

FIRM FOUNDATIONS

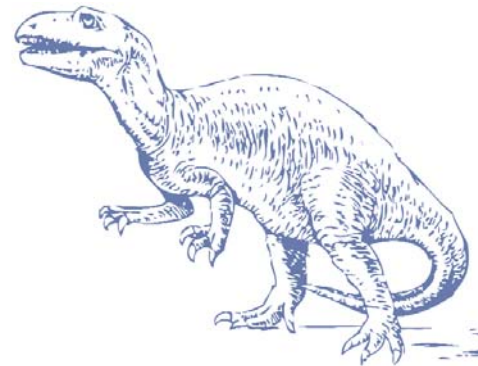
the story of cement around Rugby – a guide for schools

CEMEX is 100-years-old in 2006 and its Rugby cement works is joining in anniversary celebrations across the world.

In this brief guide for schools, we summarise the long and fascinating history of the industry in the area. The guide is supported by a video and a display at Rugby Museum. The company would be happy to assist teachers who want to build any of this information into wider curriculum studies.

Dinosaur days

The story of cement in Rugby began around 200 million years ago in the dinosaur era. At that time, Warwickshire was nearer the Equator than it is today and the area was covered by a warm, shallow sea. As the remains of billions of tiny shellfish built up on the sea bed, they gradually created a deep deposit of limestone, interspersed with layers of muddy clay.



On to the Romans

By Roman times, man was starting to build in earnest and needed to bond stone together. The answer lay in the local limestone. By burning the stone at high temperatures and then crushing the resulting lumps, man could produce a powder called quicklime. When mixed with water and sand, this produced a primitive type of cement that would glue stones together.

From lime to cement

Warwickshire's special geological mix of limestone and clay made it one of the centres of lime production in the UK in the 1700s, not just for building uses but as a fertiliser for the fields. Lime was made in beehive-shaped kilns where the stone was heated at very high temperatures. In the 1800s, the lime-making process was further improved using much higher kiln temperatures. This created a product of significantly greater strength – cement.



Walker Newbold lime quarry

Hard work

In the late 1700s, lime kilns were brick-built structures which looked like large beehives. The raw material was loaded by men with shovels. The lime was interspersed with layers of locally-produced coal. Once loaded, they set fire to the coal and let it smoulder for days at a time, steadily heating the stone. Then it was all dug out again and crushed using grinding stones and, later, mills. It was hard, manual work.



Chinnor lime kiln



Greaves works

Transport

With the coming of the Industrial Revolution during the 1800s and the rapid growth in Britain's major cities, cement became increasingly important. The growing canal network in the area was critical as a means of distributing this vital construction material and of bringing in local coal as a fuel. Completed in 1773, the Oxford Canal ran right

through Rugby to Birmingham. Later came the Warwick to Napton Canal in 1799.

The arrival of Britain's railway system was a further boost to the cement industry. Rugby was at the heart of the network as a stop on the first main trunk rail line from London to Birmingham, which opened in 1838.



