



The Church of England  
Diocese of Ely

All Saints' Church, Walsoken  
Renovation Project

# Renovation Project Supporting Documentation

Title: Church Drain Report

Date: 19th September 2024

# Drainage Investigation Report

Auger Ref:

149799.5.BSD



## Job Information

Client	Quadra
Client ref	16550702
Visit date	18/09/2024
Report date	19/09/2024

## Job Summary

-  Claim Referred Back to Client. [Read more.](#)
-  CCTV survey undertaken. [Read more.](#)
-  Drainage repairs required. [Read more.](#)



# Job Information

## Overview

### Brief

Auger were commissioned by Quadra to undertake drainage investigations following our previous subsidence investigations and repairs at the property. This entailed the excavation and replacement of a rainwater gully and 2m of 100mm pipework. Following our repairs we identified more strenuous issues with the below ground surface water system as the entirety of the drains comprise of pitch fibre pipework and are significantly blocked with silt and debris.

Due to these issues Auger have since attended the property on five occasions beginning from the 12/07/2023. The majority of these investigations necessitated the utilisation of JetVac Combination Tanker unit, however, on several occasions our sub-contractor Lanes attended site unequipped with the adequate amount of jetting and vacuuming hose to enable the clearance of the below ground drainage system. In our last investigation however, on the 18/08/2024, Lanes attended site with the incorrect tanker. Lanes were able to resolve this issue and reattended on the same day with the right equipment and were successful in clearing the surface water system.

Auger have now reattended site and carried out a full CCTV survey of the surface water drainage system at the Church. Our findings are as follows:

## Findings

### Drain Survey

Upon arrival to site our engineer lifted all seven external surface water manholes (SWMH1-7) and found that the drains remain to be clear and free flowing since our last attendance.

We began our survey from the drains situated at the front left hand side of the Church. Our survey of line 1 was performed upstream from SWMH1 to rainwater gully 1 (RWG1) and revealed that the pitch fibre pipework on this line is clear and free flowing.

On line 2 we carried out a drain survey downstream from SWMH1 to SWMH2. This revealed a severely blistered and deformed section of pitch fibre pipework at 10m downstream which we were unable to pass through. Our subsequent survey back upstream from SWMH2 revealed further blistering leading to this obstruction point.

Our inspection of line 3 was conducted upstream from SWMH2 upstream to RWG2 and highlighted one section of severely blistered pitch fibre pipework at 1m upstream.

On line 4 our survey was conducted between SWMH2 and SWMH3 which revealed a 16m run of blistered and deformed pitch fibre pipework.

Our survey of line 5 was completed from SWMH3 upstream to RWG3. Our survey highlighted no evidence of any structural damage to the pitch fibre pipework on this line.

Our inspection of line 6 was carried out between SWMH3 and SWMH4 and revealed a severely deformed section of pitch fibre pipework which we were unable to manoeuvre our camera through.. Our subsequent re-survey upstream from SWMH4 highlighted further blistering leading to the obstruction point.

Our CCTV survey of line 7 was performed downstream from SWMH4 and extended off the customers property boundary at 19m downstream. We became obstructed on this run at approximately 24m downstream and were unable to obtain a clear visual on the private pipework within boundary due to the water retention within the drain. We would advise that the Local Water Authority (LWA) are appointed to resolve this issue.

We then completed our next survey of line 8 between SWMH5, situated at the rear right hand side of the Church, downstream from SWMH4 which highlighted further blistering and deformities leading to an obstruction point at 16m downstream.

On line 9 we conducted an inspection upstream from SWMH5 to RWG4 which revealed a collapsed section of pitch fibre pipework at 2m upstream from the manhole.

Our CCTV survey of line 10 was done between SWMH5 and SWMH6. This drain runs beneath a plethora of gravestones and is severely blistered and deformed throughout.

Our inspection of line 11 revealed no significant defects to the pitch fibre pipework on this line between SWMH6 and RWG5.

