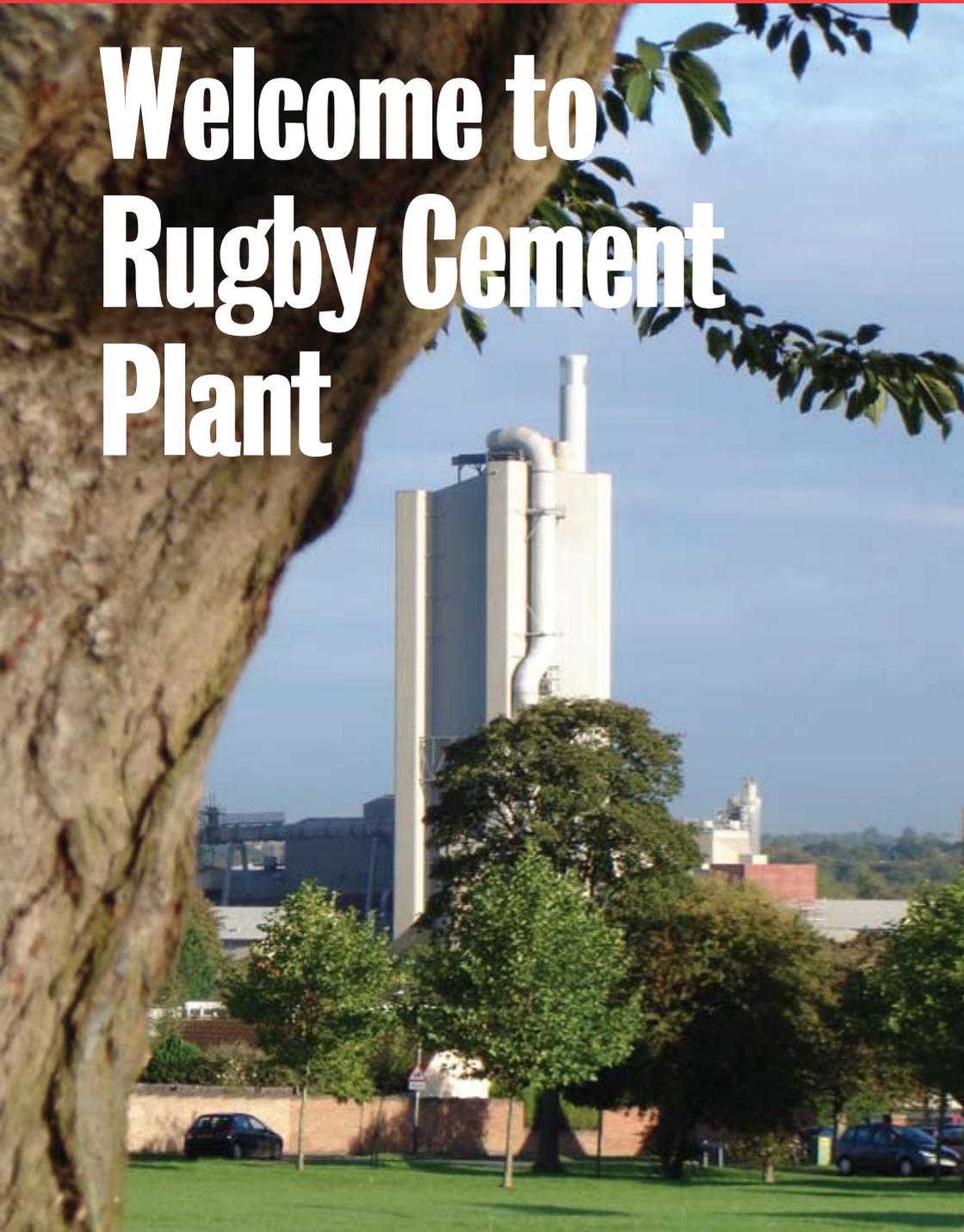




Welcome to Rugby Cement Plant



1

A long tradition

Rugby's relationship with cement-making began in the early 1700s when Warwickshire's special geological mix of limestone and clay made the area one of the main lime-production centres of the UK. In the early days, lime kilns were brick-built structures which looked like large beehives.

