100/15 Summer				24.236
S2.005	S20	30 Winter	100	+40%	100/15 Summer				24.317
S3.000	S16	15 Winter	100	+40%					25.215
S3.001	S17	30 Winter	100	+40%	100/15 Summer				24.554
S3.002	S18	30 Winter	100	+40%	100/15 Summer				24.545
S3.003	S19	30 Winter	100	+40%	100/15 Summer				24.534

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

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	-0.181	0.000	0.32		44.7	OK	
S1.001	S2	-0.118	0.000	0.66		85.0	OK	
S1.002	S3	-0.120	0.000	0.65		84.1	OK	
S1.003	S4	-0.092	0.000	0.80		110.0	OK	
S1.004	S5	-0.026	0.000	0.97		131.6	OK	
S1.005	S6	0.023	0.000	1.06		130.7	SURCHARGED	
S1.006	S7	-0.072	0.000	0.91		128.5	OK	
S1.007	S8	0.058	0.000	1.16		128.6	SURCHARGED	
S1.008	S9	0.088	0.000	0.61		123.3	SURCHARGED	
S2.000	S15	0.583	0.000	0.09		4.5	SURCHARGED	
S2.001	S16	0.615	0.000	0.11		6.4	FLOOD RISK	
S2.002	S17	0.659	0.000	0.35		21.7	FLOOD RISK	
S2.003	S18	0.749	0.000	0.42		24.4	SURCHARGED	
S2.004	S19	0.820	0.000	0.38		26.0	SURCHARGED	
S2.005	S20	1.219	0.000	0.51		30.7	SURCHARGED	
S3.000	S16	-0.240	0.000	0.09		20.0	OK	
S3.001	S17	0.905	0.000	0.36		20.3	SURCHARGED	
S3.002	S18	0.941	0.000	0.31		19.4	SURCHARGED	
S3.003	S19	1.013	0.000	0.70		44.0	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S3.004	S19	30 Winter	100	+40%	100/15 Summer			
S3.005	S19	30 Winter	100	+40%	100/15 Summer			
S3.006	S19	30 Winter	100	+40%	100/15 Summer			
S2.006	S21	30 Winter	100	+40%	100/15 Summer			
S2.007	S22	30 Winter	100	+40%	100/15 Summer			
S2.008	S23	30 Winter	100	+40%	100/15 Summer			
S2.009	S24	15 Winter	100	+40%	100/15 Summer			
S2.010	S25	15 Winter	100	+40%	100/15 Summer			
S2.011	S26	15 Winter	100	+40%	100/15 Summer			
S1.009	S10	15 Winter	100	+40%	100/15 Summer			
S1.010	S11	30 Winter	100	+40%	100/15 Summer			
S1.011	S12	30 Winter	100	+40%	100/15 Summer			
S1.012	S13	30 Winter	100	+40%	100/15 Summer			
S1.013	S14	30 Winter	100	+40%	100/15 Summer			
S1.014	S15	30 Winter	100	+40%	100/15 Summer			
S1.015	S16	30 Winter	100	+40%	100/15 Summer			
S4.000	S33	30 Winter	100	+40%	100/15 Summer			
S1.016	S17	30 Winter	100	+40%	100/15 Summer			
S1.017	S18	30 Winter	100	+40%	100/15 Summer			
S1.018	S19	30 Winter	100	+40%	100/15 Summer			
S1.019	S20	30 Winter	100	+40%	100/15 Summer		100/15 Summer	38
S1.020	S21	30 Winter	100	+40%	100/15 Summer			
S5.000	S38	15 Winter	100	+40%				
S5.001	S39	15 Winter	100	+40%	100/15 Summer			
S5.002	S40	15 Winter	100	+40%	100/15 Summer			
S5.003	S41	15 Winter	100	+40%	100/15 Summer			
S1.021	S22	30 Winter	100	+40%	100/15 Summer			
S6.000	S22	15 Winter	100	+40%				
S6.001	S23	15 Winter	100	+40%	100/15 Winter			
S6.002	S24	15 Winter	100	+40%	100/15 Winter			
S6.003	S25	15 Winter	100	+40%	100/15 Summer			
S6.004	S26	15 Winter	100	+40%	100/15 Summer			
S6.005	S27	15 Winter	100	+40%	100/15 Summer			
S6.006	S28	15 Winter	100	+40%	100/15 Summer			
S6.007	S29	15 Winter	100	+40%	100/15 Summer			
S6.008	S31	15 Winter	100	+40%	100/15 Summer			
S6.009	S33	15 Winter	100	+40%	100/15 Summer			
S6.010	S34	15 Winter	100	+40%	100/15 Summer			
S6.011	S35	15 Winter	100	+40%	100/15 Summer			
S1.022	S22	480 Winter	100	+40%	100/120 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S3.004	S19	24.466	1.049	0.000	0.66		37.1	SURCHARGED	
S3.005	S19	24.451	1.077	0.000	0.48		32.7	SURCHARGED	

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S3.006	S19	24.400	1.330	0.000	0.44		24.1	SURCHARGED	
S2.006	S21	24.392	1.361	0.000	1.11		55.1	SURCHARGED	
S2.007	S22	24.429	1.424	0.000	0.82		54.7	SURCHARGED	
S2.008	S23	24.487	1.696	0.000	0.86		56.9	SURCHARGED	
S2.009	S24	24.508	1.901	0.000	0.99		59.9	SURCHARGED	
S2.010	S25	24.509	1.975	0.000	0.98		59.7	SURCHARGED	
S2.011	S26	24.508	2.052	0.000	1.08		59.6	SURCHARGED	
S1.009	S10	24.506	2.089	0.000	1.86		111.2	SURCHARGED	
S1.010	S11	24.327	1.977	0.000	1.60		93.4	SURCHARGED	
S1.011	S12	24.195	1.900	0.000	1.51		86.6	SURCHARGED	
S1.012	S13	23.923	1.754	0.000	1.62		107.6	SURCHARGED	
S1.013	S14	23.401	1.431	0.000	2.15		112.0	SURCHARGED	
S1.014	S15	23.198	1.261	0.000	1.81		112.0	SURCHARGED	
S1.015	S16	22.912	1.063	0.000	1.87		112.6	SURCHARGED	
S4.000	S33	22.692	0.592	0.000	0.18		23.0	SURCHARGED	
S1.016	S17	22.676	0.896	0.000	2.23		126.5	SURCHARGED	
S1.017	S18	22.421	0.688	0.000	2.24		132.1	SURCHARGED	
S1.018	S19	22.118	0.445	0.000	2.30		132.4	SURCHARGED	
S1.019	S20	21.843	0.221	0.000	1.14	67.5	67.9	SURCHARGED	
S1.020	S21	21.772	0.217	0.000	1.16		70.5	SURCHARGED	
S5.000	S38	22.378	-0.175	0.000	0.11		10.0	OK	
S5.001	S39	22.033	0.215	0.000	0.26		11.0	SURCHARGED	
S5.002	S40	22.023	0.295	0.000	0.79		29.3	SURCHARGED	
S5.003	S41	21.917	0.361	0.000	1.76		67.2	SURCHARGED	
S1.021	S22	21.687	0.283	0.000	1.95		109.0	SURCHARGED	
S6.000	S22	22.815	-0.132	0.000	0.59		37.8	OK	
S6.001	S23	22.370	0.050	0.000	0.59		37.8	SURCHARGED	
S6.002	S24	22.304	0.097	0.000	0.68		40.4	SURCHARGED	
S6.003	S25	22.227	0.084	0.000	0.62		37.1	SURCHARGED	
S6.004	S26	22.148	0.071	0.000	0.83		50.8	SURCHARGED	
S6.005	S27	22.060	0.064	0.000	0.82		52.5	SURCHARGED	
S6.006	S28	21.976	0.111	0.000	0.86		53.0	SURCHARGED	
S6.007	S29	21.897	0.120	0.000	0.98		57.9	SURCHARGED	
S6.008	S31	21.820	0.103	0.000	0.93		55.8	SURCHARGED	
S6.009	S33	21.740	0.092	0.000	1.00		62.5	SURCHARGED	
S6.010	S34	21.641	0.089	0.000	1.11		70.5	SURCHARGED	
S6.011	S35	21.504	0.063	0.000	1.34		85.6	SURCHARGED	
S1.022	S22	21.454	0.104	0.000	0.00		0.0	SURCHARGED	

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 752 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	28.967	0.267	0.1	3.5	O K
30 min Summer	29.048	0.348	0.1	4.6	O K
60 min Summer	29.133	0.433	0.1	5.7	O K
120 min Summer	29.218	0.518	0.1	6.8	O K
180 min Summer	29.265	0.565	0.1	7.5	O K
240 min Summer	29.293	0.593	0.1	7.8	O K
360 min Summer	29.325	0.625	0.1	8.3	O K
480 min Summer	29.339	0.639	0.1	8.5	O K
600 min Summer	29.344	0.644	0.1	8.5	O K
720 min Summer	29.346	0.646	0.1	8.5	O K
960 min Summer	29.345	0.645	0.1	8.5	O K
1440 min Summer	29.333	0.633	0.1	8.4	O K
2160 min Summer	29.305	0.605	0.1	8.0	O K
2880 min Summer	29.275	0.575	0.1	7.6	O K
4320 min Summer	29.215	0.515	0.1	6.8	O K
5760 min Summer	29.159	0.459	0.1	6.1	O K
7200 min Summer	29.108	0.408	0.1	5.4	O K
8640 min Summer	29.063	0.363	0.1	4.8	O K
10080 min Summer	29.022	0.322	0.1	4.2	O K
15 min Winter	28.999	0.299	0.1	3.9	O K
30 min Winter	29.091	0.391	0.1	5.1	O K
60 min Winter	29.187	0.487	0.1	6.4	O K
120 min Winter	29.285	0.585	0.1	7.7	O K
180 min Winter	29.339	0.639	0.1	8.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	360
480 min Summer	7.922	0.0	480
600 min Summer	6.730	0.0	548
720 min Summer	5.890	0.0	606
960 min Summer	4.770	0.0	732
1440 min Summer	3.540	0.0	998
2160 min Summer	2.625	0.0	1424
2880 min Summer	2.123	0.0	1840
4320 min Summer	1.572	0.0	2640
5760 min Summer	1.270	0.0	3456
7200 min Summer	1.076	0.0	4184
8640 min Summer	0.940	0.0	4936
10080 min Summer	0.839	0.0	5744
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	120
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	29.373	0.673	0.1	8.9	O K
360 min Winter	29.414	0.714	0.1	9.4	O K
480 min Winter	29.434	0.734	0.1	9.7	O K
600 min Winter	29.443	0.743	0.1	9.8	O K
720 min Winter	29.445	0.745	0.1	9.9	O K
960 min Winter	29.442	0.742	0.1	9.8	O K
1440 min Winter	29.425	0.725	0.1	9.6	O K
2160 min Winter	29.381	0.681	0.1	9.0	O K
2880 min Winter	29.333	0.633	0.1	8.4	O K
4320 min Winter	29.240	0.540	0.1	7.1	O K
5760 min Winter	29.157	0.457	0.1	6.0	O K
7200 min Winter	29.084	0.384	0.1	5.1	O K
8640 min Winter	29.021	0.321	0.1	4.2	O K
10080 min Winter	28.966	0.266	0.1	3.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	352
480 min Winter	7.922	0.0	464
600 min Winter	6.730	0.0	572
720 min Winter	5.890	0.0	674
960 min Winter	4.770	0.0	764
1440 min Winter	3.540	0.0	1070
2160 min Winter	2.625	0.0	1536
2880 min Winter	2.123	0.0	1988
4320 min Winter	1.572	0.0	2848
5760 min Winter	1.270	0.0	3640
7200 min Winter	1.076	0.0	4464
8640 min Winter	0.940	0.0	5192
10080 min Winter	0.839	0.0	5952

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.023

Time (mins) From:	To:	Area (ha)
0	4	0.023

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Model Details

Storage is Online Cover Level (m) 30.500

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.16500	Trench Width (m)	2.0
Infiltration Coefficient Side (m/hr)	0.16500	Trench Length (m)	7.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	28.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1004 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	29.137	0.437	0.1	5.8	O K
30 min Summer	29.283	0.583	0.1	7.7	O K
60 min Summer	29.438	0.738	0.1	9.8	O K
120 min Summer	29.591	0.891	0.1	11.8	O K
180 min Summer	29.672	0.972	0.1	12.9	O K
240 min Summer	29.719	1.019	0.1	13.5	O K
360 min Summer	29.776	1.076	0.2	14.3	O K
480 min Summer	29.804	1.104	0.2	14.6	O K
600 min Summer	29.815	1.115	0.2	14.8	O K
720 min Summer	29.816	1.116	0.2	14.8	O K
960 min Summer	29.812	1.112	0.2	14.7	O K
1440 min Summer	29.792	1.092	0.2	14.5	O K
2160 min Summer	29.744	1.044	0.1	13.8	O K
2880 min Summer	29.691	0.991	0.1	13.1	O K
4320 min Summer	29.595	0.895	0.1	11.9	O K
5760 min Summer	29.511	0.811	0.1	10.7	O K
7200 min Summer	29.436	0.736	0.1	9.7	O K
8640 min Summer	29.370	0.670	0.1	8.9	O K
10080 min Summer	29.311	0.611	0.1	8.1	O K
15 min Winter	29.190	0.490	0.1	6.5	O K
30 min Winter	29.354	0.654	0.1	8.6	O K
60 min Winter	29.528	0.828	0.1	11.0	O K
120 min Winter	29.703	1.003	0.1	13.3	O K
180 min Winter	29.796	1.096	0.2	14.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	480
600 min Summer	10.849	0.0	600
720 min Summer	9.435	0.0	686
960 min Summer	7.561	0.0	796
1440 min Summer	5.523	0.0	1042
2160 min Summer	4.026	0.0	1468
2880 min Summer	3.213	0.0	1876
4320 min Summer	2.333	0.0	2684
5760 min Summer	1.857	0.0	3512
7200 min Summer	1.555	0.0	4320
8640 min Summer	1.347	0.0	5096
10080 min Summer	1.192	0.0	5848
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	62
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	29.851	1.151	0.2	15.3	O K
360 min Winter	29.920	1.220	0.2	16.2	O K
480 min Winter	29.957	1.257	0.2	16.7	O K
600 min Winter	29.976	1.276	0.2	16.9	O K
720 min Winter	29.983	1.283	0.2	17.0	O K
960 min Winter	29.976	1.276	0.2	16.9	O K
1440 min Winter	29.950	1.250	0.2	16.6	O K
2160 min Winter	29.886	1.186	0.2	15.7	O K
2880 min Winter	29.811	1.111	0.2	14.7	O K
4320 min Winter	29.671	0.971	0.1	12.9	O K
5760 min Winter	29.549	0.849	0.1	11.2	O K
7200 min Winter	29.443	0.743	0.1	9.8	O K
8640 min Winter	29.352	0.652	0.1	8.6	O K
10080 min Winter	29.272	0.572	0.1	7.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	238
360 min Winter	16.006	0.0	354
480 min Winter	12.864	0.0	468
600 min Winter	10.849	0.0	578
720 min Winter	9.435	0.0	686
960 min Winter	7.561	0.0	886
1440 min Winter	5.523	0.0	1108
2160 min Winter	4.026	0.0	1576
2880 min Winter	3.213	0.0	2020
4320 min Winter	2.333	0.0	2896
5760 min Winter	1.857	0.0	3744
7200 min Winter	1.555	0.0	4544
8640 min Winter	1.347	0.0	5360
10080 min Winter	1.192	0.0	6152

