Drain Doctor Plumbing & Drainage
London Central Office
01707 371785

Project Name:
19 Rona Road, London NW3

Report Date:
20/07/2015 10:02:44

Drain Doctor®
PLUMBING & DRAINAGE
COMPETITIVE PRICES ★ UNBEATABLE SERVICE

www.draindoctor.co.uk

Pipe Condition Grade Summary

STRUCTURAL CODE OBSERVATION SCORES

Structural defects			
Section	PLR	Grade	Fault description
1	Downpipe X	5	Open joint, 50mm of diameter

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.
Grade 4: Best practice suggests consideration should be given to repairs to avoid potential structural failure in the short term.
Grade 5: Best practice suggests this pipe is at risk from structural failure at any time and urgent consideration should be given to repairs to avoid risks to public health.

SERVICE CODE OBSERVATION SCORES

Service defects			
Section	PLR	Grade	Fault description
1	Downpipe X	3	Multiple defects at 0.2m

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.
Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential operational failure in the short term.
Grade 5: Best practice suggests this pipe is at immediate risk of operational failure and/or causing flooding.

ABANDONED SURVEYS

Camera no access		
Section	PLR	Fault description
All Surveys Completed		

INFORMATION

These summaries are based on the Sewer Rehabilitation Manual grading system from the Water Research Centre. The condition grade scores are mathematically calculated values which offer an excellent guideline on the performance of the pipes.

Pipes with structural and service condition grade scores 1 & 2 are generally considered to be in an acceptable working order and will not be listed in the tables above.

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C.C.T.V. SURVEY REPORT

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C.C.T.V. SURVEY REPORT

Project Information

Project Name	Project Number	Contact	Report Date
19 Rona Road, London NW3		**SubStructural Ltd.**	**20/07/2015**

Client:	**SubStructural Ltd.**
Contact Name:	**Ian Cannons**
Department:	
Road:	**Suite LP20929, Lower Ground Floor**
Town:	**145-157 St John Street**
County:	**London EC1V 4PW**
Telephone:	
Fax:	
Mobile:	
E-mail:	

Site:	**SubStructural Ltd.**
Contact Name:	
Department:	
Road:	**19 Rona Road**
Town:	**London**
County:	**NW3**
Telephone:	
Fax:	
Mobile:	
E-mail:	

Contractor	**DRAIN DOCTOR**
Contact Name:	**Mr Ian Robinson**
Area:	**London Central**
Road:	**New House, Bessemer Rd, Welwyn Garden City**
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The survey has shown that the line has an open joint at 1.6m, and displaced joints at 2.6m and 3.2m, for which we recommend three localised structural repairs.

The lining materials used for the localised structural repair are a woven glass mat and polyurethane 2 part resin. The resin is not harmful to the environment or user. Once the resin is cured it forms a non-porous bonded structural repair over the identified defects. Because the repair is held in place under pressure during the curing process this allows for excess resin to fill the joints and cracks etc and therefore permanently seal them, this will stop any seepage.

To install 3 x 100mm localised structural repairs £1,080.00 + VAT.

Please note this survey is valid for three months.

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Inspection Report

Section Number	Survey Date	Client's Job Number	Our Job Number	Weather	Inspected Length
1	**15/07/2015**				**4.60 m**
Vehicle	**Technician**	**Camera**	**Pipe Type**	**Pre Cleaned**	**Section Length**
BD11 WPP	**D Archer**	**Xtech**			**4.60 m**

Place:	**London NW3**	Location Details:		U/S Node:	**Downpipe**
Road:	**19 Rona Road**	Catchment:		U/S Depth (m):	
Location:		Tape Number:		D/S Node:	**Ground**
Survey Section:	**Downpipe D/S to Ground**	Joint Length:	**1.50 m**	D/S Depth (m):	

Flow Use:	**Foul**	Pipe Shape:	**Circular**
Year Laid:		Pipe Dia/Height:	**100 mm**
Inspection Purpose:	**Routine inspection of condition**	Pipe Material:	**Cast iron**
		Lining:	

Comment:

