

External building facades by photovoltaic ceramic tiles

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The building cladding is considered the barrier dividing the indoor and outdoor spaces. The shape and the covering materials have historically been related with different items like: i)environment climate; ii)materials availability; iii)inhabitants needs; iv)acquaintance level with the materials.

Since it is obvious that not all problems related with the building management can be taken into account and/or solved through the building covering, the remaining problems should be solved through the building facilities.

So, it is necessary to apply an integrated approach starting from a comprehensive analysis of the building (considering both covering and facilities of the building) made in relation with an environment characterised by well defined climate parameters.

This requires a good efficiency of the covering that can be realised in different ways, both traditional and advanced ones, but all aiming at the reduction of the energy consumption for building management.

The use of tiles having a surface functionalised with photovoltaic cells leads in this direction and represents a possible solution to be evaluated on the basis of the potential achievements.

On the basis of the adopted laboratory approach, the forecast levels of energy saving, obtainable by this application, are presented and discussed.