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Understanding Ground Conditions

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BS39 5XP
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Job No:	21035	**Site Photographs**	Date
Job Name:	Aston Hall Barns, Aston Munslow		06/07/2021
Client:	Mr. & Mrs. D. Cleevely		

Plate 1 TP01.

Plate 2 TP02.

Plate 3 Concrete gulley at TP02.

Plate 4 Line of gulley along E elevation of barn to drain.

Plate 5 TP03.

Plate 6 TP04.

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Job No:	21035
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Site Photographs

Date

06/07/2021

Plate 7 TP05.

Plate 8 TP06.

Plate 9 TP07.

Plate 10 TP08.

Plate 11 TP09.

Plate 12 TP10.

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Site Photographs

Date

06/07/2021

Plate 13 TP11.

Plate 14 TP12.

Plate 15 TP13.

Plate 16 TP14.

Plate 17 TP15.

Plate 18 TP16.

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Job Name:	Aston Hall Barns, Aston Munslow
Client:	Mr. & Mrs. D. Cleevely

Site Photographs

Date

06/07/2021

Plate 19 TP18.

Plate 20 TP19.

Plate 21 TP20.

Plate 22

Plate 23 TP22.

Plate 24 TP23.

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Job No:	21035	**Site Photographs**	Date
Job Name:	Aston Hall Barns, Aston Munslow		06/07/2021
Client:	Mr. & Mrs. D. Cleevely		

Plate 25 TP23.

Plate 26 TP24.

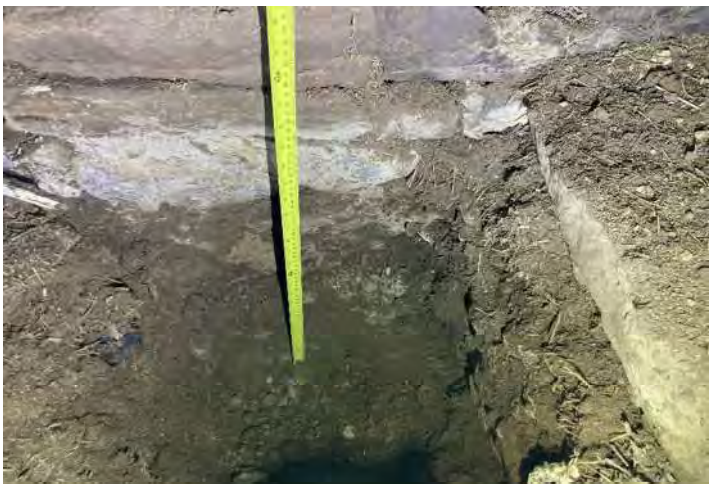

Plate 27 TP25.

Plate 28 TP26.

Plate 29 TP27.

Plate 30 TP28.

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Job No:	21035	**Site Photographs**	Date
Job Name:	Aston Hall Barns, Aston Munslow		06/07/2021
Client:	Mr. & Mrs. D. Cleevely		

Plate 31 TP30.

Plate 32 TP31.

Plate 33 TP31.

Plate 34 TPA.

Plate 35 TPA, post-soakaway testing, structure of the rock more visible with some tight fractures.

Plate 36 TPA. The dip of the bedding planes measures at c.18˚ down to the E.

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Job No:	21035	**Site Photographs**	Date
Job Name:	Aston Hall Barns, Aston Munslow		06/07/2021
Client:	Mr. & Mrs. D. Cleevely		

Plate 37 TPA arisings.

Plate 38 TPB, rock was more 'crumbly'.

Plate 39 TPB arisings.

Plate 40 TPC.

Plate 41 TPD.

Plate 42 TPE.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPA
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level: 157.00	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER	Dimensions (m): Depth 0.85	1.8 × 0.6	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES					Grass over TOPSOIL: (Comprising soft brown slightly sandy slightly gravelly clayey Silt with rare extraneous materials and abundant fine fibrous roots throughout. Sand is fine to coarse. Gravel is angular to subrounded fine to medium of siltstone, quartzite, brick and rare charcoal.)
				0.22	156.78		Very weak thinly bedded olive green grey SILTSTONE. (UPPER LUDLOW SHALES)
				0.85	156.15		End of pit at 0.85 m

1
2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Breaker required from 0.25m depth.
Ease of excavation: Hard.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPB
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level: 156.80	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER	Dimensions (m): Depth 0.80	2.1 / 0.6	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.20	156.60		Grass over TOPSOIL: (Comprising soft brown slightly sandy slightly gravelly clayey Silt with rare extraneous material and abundant fine fibrous roosts throughout. Sand if fine to medium. Gravel is angular to subrounded fine to medium of siltstone, quartzite, brick and rare charcoal.)
				0.80	156.00		Extremely weak thinly bedded olive green grey SILTSTONE. (UPPER LUDLOW SHALES)
							End of pit at 0.80 m

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Ease of excavation: Rock was 'crumbly' and ripped out fairly easily by bucket.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPC
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level:	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Dimensions (m): 1.45 × 0.6, Depth 0.72	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.15			Grass over TOPSOIL: (Comprising loosely compact brown slightly sandy silty angular medium Gravel of basalt.)
	0.40	ES		0.60			Possible MADE GROUND: (Comprising soft grey brown mottled orange slightly sandy slightly gravelly silty Clay. Sand is fine to coarse. Gravel is angular to subangular fine to medium typically fine of brick, siltstone and charcoal.)
				0.72			Very weak thinly bedded olive green grey SILTSTONE. (UPPER LUDLOW SHALES)
							At 0.72m depth: Mexecone - Refusal.
							End of pit at 0.72 m

1

2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Ease of excavation: Hard. Bucket scraping along base of pit.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPD
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level:	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Dimensions (m): 1.05 × 0.6, Depth 0.85	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.05	ES					Grass over TOPSOIL: (Comprising soft brown slightly sandy clayey Silt with abundant fine fibrous roots throughout.)
				0.10			
	0.20	ES					Possible MADE GROUND: (Comprising soft yellow brown mottled grey slightly sandy slightly gravelly clayey Silt. Sand is fine to medium. Gravel is angular fine to medium of siltstone.)
				0.25			Possible MADE GROUND: (Comprising soft brown slightly sandy gravelly Clay. Sand is fine to medium. Gravel is angular fine to coarse of siltstone and rare charcoal.)
							At 0.35m depth: Mexecone - 1, Refusal.
				0.50			Very weak thinly bedded olive green grey SILTSTONE. (UPPER LUDLOW SHALES)
				0.85			End of pit at 0.85 m

1

2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Ease of excavation: Moderate. Ripped out as cobbles.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPE
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level:	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Dimensions (m): 2.1 × 1 Depth 1.20	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES					Grass over MADE GROUND: (Comprising soft dark grey slightly sandy slightly gravelly clayey Silt with abundant fine fibrous roots throughout. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick, siltstone and rare charcoal.)
				0.40			Very weak olive green grey SILTSTONE recovered as angular tabular cobbles with much silty sandy angular to subangular medium to coarse gravel. (UPPER LUDLOW SHALES)
							Between 0.40-0.90m depth: Made Ground locally deeper in c.0.30m wide strip around pipework.
							c.0.80m depth: 32mmØ water pipe exposed running E-W across pit.
				1.20			End of pit at 1.20 m

1
2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Ease of excavation: Moderate, no breaker required.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPF
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level:	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER	Dimensions (m): Depth 0.30	0.3 / 0.3	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over TOPSOIL: (Comprising soft brown slightly sandy slightly gravelly clayey Silt with fine fibrous roots throughout. Sand is fine to medium. Gravel is angular to subangular fine of siltstone.) End of pit at 0.30 m

1
2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Hand excavated.

Stability: Stable.

Intégrale
Understanding Ground Conditions

Trial Pit Log

Trialpit No
TPG
Sheet 1 of 1

Project Name:	Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: - Level:	Date 09/07/2021
Location:	Aston Hall, Aston Munslow, Shropshire, SY7 9ER	Dimensions (m): Depth 0.30	0.3 / 0.3	Scale 1:10
Client:	Mr. & Mrs. D. Cleevely			Logged JB

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over TOPSOIL: (Comprising soft brown slightly sandy slightly gravelly clayey Silt with abundant fine fibrous roots throughout. Sand is fine to medium. Gravel is angular fine of siltstone.)
							End of pit at 0.30 m

1

2

Remarks: No groundwater encountered.
No visual or olfactory contamination noted.
Hand excavated.

Stability: Stable.

Appendix E

Soakaway Analyses

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

Registered Office: The Granary, Chewton Fields, Ston Easton, Somerset, BA3 4BX United Kingdom VAT Reg. No. 609 7402 37

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STANDARD METHODOLOGY FOR SOAKAWAY TESTING

Some trial pits also include soakaway testing in order to assess the soils permeability for design of stormwater drainage. The soakaway tests were completed in accordance with BRE Digest 365 (September 1991). This included excavation of pits to generally 1-2m depth, which were then filled with water on one to three occasions depending on the rate of infiltration. The water was supplied by a water bowser and discharged into the pits using a centrifugal pump. The falling head was recorded and therefore the rate of infiltration into the soils beneath.

The soakaway results have been prepared using a Microsoft Excel spreadsheet.

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Job No:	21035	**Soil Infiltration Rate Test**			
		BRE 365 (2007) Soakaway Design			
Job Name:	Aston Hall Barns, Aston Munslow			Hole:	**TPA**
Prepared By:	JB	Date:	02/09/2021	Sheet:	1 of 2
Checked By:		Date:			

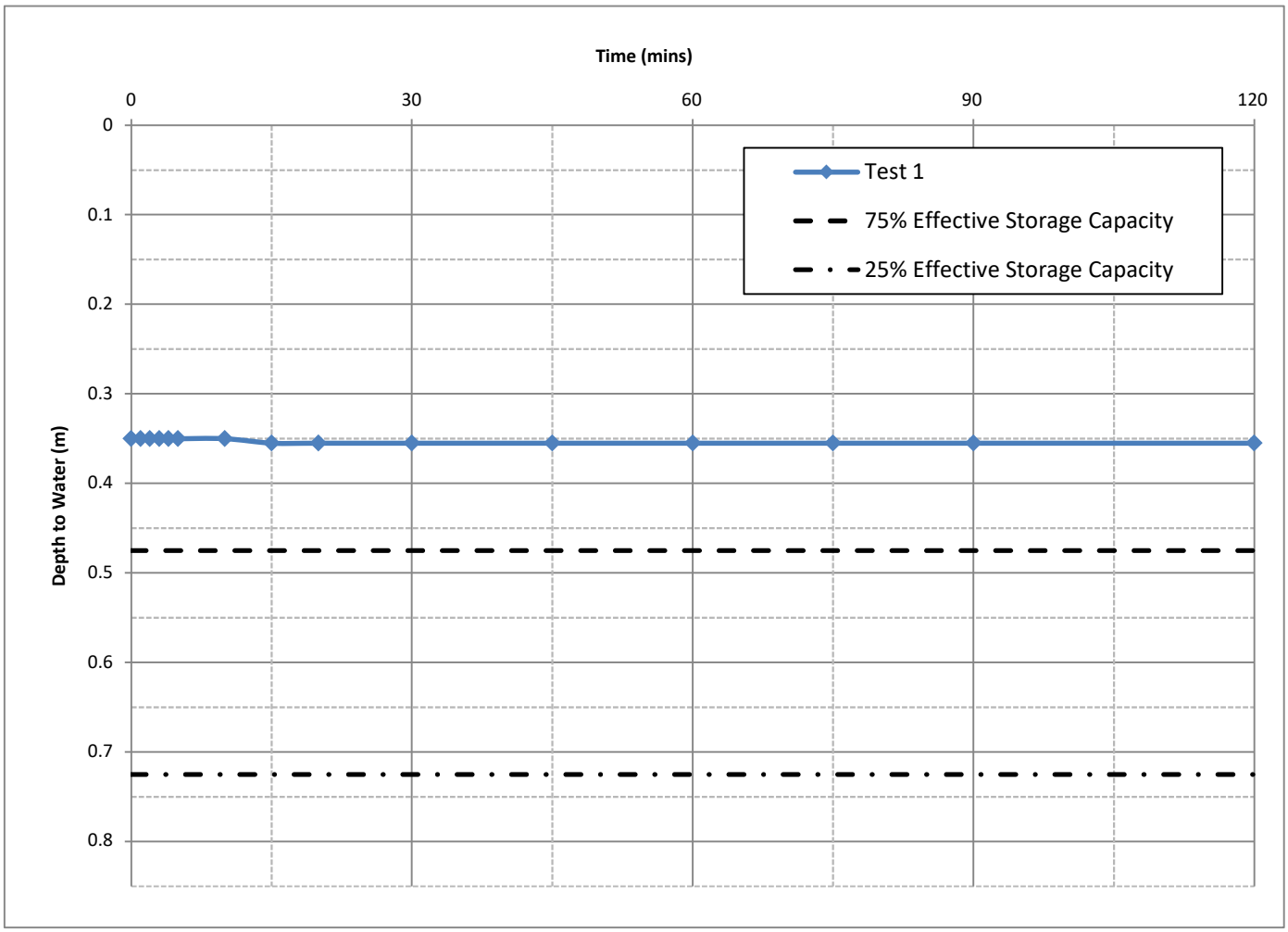
Date of Test: **9th July 2021**

Length (m): **1.80** **Width (m):** **0.60** **Depth (m):** **0.85**

Remarks: Testing terminated after negligible infiltration recorded in 2 hours.

