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A REPORT ON A GROUND INVESTIGATION AT FOUNDRY PLANT CENTRE, TASBURGH



PREPARED FOR	Foundry Nurseries Ltd
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CONTENTS

1. INTRODUCTION
2. BRE365 TEST METHOD
3. SITE WORK

APPENDICIES

APPENDIX A: REFERENCES

APPENDIX B: TRIAL PIT AND SOAKAGE TEST RECORDS

APPENDIX C: DRAWINGS

1. INTRODUCTION

This report is the summary of a ground investigation that was undertaken at Foundry Plant Centre, Tasburgh. At the instruction of Foundry Nurseries Ltd, an investigation was carried out to provide information regarding drainage characteristics, whilst giving an overall assessment of the shallow soil strata.

This report can be used to aid the drainage design of the proposed development.

2. BRE365 TEST METHOD

The test is performed by excavating a trial hole to a depth agreed by the client. The soils recovered from the trial hole are then sampled and logged by an engineer in general accordance with BS 5930:2015. Groundwater ingress and sidewall stability is monitored throughout whilst continuously assessing safety of practise.

Upon completion of the trial hole, 20 mm gravel is used to fill the relevant test section to keep the trial pit walls stable, avoiding any risk of collapse during the testing period. The trial hole is then backfilled with arisings to surface around a monitoring pipe and a greater diameter pipe used for filling with water. The test section is then filled with water and the water level monitored using dataloggers that measure head pressure. Testing is repeated three times before removing all pipes and reinstating to satisfactory standard.

3. SITE WORK

Micro Geotechnical Limited visited the site on 22 and 23 March 2023 to undertake four machine excavated trial pits with subsequent soakaway testing in two of them.

Soils recovered from each excavation were logged in general accordance with BS EN 1997-2:2007 Eurocode 7 and its UK National Annex supported by BS 5930:2015.

Locations of the trial pits were agreed by the engineer prior to the investigation and are shown on drawing 23.048/draw2. Each location was scanned by a cable avoidance tool (CAT) to locate any potential buried services. Any services detected were noted and positions relocated as necessary.

The trial pits, referenced TP01, TP02, SA01 and SA02 were machine excavated by a JCB 3CX using a 0.45 m wide toothed bucket. SA01 and SA02 were taken to a final depth of 2.0 m. TP01 and TP02 were advanced to a greater depth of 3.0 m and 2.4 m respectively to establish ground conditions below the test section. No groundwater was encountered during the investigation.

Soakaway testing in SA01 and SA02 failed due to insufficient drainage over a 24 hour monitoring period. The trial pit logs and infiltration rates are appended to this report.

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Matthew Balls
Managing Director
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JJC/23.048
3 April 2023

APPENDIX A: REFERENCES

BRITISH STANDARD INSTITUTION. 2015. BS5930:2015+A1-2020 code of practice for ground investigations. British Standards Institution. London.

BUILDING RESEARCH ESTABLISHMENT. 2016. BRE Digest 365: Soakaway design. Building Research Establishment, London.

JJC/23.048
3 April 2023

APPENDIX B: TRIAL PIT AND SOAKAGE TEST RECORDS

D = Disturbed sample

B = Bulk sample

All measurements displayed on the log are presented in metres unless otherwise stated. Soils are described in general accordance with BS5930:2015+A1-2020.

Excavation Method Machine excavated pit JCB 3CX	Dimensions L 2.3 m w W 0.45 m x D 3.0 m	Ground Level (mOD)	Client Foundry Nurseries Ltd	Job Number 23.048
	Location TM 20864 96481	Dates 22/03/2023	Engineer K Garnham Design Ltd	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.00 - 0.30	MADE GROUND (Greyish brown slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse flint, brick and tarmac)		
					0.30 - 0.60	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse flint		
					0.60 - 2.40	Stiff to very stiff grey and brown mottled gravelly friable CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk ... with occasional cobble sized fragments of chalk from 1.9 m		
					2.40 - 3.00	Complete at 3.00m		



Remarks

- CAT4+ scanner used to sweep location prior to excavation.
- Trial pit excavated to 3.0 m successfully without sidewall collapse.
- No groundwater encountered.
- Pit backfilled with arisings to surface.

Scale (approx) 1:20	Logged By WS	Figure No. 23.048.TP01
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Excavation Method Machine excavated pit JCB 3CX	Dimensions L 2.2 m w W 0.45 m x D 2.4 m	Ground Level (mOD)	Client Foundry Nurseries Ltd	Job Number 23.048
	Location TM 20911 96449		Dates 22/03/2023	Engineer K Garnham Design Ltd

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	MADE GROUND (Brown slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse flint, brick, tarmac with fragments of plastic)		
					0.30 (0.60)	Stiff brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint		
					0.90 (1.50)	Stiff to very stiff grey and brown mottled gravelly friable CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk		
					2.40	Complete at 2.40m		



Remarks

- CAT4+ scanner used to sweep location prior to excavation.
- Trial pit excavated to 2.4 m successfully without sidewall collapse.
- No groundwater encountered.
- Pit backfilled with arisings to surface.

