Date: 15 July 2021

Your Ref:

Our Ref: AK/SMW/16014-1

HOP
CONSULTING CIVIL AND STRUCTURAL ENGINEERS

Mr Luke Hasler
Sussex & Kent Area
Natural England
Hornbeam House
Crewe Business Park
Elektra Way
Crewe
CW1 6GJ

By email:

Dear Luke

BEDFORDWELL ROAD, EASTBOURNE
SuDS treatment train management

Many thanks for your further consultation of advice addressed to Mr Neil Collins of Eastbourne Borough Council dated 9th June 2021. We are pleased that we have been able to demonstrate that each of the separate SuDS strategies for the site contain at least two stages of interconnected treatment and we note your request for further information as to the treatment characteristics for the proprietary units proposed to treat surface water runoff from the Bedfordwell Road development. We present here briefly the responses from the proprietary treatment unit manufacturer, in terms of their mitigation indices against the hazards of total suspended solids (TSS), metals and hydrocarbons.

The proposals are to use the Klargester AquaTreat units, as discussed in appended correspondence. As can be seen these offer the following mitigation indices.

- TSS 0.85
- Metals 0.65
- Hydrocabrons 0.99

As discussed in Paragraph 4.2 of our previous report, reference 16014/01/HOP/RPT02 *Surface Water Runoff Treatment Strategy*, these mitigation indices are in excess of the hazard indices values and therefore we consider that the proprietary Aqua Treat system will be sufficient to treat the level of runoff at the site in an appropriate manner.

It should be noted that these are the end of pipe treatment control units and that further upstream gullies and catch pits will further intercept and treat surface water runoff so it is likely that the final mitigation indices will be in excess of those stated in the Klargester correspondence.

We trust this now provides you with sufficient information to satisfy your request for further information and we look forward to receiving acknowledgement in due course. If you should require any further information please do not hesitate to contact the undersigned.

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W: www.hop.uk.com

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CHAS
Constructionline

Date: 15 July 2021

Your Ref:

Our Ref: AK/SMW/16014-1

Yours sincerely

Andy Keen
For HOP Consulting Limited
[redacted]

Enc: correspondence

Andy Keen

From: Elliott Evans [redacted]
Sent: 12 July 2021 14:34
To: Andy Keen
Subject: RE: Water Management Solutions UK Web Enquiry

Hi Andy

No the AquaTreat would have far superior treatment due to it having the same functionality as a full retention separator.

If you let me know what the drainage area m2 is I can specify the correct model and send over details etc

Kind regards

Elliott Evans
Product Manager – SuDS, GB & Ireland
Kingspan Klargester
[redacted]

From: Andy Keen [redacted]
Sent: 12 July 2021
To: Elliott Evans <[redacted]
Subject: RE: Water Management Solutions UK Web Enquiry

Hi Elliott

Thanks for getting back to me. Would it be safe to assume that the bypass separator would have better treatment qualities than the Aquatreat unit?

Tis is for a project we are currently working on at the former Bedfordwell Road Depot in Eastbourne. We have an attenuation SuDS system we propose to discharge via bypass separators to the downstream surface water sewer.

Andy

ANDREW KEEN
Associate

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Please note I currently operate both from the home and HOP office and therefore am best contacted by email or Microsoft teams

From: Elliott [redacted]
Sent: 12 July [redacted]
To: Andy Kee[redacted]
Subject: RE: Water Management Solutions UK Web Enquiry

Elliott Evans
Product Manager – SuDS, GB & Ireland

Kingspan Klargester
College Road North, Aston Clinton | Aylesbury | Buckinghamshire | HP22 5EW
T: +44 1296 633 209 | **M:** +44 7990 080 907
E: elliott.evans@kingspan.com
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Hi Andy

We don't have these results on our bypass range but we do have it on our new AquaTreat separators:

TSS – 0.85
Metals – 0.64
Hydrocarbons – 0.99

Let me know if you need any more information,

Is this for a certain scheme?

