

SUSTAINABILITY REPORT 2021



SUSTAINABILITY

Introduction	1
Our Impacts	2
Materiality Assessment	4
Sustainability Pillars	5
– Planet	8
– Product	17
– People	21
Our Reporting	27
Climate Related Risks and Governance	29



SUSTAINABILITY REPORT

INTRODUCTION



Sustainability sits at the heart of our long-term strategy of capitalising on attractive market dynamics through investment in renewal and expansion of our manufacturing base, not only making our business more efficient but also more sustainable.”

Divya Seshamani

Chairman of the Risk and Sustainability Committee

In a year where climate change gained even greater prominence in the UK through the United Nations Climate change conference (COP26) in Glasgow, 2021 has seen sustainability embedded at the heart of our business. We took a major step forward with the publication of our first comprehensive sustainability report within last year's Annual Report and we are delighted with the positive feedback this received with the report acting as a catalyst for a significant increase in the number of sustainability focused conversations with our stakeholders.

Having set ourselves challenging sustainability targets at the beginning of 2021, our focus is now on delivering against these. With target horizons of up to 10 years, it is important to emphasise that the investments and actions we take now will deliver a tangible and sustained impact over time rather than immediately. That said, I am pleased that in 2021 our carbon emissions per tonne of production were 4.5% lower than 2019, with 2020 distorted by the effects of the pandemic.

Sustainability sits at the centre of our long-term strategy of capitalising on attractive market dynamics through investment in renewal and expansion of our manufacturing base, not only making our business more efficient but also more sustainable.

In addition, we have taken strides to better highlight the inherent sustainability and longevity of our products. Like most heavy building materials they have a significant carbon footprint, however they will last for hundreds of years, providing generations with safe, secure high-quality housing.

Along with progressing the construction of our new Desford brick factory, which will deliver market-leading levels of efficiency, we are also delivering two further investment projects both with strong sustainability credentials. The refurbishment and renewal of our Wilnecote brick factory will reduce the carbon footprint of each brick manufactured, and the construction of a brick slip manufacturing facility at our Accrington facility will allow us to bring a new sustainable product to market.

Back in 2019 we took a positive decision to purchase all of our electricity from renewable sources. Whilst an important step, at the time we recognised the limitations of this approach in that it did not add any new renewable generation capacity to the grid, something that is critical if the UK is to reach its net zero goals. Therefore, we are delighted that we have entered into an agreement with a strategic partner to construct a dedicated solar farm that will provide around 70% of our annual electricity requirement for a 15-year period commencing in 2025. In addition, we are making progress toward our commitment to produce at least 10% of our electricity requirement through on-site renewables with our facilities at Wilnecote and Desford to be among our first to be equipped with on-site solar.

At the beginning of 2021 the Board's Risk Committee became the Risk and Sustainability Committee, a move that I feel has been successful in elevating the importance of sustainability throughout the business, with the Committee devoting a significant portion of its time to the Group's sustainability strategy and governance thereof. The Board takes all areas of governance seriously and we have now added the climate change scenario analysis required under the requirements of the Task Force on Climate Related Financial Disclosure (TCFD) meaning that we are fully compliant with the requirements of TCFD in the year which they have become mandatory.

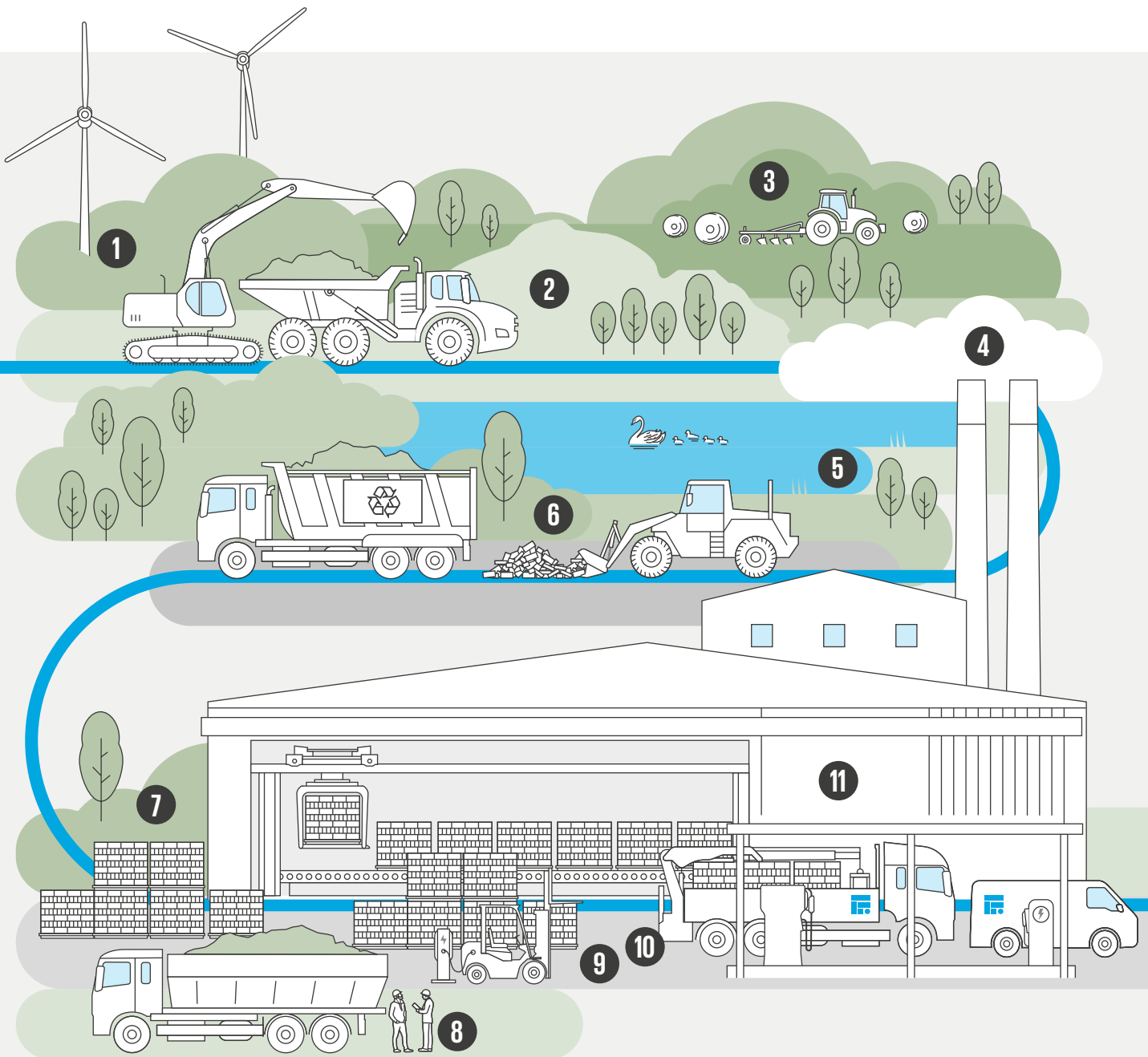
Included within this report is an overview of our key sustainability initiatives and credentials highlighting the progress made in the year, along with providing everything necessary to understand our sustainability journey. As always, we welcome feedback regarding our approach to sustainability and the appropriateness and transparency of our disclosures.

Divya Seshamani

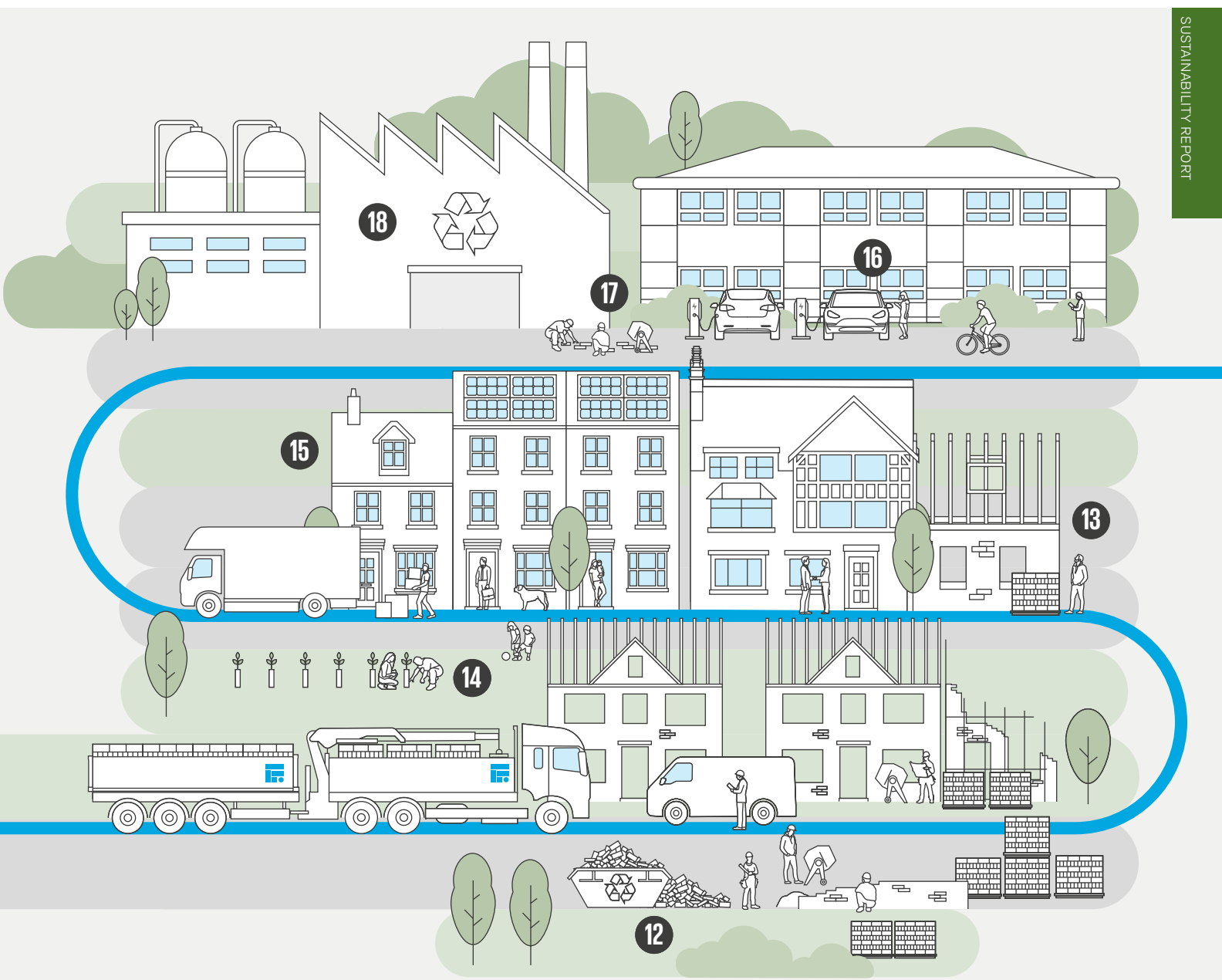
Chairman of the Risk and Sustainability Committee

