



Client:
Yorkshire Housing

Carried out for:
Cliff Close, Brierley, Barnsley

Drainage Statement

Project No: 04.12015

Date: September 2012

Issue Status	Draft/ 01 or Final/ A	Initial & date	Draft/ 01 or Final/ A	Initial & date	Draft/ 01 or Final/ A	Initial & date
Report Author:	Final/A	CB 25.10.12				
Checked:	Final/A	RP 25.10.12				
Approved:	Final/A	RP 25.10.12				

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1.0 INTRODUCTION

1.1 Reason for the Report

Adept Consulting Engineers Ltd has been commissioned by Yorkshire Housing to prepare a Drainage Statement to accompany the planning submission and tender for the proposed residential development at the site.

1.2 Objectives

The aim of this report is to present the findings of the investigations associated with the proposed redevelopment. The objectives of this report are as follows:

- Undertake a site visit to establish a better understanding of the existing site
- Undertake a CCTV drainage survey of all the recorded and unrecorded private and adopted drainage on the sites and in the adjoining and surrounding roads and land, including a short report on findings.
- Establish if any existing connections to the adopted/unadopted drains can be reused.
- Carry out sufficient percolation tests on each site to establish if soakaways will be a viable solution for the surface water drainage and provided a report there on.
- Develop a drainage strategy for foul and surface water run-off from the site.
- Identify any further study that maybe required and to recommend options for proceeding with the development proposals to ensure the development is safe and surface water run-off is appropriately managed.

1.3 Sources of Information

The following sources of information have been consulted for the review;

- Yorkshire Water correspondence dated 5th September 2012.
- Infiltration tests carried out September 2012.
- Proposed site plans and existing topographical survey.
- GP Drains, drainage survey dates 3rd September 2012

1.4 Limitations

The opinions expressed in this report and the recommendations given, are based on the information obtained from the desktop assessment.

The information, views and conclusions drawn concerning the site are based, in part, on information supplied to Adept Consulting Engineers Ltd by other parties. Adept Consulting Engineers Ltd accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to Adept Consulting Engineers Ltd from others.

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2.0 SITE SETTING

2.1 Site Location

The site is located in Brierley to the north east of Barnsley within an existing residential development. The site is bordered on all boundaries by existing residential properties.

The approximate centre of the site is given by National Grid Reference: 440801,411095.

2.2 Site Walkover Visit and Description

A site walkover survey was carried out as part of the Drainage Assessment conducted on 31st August 2012. The walkover was conducted in general accordance with CLR 2, ref. 9.1.

The site generally falls from 110m AOD in the south west corner of the site to 107m AOD in the north west of the site. A topographical survey of the site has been carried out by Ellam Land Surveys.

2.3 Existing Drainage

The site is currently a brown field site which was occupied by housing. A survey of the existing drainage within the site has been carried out by GP Drains which shows there is no existing drainage within the site.

2.4 Hydrological Setting

The nearest surface water feature is shown to be 450m south of the site.

2.5 Hydrogeology

The underlying solid geology beneath the site is classed as a secondary Aquifer A.

2.5 Geology

The permeability test report picked up made ground (0.0-0.3m bgl), consisting of dark brown topsoil with light brown sand stone below (0.25-1.5m bgl)

From the phase 1 desktop survey the solid geology beneath the site is likely to comprise Brierley rock of the middle coal measure.



3.0 PROPOSED DEVELOPMENT

3.1 Proposed Development

It is proposed to redevelop the existing site with construction of 8 new dwellings and upgrade the existing road.

It will be necessary to construct the on-site drainage as separate foul and surface water system. The surface water run-off will need to be carefully managed so as not to create flooding issues on site and adjacent/downstream of the site.

It is the clients intention to adopt as much of the drainage system as possible. Discussions will need to be progressed with Yorkshire Water to determine the extent of drains adopted.

3.2 Drainage Design Principles

Sustainable Drainage Systems (SUDS) are an integral part of the design of surface water drainage systems. There are physical measures and techniques whereby surface water returns directly to the ground at or near to the point at which it falls, controlling the rate of runoff from an area and allowing a more natural form of discharge.

It is essential to consider source control within the surface water drainage proposals; techniques which aim to manage the surface water at or close to the receiving surface should be utilised as widely as possible (e.g. porous pavements, soakaways, swales and detention ponds).

In addition to source control methods, it would be necessary to incorporate attenuation areas into the surface water drainage proposals, should the proposed scheme fail to integrate sufficient source control measures.

The proposed development will increase the impermeable area of the existing site compared to the previous housing runoff rate subsequently increasing the volume of surface water run-off from the developed site, and this excess impermeable area needs to be considered in the final design.

Underlying ground conditions have proven indifferent for infiltration techniques with infiltration rates varying from $1.68 - 9.96 \times 10^{-6}$ m/s. All of the results indicated a poor/unsuitable infiltration rate. It should not be possible for the development to drain to soakaway with plots requiring alternative SUDS systems in order to prevent flooding of adjacent and downstream properties.

Yorkshire Water have not permitted an allowable discharge from the site and surface water run-off from the site should be discharged to a suitable watercourse. If there is not a suitable watercourse nearby Yorkshire water will need to be consulted again. It is likely a 5 l/s discharge rate will be imposed and needs to be agreed with Yorkshire Water.

