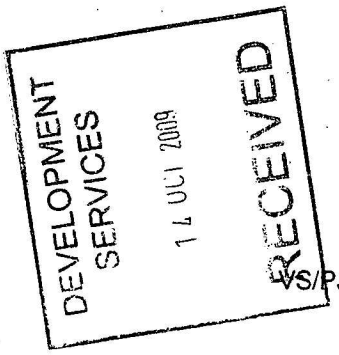
14 OCT 2009

09/00811/FUL

OPUS JOYNES PIKE

31st July 2009

Hinckley and Bosworth Borough Council
Council Offices
Argents Mead
Hinckley
Leicestershire
LE10 1BZ



For the Attention of Mr. P. Scragg

VS/PJE/J-B0021.00(L002)

Dear Paul,

Re: Richmond Community Park, Hinckley

Further to your recent instruction, we write to present the findings of our soakaway testing undertaken on the above site.

Recorded Geology

The published geological map for the area records the site as being predominantly underlain by the Oadby Till which is generally a grey pebbly clay. The north western section of the site, however, is recorded as being underlain by Wolstan Sand and Gravel.

Site Works

Four trial pits (TP1, TP2A, TP3, TP4) were excavated using a mechanical excavator to depths of between 2.60m and 3.00m below ground level (bgl) on 28 July 2009. The approximate locations of the trial pits are shown on Drawing No. J-B0021.00/501 and copies of the exploratory hole records are appended.

The soakaway testing was proposed to be carried out generally in accordance with the methodology set out within BRE Digest 365. Water was pumped into the test pits from a water bowser and the time taken for the pit to drain was recorded at regular intervals.

Ground Conditions Encountered

The investigation identified a surface layer of clayey topsoil to between 0.35m and 0.50m bgl. This was underlain by red-brown soft consistency silty clay in each of the pits to depths of between 1.10m (TP3) and in excess of 3.00m (TP2A). The base of the clay was not proven in TP2A.

Beneath the clay in TP1 (2.00m), TP3 (1.10m) and TP4 (1.60m), a clayey sand, locally gravelly, was proven to the base of each hole.

Groundwater was observed at the base of the pit in TP1 (2.80m) and TP3 (2.60m) but was not observed in TP4 (base at 3.00m).

Opus Joynes Pike
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Company Reg. No: 1421639
Registered Office: Willow House, Brotherswood Court, Great Park Road, Bristol, BS32 4QW

OPUS

Soakaway Tests

Following excavation, three of the trial pits (TP1, TP3 and TP4) were backfilled with a clean single size stone to prevent side wall collapse. Trial pit TP2A recorded cohesive materials for its full depth and was not considered suitable for soakaway testing. This was confirmed by the soakaway tests undertaken in these materials as part of the Solmek Site Investigation Report.

The soakaway tests were undertaken on 29th July and prior to testing it was observed that TP4 remained dry but the groundwater level in TP3 had risen to 1.88m bgl. TP1 had been vandalised overnight with the monitoring pipe filled with material preventing water levels being recorded. This occurred even after the monitoring pipe had been covered over with turf the previous evening.

The soakaways were undertaken within TP3 and TP4 and were carried out generally in accordance with BRE365, however only one filling operation was possible within each trial pit.

The tests recorded soil infiltration rates of 9.8×10^{-6}m/s (TP3) and 5.6×10^{-6}m/s (TP4). Hence a soil infiltration rate of ***5.6×10^{-6} m/s*** should be utilised for soakaway design.

Results of the soakaway testing are attached for your information.

Comments

The recorded soils confirm the anticipated ground conditions with granular materials being recorded in the northern and western sections of the site and cohesive materials in the south east.

The testing was undertaken during a period of very heavy rainfall which continued through the night of the 29 July. This resulted in a rise in the groundwater levels overnight of 1.00m in TP3 and 2.10m in TP4, which when ground levels are assessed, put the water table at approximately 113.65m.

Based on the results of the soakaway testing, the sands in the north and west of the site are considered to represent a potential stratum for the use of traditional soakaways for storm water drainage. However, the significant rise in water levels after the heavy storm suggests that any system would need a significant amount of attenuation capacity.

We trust that the above is suitable for your current requirements, however should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely
For and on behalf of OPUS Joynes Pike Ltd

Phil Edge
Principal Geoenvironmental Engineer
phil.edge@opusjoynespike.co.uk

Encs.

