

Our Ref: BEK/20771/201023/EG

23 October 2020

Euro Garages Ltd
Euro House
Beehive Trading Park
Haslingden Road
Blackburn
BB1 2EE

To whom it may concern,

Land at the north of Rhallt Lane, Welshpool - BRE 365 Percolation Test

BEK Enviro (BEK) have been commissioned by Euro Garages Ltd to determine soil infiltration rates at the above site using the BRE 365 methodology (2016) to assess the viability of disposal of surface water from the site via infiltration.

Percolation testing was undertaken in accordance with the requirements set out in BRE 365 (2016). A test pit was excavated at the site and an infiltration test was undertaken. The test was undertaken on 03rd October 2020 with dry conditions. The test location is presented on BEK Drawing No 20771-3, a copy of which is presented in Annex B.

In accordance with BRE 365 'the trial pit should be 0.3 to 1 m wide and 1 to 3 m long. It should have vertical sides trimmed square and, if necessary for stability, should be filled with granular material. Fill the pit and allow it to drain three times to near empty; each time record the water level and time filling. Calculate the soil infiltration rate from the time taken for the water level to fall from 75% to 25% effective storage depth in the pit, using the lowest f value of the three test results for design.'

The trial pit was excavated using a JCB 8104 excavator to a maximum depth of 2.00 m with the sides trimmed square. Water was discharged into pit using an ICB water bowser.

The test pit dimensions are as follows:

Test Pit No.	Length (m)	Width (m)	Depth (m)	Area (m ³)
SA1	1.80	0.80	2.00	2.88

Table 1: Test Pit Dimensions

The location of the infiltration test is included within Annex B of this report.

The ground conditions at the location of the test pit generally comprised of made ground overlying firm sandy clay. Water was discharged into the pit and the time taken for the water to infiltration into the soil was recorded as shown within the table below:



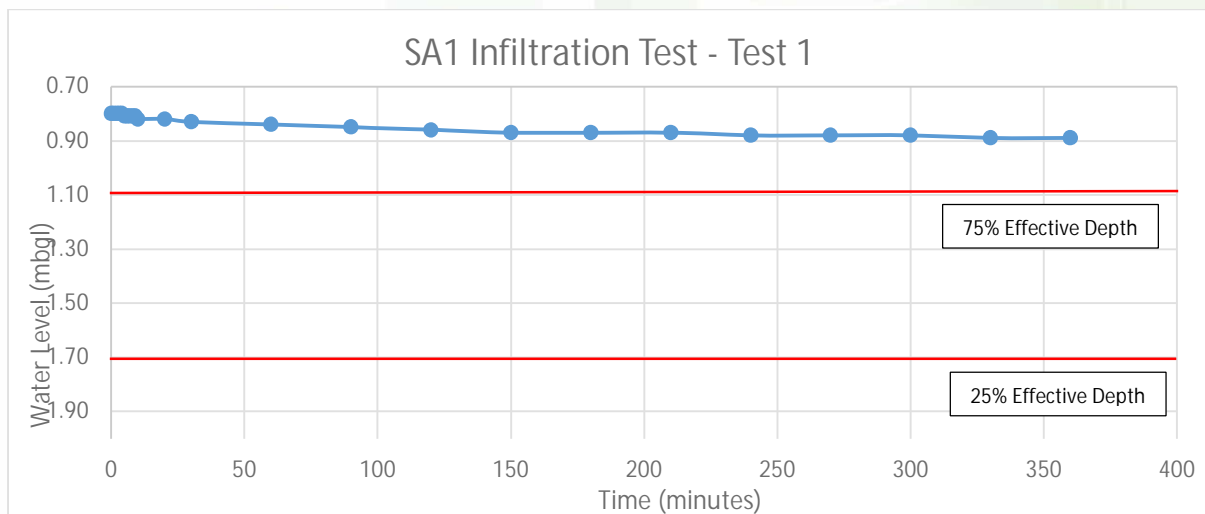
Soakaway Test 1

Depth to water at start of test: 0.80 m

A summary of the percolation test is shown within the table below:

Time (minutes)	Depth to Water (m bgl)	Notes
0	0.80	
5	0.81	
10	0.82	
20	0.82	
30	0.83	
60	0.84	
90	0.85	
150	0.87	
240	0.88	
300	0.88	
330	0.89	
360	0.89	End of test

Table 2: SA1 Infiltration Test



It can be seen from the above table that the water did not reach 75% effective depth after 6 hours of the test. Furthermore, 3 tests are required to be undertaken with the slowest infiltration rate used for design purposes therefore the test is considered to have failed.