SUSTAINABILITY REPORT

OUR IMPACTS



1. 100% of our electricity came from renewable sources in 2021. We are committed to adding our own dedicated renewable generation capacity to the grid.
2. We extract clay from quarries adjacent to our brick factories.
3. When mineral extraction is complete our quarries are restored to nature or back to agricultural use.
4. Our factories and especially our kilns do emit greenhouse gases. We are investing in our business to enhance efficiency and reduce these emissions. Our strategy focuses on efficient manufacturing, allowing us to reduce our energy usage making our business more sustainable.
5. We limit our mains water usage through rainwater harvesting and recycling systems.
6. Almost all of our manufacturing process waste is recycled back into our products.
7. We are making large reductions in our use of plastic packaging.
8. We purchase raw materials from suppliers, supporting jobs in our supply chain. The vast majority of our raw materials are either obtained from our adjacent quarries or are purchased from UK suppliers.



9. We aim to invest further in electric powered mobile plant where current technology allows.
10. We are switching to the use of biodiesel (HVO) to fuel more of our mobile plant where electric power is not currently viable.
11. We are investing in delivery vehicles and cars with the latest emission-reducing engine technology.

12. At the end of their life our products are recyclable.
13. We provide products that match existing homes allowing them to be extended and repaired.
14. We are committed to biodiversity and will increase our tree planting.
15. Our products help build high-quality energy-efficient homes that last for generations.

16. We provide employment for approximately 1,800 people, playing an integral role in our local communities.
17. We are committed to training and developing both our current workforce and our workforce of tomorrow.
18. We seek to limit waste, recycling wherever possible and are now effectively a zero waste to landfill business.

SUSTAINABILITY REPORT

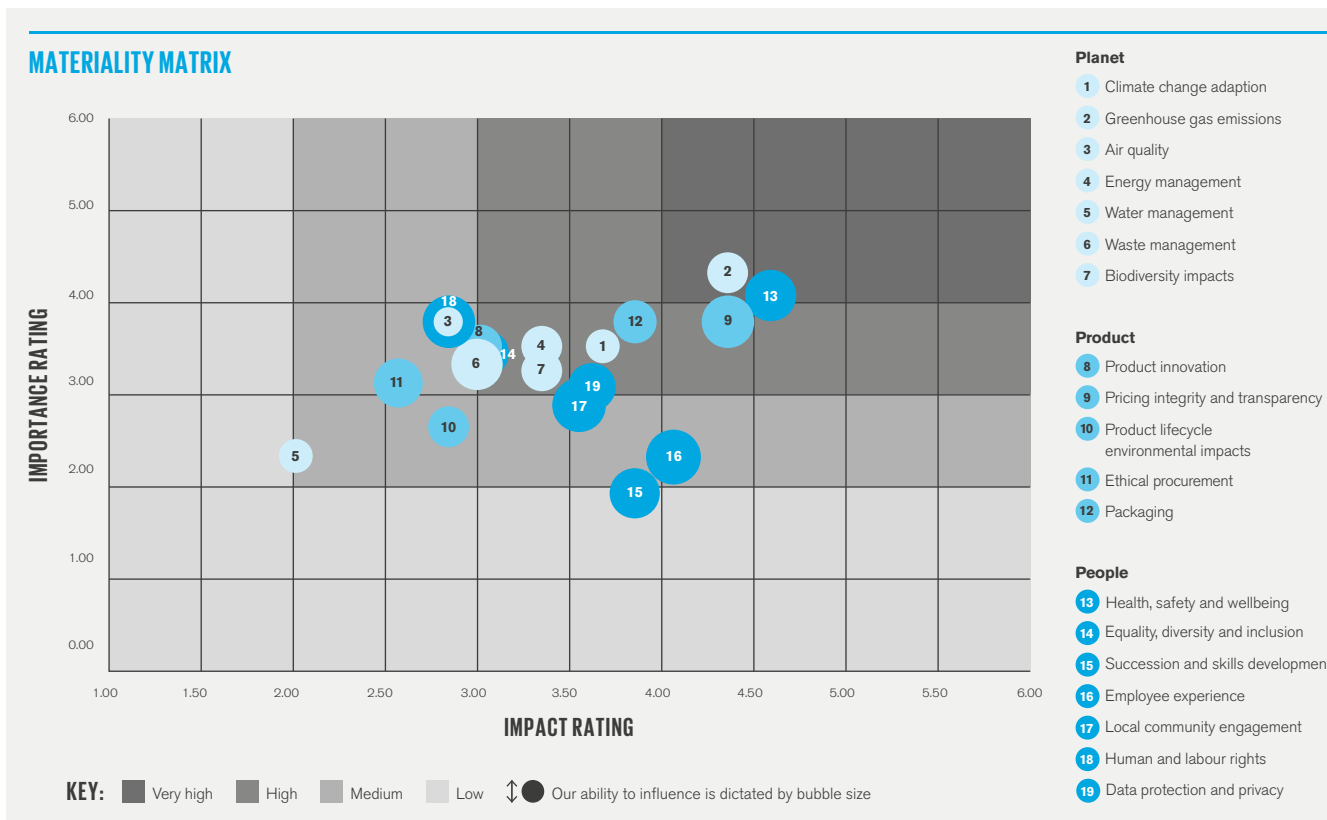
MATERIALITY ASSESSMENT

MATERIALITY ASSESSMENT PROCESS

In defining our materiality assessment we worked alongside external consultants with the intention of providing an overview of our priority sustainability topics and in turn enabling our focus and resources to be appropriately deployed in these areas. The viewpoints of key stakeholder groups were critical to the creation of this assessment, and we sought feedback and insight from multiple perspectives, including those of shareholders, local communities, employees and customers.

Approach and process

STEP 1 Identifying issues	We created a long list of potentially material topics through the review of sustainability reporting publications, internal policies and management insight. This was supplemented by an evaluation of relevant sustainability frameworks including the Sustainable Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI). It was important at this stage to ensure we had covered social, and governance factors alongside purely environmental impacts.
STEP 2 Broadening and refining the scope	Our external consultants provided a broader perspective of macro sustainability topics, assessing their relevance and application to our business, such as the United Nations Sustainable Development Goals (UNSDGs). Specific feedback from shareholder meetings was also included, as well as research from relevant industry bodies.
STEP 3 Assessment and scoring	We assessed our material topics and provided a scoring criterion based upon two factors. Firstly, the importance of the topic to stakeholders, and secondly the impact of the topic upon future business performance. Our external consultants assisted us in this process, providing a consistent framework for the basis of assessment.
STEP 4 Prioritisation and validation	An assessment of the ability of the business to influence each topic provided further perspective to the prioritisation process and was a key further dimension brought into our analysis. The outcome of the materiality assessment was reviewed at Board level to ensure appropriate challenge, validation and alignment to the Group strategy.



Our materiality matrix above summarises the outcomes of the materiality assessment, providing a visual overview of our key topics. We recognise that the matrix contains an element of subjectivity; impact can be defined in various ways including risk of non-compliance, impact to reputation or financial implications. Equally, importance may vary between different stakeholder groups. The matrix should therefore be viewed in this context, as an indicative overview and insight to Management's perspective on the subject. Our materiality assessment was undertaken in early 2021 and was subject to a review in early 2022 with no requirement for significant changes identified.

SUSTAINABILITY REPORT

PILLARS

OUTCOMES

The materiality matrix categorises the material topics into our sustainability reporting framework of 'Planet, Product, People'. The framework sets out a balanced approach to sustainability through these three pillars:

- the Planet pillar frames our wider environmental responsibilities, with a particular focus upon greenhouse gas emissions;
- the Product pillar focuses upon some more specific industry and Company level topics, including new product development, and the wider supply chain; and
- the People pillar highlights our social responsibility objectives, including utmost priority of ensuring health, safety and wellbeing across our business.

Collectively, our three pillars guide our future decision-making, ensuring we are successful in our overall objective of being a good neighbour and responsible employer, for generations to come.

This framework sets out our key future targets and reporting metrics within each sustainability pillar. We continue to investigate additional opportunities to contribute to sustainable development and have also linked our framework to the United Nations Sustainable Development Goals (UNSDGs) that most closely align to each pillar.