Consultations with the Environment Agency and local land drainage authority will need to be held to ascertain if there are any suitable watercourses near to the site suitable for discharge along with any restrictions or conditions.

Consideration should also be given to compliance with the Code for Sustainable Homes.



3.3 Foul Drainage

Foul drainage from the site is to discharge to the 150mm diameter sewer to the north east of the site. Consent should be obtained from Yorkshire Water for any sewer connection.

Consideration should also be given to the building regulations requirements, not only Part H but also Part G relating to water efficiency and the expected foul flows from dwellings.

3.4 Maintenance

Consideration should be given to the operational and maintenance requirements of the proposed drainage system as part of the design process to ensure that it is robust enough to prevent blockages allow ease of maintenance and reduce long term maintenance costs. Furthermore, the drainage scheme should be designed so that it could function with very minimal maintenance.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The completion of this drainage statement recommends that following should be carried out:

- Sustainable Drainage Systems (SUDS) should be promoted as part of the overall scheme. This will be done through infiltration systems where appropriate along with underground attenuation to be agreed with the water authority and local authority.
- The surface water drainage scheme should be designed in accordance with the Code for Sustainable Homes requirements.
- Foul Water drainage is to the public sewerage system.



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APPENDIX 1

SITE LOCATION PLAN



Fig A1.2 Aerial Photography

APPENDIX 2

Yorkshire Water Correspondence, Solmek Permeability testing and GP Drain survey



Adept Consulting Engineers Ltd
Park Square House
Park Square
Pudsey
Leeds
LS28 7RG

11th September 2012
Contract Ref: S120833/Cliffe

FAO Mr Richard Parker

Permeability Testing at Cliffe Close, Barnsley

Solmek visited the above site on 30th August 2012 to carry out percolation trials as instructed. Please find attached a site location map and soakaway test location plan and the field test results. The testing was generally carried out in accordance with BRE Digest 365: Soakaway Design.

The trial pits were excavated, logged and then water was poured into the trial pits from a water bowser and depth measurements were taken at regular time intervals (see attached). Following completion of the percolation trials the trial pits were backfilled with arisings.

Below gives a summary of the related infiltration rate, where a classification has been given.

SA	Infiltration Rate (m/sec ^{*10⁻⁶})	Description of base stratum	Suitability (in accordance with BRE Digest 365).
1	1.68	Light brown SAND	Not acceptable
2	9.96	Light brown SANDSTONE	Poor (Probably Unsuitable)
3	6.03	Light brown SANDSTONE	Poor (Probably Unsuitable)

We would like to take this opportunity to thank you for using Solmek. An invoice for the works carried out is also enclosed.

Yours faithfully

Paul Finnimore
On behalf of Solmek



Title
Soakaway Location Plan
Project
Cliffe Close, Barnsley
Client
Adept
Date
September 2012
Drawing No
Figure 1
Scale
NTS



12 Yarm Road
 Stockton on Tees
 Cleveland
 TS18 3NA
 Tel: +44 (0) 1642 607 083
 Fax: +44 (0) 1642 612 355
 Email: south@solmek.com
www.solmek.com

