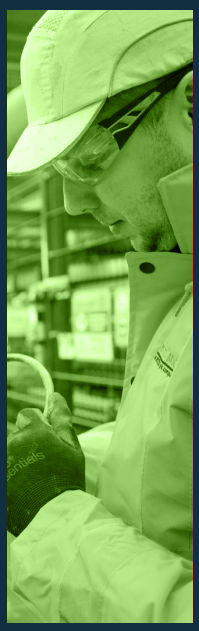
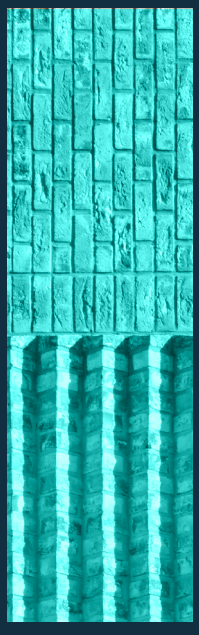
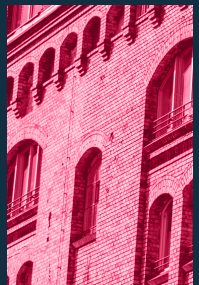
BRICK DEVELOPMENT ASSOCIATION

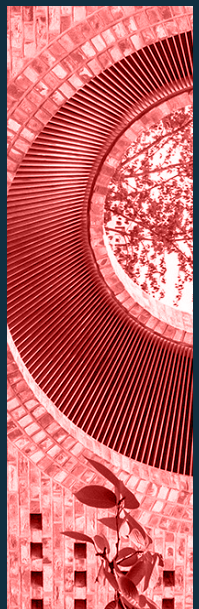
Sustainability Report

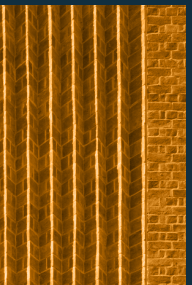
2019











brick.org.uk

Chairman's Summary

Welcome to the latest Brick Development Association sustainability report. This annual publication is an opportunity to review the collective progress in sustainable operations made by the UK's brick manufacturing industry. It also focuses our attention on forthcoming challenges and the way in which we will approach them.

This report covers a range of activities, which we believe to be most pertinent to developing the responsible, modern clay brick manufacturing process. These activities range from the use of alternative raw materials to our role in a circular economy, approaches to resource efficiency and, biodiversity and its relationship to natural capital. Central to all of our operations of course, remains the wellbeing, health and safety of our people.

The Sustainable Production Working Party's focus during 2020 will be continuing to demonstrate clay brick's important role in a circular economy within the built environment, contributing substantially to a resilient housing stock. Concurrently, we will work with other groups towards achieving the UK's net zero carbon emissions target, as well as contributing to the development of a natural capital agenda.

We continue to report against the targets we developed through our collaborative Resource Efficiency Action Plan, evidencing significant progress to date, particularly in the areas of waste and water consumption. Details of our performance are presented in the following pages.

Dave Manley
Chairman of the Sustainable Production Working Party

Wellbeing

OUR ASPIRATION

To ensure employee wellbeing remains core to business operations across the sector, through responsible health and safety practices and the provision of education and training to develop employees' skills.

KEY STATS

2,200 additional training days for employees in 2018 compared to 2016

68 apprentices in 2018

In 2018, the sector Lost Time Injury Rate was **0.4***

In 2018, the Accident Rate was **0.27***

In 2018, the RIDDOR Reportable Injury Rate was **0.01***

*How are accident statistics calculated?

Accident Rate =
(Total Number of Accidents) / (Total Number of Employees)

Lost Time Injury (LTI) Rate =
(Total Number of Days Lost)/ (Total Number of Employees)

RIDDOR Reportable Injury Rate =
(Number of Injuries Reportable Under RIDDOR) / (Total Number of Employees)

THE CHALLENGE

Continual improvement in health and safety performance in a changing work and regulatory environment alongside which employers must train the workforce of the future and nurture existing talent.

