Infrastruct CS Ltd
The Stables
High Cogges Farm
High Cogges
Nr Witney
Oxon
OX29 6UN

SuDs Compliance Report

Unit 5, Oxford Technology Park, Oxford

Document reference: **4553-TECH-ICS-XX-RP-C-07.001**

Report Prepared By:
Andrew LLoyd
BSc (Hons), GradCIWEM

Report Checked By:
Mateo Blanco
Meng, GMICE

Report Date: July 2023

Project Number: **4553**

Registered Office: Jamesons House, Compton Way, Witney, OX28 3AB
Registered in England and Wales 07521130,

Date:	04th July 2023
Project Number:	4553
Project Name:	Oxford Technology Park, Unit 5
Prepared By:	A. LLoyd
Prepared For:	Oxtec Developments Ltd

Document Revision Record

Issue	Checked By	Date	Description
DRAFT	**MBD**	**4th July 2023**	**Initial Issue**

Foreword

This document has been prepared solely as a SuDS Compliance report for the Client, OxTec Developments Ltd. No responsibility or liability will be accepted for any use that is made of this document other than by the Client for the purpose it was written. The conclusions resulting from this study and contained within this report are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

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Some of the information presented within this report is based on third party information which is believed to be correct; no liability will be accepted for any discrepancies in accuracy, mistakes or omissions in such information.

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1.0 Introduction

1.1 Commission

OxTec Developments Ltd have commissioned Infrastruct CS Ltd (ICS) to check that the as constructed drainage installation at Unit 5 of the Oxford Technology Park is in accordance with the approved drainage design:

4553-TECH-ICS-01-XX-DR-C-0200-S2-P05 - Drainage Design

1.2 Aims and Objectives

To assess the as constructed drainage arrangement and comment any deviation or deficiencies from the original design.

2.0 Site Details

2.1 Location

The site is located in Kidlington, south of Oxford Airport, approximately 3.5km south-west of Woodstock. It is bound by Unit 3 of the same park to the north and Unit 7 to the south. Postcode is OX5 1GN and grid reference SP 47651 14700.

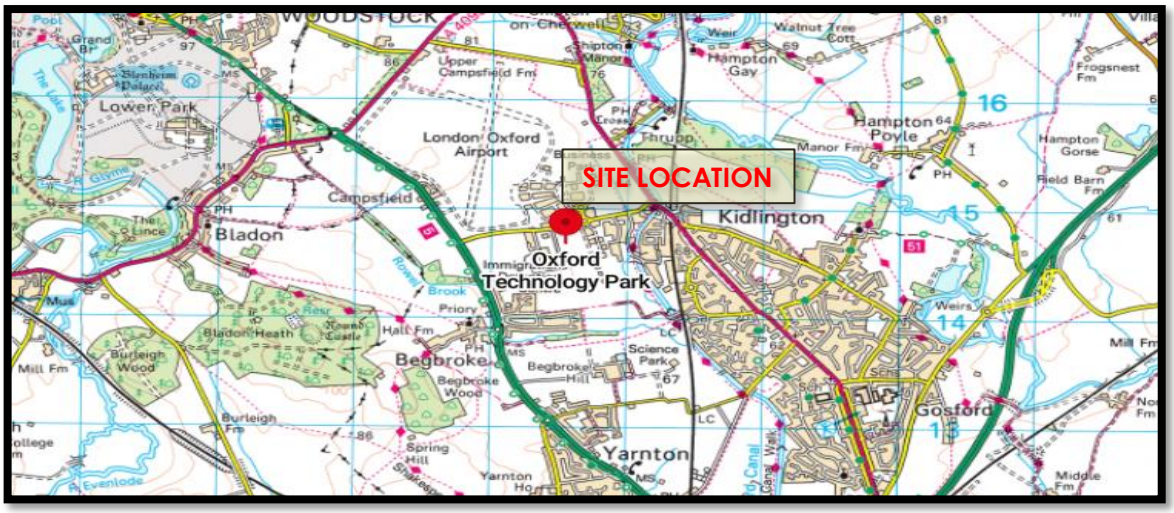


Figure 2.1.1 - Site Context

Figure 2.1.2 - Site location

2.2 Site description

The site is being developed as a technology park with eleven industrial plots, some with more than a single building.

Plot 5 consists of one building split into two units, 5A and 5B.

Most of the hard landscaping is dedicated to vehicle manoeuvring and parking bays.

3.0 Drainage

3.1 Proposed Drainage

The drainage strategy for this scheme is in line with NPPF guidance and follows the SuDS hierarchy, which has infiltration based solutions situated at the top of it.

In this case, all runoff is conveyed into the ground so the runoff rate leaving the site is zero.

The hard landscaping was made permeable in most areas, which is good practice in terms of water quality. The rest, the impermeable zones, were designed to make runoff flow towards permeable areas. Water is intended to be stored in the open graded crushed rock before infiltrating into the ground.

Runoff from the roof of the building is to be collected via rainwater pipes, each of them individually discharging into the open graded crushed rock (OGCR) layer under the car park through a series of diffusers.

The approved drainage design can be found in appendix A.

3.2 SuDs Analysis

Due to the underground nature of the drainage and the inability to see the SuDs features once construction is complete, photographs taken during the construction have been used for review. It is the only material, together with As-Built drawings that can be relied upon to demonstrate compliance and /or deviations from the approved design.

3.3 Open Graded Crushed Rock Subbase (OGCR)

Fig 3.3.1, Fig 3.3.2 and Fig 3.3.3 are images of the open graded subbase used on site beneath the permeable block paving. As can be seen, the material appears to be suitable with no visible fines. The particle size distribution report, provided by Hanson, is acceptable and within range, and can be found in Appendix B. The subbase appears to have been constructed to the suitable depth as specified in the design.

The geotextile is visibly being covered by OGCR as it is being rolled out in Fig 3.3.2, demonstrating that it is in place. Geotextile was provided by Geosynthetics (ref Ekotex 07 (1000)) and its datasheet can be found in Appendix C.

