

The use of cost optimal methodology to determine nZEB standard of public building

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The Recast of the Directive on the Energy Performance of Buildings (the EPB Directive) came into force on 9 June 2010. EU member states should until 9 June 2012, publish the relevant laws and administrative regulations necessary to implement its provisions. European regulatory efforts towards increasing energy efficiency of buildings are focusing on building requirements. All new public building after 31.12.2018 must be nearly zero energy buildings. Such requirement can be very hard to implement in buildings with energy needs for heating, cooling and lighting and good quality of indoor air.

European regulatory efforts towards increasing energy efficiency of buildings are focusing on a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements, which has been published as a European regulation 244/2012.

In the paper a determine of nZEB standard based on cost optimal methodology will be presented. There are many measures that allows to decrease energy needs of buildings. However some of them can decrease energy needs for heating but at the same time increase energy needs for cooling. Thus it is important to include in calculation all of systems in the building. For this study a dynamic energy simulation tool is used to calculate energy needs and operational cost of used fuels.

The aim of the paper is to show which measures are most cost efficient and what will be cost optimal nearly zero energy standard of educational building. Also a discussion on results under different parameters of calculation will be presented as the framework of cost optimal methodology requires that many parameters have to be decided on national level.

Keywords: cost optimal methodology, nZEB standard, energy efficiency