	Test 1	Test 2	Test 3
Effective Storage Depth$_{75\text{-}25\%}$ (m)	0.25	-	-
A = Surface Area$_{50\%}$ (m^2)	2.28	-	-
V = Effective Storage Volume$_{75\text{-}25\%}$ (m^3)	0.27	-	-
t = Time$_{75\text{-}25\%}$ (mins)	-	-	-
Soil Infiltration Rate (m/s)	**N/A**	**-**	**-**

Soil Infiltration Rate (m/s)	**Practically Impervious**



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Job No:	21035	**Soil Infiltration Rate Test**			
		BRE 365 (2007) Soakaway Design			
Job Name:	Aston Hall Barns, Aston Munslow			Hole:	**TPB**
Prepared By:	JB	Date:	02/09/2021	Sheet:	2 of 2
Checked By:		Date:			

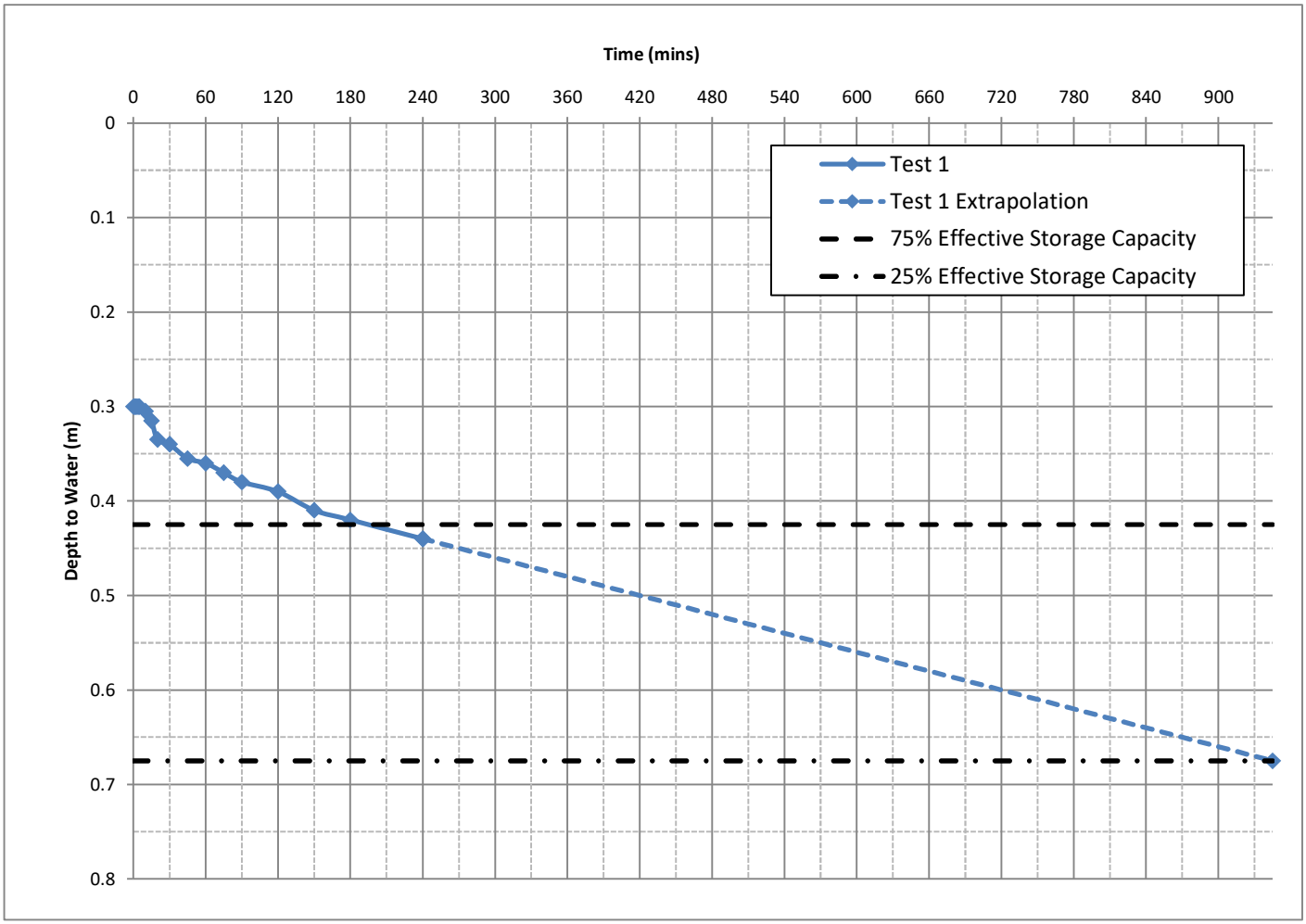
Date of Test: 9th July 2021

Length (m): 2.10 **Width (m):** 0.60 **Depth (m):** 0.80

Remarks:

	Test 1	Test 2	Test 3
Effective Storage Depth$_{75\text{-}25\%}$ (m)	0.25	-	-
A = Surface Area$_{50\%}$ (m^2)	2.61	-	-
V = Effective Storage Volume$_{75\text{-}25\%}$ (m^3)	0.32	-	-
t = Time$_{75\text{-}25\%}$ (mins)	750.0	-	-
Soil Infiltration Rate (m/s)	**2.68E-06**	**-**	**-**

Extrapolated Soil Infiltration Rate (m/s)	**2.68E-06**



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Job No:	21035	**Soil Infiltration Rate Test**			
		Building Regulations Part H (2010)			
Job Name:	Aston Hall Barns, Aston Munslow			Hole:	**TPF**
Prepared By:	JB	Date:	02/09/2021	Sheet:	1 of 2
Checked By:		Date:			

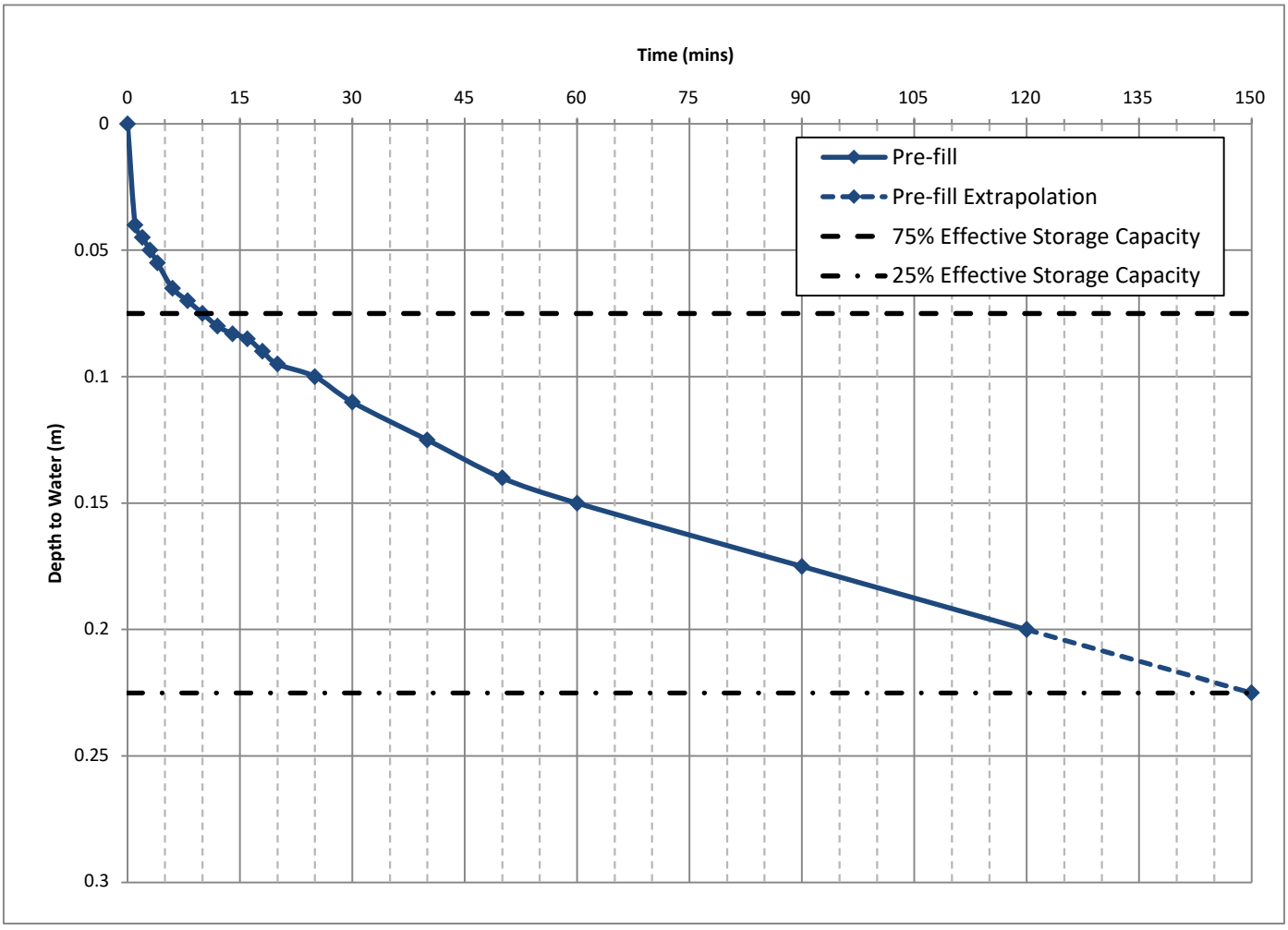
Date of Test: **9th July 2021**

Length (m): **0.30** **Width (m):** **0.30** **Depth (m):** **0.30**

Remarks: Pre-fill run only. No formal testing undertaken in time allowed on-site. Pit dug within Topsoil, due to shallow rockhead precluding deeper excavation by hand.