WHERE WE ARE NOW

Brick manufacturers have worked together for many years as part of the wider ceramic sector Health and Safety Pledge Scheme, to improve health and safety performance through sharing good practice and working together on health and safety initiatives. One example of the benefit that this collective working can result in is the development of the sector Continual Professional Development scheme for quarry managers, as explained below.

WHAT WE PLAN TO DO

+ Continue to invest in formal training and apprenticeship schemes
+ Engage with the Health and Safety Pledge (Pledge Phase 4), which is closely aligned with the HSE's Manufacturing Sector Strategy
+ Continue to work closely with IOM3 to deliver a health and safety Continuing Professional Development (CPD) scheme for those responsible for the management of quarries
+ Explore further opportunities for collaborative working to improve health and safety performance, including the development of sector specific training.

WORKING IN PARTNERSHIP TO DELIVER A SECTOR CPD SCHEME

The brick industry works in partnership with IOM3 and the British Ceramic Confederation to manage the clay quarry manager continual professional development (CPD) scheme designed to support the health and safety and environmental competency of employees working in quarries.

Over the last four years, partners have worked together to raise standards and ensure that the scheme meets the needs of employees who have clay quarry management responsibilities.

Recent developments include:

+ The development of a sector Competency Framework.
+ Working with training providers to develop bespoke sector training, the most recent of which is an Environmental Awareness course.
+ An annual programme of sector training courses.

This partnership working is helping to make sure that the CPD scheme continues to evolve and meets the needs of the sector.

Biodiversity & Community

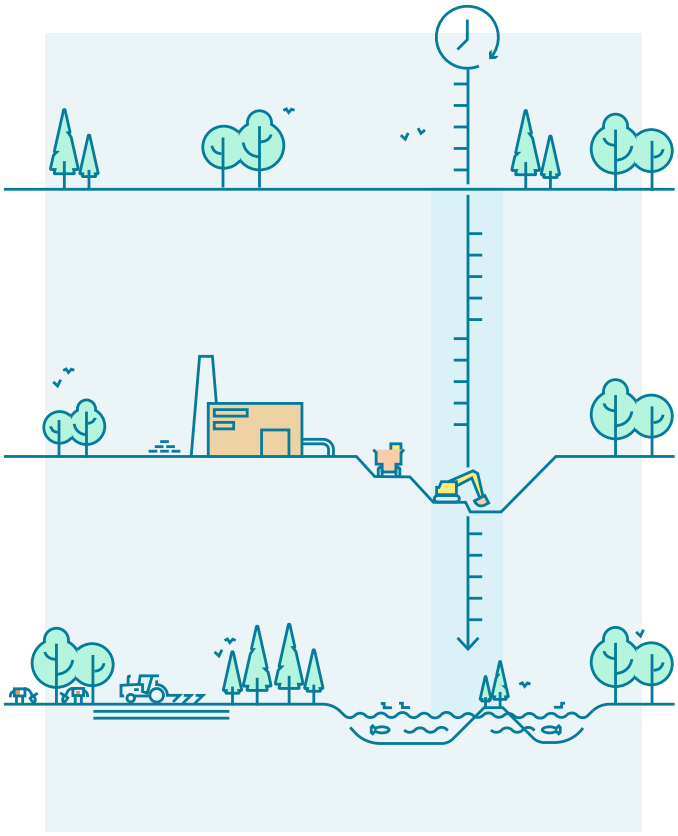
OUR ASPIRATION

To support and enhance biodiversity through good site management and the restoration of quarries and to be an active member of the communities in which we operate.

KEY STATS

70 educational visits and site tours hosted by UK brick manufacturers in 2018

All UK brick manufacturers are involved in community liaison activities, with many running active liaison committees. Other ways in which companies support local communities include the sponsorship of local groups and events, employee volunteer programmes and charitable donations.



