

Sandra Edwards

From: Amanda Scholes on behalf of Planning.Responses
Sent: 06 August 2018 08:46
To: Planning Scanning
Subject: FW: Planning Consultation on BN/33/18/DOC
Attachments: 1781-D1.2 Drainage Layout.pdf; 1781-D5.1 Construction Details.pdf; Soakaway calcs.pdf; Drainage Statement 1781-R1.pdf

From: Laura Gibbons
Sent: 03 August 2018 11:03
To: Planning.Responses
Subject: RE: Planning Consultation on BN/33/18/DOC

Engineers Comments Relating to Condition 5- surface water drainage
Based on the attached information I recommend that condition 5 is discharged.
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

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Save the environment - think before you print.

From: planning.responses [REDACTED]
Sent: 01 August 2018 08:19
To: Land Drainage
Subject: Planning Consultation on BN/33/18/DOC

To: Engineers (Drainage)

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

APPLICATION NO: BN/33/18/DOC

Registered: 06-JUL-18
Site Address: 2 Mill Cottages Yapton Road Barnham PO22 0BG

Description of Works: Application for approval of details reserved by condition imposed under planning permission BN/17/18/HH relating to condition No. 5 (Proposed surface water drainage)

The Council have received the above application to discharge conditions. I shall be pleased to receive any observations you may wish to make in respect of those conditions relating to your field of expertise.

[Click here to view the Discharge of Condition application](#)

[Click here to view conditions on original application - click on decision tab](#)

Should you have any comments to make, these should be sent by replying to this email by 15th August 2018.

www.arun.gov.uk/planning

Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

The officer dealing with this application is Zac Denton who can be contacted on telephone number [REDACTED]

Thanking you in anticipation

Planning Case Officer
Arun District Council

post_con_email

Robert Clark Associates					Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 17 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>9.835</td><td>0.335</td><td>0.4</td><td>0.5</td><td>O K</td></tr><tr><td>30 min Summer</td><td>9.877</td><td>0.377</td><td>0.4</td><td>0.5</td><td>O K</td></tr><tr><td>60 min Summer</td><td>9.874</td><td>0.374</td><td>0.4</td><td>0.5</td><td>O K</td></tr><tr><td>120 min Summer</td><td>9.818</td><td>0.318</td><td>0.4</td><td>0.5</td><td>O K</td></tr><tr><td>180 min Summer</td><td>9.763</td><td>0.263</td><td>0.3</td><td>0.4</td><td>O K</td></tr><tr><td>240 min Summer</td><td>9.715</td><td>0.215</td><td>0.3</td><td>0.3</td><td>O K</td></tr><tr><td>360 min Summer</td><td>9.645</td><td>0.145</td><td>0.3</td><td>0.2</td><td>O K</td></tr><tr><td>480 min 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Summer</td><td>9.966</td><td>0.0</td><td>312</td></tr><tr><td>720 min Summer</td><td>8.665</td><td>0.0</td><td>368</td></tr><tr><td>960 min Summer</td><td>6.943</td><td>0.0</td><td>490</td></tr><tr><td>1440 min Summer</td><td>5.071</td><td>0.0</td><td>734</td></tr><tr><td>2160 min Summer</td><td>3.696</td><td>0.0</td><td>1084</td></tr><tr><td>2880 min Summer</td><td>2.949</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.142</td><td>0.0</td><td>2140</td></tr><tr><td>5760 min Summer</td><td>1.705</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.427</td><td>0.0</td><td>3632</td></tr><tr><td>8640 min Summer</td><td>1.235</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.093</td><td>0.0</td><td>5024</td></tr><tr><td>15 min Winter</td><td>124.633</td><td>0.0</td><td>15</td></tr></tbody></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	9.835	0.335	0.4	0.5	O K	30 min 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Robert Clark Associates		Page 2
Willow Cottage Herne Lane Rustington BN16 3EE	2 Mill Cottages Yapton Road Barnham	
Date 7.3.18 File Geocell-1.SRCX	Designed by RTFC Checked by	
Micro Drainage	Source Control 2016.1	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	9.940	0.440	0.4	0.6	O K
60 min Winter	9.905	0.405	0.4	0.6	O K
120 min Winter	9.816	0.316	0.4	0.5	O K
180 min Winter	9.739	0.239	0.3	0.3	O K
240 min Winter	9.677	0.177	0.3	0.3	O K
360 min Winter	9.593	0.093	0.2	0.1	O K
480 min Winter	9.550	0.050	0.2	0.1	O K
600 min Winter	9.542	0.042	0.2	0.1	O K
720 min Winter	9.537	0.037	0.2	0.1	O K
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5760 min Winter	9.507	0.007	0.0	0.0	O K
7200 min Winter	9.506	0.006	0.0	0.0	O K
8640 min Winter	9.505	0.005	0.0	0.0	O K
10080 min Winter	9.505	0.005	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	83.789	0.0	24
60 min Winter	53.779	0.0	42
120 min Winter	33.337	0.0	78
180 min Winter	24.832	0.0	110
240 min Winter	20.006	0.0	142
360 min Winter	14.706	0.0	200
480 min Winter	11.818	0.0	248
600 min Winter	9.966	0.0	306
720 min Winter	8.665	0.0	370
960 min Winter	6.943	0.0	492
1440 min Winter	5.071	0.0	722
2160 min Winter	3.696	0.0	1100
2880 min Winter	2.949	0.0	1444
4320 min Winter	2.142	0.0	2196
5760 min Winter	1.705	0.0	2816
7200 min Winter	1.427	0.0	3656
8640 min Winter	1.235	0.0	4240
10080 min Winter	1.093	0.0	5128

