ENGINEERING
TOMORROW

Case story

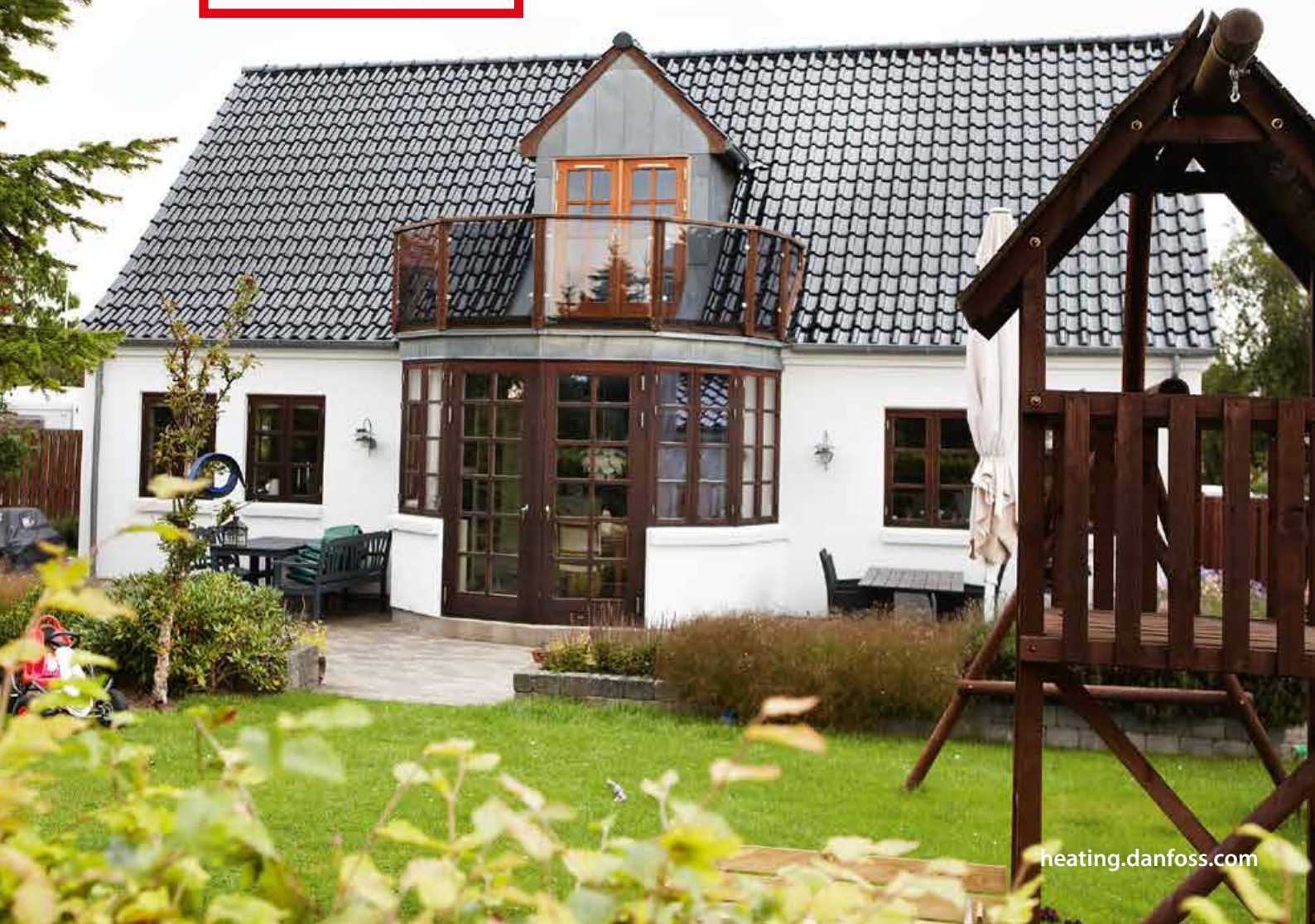
Comfort and control are easy to handle **with Danfoss electronic thermostats**

Klaus and Vivi have set the temperature once and for all with *Danfoss Link*™.

28%

reduction in energy consumption

and the family no longer has to contend with changing temperatures



heating.danfoss.com

A good indoor climate and energy savings go hand in hand with *Danfoss Link*™

After building their new house in Solbjerg, homeowners Klaus and Vivi discovered they had problems regulating the heat. After some consideration they decided to install electronic thermostats from Danfoss - and they have not regretted their decision. Now, the indoor climate has improved in general, and the house is set to a pleasant temperature when they are at home. At the same time they are looking forward to saving on energy, not least because the thermostats automatically lower room temperatures when no-one is home.

> The ability to set the temperature in all the rooms from one location gives the homeowners excellent control over the indoor climate - at all times of day and night. We don't have to bother with turning the thermostats up or down, and with just one touch there is pleasant heat throughout all the rooms.
>
> Vivi,
> Radiographer, Solbjerg

Lots of sunlight and a beautiful view

With its rolling hills and small lakes, the landscape around Solbjerg, about 15 km south of Aarhus, was the perfect place for Klaus and Vivi to build their house in 2000. They chose to build a new, two-storey brick house of 163 m^2 on the site, which was close to the city yet still in the country, surrounded by a beautiful landscape.