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.023

Time (mins) From:	To:	Area (ha)
0	4	0.023

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Model Details

Storage is Online Cover Level (m) 30.500

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.16500	Trench Width (m)	2.0
Infiltration Coefficient Side (m/hr)	0.16500	Trench Length (m)	7.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	28.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period

Half Drain Time : 611 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.957	0.257	0.2	6.9	O K
30 min Summer	24.031	0.331	0.2	9.0	O K
60 min Summer	24.107	0.407	0.2	11.2	O K
120 min Summer	24.182	0.482	0.3	13.3	O K
180 min Summer	24.221	0.521	0.3	14.4	O K
240 min Summer	24.244	0.544	0.3	15.1	O K
360 min Summer	24.266	0.566	0.3	15.7	O K
480 min Summer	24.273	0.573	0.3	15.9	O K
600 min Summer	24.277	0.577	0.3	16.0	O K
720 min Summer	24.278	0.578	0.3	16.0	O K
960 min Summer	24.275	0.575	0.3	15.9	O K
1440 min Summer	24.259	0.559	0.3	15.5	O K
2160 min Summer	24.228	0.528	0.3	14.6	O K
2880 min Summer	24.197	0.497	0.3	13.7	O K
4320 min Summer	24.139	0.439	0.2	12.1	O K
5760 min Summer	24.087	0.387	0.2	10.6	O K
7200 min Summer	24.042	0.342	0.2	9.3	O K
8640 min Summer	24.003	0.303	0.2	8.2	O K
10080 min Summer	23.968	0.268	0.2	7.2	O K
15 min Winter	23.986	0.286	0.2	7.7	O K
30 min Winter	24.070	0.370	0.2	10.1	O K
60 min Winter	24.157	0.457	0.2	12.6	O K
120 min Winter	24.243	0.543	0.3	15.0	O K
180 min Winter	24.289	0.589	0.3	16.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	55.216	0.0	19
30 min Summer	36.465	0.0	34
60 min Summer	23.155	0.0	64
120 min Summer	14.345	0.0	122
180 min Summer	10.753	0.0	182
240 min Summer	8.737	0.0	242
360 min Summer	6.512	0.0	360
480 min Summer	5.281	0.0	438
600 min Summer	4.487	0.0	494
720 min Summer	3.927	0.0	558
960 min Summer	3.180	0.0	686
1440 min Summer	2.360	0.0	966
2160 min Summer	1.750	0.0	1384
2880 min Summer	1.415	0.0	1788
4320 min Summer	1.048	0.0	2592
5760 min Summer	0.847	0.0	3352
7200 min Summer	0.718	0.0	4112
8640 min Summer	0.627	0.0	4848
10080 min Summer	0.559	0.0	5648
15 min Winter	55.216	0.0	19
30 min Winter	36.465	0.0	33
60 min Winter	23.155	0.0	62
120 min Winter	14.345	0.0	120
180 min Winter	10.753	0.0	178

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Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	24.316	0.616	0.3	17.1	O K
360 min Winter	24.347	0.647	0.3	18.0	O K
480 min Winter	24.358	0.658	0.3	18.3	O K
600 min Winter	24.361	0.661	0.3	18.4	O K
720 min Winter	24.360	0.660	0.3	18.4	O K
960 min Winter	24.356	0.656	0.3	18.3	O K
1440 min Winter	24.332	0.632	0.3	17.6	O K
2160 min Winter	24.283	0.583	0.3	16.2	O K
2880 min Winter	24.234	0.534	0.3	14.8	O K
4320 min Winter	24.147	0.447	0.2	12.3	O K
5760 min Winter	24.073	0.373	0.2	10.2	O K
7200 min Winter	24.011	0.311	0.2	8.4	O K
8640 min Winter	23.959	0.259	0.2	6.9	O K
10080 min Winter	23.914	0.214	0.2	5.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	8.737	0.0	236
360 min Winter	6.512	0.0	348
480 min Winter	5.281	0.0	456
600 min Winter	4.487	0.0	554
720 min Winter	3.927	0.0	578
960 min Winter	3.180	0.0	732
1440 min Winter	2.360	0.0	1040
2160 min Winter	1.750	0.0	1492
2880 min Winter	1.415	0.0	1928
4320 min Winter	1.048	0.0	2764
5760 min Winter	0.847	0.0	3568
7200 min Winter	0.718	0.0	4328
8640 min Winter	0.627	0.0	5104
10080 min Winter	0.559	0.0	5848

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.068

Time (mins) From:	To:	Area (ha)
0	4	0.068

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Model Details

Storage is Online Cover Level (m) 25.900

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.15300	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.15300	Trench Length (m)	30.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 100 year Return Period

Half Drain Time : 775 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.113	0.413	0.2	11.3	O K
30 min Summer	24.246	0.546	0.3	15.1	O K
60 min Summer	24.386	0.686	0.3	19.1	O K
120 min Summer	24.522	0.822	0.3	23.0	O K
180 min Summer	24.590	0.890	0.4	24.9	O K
240 min Summer	24.628	0.928	0.4	26.0	O K
360 min Summer	24.668	0.968	0.4	27.2	O K
480 min Summer	24.682	0.982	0.4	27.6	O K
600 min Summer	24.684	0.984	0.4	27.6	O K
720 min Summer	24.685	0.985	0.4	27.6	O K
960 min Summer	24.679	0.979	0.4	27.5	O K
1440 min Summer	24.654	0.954	0.4	26.8	O K
2160 min Summer	24.601	0.901	0.4	25.3	O K
2880 min Summer	24.548	0.848	0.3	23.7	O K
4320 min Summer	24.454	0.754	0.3	21.1	O K
5760 min Summer	24.374	0.674	0.3	18.8	O K
7200 min Summer	24.305	0.605	0.3	16.8	O K
8640 min Summer	24.247	0.547	0.3	15.1	O K
10080 min Summer	24.195	0.495	0.3	13.7	O K
15 min Winter	24.161	0.461	0.2	12.7	O K
30 min Winter	24.311	0.611	0.3	17.0	O K
60 min Winter	24.469	0.769	0.3	21.5	O K
120 min Winter	24.624	0.924	0.4	25.9	O K
180 min Winter	24.703	1.003	0.4	28.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	90.386	0.0	19
30 min Summer	60.811	0.0	34
60 min Summer	39.045	0.0	64
120 min Summer	24.196	0.0	122
180 min Summer	18.011	0.0	182
240 min Summer	14.499	0.0	242
360 min Summer	10.670	0.0	360
480 min Summer	8.576	0.0	480
600 min Summer	7.233	0.0	536
720 min Summer	6.290	0.0	596
960 min Summer	5.040	0.0	722
1440 min Summer	3.682	0.0	992
2160 min Summer	2.684	0.0	1408
2880 min Summer	2.142	0.0	1816
4320 min Summer	1.555	0.0	2636
5760 min Summer	1.238	0.0	3408
7200 min Summer	1.037	0.0	4184
8640 min Summer	0.898	0.0	4936
10080 min Summer	0.795	0.0	5744
15 min Winter	90.386	0.0	19
30 min Winter	60.811	0.0	33
60 min Winter	39.045	0.0	62
120 min Winter	24.196	0.0	120
180 min Winter	18.011	0.0	180

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Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	24.748	1.048	0.4	29.4	O K
360 min Winter	24.798	1.098	0.4	30.9	O K
480 min Winter	24.820	1.120	0.4	31.5	O K
600 min Winter	24.827	1.127	0.4	31.7	O K
720 min Winter	24.824	1.124	0.4	31.6	O K
960 min Winter	24.815	1.115	0.4	31.3	O K
1440 min Winter	24.780	1.080	0.4	30.4	O K
2160 min Winter	24.706	1.006	0.4	28.2	O K
2880 min Winter	24.628	0.928	0.4	26.0	O K
4320 min Winter	24.492	0.792	0.3	22.1	O K
5760 min Winter	24.381	0.681	0.3	19.0	O K
7200 min Winter	24.288	0.588	0.3	16.3	O K
8640 min Winter	24.211	0.511	0.3	14.1	O K
10080 min Winter	24.144	0.444	0.2	12.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	14.499	0.0	236
360 min Winter	10.670	0.0	350
480 min Winter	8.576	0.0	462
600 min Winter	7.233	0.0	568
720 min Winter	6.290	0.0	664
960 min Winter	5.040	0.0	750
1440 min Winter	3.682	0.0	1056
2160 min Winter	2.684	0.0	1516
2880 min Winter	2.142	0.0	1960
4320 min Winter	1.555	0.0	2808
5760 min Winter	1.238	0.0	3632
7200 min Winter	1.037	0.0	4400
8640 min Winter	0.898	0.0	5192
10080 min Winter	0.795	0.0	5952

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.068

Time (mins) From:	To:	Area (ha)
0	4	0.068

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Model Details

Storage is Online Cover Level (m) 25.900

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.15300	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.15300	Trench Length (m)	30.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 192 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.097	0.397	0.7	9.1	O K
30 min Summer	24.206	0.506	0.7	11.7	O K
60 min Summer	24.305	0.605	0.8	14.1	O K
120 min Summer	24.372	0.672	0.9	15.7	O K
180 min Summer	24.389	0.689	0.9	16.1	O K
240 min Summer	24.394	0.694	0.9	16.2	O K
360 min Summer	24.390	0.690	0.9	16.1	O K
480 min Summer	24.376	0.676	0.9	15.7	O K
600 min Summer	24.358	0.658	0.8	15.3	O K
720 min Summer	24.340	0.640	0.8	14.9	O K
960 min Summer	24.303	0.603	0.8	14.0	O K
1440 min Summer	24.235	0.535	0.8	12.4	O K
2160 min Summer	24.147	0.447	0.7	10.3	O K
2880 min Summer	24.075	0.375	0.6	8.6	O K
4320 min Summer	23.966	0.266	0.6	6.0	O K
5760 min Summer	23.888	0.188	0.5	4.2	O K
7200 min Summer	23.832	0.132	0.5	2.8	O K
8640 min Summer	23.791	0.091	0.4	1.9	O K
10080 min Summer	23.764	0.064	0.4	1.2	O K
15 min Winter	24.145	0.445	0.7	10.3	O K
30 min Winter	24.269	0.569	0.8	13.2	O K
60 min Winter	24.383	0.683	0.9	15.9	O K
120 min Winter	24.468	0.768	0.9	17.9	O K
180 min Winter	24.489	0.789	0.9	18.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	18
30 min Summer	54.698	0.0	33
60 min Summer	34.733	0.0	62
120 min Summer	21.518	0.0	120
180 min Summer	16.130	0.0	152
240 min Summer	13.106	0.0	184
360 min Summer	9.767	0.0	252
480 min Summer	7.922	0.0	322
600 min Summer	6.730	0.0	390
720 min Summer	5.890	0.0	460
960 min Summer	4.770	0.0	596
1440 min Summer	3.540	0.0	866
2160 min Summer	2.625	0.0	1252
2880 min Summer	2.123	0.0	1616
4320 min Summer	1.572	0.0	2376
5760 min Summer	1.270	0.0	3064
7200 min Summer	1.076	0.0	3816
8640 min Summer	0.940	0.0	4496
10080 min Summer	0.839	0.0	5144
15 min Winter	82.824	0.0	18
30 min Winter	54.698	0.0	32
60 min Winter	34.733	0.0	60
120 min Winter	21.518	0.0	116
180 min Winter	16.130	0.0	168

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	24.492	0.792	1.0	18.5	O K
360 min Winter	24.484	0.784	0.9	18.3	O K
480 min Winter	24.461	0.761	0.9	17.8	O K
600 min Winter	24.433	0.733	0.9	17.1	O K
720 min Winter	24.404	0.704	0.9	16.4	O K
960 min Winter	24.346	0.646	0.8	15.0	O K
1440 min Winter	24.243	0.543	0.8	12.6	O K
2160 min Winter	24.119	0.419	0.7	9.7	O K
2880 min Winter	24.024	0.324	0.6	7.4	O K
4320 min Winter	23.889	0.189	0.5	4.2	O K
5760 min Winter	23.801	0.101	0.4	2.1	O K
7200 min Winter	23.751	0.051	0.4	0.9	O K
8640 min Winter	23.744	0.044	0.3	0.7	O K
10080 min Winter	23.740	0.040	0.3	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	192
360 min Winter	9.767	0.0	268
480 min Winter	7.922	0.0	346
600 min Winter	6.730	0.0	422
720 min Winter	5.890	0.0	494
960 min Winter	4.770	0.0	638
1440 min Winter	3.540	0.0	912
2160 min Winter	2.625	0.0	1316
2880 min Winter	2.123	0.0	1700
4320 min Winter	1.572	0.0	2424
5760 min Winter	1.270	0.0	3120
7200 min Winter	1.076	0.0	3672
8640 min Winter	0.940	0.0	4352
10080 min Winter	0.839	0.0	5088

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.062

Time (mins) From:	To:	Area (ha)
0	4	0.062

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Model Details

Storage is Online Cover Level (m) 25.900

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.52200	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.52200	Trench Length (m)	25.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 251 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	24.350	0.650	0.8	15.1	O K
30 min Summer	24.551	0.851	1.0	19.9	O K
60 min Summer	24.743	1.043	1.1	24.5	O K
120 min Summer	24.885	1.185	1.2	27.8	O K
180 min Summer	24.920	1.220	1.3	28.7	O K
240 min Summer	24.927	1.227	1.3	28.8	O K
360 min Summer	24.923	1.223	1.3	28.8	O K
480 min Summer	24.905	1.205	1.3	28.3	O K
600 min Summer	24.878	1.178	1.2	27.7	O K
720 min Summer	24.847	1.147	1.2	26.9	O K
960 min Summer	24.784	1.084	1.2	25.4	O K
1440 min Summer	24.670	0.970	1.1	22.7	O K
2160 min Summer	24.531	0.831	1.0	19.4	O K
2880 min Summer	24.419	0.719	0.9	16.8	O K
4320 min Summer	24.248	0.548	0.8	12.7	O K
5760 min Summer	24.125	0.425	0.7	9.8	O K
7200 min Summer	24.032	0.332	0.6	7.6	O K
8640 min Summer	23.961	0.261	0.6	5.9	O K
10080 min Summer	23.903	0.203	0.5	4.5	O K
15 min Winter	24.428	0.728	0.9	17.0	O K
30 min Winter	24.656	0.956	1.1	22.4	O K
60 min Winter	24.875	1.175	1.2	27.6	O K
120 min Winter	25.046	1.346	1.4	31.7	O K
180 min Winter	25.094	1.394	1.4	32.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	18
30 min Summer	91.216	0.0	33
60 min Summer	58.567	0.0	62
120 min Summer	36.294	0.0	120
180 min Summer	27.017	0.0	166
240 min Summer	21.749	0.0	194
360 min Summer	16.006	0.0	258
480 min Summer	12.864	0.0	328
600 min Summer	10.849	0.0	398
720 min Summer	9.435	0.0	466
960 min Summer	7.561	0.0	606
1440 min Summer	5.523	0.0	868
2160 min Summer	4.026	0.0	1260
2880 min Summer	3.213	0.0	1644
4320 min Summer	2.333	0.0	2380
5760 min Summer	1.857	0.0	3120
7200 min Summer	1.555	0.0	3824
8640 min Summer	1.347	0.0	4584
10080 min Summer	1.192	0.0	5256
15 min Winter	135.580	0.0	18
30 min Winter	91.216	0.0	32
60 min Winter	58.567	0.0	62
120 min Winter	36.294	0.0	118
180 min Winter	27.017	0.0	172

