

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method



Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	19/05/2020
Test Location:	SA101 (SA1)	Soil Infiltration Rate	test failed m/sec
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.66
1	0.66
2	0.66
3	0.66
4	0.66
5	0.66
10	0.66
13	0.66
15	0.68
20	0.69
40	0.71
61	0.74
83	0.78
114	0.80
136	0.80
172	0.83
248	0.90
285	0.96
342	0.97
1323	1.64

Pit Dimensions (m)

Length	2.50
Width	0.80
Depth	2.10

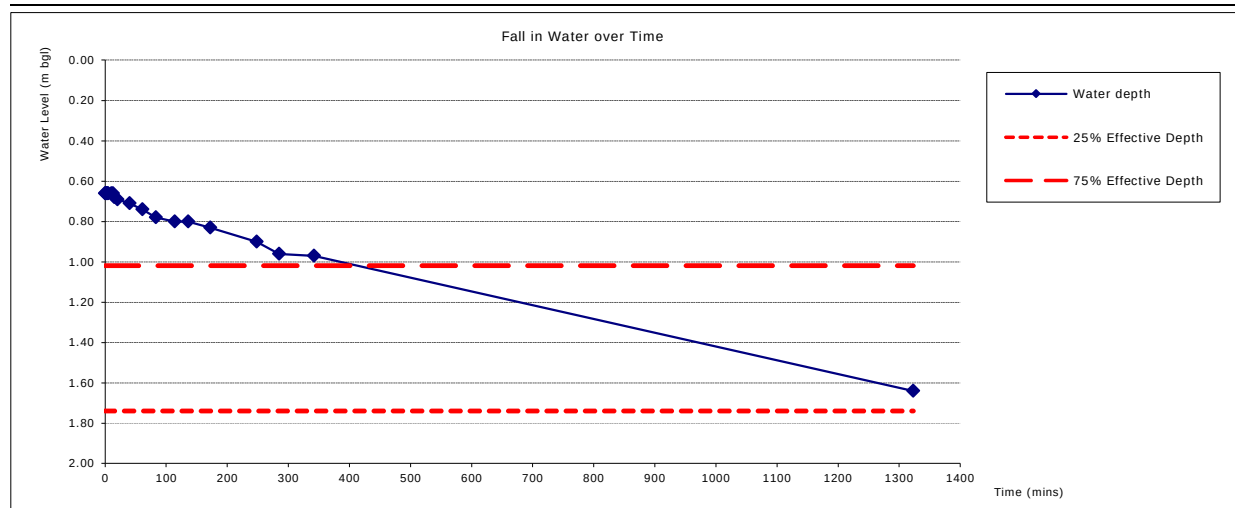
Assumed Invert Level (m bgl)	0.66
------------------------------	------

Ground Conditions:

GL - 0.2m	Grass surface followed by: Slightly gravelly sandy SILT. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.4m	Gravelly silty clayey fine to coarse SAND with low cobble content. (MADE GROUND)
0.4 - 2.1m	Slightly gravelly slightly sandy silty CLAY with medium cobble content and low boulder boulder content. Sandstone boulders are subangular ranging in size from 200mm to 350mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. Trial pit was not filled with aggregate for test.
3. Pit sides collapsed during testing. Base reduced to around 1.65m when inspected on second day.
4. Groundwater seepage at 2.0m.
5. Trial pit failed to empty 75% of fill volume after 22hrs test period.



Soil Infiltration Rate (m/sec)

$$f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.44
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	6.752
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

Soil Infiltration Rate (m/sec)

$$f = \frac{1.440}{\text{no value}}$$

f test failed

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	19/05/2020
Test Location:	SA102 (SA2)	Soil Infiltration Rate	test failed m/sec
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.86
1	0.87
2	0.87
3	0.88
4	0.89
5	0.90
6	0.90
8	0.94
10	0.96
12	0.96
14	0.98
15	0.98
18	0.99
20	1.01
30	1.06
65	1.08
123	1.10
163	1.13
217	1.18
1188	1.54
1290	1.6

Pit Dimensions (m)

