



## Delivering faster, cheaper, safer and greener

Severn Trent Water

### Overview of Works

170 + years' combined specialist trenchless technology experience and capability allowed us to deliver faster, cheaper, safer, greener and less intrusive rehabilitation of Severn Trent Water's wastewater network.

### Scope & Capability

Ipsum take our role as a responsible specialist delivery partner seriously; this includes finding the very latest innovations in both equipment and materials to aid delivery of rehabilitation schemes. Since 2012, we have been working collaboratively as a Tier 1 delivery partner to Severn Trent Water providing proactive and reactive, repair and maintenance, minor civils, specialist trenchless technology, complex and capital schemes and digital / data analysis services on their wastewater assets.

## Approach

### Wastewater Infrastructure Framework (WINS)

- » **Outstanding reactive or planned works that were having a detrimental effect on Severn Trent Water's SLAs and KPIs.** These works would often be complex repairs requiring a high level of mitigation / traffic management. Repairs were carried out within 21 days (barring any TM restrictions) and used the latest trenchless methodology to reduce impact on stakeholders.

**Info asset data support through Ipsum.live.** During AMP6, Ipsum provided a system called 'Sewer Viewer' now known as Ipsum.live Assets which acted as a library for every survey carried out on the contract, and provided support on the Info Asset system. We also screened third party contractor CCTV and asset mapping data to validate workmanship. Later in AMP7, we supported Severn Trent Water's in-house teams who were struggling with the volume and accuracy of its data. Ipsum corrected the data and created a process which we have since supported the team with consistently. We provide a range of digital products and services to facilitate the analysis and delivery of data.

**Waste Network Resolution Team (WNRT) support – complex repairs.** Ipsum is the approved rising main rehabilitation specialist for Severn Trent Water, and works in collaboration with its WNRT teams. Our solutions range from a steam cured E-poxy impregnated glass reinforced needle felt liner, a bespoke UV pressure pipe liner, and a Kevlar reinforced resin less lining system.

Ipsum is an approved installer of eight different types of pressure pipe liners which means the correct solution is always installed. We have the Vericure system for monitoring the cure, as part of our quality assurance protocol which accompanies each install.

Ipsum has relined a number of critical H<sub>2</sub>S corrosion-impacted, large diameter concrete pipes, complete with structural manhole spraying / lining thus rehabilitating the entire system along, with deformed and structurally deteriorated brick culverts. These ranged from egg-shape profile to flat bottom barrel sewers meaning we used UV, steam or even traditional hot cure lining techniques.

- » **Capital and commercial schemes.** Ipsum's partnership with Severn Trent Water adds valuable experience to ECI projects, and helps the water company to design optimal, practical solutions that meet structural design and the design life criteria.

Capital works range from CP308 leak tight lining on infiltration schemes in pipes starting from 100mm. Ipsum also undertakes mechanical patching in small and large diameter pipes, manhole sealing and spray relining of culverts and manholes using the Hermes rehabilitation system, UHP cutting from 100mm to 900mm and



pressures up to 65,000 psi, UV tophats from 150mm to 600mm as part of our commitment to leaktight systems.

- » **WINEP programme.** Ipsum is delivering a large volume of WINEP work for Severn Trent Water. These critical schemes are designed to counter a number of environmental risks over the next 15 years. Ipsum has over 10 crews delivering works, split into four work types:
- » CCTV surveys,
- » STC25 Manhole Cards including cover levels through GPS,
- » Contributing area surveys to determine where the surface water system discharges,
- » SPS/WWTW/CSO surveys including model CAD drawings and drop tests.

Due to manhole complexity on NC3 or NC4 entries, we advocate surveying via 3D scanner from the tank access point, giving a fully workable 3D image and reducing risk.

Ipsum has also completed 1,250 CSO's survey inspections, including survey of the CSO exported into a 2D CAD and condition and positioning checks on the EDM (Event Duration Monitor).

## Outcome & Benefits

On the WINS defects contract, 92% of works are completed without the need for civils involvement.

On WNRT, Ipsum worked closely with Severn Trent Water to reduce mitigation costs by holding a stock of common size liners, based on a pressure rating of 7 bar positive and 0.5 bar negative. Although this doesn't cover every repair, as a generic it works and has saved thousands of pounds in mitigation costs.

As the delivery model changes in Severn Trent Water, with WNRT now taking on the more complex civils works, Ipsum has partnered with the delivery of more complex liners, and helping to minimise the amount of civils, our no-dig percentage is circa 87%.

Historically much of these works would have been passed to capital schemes, delaying and increasing costs. Ipsum regularly sits with the design teams to educate in the benefits of Trenchless technology, its capabilities and limitations. The experience and depth of knowledge of the Ipsum trenchless management team, has given Severn Trent Water the confidence to take on more challenging projects in house.