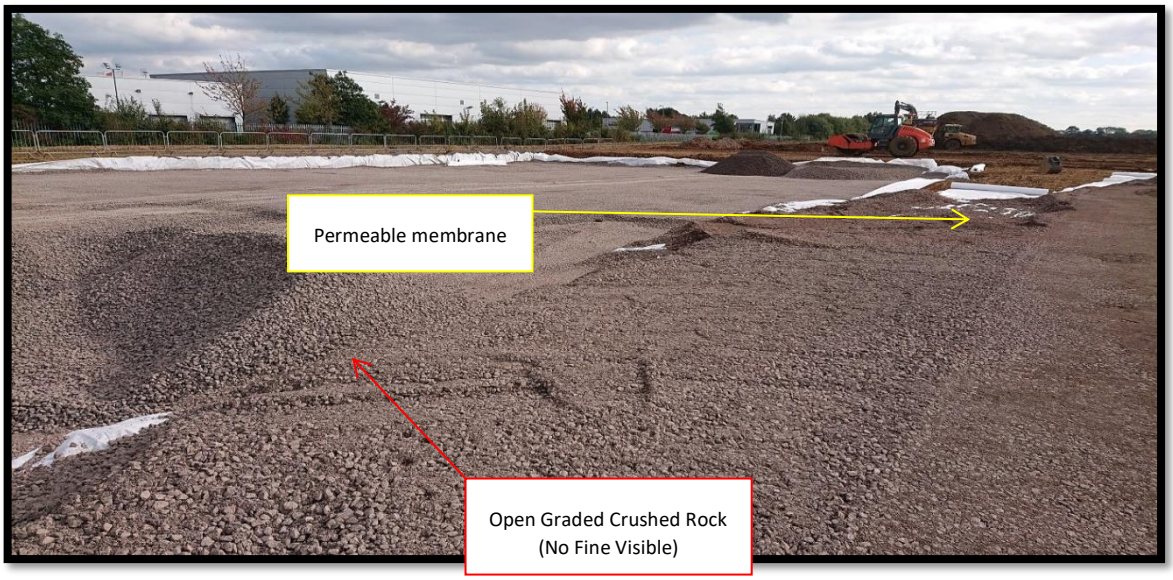


Fig 3.3.1- Image of OGCR material front car park

Fig 3.3.2- Image of geotextile being rolled out in preparation for the OGCR subbase.

Fig 3.3.3- OGCR layer being compacted.

3.4 Filter Trenches

Though a filter trench was not specified on the approved design, this SUDs feature is a suitable method and can only help in achieving the goal of distributing water into an open graded subbase.

After visual analysis of the photograph displayed in Fig 3.4.1 & 3.4.2 the trenches appear to have been excavated to a sufficient depth. However, without survey information this cannot be verified. The photos also show a permeable geotextile membrane being installed at the base and sides of the slip trench that the trenches have been backfilled with OGCR as per original design.

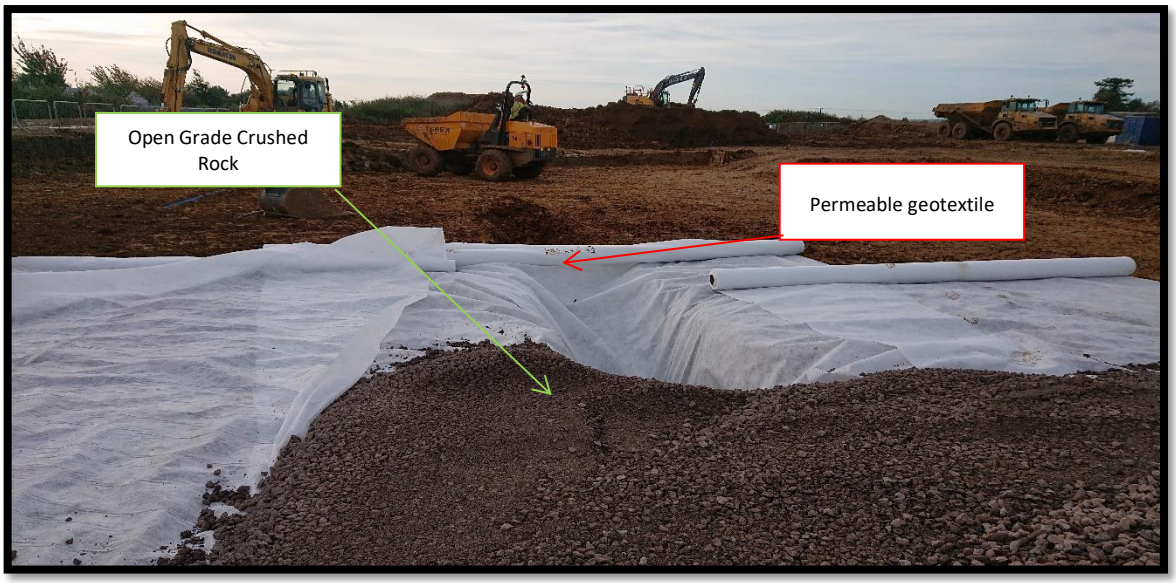


Fig 3.4.1- Filter trench construction with permeable geotextile and OGCR backfill.

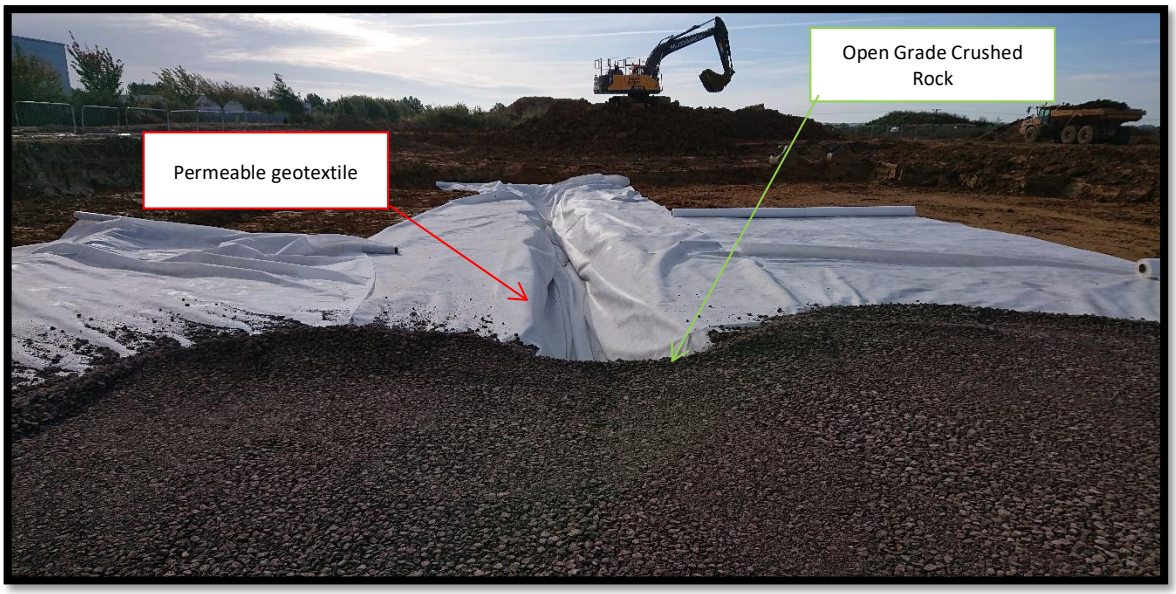


Fig 3.4.2- Filter trench construction with permeable geotextile and OGCR backfill.

3.5 Distribution Pipes & Chambers

Distribution is achieved via a series of standard Ø 150mm pipe with a High performance cellular diffuser (PVOD05202) at the end (It is similar to that used in Units 6 to 11). Perforated concrete rings (Ø 1200mm) with a sump to allow silt capture have been installed in place of the PVC-U chambers specified. Although this is a variation from the approved design, the perforated rings will allow distribution from the chamber in addition to the diffusers, granting improved distribution into the subbase, while also provided additional storage in the event the subbase capacity is exceeded and collection of silt from the roof run off. The perforated ring chamber has also been wrapped in a permeable geotextile which will allow water to leave the chamber but prevent debris from entering the chamber and causing blockages. Please refer to Fig 3.5.1 & 3.5.2 for surface water distribution arrangement.

