

DRAINAGE PROBLEMS??? **WE CAN SOLVE THEM**



Before



after

COMMITMENT TO OUR CUSTOMERS

Our aim is to save you money, time and inconvenience when you have a problem with your Sewerage and Drainage systems.

It is our policy and commitment to provide all our customers with the most appropriate and cost effective solution to any drainage problem that may occur, we aim to respond quickly and treat all enquiries as urgent.

TYPES OF DRAINAGE PROBLEMS & SOLUTIONS

- **Sewer Blockages.** *Can be cleared by high-pressure water jetting or flexible rods. It depends on the type of blockage that determines the method of removal to be used.*
- **CCTV inspection and survey of pipelines.** *From this you will be able to see and determine the condition and type of structural defects within the pipe. This can be recorded onto VHS or CD-ROM. From the survey a structural report can be written and correct method of repair can be identified if required. Insurance claims and disputes can easily be settled with the help of a clear CCTV report.*



Our WinCan reporting software provides you with a clear and concise CCTV report that is easy to understand and shows specific photographs of defects that may require attention.

- **Hidden underground pipes and services.** *Location of underground pipes and services is essential when excavation works or pile driving is required. Electronic locating equipment can be used to locate the pipe or services underground and plotted on the surface, this will reduce the risk of the pipes and services being struck by excavating equipment.*
- **Deformed pitch fibre pipes.** *After time pitch fibre pipes tend to deform due to ground movement and weight, this can be rectified by pulling a re-rounding device (pig) through the sewer to re-open the pipe to its original shape then to install a manhole to manhole cured in place liner, again this reduces the disruption and cost to the customer.*

- **Broken and fractured pipes.** *Recurring blockages, exfiltration and infiltration causing contamination to surrounding ground and watercourses is likely to occur due to structural damage. Most defects can be repaired using no-dig methods, such as patch liner for localised defects or cured in place structural liners from manhole to manhole. These types of repair are quicker and more cost effective than open cut repairs with the minimum of disruption for the customer.*

Client:- Perco Ltd, Working for Earth Tec Morrison, Sheffield

Problem:- Contaminated ground water containing Iron Oxide (Ochre) infiltrating into a 1200mm dia surface water pipe, the infiltration was seeping through the joints and causing encrustation on the pipe walls also discoloration and pollution at the outfall and to the River Don.

The pipe was used as an overflow system (CSO) from the main trunk sewer.



Solution:- The pipe was large enough to carry out man entry methods of repair. To seal the pipe joints, fibreglass and epoxy resin patches were to be used.

In accordance with all Health and Safety at Work requirements the pipe was entered and the grout was removed from the joints.

The patch material was impregnated with the resin before being wrapped around an inflatable rubber packer and lowered into the pipe. The packer was then placed over the infiltrating joints and then inflated to the correct pressure to bond the patches to the pipe walls.



After three hours curing the packer was deflated and removed from the pipe, the patch was left in place giving a permanent seal to each joint. Nine patches in total were installed over a period of four working days reducing the risk of pollution to the river Don.

Benefits of Patch Repairs:-

- Full structural repair bonding to existing pipe wall even in wet conditions
 - Hard surface finish giving improved flow characteristics
 - Tapered edges give smooth flow transition
 - Most pipe of varying shapes and sizes can be repaired using patch liners
 - Overpumping is not required during installation
 - Patch material is fully resistant to most chemicals
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- ***Infiltration and exfiltration of foul or surface water from within manholes.*** As with defective pipe work infiltration in to a manhole or exfiltration out of a manhole can contaminate surrounding ground or watercourses. To remedy this, injection holes can be drilled at various point around the base of the manhole and a chemical grout injected into the holes, water is used as a catalyst to activate the grout on the outside of the manhole giving a permanent seal.
 - ***Annual drainage maintenance contracts.*** Industrial and domestic customers alike benefit from annual maintenance of their drainage systems. Over a period of time, foul and surface water drains may become silted or damaged, this may go undetected until a foul system blocks or a period of heavy rain causes a surface or combined system to surcharge. Flooding may occur inside and out causing damage and contamination to properties, surrounding land and watercourses. An annual investigation and cleaning out would prevent this happening.
 - ***Open cut repairs.*** It is possible that in some instances it may be cheaper and more practical to excavate to make a repair to a damaged pipe, eg:- if the damaged pipe is just below the surface in unmade ground.



