

# SAICE Western Cape Branch Visit to the Tunnels under the Castle

EARLIER THIS YEAR members of SAICE's Western Cape Branch enjoyed a 90-minute tour inspecting the historic drainage tunnels under Cape Town's famous Castle.

It was the streams rising on the north face of Table Mountain that led to the establishment of Cape Town as a ship replenishment station in 1652. Soon, however, there was conflict between the development of the town and the management of the streams. Within three years ships were drafting letters of complaint

that the Cape water was polluted and that their crews were falling ill, which led to the first environmental legislation in the country to limit pollution.

Hydraulic works on these streams, irrigation ditches, canalisation, deviation and the construction of a weir started almost immediately. These, in turn, proved to be natural traps for pollutants, so enclosure of the waterways was begun in the 19th century. Today they take the form of brick-lined tunnels running under the city.

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The tour group convened at the Castle car park off Darling Street between the Leerdam and Oranje bastions where a brief background talk on the origin of the tunnels was given. A short walk took the group to an entrance manhole off Sir Lowry Road between the Oranje and Nassau bastions. Once in the tunnel, the group initially walked uphill to about the position of Caledon Street, where they rested while the organisers entertained them with a laser-light show and some eerie music.

On this reach the tunnel was initially circular, built of bricks – blue engineering bricks for the lower third to half of the section and red hard bricks above. Higher up, stone construction – Malmsbury

Hornfels – made its appearance as the construction material with brick inverts. In this portion, the section had become noticeably elliptical as if it was slowly yielding to the weight above.

The brickwork was generally of good quality and the occasional junctions with side drains presented interesting examples of the intersection of two cylinders at an angle to each other, as executed in brickwork.

Throughout the walk, the invert was running at the order of 0.05 m<sup>3</sup>/sec of clear water without any sign of trash.

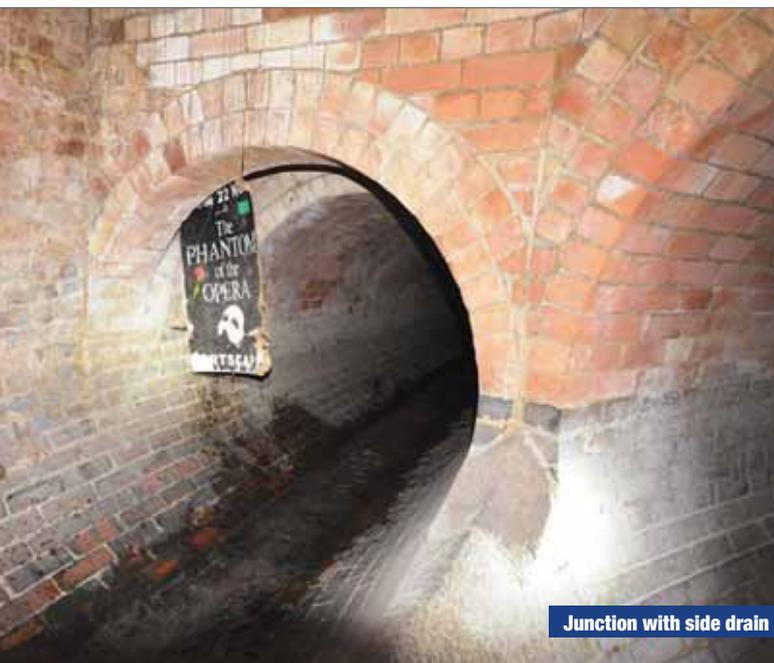
The group then retraced their steps, past the entrance manhole, past the junction with a large side stream and bent around the east of the Castle, just past the

Catzenellenbogen bastion, to pass under Strand Street from whence the tunnel debouches into the Duncan Dock. Here the tunnel had been widened and lowered to pass under the roadway which was carried on steel girders.

The tour ended at a small wicket gate set in the wall along Strand Street, followed by a walk back to the car park around the west of the Castle, past the Buren and Leerdam bastions.

## ACKNOWLEDGEMENTS

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Source:

[http://www.saice.org.za/downloads/monthly\\_publications/2013/2013-Civil-Engineering-June/#/0](http://www.saice.org.za/downloads/monthly_publications/2013/2013-Civil-Engineering-June/#/0)