Scale (approx) 1:20	Logged By WS	Figure No. 23.048.TP02
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Site : Foundry Plant Centre, Tasburgh

Client : Foundry Nurseries Ltd

Engineer: K Garnham Design Ltd

Job Number
23.048

Sheet
1 / 2

Location	Date	Level	Location
SA01	22/03/2023		TM 20871 96476

Pit Width (m)	0.45
Pit Depth (m)	2.00
Pit Length (m)	1.70

Soil type at test level	Gravelly CLAY
Groundwater	Not encountered
Drain discharge depth	Not known
Sidewall stability	Stable
Stone filled or open pit	Stone filled

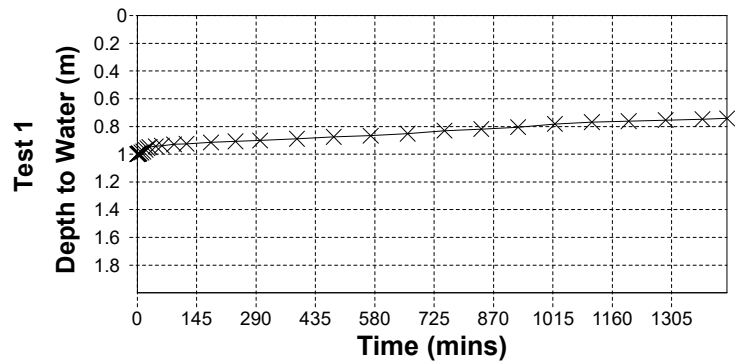
	1
Effective depth (m)	1.00
Volume outflowing between 75% & 25% (m3)*	
Mean surface area through which outflow occurs (m2)	
Time for outflow between 75% & 25% (min)	
SOIL INFILTRATION RATE (ms⁻¹), f	Test Failed

Remarks

1. Soakage test performed between 1.0 m and 2.0 m.
2. No groundwater encountered.
3. Level logger serial number 22581120.
4. Test 1 undertaken over 22/03/23 and 23/03/23.
5. Test failed due to insufficient drainage over a 24 hour monitoring period.

* Volume outflowing reduced to account for granular backfill used during testing (30 % of free volume assumed).

Elapsed time (mins)	Depth to Water Test 1
0	1.00
1	0.999
2	0.998
3	0.996
4	0.995
5	0.994
10	0.988
15	0.981
20	0.969
25	0.957
30	0.949
45	0.943
60	0.939
90	0.929
120	0.925
180	0.915
240	0.907
300	0.901
390	0.889
480	0.875
570	0.866
660	0.852
750	0.83
840	0.819
930	0.805
1020	0.782
1110	0.769
1200	0.762
1290	0.754
1380	0.747
1440	0.742



Excavation Method
Machine excavated pit
JCB 3CX

Dimensions
L 1.5 m w W 0.45 m x D 2.0 m

Ground Level (mOD)

Client
Foundry Nurseries Ltd

Job Number
23.048

Location
TM 20846 96431

Dates
22/03/2023

Engineer
K Garnham Design Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.10)	MADE GROUND (Orange fine to coarse sand)		
					0.10	Firm dark grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk		
					(0.30)			
					0.40	Stiff to very stiff grey and brown mottled gravelly friable CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk		
					(1.60)	... with cobble sized fragments of flint from 1.4 m		
					2.00	Complete at 2.00m		



Remarks

- CAT4+ scanner used to sweep location prior to excavation.
- Trial pit excavated to 2.0 m successfully without sidewall collapse.
- No groundwater encountered.
- Pit backfilled with gravel to 1.0 m and then arisings to surface.
- Soakage test performed between 1.0 m and 2.0 m.

Scale (approx) 1:20	Logged By WS	Figure No. 23.048.SA02
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Site : Foundry Plant Centre, Tasburgh

Client : Foundry Nurseries Ltd

Engineer : K Garnham Design Ltd

Job Number
23.048

Sheet
2 / 2

Location	Date	Level	Location
SA02	22/03/2023		TM 20876 96431

Pit Width (m)	0.45
Pit Depth (m)	2.00
Pit Length (m)	1.50

Soil type at test level	Gravelly CLAY
Groundwater	Not encountered
Drain discharge depth	Not known
Sidewall stability	Stable
Stone filled or open pit	Stone filled

