



A SAFE INVESTMENT?

Buying a new house that will be
'Future Proof'



Buying a house is an exciting process which can transform your life in so many ways.

At the same time it is almost certainly the biggest financial commitment you will ever make. That's why there are so many checks and balances that need to be carried out before your mortgage lender will agree to lend you the money you need.

These checks, whilst they may feel like a nuisance at the time, can in the longer term be tremendously reassuring in that they are designed to ensure that the amount of money you borrow is never more than the value of the property and, in theory at least, you should never end up with a debt you can never repay.



However, there is one area where these checks fall short; an increasingly urgent and important consideration that could very significantly affect the value of your home in the future and at worst, leave you with a home that you can't afford to heat and won't be able to easily sell.

Beware Hidden Future Costs

You will no doubt have worked out whether you can afford the mortgage repayments, but have you thought about how much the house will cost to run? However delightful your new home is, you won't be able to enjoy it if it is either just uncomfortably chilly through the winter or unbearably hot in the summer?

We all now understand the significance of climate change - we will all have noticed that the weather isn't quite the same as it used to be and both the UN with its recent warning of 'Code Red for humanity' and the UK Government with its declaration of a Climate & Ecological Emergency now reflect what climate scientists have been telling us for decades.

At the same time the recent sharp increases in energy prices have shown how vulnerable the UK is to outside factors and most especially where our energy comes from. In order to try to prevent runaway climate change the Government is planning to replace the gas network with an upgraded electricity grid supplied from renewable energy - which isn't subject to the volatility of international oil and gas prices.



This means that the home-buyers will be left with buildings that are prohibitively expensive to keep warm and comfortable and which will need expensive retrofitting to make them suitable for the new low energy future

They will need to be retrofitted with far better insulation and completely new heating systems such as Heat Pumps which require larger radiators. Whilst it is relatively cheap to incorporate these upgrades during the original build, it is much more costly if you need to strip out substandard systems and upgrade them at a later stage.

*This means that all houses in the future will need to be converted to electrical heating in place of the familiar gas central heating boilers that we use at the moment. **Indeed it will no longer be permitted to fit gas fired heating in a new house from 2025***

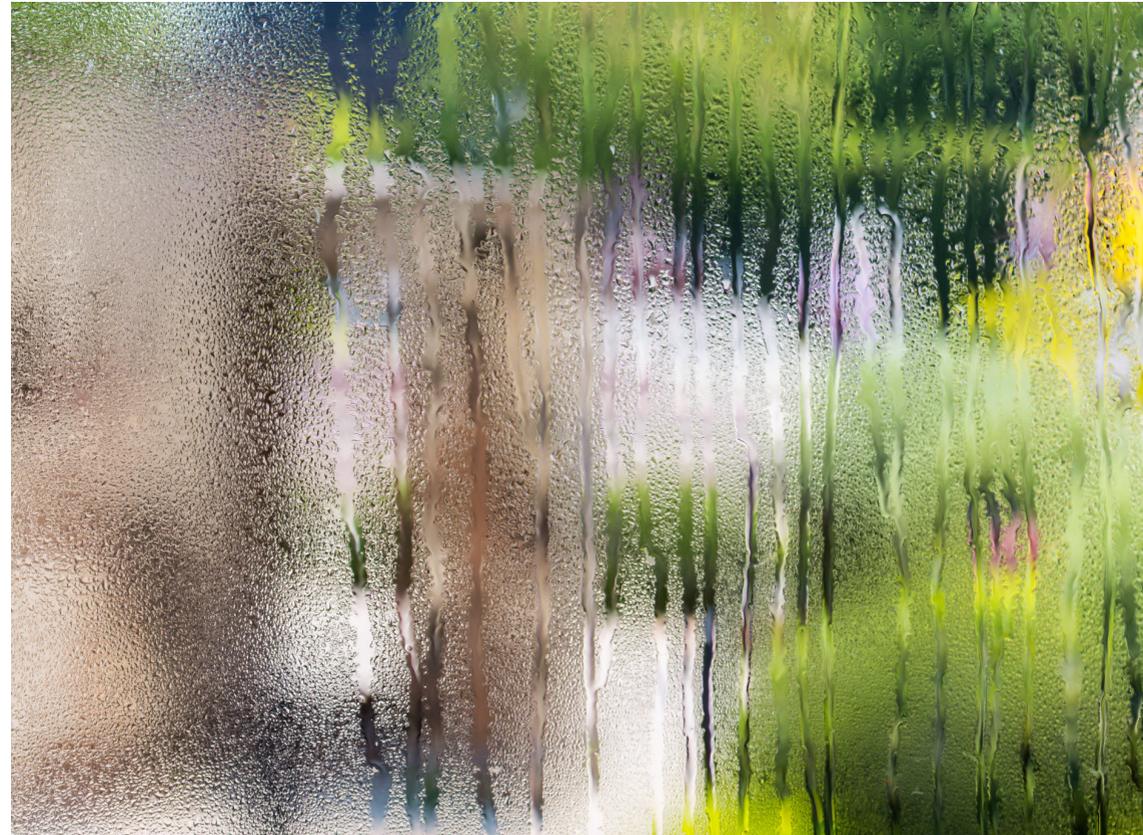
That is why it is so important to make sure that your house-builder is anticipating the new 2025 standards and not trying to make false economies.

The government has also recognised that over the coming decade all UK housing will need to radically reduce the amount of energy it requires for heating, lighting and hot water.

It is bringing in new rules - in the form of much stricter Building Regulation that will eventually give a 78% improvement in the energy efficiency of all new homes.

Unfortunately these new regulations won't come into full force until after 2025. This means that the majority of new homes being constructed at the moment fall very far short of what the Government has decided should be the required minimum standard.

