

[REDACTED]

From: [REDACTED]
Sent: 07 February 2019 16:51
To: Laura Gibbons
Cc: Richard Castro-Parker; Daniel Vick
Subject: FP/262/18/P

Hi Laura

Please find attached surface water design for the above planning application.

I trust this is acceptable and will avoid a planning condition in respect of surface water drainage.

By copy to Richard Castro-Parker and Arun planning department I would request that the information below is added to the planning file.

Attached files:

Drawing 404127/10P1
403912 Soakaway calculation car parking area
403912 Soakaway calculations roof drainage
Groundwater monitoring log
BRE Soakage test results

Kind regards

Ivon

Ivon Blumer Architects Ltd



[REDACTED]

The Studio, 41 West Drive, Aldwick Bay, PO21 4LZ

Our Ref: PJS/VF/J13324

3rd April 2018

Beachcroft Hotel
Felpham
Bognor Regis
West Sussex
PO22 7AH

Southern Testing Laboratories Ltd
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Co. Secretary: J N Joseph
Consultant: Dr D Peiley BSc PhD DIC MPhil FGS
D Blingworth BSc FGS

For the attention of Phillip Roberts

Dear Sirs,

Re: Groundwater Monitoring at The Old Gunpost, Felpham.

We are pleased to attach the results of 6 months groundwater monitoring from the single monitoring well placed on site.

From the appended plot it can be seen that groundwater varied between approximately 2.1m and 1.3m below ground level. There did not appear to be any significant tidal influence on water levels (approximately 10mm difference) but when correlated with precipitation data taken from a nearby weather station there appears to be a link to the magnitude of rainfall.

The plot of groundwater level vs. time is attached along with an excel file of raw data (by email).

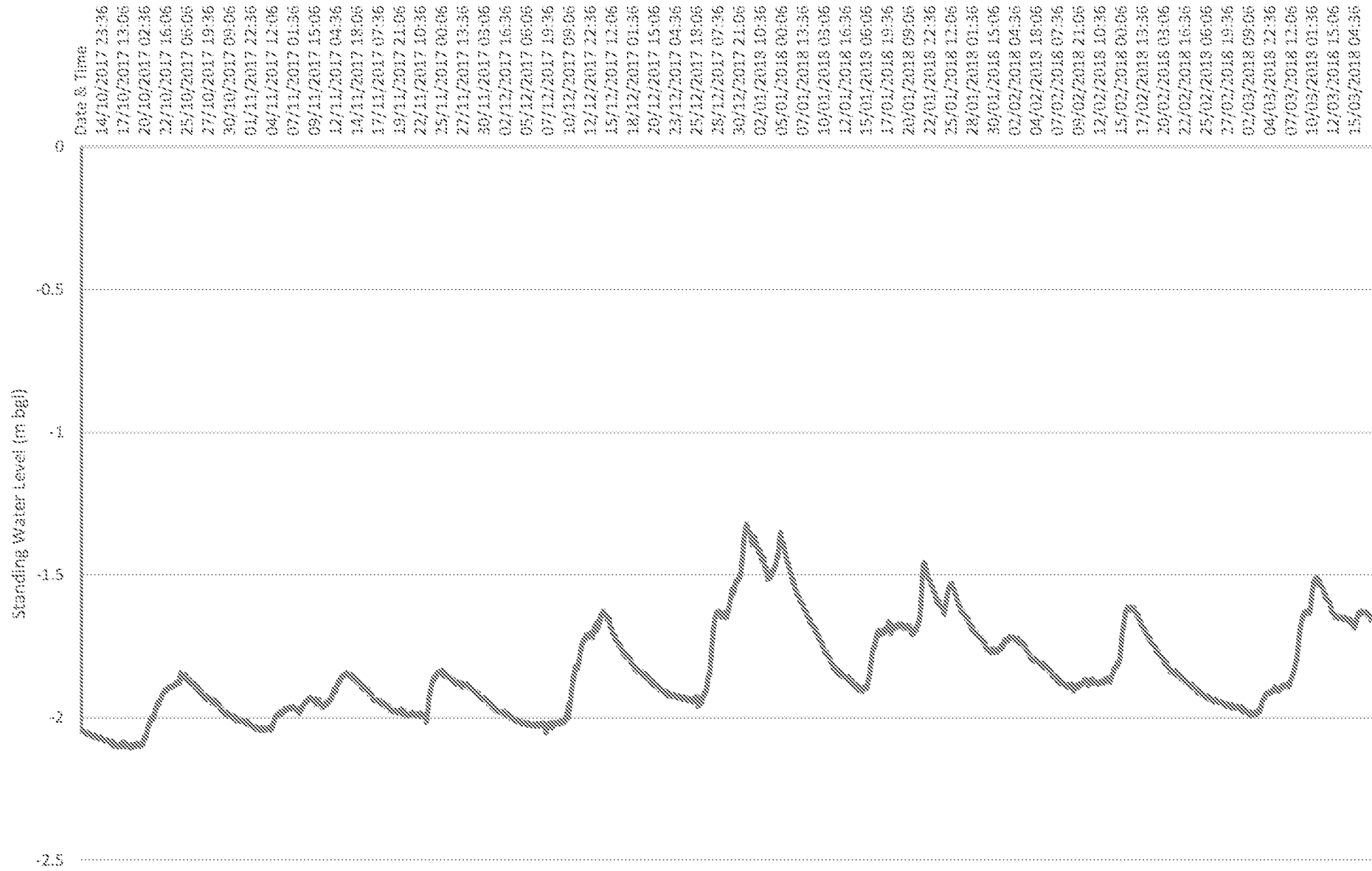
We trust this is of interest.

