



Active House building with BIPV

At the same time as the cost of PV panels and related technologies is still clearly reduced every year, ongoing work is still taking place in Denmark to develop new low cost mounting and integration systems for both roofs and facades, here with focus on ultimate solutions where PV panels can actually substitute normal building materials, so use of nice architecturally integrated BIPV solutions in many cases can be realised at very competitive costs even based on the new legislation for use of PV in Denmark.

In the ongoing ForskVE projects, BIPV Quality Cities and PV Active Roofs and Facades, Gate 21, Cenergia and other partners with Solarplan, Kuben Management, Technological Institute, AAU, EnergiMidt, Solar City Copenhagen and FBBB is working respectively with cities and housing associations to support the development of good BIPV solutions also with a view to use of a so-called "Solar Watch" system to secure principles for detailed monitoring, follow up and quality control. And a number of workshops are here organized with the involved stake holders to support practical implementation work and full understanding of the new PV rules in Denmark with hourly netmetering, and how you can still realise cost effective PV projects if you base the design on more limited size projects where most of the PV electricity can be used in the hour it is produced in.

In connection to this it has been clear that when you deal with new build and deep renovation projects of the future, then quite small PV systems can actually play an important role not only in securing that f. ex. the new low energy class 2020 can be met in practice, but even with a possibility to reach a zero energy or even plus energy building standard. It has now been possible to identify a number of housing associations and cities who is interested to be involved in a dedicated campaign concerning this together with agreements concerning "Performance Documentation", so it is possible to secure a good energy balance in practice both with respect to the actual energy consumption/ solar PV production and the total economy for the users. And when the results are being disseminated through the national data base for sustainable and energy efficient building in Denmark, which is administrated by the Danish Association of Sustainable Cities and Buildings, FBBB(www.fbbb.dk), then the proposed project can have a strong impact concerning integration of BIPV which will actually be a benefit to the society.

At present there has been realised improved demands for energy efficient building in Denmark based on EU's Building Directive since 2006, where low energy class 2015 from 2015 be the new minimum standard for new build in Denmark and in many cases also for deep renovation projects, while the low energy class 2020 standard (the almost zero energy standard) will already, in some cases, be defined as the minimum standard for a number of municipalities, e.g. including Copenhagen and Aarhus, here influencing both municipal building, housing associations and larger urban development areas.

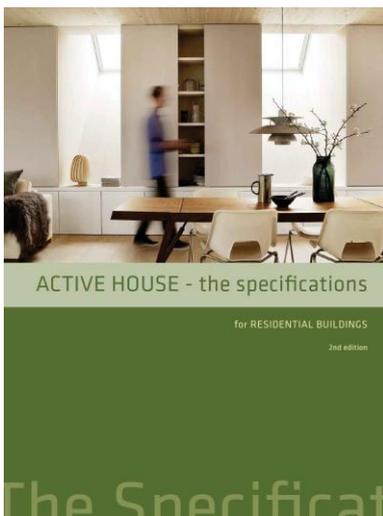
But even though it is demanded from the EU that "performance documentation", showing how buildings perform in practice will be a demand in all countries from 2020, it is still only implemented in Sweden at present.

Due to this there is a real interest in especially the larger cities to focus on this in the future.

And in connection to this, there is a real interest to let BIPV solutions be an important part of the future solutions for both almost zero energy standards like low energy class 2020 and even for real zero energy

building, and the experiences is at the same time that these PV solutions have a track record of actually delivering the aimed at calculated savings in practice.

In this context the proposed campaign can actually be an important support for more holistic approaches, where both the actual energy use and the BIPV supply is documented in practice in combination with approaches to both comfort and sustainability as it is e.g. defined in the Active House specifications, www.activehouse.info .



Active House Specifications includes demands for "performance documentation"



Winning project in architectural competition on "The sustainable social housing of the future" to be realised by AL2 bolig in Lisbjerg near Aarhus.