Higher kiln temperatures and improved technology in the 1800s meant that lime gave way to cement as a much stronger means of bonding building materials. The cement industry in the area grew up side-by-side with the local canal and rail networks as means of transporting raw materials and the finished product.



The current plant cost £200 million to build in the late 1990s. Now, as one of the most modern cement factories in the world and with one of the largest kilns in the UK, it has an annual production capacity of some 1.8 million tonnes. The latest chapter began in 2005 when CEMEX took over RMC, which had acquired Rugby Cement a few years previously.

KEY FACTS

- Cement was invented in Britain
- The average family creates a need for a tonne of cement every year
- No house, school, hospital or road could be built without cement.

Raw materials

2

CEMEX UK's Rugby plant makes its cement using chalk from Kensworth quarry near Dunstable and clay from Southam quarry some 11 miles from Rugby. Around 4,000 cubic metres of chalk slurry is pumped underground along a 57-mile pipeline from Kensworth each day, passing under the M1 four times on its journey and saving up to 400 lorry movements every day. Some 2,000 tonnes of clay are delivered daily by lorry from Southam to Rugby.

The clay arrives at the plant already crushed; the chalk arrives as a slurry from the pipeline. At Rugby, two further raw materials – sand and iron oxide – are added to create a “raw meal”.



All the ingredients are tested continuously using state-of-the-art x-ray techniques in order to ensure a finely balanced chemical mix. Quality control of both the raw materials and the end-product is essential to achieving the high standards demanded by CEMEX customers.

KEY FACTS

- The chalk raw material was created around 100 million years ago
- Chalk contributes 70 per cent of the raw material
- Clay makes up 25 per cent, sand 4 per cent and iron oxide 1 per cent.

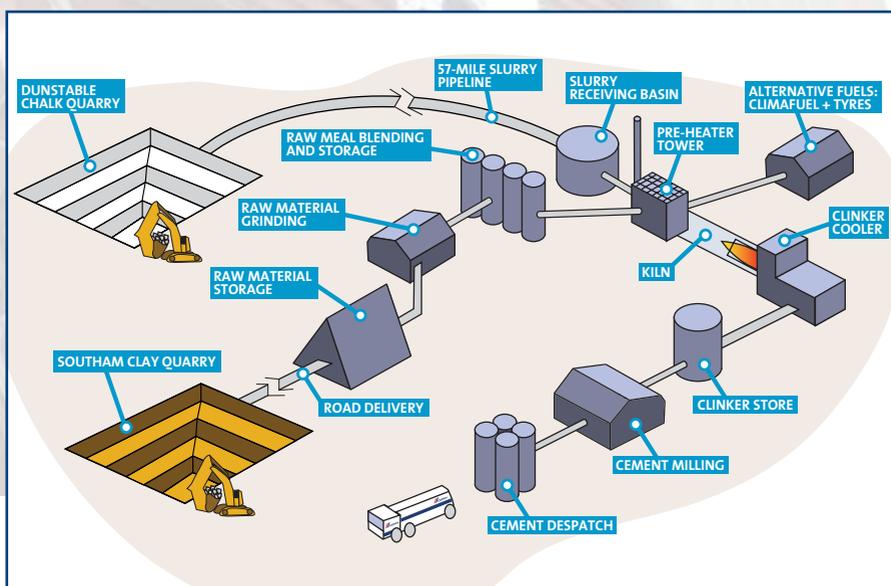
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Production

The kiln is at the heart of the cement production process. Rugby has a single kiln, some 62 metres long, revolving slowly on massive steel bearings.

Preparation for the kiln involves pre-heating the raw meal to temperatures of up to 900°C. To do this, the raw materials fall through a series of cyclones and are heated by rising hot air from the kiln below.

