

**DESIGN OF A SWIMMING POOL**

**by**

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## Summary

In order to make the design of swimming pool we have to do a proper design and analysis of the retaining walls in order for the construction to resist a combination of world pressure and hydrostatic loads.

For the design we are going to use the limit state philosophy according with the methods of BS110 by using the earlier code BS 5337.

In order to make the analysis and design the following steps are necessary:

Stage 1: Stability analysis.

Stage 2: bearing pressure analysis

Stage 3: member design and detail

We don't need to take sliding into account because the floor provides us enough resistance to sliding.

The following material specifications are used:

concrete strength,  $F_{cu}=30 \text{ N/mm}^2$

steel tensile stress,  $f_y=460 \text{ N/mm}^2$

weight of concrete  $=24 \text{ KN/m}^3$

angle of shearing resistance  $\phi=30^\circ$

Soil density,  $\gamma=20 \text{ KN/m}^3$

soil bearing capacity  $=200 \text{ KN/m}^2$

water density,  $\gamma_w=9.81 \text{ KN/m}^3$

## CONTENTS

	Pages
<b>CONTENTS</b>	<b>I</b>
<b>ACKNOWLEDGEMENTS</b>	<b>II</b>
<b>SUMMARY</b>	<b>III</b>
<b>INTRODUCTION</b>	<b>IV</b>
1.0	Designing and planning
1.1	The basic requirements for a swimming pool
1.2	Recommended procedure for getting a pool built
1.3	Budgeting
1.4	The Site Survey
1.5	Location of pools
1.6	Pools in or near the centre of the garden
1.7	Pools on the boundary of the plot
1.8	Shape and dimensions
2.0	Substructures
2.1	Location and distribution
2.2	Digging and foundation
2.3	Water supply
2.4	Drainage
2.5	Filling and emptying swimming pools
3.0	Materials and methods
3.1	Cement content
3.2	Swimming pools built with an in situ reinforced concrete
3.3	Corrosion of concrete
3.4	Special cements
3.5	Admixtures
3.6	The use of admixtures in concrete mixes
3.7	Stainless steel
3.8	Thermal insulation of swimming pool shells
3.9	Joint fillers
4.0	Joint sealants
5.0	Section X-X, pool empty
5.1	Section X-X, pool full
5.2	Section y-y, pool empty
5.3	Section y-y, pool full
6.0	References