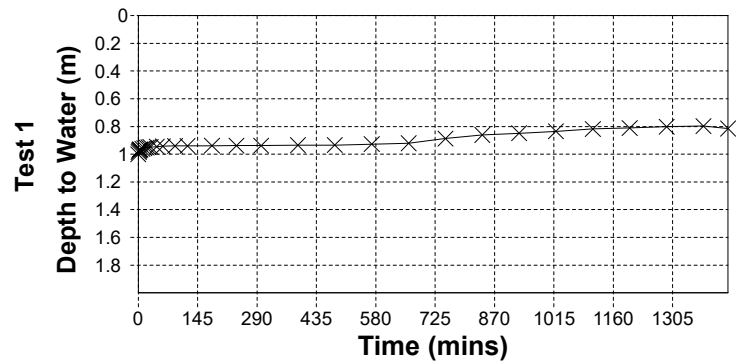
	1
Effective depth (m)	1.00
Volume outflowing between 75% & 25% (m3)*	
Mean surface area through which outflow occurs (m2)	
Time for outflow between 75% & 25% (min)	
SOIL INFILTRATION RATE (ms ⁻¹), f	Test Failed

Remarks

1. Soakage test performed between 1.0 m and 2.0 m.
2. No groundwater encountered.
3. Level logger serial number 21432060.
4. Test 1 undertaken over 22/03/23 and 23/03/23.
5. Test failed due to insufficient drainage over a 24 hour monitoring period.

* Volume outflowing reduced to account for granular backfill used during testing (30 % of free volume assumed).

Elapsed time (mins)	Depth to Water Test 1
0	1.00
1	0.984
2	0.976
3	0.971
4	0.967
5	0.966
10	0.961
15	0.957
20	0.952
25	0.95
30	0.948
45	0.946
60	0.943
90	0.94
120	0.94
180	0.939
240	0.938
300	0.938
390	0.935
480	0.934
570	0.927
660	0.921
750	0.887
840	0.861
930	0.849
1020	0.835
1110	0.818
1200	0.811
1290	0.802
1380	0.797
1440	0.815



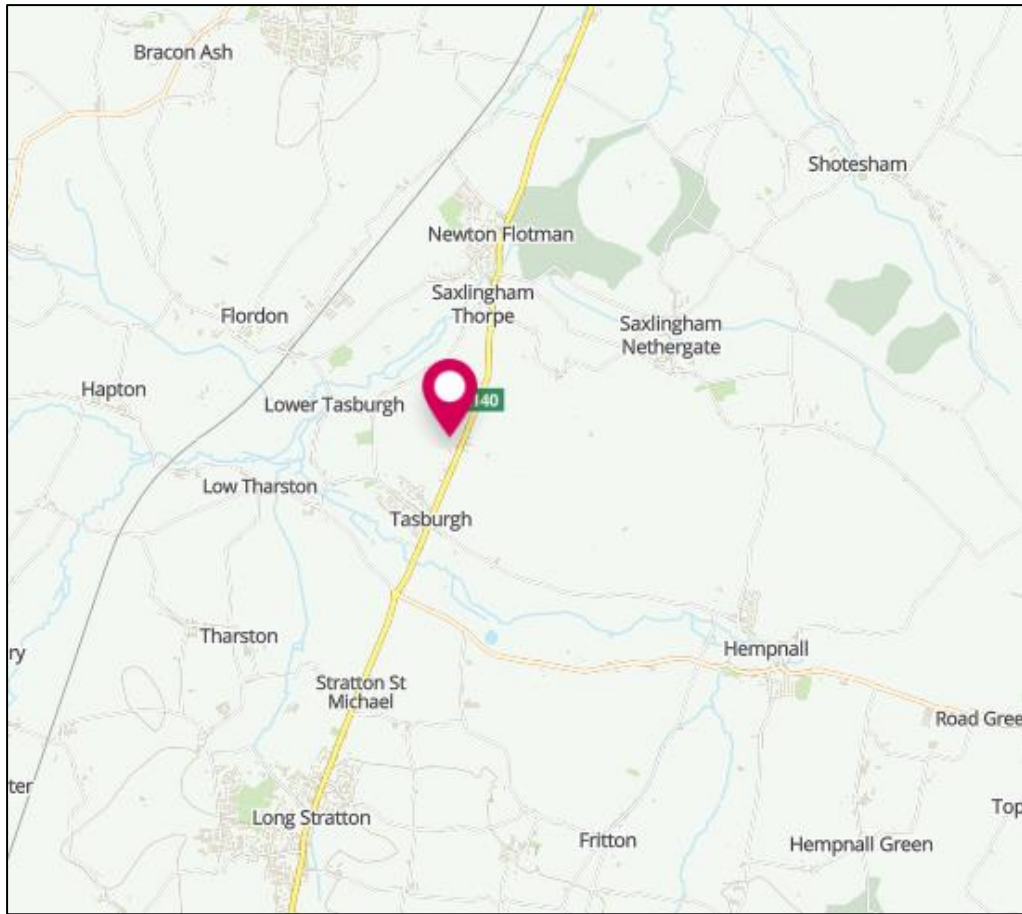
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3 April 2023

