

Passive House and Nearly Zero Energy Buildings

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ABSTRACT

Passive house and nearly zero energy buildings concept essentially based on the same idea, that the heating/cooling energy in the building can be minimized or maximized through airtight and well insulated building shell. Passive house is a standard and gives specific recommendations in regard to the achievement of heating/cooling energy savings. The passive house concept as known today is result of experience from many years of nearly zero energy house construction. Further, the second one is rather a guideline and rarely specified in practical values (e.g. heat load or space heating minimum).

A passive house is one in which a comfortable interior climate can be maintained without active heating and cooling systems. While other houses might employ a passive solar design or use alternative energy sources such as wind and solar power to minimize their environmental impact.

Nearly Zero Energy Building (nZEB) principle is based on the integration of high energy efficiency level and renewable energy systems causing the remaining energy needs of the building seem negligible (almost zero). The aim of the study by suitable case study/ examples is to take into account all financial, legal, technical and environmental aspects and to meet and save the present and future challenges.

The research method used is through literature review of mostly peer-reviewed papers and standard specifications.

Keywords: Passive house, Nearly Zero Energy Building, high energy efficiency, environmental, renewable energy