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	25.094	1.394	1.4	32.9	O K
360 min Winter	25.087	1.387	1.4	32.6	O K
480 min Winter	25.057	1.357	1.4	31.9	O K
600 min Winter	25.017	1.317	1.3	31.0	O K
720 min Winter	24.972	1.272	1.3	29.9	O K
960 min Winter	24.879	1.179	1.2	27.7	O K
1440 min Winter	24.713	1.013	1.1	23.8	O K
2160 min Winter	24.520	0.820	1.0	19.2	O K
2880 min Winter	24.372	0.672	0.9	15.7	O K
4320 min Winter	24.161	0.461	0.7	10.7	O K
5760 min Winter	24.019	0.319	0.6	7.3	O K
7200 min Winter	23.918	0.218	0.5	4.9	O K
8640 min Winter	23.843	0.143	0.5	3.1	O K
10080 min Winter	23.787	0.087	0.4	1.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	204
360 min Winter	16.006	0.0	274
480 min Winter	12.864	0.0	352
600 min Winter	10.849	0.0	428
720 min Winter	9.435	0.0	502
960 min Winter	7.561	0.0	646
1440 min Winter	5.523	0.0	926
2160 min Winter	4.026	0.0	1340
2880 min Winter	3.213	0.0	1728
4320 min Winter	2.333	0.0	2468
5760 min Winter	1.857	0.0	3224
7200 min Winter	1.555	0.0	3960
8640 min Winter	1.347	0.0	4664
10080 min Winter	1.192	0.0	5344

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.062

Time (mins) From:	To:	Area (ha)
0	4	0.062

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Model Details

Storage is Online Cover Level (m) 25.900

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.52200	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.52200	Trench Length (m)	25.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.700	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 1299 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.572	0.272	0.4	20.2	O K
30 min Summer	25.653	0.353	0.4	26.5	O K
60 min Summer	25.741	0.441	0.4	33.2	O K
120 min Summer	25.832	0.532	0.4	40.2	O K
180 min Summer	25.885	0.585	0.4	44.3	O K
240 min Summer	25.920	0.620	0.4	47.0	O K
360 min Summer	25.967	0.667	0.4	50.6	O K
480 min Summer	25.995	0.695	0.4	52.8	O K
600 min Summer	26.013	0.713	0.4	54.1	O K
720 min Summer	26.023	0.723	0.4	54.9	O K
960 min Summer	26.030	0.730	0.4	55.5	O K
1440 min Summer	26.026	0.726	0.4	55.2	O K
2160 min Summer	26.009	0.709	0.4	53.9	O K
2880 min Summer	25.989	0.689	0.4	52.3	O K
4320 min Summer	25.945	0.645	0.4	49.0	O K
5760 min Summer	25.901	0.601	0.4	45.5	O K
7200 min Summer	25.856	0.556	0.4	42.1	O K
8640 min Summer	25.814	0.514	0.4	38.8	O K
10080 min Summer	25.773	0.473	0.4	35.7	O K
15 min Winter	25.603	0.303	0.4	22.7	O K
30 min Winter	25.696	0.396	0.4	29.7	O K
60 min Winter	25.794	0.494	0.4	37.3	O K
120 min Winter	25.898	0.598	0.4	45.3	O K
180 min Winter	25.959	0.659	0.4	50.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	124
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	482
600 min Summer	6.730	0.0	602
720 min Summer	5.890	0.0	720
960 min Summer	4.770	0.0	952
1440 min Summer	3.540	0.0	1170
2160 min Summer	2.625	0.0	1560
2880 min Summer	2.123	0.0	1964
4320 min Summer	1.572	0.0	2808
5760 min Summer	1.270	0.0	3632
7200 min Summer	1.076	0.0	4464
8640 min Summer	0.940	0.0	5264
10080 min Summer	0.839	0.0	6048
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.001	0.701	0.4	53.3	O K
360 min Winter	26.057	0.757	0.4	57.6	O K
480 min Winter	26.093	0.793	0.4	60.3	O K
600 min Winter	26.116	0.816	0.4	62.1	O K
720 min Winter	26.131	0.831	0.4	63.3	O K
960 min Winter	26.147	0.847	0.4	64.5	O K
1440 min Winter	26.145	0.845	0.4	64.3	O K
2160 min Winter	26.123	0.823	0.4	62.6	O K
2880 min Winter	26.093	0.793	0.4	60.3	O K
4320 min Winter	26.024	0.724	0.4	55.0	O K
5760 min Winter	25.953	0.653	0.4	49.5	O K
7200 min Winter	25.883	0.583	0.4	44.2	O K
8640 min Winter	25.818	0.518	0.4	39.2	O K
10080 min Winter	25.757	0.457	0.4	34.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	240
360 min Winter	9.767	0.0	356
480 min Winter	7.922	0.0	472
600 min Winter	6.730	0.0	586
720 min Winter	5.890	0.0	700
960 min Winter	4.770	0.0	922
1440 min Winter	3.540	0.0	1338
2160 min Winter	2.625	0.0	1664
2880 min Winter	2.123	0.0	2132
4320 min Winter	1.572	0.0	3028
5760 min Winter	1.270	0.0	3920
7200 min Winter	1.076	0.0	4760
8640 min Winter	0.940	0.0	5616
10080 min Winter	0.839	0.0	6360

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.132

Time (mins) From:	To:	Area (ha)
0	4	0.132

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Model Details

Storage is Online Cover Level (m) 27.300

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.13640	Trench Width (m)	4.5
Infiltration Coefficient Side (m/hr)	0.13640	Trench Length (m)	18.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.500
Invert Level (m)	25.300	Cap Infiltration Depth (m)	1.500

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1904 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.741	0.441	0.4	33.2	O K
30 min Summer	25.887	0.587	0.4	44.5	O K
60 min Summer	26.045	0.745	0.4	56.7	O K
120 min Summer	26.208	0.908	0.5	69.2	O K
180 min Summer	26.298	0.998	0.5	76.1	O K
240 min Summer	26.356	1.056	0.5	80.6	O K
360 min Summer	26.434	1.134	0.5	86.6	O K
480 min Summer	26.485	1.185	0.5	90.5	O K
600 min Summer	26.518	1.218	0.5	93.0	O K
720 min Summer	26.540	1.240	0.5	94.7	O K
960 min Summer	26.562	1.262	0.5	96.4	O K
1440 min Summer	26.559	1.259	0.5	96.2	O K
2160 min Summer	26.528	1.228	0.5	93.8	O K
2880 min Summer	26.490	1.190	0.5	90.8	O K
4320 min Summer	26.413	1.113	0.5	85.0	O K
5760 min Summer	26.343	1.043	0.5	79.6	O K
7200 min Summer	26.279	0.979	0.5	74.6	O K
8640 min Summer	26.220	0.920	0.5	70.1	O K
10080 min Summer	26.163	0.863	0.5	65.8	O K
15 min Winter	25.793	0.493	0.4	37.2	O K
30 min Winter	25.958	0.658	0.4	49.9	O K
60 min Winter	26.136	0.836	0.4	63.6	O K
120 min Winter	26.320	1.020	0.5	77.8	O K
180 min Winter	26.423	1.123	0.5	85.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	184
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	602
720 min Summer	9.435	0.0	722
960 min Summer	7.561	0.0	960
1440 min Summer	5.523	0.0	1372
2160 min Summer	4.026	0.0	1712
2880 min Summer	3.213	0.0	2104
4320 min Summer	2.333	0.0	2936
5760 min Summer	1.857	0.0	3752
7200 min Summer	1.555	0.0	4544
8640 min Summer	1.347	0.0	5368
10080 min Summer	1.192	0.0	6160
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	34
60 min Winter	58.567	0.0	64
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.490	1.190	0.5	90.9	O K
360 min Winter	26.582	1.282	0.5	97.9	O K
480 min Winter	26.642	1.342	0.5	102.6	O K
600 min Winter	26.683	1.383	0.5	105.7	O K
720 min Winter	26.712	1.412	0.5	108.0	O K
960 min Winter	26.746	1.446	0.6	110.6	O K
1440 min Winter	26.760	1.460	0.6	111.7	O K
2160 min Winter	26.722	1.422	0.5	108.7	O K
2880 min Winter	26.680	1.380	0.5	105.5	O K
4320 min Winter	26.575	1.275	0.5	97.5	O K
5760 min Winter	26.474	1.174	0.5	89.7	O K
7200 min Winter	26.379	1.079	0.5	82.4	O K
8640 min Winter	26.291	0.991	0.5	75.6	O K
10080 min Winter	26.209	0.909	0.5	69.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	240
360 min Winter	16.006	0.0	358
480 min Winter	12.864	0.0	474
600 min Winter	10.849	0.0	590
720 min Winter	9.435	0.0	706
960 min Winter	7.561	0.0	934
1440 min Winter	5.523	0.0	1372
2160 min Winter	4.026	0.0	1944
2880 min Winter	3.213	0.0	2220
4320 min Winter	2.333	0.0	3156
5760 min Winter	1.857	0.0	4040
7200 min Winter	1.555	0.0	4968
8640 min Winter	1.347	0.0	5792
10080 min Winter	1.192	0.0	6656

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.132

Time (mins) From:	To:	Area (ha)
0	4	0.132

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Model Details

Storage is Online Cover Level (m) 27.300

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.13640	Trench Width (m)	4.5
Infiltration Coefficient Side (m/hr)	0.13640	Trench Length (m)	18.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.500
Invert Level (m)	25.300	Cap Infiltration Depth (m)	1.500

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Summary of Results for 10 year Return Period

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.571	0.271	23.3	6.9	O K
30 min Summer	23.555	0.255	22.8	6.5	O K
60 min Summer	23.480	0.180	20.5	4.6	O K
120 min Summer	23.377	0.077	17.4	2.0	O K
180 min Summer	23.346	0.046	15.2	1.2	O K
240 min Summer	23.338	0.038	12.5	1.0	O K
360 min Summer	23.328	0.028	9.4	0.7	O K
480 min Summer	23.323	0.023	7.7	0.6	O K
600 min Summer	23.320	0.020	6.6	0.5	O K
720 min Summer	23.317	0.017	5.7	0.4	O K
960 min Summer	23.314	0.014	4.7	0.4	O K
1440 min Summer	23.311	0.011	3.6	0.3	O K
2160 min Summer	23.308	0.008	2.6	0.2	O K
2880 min Summer	23.307	0.007	2.2	0.2	O K
4320 min Summer	23.305	0.005	1.6	0.1	O K
5760 min Summer	23.304	0.004	1.4	0.1	O K
7200 min Summer	23.304	0.004	1.2	0.1	O K
8640 min Summer	23.303	0.003	1.1	0.1	O K
10080 min Summer	23.303	0.003	0.9	0.1	O K
15 min Winter	23.600	0.300	24.2	7.7	O K
30 min Winter	23.557	0.257	22.9	6.6	O K
60 min Winter	23.441	0.141	19.4	3.6	O K
120 min Winter	23.345	0.045	14.8	1.1	O K
180 min Winter	23.334	0.034	11.2	0.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	55.216	0.0	12
30 min Summer	36.465	0.0	20
60 min Summer	23.155	0.0	36
120 min Summer	14.345	0.0	66
180 min Summer	10.753	0.0	94
240 min Summer	8.737	0.0	124
360 min Summer	6.512	0.0	184
480 min Summer	5.281	0.0	242
600 min Summer	4.487	0.0	300
720 min Summer	3.927	0.0	360
960 min Summer	3.180	0.0	484
1440 min Summer	2.360	0.0	734
2160 min Summer	1.750	0.0	1092
2880 min Summer	1.415	0.0	1436
4320 min Summer	1.048	0.0	2180
5760 min Summer	0.847	0.0	2944
7200 min Summer	0.718	0.0	3560
8640 min Summer	0.627	0.0	4256
10080 min Summer	0.559	0.0	4864
15 min Winter	55.216	0.0	13
30 min Winter	36.465	0.0	21
60 min Winter	23.155	0.0	36
120 min Winter	14.345	0.0	64
180 min Winter	10.753	0.0	94

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Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	23.328	0.028	9.2	0.7	O K
360 min Winter	23.321	0.021	6.9	0.5	O K
480 min Winter	23.317	0.017	5.6	0.4	O K
600 min Winter	23.314	0.014	4.7	0.4	O K
720 min Winter	23.313	0.013	4.2	0.3	O K
960 min Winter	23.310	0.010	3.4	0.3	O K
1440 min Winter	23.308	0.008	2.6	0.2	O K
2160 min Winter	23.306	0.006	1.9	0.2	O K
2880 min Winter	23.305	0.005	1.6	0.1	O K
4320 min Winter	23.304	0.004	1.2	0.1	O K
5760 min Winter	23.303	0.003	1.1	0.1	O K
7200 min Winter	23.303	0.003	0.9	0.1	O K
8640 min Winter	23.302	0.002	0.7	0.1	O K
10080 min Winter	23.302	0.002	0.7	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	8.737	0.0	124
360 min Winter	6.512	0.0	180
480 min Winter	5.281	0.0	240
600 min Winter	4.487	0.0	296
720 min Winter	3.927	0.0	366
960 min Winter	3.180	0.0	488
1440 min Winter	2.360	0.0	752
2160 min Winter	1.750	0.0	1076
2880 min Winter	1.415	0.0	1328
4320 min Winter	1.048	0.0	2228
5760 min Winter	0.847	0.0	2976
7200 min Winter	0.718	0.0	3632
8640 min Winter	0.627	0.0	4016
10080 min Winter	0.559	0.0	5016

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.178

Time (mins) From:	To:	Area (ha)
0	4	0.178

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Model Details

Storage is Online Cover Level (m) 25.200

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	1.80700	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	1.80000	Trench Length (m)	60.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	23.300	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	23.300	Safety Factor	10.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	8.0	0.0	1.600	8.0	0.0

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Summary of Results for 100 year Return Period