	Pre-fill		
Effective Storage Depth$_{75\text{-}25\%}$ (m)	0.150		
t = Time$_{75\text{-}25\%}$ (secs)	8400.0		
Vp (s/mm)	**56.0**		

Extrapolated VP (s/mm)	**18.67**



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Job No:	21035	**Soil Infiltration Rate Test**			
		Building Regulations Part H (2010)			
Job Name:	Aston Hall Barns, Aston Munslow			Hole:	**TPG**
Prepared By:	JB	Date:	02/09/2021	Sheet:	2 of 2
Checked By:		Date:			

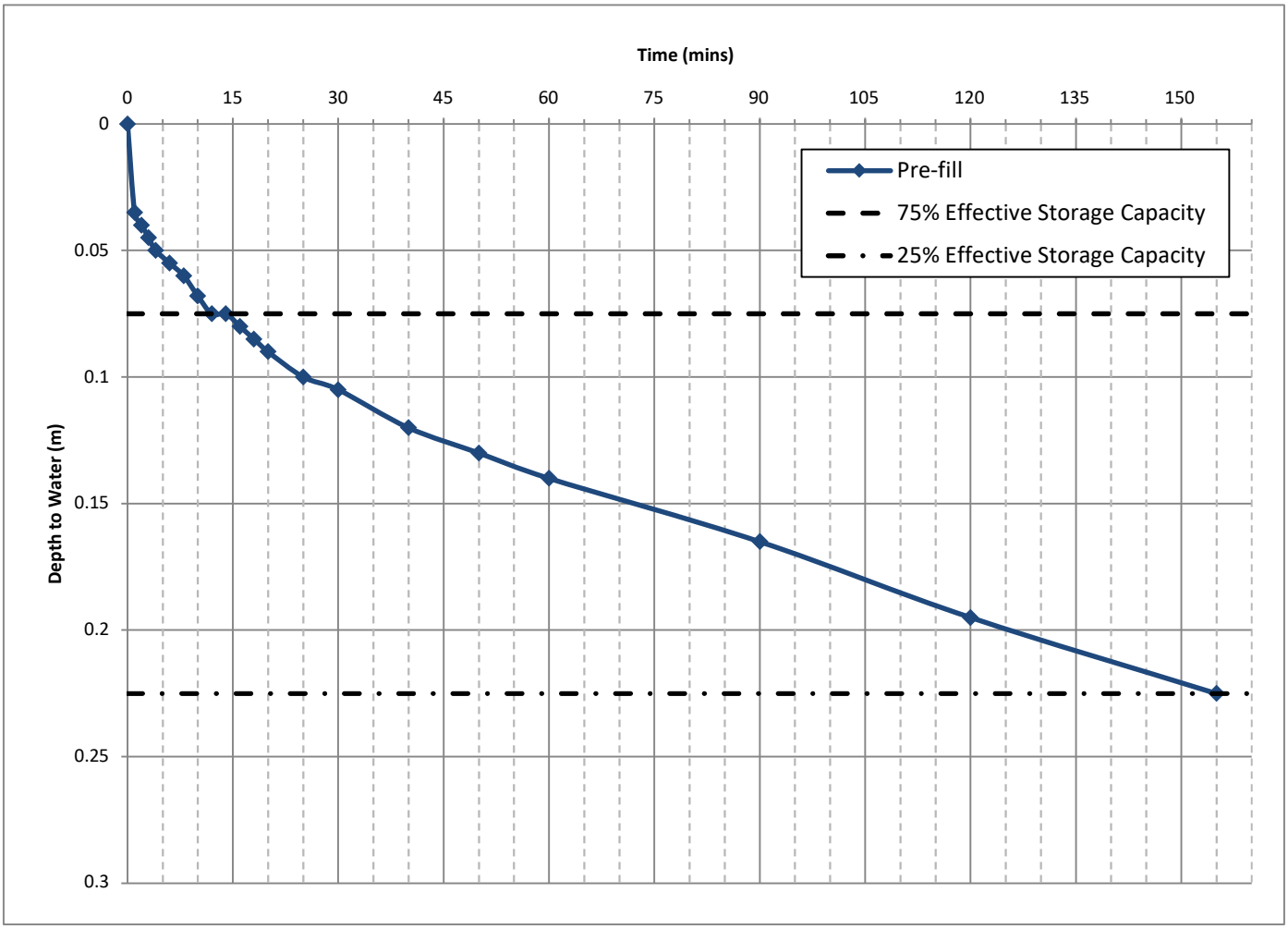
Date of Test: **9th July 2021**

Length (m): **0.30** **Width (m):** **0.30** **Depth (m):** **0.30**

Remarks: Pre-fill run only. No formal testing undertaken in time allowed on-site. Pit dug within Topsoil, due to shallow rockhead precluding deeper excavation by hand.

	Pre-fill		
Effective Storage Depth$_{75\text{-}25\%}$ (m)	0.150		
t = Time$_{75\text{-}25\%}$ (secs)	8580.0		
Vp (s/mm)	**57.2**		

Recorded VP (s/mm)	**19.07**



Appendix F

Rotary Borehole Logs & Photographs

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

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STANDARD METHODOLOGY FOR ROTARY CORED BOREHOLES

Boreholes were sunk utilising double core barrel rotary drilling techniques. Details of the drilling rig and techniques used are provided on each of the borehole records included as a separate appendix. The locations are given in Figure 1 and selected using information on the proposed redevelopment, existing buried services and structures, ongoing site use, reinstatement requirements and time constraints.

In general open holing or dry core drilling is utilised through soils and superficial strata, with casing used where necessary to prevent collapse of the unconsolidated material. The first core run is then commenced and core run lengths amended to suit the quality of rock returns being achieved.

Groundwater observations are given on the borehole records. The depth of initial groundwater strikes and standing levels on completion are recorded.

The probing was directed and supervised full-time by an experienced geologist who logged the rock cores including details of recover and rock quality as Total Core Recovery, Solid Core Recovery and Rock Quality Designation. Colour photographs were taken of the cores and are available on request.

On completion the boreholes were either backfilled with their spoil, or a standpipe installation fitted.

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EXPLORATORY HOLE EXPLANATION SHEET

SAMPLES AND TESTS

AMAL	Amalgamated sample
B	Bulk disturbed sample
BLK	Block sample
C	Core sample
CBR	CBR mould sample
D	Small disturbed sample
ES	Environmental sample
EW	Environmental water sample
G	Gas sample
J	Jar sample
LB	Large bulk disturbed sample
M	Mazier type sample
SPTLS	Standard penetration sample
TW	Thin-walled push in sample
U	Undisturbed sample - open drive
UT	Thin wall open drive tube sampler
W	Water sample
HVP	Hand-held shear vane test
HSV	Hand-held shear vane test
MEX	Mexicone penetrometer test
PID	Photoionization detector (gas)

SOILS

- Topsoil
- Concrete
- Made Ground (Fill)
- Peat
- Clay
- Silt
- Sand
- Gravel
- Cobbles
- Boulders

Note: composite soil types will be signified by combined soil types e.g.

- Silty Sand

SEDIMENTARY

- Chalk
- Limestone
- Conglomerate
- Breccia
- Sandstone
- Siltstone
- Mudstone
- Shale
- Coal
- Pyroclastic (Volcanic Ash)
- Gypsum, Rocksalt, etc.
- Void/Broken Ground

IGNEOUS

- Coarse Grained Igneous
- Medium Grained Igneous
- Fine Grained Igneous

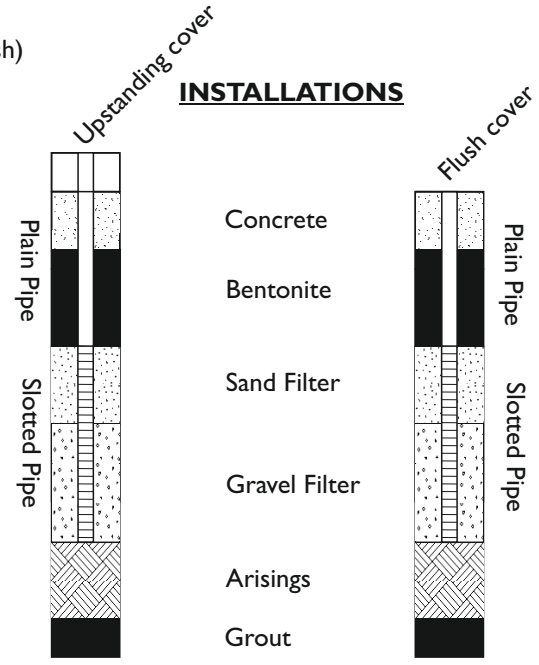
METAMORPHIC

- Coarse Grained Metamorphic
- Medium Grained Metamorphic
- Fine Grained Metamorphic

WATER SYMBOLS

- Water Level (after 20 minutes)
- Water Strike

INSTALLATIONS



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Borehole Log

Borehole No.
BH01
Sheet 1 of 1

Project Name: Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: -	Hole Type RO
Location: Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Level: 155.75	Scale 1:20
Client: Mr. & Mrs. D. Cleevely		Dates: 06/07/2021 - 06/07/2021	Logged By JB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.05	ES		0.10	155.65		Grass over TOPSOIL: (Comprising soft dark brown slightly sandy slightly gravelly silty Clay with little extraneous material and abundant fine fibrous roots throughout. Sand is fine to coarse. Gravel is angular to subangular fine or brick, quartzite and charcoal.)
	▼	0.20	ES					MADE GROUND: (Comprising soft dark brown slightly sandy slightly gravelly silty Clay with low cobble content and occasional fine roots throughout. Sand is fine to medium. Gravel is angular of brick and charcoal with rare metal fragment. Cobbles are angular of brick.)
					0.60	155.15		Very weak olive green grey SILTSTONE (recovered as silt with some fine subangular gravel). (UPPER LUDLOW SHALES)
		1.50	D					
					3.00	152.75		End of borehole at 3.00 m

1
2
3
4

Remarks
Slight seepage at 0.3m.
No visual or olfactory contamination.
Hand excavated pit to 0.6m depth.
Monitoring well installed to 3.0m.

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Rotary Core Log

Borehole No.
BH02
Sheet 1 of 1

Project Name: Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: -	Hole Type RC
Location: Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Level: 158.20	Scale 1:30
Client: Mr. & Mrs. D. Cleevely		Dates: 06/07/2021 - 06/07/2021	Logged By JB

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.50		100	70	30	0.09	158.11		Grass over TOPSOIL: (Comprising soft dark brown slightly sandy slightly gravelly Clay with fine fibrous roots throughout. Sand is fine to medium. Gravel is angular fine of siltstone and rare sandstone.)
							0.35	157.85		MADE GROUND: (Comprising moderately compact orange mottled brown slightly silty sandy angular fine to coarse Gravel of brick with lesser siltstone and rare limestone.)
		0.50 - 2.00		73	60	14				Very weak thickly laminated olive green grey SILTSTONE with occasional marine fossils. Slightly weathered. Discontinuities: Very closely to closely, horizontal locally sub-horizontal, planar, rough locally smooth, open to moderately wide with occasional gravel infill and rare iron staining on fracture surfaces. (UPPER LUDLOW SHALES)
										From 0.35-0.50m depth: Highly fractured, recovered as coarse gravel and cobbles.
										From 0.74-0.79m depth: Sub-vertical, undulating, rough, open fracture. No infill.
										At 0.5m depth: CPT (25 for 60mm/50 for 70mm) N=214*
										At 1.0m depth: Becoming weak.
		2.00 - 3.50		91	69	17				*At 2.0m depth: Becoming medium strong.*
										At 2.0m depth: CPT (25 for 50mm/50 for 60mm) N=250*
										Below 2.95m depth: Locally with bands of dark grey siltstone.
		3.50 - 5.00		95	79	31				*At 3.50m depth: CPT (25 for 50mm/50 for 60mm) N*=250*
							5.00	153.20		*At 5.0m depth: CPT (25 for 60mm/50 for 50mm) N*=300*
										End of borehole at 5.00 m

1 2 3 4 5 6

Remarks
No groundwater encountered.
No visual or olfactory contamination noted.
Dynamically sampled from Ground Level to 0.5m depth.
Monitoring well installed at 3.0m depth.