Difficult Root Cutting job Undertaken by CG Pipetec

Client :- Yorkshire Water, Southern Area

Problem:- Mass Tree Roots blocking a 225mm sewer through a heavily wooded area with no access for conventional root cutting equipment or vehicles.

The most accessible manhole was located at the bottom of a steep bank in a farmers field. The manholes through the wood had been surcharging and the overspill had been contaminating the surrounding ground and a nearby watercourse.



Pictures showing the type of area



Locating the manholes through the wooded area was very difficult as access was restricted due to the undergrowth. A locating devise (sond) was attached to a crawler mounted camera, the camera was remotely passed through to the sewer to locate the manholes, this allowed each manhole to be found and exposed on the surface.

A flexible rod was used to line the sewer and draw a fine steel winch rope from the up stream manhole to the first accessible manhole. The winch rope was then attached to our directional high- pressure water cutter.



The Directional Root Cutter was placed by the manhole and attached to the winch rope ready to be placed in the pipe.

The root cutter was then placed in the pipe and pulled through the sewer to the offending roots. The cutter has a camera attached, this allows the operator to see and operate the cutter from the control panel in the back of the unit.





*The winch was located over 200m away from the unit in a very remote area of woodland, no vehicle access at all.
Our brave winch man managed to position the winch over the manhole without too much injury from the brambles and nettles*

The operator was able to control and monitor the progress of the root cutting from the rear of a four x four vehicle.



Water was supplied to the cutter via a 4000psi portable jetting unit positioned by the manhole.



On completion of the works all the equipment was removed and the site left clean and tidy.

The Directional Water Cutter



Features

- Works remotely in non man entry pipes from existing manholes
- Operates within the sewer without the need for over pumping
- Does not damage the pipe wall whilst cutting
- Video recording of completed work for clients retention
- Camera enables total control over cutting process
- Cuts hard fat, encrustation, roots, grout and intruding laterals

Cleaning Pipes and Culverts

As pipe sizes vary to accommodate different usage and catchment area, it is essential that the correct equipment is used to remove silt and debris that accumulates over a period of time. Our customers benefit from our experience and ability to assess the requirements and implement the proper and most cost effective method to complete the job.

CG Pipetec (UK) Ltd is our cleaning division and operates a range of cleaning equipment to cover pipe sizes from 100mm to 900mm.

Our trailer mounted jetting unit covers pipe sizes from 100mm to 300mm depending on silt volumes, to deal with larger pipes ranging from 150mm to 900mm we would use our Vactor 825 jetting and vacuum combination unit



Extensive Pipe Cleaning Carried out by CG Pipetec (UK) Ltd

Client:- Hansons

Location:- Outfall pipe at Corus, Rotherham

Problem:- Surface water outfall pipe not operating fully due to hard scale - grout reducing the pipe diameter by 80% to 90%. The detritus material in the pipe was a build up of steel waste and sludge that had rusted together.

A number of manholes had been buried under tonnes of scrap metal with a few that had the covers displaced and the metal debris had also filled the manholes.



Pictures Showing The extent of the Problem



The pipe is situated under the scrap metal area at a depth of 10m. The pipe size is 0.7m in diameter with the outfall at 1m. The distance between the manholes is approximately 100m.



Type of Location And Manhole Showing landing



Technique used:- To allow thorough cleaning of the pipe an Hydrainer pump was installed in the down stream manhole to remove the water. Man entry methods were used to break the scale into a more manageable size. The loose scale was then jetted back to the manhole using our Vector 825. With the high airflow

suction capability of this machine the loose scale was removed from the 10m deep manholes.