Half Drain Time : 6 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.842	0.542	31.6	13.9	O K
30 min Summer	23.856	0.556	32.0	14.2	O K
60 min Summer	23.768	0.468	29.3	12.0	O K
120 min Summer	23.602	0.302	24.3	7.7	O K
180 min Summer	23.485	0.185	20.7	4.7	O K
240 min Summer	23.406	0.106	18.3	2.7	O K
360 min Summer	23.347	0.047	15.5	1.2	O K
480 min Summer	23.338	0.038	12.5	1.0	O K
600 min Summer	23.332	0.032	10.5	0.8	O K
720 min Summer	23.328	0.028	9.2	0.7	O K
960 min Summer	23.322	0.022	7.4	0.6	O K
1440 min Summer	23.316	0.016	5.4	0.4	O K
2160 min Summer	23.312	0.012	3.9	0.3	O K
2880 min Summer	23.310	0.010	3.2	0.3	O K
4320 min Summer	23.307	0.007	2.4	0.2	O K
5760 min Summer	23.306	0.006	1.9	0.2	O K
7200 min Summer	23.305	0.005	1.6	0.1	O K
8640 min Summer	23.304	0.004	1.4	0.1	O K
10080 min Summer	23.304	0.004	1.2	0.1	O K
15 min Winter	23.915	0.615	33.8	15.7	O K
30 min Winter	23.892	0.592	33.1	15.2	O K
60 min Winter	23.744	0.444	28.6	11.4	O K
120 min Winter	23.521	0.221	21.8	5.6	O K
180 min Winter	23.389	0.089	17.8	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	90.386	0.0	12
30 min Summer	60.811	0.0	21
60 min Summer	39.045	0.0	36
120 min Summer	24.196	0.0	68
180 min Summer	18.011	0.0	98
240 min Summer	14.499	0.0	128
360 min Summer	10.670	0.0	184
480 min Summer	8.576	0.0	244
600 min Summer	7.233	0.0	306
720 min Summer	6.290	0.0	364
960 min Summer	5.040	0.0	484
1440 min Summer	3.682	0.0	730
2160 min Summer	2.684	0.0	1100
2880 min Summer	2.142	0.0	1444
4320 min Summer	1.555	0.0	2148
5760 min Summer	1.238	0.0	2784
7200 min Summer	1.037	0.0	3624
8640 min Summer	0.898	0.0	4272
10080 min Summer	0.795	0.0	5144
15 min Winter	90.386	0.0	13
30 min Winter	60.811	0.0	22
60 min Winter	39.045	0.0	38
120 min Winter	24.196	0.0	70
180 min Winter	18.011	0.0	98

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Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	23.346	0.046	15.2	1.2	O K
360 min Winter	23.334	0.034	11.2	0.9	O K
480 min Winter	23.327	0.027	9.0	0.7	O K
600 min Winter	23.323	0.023	7.7	0.6	O K
720 min Winter	23.320	0.020	6.7	0.5	O K
960 min Winter	23.316	0.016	5.4	0.4	O K
1440 min Winter	23.312	0.012	3.9	0.3	O K
2160 min Winter	23.309	0.009	2.9	0.2	O K
2880 min Winter	23.307	0.007	2.4	0.2	O K
4320 min Winter	23.305	0.005	1.7	0.1	O K
5760 min Winter	23.304	0.004	1.4	0.1	O K
7200 min Winter	23.304	0.004	1.2	0.1	O K
8640 min Winter	23.303	0.003	1.1	0.1	O K
10080 min Winter	23.303	0.003	0.9	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	14.499	0.0	124
360 min Winter	10.670	0.0	184
480 min Winter	8.576	0.0	244
600 min Winter	7.233	0.0	302
720 min Winter	6.290	0.0	368
960 min Winter	5.040	0.0	488
1440 min Winter	3.682	0.0	726
2160 min Winter	2.684	0.0	1060
2880 min Winter	2.142	0.0	1468
4320 min Winter	1.555	0.0	2172
5760 min Winter	1.238	0.0	2824
7200 min Winter	1.037	0.0	3192
8640 min Winter	0.898	0.0	4192
10080 min Winter	0.795	0.0	5056

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.178

Time (mins) From:	To:	Area (ha)
0	4	0.178

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Model Details

Storage is Online Cover Level (m) 25.200

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	1.80700	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	1.80000	Trench Length (m)	60.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	23.300	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	23.300	Safety Factor	10.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	8.0	0.0	1.600	8.0	0.0

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 942 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	22.268	0.318	0.2	9.0	O K
30 min Summer	22.365	0.415	0.2	11.9	O K
60 min Summer	22.468	0.518	0.2	14.8	O K
120 min Summer	22.574	0.624	0.2	17.9	O K
180 min Summer	22.635	0.685	0.2	19.7	O K
240 min Summer	22.674	0.724	0.2	20.8	O K
360 min Summer	22.723	0.773	0.3	22.2	O K
480 min Summer	22.749	0.799	0.3	23.0	O K
600 min Summer	22.762	0.812	0.3	23.4	O K
720 min Summer	22.769	0.819	0.3	23.6	O K
960 min Summer	22.777	0.827	0.3	23.8	O K
1440 min Summer	22.779	0.829	0.3	23.8	O K
2160 min Summer	22.761	0.811	0.3	23.3	O K
2880 min Summer	22.735	0.785	0.3	22.6	O K
4320 min Summer	22.679	0.729	0.2	21.0	O K
5760 min Summer	22.627	0.677	0.2	19.5	O K
7200 min Summer	22.579	0.629	0.2	18.1	O K
8640 min Summer	22.535	0.585	0.2	16.8	O K
10080 min Summer	22.495	0.545	0.2	15.6	O K
15 min Winter	22.305	0.355	0.2	10.1	O K
30 min Winter	22.415	0.465	0.2	13.3	O K
60 min Winter	22.531	0.581	0.2	16.7	O K
120 min Winter	22.652	0.702	0.2	20.2	O K
180 min Winter	22.721	0.771	0.3	22.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	480
600 min Summer	6.730	0.0	600
720 min Summer	5.890	0.0	658
960 min Summer	4.770	0.0	772
1440 min Summer	3.540	0.0	1028
2160 min Summer	2.625	0.0	1448
2880 min Summer	2.123	0.0	1872
4320 min Summer	1.572	0.0	2684
5760 min Summer	1.270	0.0	3512
7200 min Summer	1.076	0.0	4320
8640 min Summer	0.940	0.0	5096
10080 min Summer	0.839	0.0	5848
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	22.767	0.817	0.3	23.5	O K
360 min Winter	22.825	0.875	0.3	25.2	O K
480 min Winter	22.859	0.909	0.3	26.2	O K
600 min Winter	22.878	0.928	0.3	26.7	O K
720 min Winter	22.889	0.939	0.3	27.0	O K
960 min Winter	22.893	0.943	0.3	27.2	O K
1440 min Winter	22.893	0.943	0.3	27.2	O K
2160 min Winter	22.865	0.915	0.3	26.3	O K
2880 min Winter	22.823	0.873	0.3	25.1	O K
4320 min Winter	22.736	0.786	0.3	22.6	O K
5760 min Winter	22.657	0.707	0.2	20.3	O K
7200 min Winter	22.587	0.637	0.2	18.3	O K
8640 min Winter	22.524	0.574	0.2	16.5	O K
10080 min Winter	22.469	0.519	0.2	14.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	354
480 min Winter	7.922	0.0	466
600 min Winter	6.730	0.0	578
720 min Winter	5.890	0.0	684
960 min Winter	4.770	0.0	866
1440 min Winter	3.540	0.0	1096
2160 min Winter	2.625	0.0	1556
2880 min Winter	2.123	0.0	2016
4320 min Winter	1.572	0.0	2892
5760 min Winter	1.270	0.0	3744
7200 min Winter	1.076	0.0	4544
8640 min Winter	0.940	0.0	5360
10080 min Winter	0.839	0.0	6152

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

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) 23.850

Complex Structure

Cellular Storage

Invert Level (m) 21.950 Safety Factor 10.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	12.0	0.0	1.600	12.0	0.0

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.18940	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.18940	Trench Length (m)	18.5
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	21.950	Cap Infiltration Depth (m)	1.600

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ARUN DISTRICT COUNCIL WA/48/19/RES

Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1123 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	22.468	0.518	0.2	14.8	O K
30 min Summer	22.641	0.691	0.2	19.9	O K
60 min Summer	22.827	0.877	0.3	25.2	O K
120 min Summer	23.013	1.063	0.3	30.6	O K
180 min Summer	23.113	1.163	0.3	33.5	O K
240 min Summer	23.174	1.224	0.3	35.3	O K
360 min Summer	23.250	1.300	0.4	37.5	O K
480 min Summer	23.292	1.342	0.4	38.7	O K
600 min Summer	23.314	1.364	0.4	39.3	O K
720 min Summer	23.322	1.372	0.4	39.6	O K
960 min Summer	23.327	1.377	0.4	39.7	O K
1440 min Summer	23.322	1.372	0.4	39.6	O K
2160 min Summer	23.290	1.340	0.4	38.7	O K
2880 min Summer	23.245	1.295	0.4	37.3	O K
4320 min Summer	23.146	1.196	0.3	34.5	O K
5760 min Summer	23.054	1.104	0.3	31.8	O K
7200 min Summer	22.975	1.025	0.3	29.5	O K
8640 min Summer	22.907	0.957	0.3	27.6	O K
10080 min Summer	22.845	0.895	0.3	25.8	O K
15 min Winter	22.530	0.580	0.2	16.6	O K
30 min Winter	22.724	0.774	0.3	22.3	O K
60 min Winter	22.933	0.983	0.3	28.3	O K
120 min Winter	23.144	1.194	0.3	34.4	O K
180 min Winter	23.258	1.308	0.4	37.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	600
720 min Summer	9.435	0.0	714
960 min Summer	7.561	0.0	818
1440 min Summer	5.523	0.0	1066
2160 min Summer	4.026	0.0	1472
2880 min Summer	3.213	0.0	1876
4320 min Summer	2.333	0.0	2724
5760 min Summer	1.857	0.0	3520
7200 min Summer	1.555	0.0	4328
8640 min Summer	1.347	0.0	5104
10080 min Summer	1.192	0.0	5856
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	62
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	23.328	1.378	0.4	39.8	O K
360 min Winter	23.418	1.468	0.4	42.4	O K
480 min Winter	23.470	1.520	0.4	43.9	O K
600 min Winter	23.499	1.549	0.4	44.7	O K
720 min Winter	23.514	1.564	0.4	45.2	O K
960 min Winter	23.520	1.570	0.4	45.3	O K
1440 min Winter	23.506	1.556	0.4	44.9	O K
2160 min Winter	23.459	1.509	0.4	43.5	O K
2880 min Winter	23.392	1.442	0.4	41.6	O K
4320 min Winter	23.251	1.301	0.4	37.5	O K
5760 min Winter	23.120	1.170	0.3	33.7	O K
7200 min Winter	23.009	1.059	0.3	30.5	O K
8640 min Winter	22.915	0.965	0.3	27.8	O K
10080 min Winter	22.832	0.882	0.3	25.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	238
360 min Winter	16.006	0.0	354
480 min Winter	12.864	0.0	468
600 min Winter	10.849	0.0	580
720 min Winter	9.435	0.0	690
960 min Winter	7.561	0.0	836
1440 min Winter	5.523	0.0	1112
2160 min Winter	4.026	0.0	1580
2880 min Winter	3.213	0.0	2020
4320 min Winter	2.333	0.0	2900
5760 min Winter	1.857	0.0	3752
7200 min Winter	1.555	0.0	4608
8640 min Winter	1.347	0.0	5368
10080 min Winter	1.192	0.0	6160

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

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) 23.850

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.18940	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.18940	Trench Length (m)	18.5
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	21.950	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	21.950	Safety Factor	10.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	12.0	0.0	1.600	12.0	0.0

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 906 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.610	0.210	0.5	19.5	O K
30 min Summer	26.670	0.270	0.5	25.5	O K
60 min Summer	26.732	0.332	0.5	31.8	O K
120 min Summer	26.796	0.396	0.5	38.2	O K
180 min Summer	26.831	0.431	0.5	41.8	O K
240 min Summer	26.853	0.453	0.5	44.1	O K
360 min Summer	26.880	0.480	0.5	46.8	O K
480 min Summer	26.893	0.493	0.5	48.1	O K
600 min Summer	26.899	0.499	0.5	48.7	O K
720 min Summer	26.900	0.500	0.5	48.8	O K
960 min Summer	26.898	0.498	0.5	48.6	O K
1440 min Summer	26.888	0.488	0.5	47.6	O K
2160 min Summer	26.868	0.468	0.5	45.6	O K
2880 min Summer	26.847	0.447	0.5	43.4	O K
4320 min Summer	26.803	0.403	0.5	39.0	O K
5760 min Summer	26.760	0.360	0.5	34.7	O K
7200 min Summer	26.720	0.320	0.5	30.6	O K
8640 min Summer	26.683	0.283	0.5	26.9	O K
10080 min Summer	26.649	0.249	0.5	23.4	O K
15 min Winter	26.634	0.234	0.5	21.9	O K
30 min Winter	26.701	0.301	0.5	28.7	O K
60 min Winter	26.772	0.372	0.5	35.8	O K
120 min Winter	26.845	0.445	0.5	43.2	O K
180 min Winter	26.886	0.486	0.5	47.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	480
600 min Summer	6.730	0.0	600
720 min Summer	5.890	0.0	686
960 min Summer	4.770	0.0	798
1440 min Summer	3.540	0.0	1052
2160 min Summer	2.625	0.0	1468
2880 min Summer	2.123	0.0	1876
4320 min Summer	1.572	0.0	2720
5760 min Summer	1.270	0.0	3512
7200 min Summer	1.076	0.0	4256
8640 min Summer	0.940	0.0	5024
10080 min Summer	0.839	0.0	5760
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.913	0.513	0.5	50.1	O K
360 min Winter	26.947	0.547	0.6	53.5	O K
480 min Winter	26.965	0.565	0.6	55.4	O K
600 min Winter	26.975	0.575	0.6	56.4	O K
720 min Winter	26.980	0.580	0.6	56.9	O K
960 min Winter	26.978	0.578	0.6	56.7	O K
1440 min Winter	26.965	0.565	0.6	55.3	O K
2160 min Winter	26.935	0.535	0.6	52.4	O K
2880 min Winter	26.901	0.501	0.5	48.9	O K
4320 min Winter	26.832	0.432	0.5	41.9	O K
5760 min Winter	26.766	0.366	0.5	35.2	O K
7200 min Winter	26.705	0.305	0.5	29.1	O K
8640 min Winter	26.651	0.251	0.5	23.6	O K
10080 min Winter	26.603	0.203	0.5	18.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	354
480 min Winter	7.922	0.0	468
600 min Winter	6.730	0.0	580
720 min Winter	5.890	0.0	690
960 min Winter	4.770	0.0	896
1440 min Winter	3.540	0.0	1124
2160 min Winter	2.625	0.0	1580
2880 min Winter	2.123	0.0	2044
4320 min Winter	1.572	0.0	2936
5760 min Winter	1.270	0.0	3752
7200 min Winter	1.076	0.0	4544
8640 min Winter	0.940	0.0	5352
10080 min Winter	0.839	0.0	6056

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.128

Time (mins) From:	To:	Area (ha)
0	4	0.128

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.13600	Trench Width (m)	3.0
Infiltration Coefficient Side (m/hr)	0.13600	Trench Length (m)	35.5
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.200
Invert Level (m)	26.400	Cap Infiltration Depth (m)	1.200

