



## An invited contribution to the webinar: renewable energy and resources Towards reinforcing the effect of renewable energy in retrofitted buildings: a collaborative US-Poland research project

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### Abstract:

When talking about the effect of renewable energy, our thinking can be exemplified by an action of “placing an icing on the cake”. We must have a good building, to which we add renewable energy sources. The authors however, reverse the traditional design process and starting an integrated design process, we ask the question - how can we design an affordable, energy efficient building that the effect of the renewable energy sources is reinforced? We start with a system that must fulfill several technical requirements and one of the synergies in the design process will be to effectively incorporate the renewable energy sources.

Changing the paradigm of design is the result of actual construction development in countries like Canada, USA and Japan and while we are looking at this trend from the scientific point of view, we are also be able to illustrate the science behind the next generation of the construction retrofitting with practical examples from these three counties. In effect, this short note becomes a conceptual progress report on energy efficiency in thermal upgrade of buildings.

Keywords: energy efficiency; building automatic control; energy use under field conditions; two-stage construction process; cost-benefit evaluation; deep retrofit of residential buildings



### Biography:

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