Robert Clark Associates		Page 3
Willow Cottage Herne Lane Rustington BN16 3EE	2 Mill Cottages Yapton Road Barnham	
Date 7.3.18 File Geocell-1.SRCX	Designed by RTFC Checked by	
Micro Drainage Source Control 2016.1		

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	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.003

Time (mins)	Area
From:	To: (ha)
0	4 0.003

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Willow Cottage Herne Lane Rustington BN16 3EE	2 Mill Cottages Yapton Road Barnham	
Date 7.3.18 File Geocell-1.SRCX	Designed by RTFC Checked by	
Micro Drainage Source Control 2016.1		

Model Details

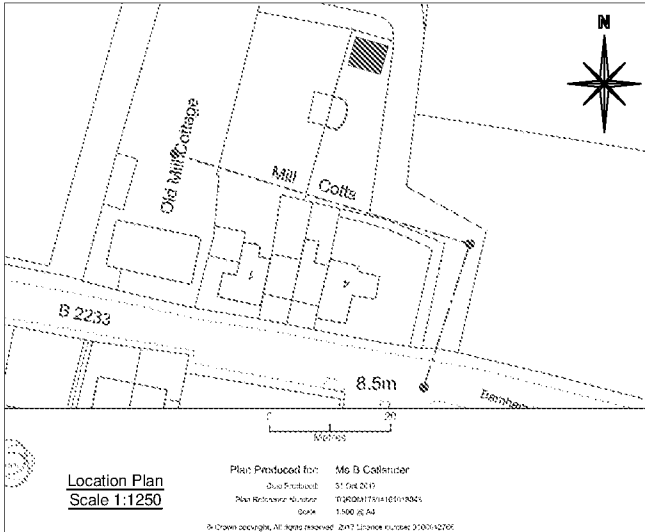
Storage is Online Cover Level (m) 10.300

Cellular Storage Structure

Invert Level (m)	9.500
Infiltration Coefficient Base (m/hr)	0.64350
Infiltration Coefficient Side (m/hr)	0.64350
Safety Factor	1.5
Porosity	0.95

