

Gravity Sewer Inspection and Condition Assessment

Urban gravity sewer network

Ras al Khaimah, UAE

In joint venture with Faiz Al-Elweet Engineering Consultancy of Saudi Arabia (FAE).

The Emirate of Ras al Khaimah has an extensive sewer network serving the urban area of the country. This includes a GRP trunk sewer located under a busy main road. The network suffered from significant infiltration and the Ras al Khaimah Sewerage Authority (RAKSA) implemented a project to inspect, assess and rehabilitate the critical sewers in the network.

IAC Emirates undertook the inspection using digital and analog CCTV, laser scanning to measure deflection, and FELL (Electroscan) leakage detection in the PVC and GRP sewers. Based on the inspection data a full condition assessment was undertaken. An asset management plan was developed for replacement of the main trunk sewer and for repair and rehabilitation of the other lines, using trenchless methods where appropriate. A combination of short liners and UV-cured CIPP was employed to rehabilitate 12km of sewers in diameters between 160 and 800 mm.

Subsequent manhole inspection by IAC identified poor condition in several manholes. A condition assessment was undertaken and a program of manhole rehabilitation was developed and was implemented in 2019.

FAE/Downley's role in the project was to work alongside the Contractor to provide condition assessment and develop repair, rehabilitation and replacement solutions in support of the project consulting engineer.

The detailed works included:

- Review selected CCTV inspection output data
- Undertake condition assessment and make recommendations on repair and rehabilitation
- Manhole condition assessment and rehabilitation options
- Advise on inspection of rising mains for future contracts

client

IAC Emirates for Ras al Khaimah Sewerage Authority (RAKSA)

date

2016 - 2018

value

\$85,000 (value of consultancy contract)

services

Trunk Sewer and Collection Network Inspection

Condition Assessment

Rehabilitation and Repair Decisions and Specifications

Manhole Assessment and Rehabilitation