LAND AT CAE MELIN, LITTLE MILL, PONTYPOOL, MONMOUTHSHIRE

BB3 LIMITED C/O POWELLS

Technical Note – Drainage Statement

231107-KTN-TN-01-A

26th January 2024

The Site
24 Chosen View Road
Cheltenham
GL51 9LT

DOCUMENT CONTROL

Document Status

Revision	Date	Document Author	Status
A	**29.01.24**	**Kris Tovey**	**First Issue**

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APPENDICIES

1.0 INTRODUCTION

1.1 K-Ten Consulting Ltd (K-Ten) provide professional Flood Risk, Infrastructure and Drainage services throughout the UK.

1.2 K-Ten have been commissioned by BB3 Limited c/o Powells (applicant) to prepare a technical note to support an allocation at Land at Cae Melin, Little Mill, Pontypool, Monmouthshire.

1.3 The development consists of the erection of up to 20 residential dwellings with associated access and infrastructure.

1.4 This technical note will summarise the proposed development foul and surface water drainage requirements in support of an allocation of the site through the Local Development Plan.

2.0 EXISTING SITE CONDITIONS

Site Location

2.1 The site is located to the east of Little Mill, Pontypool, Monmouthshire, on land off the Berthon Road A472. The approximate site co-ordinates are E332590, N203098 and National Grid SO325030, with the nearest post code NP4 0HY.

2.2 The current site is classified as Greenfield with an agricultural gate access off Cae Melin to the northwest.

Adjacent Development

2.3 Planning has been granted and the development constructed on the adjacent site immediately to the west (ref 2012/00907) for the erection of up to 20 no dwellings together with associated infrastructure and engineering work.

2.4 The development surface water strategy is for discharge of proposed roof and hardstanding catchment to permeable 'formpave' construction within private access and parking areas.

2.5 Development foul drainage connects to an existing 225mm diameter Welsh Water public within Berthon Road A472.

Existing Drainage

2.6 Welsh Water asset records identify an existing public 225mm diameter foul asset within Berthon Road A472 running along the front of the site.

2.7 There are no known surface water Welsh Water public assets in close proximity to the site.

2.8 A Highways drainage system is located within Berthon Road A472 and discharges to the Berthin Brook to the south.

Existing Hydrology

2.9 The closest watercourse is the Berthin Brook located approximately 50m to the south of the site.

2.10 The Brook runs along the Berthon Road A472 within Highways land immediately outside of the site boundary.

2.11 Online soil maps indicate the site to be underlain by freely draining loamy soils.

Topography

2.12 Based on OS map data the site topography falls from approximately 63m AOD on the northern boundary to approximately 58m AOD on the southern boundary with the Berthon Road A472.

2.13 The average site gradient is 1:40 (2.5%)

Infiltration Testing

2.14 Infiltration testing was completed on site between 15th and 16th January 2024 and testing was aborted after two days due to slow drainage and unfavourable results, in accordance with BRE365.

2.15 Refer to **Appendix A** for infiltration test results.

3.0 PROPSOSED SURFACE WATER DRAINAGE STRATEGY

3.1 A surface water strategy is proposed to manage and reduce the flood risk and surface water run-off from the development, with consideration to SuDS.

3.2 The SuDS hierarchy dictates that surface water run off should be managed as high up the following list as practically possible:

a) into the ground (via infiltration) and re-use, or then;
b) to a surface water body, or then;
c) to a surface water sewer, highway drain or another drainage system, or then;
d) to a combined sewer.

3.3 Testing on site confirmed infiltration is not viable. Therefore, a positive connection to the existing watercourse is proposed.

3.4 In accordance with Council water management guidelines, development surface water discharge will be restricted to existing Greenfield rates (QBar) and attenuated for all storms up to and including the 1 in 100 year plus a 40% allowance for climate change.

3.5 Attenuation will be provided within SuDS features which will include basins, swales and permeable paving in accordance with the SuDS manual.

3.6 A connection to the Berthin Brook will require a Land Drainage Consent.

4.0 PROPOSED FOUL DRAINAGE STRATEGY

4.1 The development foul discharge will connect to the existing 225mm Welsh Water public main within Berthon Road A472 and served by the Little Mill Wastewater Treatment facility.

4.2 An assessment will be required to confirm available capacity within the public network for development flows.

4.3 The Treatment facility does not have an existing phosphorus permit, but the SAGIS modelling has evidenced the requirement to introduce one, subject to NRW approval following their review of permits exercise.

APPENDIX A – INFILTRATION TEST RESULTS

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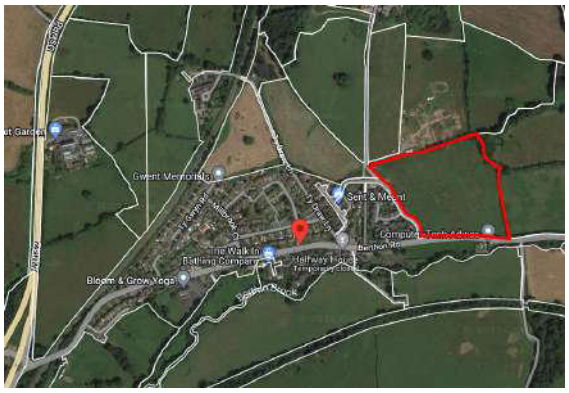
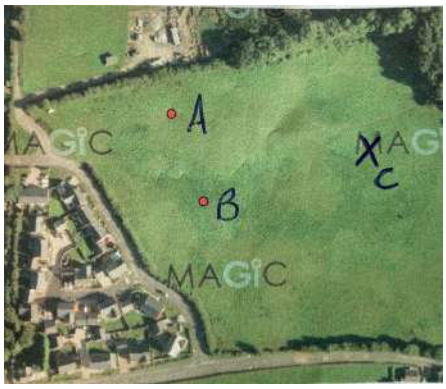
INFILTRATION ASSESSMENT REPORT - BRE365

Client	Site Address	Project No
BB3 Limited % Powells Rural Property Professionals	**Land at Cae Melin, Little Mill, Pontypool**	CLC105
Date undertaken	**Access Notes**	**Weather**
16/01/24 & 17/01/24	Gate access as per clients instructions	dry
Line Search results		
No utilities or risks identified in the dig area. Overhead cables identified.		
Water table check results		
ground excavated down to 250cm deep. No highly permeable layers of soil found. Bedrock not hit. Water table was not hit in 250cm deep excavation.		

Site Location	Dig Locations
	

Ground water level check - Photos	
depth of pit	soil profile of ground water check pit
	

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INFILTRATION ASSESSMENT REPORT - BRE365

BRE365 INFILTRATION ASSESSMENT RESULTS — PIT A (north)

Length	Width	Depth
120cm	30cm	150cm

Test No.	Time recorded at 100% full	Time recorded at 75% full	Time recorded at 50% full	Time recorded at 25% full	Time recorded at empty	Timing from 75% to 25% (minutes)
1	10.49	12.55	-	-	-	-
2	-	11:42	-	-	-	-
3	-	-	-	-	-	-

Notes:

15/01/24 test 1
150cm 10:49
138 11:08
129 11:39
120cm 12:26
112.5cm 12:55
105cm 14:02
96cm 15:18
88cm 16:04
The following day 16/01/24 at 8:26am 65cm of water still remaining in pit A.

16/01/24 test 2
112.5cm 11:42
107cm 12:08
101cm 12:45
94cm 13:35
91cm 14:31

Testing aborted due to extremely slow draining pits and unfavourable results.

BRE365 infiltration testing - Photos

excavated pit depth

full pit

Test in progress

test in progress

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INFILTRATION ASSESSMENT REPORT - BRE365

BRE365 INFILTRATION ASSESSMENT RESULTS

PIT B (south)

Length	Width	Depth
120cm	30cm	150cm

Test No.	Time recorded at 100% full	Time recorded at 75% full	Time recorded at 50% full	Time recorded at 25% full	Time recorded at empty	Timing from 75% to 25% (minutes)
1	11:35	12:54	-	-	-	-
2	-	11:49	-	-	-	-
3	-	-	-	-	-	-

Notes:

15/01/24 Test 1
150cm 11:35
138cm 11:47
120cm 12:28
112.5cm 12:54
98cm 13:58
91cm 14:24
85cm 15:16
78cm 16:04
Following day 16/01/24 at 08:27, 40cm water still remaining in pit B .

16/01/24 Test 2
112.5cm 11:49
105cm 12:11
96cm 12:48
89cm 13:37
83cm 14:33

Testing aborted due to extremely slow draining pits and unfavourable results.

BRE365 infiltration testing - Photos

full pit - start of test

test in progress

test in progress

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INFILTRATION ASSESSMENT REPORT - BRE365

BRE365 INFILTRATION ASSESSMENT RESULTS — PIT C (east)

Length	Width	Depth
120cm	30cm	112cm

Test No.	Time recorded at 100% full	Time recorded at 75% full	Time recorded at 50% full	Time recorded at 25% full	Time recorded at empty	Timing from 75% to 25% (minutes)
1	10.55	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-

Notes:

Water level did not drop in pit C. Water level was still 112cm at 14:35.
Testing aborted due to non-draining pit.

Testing Summary

Due to very slow draining pits on the first day of testing, we telephoned the engineer who looked at calculations which suggested the figures could be favourable if we persevered with testing. A second day of testing was therefore agreed with the agent and engineer. As well as more testing in pits A and B, a third shallower pit C was excavated on the second day of testing with hopes of additional results, however this pit did not drain at all. The existing pits A and B also did not yield favourable results on the second day of testing. It was agreed with the agent and engineer that testing in all three pits should be aborted and the pits reinstated. Results sent to agent and engineer.