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1361 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.735	0.335	0.5	32.1	O K
30 min Summer	26.842	0.442	0.5	42.9	O K
60 min Summer	26.957	0.557	0.6	54.5	O K
120 min Summer	27.072	0.672	0.6	66.2	O K
180 min Summer	27.134	0.734	0.6	72.5	O K
240 min Summer	27.173	0.773	0.6	76.4	O K
360 min Summer	27.221	0.821	0.6	81.3	O K
480 min Summer	27.250	0.850	0.6	84.2	O K
600 min Summer	27.265	0.865	0.6	85.7	O K
720 min Summer	27.273	0.873	0.7	86.5	O K
960 min Summer	27.273	0.873	0.7	86.5	O K
1440 min Summer	27.255	0.855	0.6	84.7	O K
2160 min Summer	27.219	0.819	0.6	81.1	O K
2880 min Summer	27.183	0.783	0.6	77.5	O K
4320 min Summer	27.117	0.717	0.6	70.8	O K
5760 min Summer	27.056	0.656	0.6	64.6	O K
7200 min Summer	26.999	0.599	0.6	58.9	O K
8640 min Summer	26.948	0.548	0.6	53.6	O K
10080 min Summer	26.900	0.500	0.5	48.8	O K
15 min Winter	26.774	0.374	0.5	36.0	O K
30 min Winter	26.894	0.494	0.5	48.2	O K
60 min Winter	27.023	0.623	0.6	61.2	O K
120 min Winter	27.155	0.755	0.6	74.5	O K
180 min Winter	27.226	0.826	0.6	81.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	602
720 min Summer	9.435	0.0	720
960 min Summer	7.561	0.0	954
1440 min Summer	5.523	0.0	1182
2160 min Summer	4.026	0.0	1560
2880 min Summer	3.213	0.0	1964
4320 min Summer	2.333	0.0	2808
5760 min Summer	1.857	0.0	3632
7200 min Summer	1.555	0.0	4400
8640 min Summer	1.347	0.0	5192
10080 min Summer	1.192	0.0	5960
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	64
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	27.271	0.871	0.7	86.3	O K
360 min Winter	27.330	0.930	0.7	92.3	O K
480 min Winter	27.366	0.966	0.7	95.9	O K
600 min Winter	27.387	0.987	0.7	98.1	O K
720 min Winter	27.400	1.000	0.7	99.4	O K
960 min Winter	27.409	1.009	0.7	100.3	O K
1440 min Winter	27.391	0.991	0.7	98.5	O K
2160 min Winter	27.349	0.949	0.7	94.2	O K
2880 min Winter	27.300	0.900	0.7	89.3	O K
4320 min Winter	27.203	0.803	0.6	79.5	O K
5760 min Winter	27.113	0.713	0.6	70.3	O K
7200 min Winter	27.029	0.629	0.6	61.9	O K
8640 min Winter	26.954	0.554	0.6	54.2	O K
10080 min Winter	26.885	0.485	0.5	47.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	240
360 min Winter	16.006	0.0	356
480 min Winter	12.864	0.0	472
600 min Winter	10.849	0.0	586
720 min Winter	9.435	0.0	700
960 min Winter	7.561	0.0	922
1440 min Winter	5.523	0.0	1330
2160 min Winter	4.026	0.0	1664
2880 min Winter	3.213	0.0	2132
4320 min Winter	2.333	0.0	3028
5760 min Winter	1.857	0.0	3920
7200 min Winter	1.555	0.0	4752
8640 min Winter	1.347	0.0	5544
10080 min Winter	1.192	0.0	6360

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.128

Time (mins) From:	To:	Area (ha)
0	4	0.128

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.13600	Trench Width (m)	3.0
Infiltration Coefficient Side (m/hr)	0.13600	Trench Length (m)	35.5
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.200
Invert Level (m)	26.400	Cap Infiltration Depth (m)	1.200

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 1369 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.547	0.297	0.2	14.8	O K
30 min Summer	25.638	0.388	0.2	19.4	O K
60 min Summer	25.735	0.485	0.2	24.4	O K
120 min Summer	25.838	0.588	0.3	29.7	O K
180 min Summer	25.898	0.648	0.3	32.8	O K
240 min Summer	25.940	0.690	0.3	34.9	O K
360 min Summer	25.995	0.745	0.3	37.8	O K
480 min Summer	26.030	0.780	0.3	39.6	O K
600 min Summer	26.053	0.803	0.3	40.7	O K
720 min Summer	26.068	0.818	0.3	41.5	O K
960 min Summer	26.082	0.832	0.3	42.2	O K
1440 min Summer	26.093	0.843	0.3	42.8	O K
2160 min Summer	26.092	0.842	0.3	42.7	O K
2880 min Summer	26.081	0.831	0.3	42.1	O K
4320 min Summer	26.043	0.793	0.3	40.2	O K
5760 min Summer	26.004	0.754	0.3	38.2	O K
7200 min Summer	25.966	0.716	0.3	36.2	O K
8640 min Summer	25.931	0.681	0.3	34.4	O K
10080 min Summer	25.898	0.648	0.3	32.7	O K
15 min Winter	25.582	0.332	0.2	16.5	O K
30 min Winter	25.683	0.433	0.2	21.7	O K
60 min Winter	25.793	0.543	0.3	27.4	O K
120 min Winter	25.909	0.659	0.3	33.3	O K
180 min Winter	25.978	0.728	0.3	36.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	124
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	482
600 min Summer	6.730	0.0	602
720 min Summer	5.890	0.0	720
960 min Summer	4.770	0.0	916
1440 min Summer	3.540	0.0	1142
2160 min Summer	2.625	0.0	1536
2880 min Summer	2.123	0.0	1960
4320 min Summer	1.572	0.0	2772
5760 min Summer	1.270	0.0	3632
7200 min Summer	1.076	0.0	4400
8640 min Summer	0.940	0.0	5192
10080 min Summer	0.839	0.0	6048
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	64
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.026	0.776	0.3	39.3	O K
360 min Winter	26.091	0.841	0.3	42.7	O K
480 min Winter	26.133	0.883	0.3	44.8	O K
600 min Winter	26.161	0.911	0.3	46.3	O K
720 min Winter	26.181	0.931	0.3	47.3	O K
960 min Winter	26.203	0.953	0.4	48.4	O K
1440 min Winter	26.211	0.961	0.4	48.8	O K
2160 min Winter	26.209	0.959	0.4	48.7	O K
2880 min Winter	26.190	0.940	0.4	47.7	O K
4320 min Winter	26.131	0.881	0.3	44.7	O K
5760 min Winter	26.069	0.819	0.3	41.5	O K
7200 min Winter	26.011	0.761	0.3	38.6	O K
8640 min Winter	25.958	0.708	0.3	35.9	O K
10080 min Winter	25.910	0.660	0.3	33.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	240
360 min Winter	9.767	0.0	356
480 min Winter	7.922	0.0	472
600 min Winter	6.730	0.0	584
720 min Winter	5.890	0.0	698
960 min Winter	4.770	0.0	916
1440 min Winter	3.540	0.0	1198
2160 min Winter	2.625	0.0	1624
2880 min Winter	2.123	0.0	2104
4320 min Winter	1.572	0.0	2988
5760 min Winter	1.270	0.0	3872
7200 min Winter	1.076	0.0	4752
8640 min Winter	0.940	0.0	5544
10080 min Winter	0.839	0.0	6360

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.096

Time (mins) From:	To:	Area (ha)
0	4	0.096

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Model Details

Storage is Online Cover Level (m) 27.250

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.13600	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.13600	Trench Length (m)	32.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.250	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	25.250	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	22.0	0.0	1.600	22.0	0.0

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1639 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.732	0.482	0.2	24.2	O K
30 min Summer	25.892	0.642	0.3	32.5	O K
60 min Summer	26.066	0.816	0.3	41.4	O K
120 min Summer	26.244	0.994	0.4	50.5	O K
180 min Summer	26.344	1.094	0.4	55.6	O K
240 min Summer	26.407	1.157	0.4	58.9	O K
360 min Summer	26.492	1.242	0.4	63.3	O K
480 min Summer	26.546	1.296	0.4	66.0	O K
600 min Summer	26.581	1.331	0.4	67.8	O K
720 min Summer	26.604	1.354	0.5	69.0	O K
960 min Summer	26.625	1.375	0.5	70.0	O K
1440 min Summer	26.630	1.380	0.5	70.3	O K
2160 min Summer	26.619	1.369	0.5	69.7	O K
2880 min Summer	26.595	1.345	0.5	68.5	O K
4320 min Summer	26.530	1.280	0.4	65.2	O K
5760 min Summer	26.459	1.209	0.4	61.5	O K
7200 min Summer	26.392	1.142	0.4	58.1	O K
8640 min Summer	26.334	1.084	0.4	55.1	O K
10080 min Summer	26.280	1.030	0.4	52.4	O K
15 min Winter	25.789	0.539	0.3	27.1	O K
30 min Winter	25.969	0.719	0.3	36.4	O K
60 min Winter	26.164	0.914	0.3	46.4	O K
120 min Winter	26.365	1.115	0.4	56.7	O K
180 min Winter	26.478	1.228	0.4	62.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	184
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	602
720 min Summer	9.435	0.0	720
960 min Summer	7.561	0.0	960
1440 min Summer	5.523	0.0	1210
2160 min Summer	4.026	0.0	1580
2880 min Summer	3.213	0.0	1988
4320 min Summer	2.333	0.0	2812
5760 min Summer	1.857	0.0	3640
7200 min Summer	1.555	0.0	4472
8640 min Summer	1.347	0.0	5272
10080 min Summer	1.192	0.0	6056
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	34
60 min Winter	58.567	0.0	64
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.550	1.300	0.4	66.2	O K
360 min Winter	26.649	1.399	0.5	71.3	O K
480 min Winter	26.712	1.462	0.5	74.5	O K
600 min Winter	26.754	1.504	0.5	76.7	O K
720 min Winter	26.783	1.533	0.5	78.2	O K
960 min Winter	26.814	1.564	0.5	79.8	O K
1440 min Winter	26.821	1.571	0.5	80.1	O K
2160 min Winter	26.802	1.552	0.5	79.2	O K
2880 min Winter	26.768	1.518	0.5	77.4	O K
4320 min Winter	26.675	1.425	0.5	72.6	O K
5760 min Winter	26.574	1.324	0.4	67.5	O K
7200 min Winter	26.479	1.229	0.4	62.6	O K
8640 min Winter	26.394	1.144	0.4	58.2	O K
10080 min Winter	26.319	1.069	0.4	54.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	240
360 min Winter	16.006	0.0	356
480 min Winter	12.864	0.0	472
600 min Winter	10.849	0.0	588
720 min Winter	9.435	0.0	700
960 min Winter	7.561	0.0	924
1440 min Winter	5.523	0.0	1340
2160 min Winter	4.026	0.0	1664
2880 min Winter	3.213	0.0	2132
4320 min Winter	2.333	0.0	3028
5760 min Winter	1.857	0.0	3920
7200 min Winter	1.555	0.0	4760
8640 min Winter	1.347	0.0	5624
10080 min Winter	1.192	0.0	6456

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.096

Time (mins) From:	To:	Area (ha)
0	4	0.096

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Model Details

Storage is Online Cover Level (m) 27.250

Complex Structure

Cellular Storage

Invert Level (m) 25.250 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	22.0	0.0	1.600	22.0	0.0

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.13600	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.13600	Trench Length (m)	32.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.250	Cap Infiltration Depth (m)	1.600

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ARUN DISTRICT COUNCIL WA/48/19/RES

Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 914 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.327	0.327	0.4	20.6	O K
30 min Summer	26.423	0.423	0.5	27.0	O K
60 min Summer	26.524	0.524	0.5	33.7	O K
120 min Summer	26.627	0.627	0.5	40.6	O K
180 min Summer	26.685	0.685	0.6	44.4	O K
240 min Summer	26.722	0.722	0.6	46.8	O K
360 min Summer	26.766	0.766	0.6	49.8	O K
480 min Summer	26.789	0.789	0.6	51.3	O K
600 min Summer	26.799	0.799	0.6	52.0	O K
720 min Summer	26.802	0.802	0.6	52.2	O K
960 min Summer	26.803	0.803	0.6	52.2	O K
1440 min Summer	26.793	0.793	0.6	51.5	O K
2160 min Summer	26.764	0.764	0.6	49.7	O K
2880 min Summer	26.734	0.734	0.6	47.6	O K
4320 min Summer	26.673	0.673	0.5	43.6	O K
5760 min Summer	26.614	0.614	0.5	39.7	O K
7200 min Summer	26.559	0.559	0.5	36.0	O K
8640 min Summer	26.508	0.508	0.5	32.6	O K
10080 min Summer	26.462	0.462	0.5	29.6	O K
15 min Winter	26.365	0.365	0.4	23.1	O K
30 min Winter	26.473	0.473	0.5	30.3	O K
60 min Winter	26.588	0.588	0.5	37.9	O K
120 min Winter	26.706	0.706	0.6	45.8	O K
180 min Winter	26.773	0.773	0.6	50.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	480
600 min Summer	6.730	0.0	600
720 min Summer	5.890	0.0	670
960 min Summer	4.770	0.0	780
1440 min Summer	3.540	0.0	1040
2160 min Summer	2.625	0.0	1452
2880 min Summer	2.123	0.0	1872
4320 min Summer	1.572	0.0	2684
5760 min Summer	1.270	0.0	3512
7200 min Summer	1.076	0.0	4320
8640 min Summer	0.940	0.0	5096
10080 min Summer	0.839	0.0	5848
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.816	0.816	0.6	53.1	O K
360 min Winter	26.871	0.871	0.6	56.8	O K
480 min Winter	26.902	0.902	0.6	58.8	O K
600 min Winter	26.919	0.919	0.6	59.9	O K
720 min Winter	26.927	0.927	0.6	60.5	O K
960 min Winter	26.926	0.926	0.6	60.4	O K
1440 min Winter	26.913	0.913	0.6	59.6	O K
2160 min Winter	26.871	0.871	0.6	56.8	O K
2880 min Winter	26.823	0.823	0.6	53.5	O K
4320 min Winter	26.726	0.726	0.6	47.1	O K
5760 min Winter	26.636	0.636	0.5	41.2	O K
7200 min Winter	26.555	0.555	0.5	35.7	O K
8640 min Winter	26.482	0.482	0.5	30.9	O K
10080 min Winter	26.417	0.417	0.5	26.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	354
480 min Winter	7.922	0.0	466
600 min Winter	6.730	0.0	578
720 min Winter	5.890	0.0	686
960 min Winter	4.770	0.0	884
1440 min Winter	3.540	0.0	1108
2160 min Winter	2.625	0.0	1576
2880 min Winter	2.123	0.0	2020
4320 min Winter	1.572	0.0	2896
5760 min Winter	1.270	0.0	3744
7200 min Winter	1.076	0.0	4544
8640 min Winter	0.940	0.0	5360
10080 min Winter	0.839	0.0	6152

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.135

Time (mins) From:	To:	Area (ha)
0	4	0.135

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ARUN DISTRICT COUNCIL WA/48/19/RES

Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.16700	Trench Width (m)	2.0
Infiltration Coefficient Side (m/hr)	0.16700	Trench Length (m)	35.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	26.000	Cap Infiltration Depth (m)	1.600

