

Master Thesis Brief Description

Thesis Title	Comparison of the Whole-building Life Cycle Assessment (L.C.A) of Concrete, Metal and Wood Structure of a residential building – A Case Study
Programme of Studies	MSc in Energy Systems and the Built Environment
Course	MES 580 Master Thesis
Area of Study	Computational Building Physics – Life Cycle Assessment
Student's Name	Leoni Efstathiou
Students Reg. Number	6455
Supervisor	Dr.-Ing. Paris A. Fokaides, V. Lecturer, Civil Engineering Department
Supervisory Committee	Dr. George Karagiorgis, Assoc. Professor, Mechanical Engineering Department Dr. Byron Ioannou, Ass. Professor, Architectural Department
Semester	Spring Semester 2016
Short Description	<p>Currently, the construction industry accounts for almost 75% of total raw material used. Also, it is associated with adverse social concerns, such as environmental issues and the human health. Due to the fact that Cyprus lacks the knowledge regarding the impacts caused by the construction industry, it continues to build buildings with high environmental impact. Therefore, I expect from this thesis to identify and promote the most sustainable type of structure, in order to minimize as much as possible the impacts on the environment and create sustainable buildings.</p> <p>This thesis aims to examine and compare the Whole-building Life Cycle (L.C.A) of a Concrete structure, Metal structure and Wood structure of a residential building of three hundred twenty two square meters (322 m²) located in Aglandjia. For the implementation of the Whole-building Life Cycle (L.C.A) study, the building environmental assessment tool Eco-Hestia was employed. Under this context, the environmental impacts of the Concrete structure, Metal structure and Wood structure were established and presented in two (2) ways: (a) per building element and (b) per construction material.</p>