Length	3.30
Width	0.72
Depth	2.84

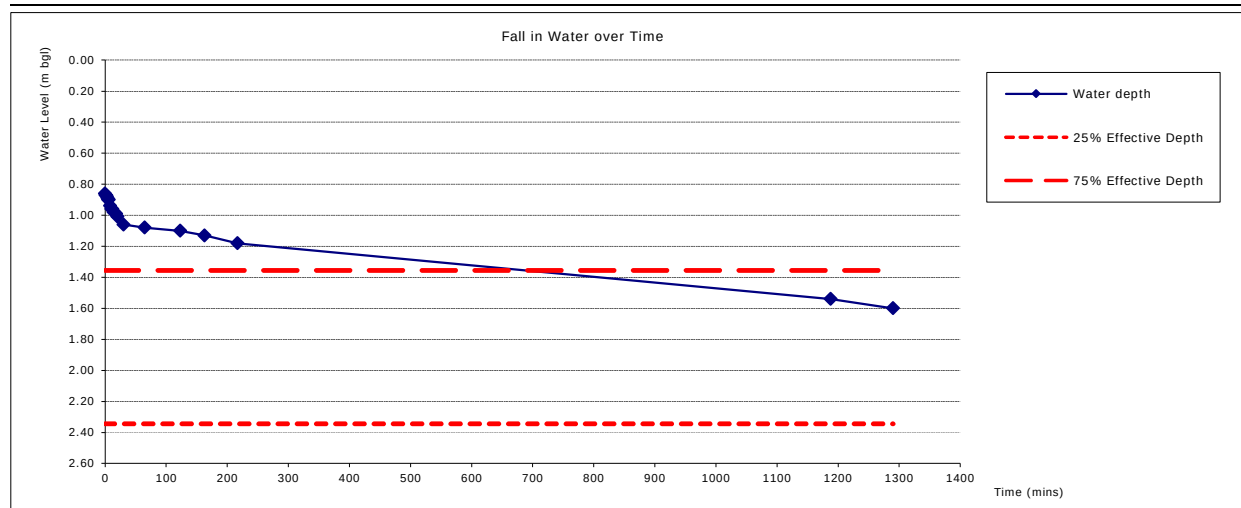
Assumed Invert Level (m bgl)	0.86
------------------------------	------

Ground Conditions:

GL - 0.1m	Grass surface followed by: Slightly gravelly sandy clayey SILT. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.1 - 0.7m	Clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.7 - 2.8m	Slightly sandy slightly gravelly silty CLAY with medium to high cobble content and low boulder content. Deposit becomes coarser with depth, with the fine grained content reducing. Sandstone boulders range from around 300mm to 820mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. Trial pit was not filled with aggregate for test.
3. Pit sides collapsed during testing. Base reduced to around 2.3m when inspected on second day.
4. Groundwater seepage at 2.2m.
5. Trial pit failed to empty 75% of fill volume after a 21hr 30 minute test period.



Soil Infiltration Rate (m/sec)

$$f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	2.35
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	10.3356
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

Soil Infiltration Rate (m/sec)

$$f = \frac{2.352}{\text{no value}}$$

f test failed

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	20/07/2020
Test Location:	SA201 (SA3)	Soil Infiltration Rate	test failed m/sec
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.62
1	0.61
2	0.61
3	0.62
4	0.62
5	0.63
10	0.65
15	0.66
30	0.73
75	0.82
120	0.93
150	0.97
195	1.07
250	1.12
270	1.23
345	1.38
1320	1.72
1450	1.72
1530	1.74
1710	1.74
2838	1.78
3120	1.78
3240	1.8

Pit Dimensions (m)

Length	2.70
Width	0.70
Depth	2.70

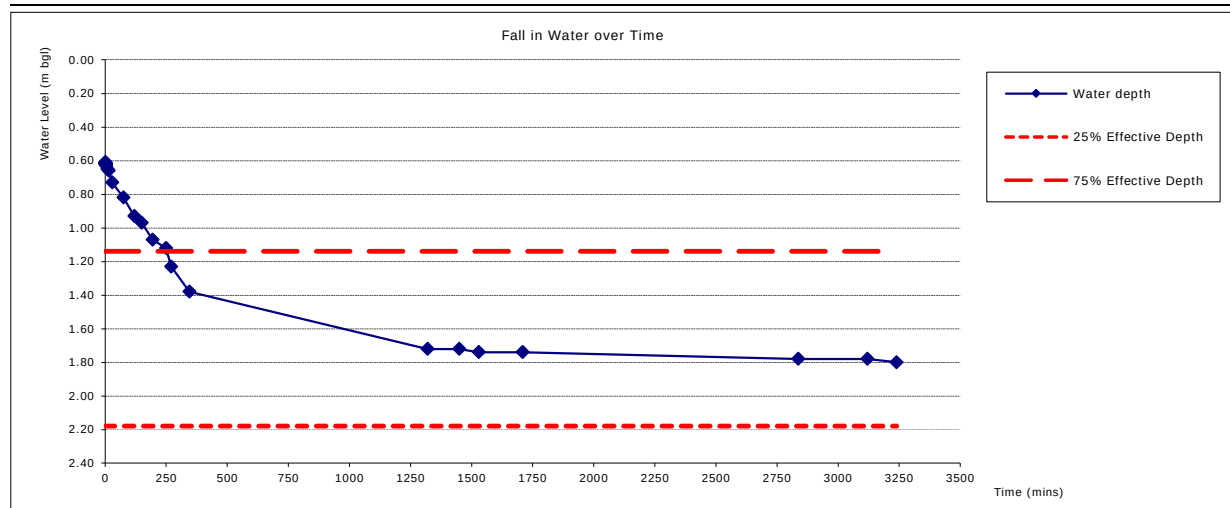
Assumed Invert Level (m bgl)	0.62
------------------------------	------

