

# LANES IN ACTION

## UV lining flood prevention



### Project challenge

Lanes Group was commissioned by Scottish Water to clean and line a combined sewer in the centre of Inverness in the Scottish Highlands, right alongside the River Ness. The 300mm diameter clay pipe had been identified as being at high risk of contributing to localised flooding during heavy rainfall. This would greatly inconvenience local people and create a pollution risk for the river.

The solution was to strengthen the pipe by lining it, greatly reducing the risk of it failing. A major challenge was to complete all work within tight daily time frames to minimise their impact on nearby businesses and essential services. Lanes' no-dig sewer rehabilitation expertise played a key role in achieving this.

### Client benefits

- Access to the latest ultra-violet pipe lining technology and expertise, allowing the lining work to be carried out with minimal impact on residents and businesses, and in the shortest timeframe
- Work scheduled to ensure local facilities, including a hospital and a theatre, were not inconvenienced
- Excellent project management and coordination of a full range of pipe repair services, using both local and national service teams
- Work carried out by a pipe rehabilitation specialist with the highest health and safety standards, recognised by achieving a RoSPA Gold Medal
- Lining project successfully completed on time and within budget.

### Client comment

"The use of specialist trenchless technology allowed the rehabilitation of this sewer to be completed quickly with minimal impact on the Ness Walk and Bishops Road areas of Inverness. This was a customer-related outcome that was central to the success of this project."

Ian Phillips, Project Manager  
Scottish Water



Client:  
Scottish Water

Sector:  
Utilities

Location:  
Inverness

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Lanes Group plc is a national wastewater and drainage solutions provider. We sit at the heart of the drainage industry in the UK and Ireland. We are serious about delivering excellence in service, safety and innovation.

The company has a network of 32 depots and strategic utility hubs, providing high quality utility, drainage, and maintenance services for commercial, public sector and domestic customers.

Our key market sectors include water utilities, construction, energy, rail, highways, insurance and commercial maintenance.

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### The project

The sewer being lined was close to a busy city centre, near a hospital, a hospice and Inverness's main theatre. This meant the Lanes team could only work between 6.30pm and 11.30pm each day.

That gave a five-hour window to set up over-pumping to divert sewer flows, carry out our work, and then clear the site each day.

### Root cause revealed

The main cause of the higher flood risk was tree roots infiltration into the sewer. Over three evenings, the roots were removed by water jetting or with a KA-TE cutter, a remote-controlled grinding tool.

Scottish Water used Lanes' CCTV drainage survey footage to assess the condition of the sewer, and decide how much of its length needed to be lined to strengthen it and prevent further root ingress.

Over three more evenings, a team from the Lanes Sewer Renovation Division then installed three liners – two 70m long, and the third 60m long – in separate sections of the sewer pipe.

### UV lining – fast and reliable

Ultra violet (UV) cure in place pipe (CIPP) lining was selected because it suited the very short working timeframe available. It meant each section of liner could be installed, cured and reinstated within the five-hour window.

Unlike conventional hot water CIPP lining, the UV lining equipment could be set up quickly, the lining process was fast, and no hazardous waste water was created, which largely eliminated the risk of polluting the River Ness.

With UV lining, a glass fibre liner is installed in the pipe and inflated against its sides. Then a UV light array is sent through the pipe to cure, or harden, resin impregnated in the liner.

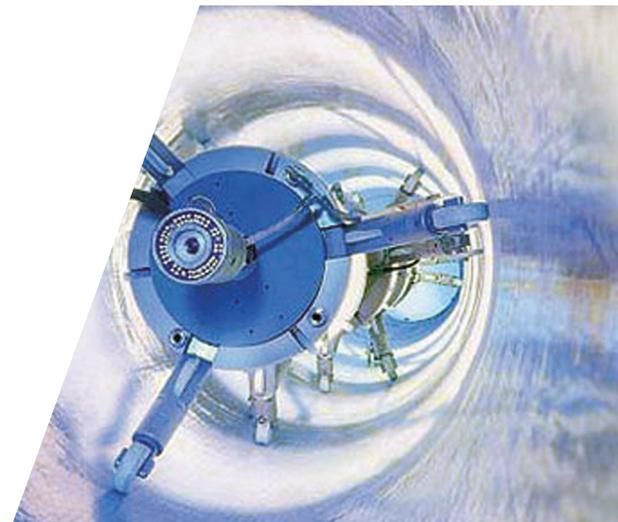
Lateral connections were then re-established with the KA-TE cutter.

#### Front cover

Lanes sewer rehabilitation engineers work on site – with just a 5-hour window each day.

#### This page

Ultra-violet light was used to cure resin in each liner, setting it hard, creating a new pipe-within-a-pipe.



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