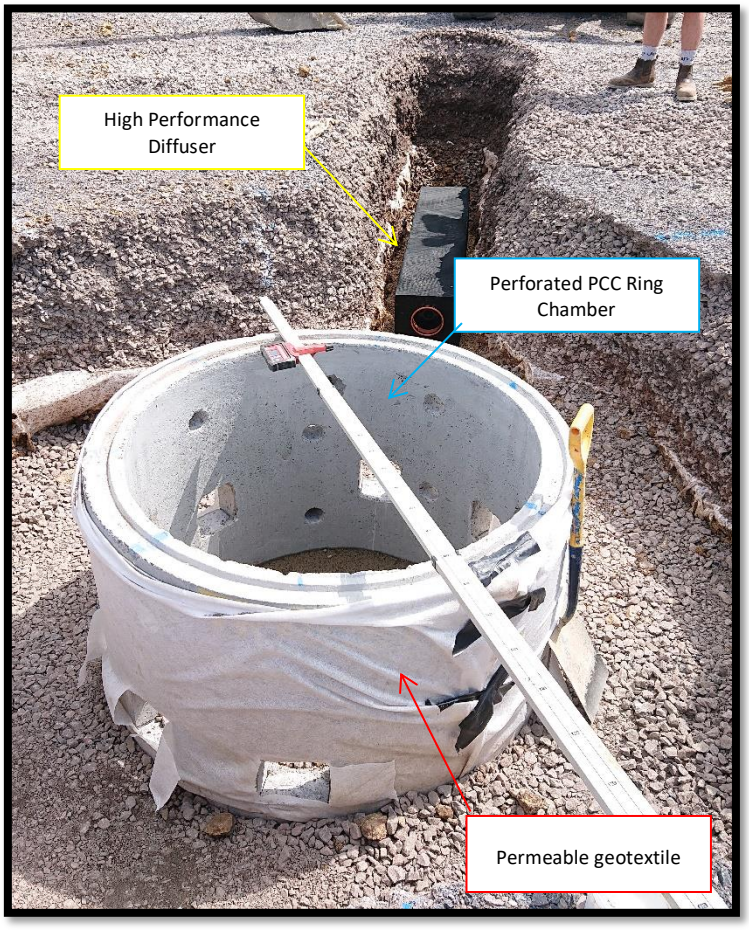


Fig 3.5.1- Perforated ring catch pit and High Performance Diffuser PVOD05202

Fig 3.5.2- Perforated ring catch pit

3.6 Permeable Paving Car Park

The front and rear car parking areas have been laid with permeable block paving which can be seen in Fig. 3.6.1 & 3.6.2. There is evidence of rainfall in the photos and there does not appear to be any pooling or puddles on the surface which indicates that it has been installed correctly allowing surface water to run between the blocks into the open graded subbase.

The site has been constructed with some minor deviations in terms of levels. While in ICS design there was a small ramp at either entrance, it seems much flatter now. The level difference with the surrounding tarmac roads is negotiated within the bitmac bellmouth areas, which is also fine.

Since the floor level of the building is higher than the car park, and the latter is in turn higher than the bitmac access road, any exceedance runoff would leave the site via the northern access. The risk of flooding from surface water is therefore low.

Fig. 3.6.1- Unit 5 front car park permeable block paved surface

Fig. 3.6.2- Unit 5 rear car park permeable block paved surface

Fig. 3.6.3- Entrance from West to Plot 5

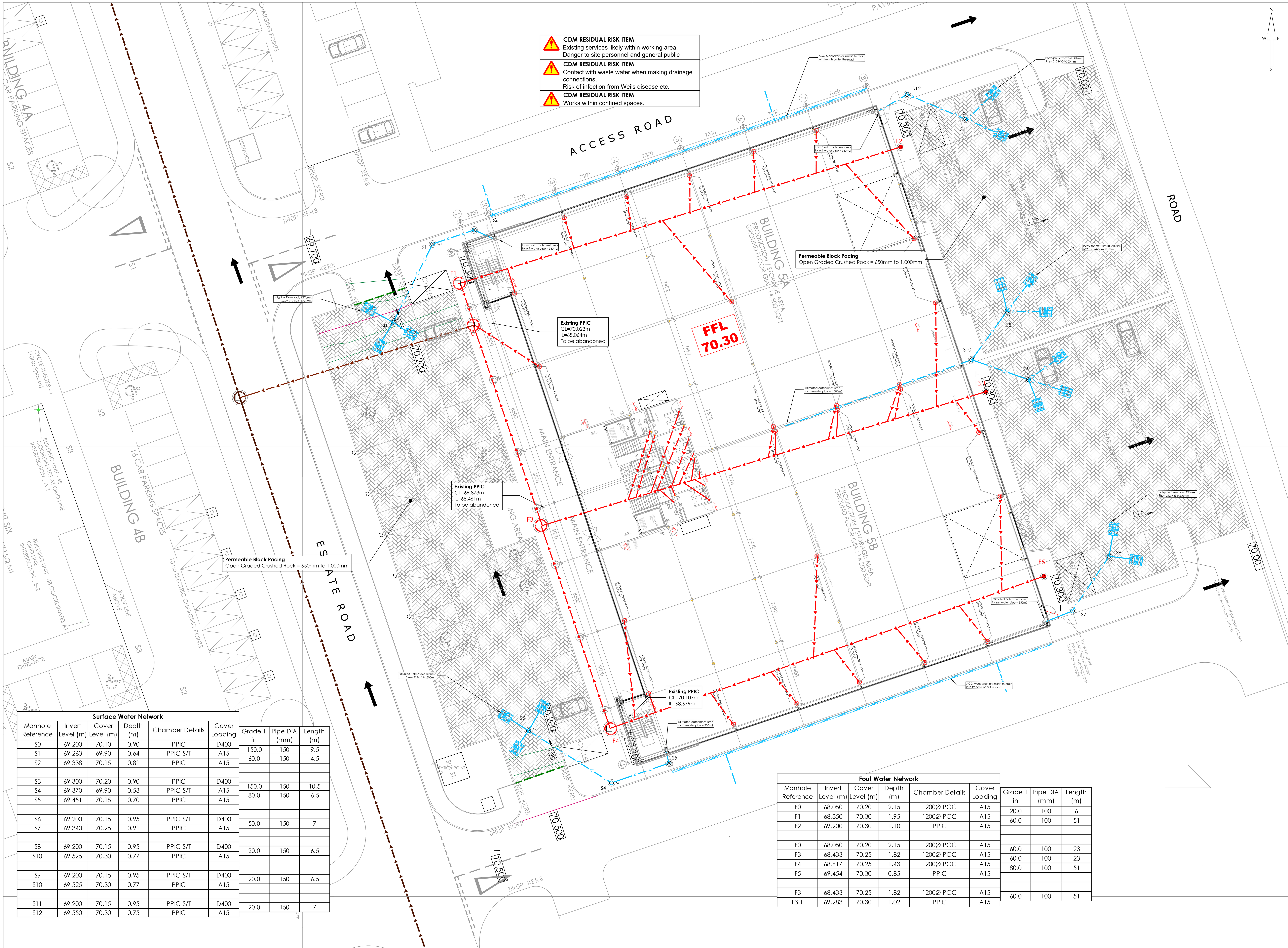
4.0 Conclusions

The conclusion of this report is based on a visual analysis of site photographs taken during construction stage of this development. The permeable block paving seems to have been installed correctly with no pooling on the finished surface. The OGCR has no visible signs of fine materials within it, the depth looks sufficient based on the approved design, and a permeable geotextile membrane has been installed at the base to allow infiltration into the strata.