Intégrale
Understanding Ground Conditions

Rotary Core Log

Borehole No.
BH03
Sheet 1 of 1

Project Name: Aston Hall Barns, Aston Munslow	Project No. 21035	Co-ords: -	Hole Type RC
Location: Aston Hall, Aston Munslow, Shropshire, SY7 9ER		Level: 155.70	Scale 1:30
Client: Mr. & Mrs. D. Cleevely		Dates: 06/07/2021 - 06/07/2021	Logged By JB

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.50		100			0.15	155.55		Grass over TOPSOIL: (Comprising soft dark brown slightly sandy slightly gravelly CLay with fine fibrous roots throughout. Sand is fine to medium. Gravel is angular fine of siltstone.)
							0.50	155.20		MADE GROUND: (Comprising loosely compact dark grey angular fine to medium Gravel of crystalline limestone.)
		0.50 - 2.00		80	41	0				Very weak thickly laminated olive green grey SILTSTONE with occasional marine fossils. Slightly weathered. Discontinuities: Very closely to closely spaced, horizontal locally sub-horizontal, planar, rough locally smooth, open to moderately wide with occasional fine gravel infill and rare iron staining on fracture faces. (UPPER LUDLOW SHALES) *At 1.0m depth: Becoming weak.* *At 2.0m depth: Becoming medium strong.* *From 2.28-2.71m depth: Sub-vertical, rough, open fracture with occasional iron staining and fine gravel infill.*
		2.00 - 3.50		93	80	7				*Below 3.0m depth: Locally with bands of dark grey siltstone.*
		3.50 - 5.00		95	73	38				
							5.00	150.70		End of borehole at 5.00 m

1 2 3 4 5 6

Remarks
No groundwater encountered.
No visual or olfactory contamination noted.
Dynamically sampled from Ground Level to 0.5m depth.

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Understanding Ground Conditions

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Wick Road
Bishop Sutton
BS39 5XP
Tel: 01275 333 036
www.integrale.uk.com

Job No:	21035			**Rock Core Photographs**	Hole ID
Job Name:	Aston Hall Barns, Aston Munslow				BH02
Client:	Mr. & Mrs. D. Cleevely				Sheet No.
Logged By:	JB	Date:	06/07/2021		1 of 1

Box No:	1 of 2	Depth:	0.00-2.00m	Details:	

Box No:	2 of 2	Depth:	2.00-5.00m	Details:	

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BS39 5XP
Tel: 01275 333 036
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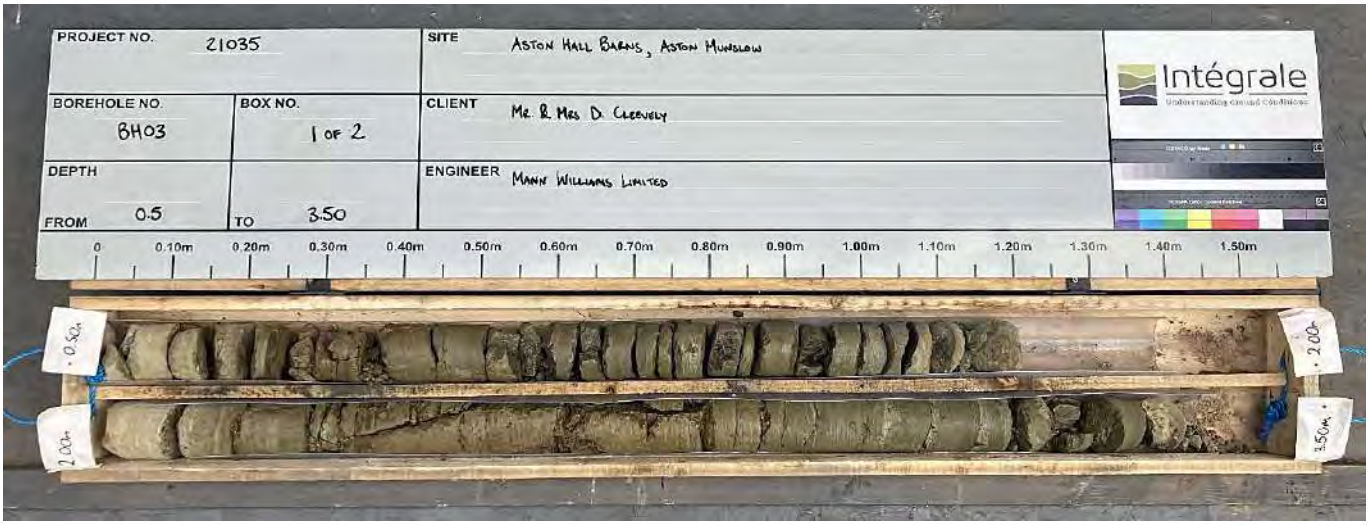
Job No:	21035			**Rock Core Photographs**	Hole ID
Job Name:	Aston Hall Barns, Aston Munslow				BH03
Client:	Mr. & Mrs. D. Cleevely				Sheet No.
Logged By:	JB	Date:	06/07/2021		1 of 2



Box No:	1 of 2	Depth:	0.50-3.50m	Details:	

Box No:	2 of 2	Depth:	3.50-5.00m	Details:	

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Appendix G

Gas & Groundwater Monitoring

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

Registered Office: The Granary, Chewton Fields, Ston Easton, Somerset, BA3 4BX United Kingdom VAT Reg. No. 609 7402 37

Intégrale
Understanding Ground Conditions

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset,
BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

STANDARD METHODOLOGIES FOR STANDPIPE INSTALLATIONS, SAMPLING and MONITORING FOR GAS AND GROUNDWATER

Standpipe Installations in Trial Pits

Simple 30-50mm diameter plastic standpipes are installed in trial pits during backfilling. These consist of slotted pipe throughout the buried length to within 0.5m of the ground surface, with unslotted pipe above. These are capped off with removable stop-ends above ground level. They provide a useful guide to soil gas conditions within the backfilled trial pit, however some soil gas will be lost by dispersal within the loose backfill at the surface of the pit. They are commonly used for monitoring standing groundwater levels which would develop within excavations, however careful consideration has to be given to the possible infiltration of rainfall and throughflow into the sump created by the excavated pit.

Standpipe Installations in Boreholes

Simple standpipes to measure the hydrostatic head of groundwater are formed in boreholes using 50mm diameter pipe. The details of individual installations are provided on borehole records. Typically the lower length is formed in slotted pipe, with the upper 1m unslotted. The annulus between the riser pipe and the borehole wall is filled with clean granular material. Details of any bentonite seals or grouting are given on the borehole records. A removable gas tap is fitted where gas monitoring is required and standpipes typically have a metal access cover concreted in at ground level.

Standpipe piezometers are formed by using a Casagrande type piezometer tip at the base of the pipe, set in a granular response zone of sand or pea gravel. The response zone is isolated from the strata above and below by placing 500mm thick bentonite seals. The remaining annulus above the bentonite seal is filled with a cement bentonite grout or similar.

Groundwater Monitoring & Sampling

Details of return monitoring visits are included in this appendix. Groundwater standing levels are measured by inserting an electrically operated dip meter into the standpipe and recording the level to 2 decimal places, relative to existing ground level. Where groundwater levels are critical to calculation of hydraulic gradients or flow directions, the measurement is taken to 3 decimal places and to a marked point on the standpipe cover. That point is then surveyed and levelled to provide accurate calculations.

Groundwater samples are recovered using either Waterra valves and sample tubing or by manually lifting water from the standpipe using a bailer. For contamination analyses, the boreholes are initially purged by removing up to 3 borehole volumes of water, allowing the rest level to redevelop and taking a sufficient sample into custom containers. If groundwater does not recover sufficiently, the purged water may be used as the sample.

Gas Monitoring

Monitoring is usually completed in standpipes prior to groundwater measurements, using portable instruments. Details are given on the monitoring tables, and typically using a PhoCheck Tiger photoionisation detector to measure volatile organic compounds in ppm and a GA5000 Gas meter to measure oxygen, carbon dioxide and methane, both by % Lower Explosive Limit and % Volume. Atmospheric pressure and temperature are also recorded. Measurements are taken immediately on opening the gas valve and the highest to lowest levels recorded. If levels fluctuate, then this is recorded, with the maximum reading and a more typical or rest level given.

Intégrale
Understanding Ground Conditions

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset, BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

Site	Aston Hall Barns, Aston Munslow
Client	Mr. & Mrs. D. Cleevely
Date	Thursday, August 19, 2021

Job No.	21035
Monitored By	GS
Visit No	1

Weather	Overcast
Air Temperature (°C)	17

Atmospheric Pressure (mbar)	994
Ground Conditions	Dry

Position ID	Time Elapsed (secs)	Gas Flow (l/hr)	%LEL	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	VOC (ppm)	Depth to Product (mbgl)	Depth to Water (mbgl)	Product Thickness (mm)	Well Depth (mbgl)
BH01	0	0.0	0	0.0	2.3	17.0	1.5	-	2.23	-	3.00
	30	0.1									
	60	0.1									
Comments:											
BH02	0	0.1	0	0.0	3.3	4.6	0.0	-	4.40	-	5.00
	30	0.1									
	60	0.1									
Comments: Carbon dioxide stable at 2.8%.											

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset, BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

Site	Aston Hall Barns, Aston Munslow
Client	Mr. & Mrs. D. Cleevely
Date	Thursday, August 26, 2021

Job No.	21035
Monitored By	GS
Visit No	2

Weather	Sunny
Air Temperature (°C)	21

Atmospheric Pressure (mbar)	1005
Ground Conditions	Dry

Position ID	Time Elapsed (secs)	Gas Flow (l/hr)	%LEL	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	VOC (ppm)	Depth to Product (mbgl)	Depth to Water (mbgl)	Product Thickness (mm)	Well Depth (mbgl)
BH01	0	0.0	0	0.0	2.4	17.2	-	-	2.25	-	3.00
	30	0.1									
	60	0.1									
Comments:											
BH02	0	0.0	0	0.0	2.8	5.0	-	-	4.26	-	5.00
	30	0.0									
	60	0.0									
Comments:											

Intégrale
Understanding Ground Conditions

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset, BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

Site	Aston Hall Barns, Aston Munslow
Client	Mr. & Mrs. D. Cleevely
Date	Thursday, September 02, 2021

Job No.	21035
Monitored By	GS
Visit No	3

Weather	Overcast w. sunny spells
Air Temperature (°C)	16

Atmospheric Pressure (mbar)	1012
Ground Conditions	Dry

Position ID	Time Elapsed (secs)	Gas Flow (l/hr)	%LEL	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	VOC (ppm)	Depth to Product (mbgl)	Depth to Water (mbgl)	Product Thickness (mm)	Well Depth (mbgl)
BH01	0	0.0	0	0.0	2.5	17.6	-	-	2.26	-	3.00
	30	0.2									
	60	0.2									
Comments:											
BH02	0	0.1	0	0.0	2.9	5.5	-	-	4.43	-	5.00
	30	0.1									
	60	0.1									
Comments:											

Intégrale

Appendix H

Results of Geotechnical Laboratory Testing

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

Registered Office: The Granary, Chewton Fields, Ston Easton, Somerset, BA3 4BX United Kingdom VAT Reg. No. 609 7402 37

Intégrale
Understanding Ground Conditions

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset,
BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

STANDARD METHODOLOGY FOR GEOTECHNICAL SAMPLING

Soil samples are recovered from trial pits or borehole samples using a stainless steel trowel and immediately placed into airtight plastic tubs or bags, as appropriate for the testing. If required the soil samples may be wrapped in cling film, particularly in suspected desiccated soils. Samples are labelled with the site name, investigation location and depth and placed into either cool boxes or large bulk bags for transit from site. An analytical schedule is drawn up in line with the actual ground conditions proven, proposed site use and likely design parameters.

Samples are sent to a specialist testing laboratory. Testing is completed in line with BS1377 as far as possible and details of the test method and UKAS accreditation are provided by the laboratory on the results sheets in a separate appendix.

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

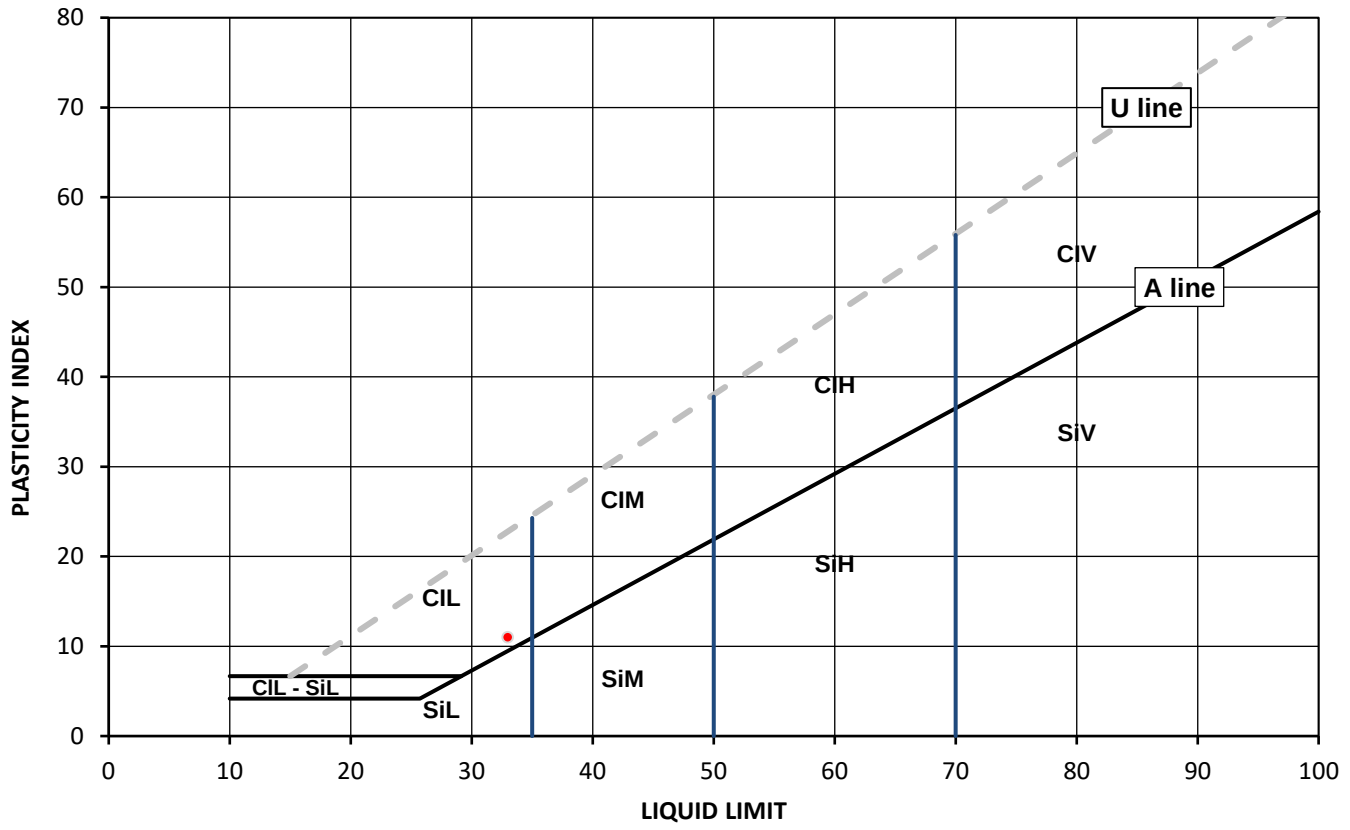
Client:	Integrale Limited	Client Reference:	21035
Client Address:	Unit 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP	Job Number:	21-88006
		Date Sampled:	06/07/2021
		Date Received:	20/07/2021
Contact:	Joseph Begaj	Date Tested:	26/07/2021
Site Address:	Aston Hall Barns, Aston Munslow	Sampled By:	Client - JB

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1944662	Depth Top [m]:	1.00
Hole No.:	TP3	Depth Base [m]:	Not Given
Sample Reference:	D3	Sample Type:	D
Soil Description:	Greyish brown slightly gravelly very sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
23	33	22	11	78



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 04/08/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

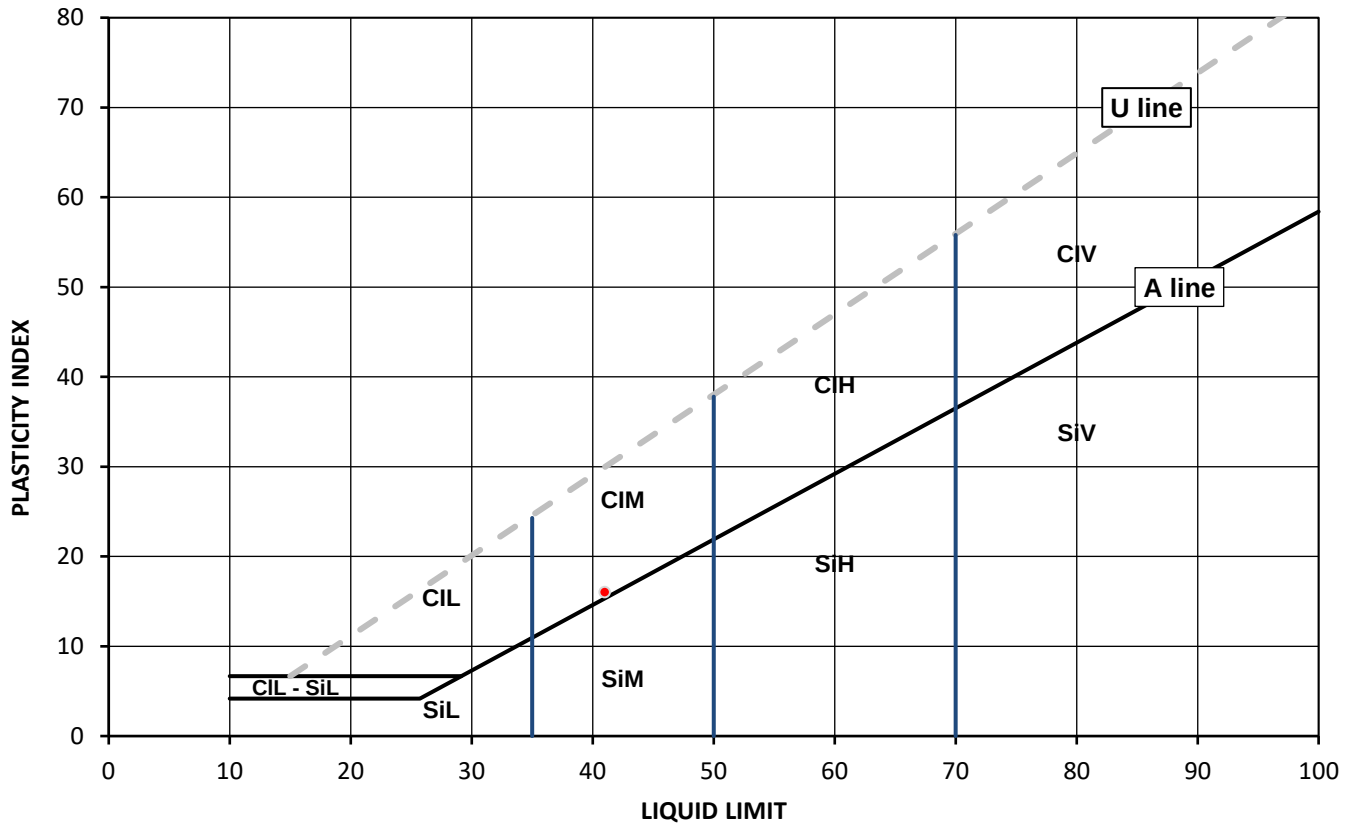
Client:	Integrale Limited	Client Reference:	21035
Client Address:	Unit 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP	Job Number:	21-88006
		Date Sampled:	07/07/2021
		Date Received:	20/07/2021
Contact:	Joseph Begaj	Date Tested:	26/07/2021
Site Address:	Aston Hall Barns, Aston Munslow	Sampled By:	Client - JB

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1944665	Depth Top [m]:	1.50
Hole No.:	TP22	Depth Base [m]:	Not Given
Sample Reference:	D3	Sample Type:	D
Soil Description:	Greyish brown slightly gravelly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	41	25	16	83



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 04/08/2021

GF 236.10

SUMMARY REPORT

Summary of Classification Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Integrale Limited

Client Address: Unit 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP

Contact: Joseph Begaj

Site Address: Aston Hall Barns, Aston Munslow

Client Reference: 21035
Job Number: 21-88006
Date Sampled: 06/07 - 07/07/2021
Date Received: 20/07/2021
Date Tested: 26/07/2021
Sampled By: Client - JB

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1944663	TP13	D2	0.50	Not Given	D	Greyish brown very gravelly very sandy CLAY		12											
1944664	TP22	D2	1.00	Not Given	D	Brown gravelly sandy CLAY		36											
1944665	TP22	D3	1.50	Not Given	D	Greyish brown slightly gravelly sandy CLAY	Atterberg 4 Point	30		83	41	25	16						
1944662	TP3	D3	1.00	Not Given	D	Greyish brown slightly gravelly very sandy CLAY	Atterberg 4 Point	23		78	33	22	11						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 04/08/2021

GF 238.12

Joseph Begaj
Integrale Limited
Unit 7
Westway Farm Business Park
Wick Road
Bishop Sutton
Somerset
BS39 5XP

e: josephbegaj@integrale.uk.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-88011

Project / Site name:	Aston Hall Barns, Aston Munslow	**Samples received on:**	20/07/2021
Your job number:	21035	**Samples instructed on/ Analysis started on:**	20/07/2021
Your order number:	21035-1877	**Analysis completed by:**	02/08/2021
Report Issue Number:	1	**Report issued on:**	04/08/2021
Samples Analysed:	3 soil samples		

Signed: A. Czerwińska

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-88011
Project / Site name: Aston Hall Barns, Aston Munslow
Your Order No: 21035-1877

Lab Sample Number				1944677	1944678	1944679
Sample Reference				BH1	TP14	TP31
Sample Number				D3	D3	D1
Depth (m)				1.50	0.75	1.20
Date Sampled				06/07/2021	07/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.3	12	8.7
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	6.9	7.6
Total Sulphate as SO4	%	0.005	MCERTS	0.019	0.069	0.067
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.013	0.18	0.18
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	13.1	175	182
Total Sulphur	%	0.005	MCERTS	0.009	0.028	0.025

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-88011
Project / Site name: Aston Hall Barns, Aston Munslow

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1944677	BH1	D3	1.5	Brown loam and clay with gravel and vegetation.
1944678	TP14	D3	0.75	Brown loam and clay with gravel and vegetation.
1944679	TP31	D1	1.2	Brown loam and clay with gravel.