1:50	Position	Observation	Photo
Downpipe	0.00	Start node type, rodding eye, reference number : Downpipe Remarks: access made	
	0.00	Water level, 0% of the vertical dimension	
	0.10	Line deviates down	
	0.20	Attached deposits, encrustation, from 12 to 12 o'clock, 10% cross-sectional area loss	1_1_5_A.jpg
	1.60	Open joint, 50mm of diameter	1_1_6_A.jpg
	2.10	Line deviates right	
	2.30	Material changes, vitrified clay	
	2.60	Joint displaced, medium	1_1_9_A.jpg
	3.10	Line deviates up	
	3.20	Joint displaced, medium	1_1_11_A.jpg
Ground	3.30	Line deviates left	
	4.50	Line deviates down	
	4.60	Vermin, rats observed in connection	1_1_14_A.jpg
	4.60	Finish node type, outfall reference number: Ground	1_1_15_A.jpg

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
3	**165**	**36.16**	**166.33**	**5**	**1**	**2**	**0.43**	**2**	**3**

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Inspection Pictures

Section Number	Project Name	Survey Date	City	Road
1	**19 Rona Road, London NW3**	**15/07/2015**	**London NW3**	**19 Rona Road**

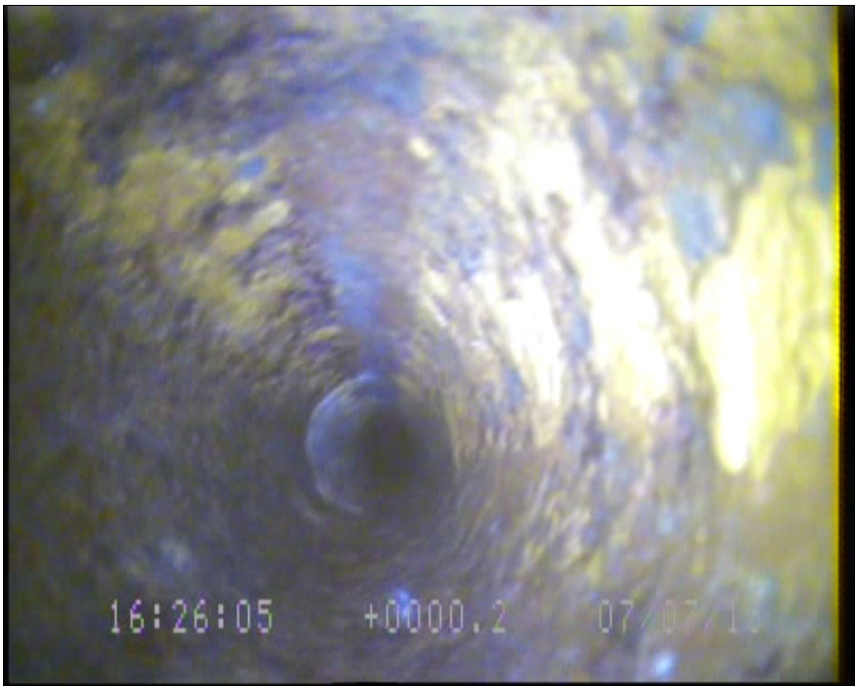

Photo: 1_1_5_A.jpg
0.2m, Attached deposits, encrustation, from 12 to 12 o'clock, 10% cross-sectional area loss

Photo: 1_1_6_A.jpg
1.6m, Open joint, 50mm of diameter

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Section Number	Project Name	Survey Date	City	Road
1	**19 Rona Road, London NW3**	**15/07/2015**	**London NW3**	**19 Rona Road**