Works locomotive 1960

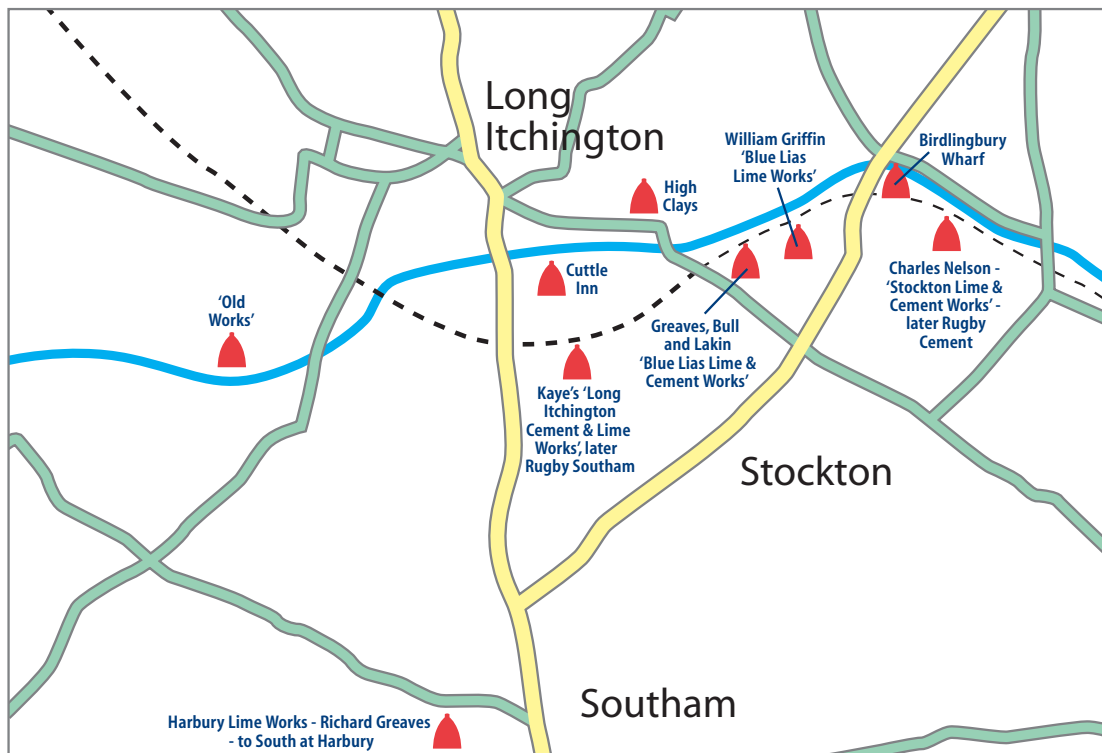
1 Try and imagine what it was like to work in the cement industry in 1700 and 1800s. How hard was the work?

2 How long do you think it took to deliver cement by canal from Rugby to Birmingham? And how much time was saved when the railways came?

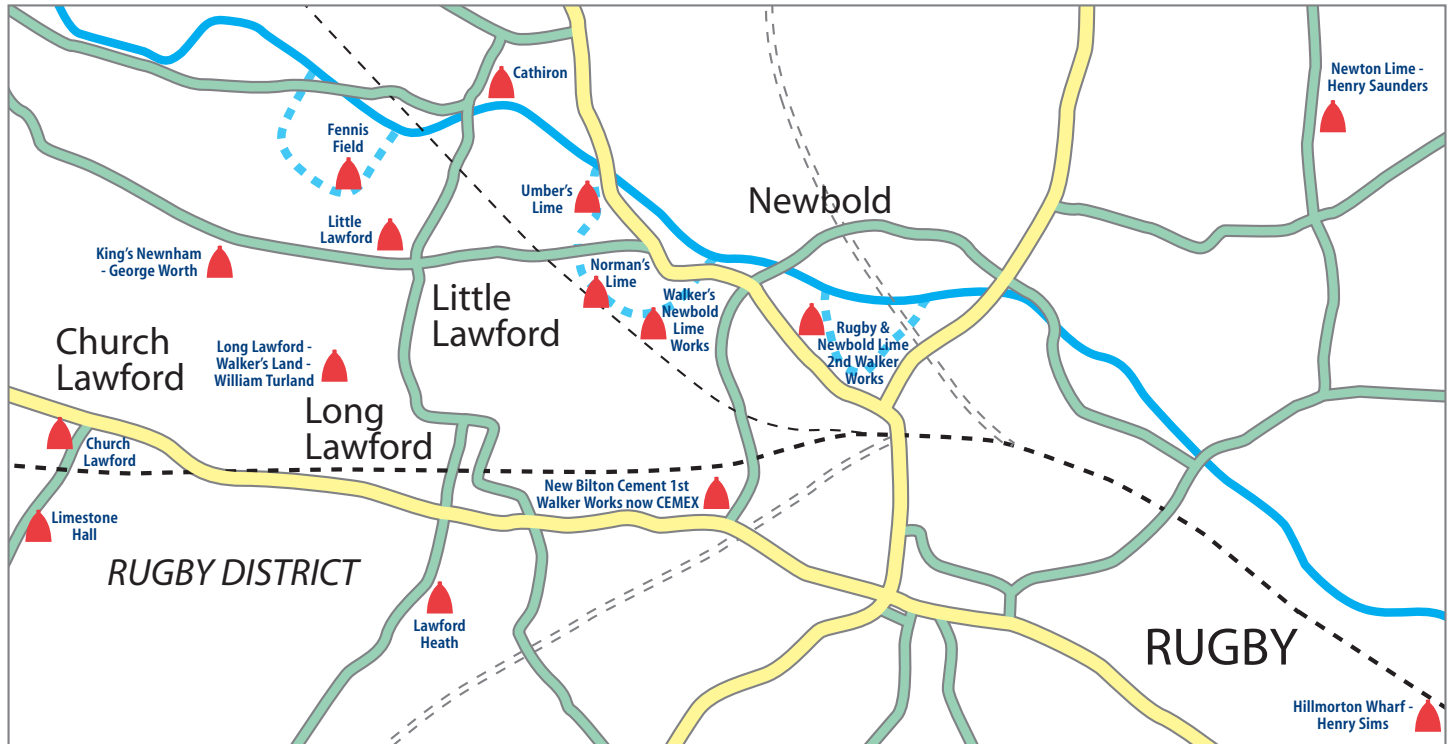
These two maps give you an idea of the large number of small lime works in the area before about 1840. You can see that many of the lime works were located near to the canals and railway lines.

