... whatever the weather

FRAME SYSTEMS

Passive Solutions

www.ecoframesystems.com

Innovative and proven

Passivhaus > *the rigorous, voluntary standard for energy efficiency in buildings resulting in ultra-low energy buildings that require little energy for space heating or cooling.*

Passive design > *an integrated design process with the architectural design that can be applied to both new buildings and refurbishments.*


SE6 ARCHITECTS

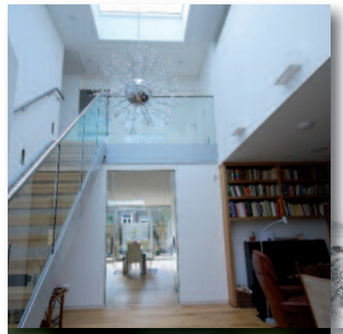
FRAME SYSTEMS

The first Passivhaus buildings were built in Darmstadt, Germany in 1990. Six years later, the Passivhaus-Institut was founded by Dr Wolfgang Feist to promote and control the standard.


TREVOR DRURY
OPERATIONS DIRECTOR


SIMMONDS MILL ARCHITECTS

Passionate about ultra low energy buildings



“ Passive houses are our future. They’ll not only protect us from the elements – come rain or shine – they’lll make significant energy savings for generations to come.”

STEVE GAMBRELL MD ECO FRAME SYSTEMS

Introduction

A framework for success.

Eco Frame Systems is an established, dynamic company founded on many years’ experience in timber frame construction within the building industry. Our mission is not just to meet the expectation of our clients but to exceed them. We achieve this by offering a level of customer service and quality second to none. We are passionate about using sustainable materials and construction methods and are champions of passive house design. Around 15,000 passive houses have been built around the world - mostly in German speaking countries - we’d like to spread the word about passive housing in the UK.

90%
less energy consumption

0%
carbon rated

Houses built in the passive design require only 10% of the energy that a standard new building uses and require 15kWh/m²a annually for space heating.

A passive house is designed for all weathers. Its clever combination of innovative features – such as triple-pane glazed windows and air-tight construction joints – guarantee a comfortable temperature – in sizzling summer temperatures or on freezing winter days. Traditional mechanical heating and cooling is replaced with mechanical heat recovery and cooling strategies such as natural ventilation, solar heat gain and efficient insulation. And it's not just residential houses that can benefit – the same concept can be applied to offices, schools, supermarkets and factories – any building that uses energy.

The future's green. By 2016, the UK Government has pledged that all new build houses will be 'zero carbon' rated. The Eco Frame Systems philosophy already holds that every building project should have a negligible, or even a positive effect, on the environment, yet sacrifice nothing in quality, durability and end-user satisfaction. We achieve this by using wood which, even allowing for transport, is a carbon-neutral material. The timber frame construction technique benefits from the lowest CO^2 cost of any commercially available building material - every timber frame home saves about 4 tonnes of CO^2 (the same quantity of CO^2 produced by driving 14,000 miles).

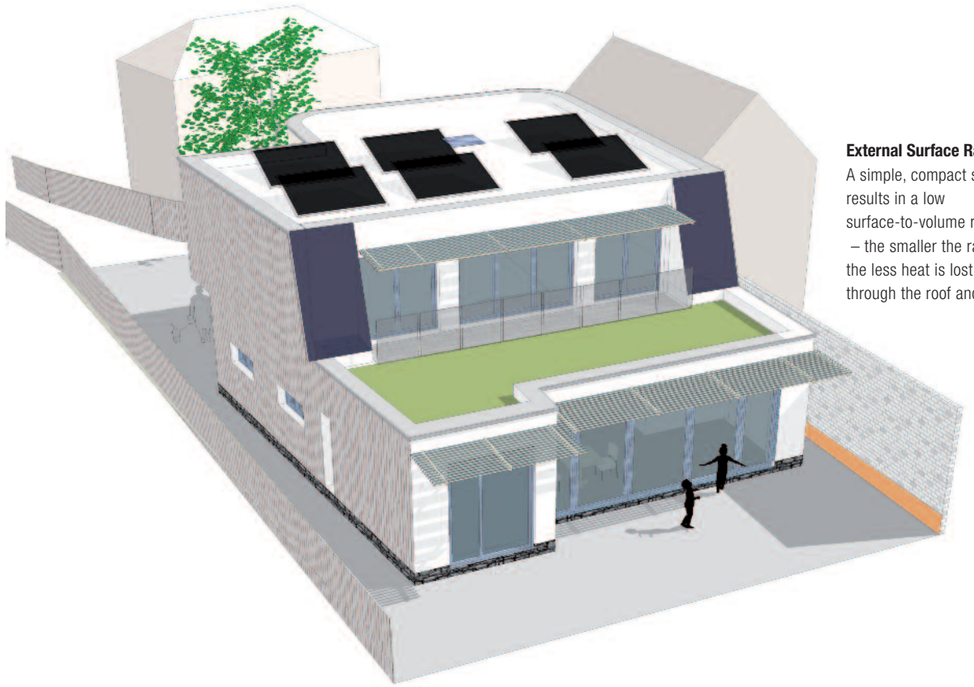
A recipe for Energy-Saving.