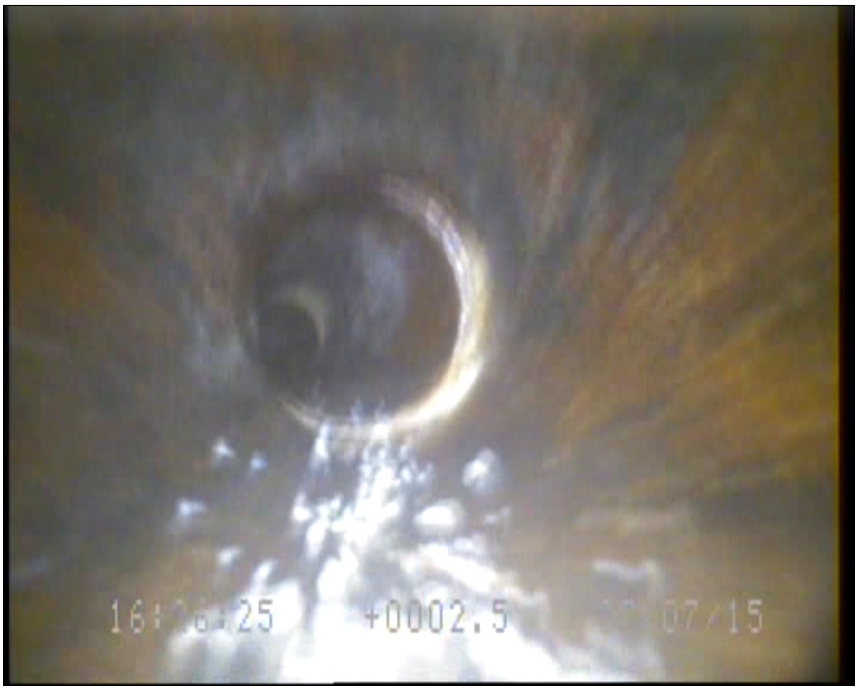

Photo: 1_1_9_A.jpg
2.6m, Joint displaced, medium

Photo: 1_1_11_A.jpg
3.2m, Joint displaced, medium

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1	**19 Rona Road, London NW3**	**15/07/2015**	**London NW3**	**19 Rona Road**

Photo: 1_1_14_A.jpg
4.6m, Vermin, rats observed in connection

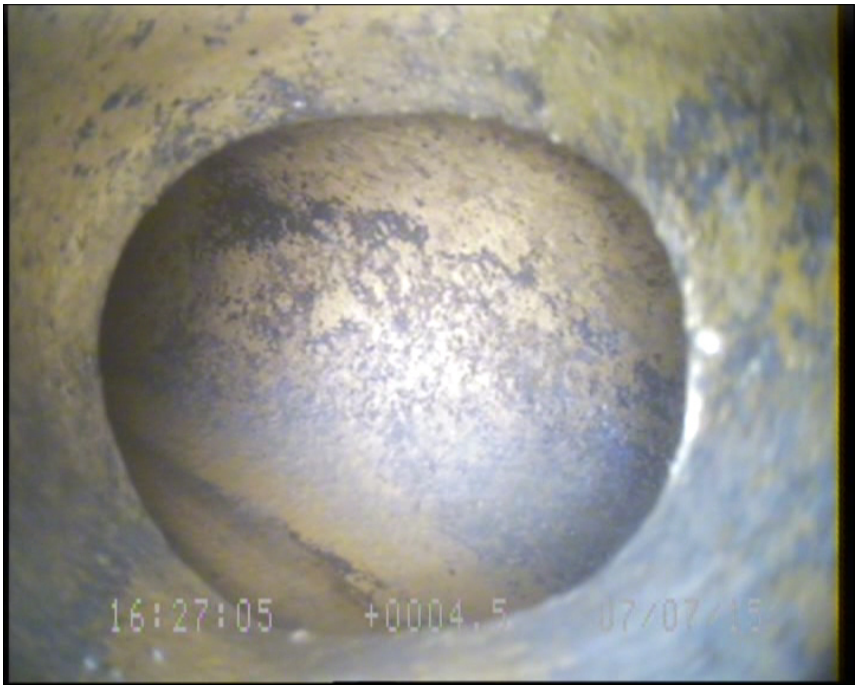

Photo: 1_1_15_A.jpg
4.6m, Finish node type, outfall reference number: Ground

Standard Notes & Conditions

Drain Doctor Plumbing has made every concerted attempt to produce a qualitative and quantitative survey, outlining all the significant observations and where applicable, their appropriate remedial actions. However, we cannot accept any liability for any misinterpretation by third parties of the information contained herein. The conditions of the drains observed in this report are that of the day(s) of the survey only.

The clock reference system is used to indicate where observations are being made, relative to the absolute position of the invert (bottom) of the pipe. That is to say that the soffit (top) of the pipe is at 12 o'clock, the invert of the pipe is at 6 o'clock, the right hand edge is at 3 o'clock and the left hand edge is at 9 o'clock. Where observations are made between points of the clock face, they are done so in a clockwise direction i.e. from 3 to 9 o'clock is the bottom half of the pipe.

