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ZEBs – No Fundamental Progress over the Last 25 Years?

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After the many ZEB attempts in the early nineties, the field stagnated and the new mantra was besster insulation. Nowadays ZEBs are being revisited as many passive and low energy buildings have been built and are working well. The building profession seem to be looking for more challenging tasks in the direction towards zero energy buldings. The author explores development between 1985 and 2010 and shows own examples of ZEB designs for villages, nations and large buildings over 15 000 m². Most of them have not been published in the architectual journals.

Criteria for Definition of Net Zero Energy Buildings

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The idea of a Net Zero Energy Building (NZEB) is understood conceptually, as it is understood that the way a NZEB is defined affects significantly the way it is designed in order to achieve the goal. However, little agreement exists on a common definition that is based on scientific analysis. The term is used commercially without a clear understanding and countries are enacting policies and national targets based on the concept without a clear definition in place. Commercial definitions may be partial or biased in their scope, hence not suitable as a basis for regulations and national policies. As the rationale behind the promotion of NZEB is to endorse the design of environmentally friendly buildings that promote sustainable development, there is the need to agree on scientifically sound definitions of NZEB, which can then create the basis for legislations and action plans to achieve the political targets. The purpose of this paper is to build upon concepts found literature and expand the analysis coming to identify a series of criteria that characterise NZEB definitions. Evaluation of such criteria and selection of related options becomes a methodology for elaborating scientifically sound NZEB definitions in a formal, systematic and comprehensive way.