

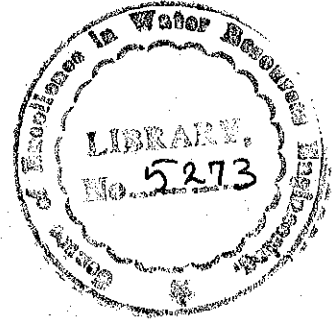
THESIS

**APPLICATION OF COMPUTER SOFTWARE FOR CONSTRUCTION PLANNING
AND MANAGEMENT OF WATER RESOURCES PROJECTS**

Submitted by:

Engr. GHIAS HAJ LATOOF

(93-PG-WRM-12)



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ABSTRACT

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The nature of the demands by users for different combinations of water outputs, make most modern water resources projects multipurpose. The development of multipurpose hydraulic projects and similar water resources projects exemplifies the kind of complex public management problem with which Governments are faced today. They reflect remarkably well the difficulties of coordinating the various private agencies involved in the planning and execution of projects, as well as in their subsequent day to day maintenance and operation.

It is now widely accepted, implicitly or explicitly, that some form of project management is necessary where large and complex undertakings are involved as its effectiveness can significantly influence the cost of a project and the time taken to complete a project.

Construction projects involve complex, time-consuming design and construction processes characterized by unforeseen circumstances. As a result, effective risk management has become a major problem that confronts the construction industry which is renowned as a high-risk industry. The success of a project-management exercise depends very much on the efficient and effective management of the risks involved.

Over the years, the computer products developed have grown in number, functionality, sophistication and availability, and the project management team now faces a bewildering array of alternatives from which to choose a package to satisfy its own particular requirements. There are a number of computer software which are used as construction planning and management tools,

and the present study is carried out to explore these tools for construction planning and management of water resources projects, to evolve a criteria for their selection and explore the potential benefits of two computer software namely CA-SuperProject and @Risk (pronounced as "at risk") (add in for Lotus 1-2-3) are explored by using them for construction planning and management of a water resources project --- Dearden Clough Reservoir.

The main conclusions drawn from the present study were that Project Management software can help the project manager analyze time, cost and resource considerations, and track progress of the project but false expectations can be created that can harm the organization and the user if the user is unfamiliar with the underlying theories. For a beginner of PM software package, a low-end package to be used on a small project should be considered first. Only after some experience more advanced software packages should be used on large projects.

When buying PM software package, the user must have a list of criteria, as given in Chapter 4, that would determine the utility of the software packages. The PERT probability features of SuperProject needs some modifications like probability calculations. @RISK application are more oriented towards process industry than the construction industry. CA-SuperProject proves to be a flexible PM software package and can be used for construction planning and management of water resources projects alongwith @RISK software package.

Engr. Ghias Haj Lattoof

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