Ground Conditions:

GL - 0.05m	Grass surface followed by: Soft dark brown sandy clayey SILT. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.05 - 0.4m	Gravelly silty clayey fine to coarse SAND with low cobble content. (MADE GROUND)
0.4 - 0.8m	Sandy gravelly CLAY with low cobble content. Cobbles range in size from around 60mm to 140mm. (GLACIAL DIAMICTON)
0.8 - 2.7m	Slightly sandy slightly gravelly silty CLAY with medium to high cobble content and low boulder content. Deposit becomes coarser with depth. Boulders range in size from around 250mm to 700mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. Groundwater seepage at 2.2m during excavation.
5. Trial pit failed to empty 75% of fill volume after a 54hr test period.



$$\text{Soil Infiltration Rate (m/sec)} = f \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.97
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	8.962
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

$$\text{Soil Infiltration Rate (m/sec)} = f \frac{1.966}{\text{no value}}$$

f test failed

esp
ENGINEERING
SURVEYING
CONSULTANTS

Project Name:	Flying Start, Dowlais Primary School			
Project Ref:	7485d	Date of Testing:	22/07/2020	
Test Location:	SA201 (SA3)	Soil Infiltration Rate		test failed m/sec
Fill Number:	2			

Test results:

[illegible]

Pit Dimensions (m)

Length	2.70
Width	0.70
Depth	2.70

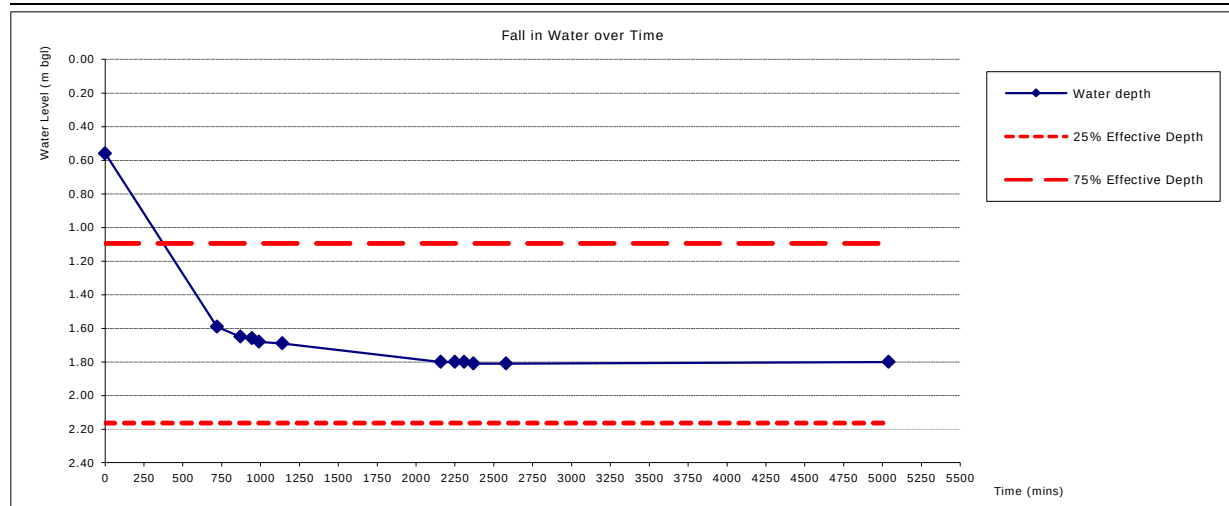
Assumed Invert Level (m bgl)	0.56
------------------------------	------

Ground Conditions:

