


Event:
Date:
Place:

ENERGY in BUILDINGS 2016
Saturday November 12, 2016
Athens, Hellas



#	Petros Dalavouras Architect engineer	
Title:	MSc Environmental Design of Buildings, BREEAM assessor, ASHRAE BEMP certified, NZEB designer	
Presentation title:	A Review of Glazed Constructions with Phase Change Materials	
<p>During the last years the reduction of energy use in buildings has become a necessity. In order to achieve more efficient buildings, passive techniques utilizing solar gains are often used. The most common way to take advantage of solar radiation is via windows and especially from windows oriented towards the equator.</p> <p>However, from an energy point of view windows represent a weak link among internal and external conditions. During cold months windows are susceptible to heat losses while during summer excessive amount of solar energy induced through glazed surfaces may result to increased cooling loads (Ismail et al., 2008). Nonetheless, windows are necessary for day lighting and the window to wall ratio is subject to thorough investigation from an energy balance stand. Thusly, the performance of glazed surfaces is a matter of intensive research.</p> <p>Even though phase change materials (PCMs) have been integrated into the opaque elements of the shell in numerous applications over the last decades, only recently research has started to investigate the combination of PCMs with glazing constructions. A PCM takes advantage of its phase transition in order to store large amounts of energy isothermally and release it with a time lag. What is more, numerous PCMs demonstrate high transmission of visible solar radiation and absorption of the infrared part.</p> <p>This review attempts to illustrate the potential advantages of incorporating PCMs with glazed constructions regarding the overall energy use of buildings and the indoor environment.</p>		

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CV:

I graduated from the School of Architects of the National Technical University of Athens, in February 2008 and gained the title of Architect engineer. Since the very first semester of my studies, I have become extremely interested in subjects which concern environmental design.

I have gained my master degree in Environmental Design of Buildings from Cardiff University, United Kingdom. My thesis entitles "Storing heat in a glazed façade: An investigation into the performance of glazed facades in correlation with phase change materials in the climate of Athens". My master dissertation was an opportunity to explore an innovative field in passive design as well as polish my simulation skills.

After I finished my studies I worked for a year in an architectural firm. This position gave me the opportunity to broaden my knowledge in architecture as well as gain skills and experience through practice. Afterwards, I continued to work both as a freelance architect and as external partner of General Refrigeration SA, a company that focuses mainly in industrial refrigeration but has a great interest in building energy renovation during the last years. During this time I had the opportunity to work on the energy enhancement of various types of building both in commercial and in residential sector.

My profound interested in the sustainability of the built environment is also demonstrated and developed by becoming a BREEAM assessor and also joining both ASHRAE and Passive House Institute as a member. Moreover, my expertise in energy modeling was certified by ASHRAE with the of Building Energy Modeling Professional (BEMP) certification. Furthermore, I became a certified NZEB designer under the European funded project: SouthZEB.