

ZERO+ house



In 2009 Denmark's first ZERO+ house was built in Sonderborg. The formal name of the house is the SIB ZERO+ House and it produces more energy than its family consumes in their everyday life.

The 200 m² modern and very comfortable house, was created in a cooperation between SIB (the local Construction Company), Grontmij (the Consulting Engineers), ProjectZero, SE (the regional Utility Company) and Danfoss Company. The house has a positive annual energy cost and sells the excess power to the national grid at the market price. The meter simply runs backwards. The concept of the ZERO+ House was proved its first year of operation: the house produced more energy than the family consumed. And the ZERO+ house continues to do so!

The success of the house is based on a combination of energy efficient insulation, ventilation, passive solar heat, geothermal heat pump, photovoltaic and an ultramodern energy management system constantly monitors and optimizes the use of energy.

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The energy consumption of the house was in 2009 and 2010 (the first 12 months) 5.133 kWh – including heating, cooking and all domestic appliances - out of which 2.890 kWh were used for lighting, ventilation, dishwashing, tumble-drying etc. During the same year the 42 m² solar panels produced 5.160 kWh – a surplus of 27 kWh .

The house was built in 2009. Since that time the cost of PV-technology has decreased by app. 15% per year and will continue to decrease. Grid parity has been achieved in Denmark for private homes and investments in PV. Energy efficient house construction is therefore not only good for the climate but also for the household economy.

The ZERO+ House has not only inspired the development of the GEHRY Harbour project to be ZERO+, but the Danish Building Code for 2020 will also be based on the same passive house construction with a renewable energy production.

During 2012 more than 1500 private families in Sonderborg invested in their own PV-production plant, which together with company PV-investments make Sonderborg a national leader in installed PV systems.

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[See the film here \(http://www.youtube.com/watch?v=X9AdC0XjSTs&feature=player_embedded\)](http://www.youtube.com/watch?v=X9AdC0XjSTs&feature=player_embedded)