In order to enjoy the beautiful view to its fullest, the family opted to install an open-plan kitchen diner with a floor to ceiling bay window offering 180° views out over the garden, the fields and the hills beyond.

"We quickly discovered that it was difficult to maintain a stable temperature in the dining room. Not only because the house is so airtight, but also because the room faces south, so the sun is shining in through the windows for most of the day. We have underfloor heating in the room and it reacts slowly, so if you want it to feel pleasant walking on the floor in the evening, it becomes far too hot in the room during the day", Klaus explained.
This meant that for the first ten years in their dream house, the family were forced to constantly turn their thermostats up and down at all times of day and night to get an acceptable indoor climate.

Pleasant indoor climate without constant regulation

"We decided to install the new Connect Thermostats to get rid of these large fluctuations in temperature and to get a more stable heat-level. We also wanted to be able to control both the underfloor heating, which we have in part of the house, and the radiators, which we have in the other rooms, using the same system, said Klaus".

The most frequently used rooms in the house, such as the hallway, kitchen diner and the kitchen have tiled floors and traditional underfloor heating. The living room and the bedrooms have wooden floors, where it was not possible to install underfloor heating when the house was built. Radiators were therefore installed in these rooms.

"We have entered the codes for each room in the house, along with when we normally use that particular room. At weekends, for example, it's warm in the living room during the day, but during the week, it's not warm in the living room until we come home from work, that is from 5 until 11pm. The rest of the time it stays at 18 degrees, so we don't waste heat. We use the same principle in all the rooms of the house," Klaus explained.

The family's *Danfoss Link*™ installation consists of eight radiator thermostats, three underfloor heating actuators and four room sensors, which work together to create a pleasant indoor climate with a regular temperature. All the thermostats are wireless and are controlled by the *Danfoss Link*™ CC Central Controller panel, which the family opted to set up in the kitchen. The system took just two hours to install by an authorised installer in February 2012.

"It's such a relief not to have to turn the heat up and down all the time. It's been especially hard in the kitchen diner, and due to the many factors which influence this room, there are still problems with excessive heat due to the sun. So it's a great relief for us to know that the heat is off when we're not home. There's a clear difference in the other rooms as well, because they don't get so stiflingly hot, and this has made our lives much more pleasant in general," Klaus explained.

The family from Solbjerg got the following solution installed:

The 163 m^2 house was built in 2000 as a two-storey brick house with central heating. The house is installed with radiators as well as underfloor heating. In February 2012, the family decided to install a complete *Danfoss Link*™ solution, comprising:

- 8 electronic *Danfoss Link* ™ Connect Thermostats, mounted on all the radiators in the house. Connect Thermostats shut off automatically when a window is opened and the temperature is quickly regulated.
- A Central Controller panel, which automatically controls all radiator thermostats, so that each room temperature can be set individually. *Danfoss Link*™ serves a large number of functions, such as setting the thermostat to a reduced temperature at night or while the family is away using the 'Away' function.
- Four Room Sensors, which measure the temperature of the room and can be used to fix the temperature to a set point.
- Three small TWA actuators, which are part of the underfloor heating system.
- One *Danfoss Link*™ HC Hydronic Controller, which controls underfloor heating.

The Solbjerg family's energy bill (first six months):

Previous consumption:

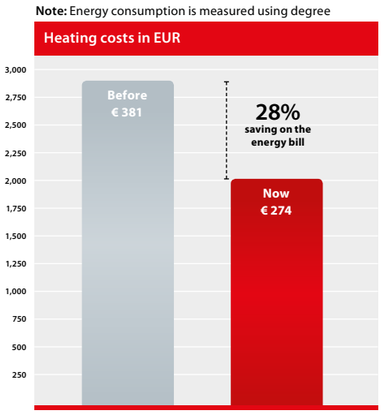
Central heating without Connect Thermostats:
6,384.33 kWh = approx. € 381

Current consumption

Central heating with Connect Thermostats:
4,583.38 kWh = approx. € 274

Savings

1800.95 kWh, at the cost of approx. € 107, corresponding to a 28.2% saving on energy consumption.



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Three good reasons to choose Danfoss

Danfoss provides intelligent, energy-efficient heating solutions for your home. Our products increase comfort, reduce heating bills and make your heating system easier to manage. With more than 75 years of experience, innovation and development, we can offer you the best solutions for the perfect indoor climate.

1 Intelligent solutions that optimise indoor climate and comfort

2 Reduce heating expenses and reap the benefits of an energy-efficient home

3 Intuitive and user-friendly products tailored to your lifestyle

Visit us online for information, support, advice
and inspiration at **smartheating.danfoss.com**

Danfoss A/S · Haarupvaenget 11 · 8600 Silkeborg · Denmark
Tel.: +45 7488 8000 · Email: heating@danfoss.com · www.heating.danfoss.com