

**HIGHER TECHNICAL INSTITUTE
MECHANICAL ENGINEERING
DEPARTMENT**

DIPLOMA PROJECT

**DESIGN OF A SOLAR HOT WATER
SYSTEM FOR A MULTI - STOREY BUILDING**

M/558

PAPACHARALAMBOUS CONSTANTINOS

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1.1 SUMMARY

This Diploma Project was produced to design a Solar Hot Water System for a Multi-Storey Building.

To reach this purpose and expedite it successfully, we have to go through the following steps:

1. The requirements of the building in hot water.
2. Describe the methods and techniques currently used in order to collect and store solar energy for water heating. To give also a detail description of all the parameters affecting the solar systems. Finally, the best method must be chosen.
3. Design the appropriate solar system to satisfy the building requirements in hot water.
4. Use the f-chart method in order to find the optimum solar collector area. (Various graphs were plotted to show the variation of the savings & costs. All the data was produced from the f-chart method, selection of panels, storage tank, and auxiliary power, as well as a selection of controls, thermostat and other accessories).
5. Pipe sizing of the various systems in the design, such as collection and distribution systems.
6. Prepare drawings such as plan views and diagrammatic layouts showing clearly the system layout and components.
7. Estimate the cost of the various parts of the system which will finally results to the total cost.

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