

## Appendix D Surface Water Drainage Strategy





5.7m

Little  
Cauldham  
Farmhouse

Swale and Filter Drain  
1m deep swale with 1 in 3 side  
slopes and 0.5m base width  
1m deep x 2m filter trench

Attenuation Basin  
CL - 151.00  
IL - 149.500  
Depth (m) - 1.50 m  
  
Bottom Area (m<sup>2</sup>) - 390m<sup>2</sup>  
Top Area (m<sup>2</sup>) - 840 m<sup>2</sup>  
1 in 3 Side Slopes  
Freeboard - 315mm  
Water Depth - 1.185m  
Attenuation Volume - 1640m<sup>3</sup>

Infiltrating Tank  
30m x 13m x 2.7m deep  
IL - 146.800  
Infiltration Rate - 0.036036m/hr

Attenuation Basin  
CL - 156.00  
IL - 154.50  
Depth (m) - 1.50 m

Bottom Area (m<sup>2</sup>) - 30m<sup>2</sup>  
Top Area (m<sup>2</sup>) - 220 m<sup>2</sup>  
1 in 3 Side Slopes  
Freeboard - 303mm  
Water Depth - 1.197m  
Attenuation Volume - 276m<sup>3</sup>

Infiltrating Tank  
12m x 5m x 2.7m deep  
IL - 151.80m  
Infiltration Rate - 0.036036m/hr

Pump Station

Flow Control restricting  
flow to 2.0l/s

- NOTES
1. Do not scale from this drawing.
  2. All measurements are in metres unless stated otherwise.
  3. Topographical Survey provided by others. C&A accept no liability for any inaccuracies.
  4. Assumed infiltration rate taken from The SuDS Manual (CIRIA SuDS Manual) for chalk (0.388m/hr). Infiltration testing to be undertaken on site with rates being provided to engineer to confirm.
  5. C&A Consulting Engineers Ltd cannot guarantee the authenticity or reliability of any data and/or records provided by third parties.
  8. The suitability of the proposed basin location is subject to receiving detailed topographical survey, arboricultural and ecological constraints by others.
  9. Levels shown for features outside of the area of topographical survey have been taken from Lidar Data.

- Key
- Proposed Attenuation Basin
  - Proposed Infiltrating Tank
  - Proposed Swale and Filter Drain
  - Proposed Surface Water pipe and chamber

D	Amended to suit new site layout	MT	TSH	GAC	June 24
C	Amended to suit KCC Comments	MT	TSH	GAC	Apr 24
B	Redline boundary amended	TH	TSH	GAC	Feb 24
A	Amended to suit client comments and updated redline boundary	TH	TSH	GAC	Feb 24
Rev	Amendments	Drn	Chk	App	Date

Charles & Associates

Issued by

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Issued by   Park House East Malling Trust Estate Bradbourne Lane Alford Kent ME20 6QZ 01793 448120

enquiries@c-a-uk.com www.c-a-uk.com

Job Title	Capel Le Ferne		
Drawing Title	Indicative Surface Water Drainage		
Client	Quinn Estates		
Scale	1:500 @A1	Date	Feb 24
Designed	MT	Checked	TSH
Approved	GAC	Drawn	MT
Job No	18-027	Drawing No	18-027-007
Rev	D		





## Appendix E Soil Logs and Infiltration

Highland Court Farm,

Bridge nr Canterbury

Kent

CT4 5HW



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Quinn Estates Ltd Registered Company Number: 05150902 Registered Office: Quinn Estates Ltd, The Cow Shed, Highland Court Farm, Bridge, Kent, England, CT4 5HW

[Redacted]

**Subject:** FW: Capel-le-ferne - Infiltration & Soakage Testing

Hi Toby/Mark,

Feedback on yesterday's tests:

Neither of the soakage tests reached 25% of the effective storage depth in the available time and therefore the below infiltration rate calculations are indicative and not fully in accordance with BRE 365.

Both tests started quite quickly and then slowed.