GL - 0.05m	Grass surface followed by: Soft dark brown sandy clayey SILT. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.05 - 0.4m	Gravelly silty clayey fine to coarse SAND with low cobble content. (MADE GROUND)
0.4 - 0.8m	Sandy gravelly CLAY with low cobble content. Cobbles range in size from around 60mm to 140mm. (GLACIAL DIAMICTON)
0.8 - 2.7m	Slightly sandy slightly gravelly silty CLAY with medium to high cobble content and low boulder content. Deposit becomes coarser with depth. Boulders range in size from around 250mm to 700mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. Groundwater seepage at 2.2m during excavation.
5. Trial pit failed to empty 75% of fill volume after a 84hr period. Infiltration did occur to a depth of around 1.8m.



$$\text{Soil Infiltration Rate (m/sec)} = f \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	2.02
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	9.16
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

Soil Infiltration Rate (m/sec)	f	$\frac{2.022}{\text{no value}}$
--------------------------------	-----	---------------------------------

f test failed

ESP
ENGINEER
GEOLOGIST
SCIENTIST

Project Name:	Flying Start, Dowlais Primary School			
Project Ref:	7485d	Date of Testing:	22/07/2020	
Test Location:	SA201 (SA3)	PROJECTED SOIL INFILTRATION RATE		1.67E-06 m/sec
Fill Number:	2 - PROJ			

Test results:

[illegible]

Pit Dimensions (m)

Length	2.70
Width	0.70
Projected Depth	2.20

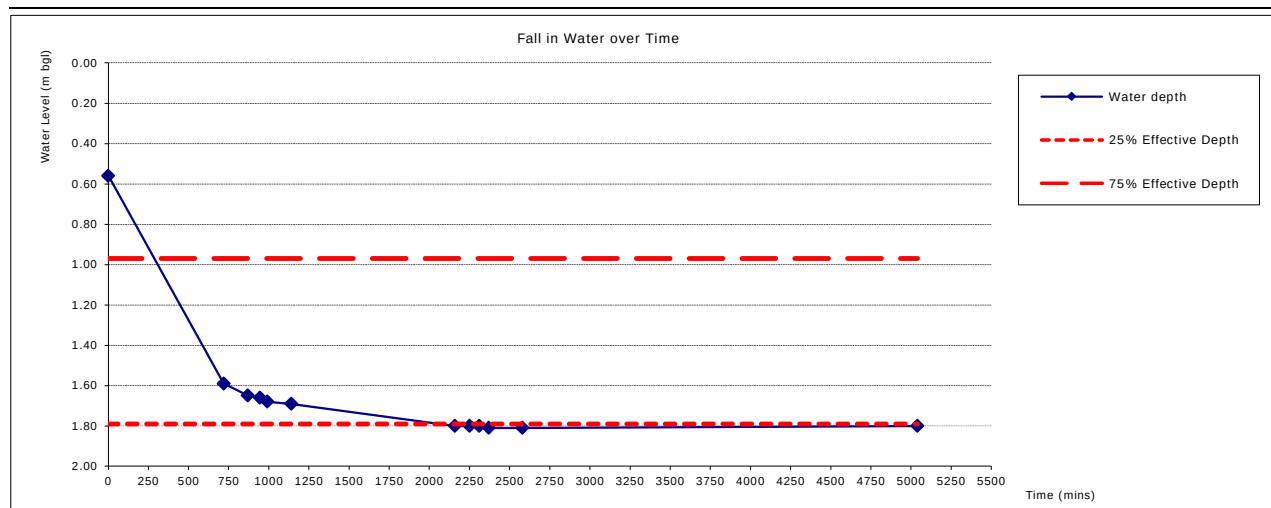
Assumed Invert Level (m bgl)	0.56
------------------------------	------

Ground Conditions:

Ground Conditions	
GL - 0.05m	Grass surface followed by: Soft dark brown sandy clayey SILT. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.05 - 0.4m	Gravelly silty clayey fine to coarse SAND with low cobble content. (MADE GROUND)
0.4 - 0.8m	Sandy gravelly CLAY with low cobble content. Cobbles range in size from around 60mm to 140mm. (GLACIAL DIAMICTON)
0.8 - 2.7m	Slightly sandy slightly gravelly silty CLAY with medium to high cobble content and low boulder content. Deposit becomes coarser with depth. Boulders range in size from around 250mm to 700mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. Groundwater seepage at 2.2m during excavation.
5. The infiltration rate calculated is projected only based on a pit depth of 2.2m. It should be used with caution.



$$\text{Soil Infiltration Rate (m/sec)} \quad f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.55
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	7.466
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	2067

Soil Infiltration Rate (m/sec)	f	$\frac{1.550}{926055.4909}$
--------------------------------	-----	-----------------------------

f 1.67E-06

(PROJECTED RATE ONLY)