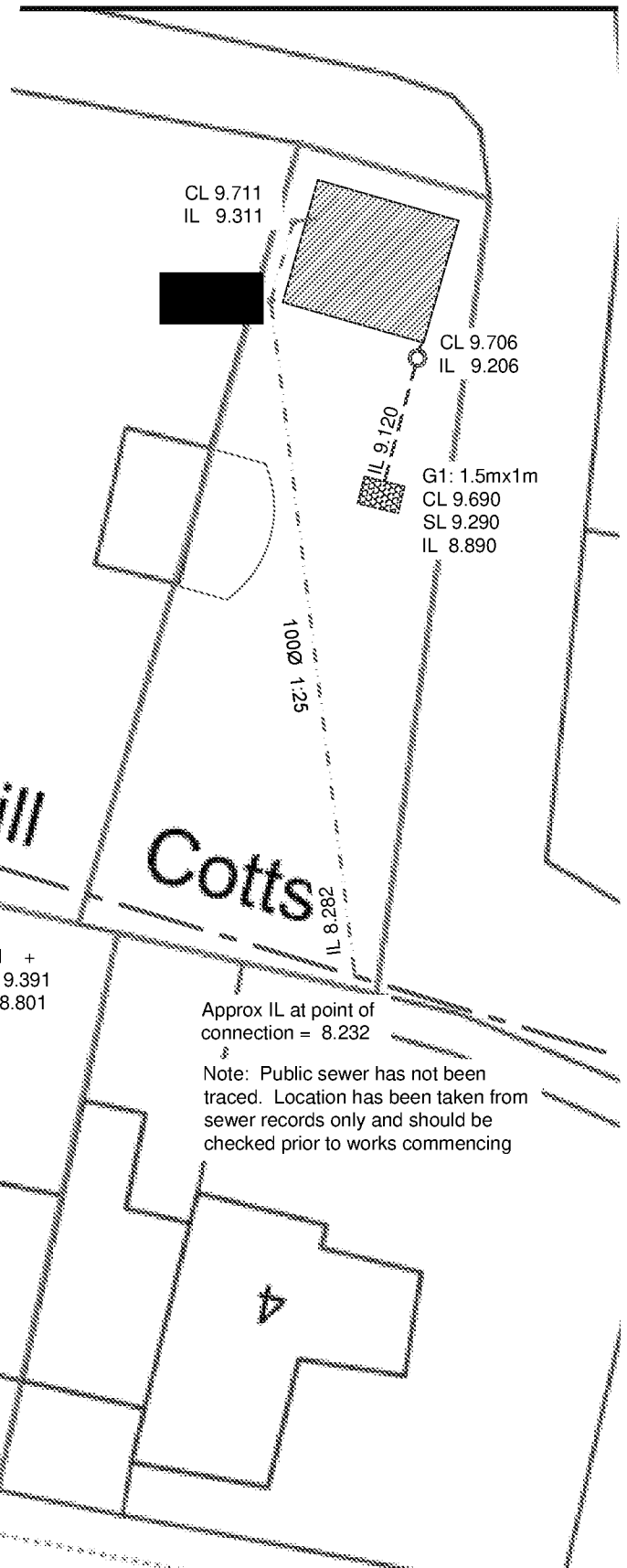
Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	1.5	1.5	0.500	0.0	3.5
0.400	1.5	3.5			

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KEY

- Proposed surface water drainage
- Proposed 500 dia surface water silt trap
- Proposed foul water drainage
- Existing public foul water sewer
- Proposed geocellular soakaway