We conducted our survey of line 12 downstream from SWMH6 to SWMH7. This drain houses two bends, one of which is displaced directly upstream from the manhole. The condition of the pipework downstream from the second bend at 4m is heavily deformed and is holding water throughout. This drain also runs in close proximity to two gravestones.

Our final survey of the surface water system at the Church was carried out upstream from SWMH7 to the final rainwater gully (RWG6). This line was severely deformed and blistered throughout.

### Cause

The cause of damage resulting in the joint displacements is consistent with an external force being applied and in this case, we conclude that this is due to ground movement applying force or loading to the material around the pipe which have been sufficient to cause the damage in sections of the drain. The damage should therefore be considered accidental.

Pitch fibre pipework is subject to gradual deterioration over time; however insurers should accept liability for repairs to pitch fibre pipework under policy terms as this is affecting the function of the system.

## Recommendations

It is recommended that the following repairs are carried out to restore full function to the system:

### Line 2

Sonde, excavate and replace 1m of 100mm pipework approximately 10m downstream of SWMH1 at a depth no greater than 1.0m through grass.

**Refer Back to Client**

Re-round and reline 15m of 100mm pipework between SWMH1 and SWMH2.

**Line 3**

Sonde, excavate and replace 1m of 100mm pipework approximately 1m upstream of SWMH2 at a depth no greater than 1.0m through grass.

**Line 4**

Re-round and reline 16m of 100mm pipework between SWMH2 and SWMH3.

**Line 6**

Sonde, excavate and replace 1m of 100mm pipework approximately 2.6m downstream of SWMH3 at a depth no greater than 1.0m through soil.

Re-round and reline 8m of 100mm pipework between SWMH3 and SWMH4.

**Line 8**

Sonde, excavate and replace 1m of 100mm pipework approximately 16m downstream of SWMH5 at a depth no greater than 1.0m through grass.

Re-round and reline 32m of 100mm pipework between SWMH5 and SWMH4.

**Line 9**

Excavate and replace RWG4 and 5m of 100mm pipework at a depth no greater than 0.5m through gravel.

**Line 10**

Re-round and reline 24m of 100mm pipework between SWMH5 and SWMH6.

**Line 12**

Excavate and replace 1m of 100mm pipework directly upstream of SWMH6 at a depth no greater than 0.5m through grass.

Sonde, excavate and replace 1m of 100mm pipework approximately 4.8m upstream of SWMH6 at a depth no greater than 0.5m through grass and tarmac.

Re-round and reline 17m of 100mm pipework between SWMH6 and SWMH7 and our open excavations.

**Line 13**

Excavate and replace RWG6 and 5m of 100mm pipework at a depth no greater than 0.4m through gravel.

Auger have not allowed or will not be held responsible for any alteration or modification to the above ground drainage following the removal of the existing gully and reinstatement of a new gully. The customer must ensure that the above ground drainage correctly expels into the gully pot and avoids overcrowding the gully with numerous downpipes which could lead to the gully overflowing.

During the clean-up/reinstatement process we will endeavour to leave the area we are working in clean and tidy and as close to how we found it as possible. There will always be an element of general debris/mud/waste that will build up in the area which cannot be prevented. There may however be elements of this process that are outside our remit i.e., Repainting or cleaning. If this is the case, then we will need to speak to the customer's insurers to help in this regard.

**Please Note:**

We would like to note that the gully we are proposing to replace has a large concrete surround. When installing the new gully Auger will install a type 3 gully at ground level with a smaller surround. We would therefore like to make the customer aware that the newly installed gully will aesthetically differ from the current arrangement.