Conclusion

An infiltration test trial pit was excavated at the site at Land at the north of Rhallt Lane, Welshpool and a single infiltration tests in accordance with BRE 365 (2016) was undertaken by BEK Enviro on 3rd October 2020.

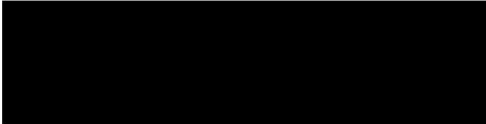


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After 6 hours of the test, the water level had failed to reach 75% effective depth therefore the test was deemed to have failed and discharge of surface water from the site via infiltration methods is not considered to be viable at the site at Land at the north of Rhallt Lane, Welshpool.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely



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ANNEX A

Infiltration Test Results

Land north of Rhalit Lane, Welshpool - Infiltration Test SA1 - Test 1

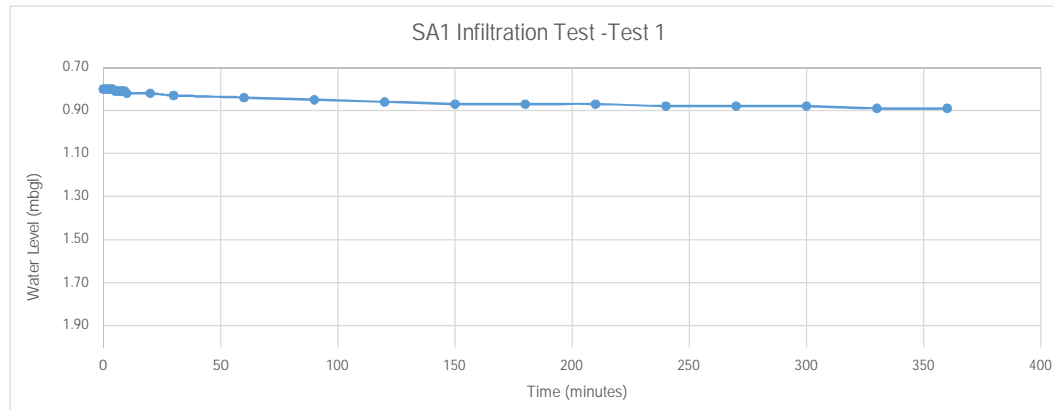
Date: 03/10/2020
 Weather: Cloudy



Time (minutes)	Depth (mbgl)
0	0.80
1	0.80
2	0.80
3	0.80
4	0.80
5	0.81
6	0.81
7	0.81
8	0.81
9	0.81
10	0.82
20	0.82
30	0.83
60	0.84
90	0.85
120	0.86
150	0.87
180	0.87
210	0.87
240	0.88
270	0.88
300	0.88
330	0.89
360	0.89

	Length (m)	Width (m)	Depth (m)	Area (m ³)
Pit Dimensions:	1.80	0.80	2.00	2.88

Start water level (mb) 0.80
 Total Depth of test = 1.20
 50% Effective Depth = 0.6
 75% Effective Depth (mbgl) = 1.10
 25% Effective Depth (mbgl) = 1.70



Soil Infiltration R $f) = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth
 = 0.86 m³

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including base area
 = 4.56 m²

t_{p75-25} = time for water to fall from 75% to 25% effective depth
 = - mins
 = #VALUE! seconds