	PLANET	PRODUCT	PEOPLE
Material Themes	<ul style="list-style-type: none"> Climate Change Adaption Air Quality Energy Management Greenhouse Gas Emissions Water Management Waste Management Biodiversity 	<ul style="list-style-type: none"> Product Lifecycle: Environmental Impacts Plastic Packaging Product Innovation Pricing Integrity and Transparency Ethical and Sustainable Procurement 	<ul style="list-style-type: none"> Equality, Diversity and Inclusion Community and Charity Engagement Health, Safety and Wellbeing Employee Experience Data Protection and Privacy Human and Labour Rights Succession and Skills Development
Future Targets / Commitments	<ul style="list-style-type: none"> CO₂e intensity targets (2019-2030): <ul style="list-style-type: none"> 33% reduction within clay products 80% reduction within concrete products Zero waste to landfill 10% of electricity use generated from on-site renewable sources by 2025 Climate change risk disclosure following recommendations of TCFD 	<ul style="list-style-type: none"> 10% of revenue from new and sustainable products by 2025 Commitment to working with our suppliers to ensure they also adopt stretching reduction targets in line with our own ambitions Plastic packaging reduction of 50% by 2025 (from 2019 baseline) 	<ul style="list-style-type: none"> Zero harm ambition for health and safety 5% of employees in 'earn and learn' positions by 2025 Annually conduct and publish employee engagement surveys Improved ethnic and gender diversity
UNSDGs			
Reporting Metrics	<ul style="list-style-type: none"> CO₂e emissions (absolute / intensity per tonne of production) Air quality emissions Waste – % recycled / tonnes to landfill / tonnes hazardous waste generated Energy and water usage per tonne Percentage of renewable energy used off site / on-site generated 	<ul style="list-style-type: none"> New product index (NPI) % of suppliers covered by internal compliance programme Plastic packaging used 	<ul style="list-style-type: none"> Lost time incident frequency rate (LTIFR) Gender pay reporting Employee engagement performance score Percentage of employees in learning positions

KEY: ■ Environment ■ Social ■ Governance [] Key material issues

SUSTAINABILITY REPORT

PILLARS

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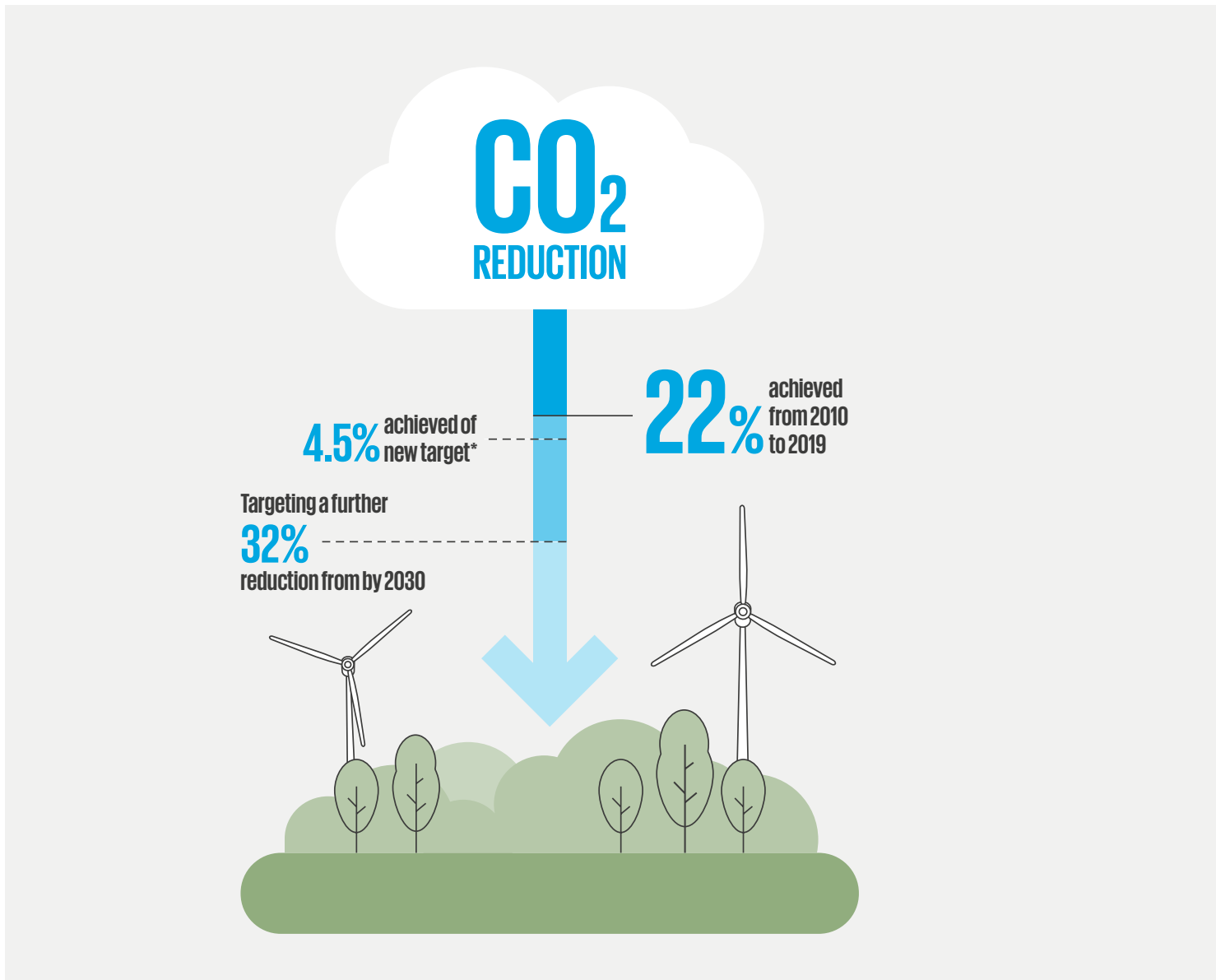
METRICS AND TARGETS

We have considered the most appropriate metrics and targets necessary for users to understand the impacts of our business. In addition to disclosing our absolute greenhouse gas (GHG) emissions, we also provide additional disclosure showing the GHG intensity ratio for both our clay and carbon products (level of emissions per tonne of output), recognising that absolute emissions vary with the level of our production according to market demand, and as such are not a meaningful measure of our progress against our targets.

Our metrics and targets were set in early 2021 and informed by the outcome of our materiality assessment which identifies the subject areas deemed most relevant to our stakeholders. In identifying further measures and targets for publication we have

also considered the requirements of the Sustainable Accounting Standards Board (SASB) standard on construction materials and have sought to comply with the disclosure requirements of this standard in as far as we believe the information provided will be useful and meaningful to our stakeholders. As with the requirements of TCFD, we will seek to enhance our disclosure of the key metrics as laid out within the SASB construction materials standard in future years.

Details of our challenging targets and commitments are laid out on page 7. Our full sustainability indicators disclosure is shown on page 28 and includes metrics covering each of our Planet, Product and People pillars, as noted on page 5, extending our disclosure beyond GHG emissions and covering key drivers and indicators relevant to all our sustainability goals.













* 4.5% decrease in intensity vs. 2019

OUR REPORTING

The table below summarises our defining future sustainability targets, shown under our sustainability pillars framework and reflecting our wider breadth of key performance indicators following the materiality matrix assessment.

Our wider reporting suite of data, which has been adopted in line with the SASB reporting standard for construction materials is detailed on page 28.

PILLAR:  PLANET  PRODUCT  PEOPLE

Pillar	Topic	Target	Target year	Metric	2010	2019	2020	2021	Target
	Group CO ₂ e emissions	27.5% reduction vs. 2019 baseline	2030	tonnes	287,726	319,296	198,921	280,381	231,489
	Group CO ₂ e emissions / tonne	32% reduction vs. 2019 baseline	2030	Kg CO ₂ e / tonne	159.0	123.4	115.3	117.5	83.9
	Clay products CO ₂ e emissions / tonne	33% reduction vs. 2019 baseline	2030	Kg CO ₂ e / tonne	330.1	255.7	237.1	237.3	171.3
	Concrete products CO ₂ e emissions / tonne	80% reduction vs. 2019 baseline	2030	Kg CO ₂ e / tonne	27.8	20.9	21.4	19.9	4.2
	Power sourced from on-site renewables	10% Group power usage	2025	%	0.0%	0.0%	0.0%	0.0%	10%
	Waste to landfill	Zero process waste	n/a	kg/tonne	1.92	0.16	0.03	0.02	0.00
	New product index	10% Group revenue	2025	%	n/a	0.6%	1.2%	1.1%	10%
	Plastic packaging consumed	50% reduction vs. 2019 baseline	2025	tonnes	n/a	1,951	1,050	1,711	976
	Health and safety – Lost time incident frequency rate (LTIFR)	Zero harm ambition	n/a	No.	4.6	7.35	2.52	3.98	0.00
	Membership of 'The 5% Club'	5% of employees in earn & learn positions	2025	%	n/a	3.2%	3.5%	3.7%	5%

SUSTAINABILITY REPORT

PLANET

PLANET MATERIALITY THEMES

- 1 Climate change adaption
- 2 Greenhouse gas emissions
- 3 Air quality
- 4 Energy management
- 5 Water management
- 6 Waste management
- 7 Biodiversity impacts

There is growing recognition that the world is in the midst of a climate emergency, driven by rising global temperatures fuelled by greenhouse gases. Extreme events including drought, fires and flooding are likely to continue to increase, with significant impacts upon communities, species and habitats.

Our business and sector plays a crucial role in the defence against climate change. Today, our products are 'climate ready', offering flood resilience, high levels of thermal performance reducing the amount of energy required to heat and cool homes and assured durability in use spanning generations.

We recognise the ever-increasing expectations of our stakeholders, and our primary future challenge is the decarbonisation of our products to support the wider built environment aspirations of delivering zero carbon buildings.

GREENHOUSE GAS EMISSIONS

We manufacture two broad categories of products: those made from clay and those made from concrete. These products are supplied hand in hand to our customers and are used together in building high-quality homes and buildings. However, the manufacturing processes are very different and their carbon footprints, whilst similar overall, are built up in different ways.

CLAY PRODUCTS

Clay is the primary raw material used to make bricks. The clay is typically sourced locally from our own quarries, limiting the environmental impacts of transportation to factories. The clay is ground and then formed into a brick shape using a variety of methods. The grinding and forming process uses electrical energy. At this stage bricks contain significant amounts of moisture which must be removed before they can be fired. This drying process utilises recycled heat from our kilns.

The next stage is the firing of the brick which transforms the relatively weak dried clay into strong durable bricks that will last for generations. During the firing process, the bricks are heated to temperatures of over 1,000 °C, triggering chemical reactions in the clay. Our kilns are fired by burning natural gas and the clay itself also emits carbon dioxide, which we refer to as process emissions during the chemical reaction. Once cooled, the bricks are packaged ready for despatch to our customers.

