BUILD WITH CaRe
ENERGY SAVING BUILDINGS

NEWSLETTER

No.1 MARCH 2009

Dear Sir, Dear Madam

With this first newsletter we would like to inform you about a newly initiated European project called Build with CaRe, which aims to mobilise all forces in order to make energy-efficient building design the mainstream.

Today's greatest challenge is to gain control over climate changes and avoid unwanted impacts on society. The building sector, i.e. residential and commercial buildings, is the largest consumer of energy and emits the greatest amount of carbon dioxide of all industrial sectors. The sector has significant untapped potential for cost-effective energy savings.
Despite tested and available technologies and pricing, energy use in the built environment continues to be much higher than necessary. This is why the eighteen Build with CaRe partners have decided to work together. During the following three years we will engage in education, research, influencing policy and publicity measures.

Follow our efforts and read the latest news on the topic at www.buildwithcare.eu or contact us directly if you are interested to know more.

Kind regards,

Hanna Blomdahl
Project Manager Build with CaRe, Region Västra Götaland, Sweden

Successful start conference in Gothenburg

The first Build with CaRe conference was held in Gothenburg on 22-23 October 2008. 45 participants attended the conference and shared their experiences within the field of energy-efficient buildings. These were two very intense days and a perfect start for the Build with CaRe project.

On the first day keynote speaker Michael Edén presented the Swedish perspective on design for sustainable living. Professor Edén works at the Department for Building Environment and Sustainable Development at the Chalmers University of Technology. In his presentation he discussed many of Sweden's passive house projects.

One important role of the conference was to encourage different working groups to meet and discuss the future activities of the project. Emphasis was also placed on internal and external communication. Many good ideas were exchanged.

There was also time for two study visits. The first was to Hamnhuset, Sweden's largest passive house. The Build with CaRe partnership posed many questions and discussions continued at the annual conference dinner at a restaurant in the Gothenburg archipelago.

The second study visit was to a small village outside Gothenburg where a passive house project had recently been completed. This tour concluded the conference and everyone then returned to their regions to continue the important work of mainstreaming energy-efficient buildings.

The next annual conference will be held in Oldenburg and Bremen in November 2009.

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A PASSIVE HOUSE IN ACTION: Low energy costs and high comfort.

The newly built Hamnhuset has a fantastic view over Göta River's outlet. PHOTO: Sergio Joselovsky

It does not have to cost more to build a block of flats that use half the energy of a traditional block of flats. The Hamnhuset pilot project at Sannegårdshamnen in Gothenburg is proof of this. In Hamnhuset, people, home electronics and household appliances account for the heat generated in the flats while solar panels on the roof provide heating the water.

Lillian Sandblom is something of a pioneer. She is one of the first tenants to move into Hamnhuset, Gothenburg's new energy-efficient passive house. That the building she lives in has a unique construction is nothing that Lillian Sandblom notices in particular in her daily life.

All tenants are individually invoiced for their electrical and warm water usage. It is a great advantage if one lives alone and doesn't use as much as a family with teenagers, for instance," says one of the residents, Lillian Sandblom. PHOTO: Kristin Fridholm

"The only thing I noticed when I moved in was that there were no traditional radiators, only a ventilation panel where air enters the apartment. The fact that we don't have a heating system but that instead most of the heat is recycled is nothing I would have paid attention to otherwise. The temperature here has always been pleasant and the air always seems fresh so I am very satisfied," she says.

ENERGY CONSUMPTION CUT IN HALF

Hamnhuset is the third step in efforts to build energy-efficient multi-family homes in Gothenburg by Älvstranden Developments.

Having seen the considerable energy-saving possibilities with existing technology and without significant increases in cost, it became clear that this design could actually be considered what is known as a passive house.

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"When we started this process the norm for a newly built block of flats was 140 kWh/m²/year and our first building used approximately 110 kWh/ m²/year. For Hamnhuset the comparable values are 60 kWh/ m²/ year. And if the large garage, two large laundry rooms and a storage area in the cellar are excluded from the calculation the consumption can be as low as 32 kWh/m²/year," explains Per Andersson, project manager at Älvstranden Developments.

WHAT IS A PASSIVE HOUSE?