THE CHALLENGE

Clay is a natural resource that should be extracted and used responsibly. The majority of clay brick manufacturers are landowners and therefore, have an opportunity to offset the impact of quarrying activity on their sites and, contribute positively to biodiversity net gain both during and after extraction has taken place.

WHERE WE ARE NOW

The National Planning Policy Framework provides the framework for mineral safeguarding and extraction in accordance with sustainable development principles. Minerals are a finite natural resource that can only be worked where they are found and planning permissions require quarries to be carefully managed throughout the extraction process and, restored once this is complete. The maintenance and enhancement of natural capital is a key priority for government and, through the implementation of quarry biodiversity and restoration plans, the brick sector is well placed to maximise positive outcomes for wildlife and biodiversity.

The high number of reported educational visits and site tours hosted by manufacturers continues to demonstrate regular engagement with communities and promotion of a better understanding of quarrying and brick manufacturing.

WHAT WE PLAN TO DO

+ The sector will continue to facilitate community engagement
+ Continue close collaboration with conservation and wildlife organisations to inform effective biodiversity planning and management
+ Work with experts to understand the contribution to natural capital that the sector can make
+ Contribute positively to government aims to improve natural capital and promote biodiversity net gain

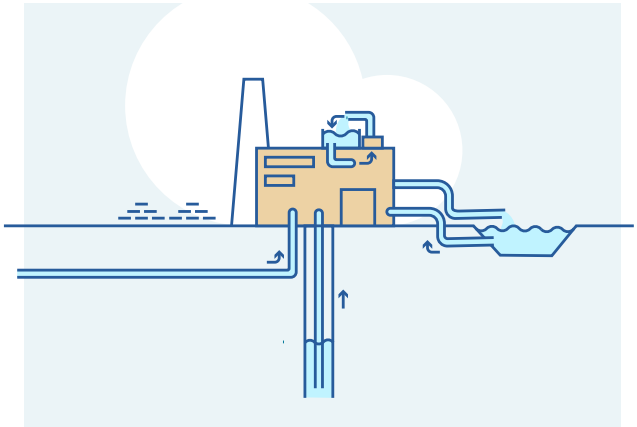
Water

OUR ASPIRATION

To use water as efficiently as possible in the manufacturing process and reduce our reliance on mains water supplies.

KEY STATS

An **8%** reduction in the overall water consumption versus 2016.



THE CHALLENGE

Water is essential to the brick manufacturing process as it is needed to help shape the clay in to a brick form before drying and firing. Changes to water abstraction regulations continue to inform our actions, and as water cannot be eliminated from the process, companies seek to use this as efficiently as possible.

