

DESIGN FOR A WATER SUPPLY SCHEME

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DESIGN FOR A WATER SUPPLY SCHEME

BY

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SYNOPSIS

This thesis deals mainly with the design of a elevated reinforced concrete water tower and submits a proposal for the reticulation system for Palong 6 , of the Palong Scheme in Negri Sembilan.

In the water tower, the dome and frustrum are analysed as shell structures. The other components of the structure are analysed using basic principles. Direct stresses and bending stresses in the dome are calculated . In the frustrum only direct stresses are calculated. Bending moments at the edge of the tank floor are calculated using standard formula. The design is in accordance with CP110 except where superceded by specific recommendation in BS 5337. The serviceability limit state of cracking which is crucial in water retaining structures is checked. An estimate of quantities of steel and concrete used in the water tower is carried out.

In the second part of this thesis, a design for the reticulation system in Palong 6 is presented. The reticulation network is analysed using Hardy Cross's method. A computer program is used to analyse the flow distribution and to calculate the residual head at all points in the system. A flow chart of the program is presented to facilitate understanding of the principles involved in the calculation.