The exact mechanism to discharge roof runoff into the gravel subbase is not in line with the approved design. However, the use of perforated ring sections will allow for better distribution from the chamber in addition to the diffuser, adding additional storage and the provision of silt capture for the roof run off. The filter trenches to the front of the building also act as an acceptable alternative to the approved method of using diffusers.

Levels are not identical but fairly similar and have little impact on the overall arrangement.

Appendix A - Drainage Design



CDM RESIDUAL RISK ITEM
Existing services likely within working area. Danger to site personnel and general public
CDM RESIDUAL RISK ITEM
Contact with waste water when making drainage connections. Risk of infection from Weils disease etc.
CDM RESIDUAL RISK ITEM
Works within confined spaces.

Surface Water Network

Manhole Reference	Invert Level (m)	Cover Level (m)	Depth (m)	Chamber Details	Cover Loading	Grade 1 in	Pipe DIA (mm)	Length (m)
S0	69.200	70.10	0.90	PPIC	D400	150.0	150	9.5
S1	69.263	69.90	0.64	PPIC S/T	A15	60.0	150	4.5
S2	69.338	70.15	0.81	PPIC	A15			
S3	69.300	70.20	0.90	PPIC	D400	150.0	150	10.5
S4	69.370	69.90	0.53	PPIC S/T	A15	80.0	150	6.5
S5	69.451	70.15	0.70	PPIC	A15			
S6	69.200	70.15	0.95	PPIC S/T	D400	50.0	150	7
S7	69.340	70.25	0.91	PPIC	A15			
S8	69.200	70.15	0.95	PPIC S/T	D400	20.0	150	6.5
S10	69.525	70.30	0.77	PPIC	A15			
S9	69.200	70.15	0.95	PPIC S/T	D400	20.0	150	6.5
S10	69.525	70.30	0.77	PPIC	A15			
S11	69.200	70.15	0.95	PPIC S/T	D400	20.0	150	7
S12	69.550	70.30	0.75	PPIC	A15			

Foul Water Network

Manhole Reference	Invert Level (m)	Cover Level (m)	Depth (m)	Chamber Details	Cover Loading	Grade 1 in	Pipe DIA (mm)	Length (m)
F0	68.050	70.20	2.15	1200Ø PCC	A15	20.0	100	6
F1	68.350	70.30	1.95	1200Ø PCC	A15	60.0	100	51
F2	69.200	70.30	1.10	PPIC	A15			
F0	68.050	70.20	2.15	1200Ø PCC	A15	60.0	100	23
F3	68.433	70.25	1.82	1200Ø PCC	A15	60.0	100	23
F4	68.817	70.25	1.43	1200Ø PCC	A15	80.0	100	51
F5	69.454	70.30	0.85	PPIC	A15			
F3	68.433	70.25	1.82	1200Ø PCC	A15	60.0	100	51
F3.1	69.283	70.30	1.02	PPIC	A15			

DESIGNER NOTE
Assumed CBR to be >5%.
In situ investigation to confirm

DESIGNER NOTE
Soakage rate used = 5.39x10-5 m/s, average value of tests carried out in the vicinity of the site.

DESIGNER NOTE
Monitoring wells recorded groundwater levels between 0.9m and 2.5m bgl during investigation for Unit 1, to the north of this site. See report SHF.1733.001.GE.R.002.A. prepared by Enzygo in June 2020. To be further investigated with groundwater monitoring in winter within the site boundary.

NOTES

1. All dimensions and levels are in metres unless otherwise noted
2. This drawing is to be read in conjunction with the relevant Architect's/Engineer's drawings, specifications and CDM documentation
3. This drawing has been produced electronically and may have been photo reduced or enlarged when copied. Work to figured dimensions only (DO NOT SCALE - EXCEPT FOR PLANNING PURPOSES). All dimensions to be checked on site. Any errors or omissions to be reported to the engineer immediately.
4. This drawing contains coloured lines / information that may not be clear if reproduced in black and white.
5. Digital copies of this plan can only be considered accurate if supplied directly by Infrastruct CS Ltd.

Construction Note
All footways to be laid to cross falls to drain into private soft landscaped areas

DESIGNERS CDM NOTE - RESIDUAL RISKS IDENTIFIED

The design Engineer(s) have analysed this design as the scheme has been developed, in order to identify if there are any significant residual risk hazards (i.e. unusual, unexpected, abnormal or difficult).

Residual risks **HAVE** been identified and are therefore shown on this drawing. These risks have not been possible to remove by design.

This statement assumes that a competent Contractor with the appropriate qualified staff will be employed for the works, and that they will be familiar with site wide construction risks and hazards that they can reasonably be expected to encounter as part of their work.

Drainage Key

Sewers

- Foul water drain (private/non adoptable)
- Surface water drain (private/non adoptable)
- Foul water sewer (Adoptable)

Chamber Key

FW/SW

- Mini access chamber (mac) - 300mmØ
- PPIC - 475mmØ*
- P.C.C. units/brick*
- Adoptable demarcation manhole within 1m of boundary
- Manhole
  Depth: 1.25m to 1.5m*
  Depth: 1.55m to 3.0m*

* General note
(Refer to standard details & longitudinal sections for chamber sizes. Size may need to increase dependant on number of incoming pipes/size of incoming pipes)

- Rain water down pipe (roddable access)
- Soil vent pipe/soil stack
- ST — Silt Trap (ST) with removable silt bucket
- S1/F1 — Manhole reference number
- Linear drainage channel
- Cellular storage (refer to drawing for sizes)
- FFL XX.XX — Finished Floor Level (FFL)
- Block paving - permeable
- Baffle to prevent rapid through flow of water through permeable paving
- Impermeable barrier to stop lateral movement of water
- DU — RWP cellular discharge/collection unit (DU) (Permavoid or similar)

REV	DRAWN	CHECK	REVISION COMMENTS	ISSUE DATE
AB	RSI	NJ	As Built Issue	18/01/23

DRAWING TITLE: Drainage Design
SHEET NO.: 1/1

PROJECT:
Building 5A & 5B
Oxford Technology Park
Kidlington, Oxon

CLIENT: SWJ Consulting Ltd

Infrastruct CS Ltd

SCALE @ A1: 1:200 (0m, 5m, 10.0m)

PROJECT NUMBER	STATUS	ISSUE PURPOSE
4553	AB	AS BUILT

ENGINEER: IMT
DRAFT: NJ
APPROVED: MBD

PROJECT	ORIGIN	PHASE	LEVEL	TYPE	ROLE	NO.	REVISION
TECH	ICS	01	XX	DR	C	0200	AB

The Stables, High Cogges Farm, High Cogges, Witney, OX29 6UN - Tel: 01993 709709: info@infrastructcs.co.uk