**We will now refer the claim back to the client in order to progress the claim.**

**PLEASE NOTE-**

**The costs of the repair works exceed the policy limit of £15,000.00 inc VAT. This typically renders the customer responsible for any costs that exceed this limit. As we do NOT have delegated authority for this claim we will refer the costs back to the Client prior to equating the apportionment of costs the customer is responsible for.**

*Once repairs have been undertaken the customer should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing / free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.*

*With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on-site and could potentially cause an increase in repair costs and inconvenience.*

*The proposed repairs will require radio detection in order to confirm the location of the defects. Although this is usually very accurate, a number of factors such as depth of pipework and presence of other services below ground can have an effect on the signal. This can result in a change of the location of the proposed excavation as well as the assumed depth and this may impact the scope of works. Costs may*

## Repair Caveats

*be subject to change due to the potential of excavating to a different depth and/or through different surfaces.*

*Where any excavation reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact match.*

*If any of the above lining recommendations fail then excavation and replacement of the pipework would be required. This would severely increase the cost of repairs and would provide greater inconvenience to the residents. The relining of a severe joint displacement is normally unadvised due to the potential for complications in the future.*

*Recommendations have been made to reline or patch reline sections of the drainage system at the property. This process combines a number of chemicals in a resin, which then harden in a fibreglass matting to create a new section of drain within the original. The reaction creates a **strong smell which can linger for up to 72 hours** once works are completed - this is not harmful. It is recommended that any areas where smells are experienced are kept well ventilated until the odour subsides.*

*The above recommendations allow for the replacement of gullies & connected underground drainage only. The insured should be made aware that the aesthetic appearance of this gully may be different from what is currently in place.*

*The recommendations to resolve the deformation issue to the system will involve attempting to reround pipework so a structural liner can be inserted, however we cannot confirm that all sections of the deformation can be cleared with re-rounding. In these cases if re-rounding fails to clear the deformation, excavation and replacement of these defective sections will be required. This can only be reported from site and additional costs and inconvenience will be incurred under these circumstances.*

*Please be aware that re-rounding and re-lining cannot alter the current line and level of the pipe. Therefore, if poor falls or dips are currently present, they will remain after the works. If blockages occur after the works, replacement may be necessary, although any improvement in fall may not be possible.*

# Photographs

## CCTV Stills

Fig 1.1: Obstruction / severe blistering on line 2



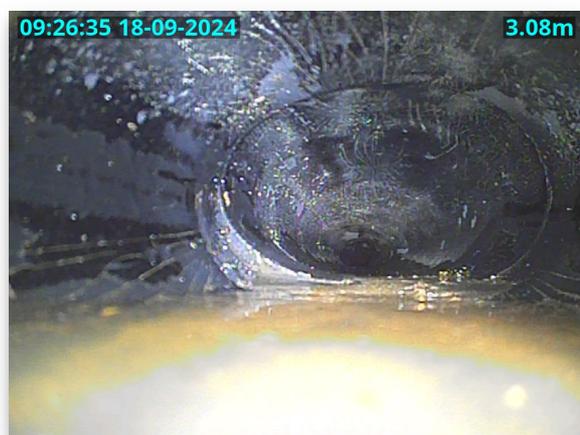
Fig 1.2: Severe blistering on line 8.



Fig 1.3: Obstruction on line 6.



Fig 1.4: Further evidence of deformed pitch fibre pipework.



## Site Photos

Fig 2.1: Sonde point of obstruction on line 2.



Fig 2.2: Sonde point of obstruction on line 6.

