

Building sustainability

Planning for the supply of brick clay

by Andrew Bloodworth, *Keyworth*

Bricks are one of the most visible components of the built environment in our villages, towns, and cities. Despite the importance of this building material, a number of critical issues face those involved in planning for the future supply of the clay needed to make bricks. Against a background of strong consumer demand for a wide range of bricks, a combination of environmental concerns, commercial pressures and technological developments are changing the pattern of demand for brick clay.

Brick is a durable and versatile construction material. Almost half of our housing stock is over 60 years old, most of which was built from brick. Brick buildings have an innate flexibility which make them easily adapted and refurbished for a variety of uses. The variety of bricks used contributes significantly to the rich regional and local architectural diversity of mainland Britain. As a consequence, the future supply of a diverse range of bricks and related materials is a major factor in creating and preserving attractive environments in both urban and rural

areas. Clay resources used in the manufacture of bricks have a major influence on both their technical performance and appearance.

The Department of Transport, Local Government and the Regions commissioned the BGS to carry out research into planning issues related to the supply of clay raw materials to the British brick industry. The BGS-led team has worked closely with the brick industry, local planners, and other stakeholders to identify key trends affecting the industry. Analysis of these trends and their effect on supply and demand for brick clay has resulted in recommendations being made for a number of changes to the process that plans for brick clay. These aim to provide the brick industry with a sustainable supply of raw materials at the least cost to the environment.

What are the key issues?

A continuing need for improvements in the urban landscape and in the quality and quantity of housing. As such, demand for bricks is likely to remain around present levels. Consumers (architects, developers, and the wider community) will require a wide choice, although architectural fashions are likely to change.

Continuing technological and economic changes in the construction and building materials industry. These will include new standards for products from the UK brick industry. A competitive business environment means that industry is striving to become more efficient by consolidating into large, automated factories. Developers are demanding new clay-based products that will make building quicker and more efficient.

Increased demand for more sustainable building methods. This means more reuse and regeneration of existing buildings and more demand for 'sustainable' building materials (low environmental impact in extraction, manufacture and use, durable, recyclable). Bricks may meet many of these criteria — they are highly durable and therefore brick buildings are both low maintenance and long-lived.

Demand for more rigorous environmental standards. Environmental standards



Brick is critical in defining the character of much of our built environment: new and restored buildings forming a mixed-use office/residential development in inner-city Nottingham.



A Bloodworth, BGS © NERC

Brick making is a highly-automated process: bricks awaiting firing at Kirton works in Nottinghamshire.

for the extraction of clay and restoration of pits will become much more strict. Urban fringe location of many clay pits makes this a sensitive issue. There will be a progressive reduction in the permitted level of emissions to atmosphere during the firing of bricks.

Decline in the production of opencast coal. Fireclay is produced as a by-product of opencast coal mining and is used to produce pale-coloured bricks with excellent resistance to weather.

How is this likely to affect the pattern of demand for brick clay?

Overall demand for brick clay will remain about the same, although industry will need access to a range of clay types, particularly those which are consistently high quality. There will be more transport of clay for blending at works which are some distance from the pit where it was dug. Landfill is likely to decline as an option for after-use of clay pits. Changing economics means that some sites with planning permission to work brick clay now have little or no commercial value for that purpose. Industry is more likely to seek ‘low emission’ clays which produce lower levels of pollutants during firing. As opencast coal production declines, the

supply of fireclay for brick manufacture will become more restricted.

How might the process which plans for the supply of brick clay respond?

Revision of existing brick clay planning guidance is likely to improve the ability of the planning system to balance the needs of industry with the need to protect the environment. It is recommended that this guidance should cover:

“... the supply of a diverse range of bricks is a major factor in creating and preserving attractive environments ...”

Sustainability: Incorporation of economic, social, and environmental objectives into all aspects of the brick clay planning process. Adoption of a long-term perspective will allow more security of supply and conservation of resources. The contribution of clay products to sustainable construction should also be outlined.

Clay supply: Declaration of the need for brick clay and the likely effects of con-

tinuing change in the economics and geography of the industry. Description of planning issues such as the shifting emphasis toward a more restricted range of clay resources; increased transport of raw materials; the need for a diverse supply to make a diverse product range; the existence of dormant sites; the recovery and/or stockpiling of fireclay where this is environmentally acceptable.

The guidance should set out the role of the English regional planning boards in taking a regional ‘resource-based’ perspective when guiding decisions on the most sustainable course of action.

Brick clay issues should be properly explored in up-to-date local development plans. They should emphasise the need for a long-term approach to sustainable security of supply, possibly delivered through a stock or ‘landbank’ of planning permissions, along with allocations of ground. These plans should be subject to regular short-term review.

Guidance should stress the need to adopt high standards in relation to environmental and amenity impacts of clay extraction. Advice on restoration options in relation to sustainable development objectives should be set out, including those which provide a rapid route to beneficial after-use (particularly extending or providing new habitats to encourage biodiversity).

For further information, contact:

A J Bloodworth,
Tel: +44 (0)115 936 3495
e-mail: ajbl@bgs.ac.uk



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After-use can be beneficial and extend biodiversity: restored clay pit in Bedfordshire.