



matt durbin associates
.....engineering integrity

North Queensferry - Culvert Lining

The main 1500mm diameter brick trunk main to the Forth Road Bridge Crossing was to be relined, and on a presurvey, a major structural collapse had occurred. This had caused the sewer to be vertically displaced by 500mm. As this was 20m below ground level, access had to be via a shaft onto the culvert itself. The key stages of this huge engineering feat of a project are shown below.



The existing condition of the culvert can be seen within these photos. Due to the structural condition, it was imperative to create a safety zone around the brick sewer. This was completed by drilling and injecting grout at 1m centres throughout the archway until refusal.



Once the safety zone was in place, 25mm thick rolled steel sheets were winched into position. As the grout had cured, the existing section of the collapsed brick arch could be removed with pneumatic tools. The GRP liner was then installed and grouted within the steel reinforced section.