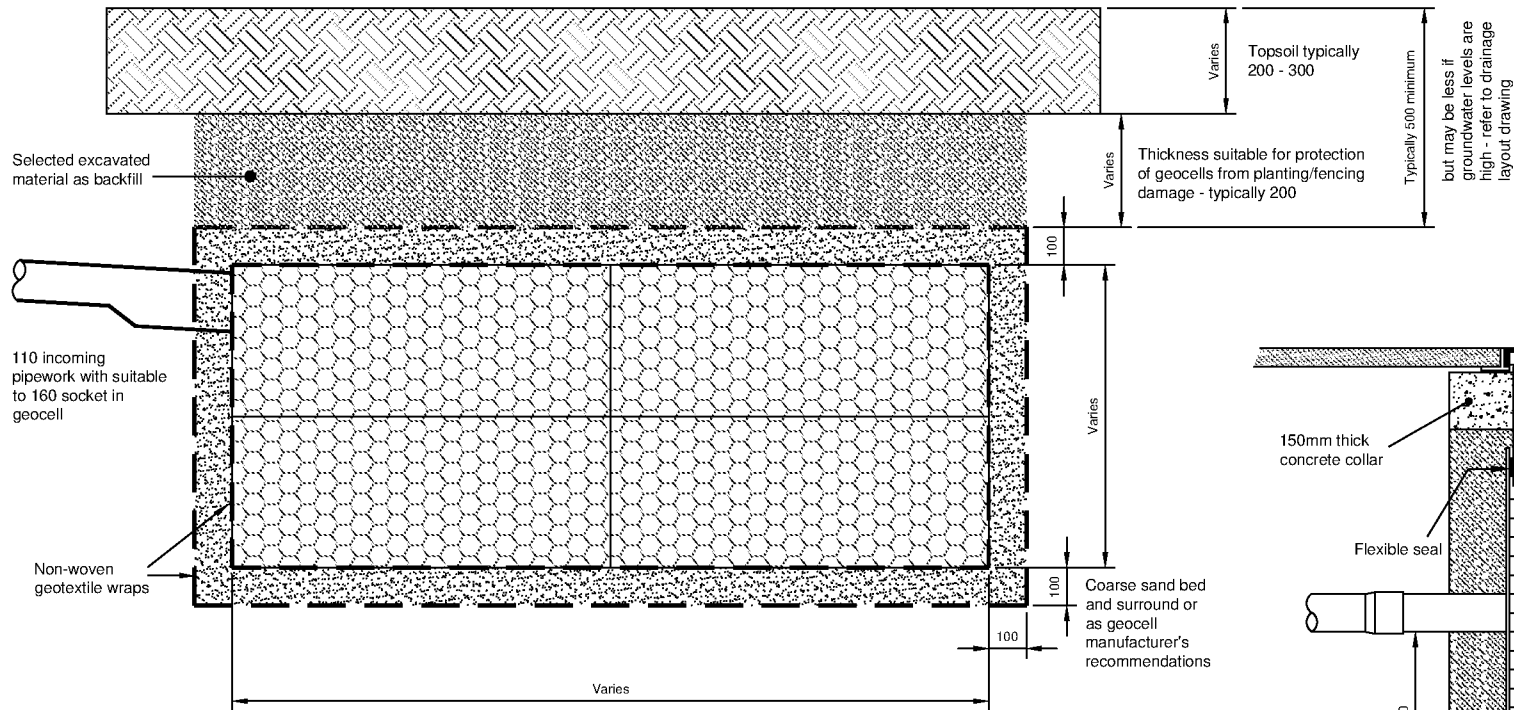


Plan - Scale 1:250

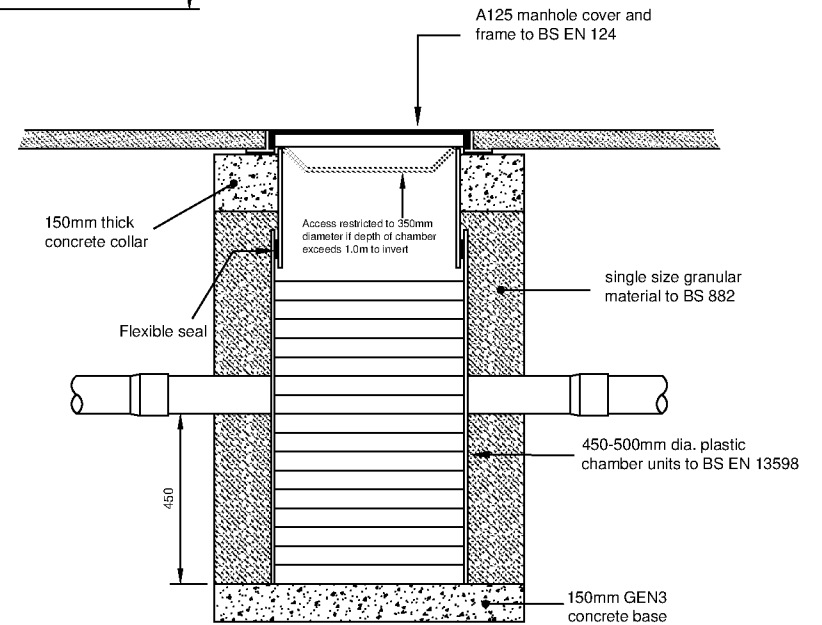
Robert Clark Associates Ltd
Chartered Civil Engineers
Willow Cottage, Herne Lane
Rustington, West Sussex BN16 3EE
T: 01903 778945 E: rca-ltd@talktalk.net