Infiltration rates, calculated over the full test undertaken are presented below:

MTP01 recorded an infiltration rate of:  $1.8 \times 10^{-5}$

MTP02 recorded an infiltration rate of:  $1.78 \times 10^{-5}$

However, both tests started with high infiltration rates slowed, as a worst case, the infiltration rate for the last 60mins of each test is presented below:

MTP01, infiltration rate of  $4.8 \times 10^{-6}$

MTP02, infiltration rate of  $2.22 \times 10^{-6}$

It is probably worth discussing these rates with the engineer to see if they can make the drainage solution work on this basis. If not, then we can book the deeper boreholes in.

Kind regards

Rob

Idom Merebrook Limited (an IDOM Group Company)



**Rob Glavin**

[Redacted]

1 Leonard Place, Westerham Road,  
Keston, BR2 6HQ.

[idom.com](http://idom.com) / [merebrook.co.uk](http://merebrook.co.uk)

----- Original message -----

[Redacted]

**Subject:** RE: Capel-le-ferne - Infiltration & Soakage Testing

Hi Rob,

Landowners number below in advance of tomorrow.

[Redacted]

They are ready to go with the bowser and digger. If they could just have clear instructions on locations of trial pits etc that would be great.

Project Name:

Capel

Project No.

21929g

Co-ords: -

Level:

Date

30/05/2024

Location:

Cauldham Lane, Capel-le-ferne, Kent

Dimensions (m):

4.00

Scale

1:25


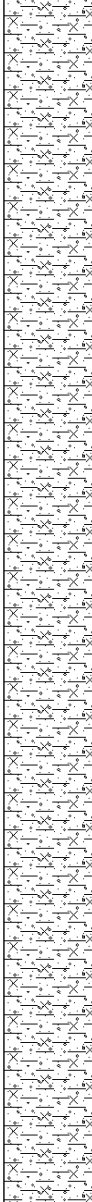
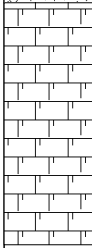
Equipment:

 Depth  
5.30

1.00

 Logged  
DJ


 Checked  
TAS

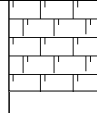
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			TOPSOIL: Soft dark brown slightly gravelly slightly sandy clay with abundant rootlets. Gravels are fine to medium sub rounded to angular of flint. Sand is fine to coarse.
							Soft orangish brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse of flint and chalk. Sand is fine. [Head Deposits]
				4.20			STRUCTURELESS CHALK recovered as off-white clayey GRAVEL with occasional brown clay bands and frequent flint. Gravels are weak and vary from low to medium density. Matrix is off-white soft silt. [weathered Lewes CHALK formation]

D = small disturbed sample (tub)  
 J = organic sample (amber glass jar)  
 V = volatile sample (amber glass vial)  
 B = bulk bag sample  
 HSV = hand shear vane (kPa)  
 PP = pocket penetrometer (kg.cm2)  
 PID = photoionisation detector (ppm)

**Stability**
**Remarks**

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

Project Name:	Capel	Project No.	21929g	Co-ords:	-	Level:		Date	30/05/2024
Location:				Cauldham Lane, Capel-le-ferne, Kent		Dimensions (m):		Scale	
Equipment:						4.00 1.00 		1:25	
				Depth		5.30		Logged	Checked
								DJ	TAS

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				5.30			STRUCTURELESS CHALK recovered as off-white clayey GRAVEL with occasional brown clay bands and frequent flint. Gravels are weak and vary from low to medium density. Matrix is off-white soft silt. [weathered Lewes CHALK formation] End of Pit at 5.300m
							6
							7
							8
							9
							10

D = small disturbed sample (tub) J = organic sample (amber glass jar) V = volatile sample (amber glass vial) B = bulk bag sample HSV = hand shear vane (kPa) PP = pocket penetrometer (kg.cm2) PID = photoionisation detector (ppm)	<b>Stability</b>	<b>Remarks</b> Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.
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Project Name:

Capel

Project No.