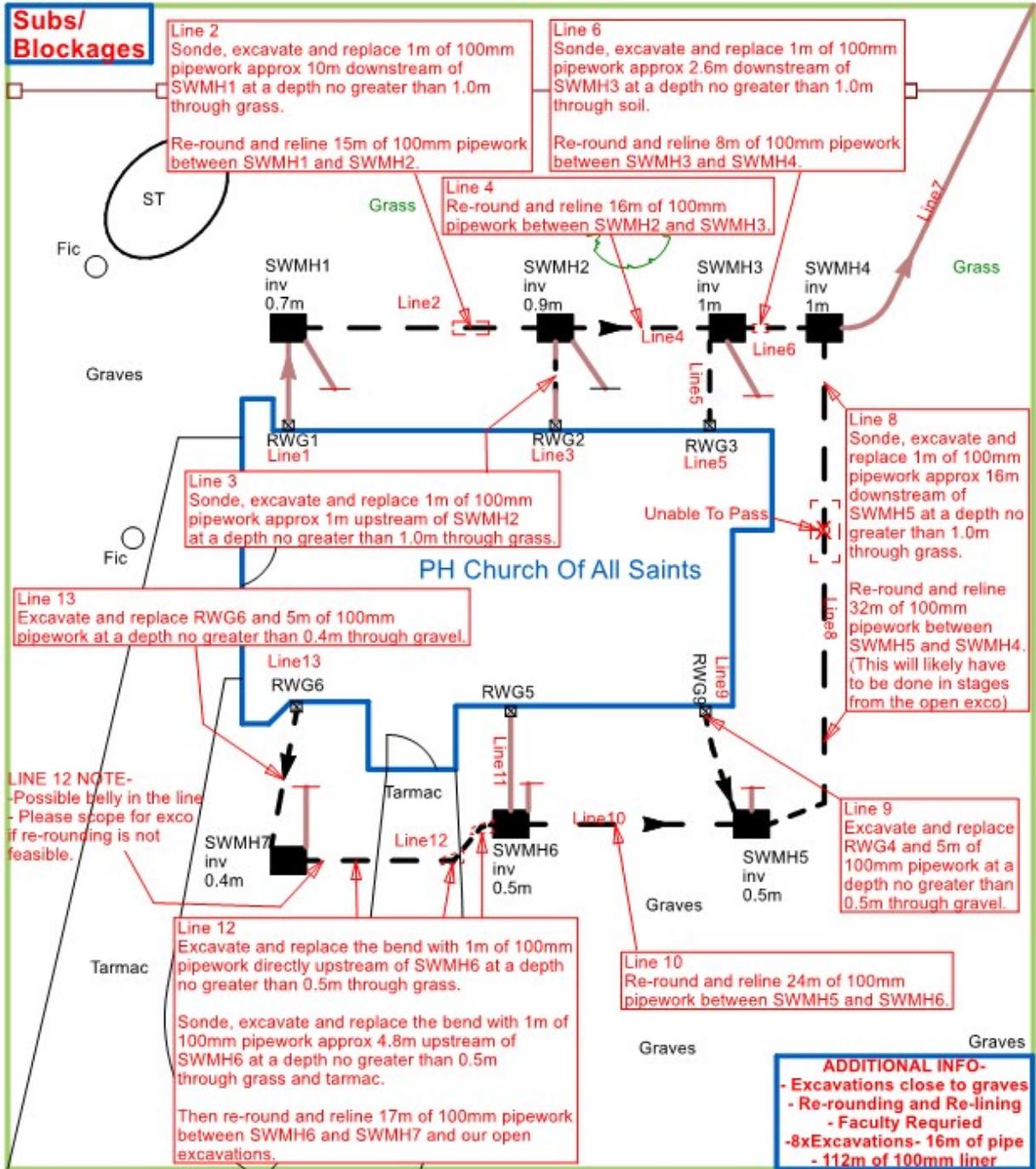


Fig 2.3: Sonde point of property boundary at 19m downstream from SWMH4.



Fig 2.4: Plethora of graves at the right hand side of the Church between SWMH6 and SWMH6.





This drawing should be used for diagrammatic purposes only. Auger are not responsible or liable for any 3rd party works undertaken using the details outlined in this drawing. Confirmation of the drainage configuration can only be confirmed by excavation or detailed technical survey.

LEGEND					
	= Manhole (MH)		= Blockage / Collapse		= Lines not to be repaired
	= Inspection Chamber (IC)		= Soil Vent Pipe (SVP) / WC		= Lines to be repaired
	= Inspection Point (IP)		= Combined Waste Gully (CWG) / Foul Waste Gully (FWG)		= Assumed water mains feed
	= Rainwater Pipe (RWP)		= Rainwater Gully (RWG)		= Walls
	= Rainwater Pipe (RWP)		= Fences		= Trial hole
			= Building Outline		= Borehole
					= Direction of flow
					= Gate / Door
					= Shrubs / Bush
					= Hedge
					= Tree
					= Steps