

CASE STUDY

SPR™ RO

SYDNEY, AUSTRALIA
DN 915 (36 in), 560m (1837.2 ft)

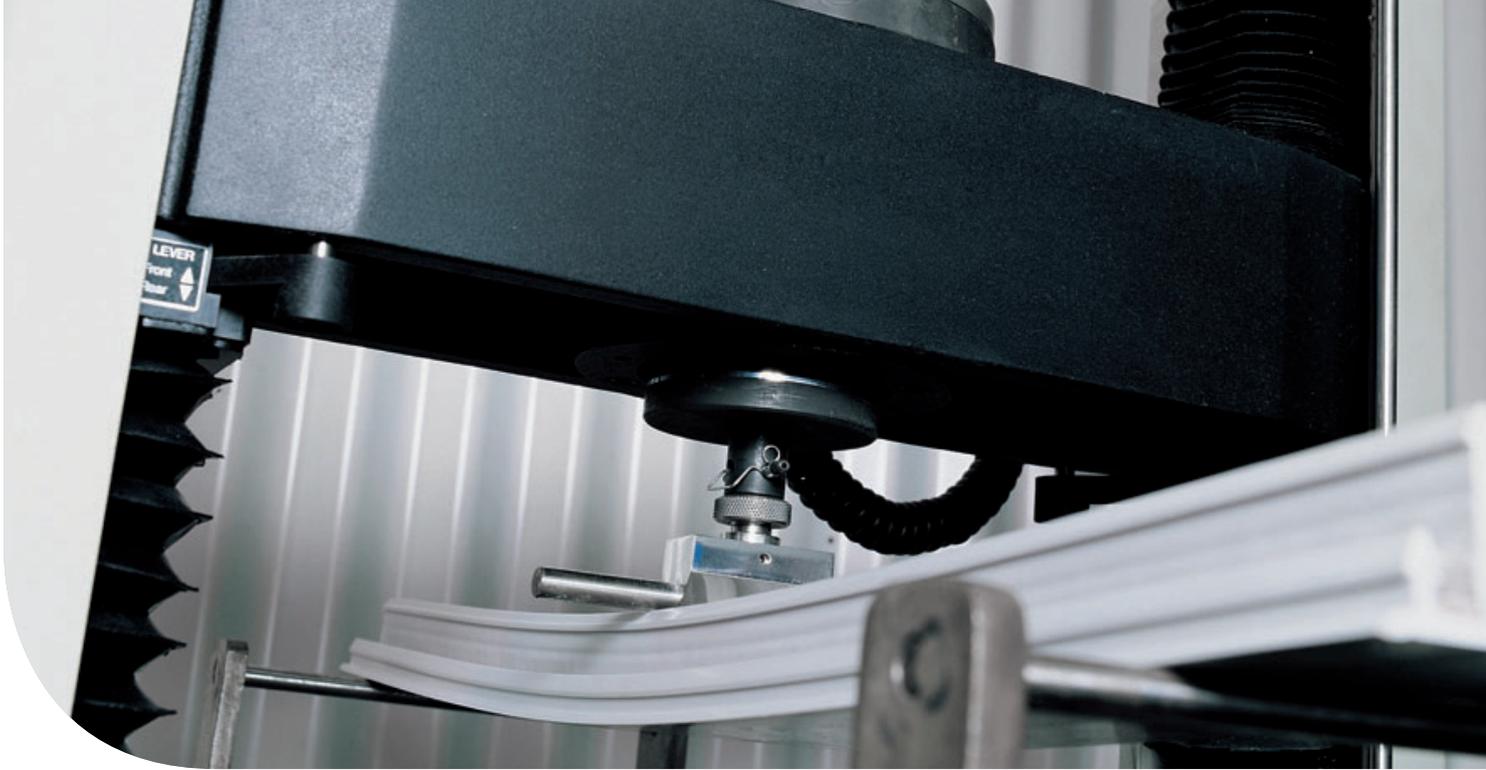


Sewer rehabilitation in suburban areas will always require a balance between productivity and impact on the local community. The Sydney suburb of Concord West is an established residential area with quiet, tree-lined streets. To avoid disruption to residents the right pipeline rehabilitation solution had to be chosen.

