

Brick. Made for generations.



The case for sustainability.



Sustainability.

“Meeting the needs of the present without compromising the ability for future generations to meet their own needs.”

The Brundtland Commission Report on Sustainable Development

The past two hundred years have seen changes and technological advances that have altered life unimaginably for those in the developed world. The capacity for what can be achieved sometimes seems limitless and life is longer, easier and more enjoyable for those of us able to capitalise on these achievements.

However, recent decades have also brought an increased awareness of the cost of such advances – and an understanding of the need to harbour resources, restrain consumption and work towards a system that can operate effectively for generations to come. In short, an economic and social system that is sustainable.

This does not mean turning the clock back and rejecting the pace of change – quite the reverse. Developing a strategy for sustainability requires that ground breaking technical and economic knowledge is used constructively. It is in no-one's interest to damage economic success, but in everyone's interests to ensure that this success can be sustained in the long term.

There is now no argument about these imperatives – the difficulty is in the detail. Changing the way industries and economies work requires the participation of everyone: this challenge is not someone else's problem.

In the UK the Government is taking the lead and, in its Sustainable Development Strategy of 1999, challenged all sectors to look in their own back yards – to evaluate the sustainability of their industry and actively to seek ways to measure and improve it.

The clay brick industry is involved in this process through its representative organisations The Brick Development Association (BDA) and The British Ceramic Confederation (BCC).

This document is an introduction to clay brick's credentials in the sustainability debate and outlines the ways in which manufacturers are working to improve performance even further.

This is not a comprehensive document (the full arguments, together with a regularly updated evaluation of progress are available from the BDA), but it gives a summary of why brick, one of the most familiar, traditional and well-loved building materials is also one of the most modern and appropriate from which to build a sustainable future – for generations.



In trying to reach a more detailed definition of sustainability that could be used across a number of industries, the Government defined four key objectives, the integration of which will deliver sustainable development:

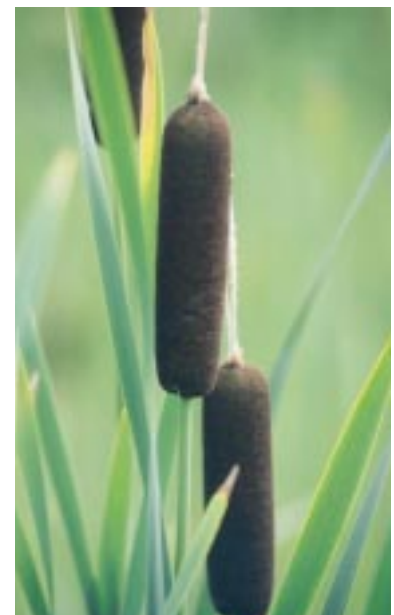
① Social progress that recognises the needs of everyone

Brick is part of the vernacular of the British built environment – regions are characterised by the bricks made from local clays. The huge range of colours, textures and finishes produced by simple variations in clay, firing temperatures and naturally obtained surface colourants all help to explain the material's enduring popularity.

Brickworks tend to be in rural areas and may often be the main source of employment for local communities. The stability of the demand for brick enables

such works to offer long term and stable employment. Because of the mutual dependency between works and communities, relations between the two tend to be unusually strong.

Continuing this relationship means seeking new ways to further improve the lives of people employed in the industry. Brick manufacturers have now defined clear targets for enhancing the working environment at all stages of the manufacturing process.



② Effective protection of the environment

Bricks are made from clay extracted from different areas of the country. The different clays often dictate the colour of the finished brick, giving a clear indication of its origin. Few building materials are so closely related to the environment from which they come.

The process of winning clay from the landscape to build shelter has been in progress since Man first settled in Mesopotamia. Given the virtually inexhaustible nature of the raw material, this process can continue for millennia while constantly improving technical and management regimes ensure the environmental impact of the process is minimised.

The volume and rate of extraction is low compared with that for other minerals. Operations are normally restricted to a limited number of weeks per year – so the immediate impact and rate of change is unpronounced. Extraction is generally only economical where the ratio of usable to unusable material is relatively high.





Brick manufacturers have worked hard to minimise the visual and environmental impact of their work and to restore exhausted extraction sites to beneficial use. They comply with the statutory performance standards required by planning permissions and those recommended in the BCC Environment Code on Extraction and Restoration.

