

Putting steel in the frame

As the construction of sustainable homes tops the industry's agenda, could steel frame building provide a green alternative? **Graham Raven** certainly thinks so

With the launch of Part L of the building regulations in April, and house buyers increasingly on the look out for energy efficient homes, builders and developers must ensure new housing is eco-friendly. Although energy conservation is far from the only important aspect of sustainable construction, it is high on most people's lists to help combat the rising cost of energy and impacts of climate change.

However, the drive towards sustainability comes at a time when 70,000 to 120,000 additional homes need to be built each year, the cost of construction is rising, and traditionally skilled builders are in short supply. The pressure to deliver homes quickly, cost-effectively and sustainably, presents the industry with a considerable challenge.

A solution that marries efficiency with environmental considerations, delivering what consumers want and developers need, may be at hand. By utilising modern methods of construction (MMC) and an entirely recyclable material, steel housing systems offer a high-quantity, cost-efficient solution, which has a minimum impact on the environment and can deliver sustainability that exceeds the latest government requirements.

Reducing the impact of construction on the environment is of prime importance to the delivery of new homes. The

off-site processes employed in the manufacture of steel homes ensure minimal waste, high levels of efficiency and eco-friendly homes.

Indeed new off-site techniques, where design and manufacture processes are computer assisted, allow components to be cut to length, drilled and fabricated, specifically for individual jobs. As a result, not only do these factory processes facilitate accurate, quality workmanship, but serve to minimise waste and reduce costs.

Steel is 100% recyclable and recycling programmes reduce the solid waste stream, resulting in saved landfill space and the conservation of natural resources. Research in conjunction with National Federation of Demolition Contractors (NFDC) shows that 84% of the steel arising from demolition sites is recycled and a further 10% reused.

'Excellent' rating

Housing accounts for a third of all carbon dioxide output, as much as the entire transport sector combined. However, steel-frame houses regularly obtain an EcoHomes "excellent" rating, and their energy-efficiency performance exceeds the latest requirements of new Part L regulations, which aim to reduce carbon dioxide emissions by 20%.

By simply adding supplementary insulation to stud walls, modern steel homes can improve energy efficiency without compromising the



Steel frames: The future?

amount of useable floor space. Furthermore, modern insulation materials used in steel construction produce low U-values and high standards of air tightness, which promote a warm, draught-free internal environment, reducing energy consumption and the associated utility bills for the occupant.

Acoustic performance

Similarly, the multiple and resilient layers of materials, enabled by the presence of cavity and insulation in light-weight steel construction, provide excellent acoustic performance.

What is more, the factory production techniques used by steel home builders, makes extensive testing of sound and heat retention at the research, development and design stages possible, allowing real confidence that the results of pre-construction testing will be replicated in the finished home.

The push for more sustainable construction is commanding house builders and house buyers enter the 21st century. Wasteful and polluting construction methods are no longer acceptable, when eco-friendly processes are available.

The benefits of steel frame systems are coming to the fore, as sustainability becomes an effective marketing tool for selling houses, all signs point towards substantial growth of steel. **EB**
Graham Raven is convenor of the Steel Homes Group

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