In the kiln itself, the materials move slowly towards what is known as the burning zone to reach a temperature of around 1400°C.



The intense heat brings about a chemical change which transforms the raw materials into cement ‘clinker’ – hardened lumps. After cooling, the clinker is ground into the powder we know as cement. Gypsum is added at this stage to control the setting time of the finished product.

KEY FACTS

- The plant can produce 1.8 million tonnes of cement a year
- Rugby’s kiln is half the length of a football pitch
- A cement kiln operates at temperatures at which steel would melt.

Fuels for the future

4

While coal still has an important role to play, the Rugby plant is increasingly using more sustainable and cost-effective alternative fuels which have been shown to achieve significant reductions in emissions of greenhouse gases and oxides of nitrogen.

The key alternative fuels planned for the future at the Rugby plant are chipped tyres and *Climafuel*, a solid recovered fuel made from household waste. Harnessing their energy potential in this way helps to overcome major disposal problems while also saving valuable fossil fuels and reducing emissions of oxides of nitrogen.

The process is regulated by the Environment Agency which sets strict limits on emissions of both gases and dust.



Chipped tyres



Climafuel

Dust is controlled using a £6.5 million bag filter system to provide a physical barrier as gases pass from kiln to chimney. The system comprises 6,000 large fabric bags which work like a vacuum cleaner in reverse, collecting dust on their outsides. Although the plant was already operating well within its emission limits, the filter has brought about a further 80 per cent reduction in dust emissions from the chimney.

KEY FACTS

- By using less fossil fuels, alternative fuels reduce CO₂ emissions
- They also reduce emissions of oxides of nitrogen
- Alternative fuels help to achieve major reductions in landfill.

5

Delivering the goods

Rugby cement plant produces ordinary Portland cement for general construction uses. It also manufactures blended cements which incorporate materials such as power station fly ash or ground limestone to improve durability and workability. With reduced clinker contents, blended cements are more sustainable.

From storage silos, about 80 per cent of the cement is loaded directly into bulk tankers. The plant delivers its vital end-product by road over a wide area of the Midlands and south to London. The remaining 20 per cent of the plant's output is bagged for delivery to builders' merchants and DIY stores.



Wembley Stadium – built using cement from Rugby

As a supplier of a vital construction material, the plant plays a crucial role in everyday life from DIY projects and housing to major motorways and hospitals. Amongst a wide range of major projects, the plant has contributed to the new Wembley Stadium, the M25 and Terminal 5 at Heathrow.

KEY FACTS

- The plant produces enough cement for 72,000 homes every year
- Cement from Rugby has been used in projects across the UK
- High profile projects supplied include the new Wembley Stadium.

Focused on people

6

The cement plant has been an important part of the community in Rugby and surrounding villages for many years. In that time, it has provided direct employment for thousands of local people and supported many more jobs through its links with other businesses in the area. In total, the company's annual contribution to the local economy through wages, rates and the buying of services adds up to some £25 million.

Even in an age when technology is increasingly sophisticated, cement-making remains a 'people industry', heavily dependent upon the skills and commitment of its employees. Their health and safety is the company's top priority. Career development is another major focus.



The company also has a strong commitment to minimising its impact on its neighbours and ensuring high environmental standards.

A wide range of community projects, including nature conservation and habitat creation, village hall and church restorations and support for key educational projects are supported in and around Rugby.

KEY FACTS

- The plant currently employs about 170 people directly
- It supports some 750 local jobs indirectly
- It contributes £25 million to the local economy every year.

CEMEX is a global building materials solutions company with leading positions in cement, ready-mixed concrete and aggregates. The company provides services and products in over 50 countries and has more than 50,000 employees around the world. In the UK, CEMEX generates in excess of £1 billion in annual sales and has a network of more than 500 locations.

The company is dedicated to building a better future and couples financial achievements with a firm commitment to sustainable development to ensure a better quality of life for everyone, now and in the future.



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