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1196 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.527	0.527	0.5	33.9	O K
30 min Summer	26.699	0.699	0.6	45.3	O K
60 min Summer	26.883	0.883	0.6	57.6	O K
120 min Summer	27.068	1.068	0.7	69.9	O K
180 min Summer	27.167	1.167	0.7	76.4	O K
240 min Summer	27.227	1.227	0.7	80.5	O K
360 min Summer	27.303	1.303	0.8	85.5	O K
480 min Summer	27.345	1.345	0.8	88.3	O K
600 min Summer	27.367	1.367	0.8	89.8	O K
720 min Summer	27.376	1.376	0.8	90.4	O K
960 min Summer	27.375	1.375	0.8	90.3	O K
1440 min Summer	27.357	1.357	0.8	89.1	O K
2160 min Summer	27.311	1.311	0.8	86.0	O K
2880 min Summer	27.255	1.255	0.7	82.3	O K
4320 min Summer	27.150	1.150	0.7	75.3	O K
5760 min Summer	27.058	1.058	0.7	69.2	O K
7200 min Summer	26.975	0.975	0.7	63.7	O K
8640 min Summer	26.902	0.902	0.6	58.8	O K
10080 min Summer	26.835	0.835	0.6	54.4	O K
15 min Winter	26.589	0.589	0.5	38.0	O K
30 min Winter	26.782	0.782	0.6	50.9	O K
60 min Winter	26.989	0.989	0.7	64.6	O K
120 min Winter	27.199	1.199	0.7	78.6	O K
180 min Winter	27.313	1.313	0.8	86.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	600
720 min Summer	9.435	0.0	720
960 min Summer	7.561	0.0	858
1440 min Summer	5.523	0.0	1110
2160 min Summer	4.026	0.0	1512
2880 min Summer	3.213	0.0	1928
4320 min Summer	2.333	0.0	2764
5760 min Summer	1.857	0.0	3576
7200 min Summer	1.555	0.0	4392
8640 min Summer	1.347	0.0	5184
10080 min Summer	1.192	0.0	5952
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	62
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	27.383	1.383	0.8	90.8	O K
360 min Winter	27.474	1.474	0.8	96.8	O K
480 min Winter	27.527	1.527	0.8	100.4	O K
600 min Winter	27.557	1.557	0.9	102.4	O K
720 min Winter	27.574	1.574	0.9	103.5	O K
960 min Winter	27.581	1.581	0.9	104.0	O K
1440 min Winter	27.555	1.555	0.9	102.2	O K
2160 min Winter	27.499	1.499	0.8	98.5	O K
2880 min Winter	27.425	1.425	0.8	93.6	O K
4320 min Winter	27.270	1.270	0.8	83.3	O K
5760 min Winter	27.136	1.136	0.7	74.4	O K
7200 min Winter	27.018	1.018	0.7	66.5	O K
8640 min Winter	26.914	0.914	0.6	59.6	O K
10080 min Winter	26.821	0.821	0.6	53.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	238
360 min Winter	16.006	0.0	356
480 min Winter	12.864	0.0	470
600 min Winter	10.849	0.0	584
720 min Winter	9.435	0.0	694
960 min Winter	7.561	0.0	912
1440 min Winter	5.523	0.0	1142
2160 min Winter	4.026	0.0	1604
2880 min Winter	3.213	0.0	2072
4320 min Winter	2.333	0.0	2980
5760 min Winter	1.857	0.0	3808
7200 min Winter	1.555	0.0	4680
8640 min Winter	1.347	0.0	5456
10080 min Winter	1.192	0.0	6256

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.135

Time (mins) From:	To:	Area (ha)
0	4	0.135

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Model Details

Storage is Online Cover Level (m) 28.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.16700	Trench Width (m)	2.0
Infiltration Coefficient Side (m/hr)	0.16700	Trench Length (m)	35.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	26.000	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 1218 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.120	0.270	0.3	18.7	O K
30 min Summer	26.205	0.355	0.3	24.6	O K
60 min Summer	26.296	0.446	0.3	30.9	O K
120 min Summer	26.391	0.541	0.4	37.5	O K
180 min Summer	26.446	0.596	0.4	41.4	O K
240 min Summer	26.484	0.634	0.4	44.0	O K
360 min Summer	26.534	0.684	0.4	47.4	O K
480 min Summer	26.564	0.714	0.4	49.5	O K
600 min Summer	26.582	0.732	0.4	50.8	O K
720 min Summer	26.593	0.743	0.4	51.5	O K
960 min Summer	26.603	0.753	0.5	52.2	O K
1440 min Summer	26.611	0.761	0.5	52.8	O K
2160 min Summer	26.606	0.756	0.5	52.4	O K
2880 min Summer	26.591	0.741	0.4	51.4	O K
4320 min Summer	26.551	0.701	0.4	48.6	O K
5760 min Summer	26.511	0.661	0.4	45.9	O K
7200 min Summer	26.473	0.623	0.4	43.2	O K
8640 min Summer	26.437	0.587	0.4	40.7	O K
10080 min Summer	26.404	0.554	0.4	38.4	O K
15 min Winter	26.153	0.303	0.3	21.0	O K
30 min Winter	26.248	0.398	0.3	27.6	O K
60 min Winter	26.350	0.500	0.4	34.7	O K
120 min Winter	26.458	0.608	0.4	42.2	O K
180 min Winter	26.522	0.672	0.4	46.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	124
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	482
600 min Summer	6.730	0.0	600
720 min Summer	5.890	0.0	720
960 min Summer	4.770	0.0	858
1440 min Summer	3.540	0.0	1110
2160 min Summer	2.625	0.0	1512
2880 min Summer	2.123	0.0	1928
4320 min Summer	1.572	0.0	2764
5760 min Summer	1.270	0.0	3576
7200 min Summer	1.076	0.0	4392
8640 min Summer	0.940	0.0	5184
10080 min Summer	0.839	0.0	5952
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.565	0.715	0.4	49.6	O K
360 min Winter	26.623	0.773	0.5	53.6	O K
480 min Winter	26.659	0.809	0.5	56.1	O K
600 min Winter	26.683	0.833	0.5	57.8	O K
720 min Winter	26.699	0.849	0.5	58.9	O K
960 min Winter	26.714	0.864	0.5	59.9	O K
1440 min Winter	26.718	0.868	0.5	60.2	O K
2160 min Winter	26.709	0.859	0.5	59.6	O K
2880 min Winter	26.685	0.835	0.5	57.9	O K
4320 min Winter	26.623	0.773	0.5	53.6	O K
5760 min Winter	26.560	0.710	0.4	49.2	O K
7200 min Winter	26.502	0.652	0.4	45.2	O K
8640 min Winter	26.450	0.600	0.4	41.6	O K
10080 min Winter	26.401	0.551	0.4	38.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	354
480 min Winter	7.922	0.0	470
600 min Winter	6.730	0.0	584
720 min Winter	5.890	0.0	694
960 min Winter	4.770	0.0	912
1440 min Winter	3.540	0.0	1142
2160 min Winter	2.625	0.0	1604
2880 min Winter	2.123	0.0	2076
4320 min Winter	1.572	0.0	2980
5760 min Winter	1.270	0.0	3816
7200 min Winter	1.076	0.0	4680
8640 min Winter	0.940	0.0	5528
10080 min Winter	0.839	0.0	6344

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.122

Time (mins) From:	To:	Area (ha)
0	4	0.122

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Model Details

Storage is Online Cover Level (m) 27.750

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.27400	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.27400	Trench Length (m)	23.0
Safety Factor	10.0	Slope (1:X)	0.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.850	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	25.850	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	50.0	0.0	1.600	50.0	0.0	1.601	0.0	0.0

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1474 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	26.294	0.444	0.3	30.8	O K
30 min Summer	26.444	0.594	0.4	41.2	O K
60 min Summer	26.606	0.756	0.5	52.5	O K
120 min Summer	26.772	0.922	0.5	64.0	O K
180 min Summer	26.864	1.014	0.5	70.3	O K
240 min Summer	26.922	1.072	0.6	74.3	O K
360 min Summer	26.998	1.148	0.6	79.6	O K
480 min Summer	27.045	1.195	0.6	82.9	O K
600 min Summer	27.074	1.224	0.6	84.9	O K
720 min Summer	27.091	1.241	0.6	86.1	O K
960 min Summer	27.104	1.254	0.6	87.0	O K
1440 min Summer	27.106	1.256	0.6	87.1	O K
2160 min Summer	27.090	1.240	0.6	86.0	O K
2880 min Summer	27.063	1.213	0.6	84.1	O K
4320 min Summer	26.992	1.142	0.6	79.2	O K
5760 min Summer	26.921	1.071	0.6	74.3	O K
7200 min Summer	26.856	1.006	0.5	69.7	O K
8640 min Summer	26.799	0.949	0.5	65.8	O K
10080 min Summer	26.747	0.897	0.5	62.2	O K
15 min Winter	26.347	0.497	0.4	34.5	O K
30 min Winter	26.516	0.666	0.4	46.2	O K
60 min Winter	26.698	0.848	0.5	58.8	O K
120 min Winter	26.886	1.036	0.6	71.8	O K
180 min Winter	26.990	1.140	0.6	79.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	184
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	602
720 min Summer	9.435	0.0	720
960 min Summer	7.561	0.0	950
1440 min Summer	5.523	0.0	1156
2160 min Summer	4.026	0.0	1540
2880 min Summer	3.213	0.0	1960
4320 min Summer	2.333	0.0	2772
5760 min Summer	1.857	0.0	3632
7200 min Summer	1.555	0.0	4400
8640 min Summer	1.347	0.0	5192
10080 min Summer	1.192	0.0	6048
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	34
60 min Winter	58.567	0.0	64
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	27.056	1.206	0.6	83.6	O K
360 min Winter	27.144	1.294	0.6	89.8	O K
480 min Winter	27.200	1.350	0.7	93.6	O K
600 min Winter	27.236	1.386	0.7	96.1	O K
720 min Winter	27.259	1.409	0.7	97.7	O K
960 min Winter	27.282	1.432	0.7	99.3	O K
1440 min Winter	27.277	1.427	0.7	99.0	O K
2160 min Winter	27.256	1.406	0.7	97.5	O K
2880 min Winter	27.216	1.366	0.7	94.8	O K
4320 min Winter	27.116	1.266	0.6	87.8	O K
5760 min Winter	27.014	1.164	0.6	80.7	O K
7200 min Winter	26.920	1.070	0.6	74.2	O K
8640 min Winter	26.840	0.990	0.5	68.6	O K
10080 min Winter	26.768	0.918	0.5	63.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	240
360 min Winter	16.006	0.0	356
480 min Winter	12.864	0.0	472
600 min Winter	10.849	0.0	586
720 min Winter	9.435	0.0	700
960 min Winter	7.561	0.0	916
1440 min Winter	5.523	0.0	1296
2160 min Winter	4.026	0.0	1640
2880 min Winter	3.213	0.0	2104
4320 min Winter	2.333	0.0	2988
5760 min Winter	1.857	0.0	3864
7200 min Winter	1.555	0.0	4752
8640 min Winter	1.347	0.0	5536
10080 min Winter	1.192	0.0	6360

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.122

Time (mins) From:	To:	Area (ha)
0	4	0.122

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Model Details

Storage is Online Cover Level (m) 27.750

Complex Structure

Cellular Storage

Invert Level (m) 25.850 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	50.0	0.0	1.600	50.0	0.0	1.601	0.0	0.0

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.27400	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.27400	Trench Length (m)	23.0
Safety Factor	10.0	Slope (1:X)	0.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.850	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 936 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.699	0.299	0.3	14.1	O K
30 min Summer	25.791	0.391	0.3	18.4	O K
60 min Summer	25.888	0.488	0.3	23.0	O K
120 min Summer	25.987	0.587	0.4	27.7	O K
180 min Summer	26.043	0.643	0.4	30.4	O K
240 min Summer	26.079	0.679	0.4	32.1	O K
360 min Summer	26.122	0.722	0.4	34.1	O K
480 min Summer	26.145	0.745	0.4	35.2	O K
600 min Summer	26.156	0.756	0.4	35.7	O K
720 min Summer	26.160	0.760	0.4	35.9	O K
960 min Summer	26.162	0.762	0.4	36.0	O K
1440 min Summer	26.154	0.754	0.4	35.6	O K
2160 min Summer	26.129	0.729	0.4	34.4	O K
2880 min Summer	26.100	0.700	0.4	33.1	O K
4320 min Summer	26.041	0.641	0.4	30.3	O K
5760 min Summer	25.984	0.584	0.4	27.6	O K
7200 min Summer	25.930	0.530	0.3	25.0	O K
8640 min Summer	25.881	0.481	0.3	22.7	O K
10080 min Summer	25.835	0.435	0.3	20.5	O K
15 min Winter	25.735	0.335	0.3	15.8	O K
30 min Winter	25.839	0.439	0.3	20.7	O K
60 min Winter	25.948	0.548	0.3	25.9	O K
120 min Winter	26.061	0.661	0.4	31.2	O K
180 min Winter	26.126	0.726	0.4	34.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	19
30 min Summer	54.698	0.0	34
60 min Summer	34.733	0.0	64
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	182
240 min Summer	13.106	0.0	242
360 min Summer	9.767	0.0	362
480 min Summer	7.922	0.0	480
600 min Summer	6.730	0.0	600
720 min Summer	5.890	0.0	684
960 min Summer	4.770	0.0	790
1440 min Summer	3.540	0.0	1050
2160 min Summer	2.625	0.0	1468
2880 min Summer	2.123	0.0	1876
4320 min Summer	1.572	0.0	2720
5760 min Summer	1.270	0.0	3512
7200 min Summer	1.076	0.0	4320
8640 min Summer	0.940	0.0	5096
10080 min Summer	0.839	0.0	5848
15 min Winter	82.824	0.0	19
30 min Winter	54.698	0.0	33
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	122
180 min Winter	16.130	0.0	180

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.169	0.769	0.4	36.3	O K
360 min Winter	26.222	0.822	0.4	38.9	O K
480 min Winter	26.253	0.853	0.4	40.3	O K
600 min Winter	26.270	0.870	0.4	41.2	O K
720 min Winter	26.279	0.879	0.4	41.6	O K
960 min Winter	26.280	0.880	0.4	41.7	O K
1440 min Winter	26.269	0.869	0.4	41.1	O K
2160 min Winter	26.232	0.832	0.4	39.3	O K
2880 min Winter	26.186	0.786	0.4	37.2	O K
4320 min Winter	26.093	0.693	0.4	32.8	O K
5760 min Winter	26.006	0.606	0.4	28.6	O K
7200 min Winter	25.926	0.526	0.3	24.8	O K
8640 min Winter	25.854	0.454	0.3	21.4	O K
10080 min Winter	25.790	0.390	0.3	18.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	238
360 min Winter	9.767	0.0	354
480 min Winter	7.922	0.0	468
600 min Winter	6.730	0.0	578
720 min Winter	5.890	0.0	686
960 min Winter	4.770	0.0	832
1440 min Winter	3.540	0.0	1110
2160 min Winter	2.625	0.0	1580
2880 min Winter	2.123	0.0	2044
4320 min Winter	1.572	0.0	2900
5760 min Winter	1.270	0.0	3752
7200 min Winter	1.076	0.0	4544
8640 min Winter	0.940	0.0	5360
10080 min Winter	0.839	0.0	6152

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.092

Time (mins) From:	To:	Area (ha)
0	4	0.092

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Model Details

Storage is Online Cover Level (m) 27.500

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.27400	Trench Width (m)	2.5
Infiltration Coefficient Side (m/hr)	0.27400	Trench Length (m)	12.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.400	Cap Infiltration Depth (m)	1.600

Cellular Storage

Invert Level (m)	25.400	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	20.0	0.0	1.600	20.0	0.0	1.601	0.0	0.0