As a result of the emissions created by the burning of gas, as well as the embodied carbon released from the clay during the firing process, the majority of emissions from our clay brick manufacture fall into scope 1.

THE SCOPE OF CARBON EMISSIONS

The Greenhouse Gas Protocol breaks emissions down into three categories:

Scope 1

All direct emissions from our business or under our control. This includes the fuels used in our manufacturing processes, the largest component being the gas used to fire our kilns. Also included within scope 1 are what we refer to as process emissions, produced from embodied carbon within the clay which is released in the firing process as the bricks reach very high temperatures within our kilns. The emissions from our mobile plant and our own delivery vehicles are also included here.

Scope 2

Indirect emissions from the electricity we purchase and use. We eliminated our scope 2 emissions by purchasing Renewable Electricity Guarantee of Origin (REGO) certificates since 2020, which ensures that our electricity has been produced from renewable sources. Therefore, we report zero scope 2 emissions.

Scope 3

All other indirect emissions from our activities. This includes emissions generated from the manufacture, processing and transport of the materials and products we purchase. Also included are the emissions from delivery vehicles where our products are delivered on our behalf by haulage contractors. Identifying and accurately calculating all our scope 3 emissions would be extremely difficult and there is currently no requirement to do this. We are however seeking to work with our suppliers to reduce our scope 3 emissions, the largest component of which is cement which is critical to the manufacture of our concrete products.

ELECTRICITY PROCURED FROM RENEWABLE SOURCES

100%

CARBON INTENSITY (PER TONNE OF PRODUCTION)

117.5kg CO₂e

(4.5)%

2019: 123.4kg CO₂e

CONCRETE

We make a range of concrete products, from aerated concrete blocks to precast concrete floor beams, using a number of different manufacturing techniques. Traditional concrete is made by mixing aggregates, cement, and water. It is then left to undergo a chemical reaction known as curing which can be accelerated by adding additional heat.

Our Thermalite lightweight aerated concrete blocks use pulverised fuel ash (PFA), a waste product from coal fired power stations; with power generation from coal drastically diminishing in recent years we now recycle previously landfilled ash in a process very similar to quarrying. Water, cement and other materials are mixed with the PFA. The cake, as its known, undergoes a chemical reaction and begins to cure such that it can be removed from the mould and be wire-cut into blocks. The blocks are then cooked in a high-pressure steam oven known as an autoclave, which like our brick kilns, is heated by burning natural gas. The blocks are removed from the autoclave, separated, packaged and once they have passed a strength test are ready to be supplied to our customers.

We purchase all of these raw materials, with cement having by far the largest carbon footprint. As such, the majority of the emissions from manufacturing concrete fall into scope 3.

It is important to emphasise that both our clay and concrete products contain very similar levels of overall carbon dioxide emissions per tonne of product. However, the way in which these emissions are reported within the Greenhouse Gas Protocol scopes is very different.

The majority of the emissions associated with the manufacture of clay bricks are direct emissions under our control and are therefore disclosed in scope 1. The majority of the emissions associated with the manufacture of our concrete products are indirect emissions under the control of our suppliers and included in scope 3, and therefore not disclosed in our figures.

SCOPE 1

When reporting our emissions and setting targets to reduce these emissions it is necessary to consider our product mix. To ensure full transparency going forward, and when reviewing our past progress, we will provide emissions figures for both our clay and concrete businesses independently. The scope 3 emissions associated with our concrete manufacture (and to a lesser extent clay) are currently estimated, therefore direct comparison between our clay and concrete reported emissions is not possible.

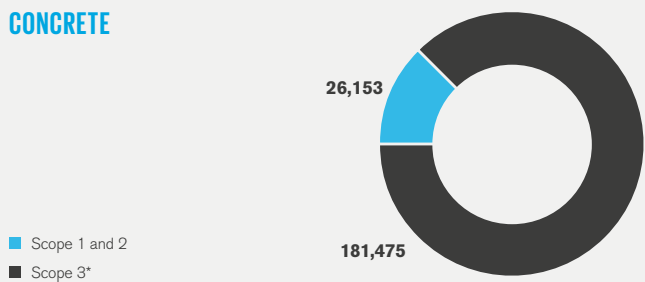
Any change in product mix in our product range between clay brick and concrete products could materially distort the comparability of our total reported scope 1 emissions year on year. Accordingly, we disclose the carbon emissions for our clay and concrete business separately providing much greater transparency on our carbon reduction progress.

It is important to recognise the amount of carbon we emit is directly related to the volume of product we manufacture.

Our key markets have historically exhibited a trend of cyclicity and as such it would not be meaningful to measure our performance solely on absolute emissions. We believe the most transparent way of reporting our carbon footprint is to separately report our greenhouse gas intensity ratio CO₂e for our clay and concrete products and that this will provide the most meaningful information from which to measure the reduction in our carbon emissions over time.

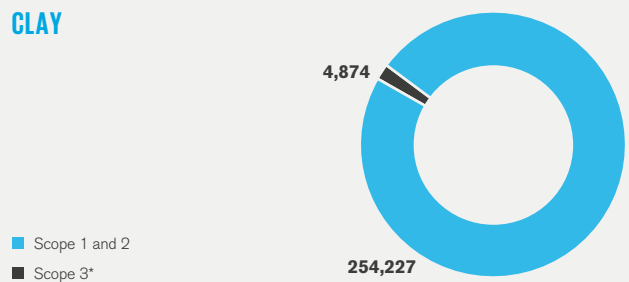
We recognise that carbon dioxide emissions are an inherent result of our manufacturing processes. The majority of our emissions are covered by the UK Emissions Trading Scheme (UKETS), The increasing cost of UKETS credits or a reduction in the number of freely allocated credits will increase our operating costs and by reducing our emissions we can deliver a reduction in these compliance costs.

CONCRETE



* estimate not included within our reporting.

CLAY

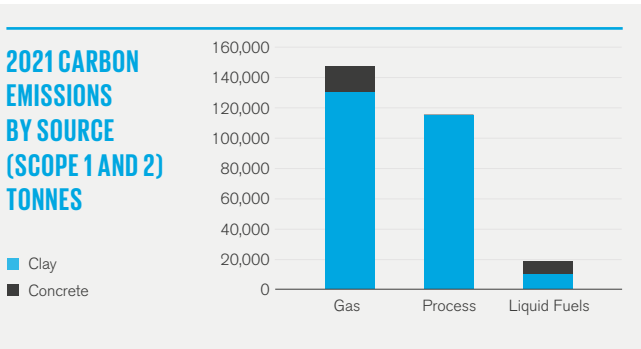


SUSTAINABILITY REPORT

PLANET

CONTINUED

The graph below shows a breakdown of our 2021 scope 1 emissions by source. The largest contributors are the natural gas used to fire our kilns and from the carbon emitted from the clay during the firing process.



OUR 2030 CARBON REDUCTION TARGETS

To build upon our substantial achievements over the past decade and in support of the UK's Net Zero Carbon ambition with the Government committing the UK to achieving net zero carbon emissions in 2050, we have set ourselves the following challenging reduction targets for 2030, covering our direct (scope 1 and 2) emissions:

- Group CO₂e intensity (CO₂e / tonne) – **32% reduction versus 2019 baseline** (assuming 2019 product mix)
- Clay products intensity (CO₂e / tonne) – **33% reduction versus 2019 baseline**
- Concrete products intensity (CO₂e / tonne) – **80% reduction versus 2019 baseline**

We set 2019 as our baseline year as the impact of the Covid-19 pandemic, which resulted in the majority of our operations ceasing production for a prolonged period, meant that 2020 did not represent the most meaningful comparator.

Our targets are ambitious. We will deploy both existing and new technologies over the next decade to achieve our goals, as well as closely controlling how we manage our existing operations. We do not expect to require significant capital expenditure purely to meet our sustainability targets in the coming decade. We will invest in large-scale projects, such as the Desford and Wilnecote brick factories, with these projects offering compelling financial returns in addition to demonstrable sustainability benefits. Planned investments in on-site renewable electricity generation capacity are also expected to be modest and generally included within our £12m a year of annual maintenance capital expenditure and will generate a positive financial return over their lifetime.

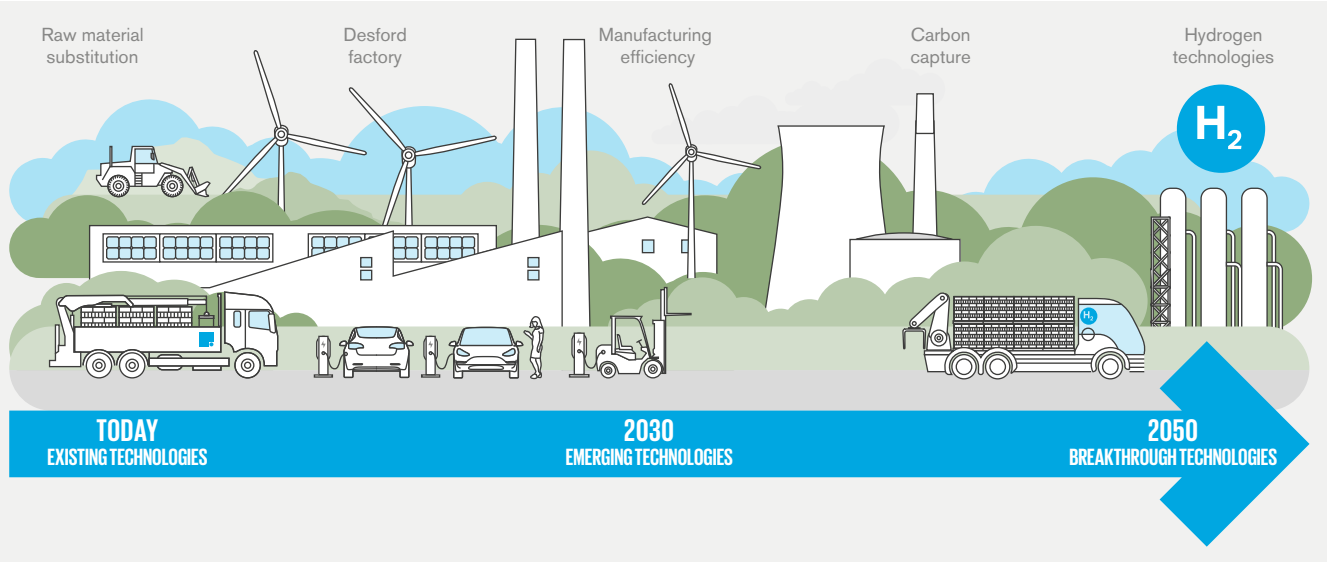
INVESTING IN EFFICIENCY

Our strategy for growth is completely aligned to our sustainability strategy with our current and planned investments in new ultra-efficient modern manufacturing technology also delivering significant sustainability improvements. Using the latest production technology and control systems allow us to burn less gas, emitting less carbon and reducing the number of carbon credits we need to purchase. Modern manufacturing equipment is more energy efficient using less electricity and our factories at Wilnecote and Desford will be among our first to be equipped with on-site solar arrays to generate clean sustainable electricity.