21929g

Co-ords: -

Level:

Date

30/05/2024

Location:

Cauldham Lane, Capel-le-ferne, Kent

Dimensions (m):

4.00

Scale

1:25

Equipment:

Depth

5.20

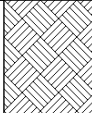
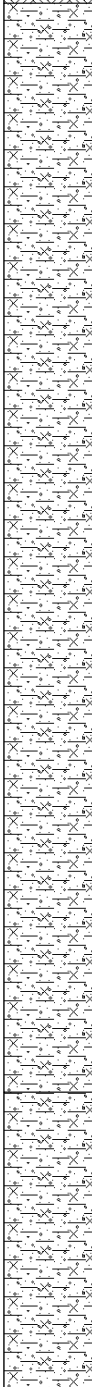
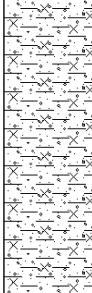
1.00

Logged

DJ

Checked

TAS

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.40			TOPSOIL: Soft dark brown slightly gravelly slightly sandy clay with abundant rootlets. Gravels are fine to medium sub rounded to angular of flint. Sand is fine to coarse.
							Soft orangish brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse of flint and chalk. Sand is fine. [Head Deposits]
				4.00			Soft orangish brown very gravelly sandy silty CLAY. Gravel is fine to coarse of flint and chalk. Sand is fine. Frequent cobbles of sub-rounded flint. [Head Deposits]

D = small disturbed sample (tub)  
 J = organic sample (amber glass jar)  
 V = volatile sample (amber glass vial)  
 B = bulk bag sample  
 HSV = hand shear vane (kPa)  
 PP = pocket penetrometer (kg.cm2)  
 PID = photoionisation detector (ppm)

**Stability**
**Remarks**

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.



# TRIAL PIT LOG

TrialPit No

**MTP02**

Sheet 2 of 2

Project Name:

Capel

Project No.

21929g

Co-ords: -

Level:

Date

30/05/2024

Location:

Cauldham Lane, Capel-le-ferne, Kent

Dimensions (m):

4.00

Scale

1:25

Equipment:

Depth

5.20

1.00

Logged

DJ

Checked

TAS

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				5.20			Soft orangish brown very gravelly sandy silty CLAY. Gravel is fine to coarse of flint and chalk. Sand is fine. Frequent cobbles of sub-rounded flint. [Head Deposits] End of Pit at 5.200m

D = small disturbed sample (tub)  
 J = organic sample (amber glass jar)  
 V = volatile sample (amber glass vial)  
 B = bulk bag sample  
 HSV = hand shear vane (kPa)  
 PP = pocket penetrometer (kg.cm2)  
 PID = photoionisation detector (ppm)

**Stability****Remarks**

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.



Project Name:

Capel

Project No.

21929g

Co-ords: -

Level:

Date

30/05/2024

Location:

Cauldham Lane, Capel-le-ferne, Kent

Dimensions (m):

4.00

Scale

1:25


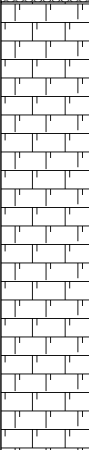
Equipment:

 Depth  
1.80

1.00

 Logged  
DJ

 Checked  
TAS

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			MADE GROUND comprising dark grey gravelly sand with common rootlets. Gravels are coarse angular chalk, flint and brick. Sands are coarse.
				1.80			STRUCTURELESS CHALK recovered as pale grey gravelly slightly sandy CLAY with occasional flint and brown clay. Gravels are weak low density. Matrix is off-white silt. [weathered Lewes CHALK formation]
							End of Pit at 1.800m

D = small disturbed sample (tub)  
 J = organic sample (amber glass jar)  
 V = volatile sample (amber glass vial)  
 B = bulk bag sample  
 HSV = hand shear vane (kPa)  
 PP = pocket penetrometer (kg.cm2)  
 PID = photoionisation detector (ppm)

**Stability**
**Remarks**

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.