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 1265 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	25.890	0.490	0.3	23.1	O K
30 min Summer	26.055	0.655	0.4	30.9	O K
60 min Summer	26.230	0.830	0.4	39.3	O K
120 min Summer	26.408	1.008	0.4	47.7	O K
180 min Summer	26.503	1.103	0.5	52.2	O K
240 min Summer	26.562	1.162	0.5	55.0	O K
360 min Summer	26.636	1.236	0.5	58.5	O K
480 min Summer	26.678	1.278	0.5	60.6	O K
600 min Summer	26.701	1.301	0.5	61.7	O K
720 min Summer	26.712	1.312	0.5	62.2	O K
960 min Summer	26.713	1.313	0.5	62.2	O K
1440 min Summer	26.696	1.296	0.5	61.4	O K
2160 min Summer	26.654	1.254	0.5	59.4	O K
2880 min Summer	26.602	1.202	0.5	56.9	O K
4320 min Summer	26.504	1.104	0.5	52.3	O K
5760 min Summer	26.416	1.016	0.5	48.1	O K
7200 min Summer	26.336	0.936	0.4	44.3	O K
8640 min Summer	26.265	0.865	0.4	40.9	O K
10080 min Summer	26.200	0.800	0.4	37.8	O K
15 min Winter	25.949	0.549	0.3	25.9	O K
30 min Winter	26.134	0.734	0.4	34.7	O K
60 min Winter	26.332	0.932	0.4	44.1	O K
120 min Winter	26.533	1.133	0.5	53.7	O K
180 min Winter	26.643	1.243	0.5	58.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	34
60 min Summer	58.567	0.0	64
120 min Summer	36.294	0.0	124
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	242
360 min Summer	16.006	0.0	362
480 min Summer	12.864	0.0	482
600 min Summer	10.849	0.0	600
720 min Summer	9.435	0.0	720
960 min Summer	7.561	0.0	894
1440 min Summer	5.523	0.0	1126
2160 min Summer	4.026	0.0	1516
2880 min Summer	3.213	0.0	1932
4320 min Summer	2.333	0.0	2768
5760 min Summer	1.857	0.0	3576
7200 min Summer	1.555	0.0	4392
8640 min Summer	1.347	0.0	5184
10080 min Summer	1.192	0.0	5952
15 min Winter	135.580	0.0	19
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	64
120 min Winter	36.294	0.0	122
180 min Winter	27.017	0.0	180

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	26.711	1.311	0.5	62.1	O K
360 min Winter	26.799	1.399	0.5	66.3	O K
480 min Winter	26.852	1.452	0.5	68.8	O K
600 min Winter	26.884	1.484	0.6	70.3	O K
720 min Winter	26.902	1.502	0.6	71.2	O K
960 min Winter	26.912	1.512	0.6	71.7	O K
1440 min Winter	26.888	1.488	0.6	70.5	O K
2160 min Winter	26.838	1.438	0.5	68.1	O K
2880 min Winter	26.769	1.369	0.5	64.8	O K
4320 min Winter	26.624	1.224	0.5	58.0	O K
5760 min Winter	26.496	1.096	0.5	51.9	O K
7200 min Winter	26.381	0.981	0.4	46.4	O K
8640 min Winter	26.280	0.880	0.4	41.6	O K
10080 min Winter	26.188	0.788	0.4	37.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	238
360 min Winter	16.006	0.0	356
480 min Winter	12.864	0.0	470
600 min Winter	10.849	0.0	584
720 min Winter	9.435	0.0	696
960 min Winter	7.561	0.0	914
1440 min Winter	5.523	0.0	1168
2160 min Winter	4.026	0.0	1620
2880 min Winter	3.213	0.0	2076
4320 min Winter	2.333	0.0	2984
5760 min Winter	1.857	0.0	3856
7200 min Winter	1.555	0.0	4688
8640 min Winter	1.347	0.0	5528
10080 min Winter	1.192	0.0	6352

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.092

Time (mins) From:	To:	Area (ha)
0	4	0.092

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Model Details

Storage is Online Cover Level (m) 27.500

Complex Structure

Cellular Storage

Invert Level (m) 25.400 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	20.0	0.0	1.600	20.0	0.0	1.601	0.0	0.0

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.27400	Trench Width (m)	2.5
Infiltration Coefficient Side (m/hr)	0.27400	Trench Length (m)	12.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	25.400	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period (+50%)

Half Drain Time : 273 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.722	0.322	1.7	27.1	O K
30 min Summer	23.813	0.413	1.8	35.0	O K
60 min Summer	23.900	0.500	1.8	42.4	O K
120 min Summer	23.968	0.568	1.9	48.2	O K
180 min Summer	23.988	0.588	1.9	49.9	O K
240 min Summer	23.990	0.590	1.9	50.1	O K
360 min Summer	23.985	0.585	1.9	49.7	O K
480 min Summer	23.975	0.575	1.9	48.8	O K
600 min Summer	23.962	0.562	1.9	47.6	O K
720 min Summer	23.947	0.547	1.9	46.4	O K
960 min Summer	23.917	0.517	1.9	43.8	O K
1440 min Summer	23.855	0.455	1.8	38.5	O K
2160 min Summer	23.767	0.367	1.8	31.0	O K
2880 min Summer	23.689	0.289	1.7	24.3	O K
4320 min Summer	23.569	0.169	1.6	14.1	O K
5760 min Summer	23.493	0.093	1.6	7.5	O K
7200 min Summer	23.454	0.054	1.6	4.3	O K
8640 min Summer	23.445	0.045	1.4	3.5	O K
10080 min Summer	23.441	0.041	1.3	3.1	O K
15 min Winter	23.762	0.362	1.8	30.5	O K
30 min Winter	23.866	0.466	1.8	39.5	O K
60 min Winter	23.967	0.567	1.9	48.1	O K
120 min Winter	24.051	0.651	1.9	55.3	O K
180 min Winter	24.082	0.682	2.0	57.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	82.824	0.0	18
30 min Summer	54.698	0.0	33
60 min Summer	34.733	0.0	62
120 min Summer	21.518	0.0	122
180 min Summer	16.130	0.0	180
240 min Summer	13.106	0.0	214
360 min Summer	9.767	0.0	278
480 min Summer	7.922	0.0	344
600 min Summer	6.730	0.0	412
720 min Summer	5.890	0.0	482
960 min Summer	4.770	0.0	618
1440 min Summer	3.540	0.0	894
2160 min Summer	2.625	0.0	1280
2880 min Summer	2.123	0.0	1648
4320 min Summer	1.572	0.0	2376
5760 min Summer	1.270	0.0	3048
7200 min Summer	1.076	0.0	3672
8640 min Summer	0.940	0.0	4400
10080 min Summer	0.839	0.0	5128
15 min Winter	82.824	0.0	18
30 min Winter	54.698	0.0	32
60 min Winter	34.733	0.0	62
120 min Winter	21.518	0.0	118
180 min Winter	16.130	0.0	176

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Summary of Results for 10 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	24.090	0.690	2.0	58.6	O K
360 min Winter	24.080	0.680	2.0	57.8	O K
480 min Winter	24.066	0.666	1.9	56.6	O K
600 min Winter	24.046	0.646	1.9	54.9	O K
720 min Winter	24.024	0.624	1.9	52.9	O K
960 min Winter	23.975	0.575	1.9	48.8	O K
1440 min Winter	23.876	0.476	1.8	40.3	O K
2160 min Winter	23.740	0.340	1.7	28.7	O K
2880 min Winter	23.627	0.227	1.7	19.0	O K
4320 min Winter	23.475	0.075	1.6	6.0	O K
5760 min Winter	23.444	0.044	1.4	3.4	O K
7200 min Winter	23.438	0.038	1.2	2.8	O K
8640 min Winter	23.433	0.033	1.0	2.4	O K
10080 min Winter	23.430	0.030	0.9	2.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	13.106	0.0	230
360 min Winter	9.767	0.0	294
480 min Winter	7.922	0.0	368
600 min Winter	6.730	0.0	446
720 min Winter	5.890	0.0	522
960 min Winter	4.770	0.0	674
1440 min Winter	3.540	0.0	964
2160 min Winter	2.625	0.0	1364
2880 min Winter	2.123	0.0	1732
4320 min Winter	1.572	0.0	2340
5760 min Winter	1.270	0.0	2944
7200 min Winter	1.076	0.0	3672
8640 min Winter	0.940	0.0	4368
10080 min Winter	0.839	0.0	5120

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.184

Time (mins) From:	To:	Area (ha)
0	4	0.184

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Model Details

Storage is Online Cover Level (m) 25.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.60840	Trench Width (m)	10.0
Infiltration Coefficient Side (m/hr)	0.60840	Trench Length (m)	9.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.400	Cap Infiltration Depth (m)	1.600

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 441 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.933	0.533	1.9	45.1	O K
30 min Summer	24.104	0.704	2.0	59.8	O K
60 min Summer	24.276	0.876	2.1	74.5	O K
120 min Summer	24.426	1.026	2.2	87.3	O K
180 min Summer	24.485	1.085	2.2	92.4	O K
240 min Summer	24.504	1.104	2.2	94.0	O K
360 min Summer	24.501	1.101	2.2	93.8	O K
480 min Summer	24.485	1.085	2.2	92.4	O K
600 min Summer	24.465	1.065	2.2	90.6	O K
720 min Summer	24.443	1.043	2.2	88.8	O K
960 min Summer	24.399	0.999	2.2	85.0	O K
1440 min Summer	24.314	0.914	2.1	77.8	O K
2160 min Summer	24.194	0.794	2.0	67.5	O K
2880 min Summer	24.083	0.683	2.0	58.0	O K
4320 min Summer	23.893	0.493	1.8	41.8	O K
5760 min Summer	23.744	0.344	1.7	29.0	O K
7200 min Summer	23.631	0.231	1.7	19.3	O K
8640 min Summer	23.548	0.148	1.6	12.3	O K
10080 min Summer	23.491	0.091	1.6	7.4	O K
15 min Winter	23.998	0.598	1.9	50.7	O K
30 min Winter	24.192	0.792	2.0	67.4	O K
60 min Winter	24.389	0.989	2.2	84.2	O K
120 min Winter	24.566	1.166	2.3	99.3	O K
180 min Winter	24.642	1.242	2.3	105.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	135.580	0.0	19
30 min Summer	91.216	0.0	33
60 min Summer	58.567	0.0	62
120 min Summer	36.294	0.0	122
180 min Summer	27.017	0.0	182
240 min Summer	21.749	0.0	240
360 min Summer	16.006	0.0	330
480 min Summer	12.864	0.0	388
600 min Summer	10.849	0.0	452
720 min Summer	9.435	0.0	518
960 min Summer	7.561	0.0	656
1440 min Summer	5.523	0.0	926
2160 min Summer	4.026	0.0	1340
2880 min Summer	3.213	0.0	1732
4320 min Summer	2.333	0.0	2504
5760 min Summer	1.857	0.0	3224
7200 min Summer	1.555	0.0	3896
8640 min Summer	1.347	0.0	4584
10080 min Summer	1.192	0.0	5248
15 min Winter	135.580	0.0	18
30 min Winter	91.216	0.0	33
60 min Winter	58.567	0.0	62
120 min Winter	36.294	0.0	120
180 min Winter	27.017	0.0	178

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	24.672	1.272	2.3	108.4	O K
360 min Winter	24.685	1.285	2.3	109.5	O K
480 min Winter	24.665	1.265	2.3	107.8	O K
600 min Winter	24.639	1.239	2.3	105.6	O K
720 min Winter	24.611	1.211	2.3	103.2	O K
960 min Winter	24.549	1.149	2.3	97.9	O K
1440 min Winter	24.423	1.023	2.2	87.1	O K
2160 min Winter	24.241	0.841	2.1	71.5	O K
2880 min Winter	24.078	0.678	2.0	57.6	O K
4320 min Winter	23.810	0.410	1.8	34.6	O K
5760 min Winter	23.613	0.213	1.7	17.8	O K
7200 min Winter	23.484	0.084	1.6	6.8	O K
8640 min Winter	23.447	0.047	1.5	3.6	O K
10080 min Winter	23.442	0.042	1.3	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	21.749	0.0	234
360 min Winter	16.006	0.0	344
480 min Winter	12.864	0.0	444
600 min Winter	10.849	0.0	476
720 min Winter	9.435	0.0	554
960 min Winter	7.561	0.0	710
1440 min Winter	5.523	0.0	1010
2160 min Winter	4.026	0.0	1448
2880 min Winter	3.213	0.0	1848
4320 min Winter	2.333	0.0	2632
5760 min Winter	1.857	0.0	3296
7200 min Winter	1.555	0.0	3888
8640 min Winter	1.347	0.0	4384
10080 min Winter	1.192	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.184

Time (mins) From:	To:	Area (ha)
0	4	0.184

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Model Details

Storage is Online Cover Level (m) 25.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.60840	Trench Width (m)	10.0
Infiltration Coefficient Side (m/hr)	0.60840	Trench Length (m)	9.0
Safety Factor	10.0	Slope (1:X)	1000.0
Porosity	0.95	Cap Volume Depth (m)	1.600
Invert Level (m)	23.400	Cap Infiltration Depth (m)	1.600

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Summary of Results for 10 year Return Period

Half Drain Time : 1295 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	27.079	0.079	0.0	0.5	O K
30 min Summer	27.100	0.100	0.0	0.9	O K
60 min Summer	27.118	0.118	0.0	1.2	O K
120 min Summer	27.135	0.135	0.0	1.6	O K
180 min Summer	27.144	0.144	0.0	1.8	O K
240 min Summer	27.150	0.150	0.0	1.9	O K
360 min Summer	27.157	0.157	0.0	2.1	O K
480 min Summer	27.162	0.162	0.0	2.2	O K
600 min Summer	27.165	0.165	0.0	2.3	O K
720 min Summer	27.167	0.167	0.0	2.4	O K
960 min Summer	27.169	0.169	0.0	2.4	O K
1440 min Summer	27.171	0.171	0.0	2.5	O K
2160 min Summer	27.173	0.173	0.0	2.5	O K
2880 min Summer	27.172	0.172	0.0	2.5	O K
4320 min Summer	27.168	0.168	0.0	2.4	O K
5760 min Summer	27.163	0.163	0.0	2.3	O K
7200 min Summer	27.158	0.158	0.0	2.1	O K
8640 min Summer	27.153	0.153	0.0	2.0	O K
10080 min Summer	27.148	0.148	0.0	1.9	O K
15 min Winter	27.088	0.088	0.0	0.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	54.336	0.0	19
30 min Summer	35.887	0.0	34
60 min Summer	22.792	0.0	64
120 min Summer	14.124	0.0	124
180 min Summer	10.591	0.0	182
240 min Summer	8.608	0.0	242
360 min Summer	6.414	0.0	362
480 min Summer	5.202	0.0	482
600 min Summer	4.420	0.0	600
720 min Summer	3.868	0.0	720
960 min Summer	3.133	0.0	856
1440 min Summer	2.325	0.0	1110
2160 min Summer	1.724	0.0	1512
2880 min Summer	1.394	0.0	1908
4320 min Summer	1.033	0.0	2724
5760 min Summer	0.835	0.0	3520
7200 min Summer	0.707	0.0	4328
8640 min Summer	0.618	0.0	5104
10080 min Summer	0.551	0.0	5856
15 min Winter	54.336	0.0	19