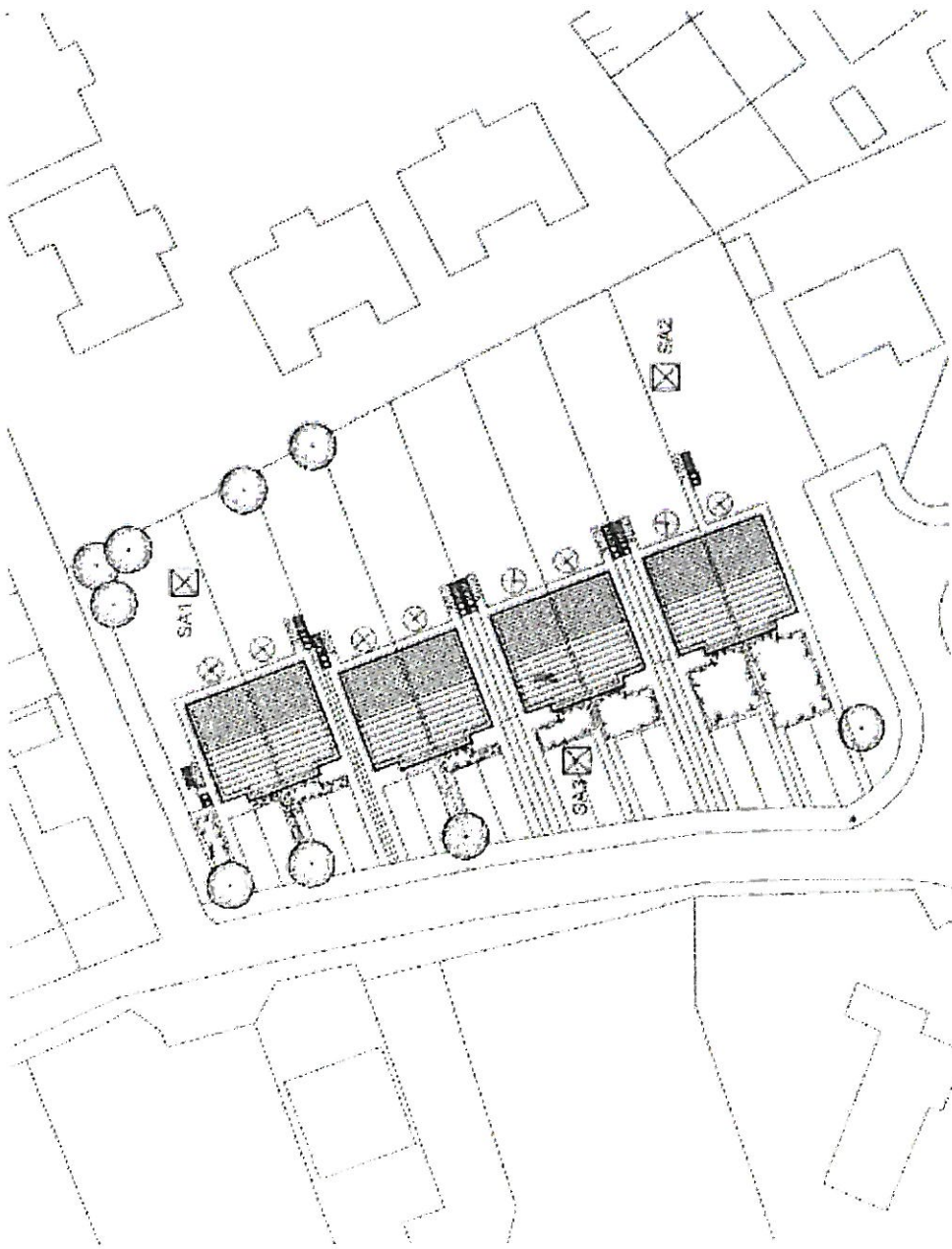
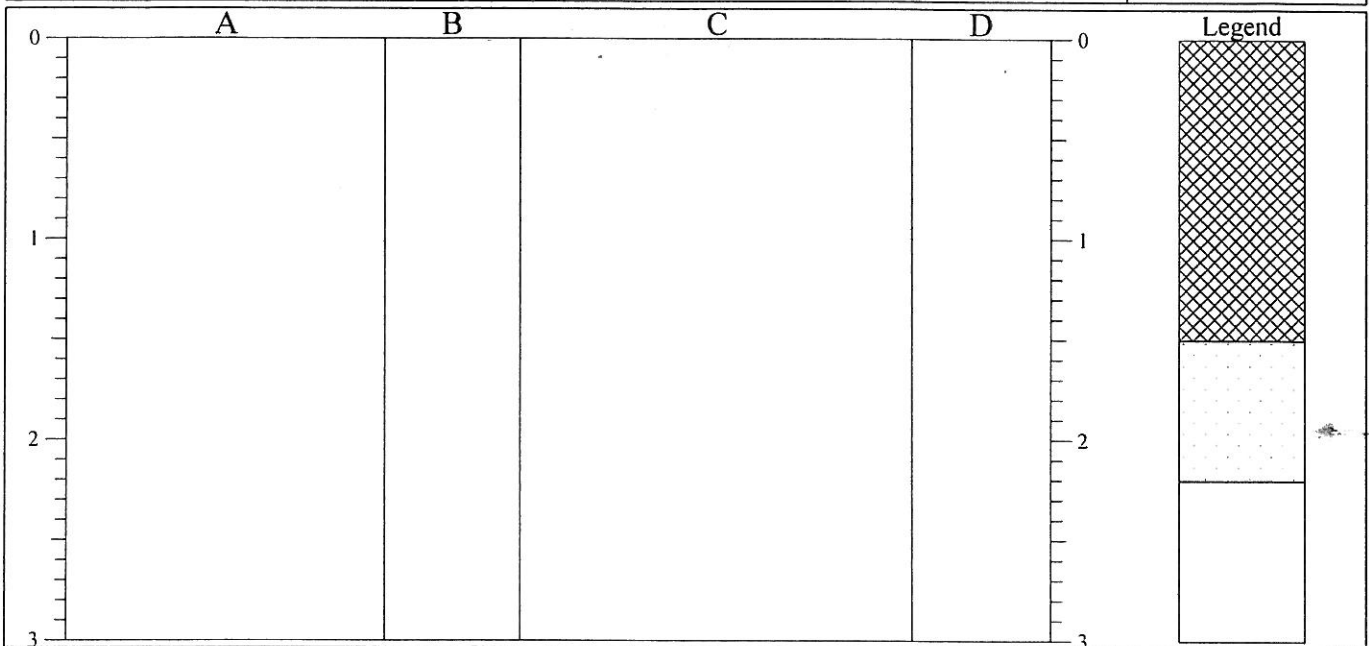


Figure 1: Soakaway Location Plan.

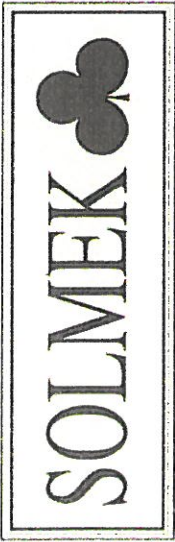
TRIAL PIT LOG

Project Cliffe Close, Barnsley				TRIAL PIT No SA1
Job No S120833	Date 30-08-12	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	Type	Remarks/Tests
0.00-1.50		MADE GROUND: Dark brown to brown sand fill with frequent rubble.			
1.50-2.20		Light brown fine to coarse SAND.			

