HITI

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

# CONVERTING A CONVENTIONAL HOME INTO AN ENERGY EFFICIENT BUILDING

M/1018

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# Converting a conventional home into an energy efficient building

Ву

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Project submitted to the

Department of Mechanical Engineering

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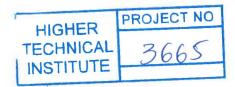
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### **SUMMARY**

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 posses 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**

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