

# THE RICH HISTORY OF bricks

It's a material which has stood the test of time — **Clive Fewins** takes an in-depth look into the history of brick, vernacular styles, visits one of Britain's surviving brickworks, and explains why the future of this housebuilding staple remains bright

**B**rick is a material that, all over the country, perfectly reflects the vernacular — both visually and historically. It charts the varied geological structure of the British Isles in all its glory.

To name just a few, there are the bright red bricks of south-east England, the blue bricks that result from the very tough clays of the northern coal measures, the purplish glazed headers that characterise many old houses in Berkshire and the Thames Valley, and the famous bricks of North Staffordshire — the colour of old copper. All manner of wonderful yellows, creams, reds, purples, browns and greys lie in between. (And that's not to mention the differences in size, texture and finish — from rough, partially distorted with deep crease marks, through to dimpled, and smooth and shiny.)

“They cover the colour spectrum — more so than stone, which at times can look drab and grey,” says brick expert and retired architect Michael Hammett, formerly of the Brick Development Association, and currently Enquiries Secretary of the British Brick Society, and the author of a very useful handbook *Brickwork and Paving for House and Garden*. “Moreover,” he says, “there is nothing artificial about brick. It is merely fired clay; it derives its colour entirely from the clay and the firing.”

“The only major colour you don't really get in brick is a vivid green. But you get all the primary colours. Brick is also a tremendously varied material. British people love bricks because they give an impression of being friendly and practical, and possessing a warmth ideally suited to the walls of houses — even in the dullest of weather.”

*Even today, 50 per cent of the façades of all our new buildings are built of brick*

## Characterful Variation

Varying in colour, finish, size and format, brick has had a long potted history in the UK throughout the ages — and created from clay dug or quarried from the immediate area — up until Victorian times at least — it is a distinctly vernacular material. Brick is increasingly being used in contemporary architecture too (as this example from The York Handmade Brick Company goes to show, TOP LEFT)

“Sometimes I describe a lovely bit of brick walling in a modern house built in traditional style as having the richness of Donegal tweed. I think this is because the appearance of brick is essentially a collection of small effects. It is the blues and buffs and pinks that I particularly like,” Michael reflects.

It has been said that, at one time, there were as many different varieties of brick in England as there were of homemade loaves. And in both cases, the bakers of both well-loved products were not all equally skilful.

If brick had never been invented, we would doubtless, as a nation, have coped. In many areas, when brickmaking started, the initial cost may well have been more than the traditional methods of timber, daub and plaster. But, ultimately, the value offered by this method of building, and its wealth of properties, have reigned supreme.

Apart from providing good value, it is visually that the country has gained so greatly from brick. While proponents of stone are sometimes prone to decry brickwork as monotonous, talented architects and builders have always been able to use brick subtly and sensitively enough for it to create a wealth of interest.