Until the new post 2025 Building Regulations come into force, many house-builders will be continuing to build homes to wasteful, leaky energy standards and fitting outdated gas-fired heating systems





How to work out if your new home will be comfortable.

So how do you know if your new house has been built to the appropriate standards and is going to be easy to make comfortable without incurring large energy bills?

Trying to work out whether or not your new home is good, bad or indifferent might feel pretty daunting. Fortunately there's a very simple measure of how much energy your house will need to keep it comfortable. It tells you how well insulated and therefore energy efficient a building is.

*This magic figure is known as the **Energy Use Intensity** of the building.*

The Energy Use Intensity (EUI) tells you how much energy is required per year for each square metre of floor-space that you have.

To be more precise it tells you how many kWhrs (the standard unit you see on your electricity bill) will be used for each square metre of floor area of your house in each year.

After 2025 every new home in Britain should have a target EUI approaching 35kWhr/m²/yr (or lower)

This means that if your house has a total floor area of say:
85 square metres,

then you can expect it to need

$35 \times 85 = 2975$ kWhr of energy per year

to heat and light it and provide all your hot water and power your appliances.

(Just as a guide, this would cost around £505 at typical mid 2021 prices)

Your house-builder should easily be able to provide you with the EUI figure for your new home.

If they can't then it possibly indicates that that they haven't taken energy efficiency, and therefore the future running costs of your home, very seriously.

At worst it is possible that they are trying to sell you a building that, although slightly cheaper and easier to build, could prove much more expensive to run in the future.





Once you have taken the initial step of checking the predicted EUI, there are some other things you should consider to reassure yourself that your new home is indeed a sound investment.

So what should you look out for and what questions should you ask?

- **Insulation and Draught Proofing:**

This determines how much of the heat that you put into your house is lost through the walls, roof, floors and windows.

If it isn't well insulated and draught-proof then it is like trying to fill a leaky bucket - however hard you try (and however much you spend) the house will be hard to keep warm and comfortable.

This might seem complicated to work out, but luckily the EUI figure mentioned on the previous page will give a good guide as to how well insulated and draught-proofed the house is.

- **Heating:**

To avoid the need for a costly upgrade and retrofit as the country moves to a low carbon future a house should not be dependant on gas for central heating and hot water. These systems are likely to be outlawed within the next few years.

The basis for all the services in your home should ideally be **electric** using one of the more efficient electric technologies such as a ground-source or air-source heat pumps.

These are a cleaner and more efficient way of providing heating and hot water, producing around 4 or 5 times as much heat energy as the electricity they consume.

It is important to note that changing from an already fitted gas boiler to a heat pump is not straightforward. Heat pumps tend to produce water for heating at a lower temperature than a gas boiler. This means that larger radiators are needed to compensate, leading to higher replacement costs.

- **Lighting:**

Modern LED lighting systems are far cheaper to run than the old incandescent and fluorescent bulbs. However, it is best to avoid having any lights switched on during daylight. Rooms that are more than 4.5 metres deep and living spaces with small windows can get very gloomy at certain times of day and cost money just to keep them lit well enough to be cheerful.

- **Ventilation and Shading:**

With the increasing expectation of extreme weather events, sustained periods of exceptionally hot weather will make it ever more important that your home has well thought out natural cooling and ventilation to protect you from the worst overheating effects of the summer sun. This is best achieved by shading south and west facing glazed areas with canopies and shutters or by the use of carefully placed deciduous trees to give summer, (but not winter) shade. In the winter, the warming effects of the sun will be welcome and be unhindered by trees that have lost their leaf cover.

- **Electricity Generation and Storage:**

With rising energy prices and the falling costs of solar panels (photo-voltaics), the case for generating some of your own electricity is becoming more obvious. Because most solar energy is generated during the day - when you may or may not be at home - and consumption peaks in the evenings and early mornings, it makes sense to incorporate an

Energy Storage system (basically a big battery) to save even more money.

There are also opportunities for selling electricity back to the grid and earning income from helping the grid cope at times of very high demand.

These systems can be retrofitted on your house at a later date, but it is important to check that the house or possibly garage, has a large unencumbered south or west facing roof to mount the solar panels on.

- Electric vehicle Charging:

With the sale of petrol & diesel cars coming to an end in 2030 and with the big cost advantages of running an electric car, its essential to check that the electrical supply to the house is sufficiently large to allow quick and efficient electric vehicle charging (of at least two cars).

It is also worth bearing in mind that all electric vehicles have a large battery that can be used to feed back into the house and grid at times of peak demand - when the grid supplied electricity can be very expensive - and then to be recharged at times when cheap grid electricity is available.



As you can see there are quite a few questions that you can ask to check whether you are buying your dream home or just an expensive liability. This may all seem a bit daunting so, as a bare minimum, it might be better to concentrate on just these main points below:

- What is the Energy Usage Intensity of the Building? (Should be below 35kWhr/yr) If not, how much would it cost to achieve this level of efficiency?
- Is the heating and hot water system low carbon (i.e. an electric heat pump)? If it is gas fired, are the radiators sized to run at less than 55 deg - i.e. suitable for use with a heat pump?
- Do you need to use any lighting during the daytime?
- Is there provision for shading and through-ventilation to allow sufficient cooling during exceptionally hot weather?
- Is there any on-site electricity generation (i.e. solar panels)? If not why not?
- Is the electrical supply to the house capable of simultaneously charging two electric vehicles and heating the house?

If the answer to all these key questions is 'yes', then you can rest assured that your builder has taken the need for cheap to run, sustainable housing seriously and your new home will be both comfortable and cheap to run. It will also be playing a significant role in helping us reach net-zero by 2050 and safeguarding our world for future generations.

Published by XR Nottingham