Shoring/Support: Stability:				GENERAL REMARKS No groundwater encountered.	
All dimensions in metres Scale 1:37.5		Client Adept	Method/ Plant Used JCB 3CX	Logged By PF	



Soakaway Test Results

Job No: S120833
Project: Cliffe Close, Barnsley
Client: Adept
Test No.: SA1
Date: 30/08/2012

Test Pit Dimensions

Length = 1400 mm
Width = 700 mm
Depth = 2200 mm (Total depth)
(Plan area = 0.98 m²)

Initial parameters

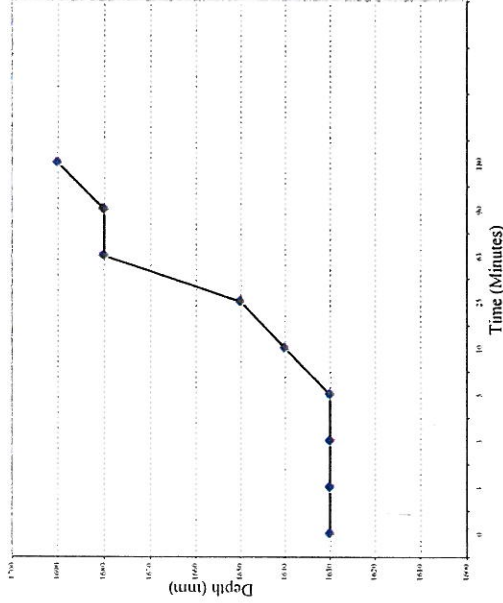
Depth to water = 1630 mm
Start time = 0 min
Average water depth = 540 mm

Final parameters

Depth to water = 1690 mm
End time = 180 min
Change in water dept = 60 mm
Time interval = 180 min

Average Soakaway Rate = 5.44 m³/sec*10⁻⁶
Average Soakaway Area = 3.25 m² (sides + base)

Infiltration Rate = 1.68 m/sec*10⁻⁶



Time	Depth to Water
0	1630
1	1630
3	1630
5	1630
10	1640
25	1650
63	1680
90	1680
180	1690

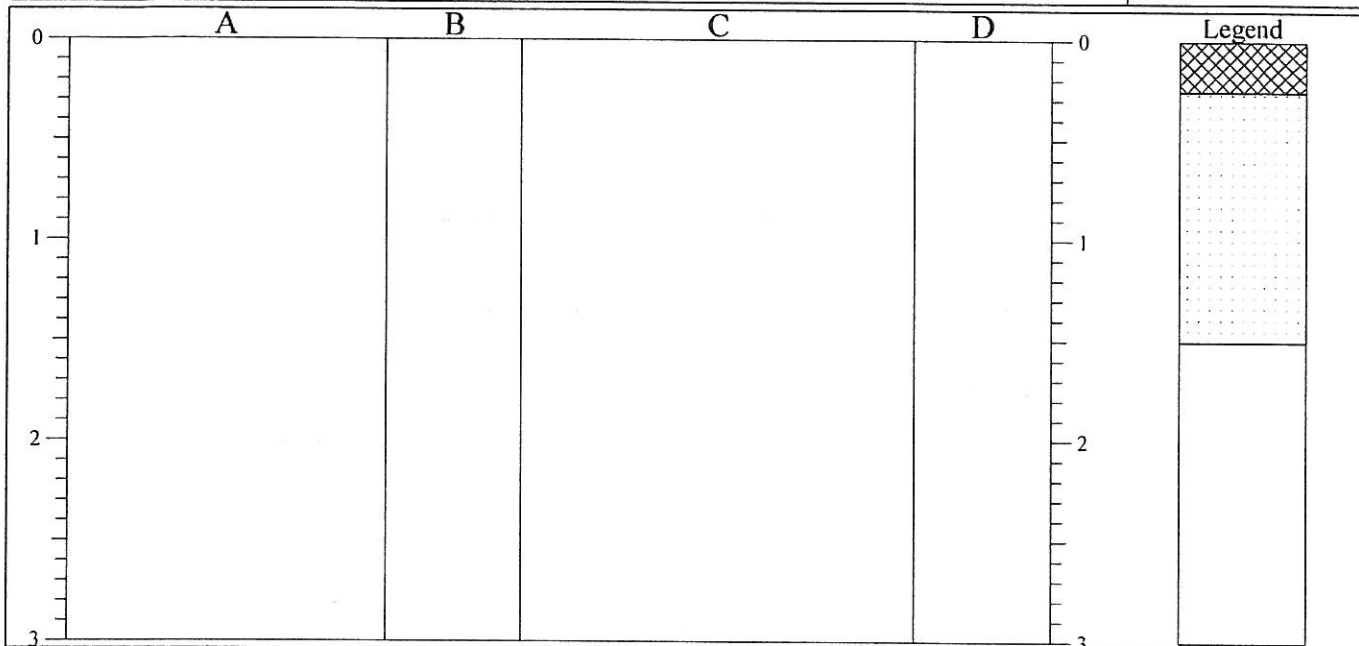
Depth (m)	Strata Description
0.0 - 1.50	MADE GROUND: Dark brown to brown sand fill with rubble
1.50 - 2.20	Light brown fine to coarse SAND

(based on BRE Digest 365)

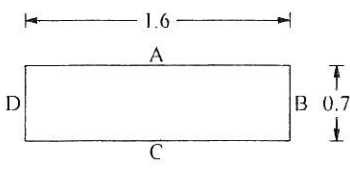


TRIAL PIT LOG

Project Cliffe Close, Barnsley				TRIAL PIT No SA2
Job No S120833	Date 30-08-12	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	Type	Remarks/Tests
0.00-0.25		MADE GROUND: Dark brown topsoil.			
0.25-1.50		Light brown SANDSTONE.			