Tree planting, imaginative landscaping and intricately planned extraction programmes all help to minimise the impact of a working site. The uses of exhausted sites vary depending on local demand. The clay lining of a pit is suitable for landfill or the creation of lakes dedicated to leisure use and to planned nature conservation programmes. Since the extraction process does not leave any contamination on the site, such redevelopment is relatively straightforward and benefits the local community.

The main atmospheric emissions resulting from the production process are carbon gases, hydrogen fluoride and particulates. The brick industry has been working for many years to reduce the impact of such emissions. It has undertaken research and development into methods of process modification, participated in the production of process guidance notes on ways to reduce hydrogen fluoride and particulates emissions and made major capital investment in the latest technology such as filters and scrubbers.

It is a clear objective of the brick industry to increase the percentage of production capacity covered by systems accredited to ISO 14001 or EMAS and to ensure that all legislative standards set for the control of emissions, toxic waste and environmental management are achieved.

③ Prudent use of resources

Sustainability is about the responsible use of resources. Our task, therefore, is to use our resources as efficiently as possible – to reduce waste, reduce the energy used in manufacture, encourage the re-use of materials and to design products with the longest possible life span.

Very little clay is wasted during manufacture. Unfired waste clay is reused in the manufacturing process and less than perfect fired bricks are crushed and used as aggregates in other parts of the building industry.

The brick industry has worked hard to reduce the energy used in the firing process. This is demonstrated by a substantial investment in more efficient kilns that allow recycled heat to be used



in the drying process. In addition, in larger brickworks where exhausted pits have been used for landfill, gas from the landfill may be used to fire the kilns or to generate electricity which is sold back into the National Grid.

Both clay and finished bricks are heavy and bulky, so the energy used in transportation is always a consideration. For this reason, brickworks are usually sited close to the clay source and a large percentage of bricks are used close to their point of manufacture. Where transportation is unavoidable, companies cooperate to minimise empty return journeys.

However, the chief demonstration of the brick industry's prudent use of resources must be the durability and low maintenance of the finished product.

Not only does it have an almost limitless life span, but it is, most unusually, a product that actually improves with age: this means that there is a ready market for recycled brick from demolished buildings.

④ Maintenance of high and stable levels of economic growth and employment

In 2001, the brick industry sold 2.8 billion bricks with a value in excess of £500 million. The industry employs 6,000 people directly in 120 manufacturing sites, most of which are in rural areas where the brickworks is a highly significant local employer.

The popularity of brick with householders provides a secure future for the industry in terms of facing bricks – but building methods change and the brick industry must continue to provide new and innovative products to meet new challenges from rapidly changing markets.

Fortunately, this is a challenge the brick industry is well prepared to meet. There is a wide variety of bricks available with a range of colours, textures, sizes and surface treatments. New products and

techniques give designers the opportunity to create facades with prefabricated components or to meet the most stringent needs of civil engineering or specialist construction projects.

There is an industry-wide recognition of the need to re-invest in existing plants and processes to continually improve production processes and product quality. Brick manufacturers work on pay-back periods of up to 25 years so a local economy that sees the development of a brickworks can be confident that it will endure – for generations.

Strategy for continuous improvement.

The brick industry already has a strong case to justify its claims as a sustainable industry. Proof of its determination to take sustainability seriously is its membership of the Pioneers Group, a best practice forum established by the DTI and DEFRA working to accelerate the development and implementation of sectoral sustainable development strategies.

Identifying key areas for possible improvement is only the first step in what will be a dynamic and ongoing process. Equally critical is the establishment of a set of key performance indicators that will be evaluated and reviewed annually to monitor progress. These enshrine both general principles and specific measurable targets.

By entering into this regime, the manufacturers of brick in the UK are signalling their commitment to this process and have undertaken to carry out the necessary changes to bring about a further improvement in the sustainability of their industry.

As an industry we believe that this process is inevitable, laudable and entirely necessary. Brick has been a valued, trusted and loved building material for over a thousand years – we aim to ensure that it remains so for another thousand years. Only through using our resources responsibly can we ensure that our record of improvement and wealth generation can be sustained for our children and grandchildren well into the foreseeable future.

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To obtain a copy of the full Sustainability Strategy for the Brick Industry, contact the Brick Development Association at 01344 885651, www.brick.org.uk



Brick Development Association
Woodside House, Winkfield, Windsor, Berkshire SL4 2DX
Tel: 01344 885651, www.brick.org.uk