The detritus material was then tipped into the waste lagoons on site.

When a section of pipe had been cleared, a CCTV camera with a locating sond attached was used to locate the buried manholes.

Areas had to be cleared of scrap to allow access to the manholes.

The chambers were then cleaned out and all the metal removed. To prevent the manholes being reburied, manhole rings were placed on top and raised above ground level.

Conclusion:- After the pipe was completely clean and free of silt and debris, a CCTV survey was carried out to confirm all the scale had been removed. Now the surface water outfall is working to its full capacity it will reduce the risk of flooding and standing surface water in the area.



The pipe after the cleaning process had been complete

All the work has been carried out by fully trained operatives using all the necessary safety equipment and in accordance with all health and safety requirements.

Area cleared of scrap with a new manhole ring to prevent metal being pushed back into the manhole, the heap of debris at the side of the manhole was the type of material taken out.



Job Variations

Away from our drainage operation we have been able to help several companies with different problems that they came across.

One such problem was maintenance of an Air Conditioning Condenser (chiller) this was located in the basement of a very well known shopping centre in Leeds.

The condenser was four meters long and contained 240 x14mm dia x 4m long tubes that required cleaning of lime scale build up.

Previously' the tubes had been cleaned by using a 4m long rod with a brush on the end, this was not only time consuming but not very successful.



A small high-pressure jetting hose and nozzle was adapted to fit one of our portable jetting units.

The water was pumped at 3500 psi this was sufficient to clear the blocked pipes of scale.

The fitters were then able to complete the maintenance of the chiller on time and get it back in operation.

By using the jetting hose instead of the rod it saved our client at least 5 hours man time and a scale free chiller unit.

By being prepared to adapt to our customers needs we are able to provide a wider range of services, saving not only time but in most cases money.

Client List Including

Yorkshire Water Services
Peter Duffy Ltd (DrainsAid)
Morrison Construction (ETM)
Johnston Construction
Scott Wilson Kirkpatrick & Co Ltd
Costain
Kenton Utilities
ALS Civil Engineers Ltd
Ancon Building Products
Angus Heron Ltd
Avon Lippiatt Hobbs Ltd
AWG Construction Services Ltd
Barhale Construction Ltd
Bradford & Bingley Group Property
Bruntwood Estates Ltd
CA Blackwell (Contracts) Ltd
Caddick Construction Ltd
Chemcol UK
Chesterfield Liquid Transport
Clugston Construction Comercial Drain Management
Demolition Services Ltd
Environmental Design Services
ESAB Group UK Ltd
ESS Steel Group Ltd
General Domestic
Glacier Arm Ltd
Ground Investigation & Piling Ltd
Grove Design & Build Ltd
Hall Construction Services Ltd
Hanson Support Services Ltd
Ian Priest & Co Ltd
Inkcycle Ltd
Interhatch
JMB Building & Maintenance
JN Bentley Ltd
John Doyle Construction
Leeds City Council
Morrison Construction
Onyx UK Ltd
National Trust
TJ Brent

The above companies are part of our growing Client List, many other companies have benefited from our wide range of services.

We also have a large number of Private and Domestic Customers with a wide and varied range of problems that have all been resolved with a minimum of inconvenience and disruption.

CG Pipetec are dedicated to providing a full range of services to all of it's customers. We undertake both small works and larger contracts, we are also able to offer the most suitable and cost affective solution to most drainage problems.

Both the management and site operatives are fully experienced in all aspects of Sewer and Drainage Maintenance Techniques allowing CG Pipetec to provide the very best service.

All relevant health and safety certificates can be provided on request.

If you have any questions or would like advice on any of the above without obligation, please contact us on our local rate number (0845) 090 0103 or our site manager's mobile (07968) 336028 or email us at enquiries@cgpipetec.co.uk