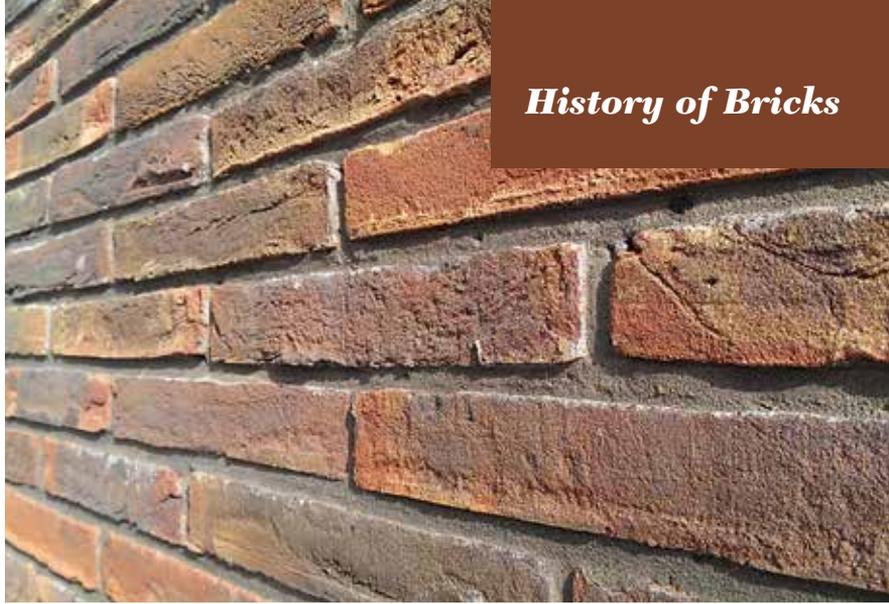
## A POTTED HISTORY

Brick is man's oldest manufactured building material; the Romans first introduced brickmaking and brick masonry to Britain. However, following the fall of the Roman Empire, brickmaking disappeared in most of Europe, including, it is believed, Britain.

In the medieval period, brickmaking spread slowly north again from Italy and what is now Istanbul, where the tradition had been kept alive. In the UK, regions where good building stone was scarce were generally rich in clay deposits, and therefore the reintroduction of brickwork was all very convenient. Strong trading links between the Baltic states and the eastern counties of England saw brickmaking reintroduced in Britain during the 13th and 14th centuries.



SHUTTERSTOCK: THE YORK HANDMADE BRICK COMPANY



It is not only for these historical reasons that some of the oldest brick buildings in the country are all in the eastern counties — our eastern extremities also lacked (and still do) good building stone.

The earliest house in England built with more brick than any other material is Little Wenham Hall, Suffolk (1260-80). All the bricks have a Flemish look of the period, but since exactly the right clay for their colour — cream to greenish yellow — is to hand locally, it is no longer thought certain that they were imported.

It is known that in 1278, several thousand Flemish bricks were shipped in for work on the Tower of London, but generally it is thought that the brick used in our earliest brick buildings was made from local clays in this country. It is known, for example, that Hull — the first all-brick town in England — had a substantial town brickworks between 1303 and 1433.

These old bricks (unlike the much larger Roman bricks) could generally be picked up in one hand. But they often varied in size, notably in height, from the standard modern brick (which is 215 x 102.5 x 65mm).

Brick steadily grew in popularity throughout the medieval period, but it received its greatest boost as the population rose in the mid-17th century, and fires (not only the Great Fire of London in 1666) became all too prevalent in cities. Timber frame gradually disappeared in favour of non-combustible brick, especially in the houses of the 'well-to-do'. And, as brick rose in popularity and production increased, prices came down. Inside, brick fireplaces became hugely popular too, even if the houses themselves were still largely built of timber frame.

The only places where brick was not really seen were those areas where there was plenty of stone, but perhaps with no suitable clay — particularly in the great limestone belts (notably the Cotswolds) and also the Pennines. The south-west, so well provided with alternative materials, was another region where brick made very little impact throughout the 17th century.

Brick remained popular for most of the 18th century; while the Georgians loved smooth façades — stone was the first choice and stucco a cheaper substitute — brick was still used for more basic house construction. Take a look at the sides of the buildings in the grand terraces of Bath, Brighton and Tunbridge Wells, and what are the walls built of? Brick, of course!

Nevertheless, brick did suffer a decline in this country. There were two causes: taxation and fashion. A tax on bricks was first imposed in 1784 and designed initially to fund the recently concluded American war. The tax was increased in 1794 and again in 1803.

*There is nothing artificial about brick... it derives its colour entirely from the clay and the firing*

### Contemporary Brickwork

Long bricks were originally used by the Romans, but have seen a big comeback in the 21st century. "This trend for long, linear lines of brickwork has been inspired by Swiss architect Peter Zumthor, and his work on the Kolumba Museum in Cologne," says Mark Laksevic of The York Handmade Brick Company (01347 838881), who also specialise in handmade brick and specials. The York Handmade Brick Company's Maxima Hunsingore Blend in 320 x 102 x 50mm format is shown here — but the Maxima range can be specified in lengths of up to 520mm and widths as narrow as 37mm

The other factor in the temporary decline of brick — fashion — came about in many of the growing towns, particularly in the southern half of the country from around 1810 to 1850, where there was a strong upper and middle-class movement (which also spread downwards to the lower middle class) for hiding brickwork behind a covering of stucco. This was partly due to snobbery and the belief that stone was a superior material; stucco was intended to suggest stone. However, there was a further motive at play here, too: Regency architects aimed at broad, sweeping aesthetics, and understandably found the small, neat effect of a brick frontage at odds with their grander designs. Brick, they felt, implied poverty.