Client	Barbara Callender				
Project	2 Mill Cottages, Yapton Road, Barnham				
-	Original	PC	RTFC	25.6.18	
Rev.	Description	App.	Chk.	Drn.	Date

Title		Drainage Layout		
Scale	As shown	At original	A4	© Robert Clark Associates Ltd
Drawing Number	1781/D1.2			Revision
				-



Typical Geocellular soakaway Unit
(for use in soft landscaped areas)
Scale 1:20



Typical Silt Trap Inspection Chamber Detail
(for use in landscaped areas and footways)
Scale 1:20

					Client	Barbara Callender	Title		Construction Details for Soakaway and Silt Trap		Robert Clark Associates Ltd Chartered Civil Engineers Willow Cottage, Herne Lane Rustington, West Sussex BN16 3EE Tel: 01903 778945 Fax: 01903 778967	
					Project	2 Mill Cottages, Yapton Road, Barnham						
					Notes		Scale	1:20	At original	A4	© Robert Clark Associates Ltd	Revision
-	Original	PC		RTFC	21.6.18		Drawing Number	1781/D5.1				
Rev.	Description	App.	Chk.	Drn.	Date							-

Statement on Flood Risk and Drainage

Drawings

The following drawings are attached to support this report:

Drawing No. 1781/D1.1 Drainage Layout

Flood Risk

The site is indicated on the attached Plan and is shown to lie in Flood Zone 1 on the Environment Agency's current Flood Map for Planning. It has therefore been assessed as being at low risk from both tidal and fluvial flooding.

Foul Water Drainage

There is a public foul water sewer crossing the site to which a connection could be made as shown. The sewer is a 150mm diameter vitrified clay pipe, approximately 1.2m deep.

Surface Water Drainage

The site is currently mainly 'greenfield' comprising, part of the garden to No.2 Mill Cottages, although there is a garden shed on the site at present that will be removed. There is no public surface water sewer or watercourse available and surface water from the new building will need to be taken to a soakaway.

The local geology comprises River Terrace Deposits of clay, silt and sand over London Clay of similar material. The River Terrace Deposits were found at 250mm below ground level and comprised soft to firm sandy clays with some small angular gravel, becoming more sandy with depth.

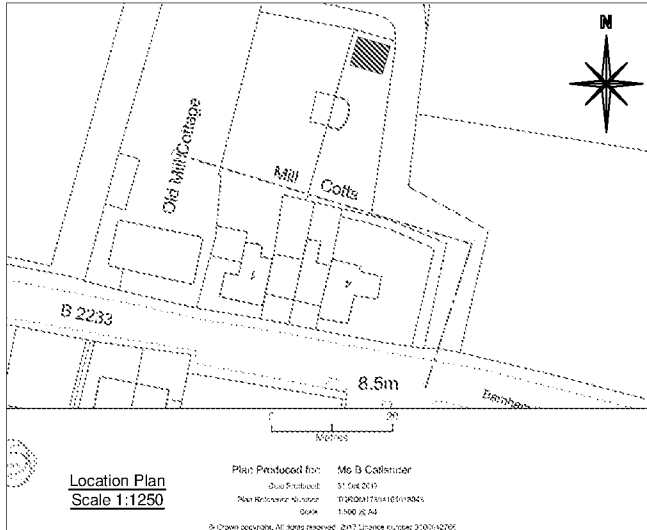
Percolation testing to BRE 365 principles was undertaken in early March 2018 to determine what form of SuDS solution could be used for the new development. Percolation rates of 1.79×10^{-4} m/s up to 1.92×10^{-4} m/s were found at 0.75m depth. Groundwater was encountered at 0.8m depth during the investigations.

The proposed development comprises a single new building of area just 24 sq.m and it has been shown that ground conditions are such that a suitable SuDS system can be designed for this development, generally as indicated on the attached plan.