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method



Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	20/07/2020
Test Location:	SA202	Soil Infiltration Rate	test failed m/sec
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.27
1	0.27
2	0.28
3	0.29
4	0.31
5	0.33
6	0.34
7	0.35
8	0.35
10	0.38
13	0.41
15	0.44
22	0.49
50	0.64
122	0.79
180	0.80
287	0.87
1245	1.48
1310	1.49
1457	1.52
1530	1.54
1575	1.55
1680	1.57

Pit Dimensions (m)

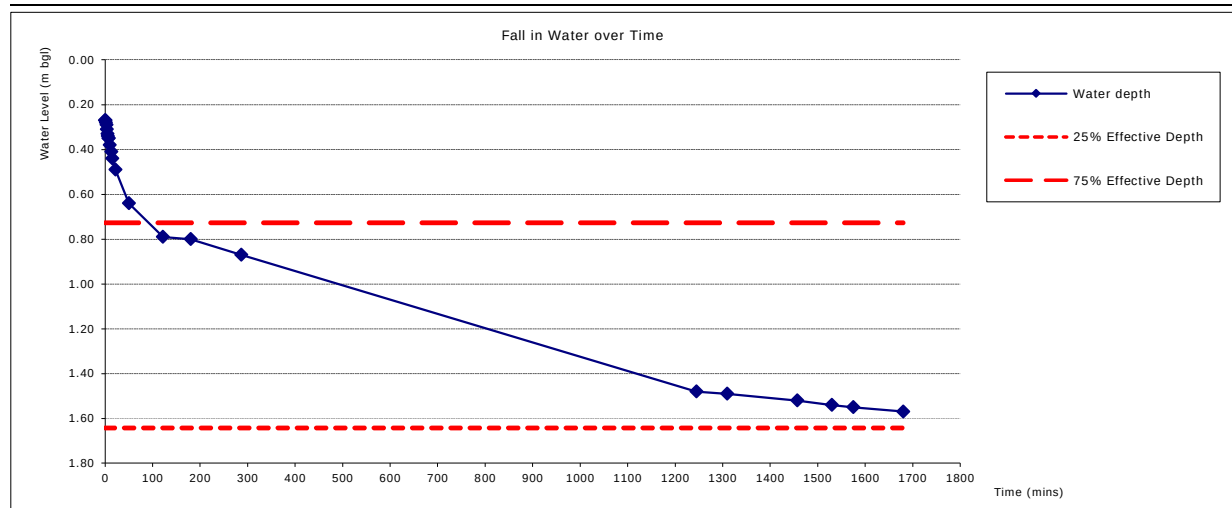
Length	1.90
Width	0.70
Depth	2.10
Assumed Invert Level (m bgl)	0.27

Ground Conditions:

GL - 0.2m	Grass surface followed by: Soft dark brown sandy clayey SILT. Sand is fine to coarse. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.35m	Gravelly silty clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.35 - 0.85m	Slightly sandy slightly gravelly CLAY with low cobble content. (GLACIAL DIAMICTON)
0.85 - 2.1m	Slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sandstone boulders are subangular ranging in size from around 200mm to 480mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. No groundwater encountered to 2.1m, prior to infilling with aggregate.
5. Trial pit failed to empty 75% of fill volume after a 28hr period.



$$\text{Soil Infiltration Rate (m/sec)} = f \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.22
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	6.088
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

$$\text{Soil Infiltration Rate (m/sec)} = f \frac{1.217}{\text{no value}}$$

f test failed

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	20/07/2020
Test Location:	SA202	PROJECTED SOIL INFILTRATION RATE	1.18E-06 m/sec
Fill Number:	1 - PROJECTED		

Test results:

Time (mins)	Water Level (m bgl)
0	0.27
1	0.27
2	0.28
3	0.29
4	0.31
5	0.33
6	0.34
7	0.35
8	0.35
10	0.38
13	0.41
15	0.44
22	0.49
50	0.64
122	0.79
180	0.80
287	0.87
1245	1.48
1310	1.49
1457	1.52
1530	1.54
1575	1.55
1680	1.57
3000	1.65

Pit Dimensions (m)