APPENDIX C: DRAWINGS

Site location plan 23.048/draw1

Trial pit location plan 23.048/draw2

Site Location Plan



Job number: 23.048

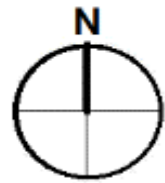
Job name: Foundry Plant Centre, Ipswich Road, Tasburgh

Client: Foundry Nurseries Ltd

Drawing ref: 23.048/draw1

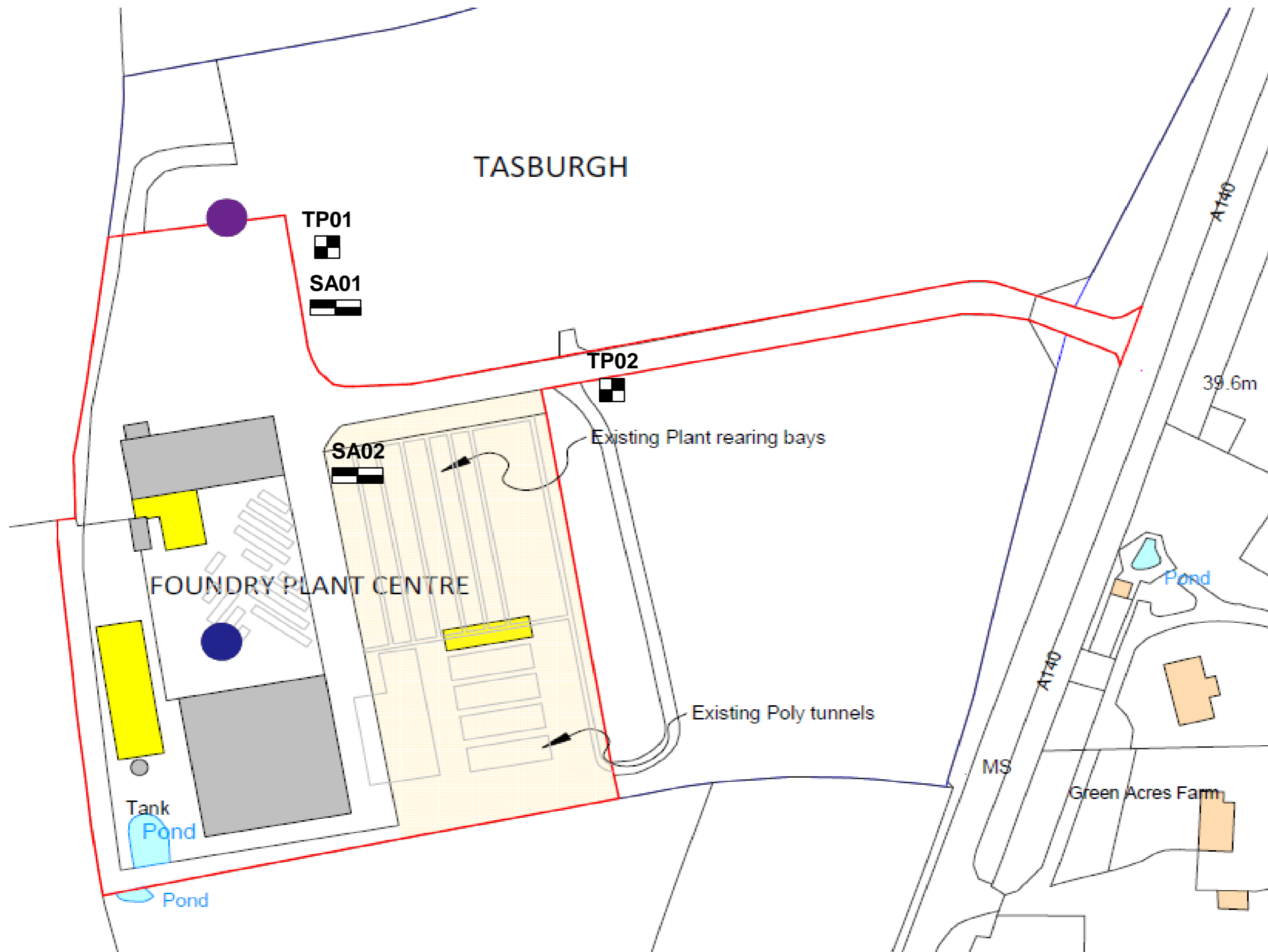


Approximate site location





Project: Foundry Plant Centre, Tasburgh
Client: Foundry Nurseries Ltd
Title: Exploratory Hole Location Plan
Drawing: 23.048/draw2
Date: 03 Apr 2023

Notes:
Hole locations approximate.



Key

-  Machine excavated trial pit
-  Machine excavated trial pit with soakage testing