

Bomanite Pervious Concrete Systems

PROJECT PROFILE

THE RIVER DEE ABSTRACTION SCHEME

PROJECT INFORMATION

With the development of North Sea oil in the late 60's, Aberdeen was faced with a sudden influx of population and a new industry. The demands placed on the existing water supply infrastructure became critical. As a consequence of this, Consulting Engineers Mott McDonald and Partners were commissioned to undertake a two year survey of available resources for the then North East of Scotland Water Board. A recommendation of this report was an abstraction scheme from the River Dee via a raw water storage reservoir and treatment works. The site identified for such construction was downstream of Morrisons Bridge near Aberdeen. Here was the first reach entirely safe from saline intrusion. At this point, it was decided to construct a reservoir with a working volume of 225,000 m³. Site investigation reports revealed that seepage loss from an unlined reservoir would be unacceptably high. The adopted method for sealing the reservoir was a synthetic membrane with an air vent system of outlets positioned within the embankment. The top and upper sloping surfaces of the reservoir embankment beyond the rip rap layer, were covered with GRASSCRETE cast on site paving type GC2 (150mm thick) being selected using BS4483 reference A252 mesh reinforcement. Some 13,000 m² of GRASSCRETE were constructed to the inner face of the bund, the crest roadway and to the elevated landward slopes of the bund. Structural integrity between the three elements was maintained by dowelled expansion joints. Construction commenced with casting of the two embankments using the crest as a haul road for concrete trucks. The crest was then cast by a continuous casting and truck withdrawal cycle, a method often used by Grass Concrete Limited, where side pour access cannot be gained. Construction took place throughout 1983. The GRASSCRETE positioned below water line was infilled with a 20-5mm gravel. Elsewhere, soiling and seeding was preferred to enable a 'natural' landscape there, to be maintained in the environmentally sensitive location.

PROJECT DETAILS

LOCATION

Aberdeen, Scotland

CLIENT

Grampian Regional Council

GENERAL CONTRACTOR

Morrison Construction Limited

INSTALL COMPLETED

1983

SQUARE FEET

13,000 m²

BOMANITE SYSTEMS

GRASSCRETE GC2 (150mm thick)