Length	1.90
Width	0.70
Depth	2.10

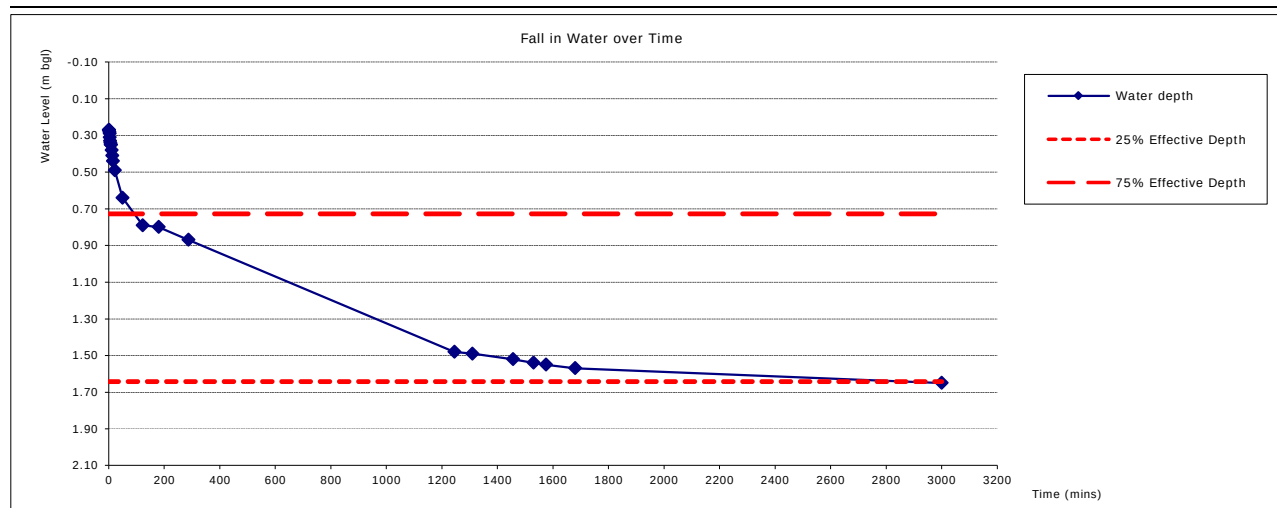
Assumed Invert Level (m bgl)	0.27
------------------------------	------

Ground Conditions:

GL - 0.2m	Grass surface followed by: Soft dark brown sandy clayey SILT. Sand is fine to coarse. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.35m	Gravelly silty clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.35 - 0.85m	Slightly sandy slightly gravelly CLAY with low cobble content. (GLACIAL DIAMICTON)
0.85 - 2.1m	Slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sandstone boulders are subangular ranging in size from around 200mm to 480mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. No groundwater encountered to 2.1m, prior to infilling with aggregate.
5. The infiltration rate calculated is projected only based on extending the test time. It should be used with caution.



Soil Infiltration Rate (m/sec)

$$f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.22
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	6.088
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	2826

Soil Infiltration Rate (m/sec)

$$f = \frac{1.217}{1032372.6}$$

$$f = 1.18E-06$$

(PROJECTED RATE ONLY)

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	21/07/2020
Test Location:	SA202	Soil Infiltration Rate	test failed m/sec
Fill Number:	2		

Test results:

Time (mins)	Water Level (m bgl)
0	0.48
1	0.49
2	0.50
3	0.51
4	0.52
5	0.52
8	0.55
9	0.55
10	0.56
13	0.58
15	0.59
42	0.69
60	0.72
1012	1.32
1080	1.36
1130	1.39
1180	1.43
1305	1.48
1365	1.51
1435	1.53
1470	1.54
1490	1.55
2450	1.6

Pit Dimensions (m)

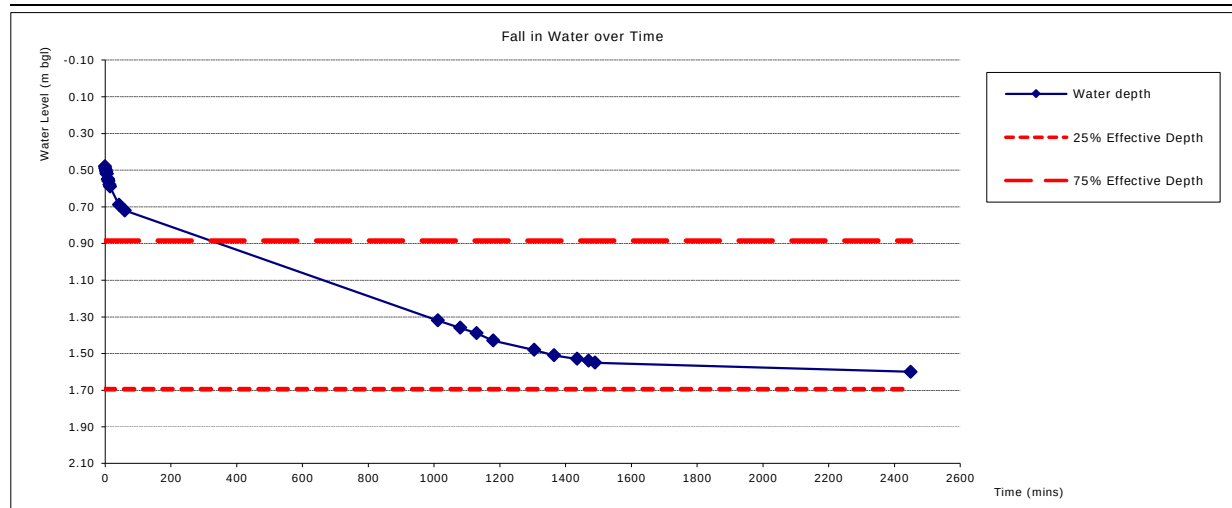
Length	1.90
Width	0.70
Depth	2.10
Assumed Invert Level (m bgl)	0.48

