

Master Thesis Brief Description

Thesis Title	Life cycle analysis model for newly constructed buildings in order to achieve CO2 neutralit
Programme of Studies	MSc in Sustainable Energy Systems
Course	MES 580 MSc Thesis
Area of Study	Computational Building Physics – Building Information Modelling – Life Cycle Assessment
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Supervisory Committee	Dr Byron Ioannou, Assoc. Professor, Architectural Department Dr. Michalis Menicou, Assoc. Professor, Mechanical Engineering Department
Semester	Fall Semester 2022
Short Description	In the past, the European Union had set a goal for all new buildings to be practically zero-energy. Recognizing the significance of materials and embodied energy in resource-efficient construction as operational energy in buildings decreased, this thesis focused on establishing standard information. The objective was to pave the way for potential mandatory regulations concerning minimum tree planting requirements around buildings in Cyprus. The aim was to sequester the CO2 enclosed in the building shell. To achieve this, the information was assessed using BIM-LCA tools, specifically REVIT and OneClickLca. Through this research, the potential impact of implementing such regulations on reducing carbon emissions and promoting sustainable construction practices in Cyprus was explored in the past.