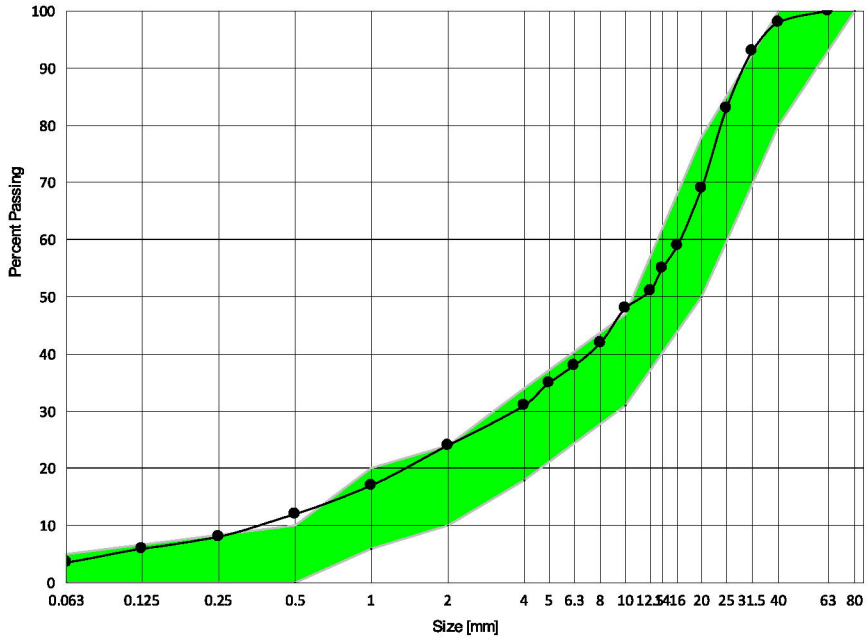
Appendix B - Gravel Particle Size

Ridgewood House
The Ridge
Chipping Sodbury
Bristol
BS37 6AY

UKAS TESTING
0812

Particle Size Distribution Report

Product:	**Type 3 Sub Base 0/50 Limestone SHW 805**
Material Code:	**200266**
Supplied by:	**Whatley**
Customer:	
Site:	
Ticket Number:	
Testing Laboratory	**Whatley**
Material type:	**SHW Series 800 /**
Job Type	**100/General**
Test Method	**Wash entire sample**
(To BS EN 933-1 : 2020)	
Sampled to:	BSEN 932-1 : 1997
Prepared to:	BSEN 932-2 : 1997



Sieve Size (mm)	Percentage Passing (%)	Spec limits (%)	Complies
63	100	-	-
40	98	80 - 100	Yes
31.5	93	-	-
25	83	-	-
20	67	50 - 78	Yes
16	59	-	-
14	55	-	-
12.5	51	-	-
10	46	31 - 47	Yes
8	42	-	-
6.3	38	-	-
5	35	-	-
4	29	18 - 34	Yes
2	24	10 - 24	Yes
1	16	6 - 20	Yes
0.5	9	0 - 10	Yes
0.25	8	-	-
0.125	6	-	-
0.063	3.3	0 - 5.0	Yes

Additional Grading Requirements - Type 1 GSB table 8/7

Remarks

Results shown on this report only relate to the sample being tested and at no point did the laboratory deviate from the test method as stated above.

Signed : [redacted]

Issue Date :12/05/2023

Appendix C - Geotextile Datasheet

Geosynthetics Limited Tel: 01455 617 139 Fax: 01455 617 140 Email: sales@geosyn.co.uk

Geotextile Comparison: Terram 1000 & Ekotex 07 (1000)

	Standard	Unit	Terram 1000	Ekotex 07 (1000)	Ekotex 07 (1000) Comparison
Product References	-	-	T-1000	Eko 07 (1000)	-
Type of Product	-	-	Non-Woven	Non-Woven	**Equal**
Production Method	-	-	Thermally bonded	Thermally Bonded	**Equal**
Static Puncture Resistance	**EN ISO 12236**	**kN**	1.5	1.5	**Equal**
Wide-width Tensile Test (Strip-test, 200mm):	**EN ISO 10319**	**kN/m**	-	-	-
Longitudinal direction			8.0	8.0	**Equal**
Transverse direction			8.0	8.0	**Equal**
Elongation at break (MD/CD)		**%**	60	60	**Equal**
Dynamic perforation (Cone Drop Test)	**EN 13433**	**mm**	38	34	**Better** A lower figure indicates greater resistance to damage.
Water flow rate	**EN ISO 11058**	**l/m²s**	90	115	**Better** Higher flow is better for drainage
Pore size $d_{90\%}$	**EN ISO 12956**	**Micron**	75	68	**Better** Smaller pore size is generally better as it prevents the migration of fine particles.
Dimensions Width	-	**m**	4.5	4.5	**Equal**
Length	-	**m**	100	100	**Equal**
Roll diameter	-	**cm**	29	34	-

Summary	
Tensile Strength	Ekotex is as strong as Terram
Static Puncture Resistance	Ekotex is equal to Terram in terms of puncture resistance.
Elongation at Break	Ekotex can withstand installation damage as well as Terram.
Dynamic Performation	Ekotex is more resistant to damage once installed.
Water flow	Ekotex is better for drainage as the flow rate is higher.

The above technical values are mean values based on measurements in current production and test results from independent test institutes.
The 'Terram' figures were obtained from the current datasheet online 26.01.15
Geosynthetics Limited accept no responsibility for improper use or misinterpretation of the technical specifications published in connection with Ekotex Geotextiles.
Wet or dry, the properties of Ekotex Geotextiles remain unchanged, and are resistant to attacks of dry rot or fungi. Ekotex Geotextiles are resistant to acids and alkalis.