Ground Conditions:

GL - 0.2m	Grass surface followed by: Soft dark brown sandy clayey SILT. Sand is fine to coarse. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.35m	Gravelly silty clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.35 - 0.85m	Slightly sandy slightly gravelly CLAY with low cobble content. (GLACIAL DIAMICTON)
0.85 - 2.1m	Slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sandstone boulders are subangular ranging in size from around 200mm to 480mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. No groundwater encountered to 2.1m, prior to infilling with aggregate.
5. Trial pit failed to empty 75% of fill volume after an approximate 40hr period.



Soil Infiltration Rate (m/sec)

$$f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.08
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	5.542
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	n/a

Soil Infiltration Rate (m/sec)

$$f = \frac{1.077}{\text{no value}}$$

f test failed

APPENDIX J - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method



Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	21/07/2020
Test Location:	SA202	PROJECTED SOIL INFILTRATION RATE	7.05E-07 m/sec
Fill Number:	2 - PROJECTED		

Test results:

Time (mins)	Water Level (m bgl)
0	0.48
1	0.49
2	0.50
3	0.51
4	0.52
5	0.52
8	0.55
9	0.55
10	0.56
13	0.58
15	0.59
42	0.69
60	0.72
1012	1.32
1080	1.36
1130	1.39
1180	1.43
1305	1.48
1365	1.51
1435	1.53
1470	1.54
1490	1.55
2450	1.6
5000	1.71

Pit Dimensions (m)

Length	1.90
Width	0.70
Depth	2.10

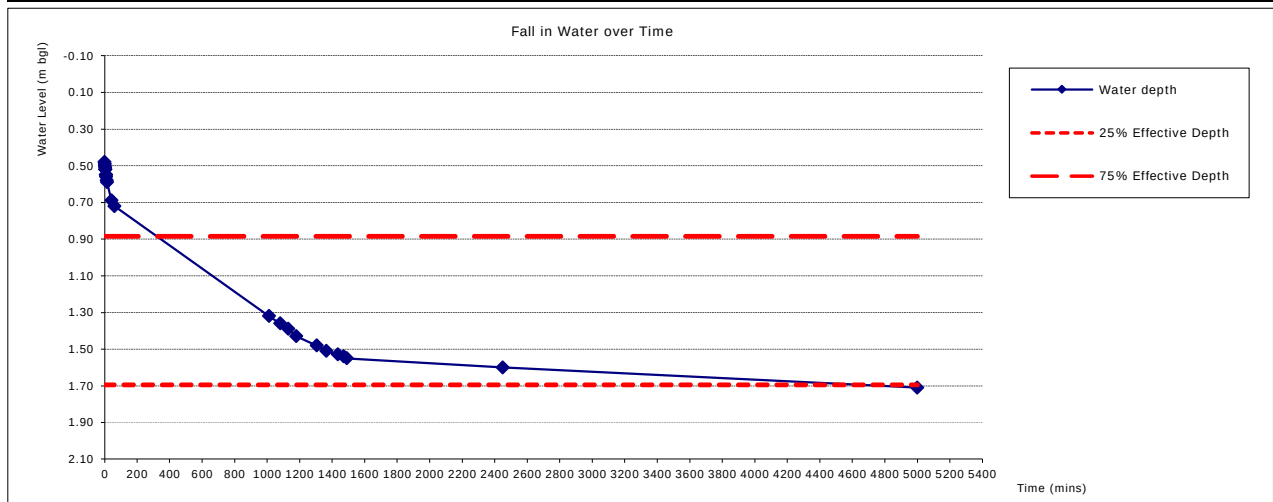
Assumed Invert Level (m bgl)	0.48
------------------------------	------

Ground Conditions:

GL - 0.2m	Grass surface followed by: Soft dark brown sandy clayey SILT. Sand is fine to coarse. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.35m	Gravelly silty clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.35 - 0.85m	Slightly sandy slightly gravelly CLAY with low cobble content. (GLACIAL DIAMICTON)
0.85 - 2.1m	Slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sandstone boulders are subangular ranging in size from around 200mm to 480mm. (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. No groundwater encountered to 2.1m, prior to infilling with aggregate.
5. The infiltration rate calculated is projected only based on extending the test time. It should be used with caution.