Shoring/Support: Stability: 	GENERAL REMARKS No groundwater encountered.
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All dimensions in metres Scale 1:37.5	Client Adept	Method/ Plant Used JCB 3CX	Logged By PF
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Soakaway Test Results

Job No: S120833
Project: Cliffe Close, Barnsley
Client: Adept
Test No.: SA2
Date: 30/08/2012

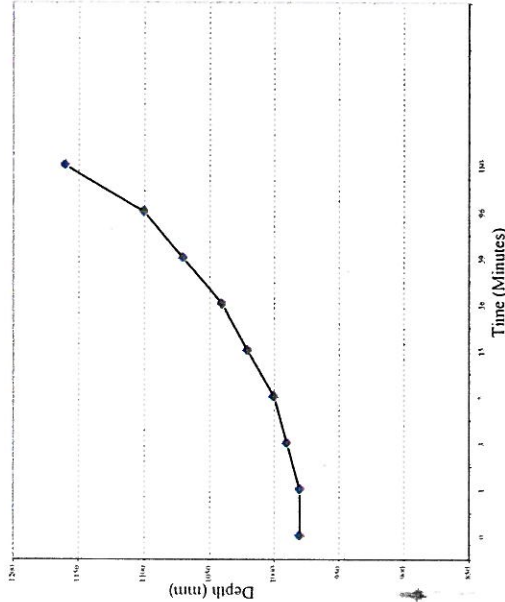
Test Pit Dimensions
Length = 1600 mm
Width = 700 mm
Depth = 1500 mm (Total depth)
(Plan area = 1.12 m²)

Initial parameters
Depth to water = 980 mm
Start time = 0 min
Average water depth = 430 mm

Final parameters
Depth to water = 1160 mm
End time = 180 min
Change in water dept = 180 mm
Time interval = 180 min

Average Soakaway Rate = 18.67 m³/sec*10⁻⁶
Average Soakaway Area = 3.10 m² (sides + base)

Infiltration Rate = 6.03 m/sec*10⁻⁶



Time	Depth to Water
0	980
1	980
3	990
7	1000
15	1020
36	1040
59	1070
96	1100
180	1160

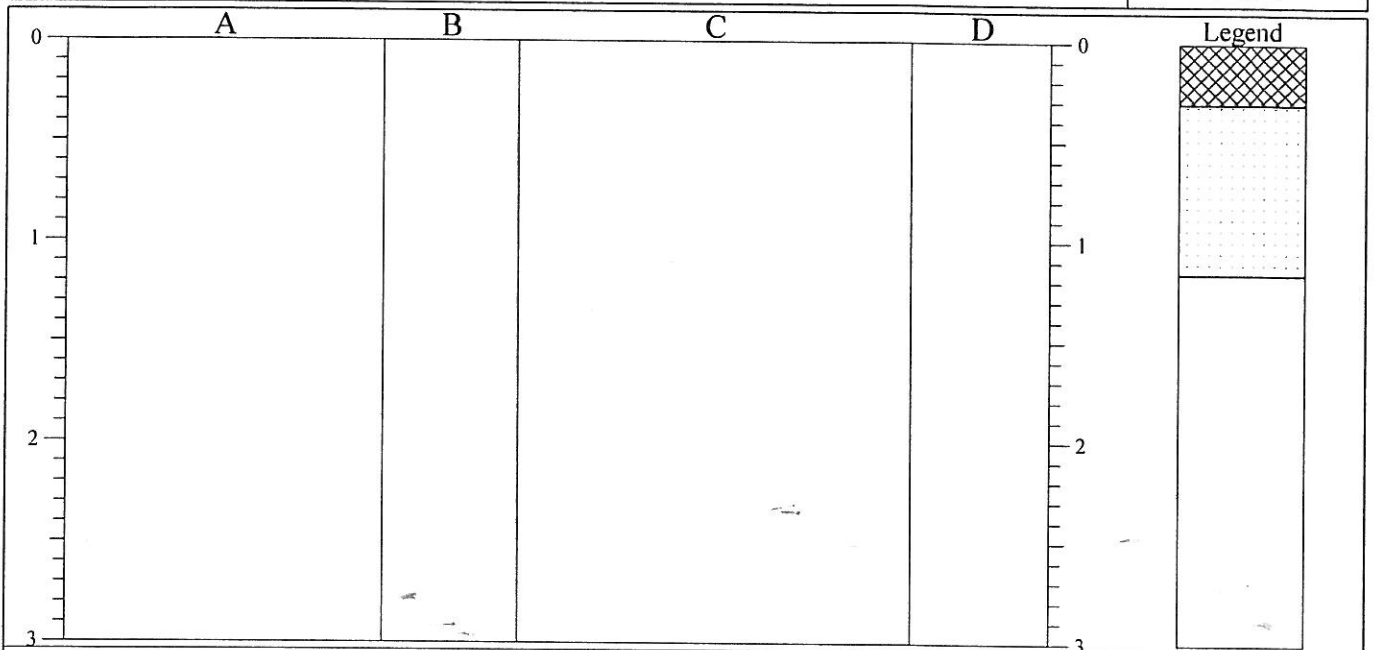
Depth (m)	Strata Description
0.0 - 0.25	MADE GROUND: Dark brown topsoil with brick
0.25 - 1.50	Light brown SANDSTONE