Analytical Report Number : 21-88011
Project / Site name: Aston Hall Barns, Aston Munslow

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

SUMMARY REPORT

Summary of Point Load Strength Index Tests Results

Tested in Accordance with: ISRM: 2007, pages 125-132

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: Integrale Limited

Client Address: Unit 7, Westway Farm Business Park,
Wick Road, Bishop Sutton,
Somerset, BS39 5XP

Contact: Joseph Begaj

Site Address: Aston Hall Barns, Aston Munslow

Client Reference: 21035
Job Number: 21-95788
Date Sampled: 06/07/2021
Date Received: 11/08/2021
Date Tested: 02/09/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks # (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)
			m	m								mm	mm	mm	mm	kN	mm	MPa	MPa
1989885	BH02	D1	2.40	2.50	U	Brownish grey SILTSTONE	WC = 4.0%	1	A	U	YES	-	85.8	46.0	40.0	7.2	66.1	1.64	1.86

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Comments:

Signed:

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

Date Reported: 03/09/2021

GF 134.12

SUMMARY REPORT

Summary of Uniaxial Compression Test on Rock Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with: ISRM, 2007, p153, part 1

Client: Integrale Limited

Client Address: Unit 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP

Contact: Joseph Begaj

Site Address: Aston Hall Barns, Aston Munslow

Client Reference: 21035
Job Number: 21-95788
Date Sampled: 06/07/2021
Date Received: 11/08/2021
Date Tested: 02/09/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Specimen Dimensions (2)				Bulk density (2)	Water Content (1)	Uniaxial Compression (3)			
		Reference	Depth Top m	Depth Base m	Type			Diameter mm	Length mm	H/D	Orientation of sample	Mg/m3	%	Condition	Stress Rate Mpa/s	Mode of failure	UCS Mpa
1989886	BH02	D2	5.00	5.10	U	Mottled grey SILTSTONE	Sample is below recommended length to diameter ratio.	85.6	118.9	1.4	Vertical	2.53	4.0	as received	0.0870	MS + AC	37.3
1989887	BH03	D1	3.60	3.75	U	Light grey SILTSTONE	Sample is below recommended length to diameter ratio.	85.7	82.5	1.0	Vertical	2.52	2.9	as received	0.0867	MS + AC	37.3

Note: 1 - ISRM p87 test 1, water content at 105 ± 3 oC, specimen as tested for UCS, 2 - ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density, 3 - ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials, above notes apply unless annotated otherwise in the remarks. Compaction machine: VJ Tech AUTOCON - VJT 51-3011; Mode of failure legend: S - Single shear, MS - multiple shear, AC - Axial cleavage, F - Fragmented

Comments:

Signed:

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

Date Reported: 03/09/2021

GF 223.13

Appendix I

Results of Contamination Analyses

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

Registered Office: The Granary, Chewton Fields, Ston Easton, Somerset, BA3 4BX United Kingdom VAT Reg. No. 609 7402 37

Intégrale
Understanding Ground Conditions

Suite 7, Westway Farm Business Park
Wick Road, Bishop Sutton, Somerset,
BS39 5XP, United Kingdom

Tel: 01275 333036
www.integrale.uk.com

STANDARD METHODOLOGY FOR CONTAMINATION SAMPLING & SCHEDULING

Soil samples for contamination analyses are recovered from trial pits or borehole samples using a stainless steel trowel and immediately placed into airtight amber glass jars, vials, or plastic tubs, as appropriate for the testing. These samples are labelled with the site name, investigation location and depth and placed into cool boxes for transit from site. Groundwater samples recovered during subsequent monitoring visits are similarly treated.

An analytical schedule is drawn up in line with the desk study findings, guidance given in CLR 8 and any relevant industry information, the actual ground conditions proven and proposed site use.

Samples are sent via overnight courier to the specialist testing laboratory. Testing is scheduled for MCERTS accredited analyses as far as possible and details of the test method are provided by the laboratory on the results sheets in a separate appendix. A standard turnaround of 10 working days is adopted unless otherwise agreed with the client at the time of instruction.

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Somerset
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7 Woodshots Meadow,
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t: 01923 225404
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Analytical Report Number : 21-87398

Project / Site name:	Aston Hall Barns Aston Munslow	**Samples received on:**	14/07/2021
Your job number:	21035	**Samples instructed on/ Analysis started on:**	16/07/2021
Your order number:	21035 1876	**Analysis completed by:**	27/07/2021
Report Issue Number:	1	**Report issued on:**	27/07/2021
Samples Analysed:	7 soil samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

Lab Sample Number				1940673	1940674	1940675	1940676	1940677
Sample Reference				TP3	TPC	TP11	TP15	TP17
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.05	0.40	0.50	0.30	0.20
Date Sampled				06/07/2021	09/07/2021	06/07/2021	07/07/2021	07/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	16	18	17	13
Total mass of sample received	kg	0.001	NONE	0.90	1.1	1.1	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	6.9	8.1	8.3	6.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.101	0.062	0.082	0.101	0.063
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	9.1	3.1	2.2	3.5	4.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.9	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.43	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	4.0	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.5	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.4	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.0	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.9	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.8	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.9	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.42	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	25.4	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

Lab Sample Number				1940673	1940674	1940675	1940676	1940677
Sample Reference				TP3	TPC	TP11	TP15	TP17
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.05	0.40	0.50	0.30	0.20
Date Sampled				06/07/2021	09/07/2021	06/07/2021	07/07/2021	07/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	11	7.7	12	9.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	65	84	97	43
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.82	1.1	1.2	0.74
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.4	2.7	0.6	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	0.3	0.4	0.5	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	35	30	24	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	18	18	27	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	69	45	45	140	43
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	33	35	25	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	51	37	31	34	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	380	95	120	130	98
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	51	< 10	< 10	< 10	12
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

Lab Sample Number				1940678	1940679
Sample Reference				TP25	TP29
Sample Number				ES1	ES1
Depth (m)				0.20	0.10
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	19
Total mass of sample received	kg	0.001	NONE	0.90	0.90
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected
General Inorganics					
pH - Automated	pH Units	N/A	MCERTS	5.2	6.3
Total Cyanide	mg/kg	1	MCERTS	1.8	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.456	0.063
Sulphide	mg/kg	1	MCERTS	< 1.0	12
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	4.5	4.2
Total Phenols					
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
Speciated PAHs					
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.35	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.33	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Total PAH					
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

Lab Sample Number				1940678	1940679
Sample Reference				TP25	TP29
Sample Number				ES1	ES1
Depth (m)				0.20	0.10
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.2	8.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	57	68
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.80	0.78
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.6
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	39	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	61
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	37	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	41	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	320
Petroleum Hydrocarbons					
TPH C10 - C40	mg/kg	10	MCERTS	42	18
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-87398
Project / Site name: Aston Hall Barns Aston Munslow

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1940673	TP3	ES1	0.05	Brown loam and clay with gravel and vegetation.
1940674	TPC	ES2	0.4	Brown clay and loam with gravel and vegetation.
1940675	TP11	ES1	0.5	Brown clay and loam with gravel and vegetation.
1940676	TP15	ES2	0.3	Brown loam and clay with gravel and vegetation.
1940677	TP17	ES1	0.2	Brown loam and clay with gravel and vegetation.
1940678	TP25	ES1	0.2	Brown loam and clay with gravel and vegetation.
1940679	TP29	ES1	0.1	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 21-87398
Project / Site name: Aston Hall Barns Aston Munslow

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	In-house method	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 21-87398
Project / Site name: Aston Hall Barns Aston Munslow

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report

Analytical Report Number : 21-87398
Project / Site name: Aston Hall Barns Aston Munslow

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP11	ES1	S	1940675	c	Sulphide in soil	L010-PL	c
TP11	ES1	S	1940675	c	Total cyanide in soil	L080-PL	c
TP15	ES2	S	1940676	c	Sulphide in soil	L010-PL	c
TP15	ES2	S	1940676	c	Total cyanide in soil	L080-PL	c
TP17	ES1	S	1940677	c	Sulphide in soil	L010-PL	c
TP17	ES1	S	1940677	c	Total cyanide in soil	L080-PL	c
TP25	ES1	S	1940678	c	Sulphide in soil	L010-PL	c
TP25	ES1	S	1940678	c	Total cyanide in soil	L080-PL	c
TP29	ES1	S	1940679	c	Sulphide in soil	L010-PL	c
TP29	ES1	S	1940679	c	Total cyanide in soil	L080-PL	c
TP3	ES1	S	1940673	c	Sulphide in soil	L010-PL	c
TP3	ES1	S	1940673	c	Total cyanide in soil	L080-PL	c
TPC	ES2	S	1940674	c	Sulphide in soil	L010-PL	c
TPC	ES2	S	1940674	c	Total cyanide in soil	L080-PL	c

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

GAC Exceedance
WRAS Exceedance
Phytotoxic Exceedance

Lab Sample Number				1940673	1940674	1940675	1940676
Sample Reference				TP3	TPC	TP11	TP15
Sample Number				ES1	ES2	ES1	ES2
Depth (m)				0.05	0.40	0.50	0.30
Date Sampled				06/07/2021	09/07/2021	06/07/2021	07/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	16	18	17
Total mass of sample received	kg	0.001	NONE	0.90	1.1	1.1	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7.6	6.9	8.1	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.101	0.062	0.082	0.101
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	9.1	3.1	2.2	3.5
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.9	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.43	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	4.0	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.5	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.4	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.0	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.9	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.8	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.9	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.42	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	25.4	< 0.80	< 0.80	< 0.80

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

GAC Exceedance
WRAS Exceedance
Phytotoxic Exceedance

Lab Sample Number				1940673	1940674	1940675	1940676
Sample Reference				TP3	TPC	TP11	TP15
Sample Number				ES1	ES2	ES1	ES2
Depth (m)				0.05	0.40	0.50	0.30
Date Sampled				06/07/2021	09/07/2021	06/07/2021	07/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	11	7.7	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	65	84	97
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.82	1.1	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.4	2.7	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	0.3	0.4	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	35	30	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	18	18	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	69	45	45	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	33	35	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	51	37	31	34
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	380	95	120	130
Petroleum Hydrocarbons							
TPH C10 - C40	mg/kg	10	MCERTS	51	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

GAC Exceedance
WRAS Exceedance
Phytotoxic Exceedance

Lab Sample Number				1940677	1940678	1940679
Sample Reference				TP17	TP25	TP29
Sample Number				ES1	ES1	ES1
Depth (m)				0.20	0.20	0.10
Date Sampled				07/07/2021	08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	11	19
Total mass of sample received	kg	0.001	NONE	1.0	0.90	0.90
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	6.6	5.2	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	1.8	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.063	0.456	0.063
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	12
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	4.6	4.5	4.2
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.35	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.33	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80

Analytical Report Number: 21-87398
Project / Site name: Aston Hall Barns Aston Munslow
Your Order No: 21035 1876

GAC Exceedance
WRAS Exceedance
Phytotoxic Exceedance

Lab Sample Number				1940677	1940678	1940679
Sample Reference				TP17	TP25	TP29
Sample Number				ES1	ES1	ES1
Depth (m)				0.20	0.20	0.10
Date Sampled				07/07/2021	08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.2	9.2	8.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	43	57	68
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.74	0.80	0.78
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	1.5	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.3	0.6
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	39	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	42	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	29	61
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31	37	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	31	41	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	98	86	320

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	12	42	18

TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-88011
Project / Site name: Aston Hall Barns, Aston Munslow
Your Order No: 21035-1877

GAC Exceedance
WRAS Exceedance
Phytotoxic Exceedance

Lab Sample Number				1944677	1944678	1944679
Sample Reference				BH1	TP14	TP31
Sample Number				D3	D3	D1
Depth (m)				1.50	0.75	1.20
Date Sampled				06/07/2021	07/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.3	12	8.7
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	6.9	7.6
Total Sulphate as SO4	%	0.005	MCERTS	0.019	0.069	0.067
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.013	0.18	0.18
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	13.1	175	182
Total Sulphur	%	0.005	MCERTS	0.009	0.028	0.025

U/S = Unsuitable Sample I/S = Insufficient Sample

Appendix J

Proposed Redevelopment

Integrale Limited, Suite 7, Westway Farm Business Park, Wick Road, Bishop Sutton, Somerset, BS39 5XP United Kingdom
Tel: 01275 333 036 www.integrale.uk.com

Registered Office: The Granary, Chewton Fields, Ston Easton, Somerset, BA3 4BX United Kingdom VAT Reg. No. 609 7402 37

Coach House

Main Hall

Existing courtyard

Existing barns

C

Proposed play area

B

Existing garden wall

A

Proposed pool barn

Open up garden wall to catch views & connect gardens

Existing potting shed

Existing garden wall

Formal garden

Drive

Field

Reinstate traditional walled garden layout

Tennis converted into traditional kitchen garden

Historic walled-garden now out of property boundary

Proposed garden wall (H matching existing adjacent) to complete walled garden

Reinstate traditional walled garden layout

Existing garden wall

Existing garden wall

Field

Existing public footpath

Notes

This drawing has been based on survey information provided by others.
All dimensions and setting out must be verified on site before commencement of the work, and any discrepancies notified to the architect.
All windows and doors are to fit into existing openings unless stated otherwise.
All dimensions are in millimetres unless stated otherwise.