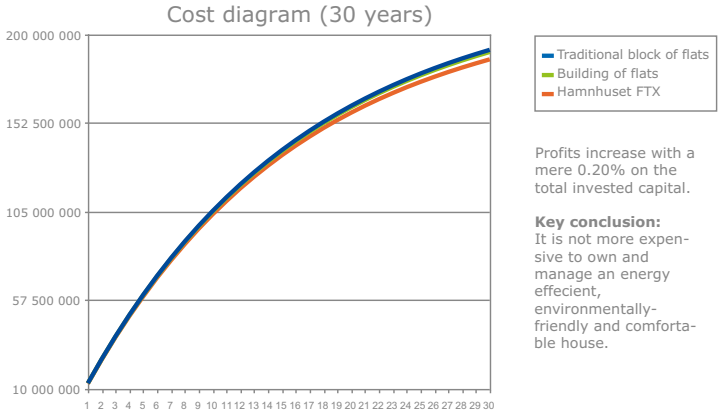
First and foremost, a passive house has so little heat loss that the flats normally do not need any active heating.
By controlling the air that comes in and that is released from the building, much of the energy that is generated from people, pets, household appliances, home electronics and so on is recycled so that it is sufficient as long as the weather outside does not become too cold. In addition, a passive house takes advantage of alternative energy sources such as solar collectors to heat water. At Hamnhuset approximately half the water is heated in this way.

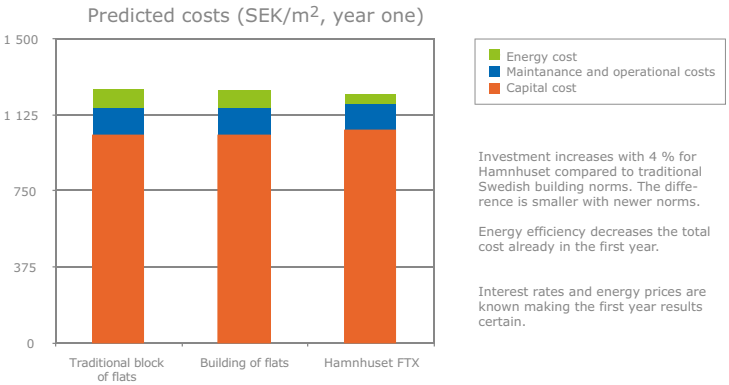
In simple terms, there are three things that distinguish a passive house from other buildings:

1. The climate shell (outer walls, roofing, flooring, and so on) is designed with minimal thermal bridges, thicker heat insulation, and enhanced protection against air/heat leakage.

2. With effective heat exchange, the fresh outside air is heated with the help of the air that is vented out from the house. This ensures a good indoor climate.

3. Good-quality windows with a low U-value. U-value dictates how much heat can flow through. The lower the U-value, the less heat is lost.





"The good ventilation and the fact that we reduced cold draughts in the flats make for a very pleasant indoor climate," says Per Andersson, project manager Älvstranden Development AB. PHOTO: Kristin Fridholm

Cold winter days

During the winter when temperatures in Gothenburg have been known to reach -10 degrees Celsius, external energy in the form of district heating has been supplemented to maintain a constant interior temperature of 21 degrees. In addition, each tenant has the possibility to raise the temperature further via a local, small, heating accumulator connected to the tenant's electrical subscription.

1/5 OF HEATING COSTS

During Hamnhuset's entire development process, Lifecycle Cost Calculations (LCC) were carried out. The goal of these calculations was to reduce energy usage without raising operating costs and thus also the tenants' rents. In the calculations, Hamnhuset was compared with a traditional block of flats where no special consideration was taken of energy savings or environmental concerns.
"We have seen that by investing more money initially, as one does in the construction of an energy-efficient building, it is more economically beneficial, despite a higher capital cost every month. The greater investment actually results in a lower total cost, where operational costs decrease more than capital costs increase. Not only in the long term but even in the very first year. For instance, heating costs are estimated to be just a fifth of those of a traditional building – garage, laundry rooms, and so on excluded," says Per Andersson.