The pendulum swung back again. The tax on bricks was abolished in 1850 and, at the same time, stucco fell out of favour; it came to be seen as a 'dishonest' substitute for stone. Brick was about to achieve a hitherto undreamed-of commercial success with the late 1850s and early 1860s bringing with it mechanisation. At this time, moulding also became a mechanical process and advances in kiln technology helped to increase efficiency.

The great heyday of brick was the Victorian period. Industrialisation meant that wire-cut and pressed bricks almost identical in colour and texture were produced by the million, often in areas where mining, notably for coal and iron ore, ensured ready quantities of clay. The common brick, used by the thousand for construction projects large and small, had arrived. In addition to technological advances, improved heat efficiency encouraged volume production of hard, blue-grey engineering bricks — which were subsequently used in mammoth works such as the construction of railway viaducts and reservoir dams. With greater volumes costs again fell, and the quality, in general, improved.

The flip side of all this was that many of the old brickworks producing handmade bricks could not compete. The distinctive character and colour harmonies of particular areas were completely disregarded, and mass-produced bricks found themselves disfiguring areas of the country where they had no aesthetic justification. Certainly in the fast-expanding industrial north, the rising tide of industry brought with it a hideous rash of unseemly red brick.

On a brighter note — quite literally — this was a time of great experimentation, especially with colour. The 1860s saw the arrival of polychrome — a style of architectural brickwork that used bricks of different colours (typically ▶

## VERNACULAR GUIDE

Traditionally, a brickworks was a very local undertaking; while every village might not have had one, pretty much every small town in most parts of the country did. We read in Dickens and other 19th-century authors that brickfields – dangerous, unhealthy places in which to work in those days – scarred the landscape across wide tracts of countryside. Before the development of plant and machinery in the 19th century, all bricks were made from clays dug from the ground by hand, prepared and mixed with water into a soft mud-like consistency and then formed into a brick shape by hand moulding – ‘throwing’ individual clots of clay into a mould.

Up until the outbreak of the Second World War, the majority of bricks were used within about 20 miles of where they were made. Take a look at the older brick buildings in any area and it will be obvious that the colour, texture and physical properties of such brick reflects the raw materials available locally. So brick is a truly vernacular material.

One of the best examples of this is the gault clays of Cambridgeshire, which give rise to the creamy buff colour of brickwork found in this part of eastern England. Another excellent example is found in the iron oxide Wealden clays of Sussex and Kent that produce the red bricks characteristic of much of south-eastern England.

In Staffordshire, however, where the clay is Etrurian marl, the bricks are deep red. They have a harsh appearance because they are generally machine produced and smooth in texture. They give rise to the serried ranks of Victorian workers’ terraces which are still found in many north Midland towns.

Farther north in England you will find far more use of the hard-edged, smooth, dense engineering bricks made from local carboniferous shale clays by machine pressing or extrusion. Amongst these are the so-called Accrington Bloods, made from shales found in the Lancashire coal measures.

Between these, there are manifold variations. Some of the Home Counties stock bricks (bricks with a low or modest compressive strength made from soft mud clays) have a multicoloured appearance.

One factor important to mention is firing. This has always been a major factor impacting on colour. The bricks exposed to the greatest heat generally emerge from the kiln the darkest, and the changes in colour can be considerable. For example, yellow bricks from the gault clays of eastern England can easily turn different shades of brown when fired, while bricks made from the Wealden clays are typically red, but might turn plum-coloured, blue-purple or even black on firing.

In some parts of Kent, it was known that certain types of wood used as faggot wood for the kilns, yielded fumes containing potash, which was valuable in assisting the process of glazing. You can’t get much more vernacular than that!

Although all these regional characteristics can easily be seen in older buildings, the localised pattern of use already eroded to some degree with the advent of railway transportation in the second half of the 19th century, was further changed by the rapid growth of road transport. Since the Second World War, this has meant that bricks can come from pretty much anywhere. Thank goodness for our local authority conservation departments who at least manage to preserve some semblance of vernacular styles in new brick houses appearing in our small towns and villages.



brown, cream and red) in patterned combination to highlight architectural features. Patterned brickwork, such as diaper (diamond pattern), also grew in popularity.