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Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	27.109	0.109	0.0	1.0	O K
60 min Winter	27.128	0.128	0.0	1.4	O K
120 min Winter	27.145	0.145	0.0	1.8	O K
180 min Winter	27.155	0.155	0.0	2.1	O K
240 min Winter	27.161	0.161	0.0	2.2	O K
360 min Winter	27.169	0.169	0.0	2.4	O K
480 min Winter	27.174	0.174	0.0	2.6	O K
600 min Winter	27.178	0.178	0.0	2.7	O K
720 min Winter	27.181	0.181	0.0	2.8	O K
960 min Winter	27.184	0.184	0.0	2.9	O K
1440 min Winter	27.186	0.186	0.0	2.9	O K
2160 min Winter	27.186	0.186	0.0	2.9	O K
2880 min Winter	27.184	0.184	0.0	2.9	O K
4320 min Winter	27.176	0.176	0.0	2.7	O K
5760 min Winter	27.168	0.168	0.0	2.4	O K
7200 min Winter	27.160	0.160	0.0	2.2	O K
8640 min Winter	27.152	0.152	0.0	2.0	O K
10080 min Winter	27.145	0.145	0.0	1.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	35.887	0.0	33
60 min Winter	22.792	0.0	64
120 min Winter	14.124	0.0	122
180 min Winter	10.591	0.0	180
240 min Winter	8.608	0.0	238
360 min Winter	6.414	0.0	356
480 min Winter	5.202	0.0	470
600 min Winter	4.420	0.0	584
720 min Winter	3.868	0.0	698
960 min Winter	3.133	0.0	914
1440 min Winter	2.325	0.0	1196
2160 min Winter	1.724	0.0	1624
2880 min Winter	1.394	0.0	2100
4320 min Winter	1.033	0.0	2980
5760 min Winter	0.835	0.0	3808
7200 min Winter	0.707	0.0	4616
8640 min Winter	0.618	0.0	5440
10080 min Winter	0.551	0.0	6160

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 28.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00400	Width (m)	9.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	26.4	Slope (1:X)	60.0
Safety Factor	5.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	27.000	Cap Volume Depth (m)	0.450

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 75 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	27.253	0.253	0.4	1.8	O K
30 min Summer	27.293	0.293	0.4	2.5	O K
60 min Summer	27.320	0.320	0.5	2.9	O K
120 min Summer	27.334	0.334	0.5	3.2	O K
180 min Summer	27.335	0.335	0.5	3.2	O K
240 min Summer	27.330	0.330	0.5	3.1	O K
360 min Summer	27.318	0.318	0.5	2.9	O K
480 min Summer	27.304	0.304	0.4	2.6	O K
600 min Summer	27.291	0.291	0.4	2.4	O K
720 min Summer	27.278	0.278	0.4	2.2	O K
960 min Summer	27.256	0.256	0.4	1.9	O K
1440 min Summer	27.221	0.221	0.3	1.4	O K
2160 min Summer	27.183	0.183	0.3	1.0	O K
2880 min Summer	27.157	0.157	0.2	0.7	O K
4320 min Summer	27.122	0.122	0.2	0.4	O K
5760 min Summer	27.100	0.100	0.1	0.3	O K
7200 min Summer	27.084	0.084	0.1	0.2	O K
8640 min Summer	27.073	0.073	0.1	0.2	O K
10080 min Summer	27.065	0.065	0.1	0.1	O K
15 min Winter	27.272	0.272	0.4	2.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	133.268	0.0	17
30 min Summer	89.682	0.0	31
60 min Summer	57.620	0.0	54
120 min Summer	35.752	0.0	86
180 min Summer	26.643	0.0	120
240 min Summer	21.471	0.0	156
360 min Summer	15.792	0.0	222
480 min Summer	12.695	0.0	288
600 min Summer	10.708	0.0	352
720 min Summer	9.313	0.0	416
960 min Summer	7.464	0.0	540
1440 min Summer	5.454	0.0	780
2160 min Summer	3.977	0.0	1144
2880 min Summer	3.174	0.0	1500
4320 min Summer	2.306	0.0	2208
5760 min Summer	1.836	0.0	2936
7200 min Summer	1.537	0.0	3672
8640 min Summer	1.331	0.0	4400
10080 min Summer	1.178	0.0	5080
15 min Winter	133.268	0.0	17

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	27.315	0.315	0.5	2.8	O K
60 min Winter	27.344	0.344	0.5	3.4	O K
120 min Winter	27.356	0.356	0.5	3.6	O K
180 min Winter	27.353	0.353	0.5	3.6	O K
240 min Winter	27.345	0.345	0.5	3.4	O K
360 min Winter	27.326	0.326	0.5	3.0	O K
480 min Winter	27.306	0.306	0.4	2.7	O K
600 min Winter	27.287	0.287	0.4	2.4	O K
720 min Winter	27.270	0.270	0.4	2.1	O K
960 min Winter	27.241	0.241	0.3	1.7	O K
1440 min Winter	27.196	0.196	0.3	1.1	O K
2160 min Winter	27.152	0.152	0.2	0.7	O K
2880 min Winter	27.125	0.125	0.2	0.4	O K
4320 min Winter	27.092	0.092	0.1	0.2	O K
5760 min Winter	27.073	0.073	0.1	0.2	O K
7200 min Winter	27.061	0.061	0.1	0.1	O K
8640 min Winter	27.053	0.053	0.1	0.1	O K
10080 min Winter	27.048	0.048	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.682	0.0	31
60 min Winter	57.620	0.0	58
120 min Winter	35.752	0.0	92
180 min Winter	26.643	0.0	130
240 min Winter	21.471	0.0	168
360 min Winter	15.792	0.0	238
480 min Winter	12.695	0.0	306
600 min Winter	10.708	0.0	372
720 min Winter	9.313	0.0	436
960 min Winter	7.464	0.0	560
1440 min Winter	5.454	0.0	806
2160 min Winter	3.977	0.0	1152
2880 min Winter	3.174	0.0	1500
4320 min Winter	2.306	0.0	2204
5760 min Winter	1.836	0.0	2936
7200 min Winter	1.537	0.0	3672
8640 min Winter	1.331	0.0	4360
10080 min Winter	1.178	0.0	5024

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 28.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.13600	Width (m)	9.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	26.4	Slope (1:X)	20.0
Safety Factor	5.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	27.000	Cap Volume Depth (m)	0.450

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Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 3638 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	27.153	0.153	0.0	2.0	O K
30 min Summer	27.184	0.184	0.0	2.9	O K
60 min Summer	27.216	0.216	0.0	3.8	O K
120 min Summer	27.251	0.251	0.0	4.8	O K
180 min Summer	27.271	0.271	0.0	5.3	O K
240 min Summer	27.284	0.284	0.0	5.7	O K
360 min Summer	27.303	0.303	0.0	6.3	O K
480 min Summer	27.316	0.316	0.0	6.6	O K
600 min Summer	27.326	0.326	0.0	6.9	O K
720 min Summer	27.334	0.334	0.0	7.1	O K
960 min Summer	27.344	0.344	0.0	7.4	O K
1440 min Summer	27.356	0.356	0.0	7.8	O K
2160 min Summer	27.360	0.360	0.0	7.9	O K
2880 min Summer	27.357	0.357	0.0	7.8	O K
4320 min Summer	27.350	0.350	0.0	7.6	O K
5760 min Summer	27.340	0.340	0.0	7.3	O K
7200 min Summer	27.329	0.329	0.0	7.0	O K
8640 min Summer	27.319	0.319	0.0	6.7	O K
10080 min Summer	27.308	0.308	0.0	6.4	O K
15 min Winter	27.164	0.164	0.0	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	133.268	0.0	19
30 min Summer	89.682	0.0	34
60 min Summer	57.620	0.0	64
120 min Summer	35.752	0.0	124
180 min Summer	26.643	0.0	184
240 min Summer	21.471	0.0	244
360 min Summer	15.792	0.0	364
480 min Summer	12.695	0.0	482
600 min Summer	10.708	0.0	602
720 min Summer	9.313	0.0	722
960 min Summer	7.464	0.0	962
1440 min Summer	5.454	0.0	1442
2160 min Summer	3.977	0.0	2160
2880 min Summer	3.174	0.0	2620
4320 min Summer	2.306	0.0	3324
5760 min Summer	1.836	0.0	4088
7200 min Summer	1.537	0.0	4896
8640 min Summer	1.331	0.0	5704
10080 min Summer	1.178	0.0	6464
15 min Winter	133.268	0.0	19

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	27.198	0.198	0.0	3.3	O K
60 min Winter	27.234	0.234	0.0	4.3	O K
120 min Winter	27.273	0.273	0.0	5.4	O K
180 min Winter	27.296	0.296	0.0	6.0	O K
240 min Winter	27.311	0.311	0.0	6.5	O K
360 min Winter	27.332	0.332	0.0	7.1	O K
480 min Winter	27.348	0.348	0.0	7.5	O K
600 min Winter	27.359	0.359	0.0	7.9	O K
720 min Winter	27.368	0.368	0.0	8.1	O K
960 min Winter	27.381	0.381	0.0	8.5	O K
1440 min Winter	27.396	0.396	0.0	8.9	O K
2160 min Winter	27.404	0.404	0.0	9.1	O K
2880 min Winter	27.404	0.404	0.0	9.1	O K
4320 min Winter	27.391	0.391	0.0	8.8	O K
5760 min Winter	27.379	0.379	0.0	8.4	O K
7200 min Winter	27.364	0.364	0.0	8.0	O K
8640 min Winter	27.348	0.348	0.0	7.6	O K
10080 min Winter	27.333	0.333	0.0	7.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.682	0.0	34
60 min Winter	57.620	0.0	64
120 min Winter	35.752	0.0	122
180 min Winter	26.643	0.0	182
240 min Winter	21.471	0.0	240
360 min Winter	15.792	0.0	360
480 min Winter	12.695	0.0	478
600 min Winter	10.708	0.0	596
720 min Winter	9.313	0.0	714
960 min Winter	7.464	0.0	944
1440 min Winter	5.454	0.0	1412
2160 min Winter	3.977	0.0	2036
2880 min Winter	3.174	0.0	2740
4320 min Winter	2.306	0.0	3548
5760 min Winter	1.836	0.0	4392
7200 min Winter	1.537	0.0	5328
8640 min Winter	1.331	0.0	6224
10080 min Winter	1.178	0.0	7064

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 28.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00400	Width (m)	9.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	26.4	Slope (1:X)	60.0
Safety Factor	5.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	27.000	Cap Volume Depth (m)	0.450

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Appendix (E)

Arun District Council Drainage Officer Correspondence

From: [redacted]
To:
Cc:
Subject: RE: Fontwell - Drainage Strategy
Date: 15 October 2019 12:56:39

Hi Christian,

I have reviewed the infiltration test results, these are okay. When a revised submission is provided please include these rates on a layout drawing summarising groundwater and infiltration test results.

The following points should be used in design:

1. Closest infiltration testing results should be used in design with the worst infiltration rate used.
2. If the base of infiltrating structures is included within design, the factor of safety applied must be in accordance with the following:

Factor of Safety Table						
Size of Area to be Drained	Consequences of failure					
	No damage or inconvenience		Minor inconvenience, e.g. surface water on car park		Damage to buildings or structures or roads.	
	Cv=1.0	Cv=0.75	Cv=1.0	Cv=0.75	Cv=1.0	Cv=0.75
<100 m^2	1.5	2	2	3	10	13
100m^2 to 1000m^2	1.5	2	3	4	10	13
>1000m^2	1.5	2	5	6.5	10	13

3. An allowance for the rainfall falling directly upon the infiltration basin must be included in calculations.
4. The soakaway nearest to a property should be the one serving that property.
5. 5m easement between soakaways and the red line site boundary should be provided.
6. If the infiltrating structure does not half drain in 24 hours for the 100 year plus climate change event please provide half drain time results for the 1 in 10 year plus climate change event. It is likely if this drain time is less than 24 hours that it will be accepted.
7. A minimum of 100mm freeboard will be provided between the base of infiltrating structures and maximum recorded groundwater level.
8. I note that you stated that layout revisions are to occur and this will therefore have a knock on impact upon the surface water drainage design.

The outstanding points from my previous consultation response are as follows:

1. Calculations are missing for areas 9 and 11.
2. The infiltration rate used in the design of the soakaway for area 14 appears to be incorrect (significant overestimation).
3. Soakaways for areas 24 are within 10m of existing buildings and therefore need to be moved/ re-designed.
4. Soakaways for areas 6, 7, 8, 24, 26, 31A are in close proximity to the red line boundary. Is there any opportunity to increase these easements?
5. Has the rain falling directly onto the infiltration basin been accounted for in design?
6. I presume from impermeable areas, and location that area 22 also serves plots 309-313

despite this not being stated in the plot numbers column. Please confirm.

7. The soakaway for area 26 has a modelled water depth which exceeds the crate depth.
8. Plots 322 and 323 and 332 and 333 are not draining to the soakaways adjacent to them. Have you considered swapping these over so they do?
9. The infiltration rate used for area 27 appears to be incorrect. Please review.
10. Draining plots 347-350 to area 29 seems optimistic, please demonstrate how you would get the water here.
11. The soakaway for area 30a is set too deep.
12. As discussed previously some of the soakaways as currently proposed will not work if infiltration rates are found to be near the lower end of the range observed between nearby test locations. When is infiltration testing going to be completed? I would be keen to see these results before determination of the application.
13. Some of the soakaways are located considerable distances away from the properties which they are serving. Are you confident that connections can be made and minimum falls achieved?
14. Are covenants going to be put in place to ensure householders permit access for maintenance?

Kind Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council |
Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
Internal: 37818 | External: +44 (0) 1903 737818 | Fax: +44 (0) 1903 716018 | E-mail: laura.gibbons@arun.gov.uk
Arun is Working in Partnership with Chichester District Council
Visit Arun's web site at http://www.arun.gov.uk/ and www.chichester.gov.uk



Save the environment - think before you print

From: Christian O'Brien <c[redacted]
Sent: 14 October 2019 16:06
To: [redacted]
Cc: [redacted]
Chri[redacted]
Subject: RE: Fontwell - Drainage Strategy

Hi Laura,

Please can you also confirm the acceptance and requirements of the following principles:
1) all hard standing areas to be permeable
2) all roof drainage to infiltration trenches, which are to be offset from proposed units, existing buildings and boundaries
3) residual roof drainage to attenuation basis in south west catchment

Kind regards,

Christian O'Brien
Engineering Manager
Dandara logo
[redacted]

From: Christian O'Brien
Sent: 14 October 2019 15:24
To: Laura Gibbons <[redacted]>
Cc: [redacted]
Subject: Fontwell - Drainage Strategy
Importance: High

Hi Laura,

Many thanks for the meeting last week with myself and Leon at RCP with regards our site at Fontwell.

With your departure only days away, we would very much appreciate a position statement which makes it crystal clear which aspects of the drainage strategy are agreed and where there are any outstanding matters in your view.

We would also appreciate confirmation that the most recent testing results that I sent over to you are acceptable with our proposed drainage strategy and that we have acquired sufficient testing across the site to advise the detailed design of the drainage strategy, even if the layout is to change slightly.

Kind regards,

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