(based on BRE Digest 365)

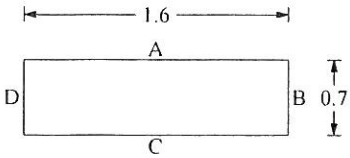


TRIAL PIT LOG

Project Cliffe Close, Barnsley				TRIAL PIT No SA3
Job No S120833	Date 30-08-12	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	Type	Remarks/Tests
0.00-0.30		MADE GROUND: Dark brown topsoil with brick.			
0.30-1.15		Light brown SANDSTONE.			

Shoring/Support: Stability: 				GENERAL REMARKS No groundwater encountered.
All dimensions in metres Scale 1:37.5				
Client	Adept	Method/ Plant Used	JCB 3CX	Logged By PF

GRD_TRIAL_PIT_LOG_S120833.GPJ AGS3 ALL GDT 11/09/12



Soakaway Test Results

Job No: S120833
Project: Cliffe Close, Barnsley
Client: Adept
Test No.: SA3
Date: 30/08/2012

Test Pit Dimensions

Length = 1800 mm
Width = 700 mm
Depth = 1150 mm (Total depth)
(Plan area = 1.25 m²)

Initial parameters

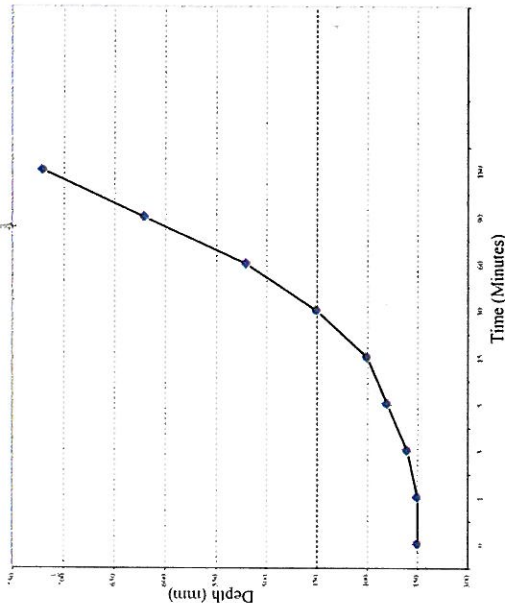
Depth to water = 350 mm
Start time = 0 min
Average water depth = 615 mm

Final parameters

Depth to water = 720 mm
End time = 180 min
Change in water depth = 370 mm
Time interval = 180 min

Average Soakaway Rate = 43.17 m³/sec*10⁻⁶
Average Soakaway Area = 4.34 m² (sides + base)

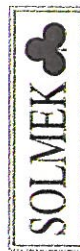
Infiltration Rate = 9.96 m/sec*10⁻⁶



Time	Depth to Water
0	350
1	350
3	360
5	380
15	400
30	450
60	520
90	620
180	720

Depth (m)	Strata Description
0.0 - 0.30	MADE GROUND: Dark brown topsoil
0.30 - 1.15	Light brown SANDSTONE

(based on BRE Digest 365)



▲Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2012)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek. Solmek was a trading name of Hymas Geoenvironmental Ltd.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2001 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.



YorkshireWater

10 SEP 2012

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Yorkshire Water Services
Developer Services
Sewerage Technical Team
PO BOX 52
Bradford
BD3 7AY

Tel: 0845 120 8482
Fax: (01274) 372 834

For the Attention of Chris Brown

Email:
Technical.Sewerage@yorkshirewater.co.uk

For telephone enquiries ring:

Your Ref: 3012015
Our Ref: N012223

Kashif Khan on (0845)120 8482

5th September 2012

Dear Sir,

Cliffe Close, Brierley, Barnsley - Pre-Planning Sewerage Enquiry - K160726

Thank you for your enquiry received 23rd August 2012. Our charge of £65.00 (plus VAT) will be added to your account with us, reference ACE092. You will receive an invoice for your account in due course. Please find enclosed a complimentary extract from the Statutory Sewer Map. This indicates the recorded position of the public sewers. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site:

Development of the site should take place with separate systems for foul and surface water drainage. The separate system should preferably extend to the public sewer.

Foul water domestic waste should discharge to the 150 mm diameter public combined sewer recorded in the road to the north-east of the site, at a point approximately 17 metres from the site. There may also be recently transferred public sewers in Cliff Lane adjacent to the site which may be utilised. We would advise you to undertake your own on-site investigations to determine the size and capacity of these sewers prior to any connections being made.

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Sustainable Drainage Systems (SUDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SUDS in this instance from the appropriate authorities.

Where appropriate, soakaways, swales and infiltration trenches (SUDS) may be adopted as part of the public sewer network. Further information may be seen in the DEFRA publication 'Interim Code of Practice for Sustainable Drainage Systems' (ISBN 0-86017-904-4). If the developer is considering adoption of SUDS they should contact our Developer Services Team on 0845 120 84 82.

