

UR196C/22

PRELIMINARY GEOLOGICAL NOTES ON PROPOSED DIVERTIONARY ROUTES OF THE HOBART RIVULET

Two alternate channels have been proposed to divert flood waters from the Hobart Rivulet; both combine tunnels and concrete fluming.

1. A tunnel from near the Gore Street Bridge, passing under Macquarie Street near the Wheatsheaf Hotel, continuing under Davey Street and Fitzroy Gardens and emptying into the Sandy Bay Rivulet below Digney Street. This tunnel would be 1300 feet in length and a concrete fluming would have to be constructed down Sandy Bay Rivulet for 3800 feet.

No outcrop is visible along the route of this proposed tunnel but on present evidence it is assumed that the tunnel will pass through dolerite all the way. The question to be asked is on what condition of weathering will the dolerite be found. This rock is notoriously deceptive; it is well jointed and weathers differentially along joint planes, sometimes to an alarming degree so that what might appear superficially to be all solid dolerite is riddled by clay, sometimes many feet in width formed in weathered joints and faults. It may, therefore, be assumed, through lack of outcrop, that the dolerite along this route will be found to be not solid but weathered along joint planes, particularly as the average depth below the surface is only about fifty feet.

11. From the same entry spot near Gore Street, a concrete flume leading to a tunnel commencing near the junction of Macquarie and Mollie Streets. This tunnel would pass under the Barracks continue along the south side of St Georges Terrace and empty out not far from the mouth of the Sandy Bay Rivulet. From superficial inspection, the dolerite appears more solid along this route. The hill is higher and outcrop along Alberura Street and Quayle Street shows bold dolerite outcrop. The dolerite is well jointed, with the principal set of joints striking at 80° and nearly vertical and subsidiary joints at 330° (vertical) and another set nearly horizontal. Nevertheless the dolerite appears fairly solid and does not show much weathering along joints at outcrop. This tunnel would also pass deeper below the surface than the other.

Comparison of two Routes

Both tunnels will probably pass through dolerite, differentially weathered. The first tunnel is much shorter but it is expected that the dolerite will be more weathered and that much more grouting will be necessary. The fluming in this first project will also be much longer and probably cannot be based on solid rock in the Sandy Bay Rivulet. Nevertheless as it is shorter it is assumed that it will be the first tested and boring is recommended. Owing to the built up nature of much of the area, it is useless to examine the first few feet from the surface by means of pits or hand bores. Diamond drilling should take place in two stages; the sinking of two or three vertical holes in the vicinity of Macquarie, Davey and Fitzroy Crescent to the depth of the tunnel, plus ten feet; and secondly the consideration of horizontal bores, perhaps from both ends along the course of the tunnel. It should be noted that a tunnel was driven beneath the barracks during the last war and although perhaps now filled in, it may be cheaply opened for inspection of the dolerite.

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Table with columns: DATE, TIME, DEPT., REF. NO.