A passive house has to meet a number of stringent design standards which Eco Frame Systems would be happy to advise on.

Super insulation
To significantly reduce the heat transfer through the walls, roof and floor compared to conventional buildings, a wide range of thermal insulation materials are used.

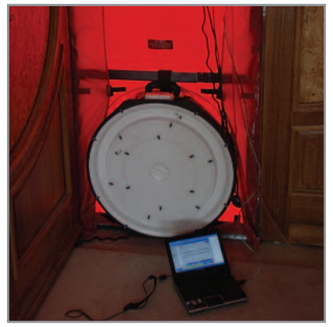
Gaulhofer Glassline windows with Thermostop®:
The Gaulhofer thermostop® makes the living room temperature more pleasant - the radiated cold on the interior side of the glass is reduced, the temperature on the interior side of the glass increases and you save valuable energy.

The **Gaulhofer Thermostop®** provides:
- Proven better protection against condensation.
- A more comfortable room climate.
- Up to 45% better heat insulation.



Passive solar gain
Buildings are usually compact in shape and, when possible, their windows are orientated towards the equator to make the most of the potential for passive solar gain.

External Surface Ratio
A simple, compact shape results in a low surface-to-volume ratio – the smaller the ratio, the less heat is lost through the roof and walls.



Air-tight construction
Minimal air leakage is achieved by air barriers, careful sealing of every construction joint and sealing of all service penetrations.

Elimination of cold bridges
Cold or thermal bridges – which account for a massive amount of heat loss in conventional homes - are avoided as far as possible.

Space heating
Passive houses make extensive use of intrinsic heat from internal sources – such as waste heat from lighting and white goods, as well as body heat.

Renewable energy
Low-energy lighting (such as compact fluorescent lamps), solar hot water and high-efficiency electrical appliances are used to minimise energy consumption in a passive design scheme.

Thermal mass
Some use of high thermal mass materials, such as concrete blocks, to allow passive solar gain in winter and take less energy to keep cool in summer.

Homes that won't cost the earth.

It is projected that the global temperature will rise at between 1.1 and 6.4 degree Celsius this century. The biggest cause of this increase is CO^2 emissions – and a staggering 50% of these emissions come from buildings. To protect this planet for future generations, we must start building passive homes, offices and factories that won't cost the earth to heat. It's the right thing to do. Passive houses typically cost slightly more to construct than conventional buildings but this should be weighed against the potential energy costs savings – up to 90% a year.

Gaulhofer
A window for a lifetime

Window of opportunity.

Even in a well-insulated home, almost 1/3 of heat loss is through the windows. In a passive house, the highly-insulated glazing and solar heat control can turn windows into net-energy gainers. When south facing these make the best use of the sun as they are constructed using triple-glazed units which allow a 40% greater area of glass compared to double glazing. The initial cost may be more but the long-term savings in energy are huge. Just think of a car – wouldn't you be tempted to pay a bit more for a car that used no petrol or even generated petrol for other users?

Variety
Powder-coated aluminium surfaces in a large variety of colours open a wide range of design options and offer perfect and permanent allround protection against all kinds of adversity.

Beautiful
The Gaulhofer design frame is pure aesthetics.
The clear, puristic appearance of the aluminium frame with its angular aluminium profiles reinforces the elegance of the slim profile.

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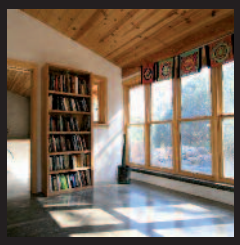

The UK Government has pledged that, by 2016, all new build houses in the UK will be 'zero carbon' rated. Passive houses use 90% less energy than a standard new building.

To find out more about passive houses and how we can help you and your clients save energy without compromising on style, visit our website: www.ecoframesystems.com

Or visit our new showroom in Kent to see the benefits of passive housing for yourself. Make an appointment now by emailing: info@ecoframesystems.com

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