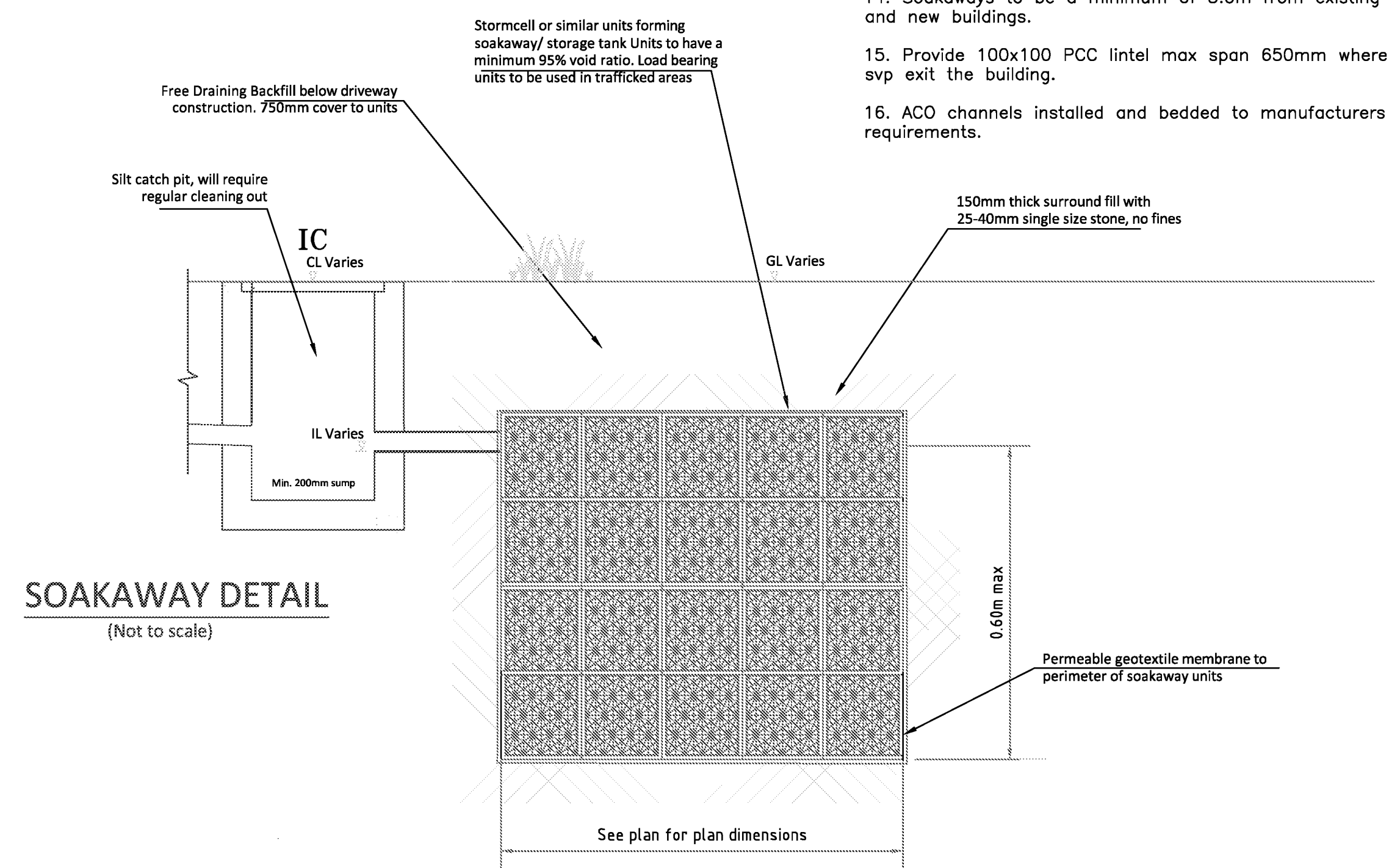
