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***DESIGN OF A SOLAR HEATING SYSTEM
FOR A SWIMMING POOL***

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***DESIGN OF A SOLAR HEATING SYSTEM
FOR A SWIMMING POOL***

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SUMMARY

The project deals with the design of solar heating and water treatment system for a swimming pool. Nowadays, the demand for construction of swimming pools increases, so it is important to study this sector.

First, a general research is done to find out the various swimming pools available in Cyprus. After than the project deals with the theory of solar heating.

The next step is to specify a certain swimming pool and make the appropriate calculations for heating and water treatment of the pool.

Then, the equipment of that pool is selected and final there is report to the maintenance for preventing and ensuring proper and efficient operation of the plant.

INTRODUCTION

Swimming pools are widely used nowadays mostly for competition, exercising and pleasure. So, there is the need of better swimming conditions and safety is the need of better swimming conditions and safety for the bathers. Better swimming conditions include heating of the swimming pool water so as to extend the swimming season, and filtering of the water so as to be attractive and clear. In addition the pool water must be free from any health hazard including hazardous chemicals and microorganisms.

From the above it is clear that a system for heating the pool water must be introduced. This system must provide heat energy quickly and safely, whenever the water temperature falls below a present level. The heating of the pool is usually done indirectly to avoid water, which is full of chemicals passing through small diameter pipes and consequently causing problems. The system to be selected must be also simple, efficient and cheap. A description of the various systems is done and a selection based on the above requirements follows.

The water will also be filtered so as to clear from suspended matter. The filtering is done either by using a pressure sand filter or a precoat filter. Both filter types have advantages and disadvantages. The selection will be based on filtering efficiency, cost of filtering and maintenance.

A few years ago filtration wasn't of major importance in pool designs and there was nothing done about it. Water, which was dirty, was drained and the pool after cleaned

(with brushes and soap) was filled with clean water. This method is for sure more costly than the method used today, because there is waste of huge water quantities and of chemicals, and the water before drained is dirty and causes an unpleasant feeling to the bathers.

The pool water will also be disinfected. The above means that dangerous microorganisms will be killed, dangerous chemical substances will be removed and generally the water will be pure and clean. Addition of chemicals is usually controlled by automatic circuits which add the correct amount, after reading done in large swimming pools where the use is heavy and the need for disinfection occurs increased. For small systems which employ test kits for the manual setting of the amount of chemicals to be dosed to the pool water. So, by using the above methods of continuous filtration and disinfection the bathers in the pool will be safe, pleased and their health will be free from dangers.

The conclusion from the above is that with the increasing demand for swimming pools, new systems for the heating and treatment of the pool water are found which offer much more than old conventional systems.