The local public sewer network does not have capacity to accept any discharge of surface water from the proposal site. The developer is advised to contact the Environment Agency/local Land Drainage Authority with a view to establishing a suitable watercourse (if any nearby) for discharge.

Please note further restrictions on surface water disposal from the site may be imposed by other parties. You are strongly advised to seek advice/comments from the Environment Agency/Land

Drainage Authority, with regard to surface water disposal from the site.

Prospectively adoptable sewers and pumping stations must be designed and constructed in accordance with the WRC publication "Sewers for Adoption - a design and construction guide for developers" 6th Edition as supplemented by Yorkshire Water's requirements, pursuant to an agreement under Section 104 of the Water Industry Act 1991. An application to enter into a Section 104 agreement must be made in writing prior to any works commencing on site. Please contact our Developer Services Team (telephone 0845 120 84 82) for further information.

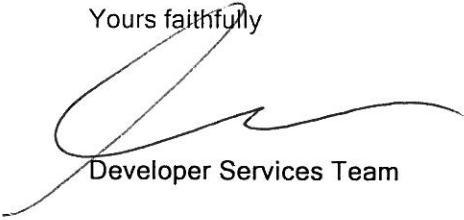
The public sewer network is for domestic sewage purposes. This generally means foul water for domestic purposes and, where a suitable surface water or combined sewer is available, surface water from the roofs of buildings together with surface water from paved areas of land appurtenant to those buildings. Land and highway drainage have no right of connection to the public sewer network. Highway drainage, however, may be accepted under certain circumstances; for instance, if SUDS are not a viable option, there is no highway drain available and if capacity is available within the public sewer network. In this event, the developer may be required to enter into a formal agreement with Yorkshire Water Services under Section 115 Water Industry Act 1991 to discharge non-domestic flows into the public sewer network.

No land drainage to be connected/discharged to public sewer.

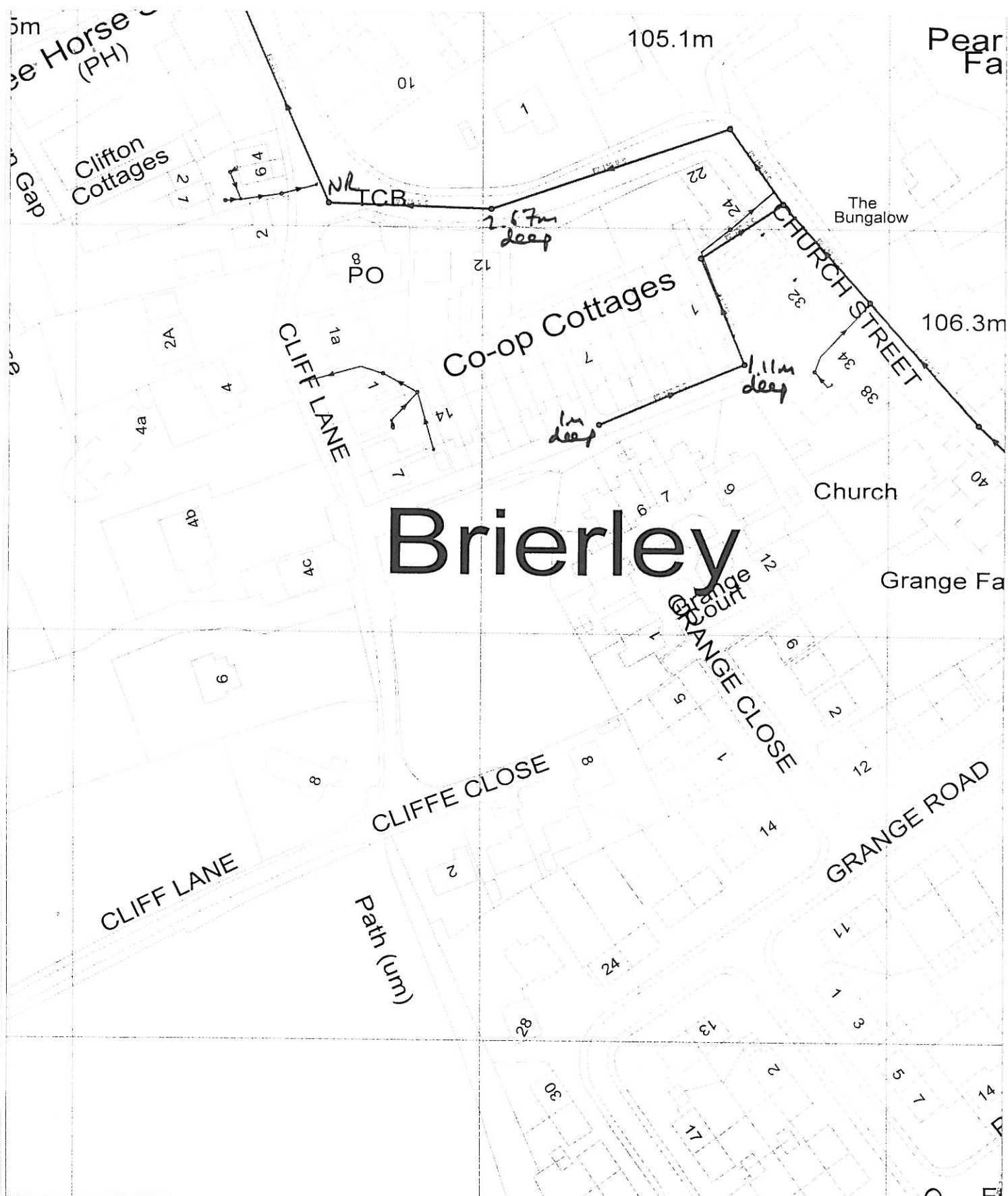
Any new connection to an existing public sewer will require the prior approval of Yorkshire Water. You may obtain an application form from our website (www.yorkshirewater.com) or by telephoning 0845 120 84 82.