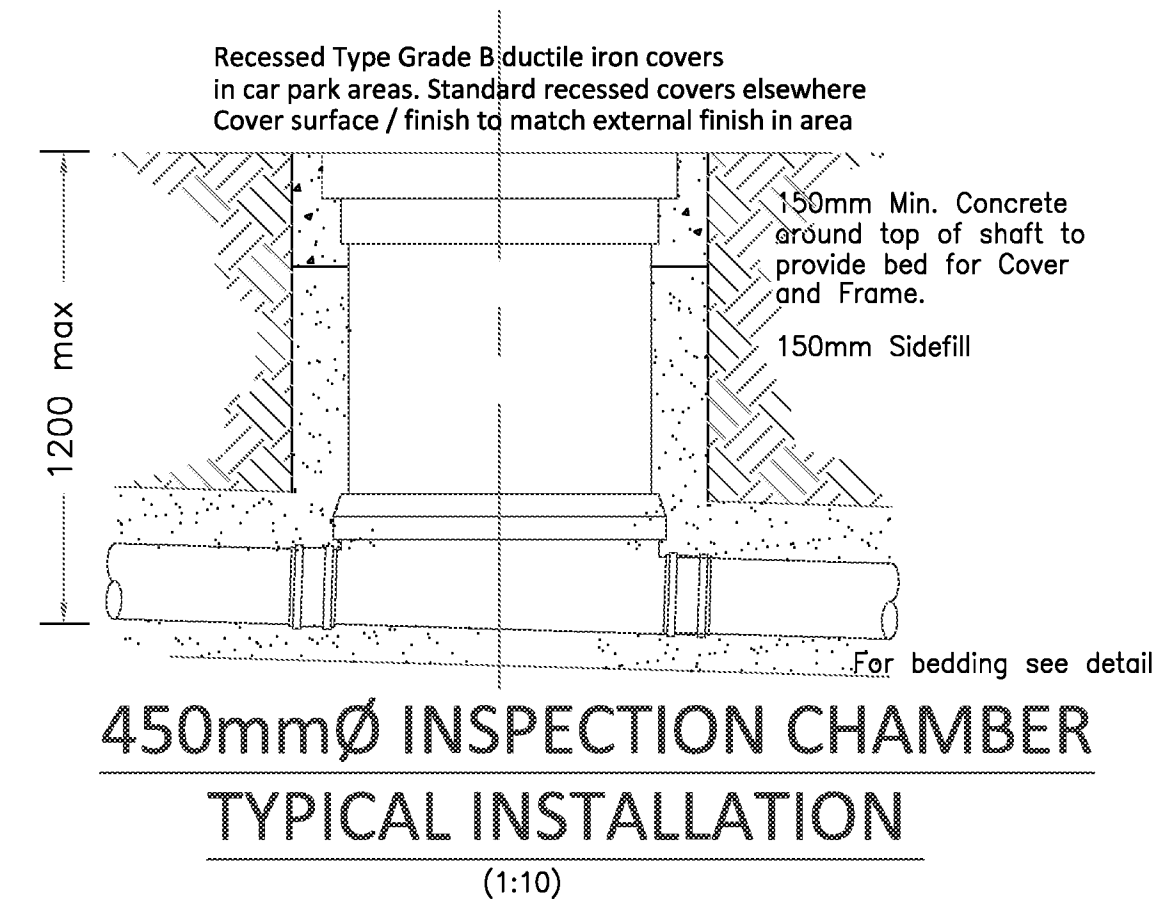
Yours faithfully,

