D E S I G N M O D I F I C A T I O N S O F

A H O T W A T E R B O I L E R

F O R H E A T I N G

Project Report Submitted by

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INTRODUCTION.

One of the main components of a central heating or hot water supply system, is the Hot Water Boiler. In fact it is the most costly component although is very simple in construction; it is just like two empty barrels one inside the other with water filling the space between them. The water is heated by burning a fuel, usually oil, in the inner barel.

Its operation is also simple. However, the design of such a simple equipment is extremely difficult. This is extraordinary but it is true.

Boilers are classified as pressurised vessels and are treated as such. Their design and manufacture is governed by Internationally recognised standards from which the manufacturer can not decline.
Boilers design entails specific knowledges in the field of Thermodynamics. Apart from the basic formula of heat transfer, equations and factors derived from experience are greately involved.

In this project, an approach is made from the design point of view, although the title of the project states "Design Modifications". This is because it is of my belief that "Design Modifications" is a step further from actual design. In doing modifications, one must pass from the design stage, and he must be expert in finding ways of improvement or changes in design. Therefore most of the effort was given in the design of the boiler rather than any other stage.

Having in mind that this project is not a kind of text book, it has been avoided overwritting of excess theories, and great effort has been laid in the actual design process of the boiler.

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