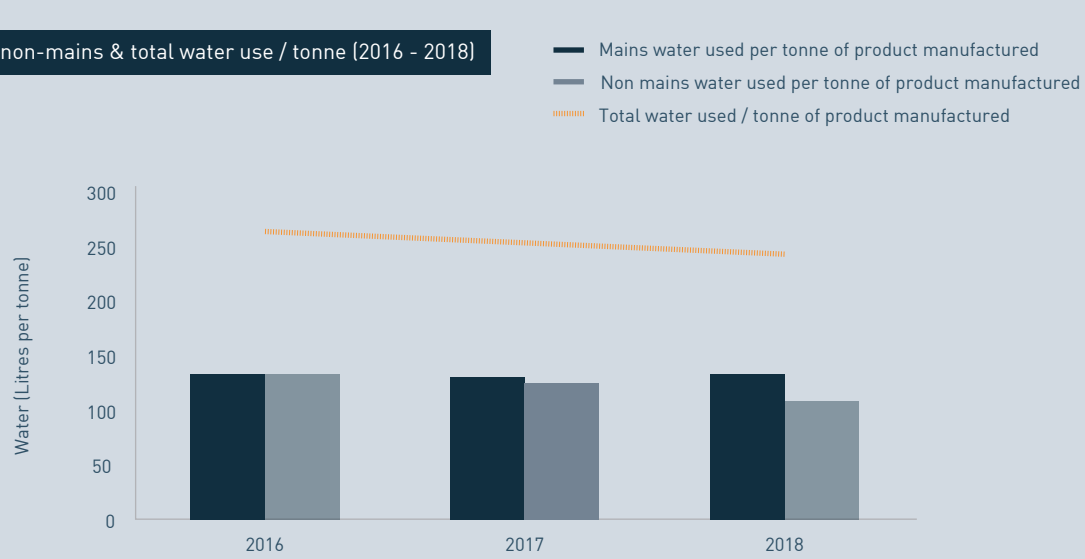
WHERE WE ARE NOW

The sector recently worked with the Environment Agency on abstraction licensing changes, to improve understanding of quarry dewatering and recognise that rainwater can accumulate in clay quarries and may be beneficially used in factories. Companies have therefore been collating more information around this non-mains water source. Overall water efficiency per tonne of manufactured product has improved by 8%. Proportionally, more of this was mains-sourced within the year (and less from non-mains supplies); this may be related to lower annual rainfall, which limits the alternatives.

WHAT WE PLAN TO DO

- Monitor progress against the sector's Water Policy, published in 2017
- Share best practice on the responsible use of non-mains water through member case studies

WATER: mains, non-mains & total water use / tonne (2016 - 2018)



Energy & Carbon

OUR ASPIRATION

To improve energy efficiency in the manufacturing process and, reduce carbon emissions generated.

KEY STATS

Virtually all brick production (**99%**) is covered by:

- a certified ISO 50001 energy management system (implementing continual improvement)
- the EU Emissions Trading System (with obligations to monitor direct carbon emissions and provides additional incentive for carbon reduction)

Around **5%** of the sector's electricity is provided by renewable sources.

THE CHALLENGE

Brick manufacturing – which involves firing clay bricks to over 1000°C – is an energy-intensive process. Once a kiln is up to temperature it will run most-efficiently if production levels are maximised. Energy efficiency is therefore mostly linked to market demand, which fluctuates. This affects carbon emissions which are in-part associated with the energy used, and clays also generate process emissions, which are technologically-difficult to abate.

