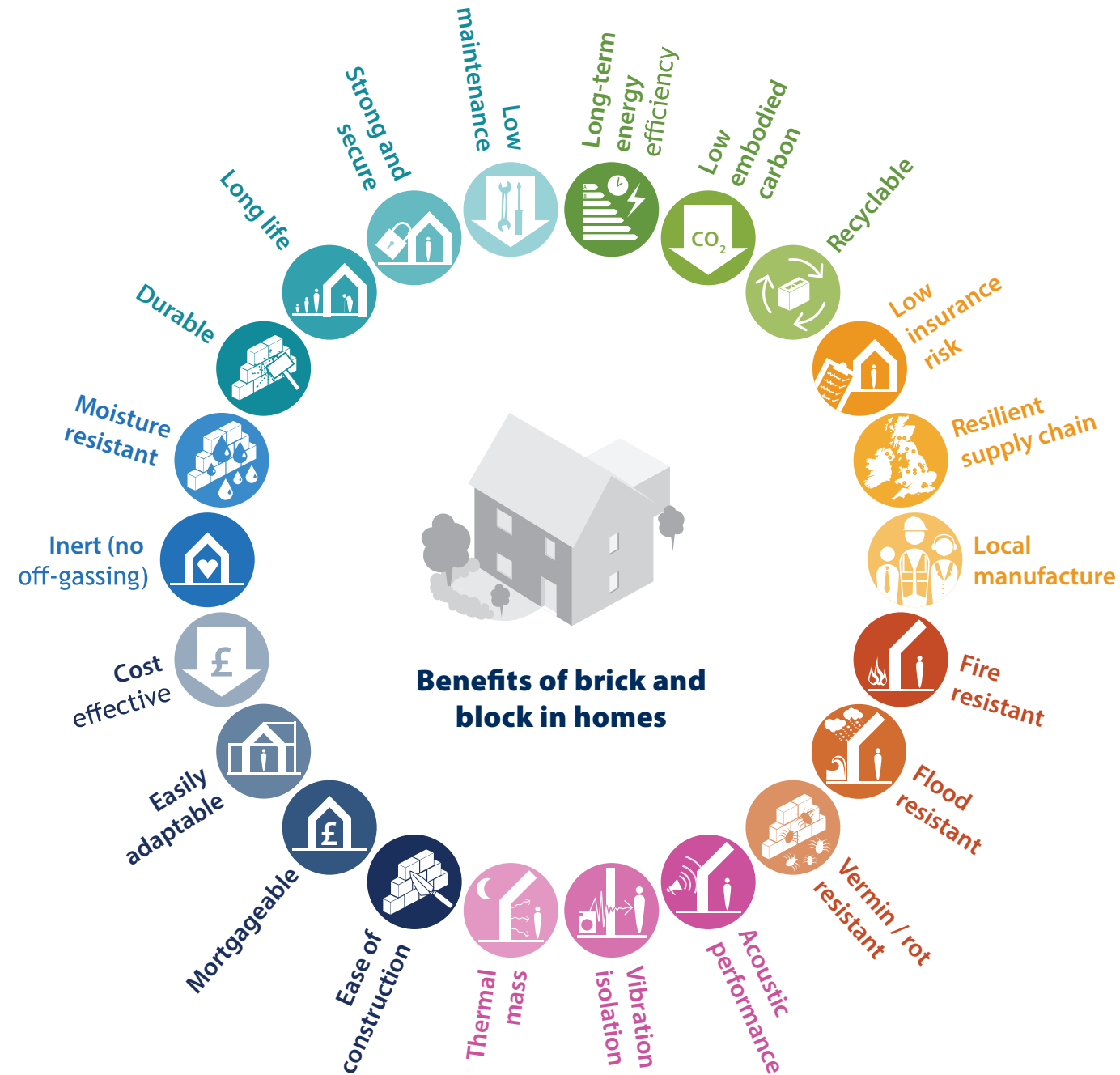




Why brick and block remains
the right choice for UK housing



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Maximising the opportunity

The construction of new homes has been put at the heart of boosting economic growth and tackling housing need in the UK.

Housebuilders have a major opportunity to deliver significant numbers of new homes. But they must do this against the backdrop of new policy in the form of the Future Homes Standard, as well as supply chain issues such as import tariffs.