P J Sugden
For and on behalf of
Southern Testing Laboratories Limited

encs

J13324 Land adjacent to Old Gun Post, Felpham, Bognor Regis





KEY	
—	PROPOSED NEW or REPLACEMENT FOUL SEWER
—	PROPOSED STORM DRAINAGE
—	EXISTING FOUL DRAINAGE to be retained, based on record drawings. Contractor to confirm on site
—	EXISTING STORM DRAINAGE to be retained, based on record drawings. Contractor to confirm on site
R.E SYP or S	RODDING EYE
R.W.P. or R	SOIL/VENT PIPE (WITH ABOVE GROUND ACCESS AT GROUND FLOOR LEVEL)
G	RAINWATER PIPE (All into roddable gullies or where internal with access at G Floor level)
AAV	GULLY (Trapped and roddable)
○	AIR ADMITTANCE VALVE
□	450mmØ INSPECTION CHAMBER
□	Brick built manhole
○	Pre-cast concrete ring manhole
—	Linear drainage channel ACO S100 with bolt down grating, outlet into storm system in locations shown on plan. Installed to suppliers details
—	Proposed levels

1. This drawing is to be read in conjunction with all relevant Engineers and Architects drawings, and the Specification.
2. All dimensions are in millimetres unless noted otherwise. All levels are in Metres Above an arbitrary datum and not to Ordnance Datum.
3. In accordance with CDM 2015 the Contractor is to:
 - Notify HSE of works.
 - Comply with the requirements of Health and Safety Plan(if applicable)
 - Provide risk assessments and method statements for all potential hazards relevant to this project.
4. The main contractor shall be responsible for the setting out and accuracy of all dimensions. He shall satisfy himself that the information given is correct and any discrepancies should be noted to the Engineer immediately.
5. DO NOT SCALE. If discrepancy or query arises on dimensions consult Engineer.
6. The Contractor is responsible for specifying product and codes and ordering of drainage materials.
7. All drainage to be installed to BS5955 Pt6 and in strict accordance with the manufacturers instructions.
8. All PVCu drainage products to conform to BS EN1401 & Kite mark certified in accordance with specification.
9. All drainage pipes on this drwg to be 100mmØ unless shown otherwise. Min. falls 1/80 for foul and 1/100 for storm drainage.
10. Cover grades are in accordance with BS497 Pt 1 Cover Grades :- D400 – carriageways. B125 – carriageways for slow traffic. A15 – inaccessible to vehicles
11. Sewer runs and manholes to be adopted are to be in accordance with Sewers for Adoption, 5th Edition.
12. Any drainage laid less than 600mm below FGL to be covered with minimum 150mm Gen 3 grade concrete to half diameter.
13. No foul drainage sewer connection works to be undertaken until permission to discharge has been granted by the Local sewer supplier. Permissions to be obtained by Contractor.
14. Soakaways to be a minimum of 5.0m from existing and new buildings.
15. Provide 100x100 PCC lintel max span 650mm where svp exit the building.
16. ACO channels installed and bedded to manufacturers requirements.

Date	By	Revision	QA'd	Chk'd	Ref
Status	PRELIMINARY				
 Cowan Consultancy STRUCTURAL, CIVIL AND BUILDING CONSULTANTS			Also at: Landguard Manor Landguard Manor Road Shanklin Isle of Wight PO37 7JB		
3 Turnberry House 4400 Parkway Whitley Farnham Hampshire PO15 7FJ			Tel: 01489 577488 Fax: 01489 579873 consultants@cowanconsult.co.uk www.cowanconsult.co.uk		
Client	Ivon Blumer Architects Ltd				
Project	Development adjacent to Beechcroft Hotel Farnham, Bognor Regis				
Title	DRAINAGE CA AND DETAILS				
Date	Feb 19	Scale	1/50	Draw No.	
Drawn	EC	Chk'd	QA'd	404127/10P1	

Soakaway Design

Job No.: **403912**
Job Name: **Beach Huts**

~~Roof area~~
Area 130 m2
Run off Coeff 1 m2
130 m2

100 year return period + 40% CC		Storm duration (Min.)	T	N	r
R5	0.03242 m	5	0.083333	0.1	0.023154
R10	0.04017 m	10	0.166667	0.1	0.028694
R15	0.04546 m	15	0.25	0.1	0.032473
R30	0.05603 m	30	0.5	0.1	0.040022
R60	0.06888 m	60	1	0.1	0.0492
R120	0.08450 m	120	2	0.1	0.060356
R240	0.10348 m	240	4	0.1	0.073917
R360	0.11643 m	360	6	0.1	0.083168
R600	0.13500 m	600	10	0.1	0.096432
R1440	0.17376 m	1440	24	0.1	0.124113

Inflow to attenuation system
I5 4.214 m3
I10 5.222 m3
I15 5.910 m3
I30 7.284 m3
I60 8.954 m3
I120 10.985 m3
I240 13.453 m3
I360 15.137 m3
I600 17.551 m3
I1440 22.589 m3

Outflow from Tank
f 2.72E-06 **m3/s** (From site investigation)

Soakaway dims:
L 7 m
W 4 m
Depth 0.6 m (below invert depth of inlet pipe)