All the above comments are based upon the information and records available at the present time. The information contained in this letter together with that shown on any extract from the Statutory Sewer Map that may be enclosed is believed to be correct and is supplied in good faith. Please note that capacity in the public sewer network is not reserved for specific future development. It is used up on a 'first come, first served' basis. You should visit the site and establish the line and level of any public sewers affecting your proposals before the commencement of any design work.

Yours faithfully



Developer Services Team



440686 : 410963	Map Name : SE4010NE	Title
 YorkshireWater	Yorkshire Water, PO Box 500, Halifax Road, Bradford BD6 2LZ Contact Name : K KHAN Contact Tel :	Notes <i>NR = N. Areroded depth</i>
(Ody) COPYRIGHT STATEMENTS: Reproduced by permission of Ordnance Survey on behalf of HMSO © Crown copyright and database 2004. All rights reserved Ordnance Survey Licence number 100019559		This plan is furnished as a general guide only and no warranty as to its correctness is given or implied. This plan must not be relied upon in the event of excavations or other works made in the vicinity of public sewers. No house or property connections are shown
UPN : Undefined		Date Req : 05/09/2012, 13:44:35
Originator: K KHAN, New Development - Waste Water,		Date Gen : 05/09/2012, 13:44:38
		Source : Sewer Network Enquiry

G.P. DRAIN SURVEYS

CLEANING, JETTING, RE-LINING, REPAIRS & SURVEYS

Our Ref : GMP/lhg/1674

Your Ref : Richard Parker

3rd September 2012

Adept Consulting Engineers Ltd
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Pudsey
Leeds
LS28 7RG

BARN 1 MARSH FARM
MARSH LANE
SOUTHOWRAM
HALIFAX
HX3 9NR

TEL/FAX: 01422 368177
MOBILE: 07973 834690

For the attention of: Mr Richard Parker.

C.C.T.V. DRAINAGE SURVEY REPORT.

Site at Cliff Lane Brierley Barnsley.

Manhole	Invert	Pipe Size	Material	Service
1	2020mm	6" & 9"	Clay	Combined
2	930mm	6"	Clay	Combined
3	1040mm	6"	Clay	Combined

M/H1 – B1

00.0 – Start scan
00.2 – Offset joint
00.7 – Line of the drain deviates up
01.2 – Unable to continue due to the bends within the drain (out of use)

Conclusion

No action required.

M/H1 – B2

00.0 – Start scan
01.7 – Drain blocked/large obstruction unable to continue survey abandoned

Conclusion

We recommend that this drain be high-pressure water jet/vac cleaned.

M/H1 – B3 (MARKED M/H1 – B2 BY MISTAKE)

00.0 – Start scan
03.3 – Radial crack
14.5 – Blind branch 12.0'clock
29.3 – Blind branch 11.0'clock
37.6 – Blind branch 3.0'clock
59.1 – End survey at a Manhole that eventually connects into the Sewer in Church Street
59.1 – Film in reverse
00.0 – End survey back at M/H1

M/H2 – B1

00.0 – Start scan
00.0 to 18.9 – Silt and rubble within the drain
18.9 – Survey abandoned at an old filled in Manhole

Conclusion

No action required. However if this drain is to be used as an outfall for the proposed development we would recommend that the drain be high-pressure water jet/vac cleaned

Proprietor: G.M. PYLE

Consultant: Eur. Ing., J.B. PYLE, B.Eng., C.Eng.
FICE., FIStructE., MCIArb., MBAE., ARICS., FConsE.

M/H2 – B2

00.0 – Start scan

00.0 to 03.0 – Silt & rubble within the drain

21.8 to 27.0 – Silt & rubble within the drain

32.5 – End survey at a M/H3 that eventually connects into the Sewer in Church Street

32.5 – Film in reverse

00.0 – End survey back at M/H2

Conclusion

We recommend that this drain be high-pressure water jet/vac cleaned.

CONCLUSIONS ON OUR FINDINGS.

From what we have found on site, we would recommend that any new drainage from the proposed development be connected into M/H1, due to the positioning and location of the Manhole. We were given an historic drawing of the site that showed part of the site used to drain to Grange Close, however there is no chance of connecting drainage that way now as part of the site has already had properties developed on it and there is no longer any access.

END OF SURVEY

Do Not Scale



DESIGN REVIEW

REVIEW BY

CHKD

DRAWING NOTES

21.09.10 Initial Issue

CB

RP

/

Date

Revision

By

Chkd Rev

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CHAS

Project A3v3.2

Cliff Close, Brierley, Barnsley

Title
CCTV Drainage Survey Layout

Client
Yorkshire Housing

Scale 1:500 Drawn CB Checked RP

Date Sept 12 Status Information

Drg. No. 04.12015/194

Rev. /