Masonry materials, most commonly in the form of brick and block cavity walls, have long been established as the principal materials of choice for the cost effective construction of homes in the UK. These homegrown building products remain essential to helping housebuilders deliver a new generation of homes.

This document explains why blockwork construction continues to be the right choice for new homes in the UK, today and in the future.



It covers the sustainability and performance of masonry, as well as the role it plays in delivering long-lasting, cost-effective, low-carbon homes. Masonry construction also delivers highly comfortable, energy-efficient homes that have a water and fire resilient structure.

Finally, in a world of unpredictable global supply chains, this guide explains the importance of derisking projects by using locally made masonry materials, which ensures that the construction of new UK homes boosts domestic manufacturing and benefits local economies.



Delivering energy-efficient, low-carbon homes with masonry

The introduction of the Futures Homes Standard ushers in a new age of energy-efficient, low-emissions housing. Housing projects and independent studies show that meeting the Standard is straight forward with masonry construction.

The Future Homes Standard (FHS) aims to significantly enhance the energy efficiency of new homes and reduce carbon emissions, supporting the UK's broader strategy to achieve net zero by 2050. Under the FHS, new homes must produce 75–80 per cent fewer carbon emissions compared to those constructed under 2013 regulations.



Energy efficiency

Masonry can be used to construct highly energy-efficient housing. There are plenty of examples built to meet or exceed the regulated thermal performance requirements of the Future Homes Standard, using a fabric first approach.

The fabric energy performance of new homes is enhanced by combining effective insulation, airtight construction, and considered detailing to reduce thermal bridging, helping to lower energy demand and improve comfort. Proven techniques using brick and block construction exist for achieving robust performance across all these areas, ensuring durability and long-term efficiency.

In comparison to lightweight walling solutions, blockwork construction additionally provides thermal mass for further energy performance and comfort benefits. Over 10 times more thermal mass can be provided by masonry and concrete construction than lightweight walls and floors.

Thermal mass

During cooler seasons, the thermal mass in masonry housing can help take full advantage of solar gain, absorbing heat during the day and releasing it at night. In well-insulated homes, this can lower the demand on the heating system and reduce energy use and carbon emissions.

Applying simple passive solar design techniques using thermal mass offers useful energy savings that can be delivered across a building's lifecycle, with minimal user interaction or need for maintenance.

Together with adequate ventilation, masonry is also a recognised means of passive cooling, which is especially useful to reduce risk of overheating in a world of increasing extreme weather events. Passive cooling also limits reliance on costly mechanical cooling, which can contribute to summer fuel poverty.

Long-term airtightness

Airtightness is a key component for the energy performance of a home. Blockwork walls can achieve excellent airtightness requirements, including Passivhaus standards where required. They provide a rigid basis for a range of robust air barrier solutions which, unlike timber frame structures, do not rely upon tapes and wraps that can degrade overtime. The NHBC Foundation study *Ageing and Airtightness - How Dwelling Air Permeability Changes Over Time*, found that masonry homes remain more airtight over time than those built using timber frame construction.

Recognised construction details

Thousands of free, independently assessed energy-efficient construction details using blockwork are available for housebuilders and designers. The details facilitate the design and calculation of thermal bridging details, all with pre-calculated values to aid building regulation submissions, helping to optimise fabric performance and potentially reduce costs of onsite renewables.

Project 80: fabric first housing to meet new standards

Led by leading housing association Midland Heart, Project 80 in Birmingham is a landmark housing development significantly influenced by the requirements of the Future Homes Standard.

The 'fabric first' development has met all the requirements of the new regulations.

By trialling different external wall solutions, the project demonstrated that u-values of 0.13 can be achieved using either concrete or aircrete blocks, putting the properties comfortably within the Standard's requirements.

Importantly, these low-carbon homes are also comfortable for the occupiers and achieve the Future Homes Standard requirements without compromising on any of the essential elements which make a quality home, such as resilience, security, fire resistance and longevity.



Reducing embodied and whole-life carbon

New studies into the embodied and whole-life carbon generated by homes demonstrate the minimal carbon reduction differences between brick and block and timber.

To fully understand the carbon impact of any new development, a whole-life carbon analysis is required. This includes the total of all embodied emissions over the whole lifecycle of a home, including those associated with materials, construction, maintenance and end-of-life demolition and disposal, as well as operational emissions from energy and water use.

