

Save energy – save money – save the climate

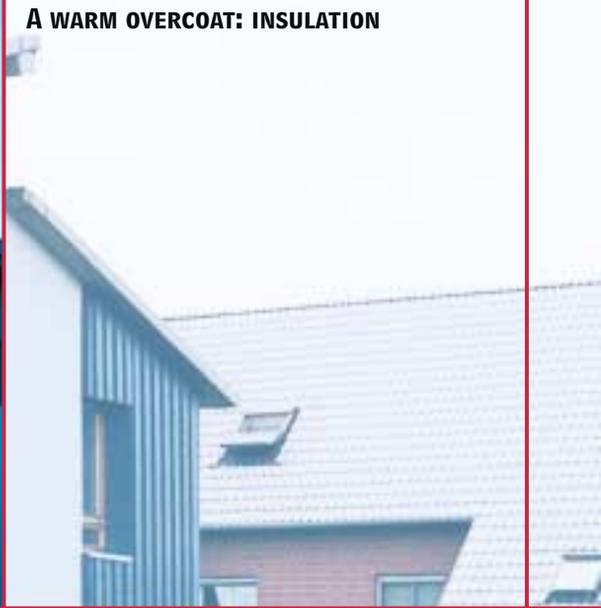
# L O W E N E R G Y H O U S E S



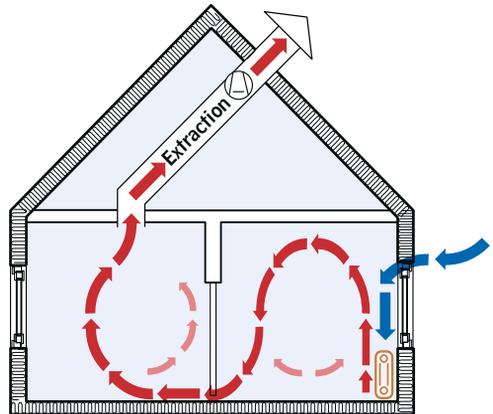
Hannover has had its own local climate protection programme since 1996, which aims to cut a quarter of the CO<sub>2</sub> emissions in the city by the year 2005. To make this happen, prospective home-owners, property developers and investors, and buyers of municipally-owned land are encouraged to use the Low Energy House construction method as their contribution to climate protection. In this way they can save precious energy and thus money - and also make homes that are comfortable and pleasant to live in.

Hannover

## A WARM OVERCOAT: INSULATION



## HOW A VENTILATION SYSTEM WORKS



# The Low Energy House

A Low Energy House's main virtue is that it uses very little energy for heating. Over the year, a Low Energy House (LEH) saves around a quarter of its heating energy needs compared to a conventional house. How? It's actually very simple. Everything in a Low Energy House can be built using ordinary construction methods, with one crucial difference.

It gets a thicker 'overcoat' – at least 14 cm of wall insulation. 'Thermal bridges', conducting heat through the walls e.g. around the window frames, are kept to a minimum.

Also, an LEH is built to be airtight to reduce heat loss. Using the 'Blower Door Test' to measure how much air finds its way into the building when the air pressure inside is reduced can find the weak points and seal them properly. The heating installations should also be inside the insulation 'overcoat' to reduce heat loss.

By the way, under certain conditions there are grants for LEHs available, described in more detail at the end of this pamphlet.

## A great Atmosphere at Home

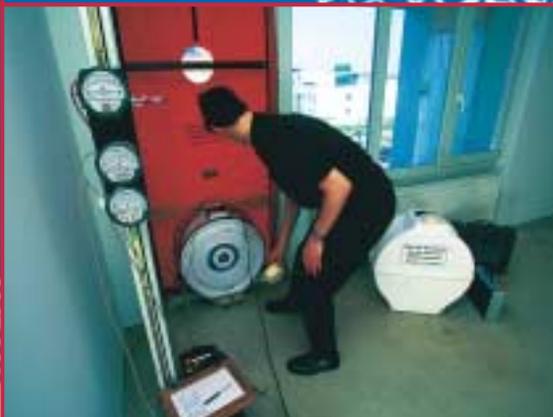
# Ventilation Systems

The following components complete the Low Energy House:

A ventilation system - not to be confused with an air conditioning system - ensures that you get a constant supply of fresh air around the clock without opening the windows once (although you can, of course). It makes your home more comfortable, and you feel better.

It works like this:

A fan extracts stale air from the kitchen, bathroom and toilet, and so draws fresh air into the other rooms. To get the same rate of air exchange you would have to open the windows every two to three hours, day and night. The ventilation system also reduces air pollution and humidity, around the clock, and provides a dependable, well-regulated supply of fresh air in your home.