Modern kilns require less gas and have more effective emission scrubbing technology reducing both the emission of carbon dioxide as well as other harmful emissions. The new factory at Desford will emit approximately 25% less carbon dioxide for each brick produced than the old factory it replaces. Similarly, the refurbishment of the Wilnecote factory will also reduce carbon emissions per brick by around 30%. Our strategy for growth will see an investment of over £200m in major expansion and replacement capex over the decade, with every major investment we make having a positive impact in reducing our carbon footprint. When evaluating investment opportunities going forward, sustainability improvements are a pre-requisite, we will not make investments unless they have clear and demonstrable environmental benefits.

INVESTMENT IN NEW MANUFACTURING CAPACITY





EMERGING TECHNOLOGIES

Whilst we are focused on the present, delivering new, more efficient manufacturing capacity alongside a number of initiatives to reduce our environmental impact in the near term, we are also thinking for the long-term.

Our industry’s journey to net zero will most likely depend on technologies that are currently in their infancy. For example, hydrogen as a replacement fuel for natural gas along with carbon capture and storage. We are actively looking at how both these technologies can be used in our business.

We are planning to undertake trials to better understand how hydrogen will work as a fuel in our kilns and how this change of fuel will impact our products. By undertaking these trials in a small kiln at our Red Bank facility we can gain valuable knowledge without disrupting production. The burning of hydrogen produces a large amount of water and we will need to learn how to manage this. Our trials will cost several hundred thousand pounds to complete but this investment will provide valuable information for the future. We are also entering into exploratory discussions with potential suppliers of hydrogen as to how we could potentially connect our facilities to future hydrogen supply infrastructure.

In addition, we are exploring opportunities for carbon capture and storage and are engaging with a number of potential partners who are developing technologies; and like our hydrogen trials, we are willing to commit funding towards exploring technologies that could help us toward our target of reaching net zero by 2050. Although we should caution that at this stage many of the technologies remain at their formative stage with mainstream deployment of carbon capture in our business still many years away. We accept that we may need to devote time and resources to a number of technologies before finding one that will ultimately be both effective and economical.

FOCUS ON RENEWABLE ENERGY

In 2020 we switched to purchasing 100% renewable electricity. Whilst this positive step reduces our scope 2 emissions to zero we always wanted to do more. For the UK to reach its net zero ambitions the electricity grid, which still relies upon significant gas and coal fired generation, needs to be decarbonised. Working with an external partner, a global leader in the management and development of solar energy projects, we have committed to purchasing around 70% of our electricity requirement from a dedicated solar farm, exceeding 200 acres in size to be situated in Nottinghamshire. This commitment approximating to £50m over 15 years from 2025 will facilitate the delivery of 60 GWh of additional solar generation capacity to the UK, enough to power 17,000 average homes . This arrangement will provide us with secure renewable energy with price certainty for a 15-year period commencing in 2025.

Alongside this, we are investing in on-site renewable electricity generation at a number of our factories in order to generate 10% of our electricity requirement from 2025. Again, this adds incremental renewable energy generation capacity whilst also providing a low-cost electricity supply avoiding the sizeable transmission charges associated with having power delivered through the grid. We were hoping to have delivered the first of these projects in 2021, although global supply chain pressures ultimately meant this wasn't possible.

SUSTAINABILITY REPORT

PLANET

CONTINUED

ENERGY MANAGEMENT

As a large consumer of mains gas and electricity we are focused on maximising energy efficiency across our whole business, complementing this with a longer-term strategy on the increased adoption of alternative, renewable energy sources, and utilisation of on-site renewables.

All of our manufacturing facilities meet the requirements of the Energy Management Standard, ISO 50001, a third party audited and certified scheme recognising businesses which enhances energy management through continuous improvement and monitoring of progress. We have held this accreditation since 2015.

We adopt a number of approaches to maximise energy efficiency; from LED lighting and the installation of variable speed drives on motors, through to the recycling of waste process heat from our kilns to be utilised in other areas of the factory.

TRANSPORT

Transportation, including our heavy goods vehicles and other company vehicles including cars, are a contributor to our overall carbon emissions totalling 12,508 tonnes in 2021 representing 4.5% of our scope 1 emissions.

Our transport fleet has increased to 188 vehicles as we prepare to increase our despatches as the new Desford brick factory comes online, as well as addressing limitations in the availability of sub-contract haulage driven by a shortage of drivers throughout the industry, along with increasing lead times for new vehicles. Increasing our fleet size does marginally increase our scope 1 emissions although this increase would be offset by a reduction in our scope 3 emissions.

We are continuing to invest in the latest, cleanest and most efficient vehicles. Of our fleet of 188 distribution vehicles, 130 are the cleanest Euro VI vehicles and we would expect 100% of our fleet to achieve this standard by the end of 2023, with the current supply chain pressures and associated long lead times for new vehicles the primary constraint to achieving this sooner.

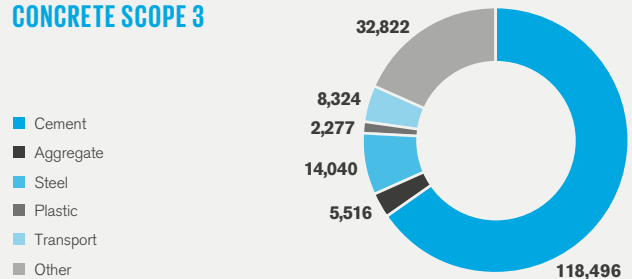
We continue to invest in electric and low emission vehicles, with all of our new company cars restricted to CO₂ emissions under 73 CO₂/km, ensuring we are promoting the use of the cleanest low emission vehicles. During the year we have continued our roll-out of electric vehicle charging infrastructure across our facilities. We now have a total of 52 zero and ultra-low emission vehicles (ULEVs) in our car fleet representing 31% of the fleet, and of the new cars joining the fleet in 2021 93% were either electric or hybrid.

OUR APPROACH TO SCOPE 3 EMISSIONS

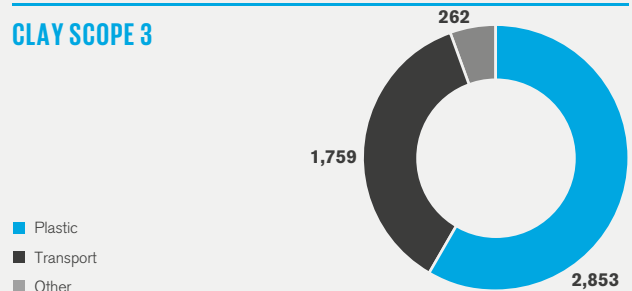
Much of our reporting focuses on our scope 1 emissions, the direct emissions from our business or activities that are under our control. The bulk (over 95%) of our scope 3 emissions are generated by inputs to our concrete products businesses with cement being by far the largest contributor to this. It is estimated that the scope 3 emissions embodied within our cement purchases represent around 65% of our total scope 3 emissions.

Our intention is to work with our major suppliers to ensure that they have equally ambitious carbon reduction targets to ourselves. Virtually all cement is purchased from major global and UK listed cement manufacturers including HeidelbergCement AG and Bredon plc and with these companies, like ourselves, taking responsible leadership positions to reduce their own emissions. Looking ahead, sustainability will form an even greater element of our supplier selection and accreditation process with an increasing number of our suppliers being required to evidence their own ambitious carbon reduction plans in order to continue their trading relationship with ourselves.

CONCRETE SCOPE 3







CLAY SCOPE 3



ENGAGEMENT

We are proud of our progress and are keen to place our sustainability information in the public domain ensuring the highest levels of transparency as we engage with our stakeholders.

We are committed to actively engaging with a number of sustainability disclosure bodies and rating agencies including the Carbon Disclosure Project, MSCI and Sustainalytics. Sustainability reporting and disclosure is still in its infancy and we are keen to engage with relevant agencies to ensure our sustainability strategy is clearly understood. We are also seeking to improve the awareness of sustainability and we recently ran our first Institute of Environmental Management and Assessment (IEMA) training course aimed at managers to improve their awareness of the many areas of Sustainability.

Organisation	Rating
	C
	AAA
	18.9 – Low Risk
	Awaiting result of inaugural submission

NET ZERO, A MARATHON NOT A SPRINT AND WHY HAVEN'T WE ANNOUNCED A 'NET ZERO' BRICK FACTORY?

Our priority is to deliver a tangible reduction in our emissions over the next decade. By 2030 we have committed to reducing our carbon intensity by 32% relative to 2019. Beyond this we have signed up to the Race to Zero formalising our ambition to reach net zero by 2050.

A key component of our decarbonisation strategy is our programme of capital investment with over £200m of investment in more efficient and greener manufacturing capacity over the next decade. This investment alongside a number of other initiatives including fuel switching will deliver a meaningful reduction in emissions.