The measurement and reporting of embodied carbon has moved on in recent years to allow more consistent material comparisons.

Tackling material mistruths

The Future Homes Hub, the independent organisation bringing together the homebuilding sector to meet climate and environmental challenges, has taken several measures to help provide greater consistency and simplify the process of measurement and benchmarking of whole houses.

These include developing a useful series of conventions to be adopted when carrying out LCA for housing, as well as a simple WLC tool.

The findings of the Future Homes Hub Embodied and Whole-Life Carbon of Future Homes Standard Options Report (March 2025) challenged misconceptions about the embodied carbon impact of using masonry construction versus timber.

This study provided a direct comparison between the upfront and whole-life carbon footprints for three example houses designed to Future Homes Standard specifications, and three common house types broken down by building elements across their lifecycle.

The research found that the upfront embodied carbon of the timber framed homes (end-of-terrace, mid-terrace and detached) with a brick outer skin was **only 3-5 per cent lower than the same housing types constructed from masonry.**

When considering whole-life carbon (over the assessment’s 60-year period), the report showed the reduction is even less. Timber frame construction showed **only a 1-2 per cent lower whole-life carbon intensity than masonry homes across the three housing types analysed.**

The findings of this report are clear in that there is no significant difference between the methods of construction and no single option for reducing embodied carbon of new homes.

The UK masonry industry remains committed to improving the data and supporting accurate measurement of embodied carbon using its products. It has invested in the development of industry average Environmental Product Declarations (EPDs) for blockwork to improve the quality of data available for housebuilders and the tools and training to assist individual manufacturers to develop their own EPDs.

Carbonation

Greater maturity in measurement of embodied carbon has identified that concrete blocks absorb CO₂ from the atmosphere throughout their lifetime, with around one-quarter to one-fifth of this uptake occurring in the first six months after manufacture, depending on block type and exposure conditions. This process is called carbonation and going forward, should be included in all embodied carbon analyses.

Equitable performance

It should be noted that while elemental comparisons of embodied carbon can be of use, they should also provide performance comparability. A masonry structure, for example, requires less plasterboard to meet minimum acoustic and fire requirements than an equivalent timber structure. It also generates less carbon from maintenance over its life and can actively contribute to the energy savings of the home.

Whole-life carbon is assessed against a 60-year lifespan but brick and block construction in the UK has clearly shown it can last multiple times this lifespan with very minimal maintenance or repair, reducing carbon emissions and cost.

Decarbonising concrete and cement

The UK cement and concrete industry is continuing to make significant decarbonisation progress. Housebuilders need not conclude that they should abandon concrete and masonry to meet carbon targets.