This period also saw the arrival of a huge variety of shaped and moulded bricks. Terracotta (very fine clay mixed with sand and fired to a hardness rarely matched by brick) was used from the late 1860s for all forms of adornment – notably around doors and fireplaces, and to adorn chimneys, ridge tiles, crestings and finials. It was not always used tastefully, but when used well it was often an effective complement to polychromatic brickwork.

In more recent times, up until the outbreak of the Second World War in 1939, the majority of bricks were used within 20 miles of where they were made. There were 365 brickworks in the south of England alone, serving London and the Home Counties, and 1,550 brickworks in total across the country.

All that changed after the Second World War. Concrete blockwork became firmly established and the building trade found that it did the work of bricks cheaper, faster and with equal strength. So, in many cases, it took over the role of the common brick as a structural building material.

However, brick as a facing material continues to hold a wide appeal, and was a major contributor to the post-war building boom, especially in the housing sector. Many of the brickworks that closed before the war never reopened, and the structure of the industry changed with the amalgamation of small firms into larger groupings. By the mid 1960s there were about 700 manufacturers, many with several works.

In 1995 there were about 140 active clay brick factories in the UK – today there are about 55. Although market forces have caused a lot of the small brickworks to close, their roles have often been taken on by other manufacturers, themselves typically part of larger organisations. Many smaller brickworks are nevertheless still functioning and contributing to an organisation’s product range.

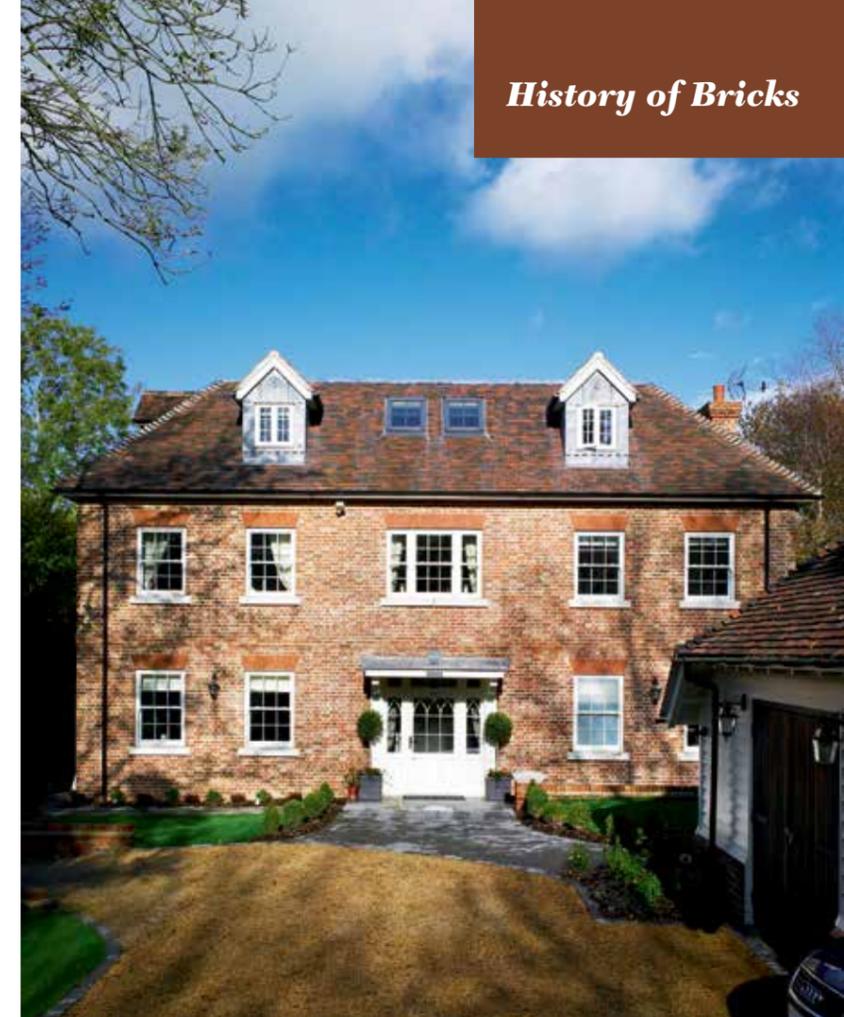
Despite a decline in the market – annual brick sales of just over 3.2bn in 1995 fell to around 1.5bn in 2010 – the choice of brick types is still almost limitless. Britain is still unique in having a brick industry that manufactures an exceptionally varied range of clay bricks.