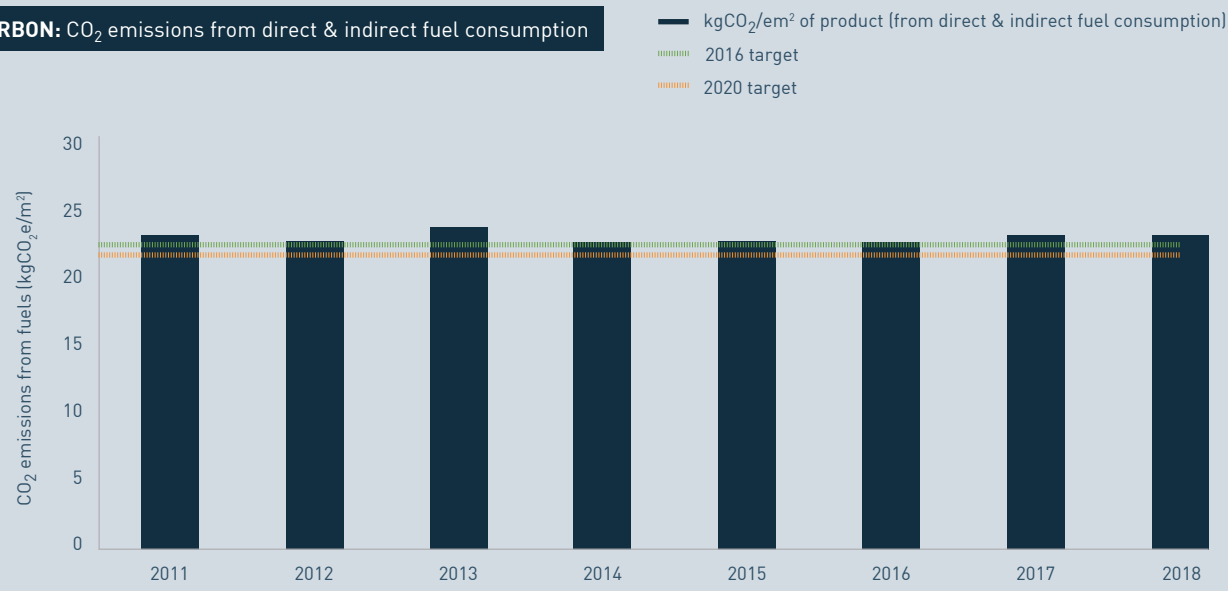
WHERE WE ARE NOW

Energy and carbon efficiency (per tonne of product) remained relatively constant in 2018, as improvements in electricity use were offset by a slight increase in natural gas / direct consumption.

WHAT WE PLAN TO DO

+ The industry has produced a Decarbonisation and Energy Efficiency Roadmap and, supported by various innovation and funding opportunities, companies are exploring projects to help reduce energy consumption and carbon emissions. The UK Government has now legislated for a 'net zero' 2050 carbon emissions target and, with the industry having already switched from higher carbon-emitting fuels (like coal) to natural gas, other low-carbon fuels like hydrogen and electric-firing will be needed in the future to work towards achieving this.

CARBON: CO_2 emissions from direct & indirect fuel consumption



Waste

OUR ASPIRATION

To reduce the amount of waste generated and to minimise disposal to landfill.

KEY STATS

20 kgs – the level of waste generated per tonne of production, the vast majority of which is recycled, with 0.501 kgs being disposed of to landfill. There have been fluctuations in the volume of waste recycled by members, linked to building and renovation projects and other factors. No clear trend is therefore apparent within the data collected however, brick production generates **relatively low levels of waste per tonne** of product.

42% reduction in waste sent to landfill per tonne of production compared to 2016 and, a **59%** reduction against the 2011 baseline.

THE CHALLENGE

For some materials such as emissions abatement waste, there are limited options other than disposal. It is important that the sector also considers further opportunities to reduce waste at source; for example, transit packaging on outgoing goods. It is important to note that investment in plant and machinery refurbishment can result in short-term increases in the amount of waste produced.