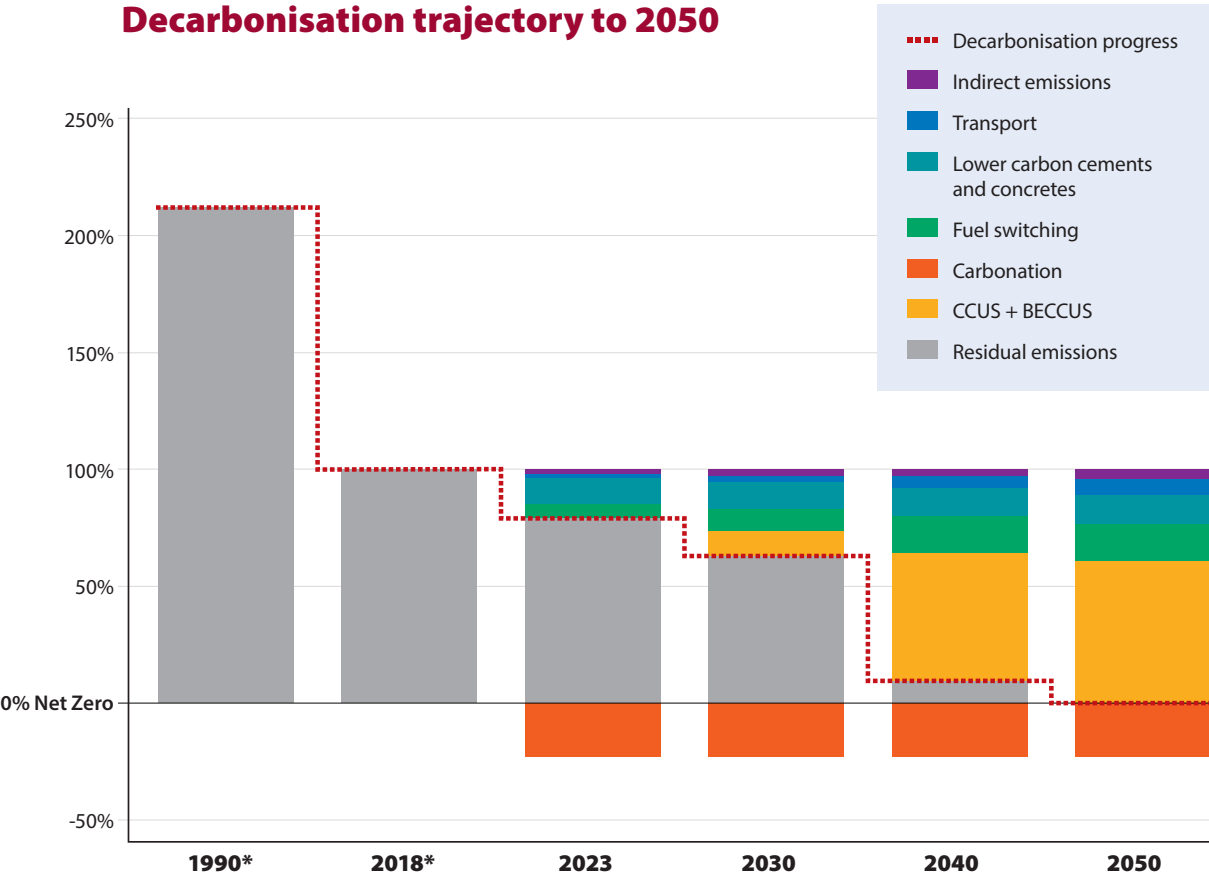
CO₂ emissions generated by the UK concrete and cement sector are now 63 per cent lower than 1990 levels and the industry is decarbonising much faster than the UK economy as a whole (54 per cent over the same period).¹

The UK concrete and cement industry’s commitment to net zero will be met through decarbonised electricity and transport networks, fuel switching, greater use of low-carbon cements and concretes as well as Carbon Capture, Use and Storage (CCUS) technology for cement manufacture.

The circularity of concrete blocks

Concrete blocks typically contain a large percentage of recycled content. Their performance lasts for over 60 years and at the end of a long service life they are recycled as aggregate, proving a lower carbon resource for other construction projects. Less than 1.18 kg per tonne of precast concrete factory waste goes to landfill, with the rest either being recycled and reused into the product or used in other applications.

Decarbonisation trajectory to 2050



* Carbonation occurred in 1990 and 2018 but had not been accurately measured and therefore is not shown in the diagram

¹ MPA UK Concrete (2025) UK Concrete and Cement Industry Roadmap to Beyond Net Zero: Progress report 2025.

Beyond carbon: Providing resilience, durability and healthy future homes

High-performance housing is essential for addressing the pressing need for safety, climate change resilience and wellbeing. Masonry construction helps to derisk housebuilding and deliver these essential performance benefits across the lifetime of a home.



A changing climate and lengthy periods of hot, dry weather are also bringing the threat of wildfires to both urban and rural areas in the UK



Non-combustible

Masonry materials do not burn. They neither feed a fire, support its spread, nor give off toxic fumes or smoke. This significantly reduces the risk and impacts of fire during a building's life and during construction, without requiring additional treatments or complex protection systems. Detailing to meet buildings regulations is thus simplified, and the consequences for fire safety due to alterations by occupants are reduced.

In its *Assessment of Risk 2024*, the London Fire Brigade identified concerns about modern construction methods including the development of cross laminated timber structures and their performance during fire or collapse. By contrast, the in-built fire resistance of blockwork delivers effective partitions to prevent fire from spreading while maintaining structural integrity.



Water resilience

Brick and block construction offers strong resilience against water damage, maintaining structural integrity and reducing repair needs from flooding or leaky pipes. Water risk isn't confined to coastal or river areas. Surface water flooding, blocked drains and burst mains can affect any building. In *FloodReady: An action plan to build the resilience of people and properties*, the Environment Agency predicts that by mid-century, one in four homes will be at risk. The latest BSI guidance, *BS 85500:2025 Flood resilient construction*, recommends masonry structures and internal walls over framed or insulated panel systems to reduce the impacts of water damage from internal water.