**THE BLOWER DOOR TEST  
SHOWS UP GAPS**

**THERMAL BRIDGES ARE KEPT TO A MINIMUM**



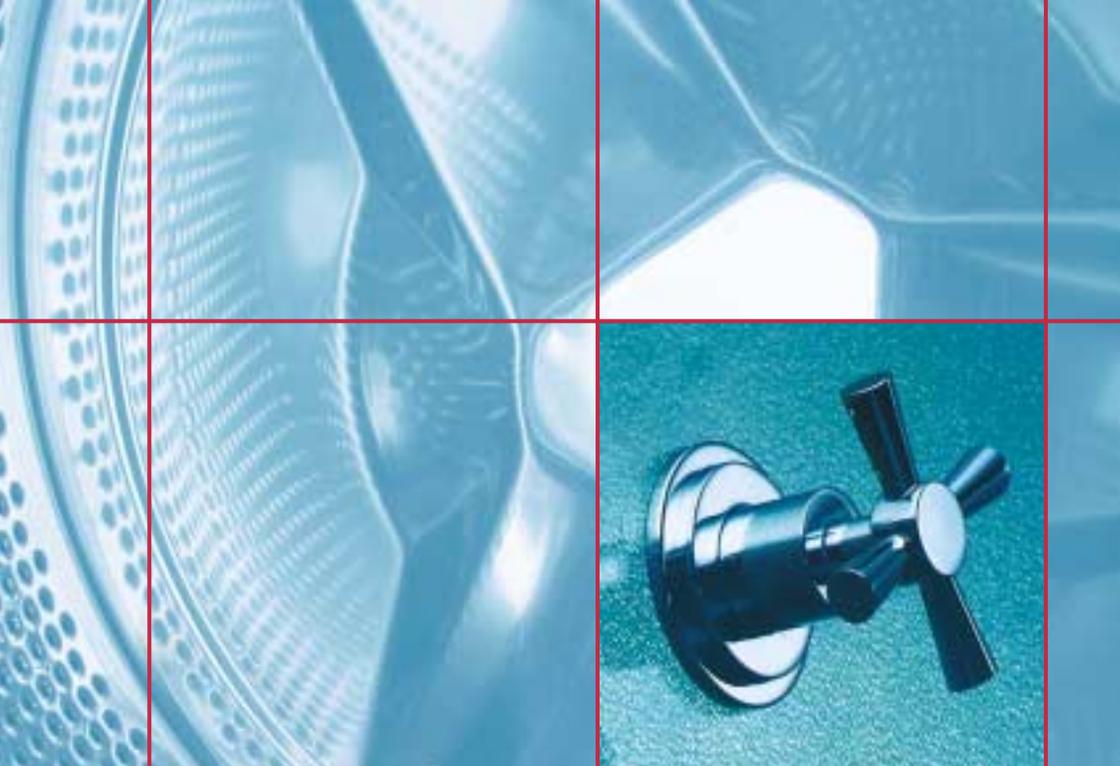
Experts check – you relax

## Energy Efficiency Quality Assurance

You may ask how these Low Energy House standards can be put into practice. The answer is, easily; throughout the construction process, approved quality assurance bureaux are working for you – leave it all to the experts, who will keep a close watch on all design aspects relevant to energy use, insulation certification, minimising thermal bridges and the airtightness of the construction – and thus also reduce the risk of damage and faults during construction. With little effort on your part, your new home will meet the most modern energy efficiency standards. The quality assurance bureaux engineers arrange this with the architect – it really couldn't be easier.

Quality assurance bureaux check, for instance:

1. the architectural drawings
2. the contractor's working drawings
3. the work on site
4. airtightness, with the Blower Door Test  
(technical readings)



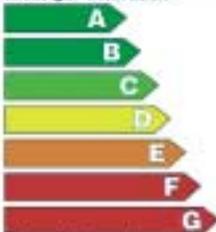
# Energie

Hersteller

Modell

Logo  
ABC  
123

**Niedriger Verbrauch**



**Hoher Verbrauch**

Energieverbrauch kWh/Jahr  
(auf der Grundlage von Experimenten  
über den typischen Gebrauch über  
ein Jahr)

Der maximale Wert ist ein Wert, der  
nicht überschritten werden darf.  
Der Wert ist ein Wert.