Most brickworks specialise in producing facing bricks; others concentrate on producing ‘specials’ of odd sizes. For self-builders, ‘Tudor-size’ bricks – they are smaller and flatter than standard facing bricks and are quite readily available – are useful for interior use. However, these are by no means the only alternative-sized bricks.

To retain this enormous variety of brick types, many of the handmade techniques associated with early brick-making, and its intermediate development, still persist within the present-day industry.

### THE FUTURE OF BRICK IN SELF-BUILD

If you choose to build in brick – in traditional or contemporary style – there is a huge range of options available and there is every incentive to avoid something bland and lacklustre using the ubiquitous stretcher bond (only the long faces of the bricks are seen). This is the quickest, simplest and cheapest route, but it also looks tedious, unimaginative and unadventurous.



### Brick-Clad Self-builds

Brick lends itself to both contemporary and traditional design. Bricks and tiles from Michelmersh Brick Group have been combined to striking effect on this build (ABOVE LEFT). “Brick is often perceived as being rigid and inflexible, so it was important to show that there was no restrictions when it comes to shape. The idea was to keep the craft alive by bringing it right up to date,” says the homeowner. This Georgian-inspired timber frame self-build (ABOVE RIGHT) is clad in The York Handmade Brick Company’s 65mm Old Clamp Blend

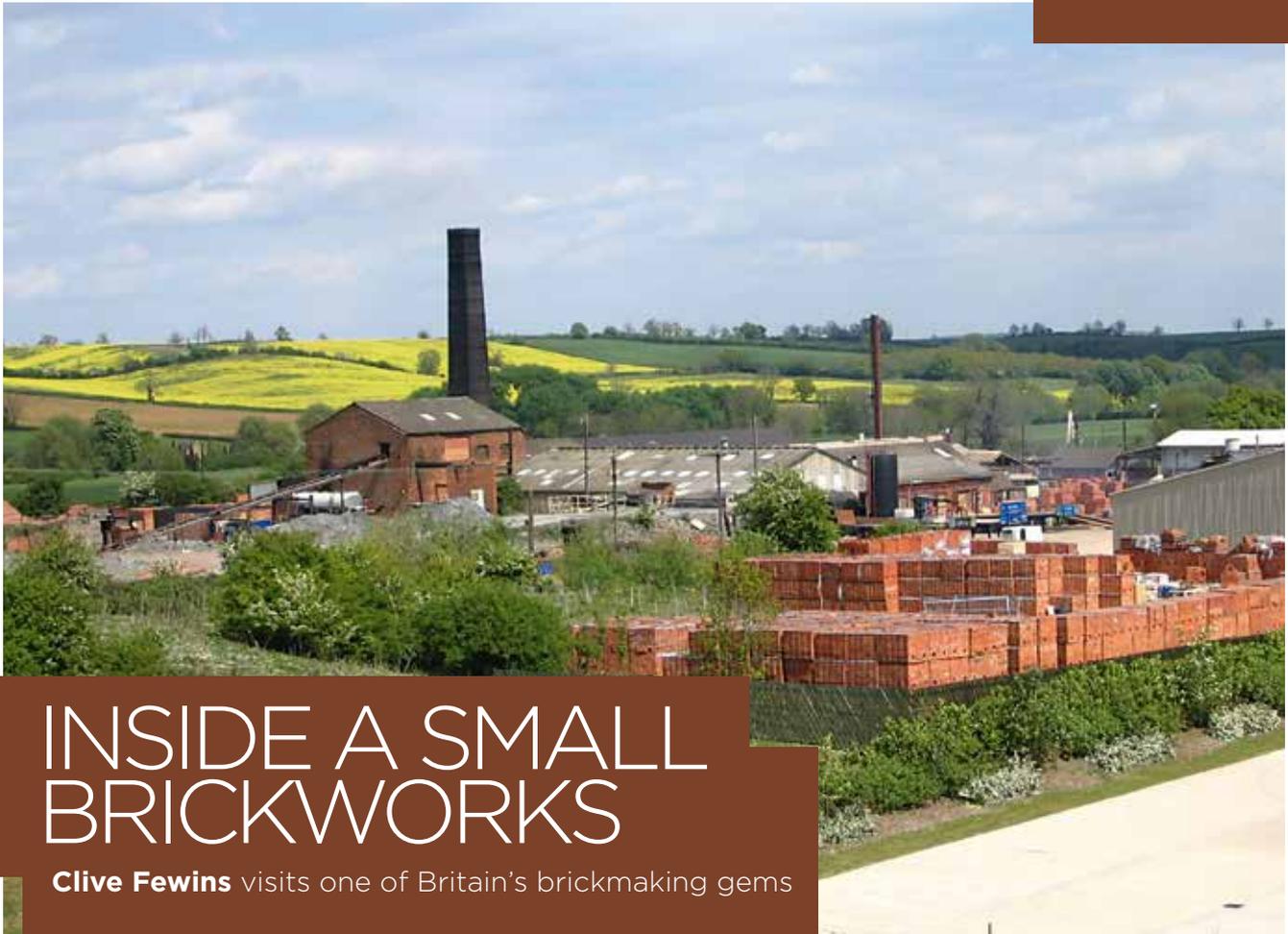
So, be bold with your new brick self-build. There is every chance to experiment, especially as the brick is likely to be merely a cladding and will not be required to carry a structural load.