1781-R1
8 March 2018

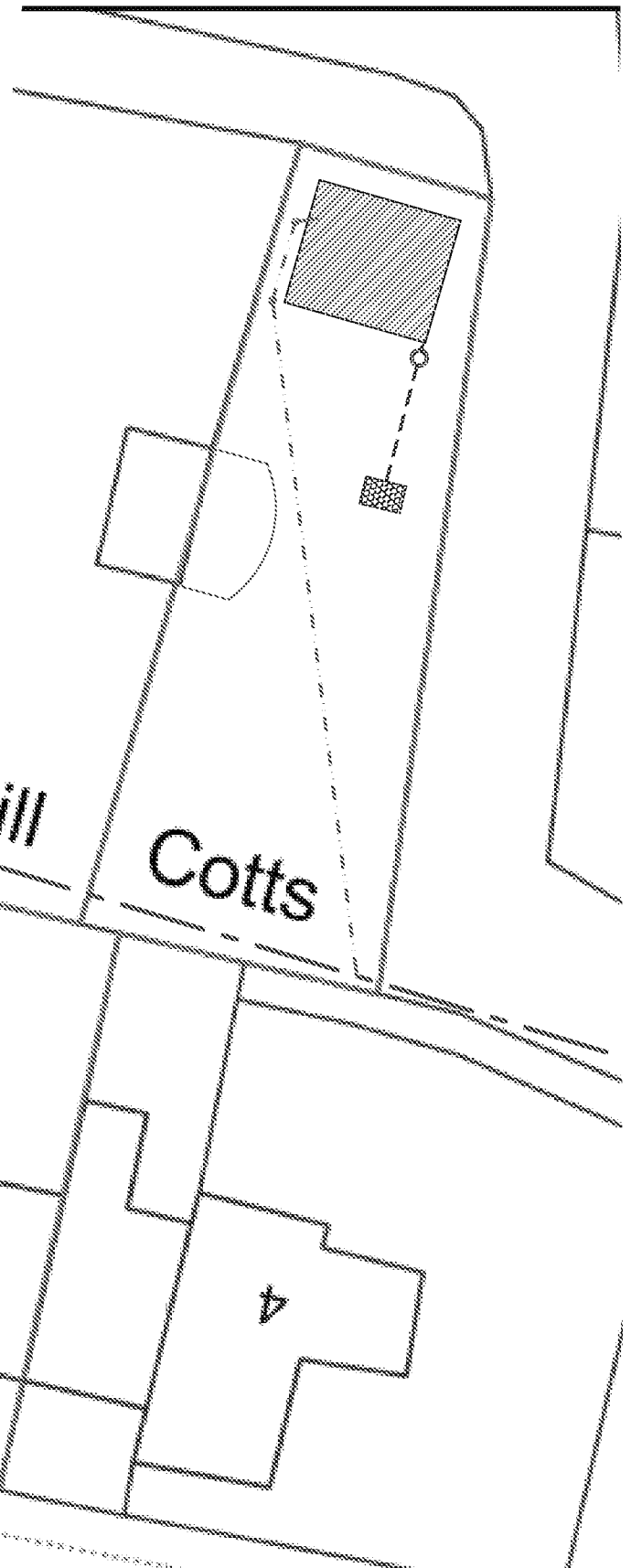
Robert Clark Associates Ltd
Chartered Civil Engineers

Registered office: Willow Cottage, Herne Lane, Rustington, West Sussex BN16 3EE
Registered in England No. 3894620; VAT No. 750 3527 48



KEY

- Proposed surface water drainage
- Proposed 500 dia surface water silt trap
- Proposed foul water drainage
- Existing public foul water sewer
- Proposed geocellular soakaway



Robert Clark Associates Ltd
Chartered Civil Engineers
Willow Cottage, Herne Lane
Rustington, West Sussex BN16 3EE
T: 01903 778945 E: rca-ltd@talktalk.net

Client	Barbara Callender				
Project	2 Mill Cottages, Yapton Road, Barnham				
-	Original	PC	RTFC	8.3.18	
Rev.	Description	App.	Chk.	Dm.	Date

Title				
Drainage Layout				
Scale	As shown	At original	A4	© Robert Clark Associates Ltd
Drawing Number	1781/D1.1			Revision
				-