Soil Infiltration R $f) =$ = #VALUE!
 = #VALUE! m/s
 = #VALUE! m/hour



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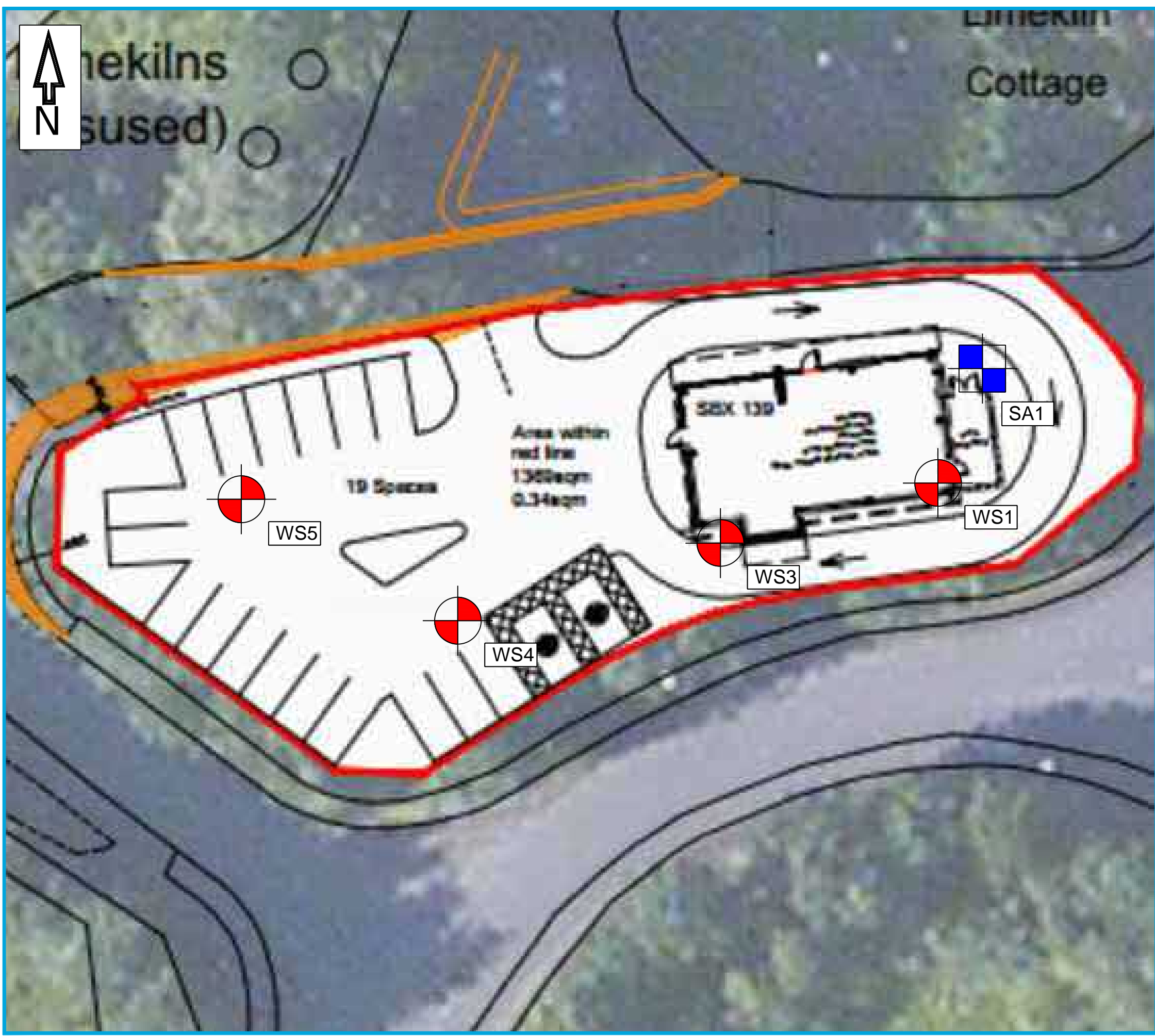
Suite One | No 3 Mitton Road Business Park
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

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ANNEX B

Site Investigation Location Plan



LEGEND

-  SITE BOUNDARY
-  BEK WINDOW SAMPLE BOREHOLE
-  INFILTRATION TEST LOCATION

REV	DESCRIPTION	DATE	BY



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CLIENT.



EG
EuroGarages

JOB TITLE.

LAND TO THE NORTH OF
RHALLT LANE, WELSHPOOL

DRAWING TITLE.

SITE INVESTIGATION
LOCATION PLAN

SCALE @ A3. NTS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 08/ 10/ 20
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DRAWING No. 20771-3	REV. -
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