Passive House and nZEB – how do they relate?

Situation

To ensure that the construction sector makes its important contribution to the 2020 targets – a 20% improvement in energy efficiency, 20% renewables and a 20% cut in greenhouse gas emissions by 2020 – the European Commission issued the *European Performance of Buildings Directive* (EPBD), recast 2010, and a *Delegated Act* providing further details.

In these documents, common requirements are defined that Member States must meet with national legislation: Building code requirements must comply with the so called "nearly-Zero Energy Buildings" (nZEB) requirement, entering into force from 31.12.2018 for public buildings and from 31.12.2020 for all other buildings.

What is an nZEB?

There is a core definition of characteristics in the EPBD and Delegated Act that national regulations are supposed to meet. The most significant are:

1. ***very high energy efficiency / nearly-zero energy demand***
2. ***cost-optimal levels of energy efficiency from a life cycle perspective***
3. ***very significant contribution from renewable energy sources (RES) produced on-site or nearby***

Is there an nZEB-standard?

There is no such thing as an "nZEB-standard", as each Member State is responsible for its own building codes. There will probably never be such a thing as a comprehensive European "nZEB-standard": Every Member State will adhere to its own ideas on improved building standards using its own rationale and comprehension of EPBD definitions and local practices. Comparisons between buildings in different Member States will therefore remain challenging.

Passive House

The Passive House Standard is a building standard that is clearly defined, with precise criteria and based on sound scientific evidence.

Moreover, the Passive House Standard embodies an existing, supra-national, tried and tested implementation of the nZEB definitions, which ticks all the boxes:

- ✓ **very high energy efficiency / nearly-zero energy demand**
- ✓ **cost-optimal levels of energy efficiency from a life cycle perspective**
- ✓ **very significant contribution from renewable energy sources (RES) produced on-site or nearby**

The latter may be obvious for any Passive House *premium* or *plus*, but any Passive House *classic* with a heat pump uses renewable energy from on-site, too. Moreover, heat pumps can use renewable electricity.

Conclusion

The Passive House Standard offers a proven implementation of the nZEB with over 25 years of experience. It can be applied to any climate. Design tools, training and quality assurance are available to help ensure reliable performance – thus avoiding "performance gaps".

The standard is public and available for anyone to use free of charge. It would be ideal for the Passive House Standard to gain official recognition throughout the European Union as *one* universally accepted proof of compliance with nZEB requirements.

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DIRECTIVE 2010/31/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 May 2010 on the energy performance of buildings (recast)

Guidelines accompanying Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012 supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements