

I.C.E.  
P.H.E.W.

Institution of Civil Engineers  
Panel for Historical  
Engineering Works

Newsletter

AUGUST 1983 No 19

ANNUAL MEETING, CAMBRIDGE 1983

Panel Members are reminded that they are asked to arrive at Downing College, Cambridge between 1600 and 1800 hours on Wednesday 21st September.

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VISIT TO HISTORICAL WATERWORKS IN S.E. SCOTLAND ... Roland Paxton

This visit, held on Saturday 28th May 1983, was initiated and programmed by the Scottish Group of PHEW and arranged jointly with the Edinburgh and East of Scotland Local Association and the Cockburn Association and attracted an attendance of over 100.

The historical scene for the visit had been set by the Panel Member at a public lecture a fortnight previously and the hosts and guides on the day were Mr Robert Grieve, Depute Director, and several of his colleagues from the Department of Water and Drainage of Lothian Regional Council.

The party assembled at the Castle Esplanade, Edinburgh at 0930 and crowded into the narrow gallery of the 130-year old Castlehill Cistern 100ft x 90ft and 25ft deep which supplies the New Town. The audience was fascinated to learn that during construction of an earlier reservoir on the site, about 1720, a subterranean chamber 14ft square was discovered containing a crowned image of the Virgin hewn of a very white stone, ancient Scottish and French coins and two large cannon balls. The party then descended to the depths of the Grassmarket taking in a view of the Telford-Jardine-Crawley water tunnel with its 1821 cast-iron pipes and penstock valves made by the Butterley Company. After a brief examination of the ornate Grassmarket draw-well, part of the 1676 supply, the party boarded two coaches and proceeded to the Alnwickhill Filtration Works, constructed between 1879-1912 and Comiston Springs. Comiston Cistern constructed about 1676 and incorporated into a small windowless building with a cave-like odour proved a considerable attraction. Its rectangular lead-lined tank is fed by nine springs named after animals and birds, lead models of which were placed at each outlet.

The party then proceeded to Glencorse Reservoir and inspected the dam constructed to a joint specification by Telford, Rennie and Jardine from 1819-22 as part of the Crawley Aqueduct scheme. This earth dam has a clay-puddle core wall nearly 120ft deep and the reservoir was built in part to supply compensation water to mill-owners for water taken from the Crawley Spring. The aqueduct which is about 9 miles in length consists of cast-iron pipes from 18in to 15in diameter.

The coaches then proceeded some thirty miles southwards towards Talla near to the source of the Tweed and the party examined the Talla earth dam and reservoir constructed from 1895 to 1905. To enable the large quantities of materials involved to be delivered to the site, a 9½ mile long standard gauge railway was built from Broughton to Talla. It was dismantled on completion of the work except for the 100ft steel span bridge over the Tweed which was retained to carry two 36in diameter pipelines between the aqueduct wells on each side. The party inspected the 2½ mile length of the reservoir which is situated in extremely picturesque surroundings having a catchment area much of which is higher than 2000ft above sea level. The dam is 350 yards long and constructed with a clay puddle core varying in thickness from 10ft to 32ft with a maximum depth of 124ft. The overall width varies from 20ft to 600ft and the water face is protected with squared stone pitching and beaching set on 12in of broken stone. The 32 mile aqueduct includes 9 miles in 21 tunnels and is mainly of concrete construction. The internal dimensions are 7ft 6in by 6ft wide with dished invert and arched roof.

The visit concluded at the Victoria Lodge, Talla, with a memorable inspection of a specially mounted historical display of original drawings, records and books belonging to the Water Authority and a warm vote of thanks from Local Association Chairman Dr Ian Christie.

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DONAGHADEE HARBOUR ... John McClure

Mr McClure writes, following the reference to Portpatrick Harbour in the February NEWSLETTER, to point out that Donaghadee Harbour in County Down is a twin of Portpatrick. A harbour was built in 1626 by Viscount Montgomery, superseding an earlier jetty, and rebuilding was carried out between 1775 and 1785 probably with the help of John Smeaton. The 'new' harbour, consisting of North and South piers with a lighthouse on the south pier, was initially designed by John Rennie Senior, the work being taken over by (Sir) John Rennie on his father's death in 1821. Construction commenced in 1821 and the lighthouse was completed in 1834.