

Brighton & Hove Water Mains Replacement

£15.5 million project to replace 57km of Victorian water mains in Brighton

by
Steve Duke

The Brighton & Hove Water Mains Replacement Project was described by Southern Water as a *Public Relations Project with a 'pipe on the end'* as the customer liaison work in the compact and busy city proved key to the company being able to complete the work successfully and to deadline. More than 250,000 residents live in the south coast city with more than eight million tourists visiting annually, many arriving by car, attending events such as the London to Brighton Bike Ride, the annual Brighton Festival, the Pride Festival and the vintage car rally, as well as the popular beach. It was vital for the company to work closely with the residents, Brighton & Hove City Council and businesses to ensure work could be carried out in key areas without any opposition.



Photograph shows a new pipe having been laid in Brighton City Centre

Courtesy of Southern Water



Clancy Docwra work on the Brighton Water Mains Replacement on Dyke Road, Brighton City Centre Courtesy of Southern Water

Problem

Much of Brighton and Hove's water mains network is between 120 and 150 years old, with the majority of the cast iron pipes being laid during Queen Victoria's reign. The age of the networks meant there was a significant danger of bursts and leaks threatening disruption to customers' services and the transport infrastructure.

In addition to this, a key driver of the company's investment strategy is the avoidance of unplanned interruptions to customers' supplies, as well as to reduce the water lost through leakage and improve upon our already high standards of water quality.

The Plan

The area of the city in which the replacement programme was to be undertaken was established using Southern Water intelligence, including road maps of data of burst mains and a series of tests in 58 locations. Sections of main were cut out and metallurgical and destructive testing carried out. This identified the parameters of the working area as both residential and commercial.

The working area created the potential for a negative impact on customers and the city's economy, so the public relations work began many months before any excavation work. A presentation of the proposed work was made to MPs at the House of Commons. Then, four months before work began, a key stakeholder liaison group, comprising representatives from trade and residential associations, the Brighton and Hove Bus and Coach Company, the city council's highways department, other utility companies, cycling groups, taxi licensing, Sussex Police and project contractors Clancy Docwra was established.

This group met monthly to ensure work was carefully co-ordinated so that the city's transport arteries kept moving and the city's economy was protected while traffic management was in place. During key stages of the work, in difficult areas, project managers would speak to some of the liaison group members on a daily basis, often heading to a location immediately if an issue arose.

During key events in the city, the project would sometimes have to backfill trenches, remove spoil from the city and close works down for a weekend and then re-open on a Monday to allow for a key annual event to proceed.

Traffic management in narrow roads had to allow for double decked buses, commercial delivery vehicles, and refuse collection vehicles being able to negotiate works. As part of the meticulous planning, Project managers would go to site with a senior bus manager and run a "ghost bus" prior to any excavation, to ensure the route was still operational.

The liaison group, chaired by the council's head of highways, enabled joint utility working. Southern Gas Networks joined the liaison group and completed a significant mains replacement project at the same time as the Southern Water project, sharing trenches and traffic management. Telephone and council works would also be carried out in the same working space to minimise disruption on routes.



Mains replacement work continues on North Road, Brighton

Courtesy of Southern Water

The Work

Traditional working methods were not suitable for Brighton for a number of reasons. The city centre is compact, with many locations a mix of business and residential and in environmentally sensitive areas with period buildings.

Therefore, a number of working techniques and materials were implemented. For example, a chain digger was used on the A259 Kingsway, the main seafront route, because the road is supported on a series of single-skinned brick arches which were originally fishermen's lock-ups and are now clubs and restaurants. Advanced structure and environment surveys were carried out along the route which stated that conventional excavations had the potential to collapse the arches along the key transport route.

In Sydney Street, a busy shopping area of the city, work was carried out in a few days in September to avoid the Christmas period. Special pre-chlorinated pipes which did not need days of flushing and bacteriological sampling once in the ground were used.

Throughout the three-year project, which started in 2006 and completed in late November 2009, work was mainly carried out using open cut excavations followed with one-hit reinstatement, because 83 percent of the properties contractors were digging parallel to, had basements or sub-basements which precluded directional drilling and pipe bursting.

There was also a preponderance of underground utilities in the work area and disused tramlines below the surface which had to be cut through. One Southern Water employee said: "Imagine trying to feed a pencil through a bowl of spaghetti without moving any of the spaghetti. That's the scale of the task we were undertaking."



Mains replacement work continues on North Road, Brighton

Courtesy of Southern Water

Completion

The formation of a liaison group was the key to getting businesses, transport groups, customers and stakeholders on board with the need to excavate key routes, and this is now considered best practice in industry. Southern Water now establishes similar groups for work which is carried out in towns and cities.

The Southern Water communication team also worked with the media, local websites, community newsletters and public meetings to ensure dialogue was always open throughout the planning stage, and during the actual work, which eventually installed 42km of new mains and 35 km of service pipes, abandoning 57km of Victorian mains.

Peter Stocker, former chairman of Brighton's North Laine Traders Association, said: "Southern Water carried out brilliant liaison work in Brighton city centre. The company made what could have been a very difficult couple of years into a bearable event. It was never going to be easy digging up most of the commercial streets in the city centre to lay the mains but the good communications and accommodating workforce smoothed the way wonderfully."

Steve Duke, Southern Water's project manager for the scheme, said: "This was an extremely challenging project not just technically, but from a customer perspective as we were working in areas which are not just key traffic routes, but routes which accommodate a large number of pedestrians because Brighton is a popular destination."

"This close working with businesses, stakeholders and other organisations was the key relationship which enabled us to complete the work ahead of deadline, while minimising inconvenience to all within the city."

Note: The Editor & Publishers thank Steve Duke, Project Manager with Southern Water, for preparing the above article for publication. ■

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