Thermal comfort

Thermal mass in masonry construction helps to regulate indoor temperatures by absorbing heat during the day and releasing it at night. When combined with natural ventilation, this passive cooling effect reduces the risk of overheating, which can lead to heat-related illnesses and deaths. This supports healthier, more comfortable homes without relying on mechanical cooling, making it a key strategy for new housing design that remains fit for future use in a warming climate.



Durability and low maintenance

Concrete and masonry deliver genuine longevity. With lifespans exceeding 100 years and minimal maintenance requirements, masonry structures represent intergenerational investments that outlast passing trends. This exceptional durability stems from the materials' inherent resistance to weathering, physical damage and pest infestation, which allows them to maintain structural integrity and performance over extended periods.



Mortgageable and insurable

Obtaining insurance and finance for brick and block construction does not face the challenges of timber frame homes which can be regarded as a 'non-standard' construction type, making getting a mortgage more difficult. The Fire Protection Association outlines recommendations to investors in *Approved Document B: Fire Safety - Volume 1 Dwellings Incorporating Insurers' Requirements for Property Protection*. These recommendations include maximising non-combustibility and investing in measures to limit the extent of damage caused by heat, smoke, and water and facilitating simple repair in the event of fire and escape of water incidents.



Safe and secure

Arguably the most basic requirement for a home is to provide a safe and secure living environment. In terms of safety, masonry benefits from being an inert, non-flammable material. From a security standpoint, the robust nature of masonry ensures that separating walls cannot be easily breached by intruders attempting access.



Acoustic performance

Masonry homes provide high levels of sound insulation across a wide range of frequencies, reducing noise levels in properties to make a valuable contribution to the health and wellbeing of occupants. This is helped by the inherent mass, stiffness and damping properties of concrete.

Local manufacturing to deliver sustainable homes and protect and develop good jobs

Masonry blocks are manufactured right across the UK using homegrown materials. By specifying these materials, housebuilders can reduce project supply chain risks, support local UK jobs, reduce transport emissions and boost local economies.

Deliverability is key. When housebuilding relies on global supply chains, it exposes projects to potential supply chain disruptions, currency fluctuation risks and reduced contributions to UK employment and economic growth.

