

H.T.I

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

CONVERTING A
CONVENTIONAL HOME
INTO AN ENERGY
EFFICIENT BUILDING

M/1018

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2006

Converting a conventional home into an energy efficient building

By

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Project submitted to the

Department of Mechanical Engineering

Of the Higher Technical Institute

Nicosia Cyprus

In partial fulfillment of the requirements for the diploma
of

TECHNICAL ENGINEER

IN

MECHANICAL ENGINEERING

June 2006

HIGHER TECHNICAL INSTITUTE	PROJECT NO 3665
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SUMMARY

The aim of this project is to convert a building so that it will become more energy efficient using thermal insulating materials.

The concept is that a residence should consume as less energy as possible for heating so this project aims to find an optimum value for insulation and the payback period in energy savings for the amount that will be spent to apply install the insulation.

This resident is located in Limassol.

The method to accomplish this optimum value is by providing a number of scenarios of insulation.

Each scenario's results are then calculated and merged with up-to-date price values for fuel and electricity.

Then the results are compared in order to determine which scenario is the most applicable for the requirements which are:

- 1) Higher thermal insulation as possible
- 2) The shortest payback period

The aspects that should be considered for choosing the insulating materials are :

- 1) It shouldn't be very expensive
- 2) It should be appropriate for internal household usage.

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3) It should possess a low thermal conductivity value.

The main conclusion is that the scenario with the most insulation applied was the one that met the requirements perfectly.

This project will provide information in general for someone who would like to convert an existing residence to a more energy efficient building and help someone understand how this will benefit him.

ACKNOWLEDGEMENTS

In working for this project, I have been helped by some persons I would like to thank.

First of all I would like to thank and express my appreciation for the help and the guidance I was given throughout the developing of this project by my supervisor Mr.Theodoro Symeou.

I would also like to thank GEVO Company who provided me with several insulating materials along with the material's properties cost and catalogues.

Finally I would like to thank the Cyprus Ministry of Commerce for providing me the Cyprus standards catalogue for household thermal insulation requirements.

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