Kind regards

Elliott

From: Info We[redacted]
Sent: 10 July 2[redacted]
To: AC SalesEn[redacted]
Subject: Water Management Solutions UK Web Enquiry

Environmental_WaterID: 6881

Form inserted: 10/07/2021 14:09:23

Form updated: 10/07/2021 14:09:23

Name: Andrew Keen

Email [redacted]

I'm a: Engineer

Your Country:

Post Code / Zip Code: BN3 2BE

Telephone: 07732406429

Comment: Hello - can you please confirm what level of mitigation a bypass separator provides in terms of the Pollution Mitigation Indices for Total Suspended Solids, Metals and Hydrocarbons as defined in the CIRIA SuDS Manual? Many thanks, Andrew Keen

Security code: 820520

Kingspan Short Privacy Notice:

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CheckBoxControl: False

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Testing carried out according to DIBt Stormwater Treatment Systems Approval Requirements Part 1: "Systems for connection of motor vehicle circulation areas with a surface of max. 2000m² for subsequent infiltration into ground and water course"

Treatment Device Tested: AquaTreat SWT010 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	2,450 l
Particulate storage capacity:	1,000 l
Hydrocarbons storage capacity:	100 l
Treatment flow rate:	10 l/s
Connectable area:	1,000 m²
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

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Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Testing carried out according to DIBt Stormwater Treatment Systems Approval Requirements Part 1: "Systems for connection of motor vehicle circulation areas with a surface of max. 2000m² for subsequent infiltration into ground and water course"

Treatment Device Tested: AquaTreat SWT015 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	3,600 l
Particulate storage capacity:	1,500 l
Hydrocarbons storage capacity:	150 l
Treatment flow rate:	15 l/s
Connectable area:	1,470 m²
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

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Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Testing carried out according to DIBt Stormwater Treatment Systems Approval Requirements Part 1: "Systems for connection of motor vehicle circulation areas with a surface of max. 2000m² for subsequent infiltration into ground and water course"

Treatment Device Tested: AquaTreat SWT020 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	7,300 l
Particulate storage capacity:	2,000 l
Hydrocarbons storage capacity:	200 l
Treatment flow rate:	20 l/s
Connectable area:	2,000 m²
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

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Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT030 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	9,150 l
Particulate storage capacity:	3,000 l
Hydrocarbons storage capacity:	300 l
Treatment flow rate:	30 l/s
Connectable area:	3,735 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT040 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	11,000 l
Particulate storage capacity:	4,000 l
Hydrocarbons storage capacity:	400 l
Treatment flow rate:	40 l/s
Connectable area:	4,500 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT050 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	13,400 l
Particulate storage capacity:	5,000 l
Hydrocarbons storage capacity:	500 l
Treatment flow rate:	50 l/s
Connectable area:	5,470 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT065 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	17,250 l
Particulate storage capacity:	6,500 l
Hydrocarbons storage capacity:	650 l
Treatment flow rate:	65 l/s
Connectable area:	7,040 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT080 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	24,800 l
Particulate storage capacity:	8,000 l
Hydrocarbons storage capacity:	800 l
Treatment flow rate:	80 l/s
Connectable area:	10,125 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT100 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	27,100 l
Particulate storage capacity:	10,000 l
Hydrocarbons storage capacity:	1000 l
Treatment flow rate:	100 l/s
Connectable area:	11,065 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT125 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	32,950 l
Particulate storage capacity:	12,500 l
Hydrocarbons storage capacity:	1250 l
Treatment flow rate:	125 l/s
Connectable area:	13,450 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT150 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	40,650 l
Particulate storage capacity:	15,000 l
Hydrocarbons storage capacity:	1500 l
Treatment flow rate:	150 l/s
Connectable area:	16,600 m²
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT175 stormwater treatment device

General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	47,380 l
Particulate storage capacity:	17,500 l
Hydrocarbons storage capacity:	1750 l
Treatment flow rate:	175 l/s
Connectable area:	19,340 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.