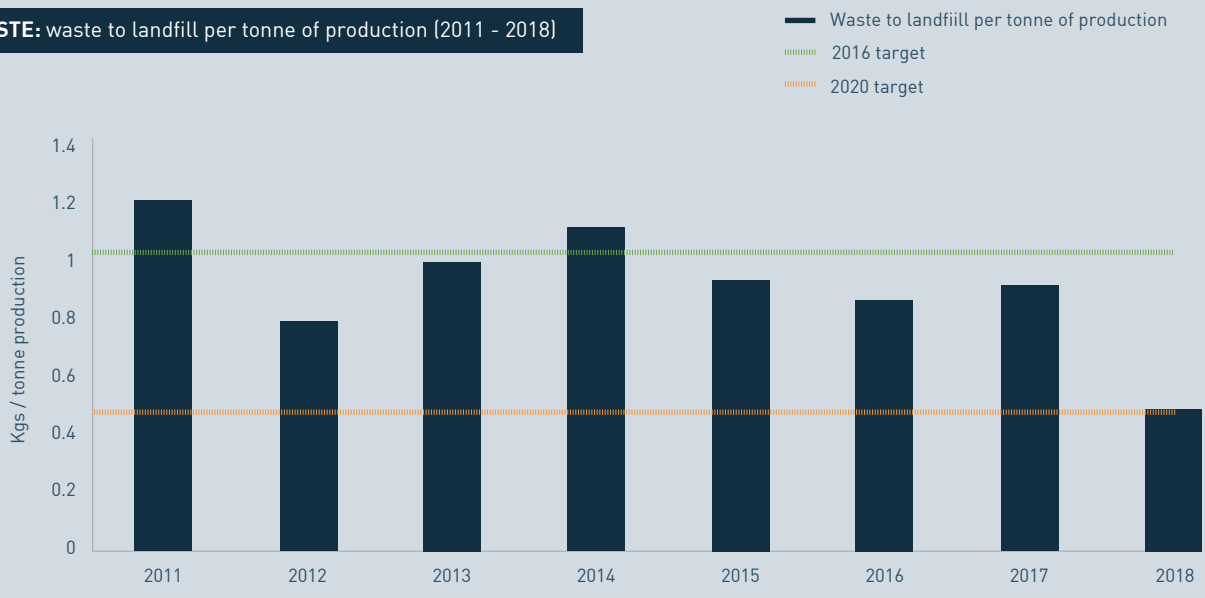
WHERE WE ARE NOW

The volume of waste per tonne of brick production is low and the total waste sent to landfill per tonne of production since 2014, has been on a downward trajectory. However, even though low volumes of waste are produced at manufacturing sites, companies are continuing to explore opportunities to reduce the amount of waste generated in the supply chain; we anticipate a particular focus from 2020 onwards, will be the plastic transit packaging used to protect products when being transported to customers, which also fulfils important health and safety functions. The sector published its first Waste Policy in 2017.

WHAT WE PLAN TO DO

- Monitor compliance with the sector's Waste Policy, published in 2017
- Review the sector Waste Policy in 2019
- Create a Waste Strategy against which progress will be measured and reported
- Review options to optimise product packaging

WASTE: waste to landfill per tonne of production (2011 - 2018)



Circular economy & Materials

OUR ASPIRATION

To use resources as effectively; demonstrated through assessment and understanding of clay bricks' role in a circular economy, supported by a robust methodology and evidenced through case studies.

KEY STATS

If installed and maintained correctly, clay bricks can have a service life in excess of **150 years** and are relatively low-maintenance

99% of production covered by BES 6001 'Responsible Sourcing' certification

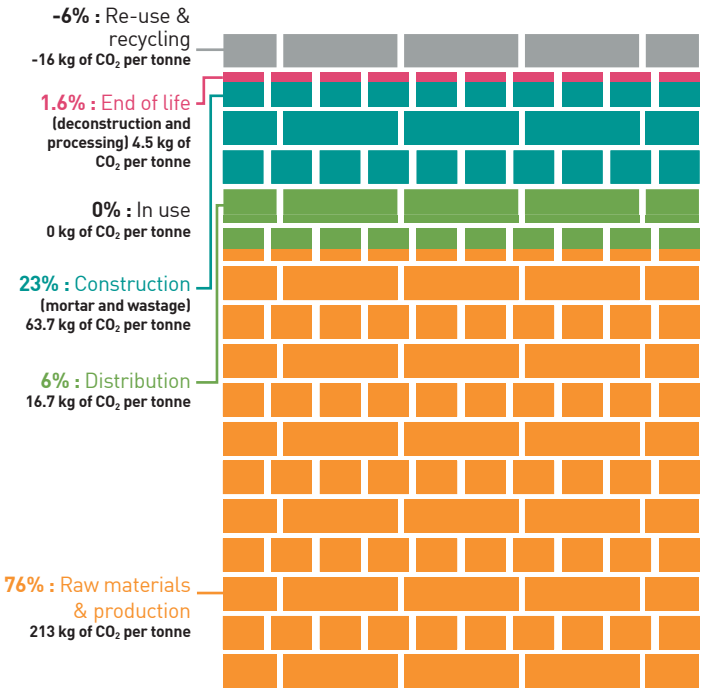
ENVIRONMENTAL PRODUCT DECLARATION (EPD) INFOGRAPHIC TO SHOW OVERALL CARBON EMISSIONS OVER PRODUCT LIFECYCLE

BRICK GLOBAL WARMING POTENTIAL

281.9kg of CO_2 per tonne

36.0KG OF CO_2 PER M²

*based on half brick thick cavity wall.