Drawing Notes:

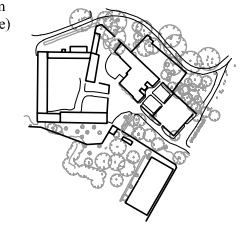
- Surveyed and drawn by James Brennan Associates Chartered Surveyors for Arrol Architects Ltd - Issue date December 2020.
- Survey grid is OS GPS & levels are related to ordonance survey GPS datum.
- Units are meters.
- Survey accuracy with a scale of 1:100.

KEY

- Property boundary
- A Proposed pool barn
- B Proposed link
- C Existing barns

N

Location Plan (Not To Scale)



1:500 0 5 10 15 20m

DRAFT FOR DISCUSSION

Rev	By	Date	Description

Drawing Number: 9801 P (0) 001.PA2

Rev: ~

Project: Aston Hall Barns
Job No. 9801

Title: General Arrangement - Proposals: Site Plan

Drawn: GB | Checked: GQ

Date: 07 2021 | Scale: 1:500 @ A3

Giles Quarme Architects
Historic Building Architects & Consultants
7 Bishops Terrace
London
SE11 4UE
020 7582 0748
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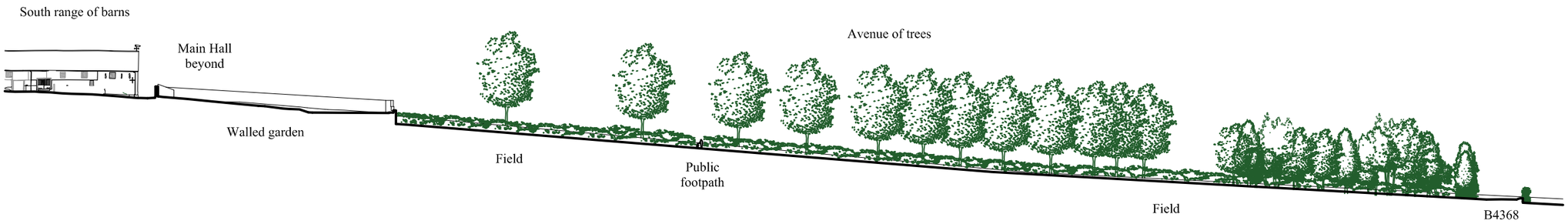
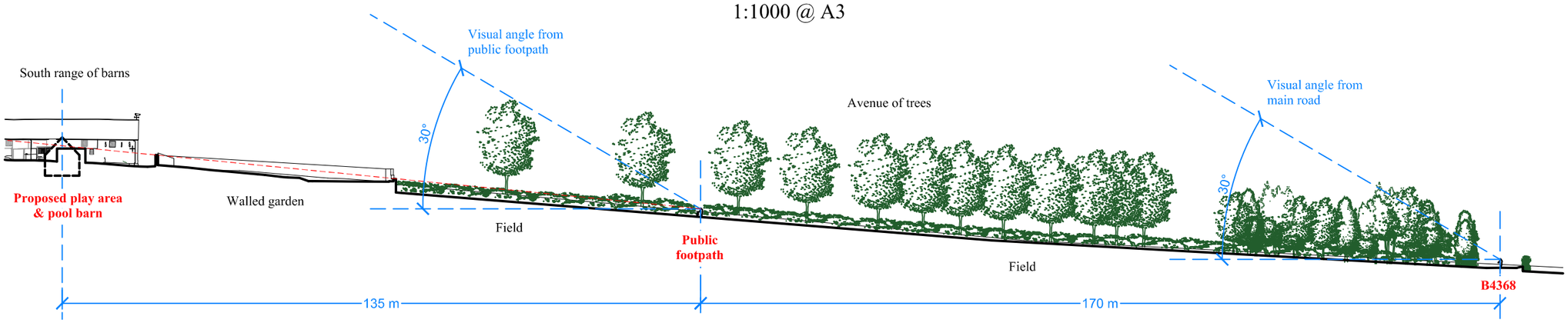
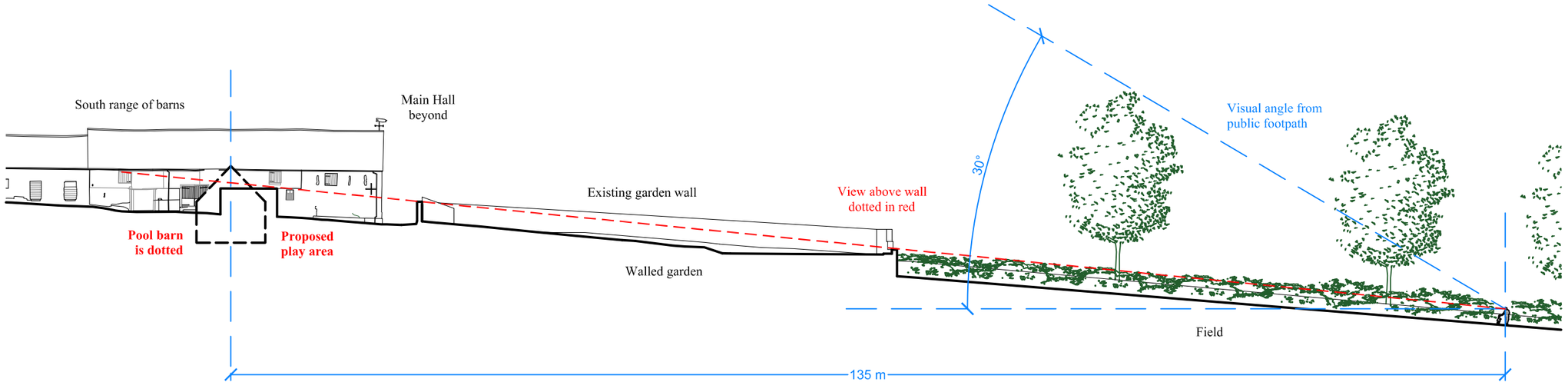
mail@quarme.com



Long site section West - East
EXISTING
1:1000 @ A3



Long site section West - East
PROPOSED
1:1000 @ A3



Long site section West - East
PROPOSED
1:500 @ A3

Notes
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This drawing has been based on survey information provided by others.
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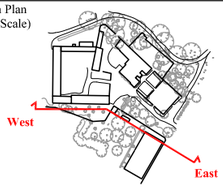
All windows and doors are to fit into existing openings unless stated otherwise.
All dimensions are in millimetres unless stated otherwise.

Drawing Notes:

- Surveyed and drawn by James Brennan Associates Chartered Surveyors for Arrol Architects Ltd - Issue date December 2020.
- Survey grid is OS GPS & levels are related to ordonance survey GPS datum.
- Units are meters.
- Survey accuracy with a scale of 1:100.

N

Location Plan
(Not To Scale)



1:1000 0 10 20 30 40m

DRAFT FOR DISCUSSION

Rev	By	Date	Description

Drawing Number: 9801 P (0) 002.PA2
Rev: ~

Project
Aston Hall Barns
Job No. 9801

Title
General Arrangement - Proposals:
Site Sections

Drawn GB | Checked GQ
Date 07 2021 | Scale 1:500/1000 @ A3

Giles Quarme Architects
Historic Building Architects & Consultants
7 Bishops Terrace
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SE11 4UE
020 7582 0748
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mail@quarme.com

BARNS AS EXISTING ARE PROPOSED TO BE MAINTAINED / REPAIRED

Block existing opening

Put back wall to for courtyard

Proposed
WC / showers
& Changing room upstairs

Proposed
sauna / steam room
& Massage room upstairs

Proposed meeting room
& Office upstairs

Open up garden wall to catch views and connect gardens

Potential for external stair

A

B

C

Notes

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All dimensions and setting out must be verified on site before commencement of the work, and any discrepancies notified to the architect.
All windows and doors are to fit into existing openings unless stated otherwise.
All dimensions are in millimetres unless stated otherwise.

Drawing Notes:

- Surveyed and drawn by James Brennan Associates Chartered Surveyors for Arrol Architects Ltd - Issue date December 2020.
- Survey grid is OS GPS & levels are related to ordonance survey GPS datum.
- Units are meters.
- Survey accuracy with a scale of 1:100.

KEY

- Property boundary
- Area covered by proposals
- (A) Proposed pool barn
- (B) Proposed link
- (C) Existing barns

N

Location Plan
(Not To Scale)

1:200 0 2 4 6 8m

DRAFT FOR DISCUSSION

Rev	By	Date	Description

Drawing Number	Rev
9801 P (0) 003.PA2	~

Project
Aston Hall Barns
Job No. 9801

Title
General Arrangement - Proposals:
Ground Floor Plan

Drawn	GB	Checked	GQ
Date	07 2021	Scale	1:200 @ A3

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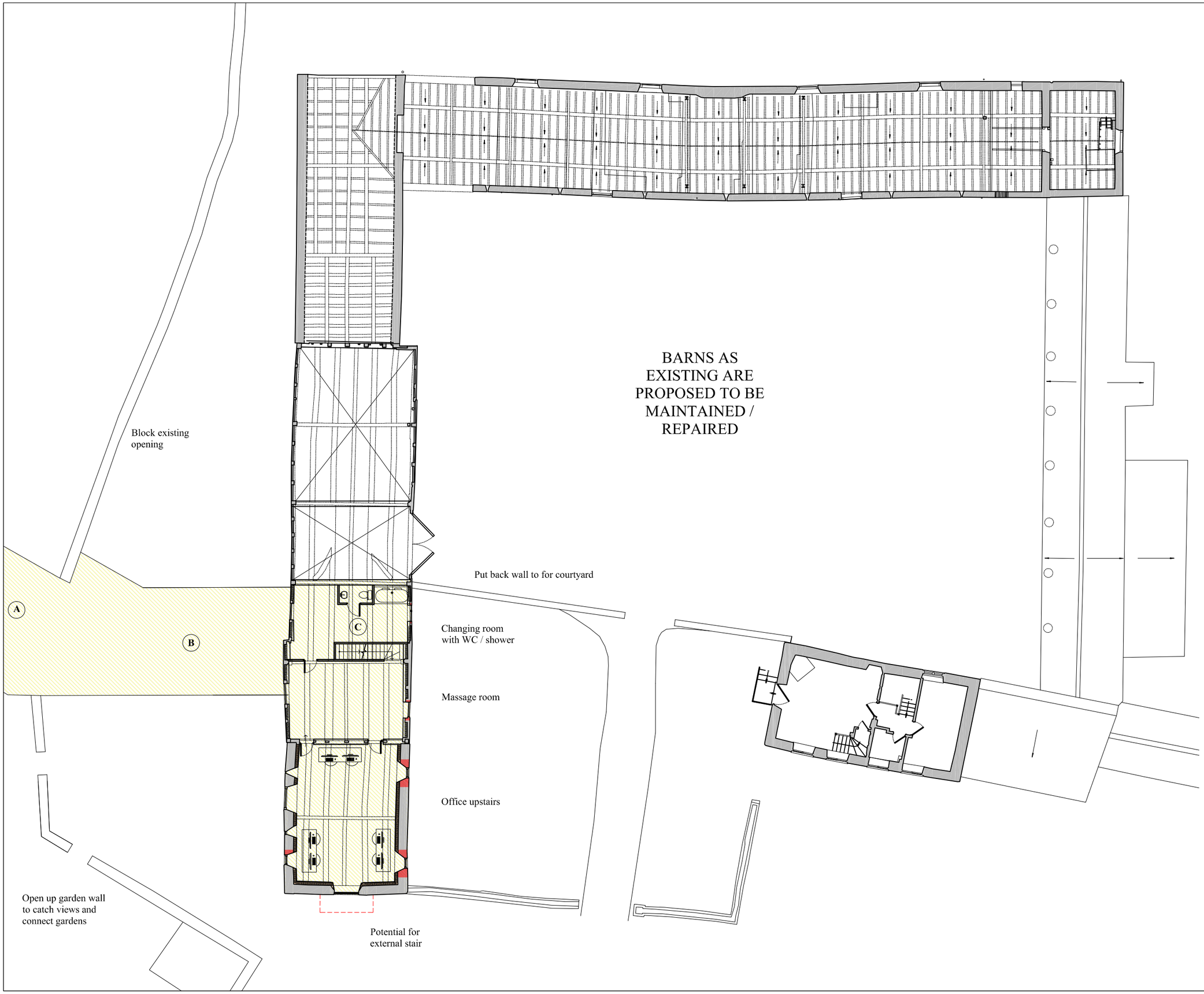


This drawing has been based on survey information provided by others.
All dimensions and setting out must be verified on site before commencement of the work, and any discrepancies notified to the architect.
All windows and doors are to fit into existing openings unless stated otherwise.
All dimensions are in millimetres unless stated otherwise.