DR: 68/V4/26.01.15

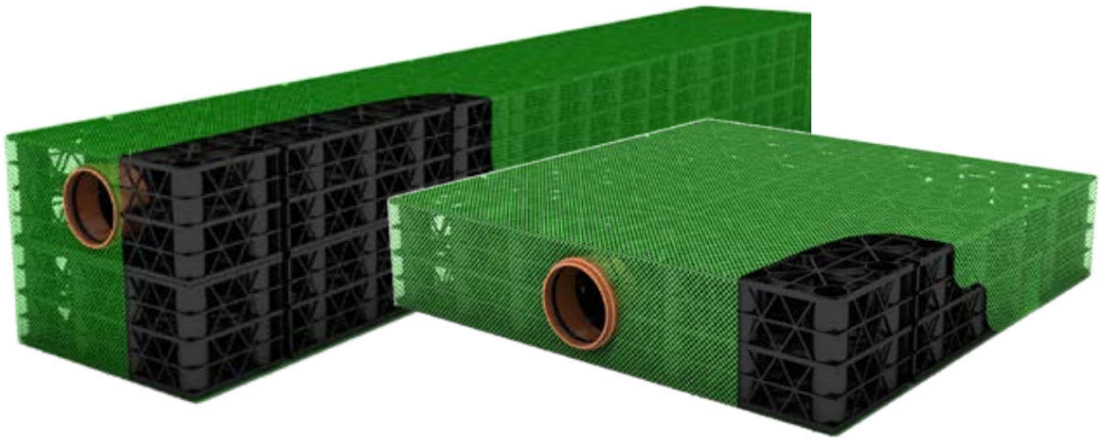
Geosynthetics

Appendix D - Rainwater Diffuser Datasheet

the Foundation for our Future

PVOD Diffuser

Specifications and Applications v2



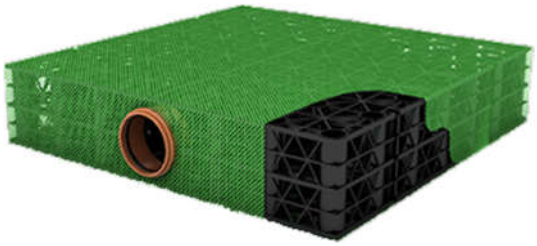
PVOD Diffuser

Introduction

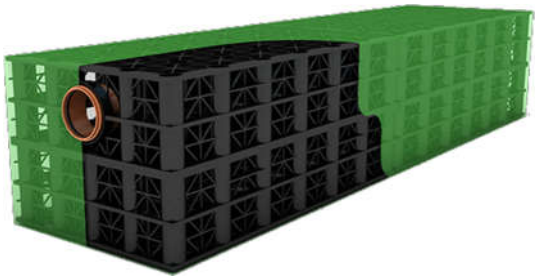
PVOD Diffuser units are a recognised method for efficient diffusion of collected rainwater run-off into and out of the voided sub-base aggregate layers beneath permeable pavements. Diffuser Units are fully compliant with BS7533-13:2009 and arrive to site ready to install with no-site assembly required. They are simply joined to standard underground push-fit pipework.

Run-off from building roofs or hard surfaces would pass through a silt catchpit chamber before discharge into a voided sub-base. The run-off will be efficiently distributed into the voided subbase layer through the highly voided surface structure of the diffuser unit.

Standard Diffuser Units



PVOD05101
for 100m² catchments
or 3 l/s discharge



PVOD05201
for 250m² catchments
or 6.3 l/s discharge

Application

The PVOD Diffuser units are installed within the pavement construction zone as a sub-base replacement system and are fully compliant with BS7533-13:2009, 'Pavements constructed with clay, natural stone or concrete pavers'.

The PVOD Diffuser is particularly useful where there are ground problems, such as high groundwater levels, contamination or shallow rock layers.

Each diffuser module is encapsulated by a 2mm mesh, which provides an excellent open surface area, allowing collected surface water runoff to easily flow into surrounding aggregate.

Coverage

A general principle for application of the diffuser unit is:

Use a 710x710x150 diffuser for up to 100m² of catchment area OR up to 3 l/s discharge*

OR

Use a 2130x355x300 diffuser for up to 250m² of catchment area OR up to 6.3 l/s discharge*

*Performance is based on the diffusers installed within a SudsAgg layer.

Bespoke Units

The above will satisfy most situations but if a larger area for inflow or higher discharge rate is required, the first recommendation is to use a 'manifold' type arrangement from a silt catchpit. If that does not provide a solution then bespoke diffuser units are available, contact the distributor who can calculate your specific requirement.

Diffuser Unit 710x710x150; 110mm ø Socket

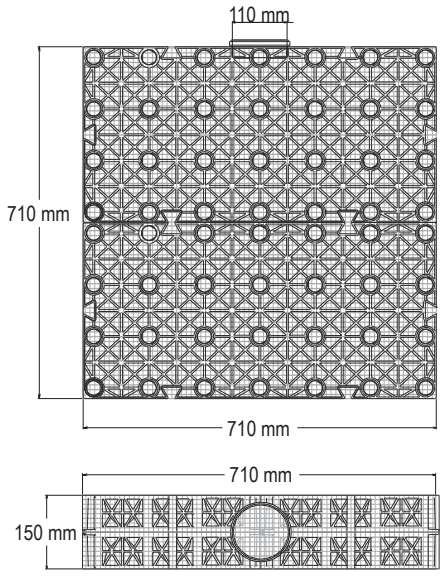
PVOD05101

Description

The Permavoid Diffuser Unit 710x710x150; 110mm ø Socket is used for the efficient diffusion of collected surface water runoff in or out of permeable aggregates. This technique can be utilised in conjunction with both pervious and impervious surfaces, in particular where there are high groundwater levels, contamination or shallow rock layers. Each diffuser module is complete with a pre-formed 110mm Ø push fit socket for easy connection to standard PVC-u underground pipework. All diffusers are encapsulated by a 2mm mesh which avoids debris clogging and provides an excellent open surface area for surface water runoff to easily flow into the surrounding aggregate.

Packaging Details

Element	Value	Unit
Packaging unit type	Double wall cardboard	
Packaging unit dimension	726 x 712 x 152 (LxWxD)	mm
Packaging unit weight	7	kg
Number of units per pallet	27	nr
Pallet dimensions	1200 x 1200 x 150 (LxWxD)	mm
Pallet weight	214	kg



Specification

Element	Value	Unit
Unit length	710	mm
Unit width	710	mm
Unit depth	150	mm
Socket OD ⌀	110	mm
No. of sockets	1	nr
Approximate storage volume	70	L
Effective perforated surface area	59	%
Maximum roof catchment area *	100	m2
Unit weight	7	kg
Material	HDPE / PP	

Diffuse up to 100m2 roof catchment

Mesh encapsulation to avoid clogging

Standard PVC-u 110mm ⌀ Socket Connection

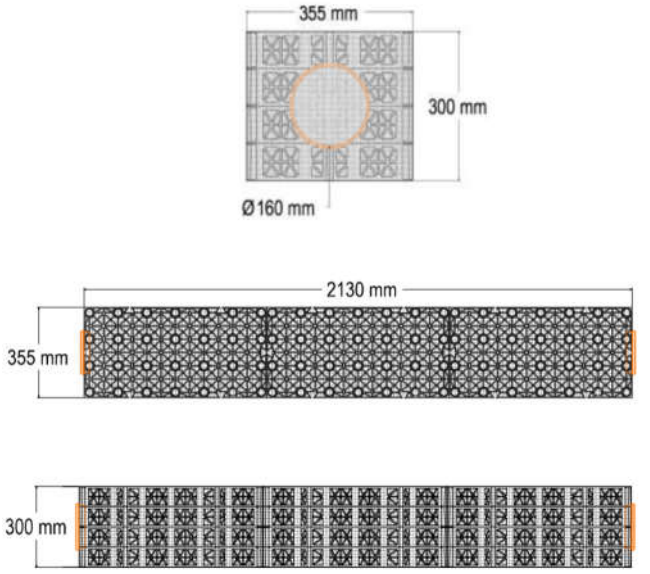
*Based on rainwater dispersal into a granular material with permeablitiy greater than or equal to 0.02 m/s, in accordance with UK building regulations. Please check the design and build regulations for your country or region when considering this product.