Stormwater Treatment Device Performance Declaration

Stormwater Treatment Devices compliant with Chapter 26 of the CIRIA SuDS manual

Treatment Device Tested: AquaTreat SWT200 stormwater treatment device

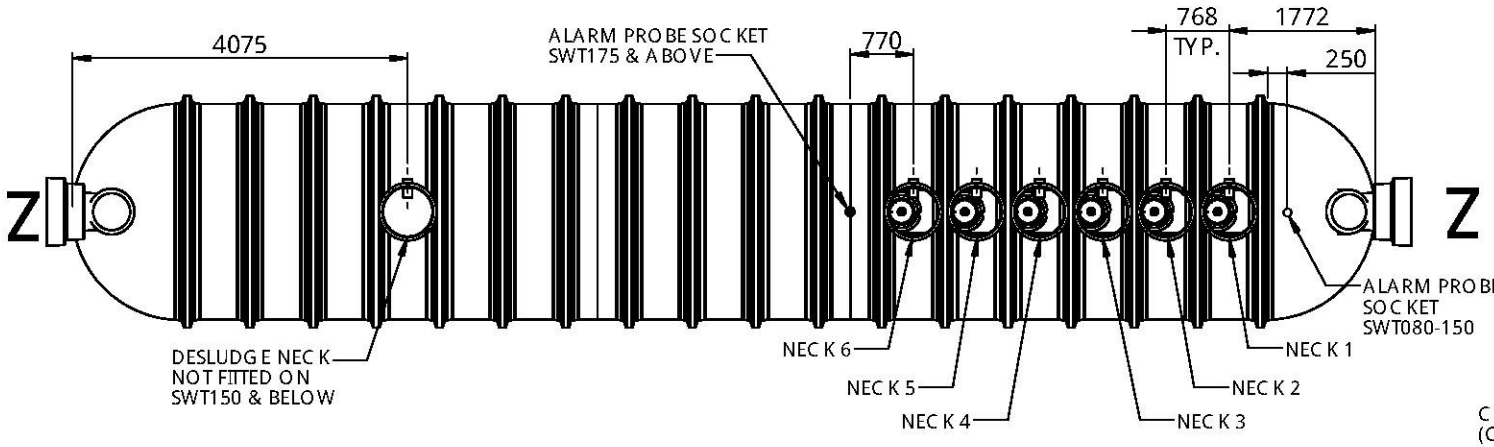
General description: A device for the collection and retention of hydrocarbons, particulate and metals.

Envisaged application: Surface water runoff for trafficked areas for subsequent infiltration into ground and water course.

Pollutant(s) captured: Hydrocarbons, particulate, zinc and copper

Parameter	Value
Treatment device capacity:	52,650 l
Particulate storage capacity:	20,000 l
Hydrocarbons storage capacity:	2000 l
Treatment flow rate:	200 l/s
Connectable area:	21,500 m^2
Hydrocarbon retention	99.65%
Particulate retention efficiency	85.5%
Zinc retention efficiency*	64%
Copper retention efficiency*	64%

*Reduction of heavy metals by collecting and retaining suspended solids is assumed as 75%.



NOTES

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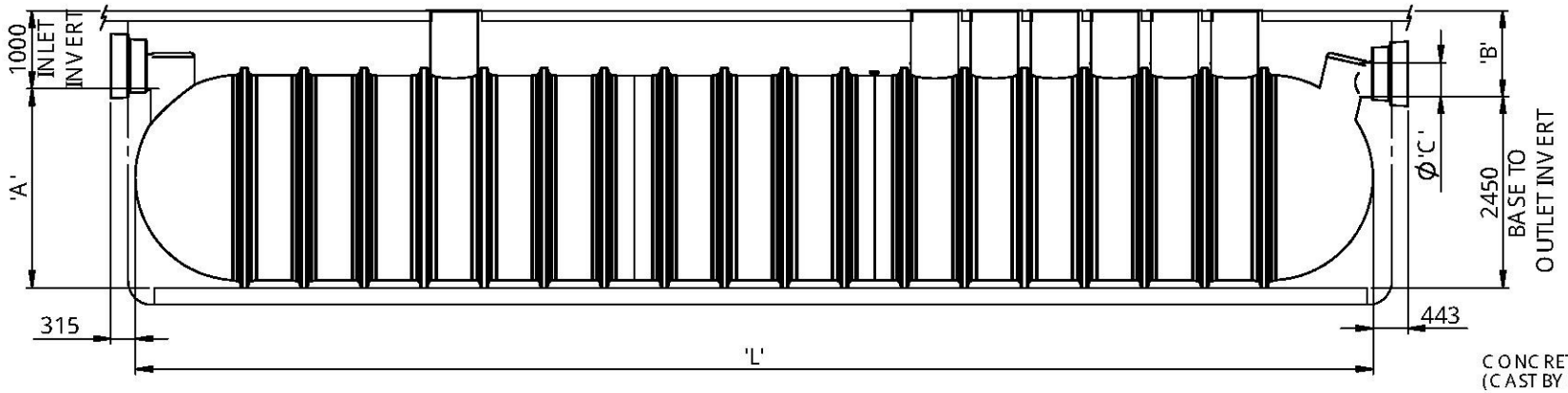