Nutzwahl Kühlzeit ( )

Nutzwahl Gefrierzeit ( )

XYZ

xyz

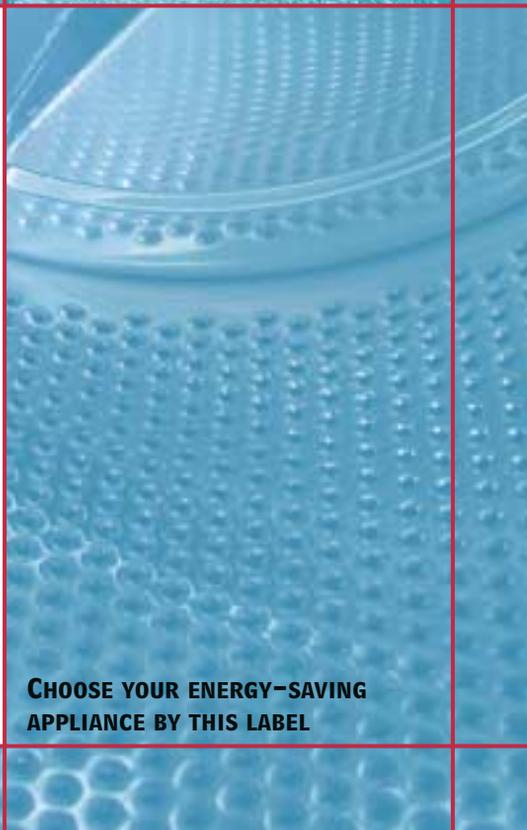
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Geräusch  
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Die Daten sind mit anderen Daten verglichen  
und in den Prospektus enthalten.



**CHOOSE YOUR ENERGY-SAVING  
APPLIANCE BY THIS LABEL**

## Energy-saving Household Appliances

# Hot Water Connections for Dishwashers

Most (about 80 percent) of the energy a dishwasher uses is for heating the cold water.

What, then, would be more sensible than to connect the dishwasher directly to the hot water system and save energy and money? The water is heated by your environmentally friendly central heating boiler rather than with expensive electricity.

Another advantage of the hot water connection: it saves time, because shorter heating cycles mean shorter programme times. A hot water connection for appliances is a must for your household – you save lots of energy with little effort, and installation costs are insignificant.

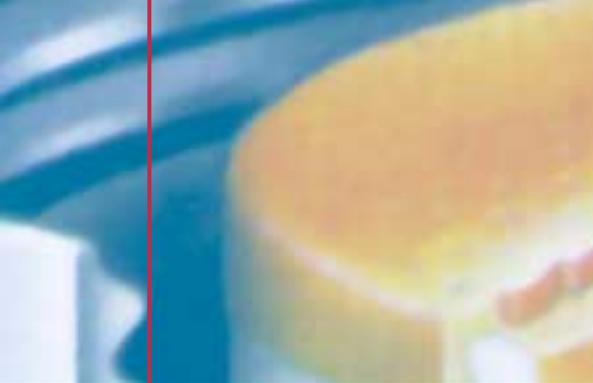
# Refrigerators and Freezers, Washing Machines and Dryers

Fridges and freezers gobble electricity – they make up around 20 percent of your house's electricity bill.

To change this, choose energy-saving appliances – they may be more expensive, but you'll recoup this easily over the years with the lower running costs.

One way of comparing when buying new appliances is to look for the Euro-Label. The best choice is the exceptionally economical 'A class'. This also applies to washing machines.

The most efficient dryers also have a heat pump, and are suitable for all materials, even those whose labels recommend 'no dryer'.



**SAVING IN STYLE**



**ENERGY-SAVING LIGHT BULBS  
JUST GO ON GLOWING**

## Energy-saving Household Technology

### Low Energy Light Bulbs

Conventional light bulbs use a lot of electricity; low-energy bulbs need 80% less and last eight times longer. Today they're available to fit all lamps, even with candle effect tints. Some models can be dimmed.

### Water-saving Tap Attachments

Water is a precious resource that we still waste. Up to 50% can be saved with attachments for the washbasin taps and the shower head. Your daily shower will be just as pleasant but less expensive.

Water-saving tap attachments limit the flow by mixing in air, but they still guarantee hygiene, and are used in hospitals.

A water-saving attachment can be fitted fast and easily. The water-saving plunger on the WC cistern has become standard.



## Low Energy Houses

# Grants Programmes

There are grants available from proKlima for Low Energy Houses, the even more efficient Passive Houses, and for quality assurance monitoring, as long as you meet the specific conditions of the proKlima funding programme. Applications must be submitted to the proKlima office before concluding sale or service contracts with property developers, building contractors and architects i.e. before submitting the building proposal.

A proKlima grant can be combined with other subsidies as long as the conditions do not exclude each other.

The 'Kreditanstalt für Wiederaufbau' (KfW) also funds CO<sub>2</sub> reduction measures.

### Contact

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