High Performance Diffuser 2130x355x300; Ø160mm Sockets

PVOD05202

Description

The PVOD05202 - High Performance Diffuser 2130x355x300; 160mm Ø Sockets is designed for the efficient diffusion of collectedsurface water runoff into permeable aggregates. This techniquecan be utilised in conjunction with both pervious and impervioussurfacings. The PVOD05202 units can also be used to supplement the storage provided within permeable aggregate layers without increasing construction depths, or to form a propriety soakaway beneath a driveway or other trafficked hardstanding.



Packaging Details

Element	Value	Unit
Packaging unit dimension	2158 x 712 x 302 (LxWxD)	mm
Packaging unit weight	18	kg
Number of units per pallet	18	nr
Pallet dimensions	2400 x 1200 x 150 (LxWxD)	mm
Pallet weight	374	kg

Specification

Element	Value	Unit
Unit length	2130	mm
Unit width	355	mm
Unit depth	300	mm
Socket ID ⌀	160	mm
No. of sockets	2	nr
Approximate storage volume	210	L
Effective perforated surface area	59	%
Maximum roof catchment area	250	m2
Unit weight	18	kg
Material	HDPE / PP	

Effective water dispersal

Standard PVC-u Ø160mm Socket Connection

Lightweight, high strength construction

Standard Diffuser Units

Below are a selection of standard diffuser units which will satisfy most situations for inflow or discharge. The first recommendation is to use a ‘manifold’ type arrangement from a silt catchpit maintaining the correct length to dispersion. If that does not provide a solution then bespoke diffuser units are available. If you cannot see a diffuser to satisfy your requirements, then contact the distributor who can provide advice.

Product Code	Length mm	Width mm	Depth mm	Connection Type	Connection Size	Connection Qty	Catchment Area* m²	Discharge Rate* l/s	Length to Dispersion m
PVOD05201	2130	355	300	Socket	110	2	250	6.3	4.225
PVOD05202	2130	355	300	Socket	160	2	250	6.3	4.225
PVOD05203	2130	355	300	Spigot	225	1	250	6.3	4.225
PVOD05101	710	710	150	Socket	110	1	100	3.0	1.937
PVOD05102	710	710	150	Spigot	160	1	100	3.0	1.937
PVOD05103	710	710	150	Socket	110	2	100	3.0	1.937
PVOD05104	710	710	150	Socket	110	2	100	3.0	1.937
PVOD05105	710	710	150	Socket	110	3	100	3.0	1.937

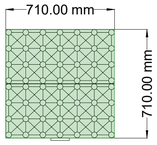
*Catchment areas and discharge rates based on rainwater dispersal into a granular material with permeability greater than or equal to 0.02 m/s, in accordance with UK building regulations. Ensure minimum length to dispersion is maintained for single diffuser units or double the length to dispersion between adjacent diffuser units within the granular layer. Figures quoted are based on a 130mm surcharge above the diffuser unit. Please check the design and build regulations for you country or region when considering this product.

SIDE

Up to 100sqm inflow
Up to 3l/s outflow

END

PLAN



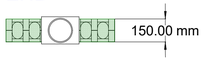
PVOD
Ø110

PVOD05101
Diffuser Unit
710mm x 710mm x 150mm
110mm Ø Socket

SIDE

Up to 100sqm inflow
Up to 3l/s outflow

END



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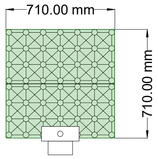


PVOD
Ø160

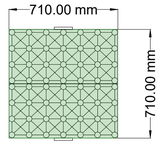
PVOD05102
Diffuser Unit
710mm x 710mm x 150mm
160mm Ø Spigot

SIDE

Up to 100sqm inflow
Up to 3l/s outflow

END

PLAN



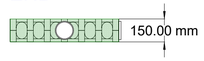
PVOD
Ø110

PVOD05103
Diffuser Unit
710mm x 710mm x 150mm
2x110mmØ Socket 180 deg

SIDE

Up to 100sqm inflow
Up to 3l/s outflow

END



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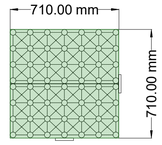


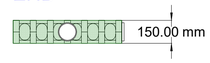
PVOD
Ø110

PVOD05104
Diffuser Unit
710mm x 710mm x 150mm
2x110mm Ø Socket 90 deg

SIDE

Up to 100sqm inflow
Up to 3l/s outflow

END



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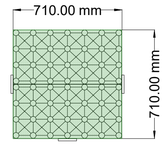
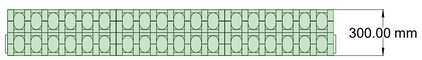


PVOD
Ø110

PVOD05105
Diffuser Unit
710mm x 710mm x 150mm
3x110mm Ø Socket 90 deg

SIDE

Up to 250sqm inflow
Up to 6.3l/s outflow



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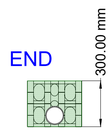

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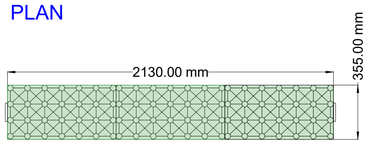
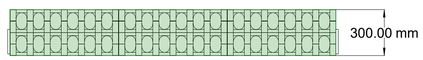


PVODØ110

PVOD05201
High Performance Diffuser
2130 x 355 x 300mm
110mmØ Sockets

SIDE

Up to 250sqm inflow
Up to 6.3l/s outflow



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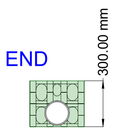

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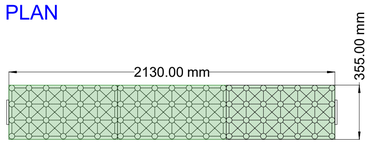
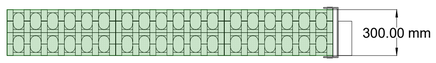


PVODØ160

PVOD05202
High Performance Diffuser
2130 x 355 x 300mm
160mmØ Sockets

SIDE

Up to 250sqm inflow
Up to 6.3l/s outflow



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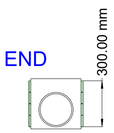

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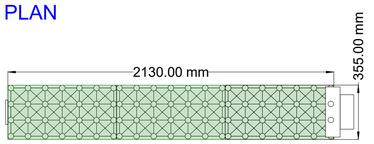


PVODØ225

PVOD05203
High Performance Diffuser
2130 x 355 x 300mm
225mmØ Spigot

Standard Diffuser Units

the Foundation for our Future

Sel Environmental Ltd
Innovation Materialised

Canal House, Bonsall Street, Blackburn, BB2 4DD
T: 01254 589987 Sales@selenvironmental.com

Bespoke Diffuser Units

Below are a selection of bespoke diffuser units to cover situations where the standard stock diffuser units are not suitable, for instance if a larger area for inflow or higher discharge rate is required. The first recommendation is to use a 'manifold' type arrangement from a silt catchpit maintaining the correct length to dispersion. If that does not provide a solution then bespoke diffuser units are available as below. If you cannot see a diffuser to satisfy your requirements, then contact the distributor who can provide advice.