Soil Infiltration Rate (m/sec)

$$f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.08
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	5.542
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	4592

Soil Infiltration Rate (m/sec)

$$f = \frac{1.077}{1527022.527}$$

$$f \text{ 7.05E-07}$$

(PROJECTED RATE ONLY)

esp
ENGINEERING
SURVEYING
CONSULTANTS

Project Name:	Flying Start, Dowlais Primary School		
Project Ref:	7485d	Date of Testing:	22/07/2020
Test Location:	SA202	Soil Infiltration Rate	6.71E-07 m/sec
Fill Number:	3		

Test results:

[illegible]

Pit Dimensions (m)

Length	1.90
Width	0.70
Depth	2.10

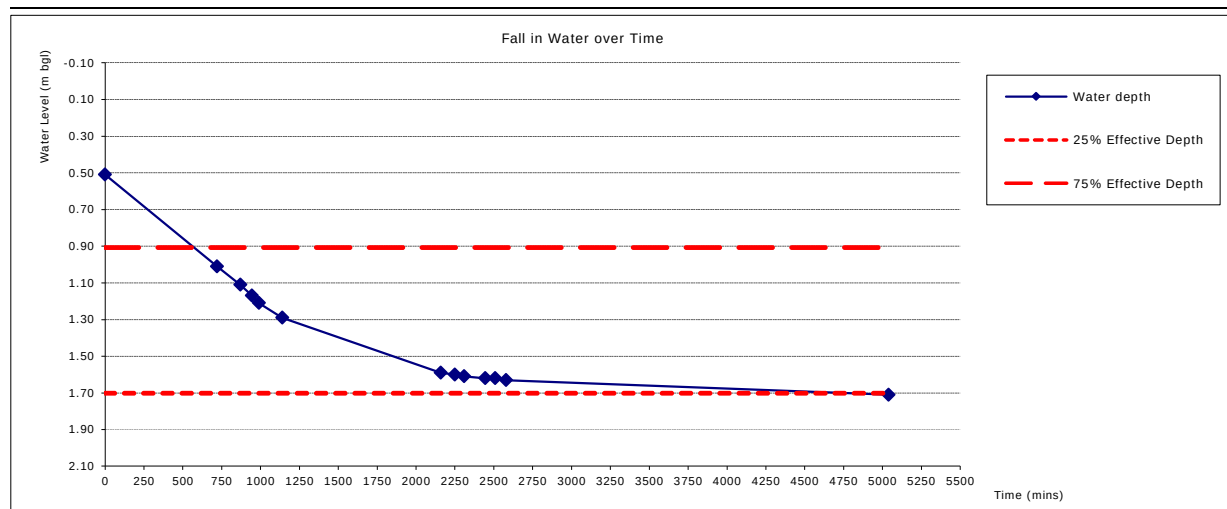
Assumed Invert Level (m bgl)	0.51
------------------------------	------

Ground Conditions:

GL - 0.2m	Grass surface followed by: Soft dark brown sandy clayey SILT. Sand is fine to coarse. Abundant rootlets. (MADE GROUND - TOPSOIL)
0.2 - 0.35m	Gravelly silty clayey fine to coarse SAND with low cobble content. Rare rootlets. (MADE GROUND)
0.35 - 0.85m	Slightly sandy slightly gravelly CLAY with low cobble content. (GLACIAL DIAMICTON)
0.85 - 2.1m	Slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sandstone boulders are subangular ranging in size from around 200mm to 480mm (GLACIAL DIAMICTON)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2016.
2. For stability, following excavation the trial pit was filled with aggregate.
3. During testing the water level was measured via a monitoring well placed in the corner of the test pit.
4. No groundwater encountered to 2.1m, prior to infilling with aggregate.
5. Trial pit emptied 75% of it's fill volume after an approximate 80hr period.



$$\text{Soil Infiltration Rate (m/sec)} = f \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	1.06
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	5.464
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	4809

$$f = \frac{1.057}{1576705.5}$$

$$f = 6.71E-07$$