Today, the choice of colours and finishes is as wide as ever. Decorative brick patterns can readily be used where brick is a cladding. Panels of herringbone, diaper and basket weave can look well in contemporary brick houses. Decorative bonded patterns can be used for feature panels, and you can even lay bricks on end – known as ‘soldier courses’ – to give a completely different scale and effect to a section of brickwork.

In addition, there are many other techniques, such as using coloured mortars and achieving novel textural effects by mixing brick types and sizes, or by projecting or recessing some of the courses of bricks from the wall.

It is almost impossible to imagine a future without brick. Between 1,200 and 1,500 different types of brick are currently available in the British Isles, according to Simon Hay, CEO of the Brick Development Association (BDA), which represents the UK and Ireland’s clay brick and paver manufacturers. According to the BDA, this is a range unequalled anywhere else in the world.

“Even today, 50 per cent of the façades of all new buildings in this country are built of brick and eight out of 10 bricks sold go into the housing market,” says Simon Hay. “There have been multimillion-pound investments in some of our larger brickworks in recent years and the industry is currently working flat out to fulfil demand.” I think that is a pretty adequate answer to those who query whether brick has a future!



## INSIDE A SMALL BRICKWORKS

Clive Fewins visits one of Britain's brickmaking gems

The small brickworks known as Northcot Brick was established in 1925 by Captain E G Spencer-Churchill, the cousin of Sir Winston Churchill, in order to provide housing and jobs for the local population close to his estate at Blockley in the Cotswolds.

Concerned about high levels of unemployment in the area, Captain Spencer-Churchill hired a team of geologists to carry out a survey with a view to finding suitable land on which to grow timber for manufacturing baskets. However, they discovered a vast seam of high-quality Jurassic blue clay, known to be excellent for brickmaking and producing an intense orange base colour when fired.

The fascinating thing about the clay – there is now a vast pit at the brickworks, said to still have sufficient clay left for at least 30 years of production – is that it is of the same geological age as the limestone which forms the Cotswolds hills. So, the clay deposits where Northcot Brick lies, signify the end of the hills and the beginning of the plain. The Jurassic limestone hills form a beautiful backdrop to the complex of old sheds and brick mills.

The 55-strong staff who make the bricks are mainly local, and fully aware of the heritage at their place of work. Many have completed 25 years of service.

The mill in which the handmade bricks (which represent 33,000 bricks of the weekly output of 263,000) are made was in fact a second-hand building imported to the site in 1925, when the works was founded. As production manager, Ian Cox, comments: “This place is a working industrial museum.” (Northcot Brick have also retained the tradition of using coal – a mix of 20

per cent coal and 80 per cent natural gas, in fact – to fire their kilns, which gives a richness in colour that has been lost in modern kilns fired using just gas.)