We are also committed to researching breakthrough technologies including carbon capture and storage and hydrogen fuels which will likely provide the pathway to net zero beyond 2030.

The Commission on Climate Change (CCC) sets out a recommended strategy for the UK to reach net zero by 2050. In this report they state that “most sectors will need to reduce emissions to close to zero without offsetting”. Reliance on offsetting does not reduce the burning of fossil fuels which is the primary contributor to climate change.

Our strategy focuses on maximising the investment in our own business to deliver a tangible and transparent reduction in carbon emissions. We will continue to evaluate the benefits carbon offsetting can provide and whilst it is possible that in the future there will be a need for some form of offsetting in order to reach net zero, we feel that at present we can have the greatest impact through investing to reduce our own emissions.

The last year has seen announcements of the first net zero brick manufacturing facilities in the UK. The technologies used in these facilities are comparable with those being employed in our investments at Desford, Wilnecote and Accrington and as such, these claims can only be achieved through the use of carbon offsetting. We will keep the use of carbon offsets and the developing rules around their allocation to specific projects or assets under review, although we currently believe that maximising our investment in our own business rather than purchasing offsets and allocating them to the emissions from a particular factory is the most transparent and effective way of meeting our challenging carbon reduction targets and in the longer term moving towards net zero by 2050.

SUSTAINABILITY REPORT

PLANET

CONTINUED

AIR QUALITY

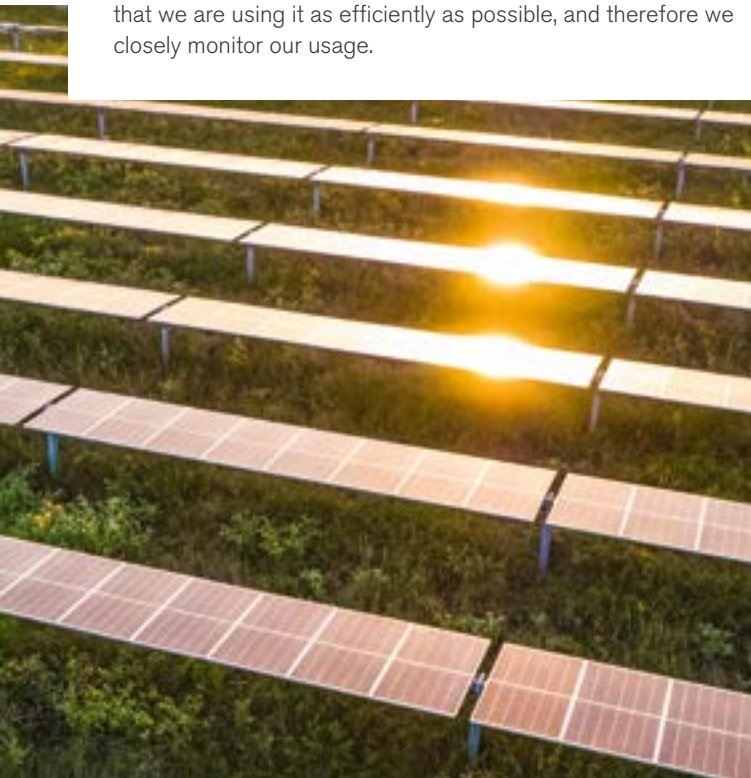
We strive to minimise emissions of air pollutants created through our manufacturing and distribution operations, complying with legislation as a minimum standard. All our operations are subject to Environmental Permitting Regulations and must operate in accordance with a permit issued by either the Environment Agency or the local authority. Each permit has at least one section focusing on emissions to air, with the regulating authority carrying out inspections to ensure compliance. In addition, the majority of our brick manufacturing facilities are required to carry out annual monitoring on the exhaust from the kiln to demonstrate compliance with any emission limits set out in the permit. Our larger sites submit a return under the UK Pollutant Release and Transfer Register.

Our brick manufacturing facilities utilise modern technologies to capture and 'scrub' emissions before their release into the atmosphere.

Our Kings Dyke brick facility is located in an air quality management area, and as a requirement of our permit we have invested in, and operate, two ambient air quality monitoring stations. Since their installation in 2008 we have operated in accordance with our permits with no breaches of air quality limits.

WATER MANAGEMENT

Water is key to the manufacture of our products, whether to achieve the correct plasticity of a clay brick, or to hydrate cement to produce our range of concrete products. As water becomes an increasingly scarce resource, we must ensure that we are using it as efficiently as possible, and therefore we closely monitor our usage.



Since 2010 we have reduced our water consumption per tonne of output by 20% through investments at our highest consuming sites, implementing water recycling systems as part of their production processes. A good example of this is in rainwater harvesting schemes such as at our flagship Measham brick facility, resulting in a 95% reduction in mains water usage since 2011. We will continue to report on our mains water usage per tonne of production.

A number of our sites benefit from ground water abstraction licences which further reduces our reliance on mains water. Our water management programme extends to the discharge of both surface and process water from our sites, carried out under consent from either the Environment Agency or water authority as well as the dewatering of our quarries.

WASTE MANAGEMENT

As a business we recognise the value of our raw material resources. Our waste quantities are extremely low relative to our production output, with large volumes of process waste streams diverted and recycled for use in other products. For example, brick waste created at our Kings Dyke London Brick factory is crushed on-site and becomes a raw material for the neighbouring aggregate block plant, and our entire aircrete block waste is recycled into use in other products in the business.

As a responsible operator we comply with all waste management legislation and apply the waste hierarchy using segregation of wastes to ensure that the most appropriate disposal routes are utilised. Virtually all our process waste is recycled within our own business, with only small quantities recycled through third party partnerships. Following recent amendments to our recycling partnership contract, we now divert all standard process waste from landfill, an achievement we look forward to continuing to honour in the future.

A notable recent project centred on the diversion of 'scrubber waste' from landfill. This waste is generated during the screening and removal of emissions from the exhaust chimneys of our brick manufacturing facilities. Representing up to 19% of our total waste, this material is now diverted from landfill following our collaboration with our waste management provider and is recycled into applications including land restoration where high alkaline soils can be neutralised by these waste streams.

Within our precast flooring products, all waste insulation (used to enhance the thermal performance of our flooring systems) is now recycled back into our suppliers' manufacturing process, removing any cost of disposal for our customers, whilst also ensuring the safe diversion from landfill.

BIODIVERSITY

Fragile habitats and associated biodiversity are at risk from climate change and deforestation across the globe. Within the UK, the Government has recognised our diverse range of natural landscapes and habitats, setting out a 25-year environmental plan focused on their protection and enhancement.

We are responsible for almost 2,000 acres of mineral bearing land and are therefore aware of our important role in supporting these national ambitions through the ongoing management, treatment, and final restoration of this land after these minerals have been exhausted. Our quarrying operations are covered by planning consents which include conditions for site restoration in accordance with the local mineral planning authority and taking into consideration local and wider environmental needs.

Depending on future use proposals, the quarry development will often lead to an improvement in the biodiversity value of the land involved, both during operation and when it moves into its restoration phase. The Kings Dyke nature reserve near

Peterborough is an excellent example of how exceeding the requirements of the restoration plan has provided a local community asset and enabled a diverse range of habitats to thrive.

We have identified a number of indicators to provide a framework for consideration of land use and environmental change as a result of our quarrying activities, and we support the Council for Sustainable Business Biodiversity commitment.

We recently commissioned a survey at our Wilnecote factory, to help us understand how we can maximise the ecological benefit of the woodland, which sits adjacent to the quarry. Part of the advice was to remove the smaller trees in order to promote wildlife habitats and Plant Manager, Tim Sugden decided to use these trees to create a hibernaculum, so that the flora and fauna can flourish further.

As a business we are continually looking at ways to reduce our environmental impact and we are pleased that this responsibility is shared by our employees, who actively look for opportunities to promote the importance of sustainability.



KINGS DYKE NATURE RESERVE

Kings Dyke Nature Reserve, near Peterborough, was established in 1999 on the site of an old London Brick clay quarry that was exhausted in the 1970s.

Developed as an educational nature reserve for schools and the local community, the site benefits from a wide range of habitats, from open water and ponds to grasslands and bare open spaces. While often regarded as a blot on the landscape, at the end of their working lives quarries can make

great nature reserves thanks to the diverse ground conditions and unique opportunity they present to create wonderfully diverse habitats for wildlife.

Today, the reserve is an important habitat for the Wall Brown butterfly whose numbers have declined in many areas. It's testament to the role of nature reserves such as Kings Dyke in enabling species such as this to not only survive but to thrive.

SUSTAINABILITY REPORT

PLANET

CONTINUED



OUR COMMITMENT TO BIODIVERSITY IN ACTION

A new water quality project on the River Mease which will slash levels of dangerous pollutants has already created valuable wetland habitats for loach, bullhead, crayfish and even otters. Four acres of formerly scrub-covered farmland have been transformed by the wetland sediment trapping scheme, a kilometre from our Measham factory in Leicestershire, to help address the high levels of phosphates in the Mease.

The river, which encompasses a Site of Special Scientific Interest and Special Area of Conservation, has suffered because of the build-up of pollutants from many sources and from urban development. High levels of phosphates cause algae to bloom and reduce the levels of oxygen in the water, creating an environment where fish and other species can no longer survive. But new ponds, wetland channels and riffles which make up a wetland sediment trap are already making a noticeable difference to the water quality and reducing phosphates. Woodland and vegetation, including nine glorious old oaks, willow trees and hawthorns have also been protected and can thrive once more because of the works on the site.

The £200,000 project, funded through a planning levy paid by developers, was only feasible because of “unprecedented” collaboration and co-operation, according to the river restoration charity which led the work. The Trent Rivers Trust worked with farmers whose land borders the River Mease and the Gilwiskaw Brook, and with 7,500 cubic metres of excavated material, enough to fill three Olympic sized swimming pools being deposited within our quarry for future restoration.

