

## Bristol, UK – Damaged Sewer Relined & Restored

Damage caused by a driven sheet pile penetrating a sewer in the middle of a residential area of Bristol, UK, led to 32m of Amiblu's Hobas Jacking Pipe being installed to reline the ruptured section to restore the asset to full use.

The original pipeline in Newfoundland Road was damaged by a sheet pile being driven through the existing double ring brick foul sewer, meaning the sewer flow was compromised for several months whilst a solution was designed.

Given that Newfoundland Road is a busy residential area, replacing the damaged section of pipe by open cut methods would have proven very costly, environmentally unacceptable and disruptive to local inhabitants, so the solution to slip line the full length of the existing pipe from manhole to manhole was taken, ensuring minimal disturbance to the community and traffic.



Fig 1: Damaged pipeline

**The trunk sewer was damaged by a third party developer attempting to excavate down to make a connection to the deep sewer. As we have over 40 years' experience with GRP jacking solutions, it was quickly apparent they would offer the quickest solution to mitigate the impact upon or customers and commuters.**

- Julian Britton, Wessex Water, Client



Fig 2: MDA Ltd works preparation

An access excavation was carried out onto the sewer where it avoided major utility services including a strategic gas main, to allow jacking operations. An insitu jacking wall was designed and installed to withstand any potential jacking forces that would be encountered.

Once the excavation works were complete, a specially fabricated shield was manufactured to suit the GRP jacking pipes which were then inserted past the point of the damage to the next manhole. Specialist mining techniques were used to excavate using the shield to maintain maximum safety at all times. Over-pumping was required to deal with foul flows during the works. Once the collapse had been removed the Hobas GRP jacking pipes were grouted into place using Pozament SPP3 to fill the annulus and transfer the brick sewer loadings to the new GRP liner.

## PROJECT PARAMETERS

Country / City	UK, Bristol
Year of Construction	2020
Installation Time	2 weeks
Application	Sewer
Installation	Relining
Technology	Hobas Jacking Pipe
Total Length of Pipe	32m
Nominal Diameter DN (mm)	900
Nominal Pressure PN (bar)	1
Nominal Stiffness SN (N/mm <sup>2</sup> )	10000
Client	Wessex Water
Contractor	Matt Durbin Associates



Fig 3: Amiblu DN900 Jacking Pipes



Fig 4: Restored pipeline ready for handover to Wessex Water

The structural integrity of the existing pipeline had been compromised, so following an engineering design, Hobas GRP SN32,000 jacking pipes were chosen as the optimal solution; the pipes were delivered in 1m lengths weighing just 199kg per metre with a wall thickness of 31mm ensuring minimal loss of capacity.

The equivalent pipe in concrete would have been too large for the jacking pit and would have weighed close to 1tonne per metre with a wall thickness of more than 90mm. Amiblu's jacking pipes are made in various lengths to suit project requirements from 1m to 6m and are engineered to give 150 years service life.

**MDA are pleased to maintain their historic relationship installing GRP products across the UK, the works for this scheme highlighted the benefits of using Amiblu/Hobas pipe which ensured the project was carried out on time and within budget to the satisfaction of the client, and ensures the important client asset is protected for many years to come.**

- Matt Durbin, MDA, Contractor

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