As50 34.6 (50% effective depth + base area as BRE365)
Void ratio 95 %

Outflow from Tank:
O5 0.03 m3
O10 0.06 m3
O15 0.08 m3
O30 0.17 m3
O60 0.34 m3
O120 0.68 m3
O240 1.36 m3
O360 2.03 m3
O600 3.39 m3
O1440 8.13 m3

Storage required:		Time to drain:	
S5	4.19 m3	ts50	6.18 hours
S10	5.17 m3	ts50	7.62 hours
S15	5.83 m3	ts50	8.60 hours
S30	7.11 m3	ts50	10.50 hours
S60	8.62 m3	ts50	12.71 hours
S120	10.31 m3	ts50	15.21 hours
S240	12.10 m3	ts50	17.85 hours
S360	13.10 m3	ts50	19.34 hours
S600	14.16 m3	ts50	20.90 hours
S1440	14.46 m3	ts50	21.34 hours

Storage provided **16.0** m3

Critical storm = **S1440**
Storage required = **14.46**
Time to discharge= **21.34** Hours (Should be less than 24 hours)

Soakaway size proposed is satisfactory

Soakaway Design

Job No.: 403912
Job Name: Beach Huts
Car park

Area 1230 m2
Run off Coeff 1 m2
1230 m2

100 year return period + 40% CC		Storm duration (Min.)	T	N	r
R5	0.03242 m	5	0.083333	0.1	0.023154
R10	0.04017 m	10	0.166667	0.1	0.028694
R15	0.04546 m	15	0.25	0.1	0.032473
R30	0.05603 m	30	0.5	0.1	0.040022
R60	0.06888 m	60	1	0.1	0.0492
R120	0.08450 m	120	2	0.1	0.060356
R240	0.10348 m	240	4	0.1	0.073917
R360	0.11643 m	360	6	0.1	0.083168
R600	0.13500 m	600	10	0.1	0.096432
R1440	0.17376 m	1440	24	0.1	0.124113

Inflow to attenuation system
I5 39.871 m3
I10 49.411 m3
I15 55.918 m3
I30 68.918 m3
I60 84.722 m3
I120 103.932 m3
I240 127.285 m3
I360 143.215 m3
I600 166.056 m3
I1440 213.722 m3

Outflow from Tank
f 2.72E-06 m3/s (From site investigation)

Soakaway dims:
Plan area 1230 m
1 m
Depth 0.22 m (below invert depth of inlet pipe)

As50 1500.82 (Half base area)
Void ratio 30 %

Outflow from Tank:
O5 1.22 m3
O10 2.45 m3
O15 3.67 m3
O30 7.35 m3
O60 14.70 m3
O120 29.39 m3
O240 58.78 m3
O360 88.18 m3
O600 146.96 m3
O1440 352.70 m3

Storage required:		Time to drain:	
S5	38.65 m3	ts50	1.31 hours
S10	46.96 m3	ts50	1.60 hours
S15	52.24 m3	ts50	1.78 hours
S30	61.57 m3	ts50	2.09 hours
S60	70.03 m3	ts50	2.38 hours
S120	74.54 m3	ts50	2.54 hours
S240	68.50 m3	ts50	2.33 hours
S360	55.04 m3	ts50	1.87 hours
S600	19.10 m3	ts50	0.65 hours
S1440	-138.98 m3	ts50	-4.73 hours

Storage provided 81.2 m3

Critical storm = S120
Storage required = 74.54
Time to discharge= 2.54 Hours (Should be less than 24 hours)

Soakaway size proposed is satisfactory

Summary Sheet

Results of BRE Digest 365 Soakage Tests

Site : Land adjacent to The Old Gun Post, Felpham					Job No : J13324		
Client : Beachcroft Hotel Ltd					O S Reference : SZ 94889 99310		
Tested By : SS				Engineer: VF		Test Date : 05/Oct/2017	
Hole No	Test No	Hole Depth <i>m</i>	Soakage Rate for Each Test <i>litre/m²/min</i>	Soakage Rate for Each Hole <i>litre/m²/min m/sec</i>		Water Level at Finish of Test	Remarks
TP1	No 1	2.70	0.254	0.163	2.72E-6	Pit was not emptied; Non compliant value was calculated.	Depth to top of permeable soils was 1.6m. Depth to existing ground water level was 2.5m.
TP1	No 2	2.70	0.163			Pit was not emptied; Non compliant value was calculated.	
TP1	No 3	2.70	0.358			Pit was not emptied; Non compliant value was calculated.	
Lowest Value of All Calculated Soakage Rates :				0.163 <i>litre/m²/min</i>	2.72E-6 <i>m/sec</i>		