Lime and cement works in the Southam/Stockton area

3 Look at our maps. Was there a lime or cement works near where you now live?



Lime and cement works in the Rugby area

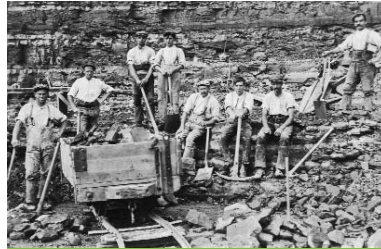


4 Can you think of any other industries that might supply the cement industry?

5 What else can you find out about Sir Halford Reddish and any other personalities who contributed to industry in Rugby?

People

Cement and lime-making has always been a people business that is heavily reliant on the skills and hard work of its employees. The industry has provided employment for many generations. Even in today's automated age, Rugby works creates 180 direct jobs and many more in



Quarry workers

other industries that supply the cement industry, such as quarrying and engineering.



Cement sack makers c. 1880



CEMEX employees today

Rare personalities

The cement industry has always been known for its personalities. People like Sir Halford Reddish, who led Rugby Cement out of trouble in the 1930s and into an age of expansion. His efforts took the name of Rugby not just across the UK but around the world, from Trinidad to Australia. He was well known for working very hard and needed just four-and-a-half hours sleep a night.



Sir Halford Reddish 1959

CEMEX

Today, there is just one large cement factory at Rugby. It is, however, one of the most modern plants in the world. The plant is operated by CEMEX, whose own story started in Mexico in 1906. The company started expanding internationally in the 1990s but it has now established itself as a world leader, operating in 50 countries and employing more than 50,000 people.



The works in Rugby cost £200 million and has the largest cement kiln in the UK. The industry has changed a lot . . . but the process remains dependent upon the same basic raw materials which brought the industry to the area in the 1700s.

6

Rugby cement works still uses coal as one of its fuels. Can you find out what other fuels it uses today and why?

For more information on how cement is made today, please visit our website www.cemex.co.uk

More information

For further information and to find out how your school can enter the 'CEMEX - building the future' schools competition, please contact:

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Kaye workers 1900s



View of a quarry train



New Bilton works c. 1880



CEMEX lorry today