

# Goulds Hill Service Reservoir, Dorchester

## Overview:

Site Location:	>> Goulds Hill
Client:	>> Wessex Water
Contract Value:	>> £780,000
Project Duration:	>> 20 weeks



Construction of a 2.5 million litre potable water reservoir & associated pipe work which includes 7 smaller chambers and over 700m of ductile iron pipe and fittings for Wessex Water.

Water from the reservoir is delivered from Friar Waddon a nearby bore hole and pumped up to Gould's Hill which is 170m above sea level and the highest point overlooking the town of Weymouth and neighbouring island of Portland.

Water from the bore hole is of a good quality and only requires minor treatment before being pumped up to Gould's Hill. Its final destination is over 10 miles away on the island of Portland.

The reservoir is situated in it's location due to the head required to transport the water over to the island of Portland which itself is well above sea level.

Gould's Hill already had a fully functioning reservoir which was constructed over 100 years ago and had never been inspected due to the demand for potable water from it being so great it was never possible to put it out of service.



Once passed the new reservoir made it possible to inspect the existing reservoir and make alterations to it. The existing reservoir was in as new condition when drained down and only metal pipes and fittings were looking their age which is a testament to the men who constructed it.

Gould's hill receives its name from the number of ancient burial mounds situated upon it and local children dare not venture up there at night as it'd rumoured to be haunted.

Archaeologists were present at all times when topsoil was removed in any area close to a burial mound of which there were several on site. The county archaeologist was a frequent visitor to site and the area is of great interest to historians and the like. However no great discoveries were made on our visit to the area!



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The ground conditions on site were favourable to our construction in all but one activity as the local chalk was the make up of the ground profile and offered an excellent stability and angle of repose allowing temp works use to be kept to a minimum.

The major issue during the construction of the reservoir was coping with the weather conditions on the site. High winds were a daily issue during the winter months with craneage activities halted on regular occasions. Winds reached speeds of up to 70mph during storms and on such days parts of the site were unsafe to work upon.

The site looks directly over the French channel on one side and the market town of Dorchester on the other. Weymouth has frequent ferries departing for many European destinations from it's port.



The reservoir was constructed using a reinforced concrete design supplied by Pell Frischmann on behalf of Wessex Water.

Shuttering systems utilised on the site were designed and supplied by Peri, with the wall shutter consisting of their Peri Vario system which was manufactured to size especially for the project and provided excellent results in terms of quality and pour turn around times.

Another clever system employed on the project was the Peri up system which enabled carpenters to erect their own access systems - after some brief training - which once used for access to the wall pour's was then utilized as the system employed to construct the roof of the structure.

Access to the external sides of the reservoir was made using a scissor lift which we were able to employ due to the space available on site allowing us to extend the blinding of the reservoir out to make a stable platform for its use on all four sides of the reservoir.



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Value engineering was employed during the instillation of the high pressure water mains by the site manager who using his industry knowledge suggested replacing the large number of thrust blocks requested by the design with anchor rubbers on all pipe work under 350mm. Thus saving time and the need for numerous concrete delivery's to site which has a considerable environmental impact.

The reservoir required 2000m<sup>3</sup> of inert material to backfill it and form the batters required, around 1200m<sup>3</sup> was produced on site from the excavation of the reservoir which meant that around 800m<sup>3</sup>.



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