SUSTAINABILITY REPORT

PRODUCT

PRODUCT MATERIALITY THEMES

- 8 Product innovation
- 9 Pricing integrity and transparency
- 10 Product lifecycle environmental impacts
- 11 Ethical procurement
- 12 Packaging

The sheer scale of product consumption in modern society has highlighted the stresses upon raw materials and natural resources, and the impact of products and packaging upon our fragile habitats.

Our goal is to minimise the environmental impacts of our products during their manufacture, installation and in use.

Our products today are inherently sustainable, providing long-lasting durability and performance with no, or minimal, maintenance requirements and are typically recyclable at the end of their life. However, there is even more that we can do.

PRODUCT INNOVATION

Our product innovation, and research and development programmes are centred on two key themes: to meet the adapting needs and requirements of our customers in how they build, and to support the UK's ambition to transition to a lower carbon economy.

Specific focus centres on the increasing requirement for offsite precast and masonry façade solutions, utilising modern methods of construction to improve site efficiency, reduce wastage and support ambitious national housebuilding targets to provide better standards of homes for all.

In recent years we have made significant progress in bringing new products to market. One of our key innovation goals is to return our products to applications from which they may have been lost over the years. Our façade solutions including brick faced concrete panels, our Quickwall prefabricated masonry system designed to reduce on-site waste, increase production speed and improve aesthetic quality and our Surebrick fully non-combustible, mechanically retained brick slip system all offer solutions for utilising brick as a firesafe façade of choice on buildings, including modular and high-rise applications, where traditional brick and block construction is no longer suitable. Our investment in our Accrington factory to manufacture our own brick slips is an important step on our sustainability journey. Brick slips, or thin bricks as they are also known, provide the much-loved finish of a brick façade using up to 75% less raw material and energy in their production. Currently many brick slips are manufactured by cutting the face off a traditional brick leading to high levels of wastage, so manufacturing brick slips is an inherently more sustainable approach.

Our manufacture of concrete floor beams is another area in which we are using innovation to do more with less. Within our Bison flooring business our engineers are pioneering changes in the design of some of our T-beams reducing their cross section and therefore raw material usage, including cement, by as much as 30%, saving up to 10,000 tonnes of concrete per year, without compromising on providing a product that still meets all of our customers' needs.

Whereas partnerships with suppliers, technology providers and innovators are key to reducing the carbon footprint of our own operations, forming partnerships with our customers are also key as we aim to help them meet their own sustainability goals through innovative Forterra products.

A great example of this is our support of our customer, Barratt Development's unique zero carbon concept home. Built on the University of Salford's main campus, the Z house, built using modern methods of construction, is part-funded by Government and has been developed in partnership with Forterra and over 40 other leading players in the construction sector. We are delighted to have participated in this project by supplying two of our innovative products, Quickwall and Jetslab, our prototype innovative and insulated floor system that can be assembled in a matter of hours.

SureBrick, our fully non-combustible brick slip façade system provides a ready-made solution for offsite construction needs, particularly suitable for buildings above 18 metres and where speed of construction is paramount. The system achieved full British Board of Agrément (BBA) accreditation in early 2020 and has been successfully installed upon a number of projects.

Our team of materials scientists are constantly researching alternative raw materials which could allow us to reduce our carbon footprint. Cement substitutes are a current area of focus and we are contributing to a research project along with a number of industry participants, trade bodies and academia on a project exploring the cementitious properties of waste brick as a substitute for clinker in the manufacture of cement. At present our brick manufacturing waste is used in the manufacture of our aggregate blocks; although there would be significant sustainability benefits if this waste brick could be used as a cement substitute, as cement is by the far the largest contributor to our scope 3 emissions and a major contributor to our overall emissions.

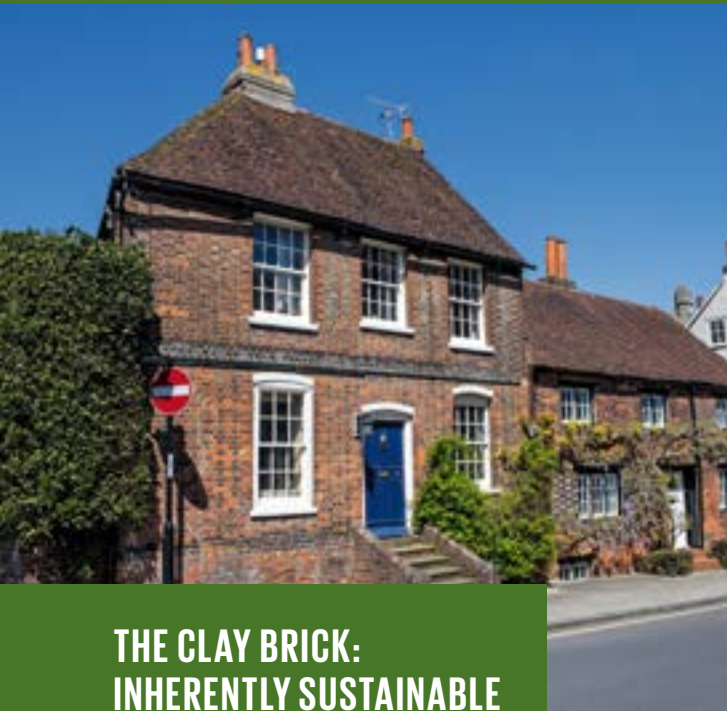
Our drive for further product innovation will continue. By 2025, we have set a target of 10% of revenues to be generated from new and sustainable products, focused upon offsite solutions, and the use of alternative raw materials where the positive impact upon our carbon footprint can be clearly demonstrated.

We recognise that we need to invest further in resource to accelerate our innovation and we have communicated our intention to increase our overhead cost by up to £3m per annum as we resource our business to devote more time to the future without compromising our day-to-day operations and customer service.

SUSTAINABILITY REPORT

PRODUCT

CONTINUED



THE CLAY BRICK: INHERENTLY SUSTAINABLE

The clay brick has been used as a building material for centuries. Through improved manufacturing technologies and efficiencies, the modern brick of today is more durable and significantly less energy intensive than its predecessors, whilst also maintaining its aesthetic appeal and reputation as the nation's building material of choice.

Produced to exacting standards, the lifespan of buildings constructed from clay brick is typically greater than 100 years, literally spanning generations. There are countless notable examples of celebrated architecture in the UK's built environment which demonstrate the longevity and beauty of this most simple of materials. Many homes built in the Victorian period were built from brick and are now sought after due to their spacious interiors, robust construction and typically large gardens. To many, the beauty of these buildings has increased with age, defined by the character of the clay bricks which have gently weathered over the last century.

On a wider scale, a 2017 survey¹ by BRE Trust revealed over 20% of the UK's housing stock built from clay brick is over 100 years old. Many of these homes will have been adapted and extended since their initial construction, but that underlying trust in brick as the core material in these buildings remains.

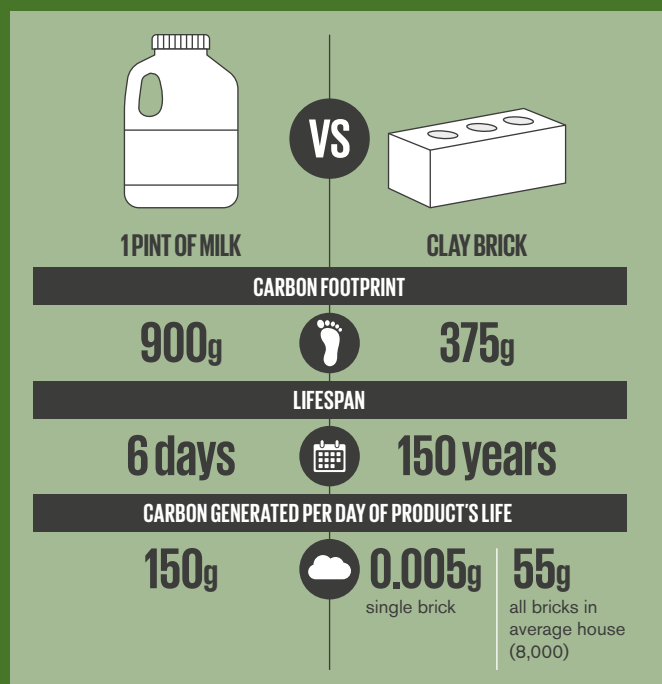
1. BRE Trust, "The Housing Stock of the United Kingdom", 2017.

The carbon footprint associated with clay brick manufacture remains significant, primarily through the use of natural gas fired kilns, and the natural chemistry of clay minerals.

Over the extensive lifetime of a clay brick-built building, the lifecycle carbon impact is remarkably low. Clay bricks also possess strong thermal mass qualities, helping minimise the impacts of more extreme weather conditions through their strong heat absorption; increasingly important as climate change increases the frequency of these conditions. During winter, bricks store heat on sunny days, slowly releasing this back to help warm the building. During the summer, heat is buffered and the interior of a brick building remains cool on the hottest days.

The longevity of brick is further complemented by the inherent quality of brick structures to require no, or minimal maintenance throughout their long lifespan, whereas alternative materials may require repeated application of protective coatings / treatments to extend their lives.

The nature of a clay brick structure makes adaptation relatively easy; parts of the structure can be removed and modified with relative ease, further enhancing the lifetime of the building. When a clay brick building does reach end of life, usually as a result of conscious demolition rather than condition, the materials can be reclaimed with the bricks themselves being reused if in good condition, or alternatively being crushed to be used as raw material within further construction applications.



PRICING INTEGRITY AND TRANSPARENCY

We recognise that in many of our product categories our markets are characterised by a small number of large businesses, operating nationally, and enjoying large market share positions. In order to ensure the highest standards of integrity we enforce a zero-tolerance approach to any anti-competitive activity.

All relevant managers and commercial employees are required to undertake annual online compliance training on both competition law and anti-bribery, with controls in place to record correspondence and communications with competitors.

The fines that can be levied on businesses which are found to have breached competition law can reach 10% of annual turnover and businesses can face damages claims from those wronged by anticompetitive actions. The risk of such fines, even if senior management were unaware of such behaviours, mean that compliance and monitoring obligations are taken very seriously.