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TRIAL PIT LOCATION PLAN

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TP1
TP2
TP2A
TP3
TP4
EDWARD STREET
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Trial Pit Location Plan
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TRIAL PIT RECORDS

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Exploratory Hole ID:	Client:		
TP1	Hinckley and Bosworth Borough Council	**OPUS JOYNES PIKE**	
	Site: Richmond Community Park, Hinckley	www.opusjoynespike.co.uk	
Job No: J-B0021		Start Date: 28/07/2009	End Date: 28/07/2009
Drilling Equipment/ Excavation Method: JCB 3CX	Co-ords:	Backfill Date: 28/07/2009	Field Records:
	Ground Level (mAOD):	Logged: CB	Chkd: Appr:

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Grass over dark brown sandy clay TOPSOIL.								
	0.35							
Red-brown high plasticity soft consistency silty CLAY.								
	2.00							
Red-brown clayey medium SAND.								
	2.80						2.80	
End of Exploratory Hole at 2.80 m								

Remarks:
Groundwater observed at 2.80m depth.

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Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Pentrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	

Exploratory Hole ID:	Client:	OPUS JOYNES PIKE
TP2A	Hinckley and Bosworth Borough Council	www.opusjoynespike.co.uk
	Site: Richmond Community Park, Hinckley	

Job No:	Start Date:	End Date:
J-B0021	28/07/2009	28/07/2009

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
JCB 3CX		28/07/2009	

Ground Level (mAOD):	Logged:	Chkd:	Appr:
	CB		

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Grass over dark brown sandy clay TOPSOIL.								
Red-brown high plasticity soft consistency silty CLAY.	0.40							
End of Exploratory Hole at 2.60 m	2.60							

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Remarks:
No groundwater observed.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Pentrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	

Exploratory Hole ID:	Client:	OPUS JOYNES PIKE
TP3	Hinckley and Bosworth Borough Council	www.opusjoynespike.co.uk
	Site: Richmond Community Park, Hinckley	

Job No:	Start Date:	End Date:
J-B0021	28/07/2009	28/07/2009

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
JCB 3CX		28/07/2009	

Ground Level (mAOD):	Logged:	Chkd:	Appr:
	CB		

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Grass over dark brown sandy clay TOPSOIL.								
Red-brown high plasticity soft consistency sandy silty CLAY.	0.50							
Red-brown clayey gravelly medium SAND.	1.10							
End of Exploratory Hole at 2.60 m	2.60						2.60	

Remarks:
Groundwater observed at 2.60m depth.

Sample Type Key -
D - Disturbed Representative
B - Bulk Representative
S - Spoon Non-Representative
W - Water
U - Undisturbed Representative
J - Jar Sample

Test Type Key
(C) - Cone SPT
(S) - Spoon SPT
P - Pocket Pentrometer Reading
PID - PID Reading
V - Hand Shear Vane Reading

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Sheet 1 of 1

Exploratory Hole ID:	Client:		
TP4	Hinckley and Bosworth Borough Council	OPUS JOYNES PIKE	
	Site: Richmond Community Park, Hinckley	www.opusjoynespike.co.uk	
Job No: J-B0021		Start Date: 28/07/2009	End Date: 28/07/2009
Drilling Equipment/ Excavation Method: JCB 3CX	Co-ords:	Backfill Date: 28/07/2009	Field Records:
	Ground Level (mAOD):	Logged: CB	Chkd: Appr:

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Grass over dark brown sandy clay TOPSOIL.								
Red-brown high plasticity soft consistency sandy silty CLAY.	0.50							
Red-brown clayey gravelly medium SAND.	1.60							
End of Exploratory Hole at 3.00 m	3.00							

Remarks:
No groundwater observed.

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Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Pentrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	

SOAKAWAY TEST RESULTS

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Percolation Test Results
Site : Richmond Community Park, Hinckley

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TP3 - SA1

Hole Dimensions	Width	Depth	Length
(m)	0.97	2.60	2.18

Time Elapsed (min)	Depth to Water (m)
0	0.870
0.5	0.870
1	0.870
1.5	0.870
2	0.870
2.5	0.870
3	0.880
4	0.880
5	0.890
6	0.890
7	0.900
8	0.900
9	0.910
10	0.910
15	0.940
20	0.970
25	0.990
30	1.010
40	1.050
50	1.090
60	1.120
75	1.160
90	1.200
105	1.240
120	1.280
180	1.350

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Project Engineer: VS
Calculations By: VS
Checked By:
Approved By:

July 2009

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Percolation Test Results
Site : Richmond Community Park, Hinckley

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TP4 - SA1

Hole Dimensions	Width	Depth	Length
(m)	0.67	2.60	1.98

Time Elapsed (min)	Depth to Water (m)
0	1.320
0.5	1.320
1	1.330
1.5	1.330
2	1.330
2.5	1.330
3	1.340
4	1.340
5	1.340
6	1.350
7	1.350
8	1.350
9	1.350
10	1.360
15	1.380
20	1.400
25	1.420
30	1.440
40	1.470
50	1.500
60	1.530
75	1.570
90	1.610
105	1.650
120	1.690
180	1.800
240	1.920
300	2.020

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Project Engineer: VS
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Checked By:
Approved By:

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