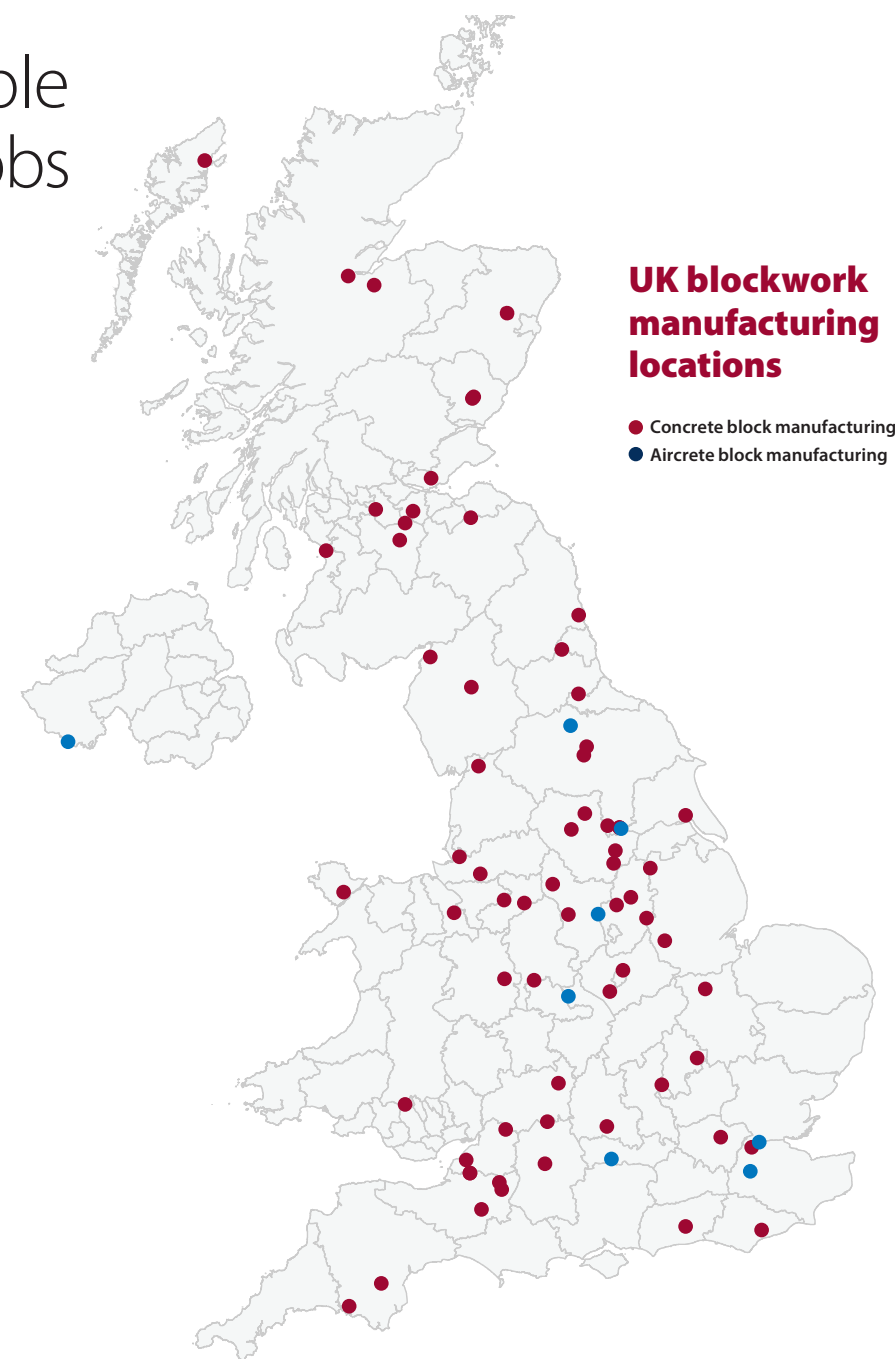
Today, 80 per cent of timber used in UK construction is imported from around the world, which means that the UK is outsourcing jobs and sending investment abroad. This sits in stark contrast with a UK manufactured masonry industry.

Local supply chain advantages

Wherever houses are built in the UK, masonry products won't have travelled far to reach site. In fact, the average distance travelled is only about 66 miles for concrete blocks, meaning logistics are highly responsive. The on-site simplicity and adaptability of masonry construction contrasts with prefabricated timber systems, which require early design freeze to prevent costly changes and delays. The prefabrication process can deliver speed, but at higher cost.

Brick and block construction offers greater flexibility for design changes with little or no extra cost; critical when client requirements or site constraints evolve during construction. The adaptable nature of masonry construction can accommodate modifications with minimal disruption to timelines or budgets.

As a local material, the manufacturing impact is accounted for in the UK and not exported to other parts of the world. 86 per cent of precast and masonry production is certified as responsibly sourced in accordance with BES 6001.



Source - MPA Masonry membership.

Building homes that people want

Research about the British public's attitudes to housing has underlined the value that people put on the fabric quality and performance of their home to deliver energy efficiency but also to protect against damp, mould, flooding and fire.

In an independent poll of 5,000 people by Opinium, 87 per cent of homeowners and renters said that having their home constructed from fire-resistant materials was important.²

In a changing climate, 90 per cent of people rated construction of their home from materials that protect against water ingress and escapes as important.

Safe and adaptable

Masonry homes are easy to maintain, resistant to fire, adaptable to our changing needs and able to cope with whatever the future throws at homeowners, whether that's flooding, hotter summers, or just life in general.

People require homes that can change with them. Masonry housing is easily altered or extended thanks to its straightforward method of construction, which is typically devoid of vapour barriers, breather membranes and structural frames.

So if an occupant wants a new kitchen or an extension, they can have this safe in the knowledge that the wall construction in a masonry home is understood by tradespeople and the thermal and acoustic performance will not be compromised by doing a small or large job.

This helps people stay in their homes longer and allows their house to adapt around them - building lasting communities.

²MPA UK Concrete (2025) *Homes 2025: a national conversation.*



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MPA Masonry represents UK manufacturers of aircrete blocks and aggregate concrete blocks. Providing information to housing developers, designers, housebuilders, end-users and occupants to enable them to understand the benefits of masonry construction.

MPA Masonry is a product group of the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and industrial sand industries. www.mineralproducts.org

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