

Senior Thesis Brief Description

Thesis Title	Experimental and numerical investigation of the performance of reflective coatings
Programme of Studies	BSc in Civil Engineering, Frederick University, Cyprus
Course	CEP 400 Senior Project
Area of Study	Computational Building Physics – Finite Elements Experimental Building Physics – In-situ Measurements
Student's Name	Constantina Christodoulou
Students Reg. Number	8587
Supervisor	Dr.-Ing. Paris A. Fokaides, V. Lecturer, Civil Engineering Department
Supervisory Committee	Dr. Petros Christou, Assoc. Professor, Civil Engineering Department Dr. Demetris Nicolaides, Ass. Professor, Civil Engineering Department
Semester	Spring Semester 2018
Short Description	Cool materials represent a major trend in building physics. These are materials with high thermal reflectance which are used as coatings in buildings to reduce their surface temperature during summer. The purpose of my study is to investigate the thermal performance of cool materials with the use of both a numerical and an experimental method. Concerning the experimental method, I will develop some samples with cool materials, and I will measure their surface temperature during summer during the day with the use of IR thermography. The numerical part of my study will concern the simulation of the thermal performance of these elements using Finite Element Methods and particularly the software Comsol Multiphysics. Through my study I will try to define some metrics concerning the performance of these materials per unit area and their potential contribution in energy saving in the building sector in Cyprus.