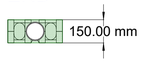
Product Code	Length mm	Width mm	Depth mm	Connection Type	Connection Size	Connection Qty	Catchment Area* m²	Discharge Rate* l/s	Length to Dispersion* m
PVOD05001	710	355	150	Socket	110	1	60	2.5	1.811
PVOD05002	710	355	150	Spigot	160	1	60	2.5	1.811
PVOD05010	710	355	300	Socket	110	1	162	4.8	3.482
PVOD05011	710	355	300	Spigot	160	1	162	4.8	3.482
PVOD05012	710	355	300	Spigot	225	1	162	4.8	3.482
PVOD05120	1065	710	150	Socket	110	1	108	3.2	1.983
PVOD05121	1065	710	150	Spigot	160	1	108	3.2	1.983
PVOD05130	1420	710	150	Socket	110	1	118	3.5	2.109
PVOD05131	1420	710	150	Spigot	160	1	118	3.5	2.109
PVOD05140	1065	710	300	Socket	110	1	189	5.6	3.893
PVOD05141	1065	710	300	Spigot	160	1	189	5.6	3.893
PVOD05150	1065	1065	150	Socket	110	1	125	3.7	2.156
PVOD05151	1065	1065	150	Spigot	160	1	125	3.7	2.156

*Catchment areas and discharge rates based on rainwater dispersal into a granular material with permeability greater than or equal to 0.02 m/s, in accordance with UK building regulations. Ensure minimum length to dispersion is maintained for single diffuser units or double the length to dispersion between adjacent diffuser units within the granular layer. Figures quoted are based on a 130mm surcharge above the diffuser unit. Please check the design and build regulations for you country or region when considering this product.

SIDE

Up to 60sqm inflow
Up to 2.5l/s outflow

END



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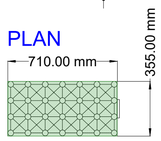


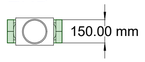
PVOD
Ø110

PVOD05001
Diffuser Unit
710mm x 355mm x 150mm
110mm Ø Socket

SIDE

Up to 60sqm inflow
Up to 2.5l/s outflow

END



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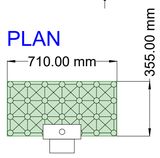


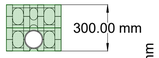
PVOD
Ø160

PVOD05002
Diffuser Unit
710mm x 355mm x 150mm
160mm Ø Spigot

SIDE

Up to 162sqm inflow
Up to 4.8l/s outflow

END



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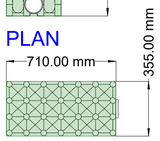
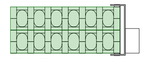


PVOD
Ø110

PVOD05010
Diffuser Unit
710mm x 355mm x 300mm
110mm Ø Socket

SIDE

Up to 162sqm inflow
Up to 4.8l/s outflow



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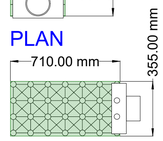
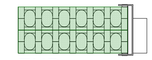


PVOD
Ø160

PVOD05011
Diffuser Unit
710mm x 355mm x 300mm
160mm Ø Spigot

SIDE

Up to 162sqm inflow
Up to 4.8l/s outflow



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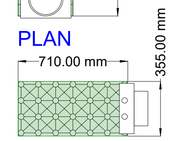


PVOD
Ø225

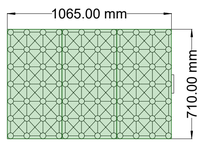
PVOD05012
Diffuser Unit
710mm x 355mm x 300mm
225mm Ø Spigot

SIDE

Up to 108sqm inflow
Up to 3.2l/s outflow

END

PLAN



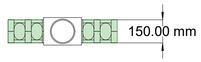
PVOD
Ø110

PVOD05120
Diffuser Unit
1065mm x 710mm x 150mm
110mm Ø Socket

SIDE

Up to 108sqm inflow
Up to 3.2l/s outflow

END



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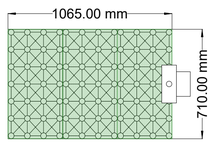


PVOD
Ø160

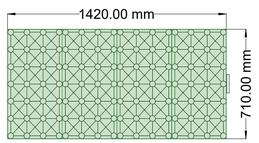
PVOD05121
Diffuser Unit
1065mm x 710mm x 150mm
160mm Ø Spigot

SIDE

Up to 118sqm inflow
Up to 3.5l/s outflow

END

PLAN



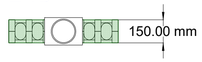
PVOD
Ø110

PVOD05130
Diffuser Unit
1065mm x 710mm x 150mm
110mm Ø Socket

SIDE

Up to 118sqm inflow
Up to 3.5l/s outflow

END



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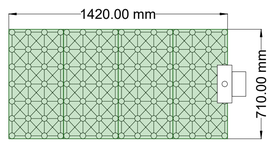
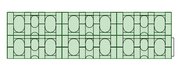


PVOD
Ø160

PVOD05131
Diffuser Unit
1065mm x 710mm x 150mm
160mm Ø Socket

SIDE

Up to 189sqm inflow
Up to 5.6l/s outflow



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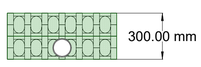

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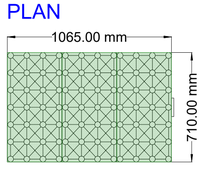
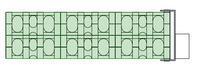


PVOD
Ø110

PVOD05140
Diffuser Unit
1065mm x 710mm x 300mm
110mm Ø Socket

SIDE

Up to 189sqm inflow
Up to 5.6l/s outflow



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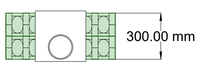

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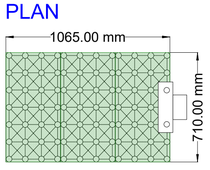


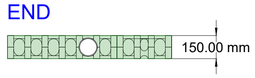
PVOD
Ø160

PVOD05141
Diffuser Unit
1065mm x 710mm x 300mm
160mm Ø Socket

SIDE

Up to 125sqm inflow
Up to 3.7l/s outflow

END



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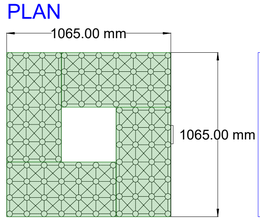


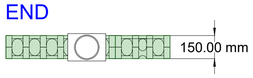
PVOD
Ø110

PVOD05150
Diffuser Unit
1065mm x 1065mm x 150mm
110mm Ø Socket

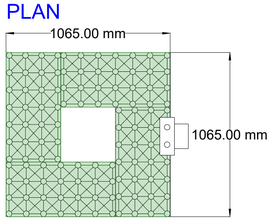
SIDE

Up to 125sqm inflow
Up to 3.7l/s outflow

END



PLAN



PVOD
Ø110

PVOD05151
Diffuser Unit
1065mm x 1065mm x 150mm
160mm Ø Socket

Bespoke Diffuser Units

pvod

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Canal House, Bonsall Street, Blackburn, BB2 4DD
T: 01254 589987 Sales@selenvironmental.com