A GOOD CONSCIENCE IS THE BEST PILLOW

Looking at the entire building project, the extra investment for all the energy-saving solutions was 4 percent or approximately 800,000 euros. From the perspective of the environment, the amount of carbon dioxide that is released due to heating is decreased by 75 percent. Although more building material is in fact needed, thus contributing to more transport need and greater carbon dioxide emissions, the cost is still calculated to be earned back in three years.
"It does not cost more to build, manage and own an energy-efficient building with a higher comfort level. The residents don't notice any major differences compared with the traditional flats in which they used to live, with the exception that some tenants have said that they sleep exceptionally well at night in their environmentally-friendly homes," concludes Per Andersson.

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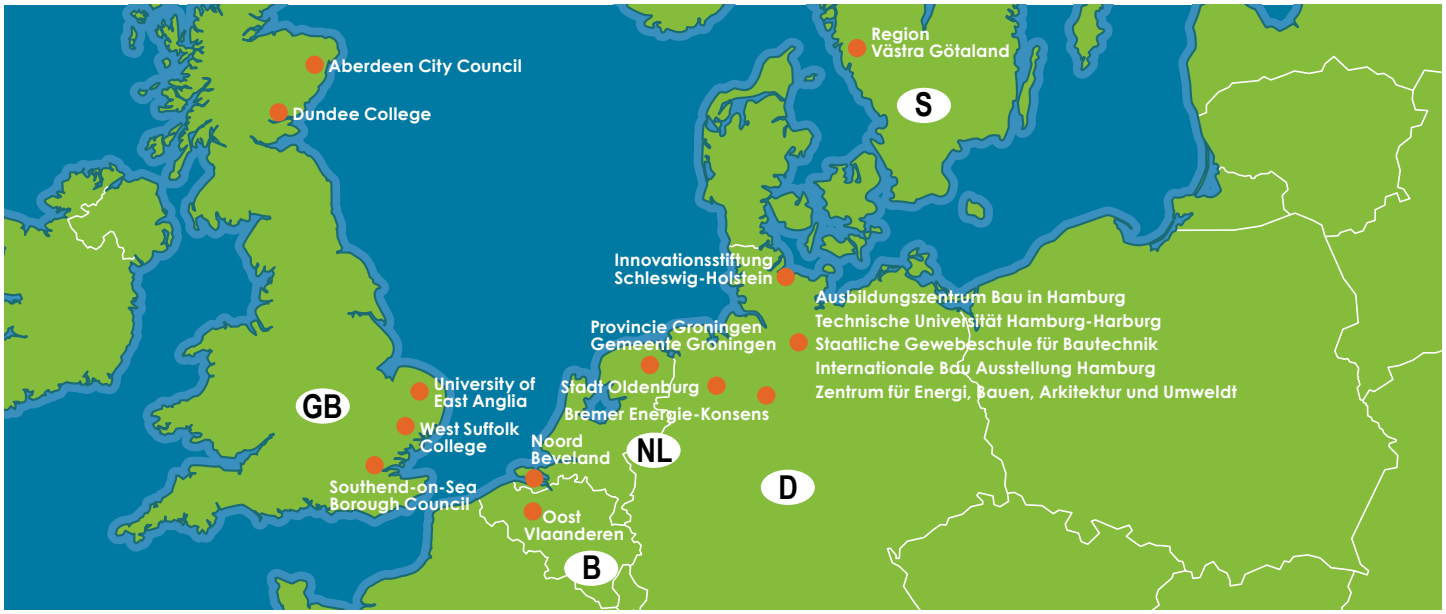

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EVENTS

3 March	Northern German Passive House Conference	Hamburg, DE
3 – 5 March	Ecobuild	London, UK
17 – 18 April	13th International Passive House Conference	Frankfurt, DE
23 – 30 April	Energy efficient construction and housing exhibition	Alingsås, SE
27 – 29 April	Second Passive House Conference Norden	Gothenburg, SE
23 – 26 June	Green Week	Brussels, BE
24 – 26 June	North Sea Commission Annual Meeting	Haarlem, NL
28 – 30 Oct	3rd European Fair on Education for Sustainable Development	Hamburg, DE
10 – 15 Sept	Bauforum Nord	Neumünster, DE
6 – 8 Nov	International Day of the Passive House	Europe
11 – 13 Nov	Annual Conference Build with CaRe	Oldenburg/Bremen, DE

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