And yet, it is successful. The last few years have seen a steady rise in output and development of several new brick ranges. Before the Millennium, it was estimated that many of the bricks produced travelled within 80 miles of the works – today Northcot Brick supply their handmade and machine-made bricks nationwide.

Works Manager, Dale Moss, picks up the story: “When I arrived here 35 years ago, we produced 10 standard brick types. The figure is now 48, varying from Old Scotch Commons, which we have recently started manufacturing after the works where they were made closed, to our new machine-made Cotswold Collection, aimed mainly at the self-build market.” Ironically, the Cotswold region (dominated as it is by limestone) is one of the few parts of the UK where there is very little brick building! ▶

*The vast pit at the brickworks is said to still have sufficient clay left for at least 30 years of production*

### Manufactured in the UK

Clay used for Northcot Brick's products is sourced from a large quarry on site – the geology of the area is unusual in that this seam of quality Jurassic blue clay (which produces an intense orange base colour) lies at the foot of the limestone hills formed around the same period



## SMALL BUT PERFECTLY FORMED

### How is Northcot Brick seen within the brick industry?

Dale Moss: Small — our output represents roughly one per cent of brick manufacturing capacity in the country, and as somewhat specialist. New brick recipes, experimentation and trial runs are all part of our service. We also undertake small runs for specialist clients such as the National Trust, for repairs to historic brick properties in their care. We offer a brick matching service which includes a bespoke weathering facility that greatly increases the potential of a closer colour match.

### What are Northcot Brick's strengths and weaknesses?

We produce a very wide range of bricks — but this is also a weakness, as it puts a lot of pressure on production. Some would argue that our large team of staff — brickmaking is a very labour-intensive process — is a disadvantage, as a more automated modern brickworks with our output would be run by a handful of people. However, our strength lies in our

product range and we could not produce this without the skills embodied in our workforce.

### How do you manage to produce such a wide variety?

Skill, experience, blending, mixing, rumbling (texture), and length of firing are all factors. Plus a few trade secrets!

### How important is the seam of clay in your on-site quarry?

Absolutely vital — there are very few naturally orange-firing clays left nationally. When the clay runs out, we shall have to go on bended knee to our neighbours as we believe the clay seam continues beneath their land.

### Where are your main markets?

Our main market is the UK, including Northern Ireland, and also the Republic of Ireland. 80 per cent of our bricks go into houses, and the self-build market is very important to us. There are also a lot of homeowners who want a brick extension to their existing home to look just right.



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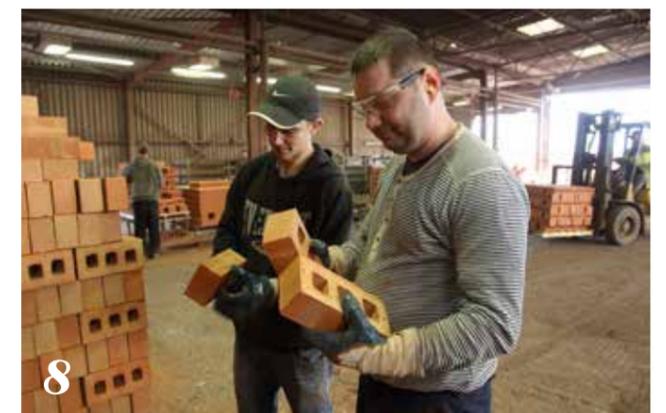
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### The Making of Handmade Bricks

1: Clay quarried on site is transported to the factory, ready to be formed into a brick shape by hand — this traditional method gives each brick character and an individual quality; 2: Sand is introduced to coat the bricks; once fired this will create a sand-faced finish; 3 & 4: A mould is then used to finish off the bricks and to ensure they're of correct dimension; 5: The clay bricks are transported on pallets to be fired; 6: The kilns are bricked up and sealed prior to firing — the kilns are fired using a mix of coal and gas; 7: Once firing has taken place, the bricks are transferred back on to pallets; 8: The bricks are quality-checked prior to being packaged up and distributed