The problem

Sydney Water's Concord sewer sub-main, originally constructed in 1935, was in need of rehabilitation. A 560m long (1837.2 ft.) section of 915mm (36 in.)

diameter reinforced concrete pipeline, including 4 tight radius bends, required a structural liner as the pipeline had suffered deterioration due to hydrogen sulphide gas attack. The project specification had stringent requirements on the type of solution which could be offered. No reduction in flow capacity was allowed limiting the solution to a close fitting liner with a smooth internal wall. In addition, sewer services had to be maintained for residents along the route as well as those upstream serviced by the sewer.



The rehabilitation process was complicated by 3 upstream pumping stations. One pumped directly into the upstream manhole, the second pumped into a manhole 100m (328 ft.) from the start of the project and the third into the manhole at the downstream end. Due to the pumping stations work within the pipeline could only take place during a six hour period from 9.00am to 3.00pm.

The solution

SEKISUI SPR provided the ideal solution. The liner could be installed into the pipeline without the need for a large pit which meant the job site could be secured at the end of each day. The ability of the SPR™ RO process to be stopped part way through rehabilitating a pipeline allowing the equipment to be removed meant the 6 hour time frame could be accommodated.

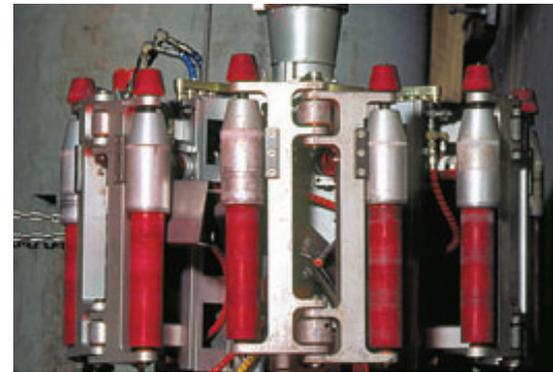
The project

During the 6 hour time frame allowed for the pipeline access some 80m (262.4 ft.) of the SPR™ RO liner was

installed by the Australian licensee, Interflow. Typically this lining could be completed in 3 hours of winding time. After setting up of the machine, winding was by remot control from above ground, where the machine operator monitored installation via CCTV cameras mounted on the SPR™ RO winding machine. Man-entry to the deteriorated pipeline during liner installation was not necessary – an important consideration. The remainder of the time was taken up with setting up of the machine in the pipeline, removing it at completion of the day's lining work, then making the site safe prior to finishing work for the day.

Despite the bypass pumping and co-ordination with the pumping stations, there was always flow in the deteriorated pipeline during liner installation from local sewer reticulation systems. This caused no problems to the installation process or the finished liner.

As the deteriorated pipeline was gas attacked, the cross section of the pipe was an irregular shape. The Contract required voids in the pipe external to the liner to be filled with cementitious grout. Prior to lining, 100mm (4 in.) diameter grout injection holes were drilled down from road level through



the top of the pipe at 20m (65.6 ft.) centers. Grout was then introduced through these injection holes after lining.

The project was completed by Interflow on budget within 8 working weeks, more than 5 weeks ahead of schedule.

The success of the project was recognised by the Australian Civil Contractors Federation who awarded Interflow the 2004 Award for Construction Excellence for projects up to \$2 million dollars. A significant achievement by Interflow when considering the competition from all types of civil engineering projects.

info@sekisuispr.com
www.sekisuispr.com

SEKISUI



FORMING GLOBAL CONNECTIONS

■ TECHNOLOGY ■ SALES & SERVICES ■ CONSTRUCTION