THE CHALLENGE

Clay is the principal material used in the manufacture of bricks. It contributes to their technical and durability performance and, is responsibly and locally sourced. Whilst a small quantity of alternatives (Materials from Alternative, Recycled and Secondary Sources - MARSS) are used, more research is needed for clays to be further substituted while maintaining these characteristics. The application of the circular economy to long service life products like clay bricks (which are components of the built environment) needs clarification as to-date, activities have focused on high-value, short life products.

WHERE WE ARE NOW

A recent update of the clay brick Environmental Product Declaration (EPD) shows that over the product's lifecycle - in construction / use / at end-of-life of a building – overall carbon emissions are low and at end-of-life, products can be reused and recycled. The design of buildings around circular economy principles can draw on many of the technical and practical characteristics of clay bricks, particularly their longevity and adaptability.

WHAT WE PLAN TO DO

+ Continue developing the circular economy narrative.
+ Encourage decision-making based on whole-life product performance.
+ Continue reporting on the use of MARSS materials within the brick industry.

A CIRCULAR ECONOMY FOR THE BUILT ENVIRONMENT

Continual improvement

OUR ASPIRATION

To evidence the sector's collective commitment to continual improvement in production efficiency and quality, and to report our results annually.

KEY STATS

£48.5 million invested in plants and machinery in 2018, taking the total to over **£154 million** in the last 3 years.

100% of production covered by a certified Environmental Management System (EMS)

99% of production covered by a certified Energy Management System (EnMS)

99% of production covered by the certified responsible sourcing framework BES 6001

97% of production covered by a certified Quality Management System (QMS)

1 The number of health and safety prosecutions in 2018

0 the number of environmental prosecutions in 2018

THE CHALLENGE

Continual improvement across all aspects of business operations is critical to company success, and this can present many challenges for companies in the short, medium and long term.

WHERE WE ARE NOW

The sector demonstrates impressive statistics in relation to the implementation of formal management systems with the production process almost in its entirety covered by certified environmental, quality and energy management systems. Members report investment in plants and machinery in excess of £48 million during the year 2018, taking the total to over £154 million in the last 3 years.

Building on success of the cross sector Resource Efficiency Action Plan, the clay brick and block, ready mix and precast concrete sectors are now collaborating on new sustainability projects. Steps are being taken to improve transparency though the development of new sustainability KPIs which are aligned with the Global Reporting Initiative Standards, and opportunities to reduce the use of plastic packaging are also being jointly explored.

WHAT WE PLAN TO DO

+ Continued investment in plants and machinery
+ Maintain the high proportion of the sector operating to recognised management systems
+ Continue to participate in industry Resource Efficiency Action Plans (REAPs) to share best practice, develop new sustainability KPIs and explore opportunities to reduce the use of plastic packaging.

MEMBERS OF THE BRICK DEVELOPMENT ASSOCIATION

Bulmer Brick & Tile Co Ltd www.bulmerbrickandtile.co.uk
Coleford Brick & Tile Ltd www.colefordbrick.co.uk
Forterra Building Products Ltd www.forterra.co.uk
H.G. Matthews www.hgmatthews.com
Ibstock Brick Ltd www.ibstockbrick.co.uk
Ketley Brick Company Ltd www.ketley-brick.co.uk
Matclad Ltd www.matclad.co.uk
Michelmersh Brick Holdings Plc www.mbhplc.co.uk
Northcot Brick Ltd www.northcotbrick.co.uk
Raeburn Brick www.raeburnbrick.co.uk
W H Collier Ltd www.whcollier.co.uk
Wienerberger Ltd www.wienerberger.co.uk
York Handmade Brick Company Ltd www.yorkhandmade.co.uk

Copies of this document can be viewed on and downloaded from the Brick Development Association website.

Please send questions or comments to:
The Brick Development Association

The Building Centre
26 Store Street
London
WC1E 7BT

brick@brick.org.uk
020 7323 7030

www.brick.org.uk