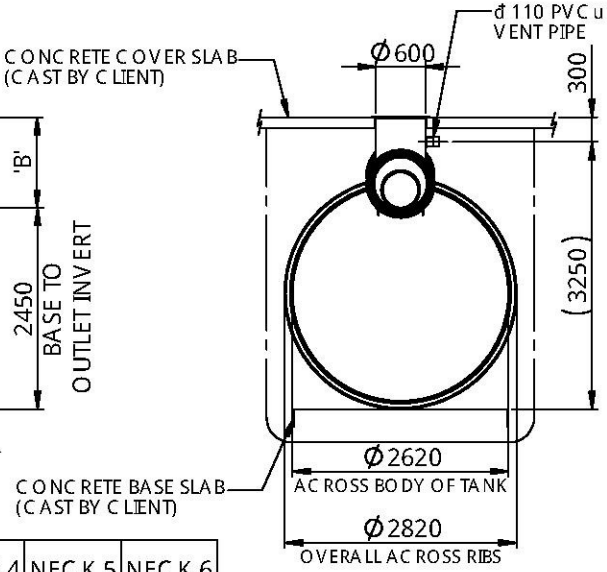

UNIT REF.	NOMINAL FLOW [L/s]	CONNECTABLE SURFACE AREA [m²]	APPROX. EMPTY WEIGHT [kg]	'L' OVERALL LENGTH	'A' BASE TO INLET INVERT	'B' OUTLET INVERT	'C' STD. PIPE DIA. (GRP)	NECK 1 FITTED	NECK 2 FITTED	NECK 3 FITTED	NECK 4 FITTED	NECK 5 FITTED	NECK 6 FITTED
SWT080	80	10125	1250	5744	2500	1050	300	P	P				
SWT100	100	11065	1350	6200	2500	1050	375/400	P	P				
SWT125	125	13450	1700	7365	2500	1050	450	P	P	P			
SWT150	150	16600	2000	8675	2550	1100	500/525	P	P	P			
SWT175	175	19340	2400	9975	2550	1100	500/525	P	P	P	P		
SWT200	200	21500	2700	11280	2550	1100	600	P	P	P	P		
SWT210	210	22940	2900	11994	2550	1100	600	P	P	P	P	P	
SWT225	225	24540	3100	12766	2550	1100	600	P	P	P	P	P	
SWT240	240	26110	3300	13528	2550	1100	600	P	P	P	P	P	
SWT255	255	27700	3450	14300	2550	1100	600	P	P	P	P	P	P
SWT270	270	29270	3600	15071	2550	1100	600	P	P	P	P	P	P
SWT285	285	30840	3800	15833	2550	1100	600	P	P	P	P	P	P

Issue	Date	Drawn by	Description
01	09.03.21	D. Owen	Initial Issue

Material : Various	Tolerance (unless stated) : n/a
Finish : n/a	Thickness : n/a
Weight : 3637.13	Surface Area : n/a m²
Modelled By :	

Drawing : DS1372P

AquaTreat SWT080 - SWT285 Stormwater Treatment Devices

All Dimensions In mm

Scale: Do Not Scale

Third Angle Projection

M:\ Wastewater\ Engineering\ Drawing Data\ 02 - Sales Drawings\ DS\ DS - 13\ DS1372P

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