

Under this title a news item* has been posted on the new www.epb.center website. The EPB Center is an initiative from REHVA and ISSO supporting the implementation of the EPBD and the developed EPB standards in Europe and beyond.

Boosting energy efficiency of buildings through ISO's holistic approach



The EPB Center activities are to plan, coordinate and guide the process of promoting implementation, use maintenance and further development of the set of EPB standards and safeguard the coherence of their technical content. Continued coordination is essential as the maintenance and further development of the individual EPB standards is carried out by the various individual Technical Committees of both CEN and ISO.



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Other activities, which can be done if the desired amount of supporting members is met, are, for instance: linking the EPB standards with ECODESIGN, supporting implementation of EPBD in national legal frameworks, codes and building traditions and also implementing all the EPB standards in the EN ISO 52000 series of standards. Deliverables could include example calculations, examples of national annexes supporting the EPB standards' use as part of the regional regulation, supporting software tools, FAQ, data files, etc.

All activities focus on achieving uniformity, flexibility and sustainability as well as cost and risk reductions in the built environment.

The set of EPB standards:

Helping to decarbonize the building sector is the goal of the new holistic approach being developed by the ISO joint working group for the energy performance of buildings (EPB) – an approach which reconciles climate and energy needs. And with the future EN ISO 52000 series of standards under development (in collaboration with CEN), the building industry is expected to be much better positioned to attain energy efficiency improvements with the best available technology and practice. That's because solutions that improve energy

efficiency often usher in new ways to enhance operational efficacy and drive innovation.

Buildings literally gobble up energy. In fact, energy expenditures account for around 40% of a building's total operating costs. What kind of challenges and opportunities does this represent?

The building industry is confronted with a range of challenges and opportunities when it comes to reducing energy consumption and increasing the use of renewables.

Several European countries, but also several US-states and other countries around the world, have set ambitious goals to reduce to (nearly) zero the energy in new buildings over the next few years. These countries will eventually focus on net zero energy districts, with an emphasis on refurbishing existing buildings and increasing the share of renewable energy.

Clear and consistent policy targets play an important role in driving innovation in the building sector. International Standards will be needed to harmonize the terms, definitions, assessment procedures and indicators in order to develop new concepts and technologies as well as monitor and evaluate progress.

* Based on an article published by ISO and at the www.epb.center site, where Dick van Dijk and Prof. Essam E. Khalil, Co-Convenors of the ISO joint working group of ISO/TC 163 & ISO/TC 205 "Energy performance using holistic approach" have been asked for their vision of the building industry's role in helping to build a low-carbon future.

From energy using product to energy efficient building systems.

In the past, energy performance requirements were set at component level – minimum thermal insulation levels and minimum efficiencies of products. This, however, leads to sub-optimal solutions and creates a barrier to the necessary technology transitions.

The holistic approach to assessing the overall energy performance of buildings and the built environment, provided by the set of EPB standards (inclusive the EN ISO 52000 series of standards), is a key tool to overcome these barriers.

The use of effective and inexpensive energy efficiency solutions. The role of the EN ISO 52000 series of standards now and in the near future.

The EN ISO 52000 series of standards will enable to assess the *overall* energy performance of a building. This means that any combination of technologies can be used to reach the intended energy performance level, at the lowest cost.

Due to this ‘competition’ between different technologies, the holistic approach is a key driver for technological innovation and change. Countries using the approach for several years – take, for instance, the Netherlands – have experienced large scale implementation and cost savings on a variety of new technologies. This includes thermal insulation concepts, windows, heating, cooling, lighting, ventilation or domestic hot-water systems, building automation and control, and renewable energy sources.

The potential users of the set of EPB standards.

The energy assessment of buildings is carried out for various purposes, such as:

- Judging compliance with building regulations expressed in terms of limited energy use or a related quantity.
- Increasing transparency in real-estate transactions through an energy performance certification and/or display of the level of energy.
- Monitoring the energy efficiency of the building and its technical building systems.
- Helping to plan retrofit measures through predicting energy savings that would result from various actions.

In general, the holistic approach means that the energy performance is assessed as the total energy used for heating, cooling, lighting, ventilation, domestic hot water, and, in some cases, appliances.



How will the EPB standard series benefit in particular regulators/public authorities?

The EPB standards support flexibility:

One of the main purposes of the EPB standards is to enable their use in laws and regulations to, in some cases, make them compulsory. This has led to the development of a systematic, clear, comprehensive and unambiguous set of energy performance procedures.

What's more, differences in national and regional climate, culture and building tradition, as well as policy and legal frameworks are taken into account. Different options are given for procedures, input data and boundary conditions. For each option, a clear template, that can be used to tailor the energy performance assessment to a specific situation, is provided. An informative (“default”) set of choices is also suggested (as worked out in the Annex B in most of these EPB standards).

The EPB standards facilitate a step by step implementation:

The modular structure set out by the EPB standards maximizes the possibilities for a step-by-step implementation at the national or regional levels. Different policy priorities and practical constraints may need to be balanced out on a case-by-case basis. This includes taking into account well-established existing practices and procedures, at least during a transition period. ■