Drawing Notes:

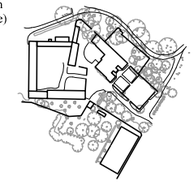
- Surveyed and drawn by James Brennan Associates Chartered Surveyors for Arrol Architects Ltd - Issue date December 2020.
- Survey grid is OS GPS & levels are related to ordonance survey GPS datum.
- Units are meters.
- Survey accuracy with a scale of 1:100.

KEY

- Property boundary
- Area covered by proposals
- (A) Proposed pool barn
- (B) Proposed link
- (C) Existing barns

N

Location Plan
(Not To Scale)



1:200 0 2 4 6 8m

DRAFT FOR DISCUSSION

Rev	By	Date	Description

Drawing Number: 9801 P (0) 004.PA2
Rev: ~

Project: Aston Hall Barns
Job No. 9801

Title: General Arrangement - Proposals: First Floor Plan

Drawn: GB
Checked: GQ
Date: 07 2021
Scale: 1:200 @ A3

Giles Quarme Architects
Historic Building Architects & Consultants
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London
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020 7582 0748
www.quarme.com
mail@quarme.com

30/6/2021

NORTH

1:500 @ A3

MAIN HOUSE

HISTORIC FARM YARD

LINK

PROPOSED POOL BARN

BUILDING CUT IN TO CONTOURS

PART OF WALLED GARDEN OWNED NOW BY "RACE HOUSE"

WALL GARDEN

HISTORIC WALLED GARDEN WALL

BOUNDARY OF OWNERSHIP OF ASTON HALL

NEW WALL

TENNIS COURT HARD SURFACE REMOVED REPLACED WITH FURTHER VEGETABLE GARDEN

HISTORIC WALLED GARDEN WALL

GROUND SLOPES TO SOUTH EAST

EXISTING WALL

PROPERTY BOUNDARY

0 10 20 30 40 50m

SCALE BAR 1:500 @A3.

ASTON HALL

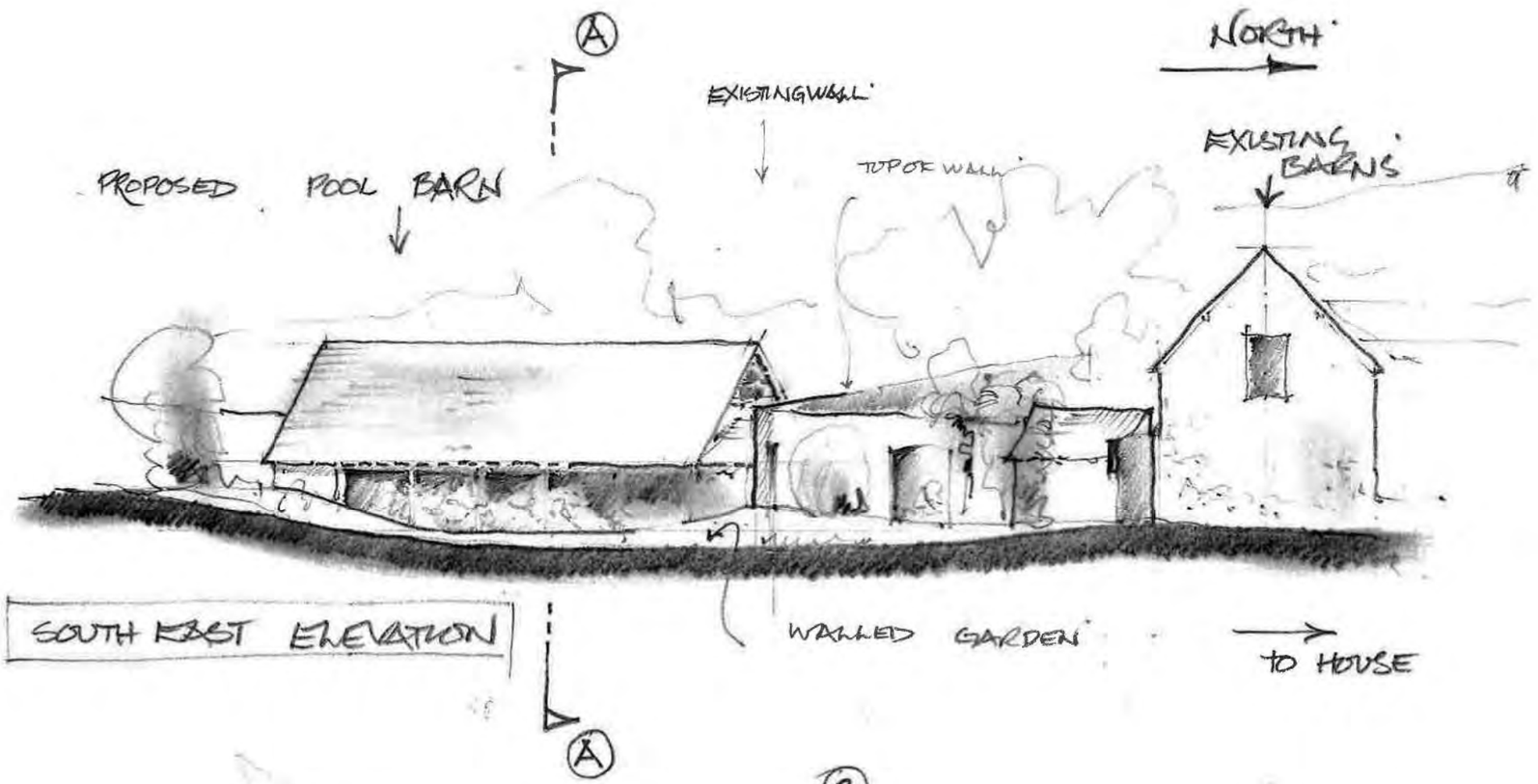
SITE PLAN

GQA SK1-21-6-30

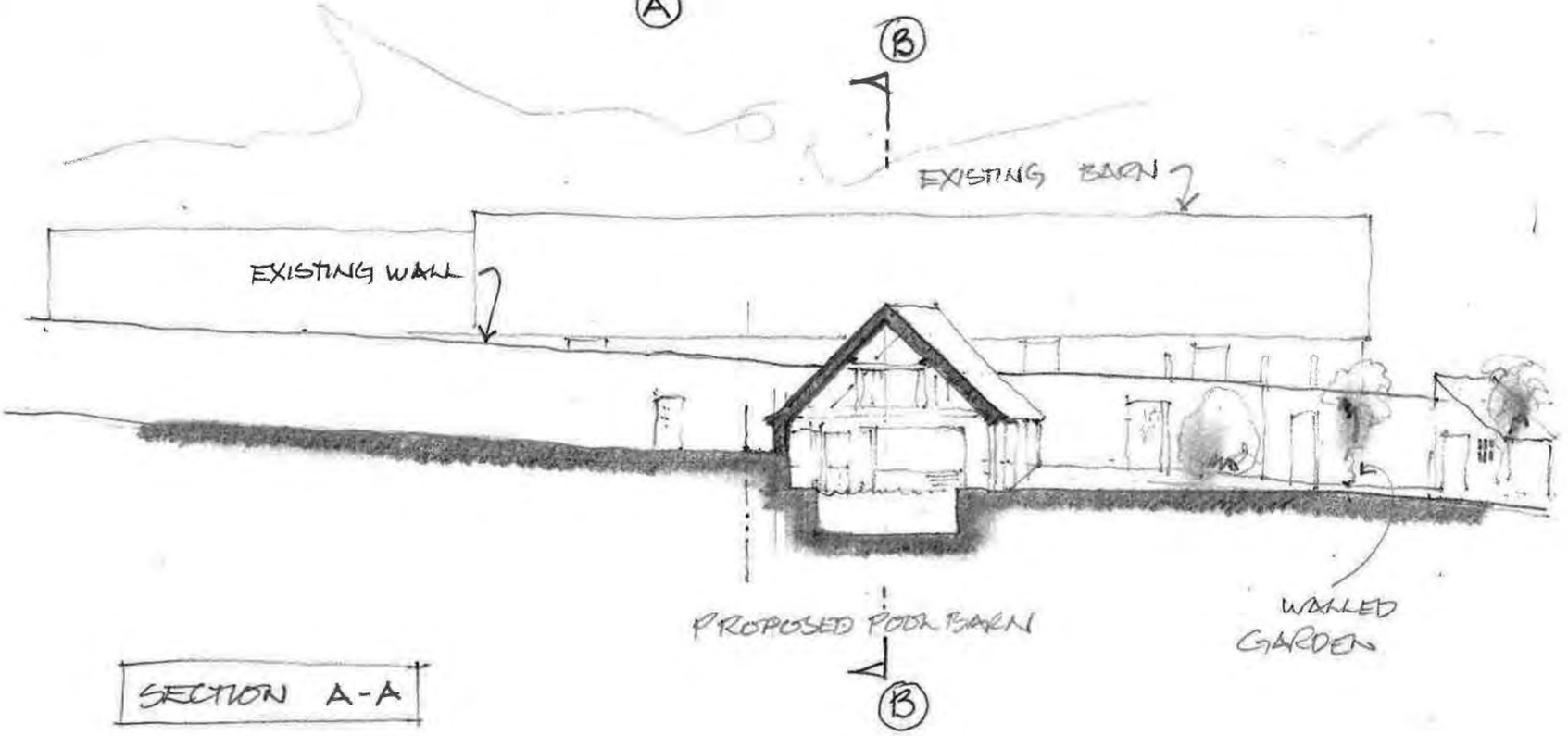
JOB 9801

NEW POOL BARN & LINK

30/6/2021



SOUTH EAST ELEVATION



SECTION A-A

0 2 4 6 8 10m

SCALE BAR 1:200 @A3

ASTON HALL

PROPOSED POOL BARN

SECTION A-A

SOUTH EAST ELEVATION

JOB 9801 GQA SK. 3-21-6-30

30/6/2021

NEW POOL BARN
CUT INTO NATURAL CONTURES TO REDUCE HIGHT

NEW LINK

NORTH

B

A

EXISTING WALL

WEST GARDEN

POOL 15 x 5m

PLAY

B

CHANGE SAUNA

A

EAST GARDEN

VIEW

WALLED GARDEN

PLAN

TO MAIN HOUSE

A

EXISTING WALL 3-7m HIGH

EXISTING WALL TOP

LINK PLAYAREA

EXISTING BARN

PROPOSED POOL

TO MAIN HOUSE

A

SECTION B-B

0 2 4 6 8 10 20m

SCALE BAR 1:200 @A3

ASTON HALL

1:200 PLAN/SECTION
NEW POOL BARN & LINK

JOB 9801 GQA. SK2-21-6-30