Unless stated otherwise, all invert depths are measured at the downstream end of the inspection chamber or manhole, vertically from the bottom of the channel to the top of the manhole cover.

The 'master' copy of the recording for this report will be kept at Drain Doctor Plumbing for a period of 12 months from the date of the survey, and further copies may be available to purchase on request. After this time, the master copy may be destroyed.

Any quotations for remedial works included with this report will remain valid for a minimum period of 3 calendar months from the date of the survey.

Clay pipes (sometimes called salt-glazed or vitrified clay) are the traditional type of drain pipe and are found at properties of all ages, but particularly pre-1960s. Older clay ware piping systems typically used socket and spigot joints that were caulked with lime mortar to provide a rigid string of drains. These older systems are commonly found to be cracked and broken due to the inflexibility of the joints coupled with slight ground movements, and have never had any degree of built in design-flex.

Old cast iron pipes are susceptible to considerable erosion during service, poor hydraulic performance due to rough internal surfaces and poorly constructed connections to clay or other pipe materials.

Modern versions of vitrified clay pipes and uPVC (plastic) pipes are jointed with polymeric flexible couplings, which allow the pipes in the ground to adapt to slight ground movements without breaking. The modern joints are just as susceptible to leakage and root intrusion as their older counterparts, often as a result of poor installation, overloading, excessive ground movement or direct damage.

The jointing systems of all below ground pipes are always constructed around the outside of the pipes, so are not usually visible on CCTV recordings. Hence, a detailed knowledge of past and present drainage construction techniques is usually used to draw conclusions about the integrity of the pipe joints, from the conditions observed on their inside surfaces.

Root intrusion into drains is very common, but only usually occurs where there is an existing defect such as a crack, fracture or hole in the pipe. Roots from trees and shrubs have the sole purpose in life to seek out water and nutrients. When they find entry into a drain or sewer, they often fill the available space to make best use of the available water, and this can lead to some considerable blockages if left unchecked. Drains with root intrusion can often be permanently repaired without the need for excavation, or any need to remove the offending tree or shrub.

It is an offence under Section 111 of the 1991 Water Industry Act (also Section 46 of the 1968 Sewerage Act 1968 in Scotland) to allow anything to enter the public sewerage network that might impede the flow of sewage, or is difficult to process at the local waste water treatment plant. This not only applies to solid objects such as gravel, bricks etc, but also particularly to FOGs (Fats, Oils and Greases).

During the 1940s, 50s and 60s, there was a large scale use of Pitch Fibre pipes in the UK construction industry. These pipes are often found to be delaminated, blistered and deformed, due to the way in which they deteriorate under ground pressure and in the damp conditions found in drains.

By definition, a drain serves one property only, and a sewer serves more than one property.

Under legislation enacted on 1st October 2011 in England and Wales, all previous 'private sewers' and 'private lateral drains' have now passed into the ownership of the local Water and Sewerage Company (WaSC). At the present time, there are a few exceptions to this ruling which include drains and sewers under Crown land, some pipes under Railway land, surface water pipes that lead directly to a moving water course and pipe systems upstream from and including sewage pumping stations. Under the new rules, pipes that were previously deemed to be 'Section 24' sewers are now public sewers under the ownership of the local WaSC.

Where a private drain runs out under a road to a sewer, the responsibility for the maintenance of the pipe hands over from the site owner to the WaSC at the point where it passes under the property boundary. All sewers are now under the ownership of the WaSCs.

Under Scottish law, the reponsibility for drains beyond the property curtilage has not changed of late, and remains with Scottish Water.

Drain Doctor will keep this survey on file for 12 months from the date of the site investigation, after which time it may be permanently deleted. Whilst still on file, additional copies of the report and WinCan Viewer disk are available from Drain Doctor for £25 +VAT if required.

WinCan v8 uses the Sewer Rehabilitation Manual grading system for classifying pipes with a 0-5 scoring system under service and structural defect observations, where zero is good condition and 5 is poor condition. This syetm is a screening process which is extremely useful for quickly assessing which pipes are in most need of remedial works. Care should be taken when interpreting these scores with respect to plastic and renovated pipes.