ETHICAL AND SUSTAINABLE PROCUREMENT

The procurement of third party materials and services are critical to our value chain. In 2021 this expenditure totalled over £143m, including materials such as steel, timber, cement, aggregates, pulverised fuel ash (PFA) and expanded polystyrene products used in our flooring solutions. Our environmental footprint is minimised through a focus on local sourcing.

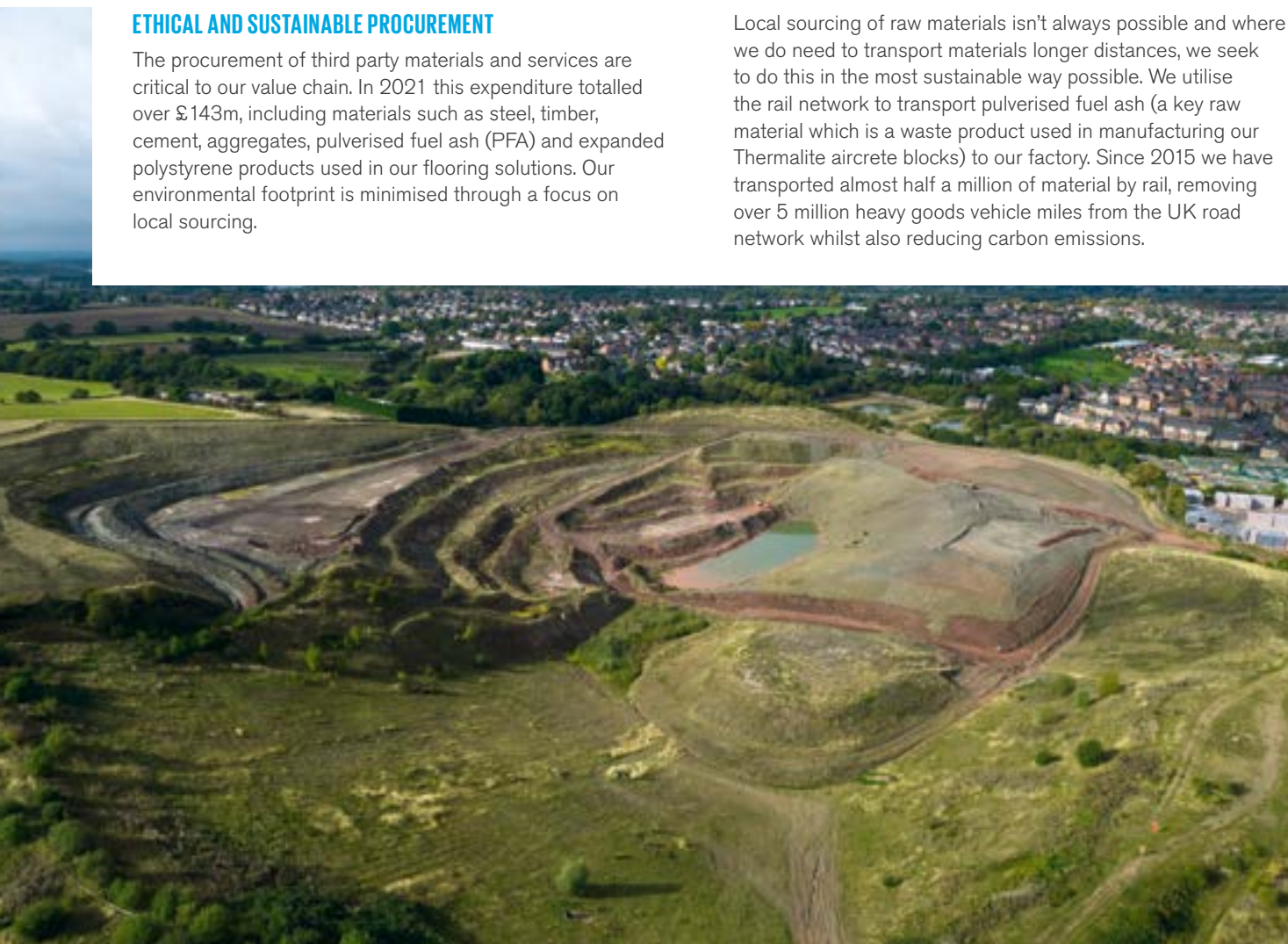
In 2021 over 80% of our materials procurement (excluding capital items) was UK sourced, minimising environmental impacts of cross border transport logistics.

Our procurement management system is ISO 14001 and ISO 9001 accredited. Compliance plays a key role within the system, covering over 1,400 suppliers' strict adherence with a range of governance topics including anti-slavery, bribery, competition law, data protection, and equal opportunities. We adopt the Ethical Trading Initiative code of practice to ensure that worker rights are protected as part of the supplier onboarding process, and this is continuously reviewed.

Larger suppliers are required to meet relevant ISO standards including ISO 9001, ISO 14001 and ISO 45001, or equivalent, for example, all timber procurement is through FSC accredited suppliers. Our Health and Safety team assists and develops suppliers' standards to help them improve their own safety procedures where necessary.

SUSTAINABLE SOURCING

Local sourcing of raw materials isn't always possible and where we do need to transport materials longer distances, we seek to do this in the most sustainable way possible. We utilise the rail network to transport pulverised fuel ash (a key raw material which is a waste product used in manufacturing our Thermalite aircrete blocks) to our factory. Since 2015 we have transported almost half a million of material by rail, removing over 5 million heavy goods vehicle miles from the UK road network whilst also reducing carbon emissions.



SUSTAINABILITY REPORT

PRODUCT

CONTINUED

PLASTIC PACKAGING

The reduction of polythene plastic packaging supplied with our products provides a huge opportunity to support the wider global environmental goal in the reduction of single use plastics, and the associated harmful impact upon natural habitats when these materials are not disposed of appropriately.

Our current packaging provides benefits including ease of product identification, stability during transportation, and ensures our products are clean, dry, and fit for installation upon construction sites.

We already minimise plastic packaging on many of our product ranges, including our aggregate blocks and specific brick ranges, and have also significantly increased the recycled content of essential plastic strapping to ensure stability. However, as a business we have generally experienced overall increases in plastic packaging, consistent with the wider trends in society across other everyday products.

Our targets in meeting this challenge are ambitious, with a commitment to reduce our total volume of plastic packaging by at least 50% by 2025, whilst also ensuring that the safety and quality credentials provided by our current packaging methods are not compromised. At present, at the majority of our brick factories, it is not possible to simply remove the plastic wrapping as the wrapping provides the back of bricks with its integrity when transported. Our Kirton factory in Nottinghamshire already has a packaging solution that allows product to be despatched without plastic wrapping with only 14% of the product despatched from this facility in 2021 being wrapped in plastic. Our efforts to upgrade our packaging equipment at other factories to facilitate despatch of bricks without plastic wrapping are progressing with an alternative machine on trial at our Accrington factory.

Both the new factories at Desford and Wilnecote will be equipped with packaging solutions that will allow bricks to be despatched without plastic wrapping whilst still giving the option to do so where customers request this for safety reasons.

To illustrate in context, this targeted annual saving of 976 tonnes of plastic per annum is the equivalent of 195 million plastic carrier bags.

To ensure consistency in customers' supply chains, we recognise that this is a topic requiring full industry engagement and collaboration, and we are engaging with customers across all our key markets to ensure our solutions meet their needs. This is not without its challenges; generally our customers' senior management are supportive of our initiative, although significant behaviour change is needed in the construction industry as changes will be required in the way our products are stored and handled with safety being of critical importance that cannot be compromised.

2025 TARGET

50%

reduction in plastic packaging



SUSTAINABILITY REPORT

PEOPLE

PEOPLE MATERIALITY THEMES

- 13 Health, safety and wellbeing
- 14 Equality, diversity and inclusion
- 15 Skills development
- 16 Employee experience
- 17 Local community engagement
- 18 Human and labour rights
- 19 Data protection and privacy

The Covid-19 pandemic has highlighted the responsibilities of businesses in supporting their most important asset, their people, and has stressed the critical role people play in creating economic and social value across the world.

The pandemic has placed a toll upon everyone, but the burden has not been even across society, falling hardest on those already facing economic difficulties and the effects of social division. Now more than ever, businesses must demonstrate their support and commitment to those they employ and provide equal opportunities for people of all backgrounds to flourish. This is particularly true for the building materials sector, where there continues to be opportunity not only for employment, but the development of transferable skills.

HEALTH, SAFETY AND WELLBEING

The continuous improvement of our health and safety performance remains our number one priority, working towards our goal of zero harm. In 2021 we launched our Road Map to Zero harm, our strategy to reduce accidents and incidents and turn our focus to our behaviours and culture within the business. This four-year plan is designed to take us on a journey to an 'interdependent' safety culture where all colleagues' mantra is 'I don't want anyone to get hurt'. We recognise that our workforce is our greatest asset, and we aim to provide a working environment that is free of accidents and ill health.

Our focus on maintaining Covid-19 controls remained in place throughout 2021 and as a result, there were no significant outbreaks within any of our facilities. We received 11 regulatory reviews of our Covid-19 control measures with no further recommendations or improvements requested, highlighting the good work completed at those sites.

Following the independent review of the effectiveness of our approach to health and safety completed in 2020, a follow-up review was completed during the year to assess progress against the recommendations. The report concluded that progress had been made upon the direction of strategy and leadership, especially on the launch of our simplified Golden Rules and Road Map to Zero Harm. The other area recognised for improvement was our Building Safety Together sessions that form our colleague engagement process for issues relating to health and safety. It also acknowledged our ongoing work to update, simplify and improve adherence to our corporate health and safety systems, which help ensure that we achieve compliance with all aspects of health and safety legislation.

During the year we achieved certification to the new ISO45001 occupational health and safety management system standard. All our facilities were internally audited to this standard and we have in place a program that ensures all facilities are externally audited every three years. Our health and safety management system was subjected to major review during 2021, with a clear focus on simplification wherever possible, alignment with best practice, and additional training materials for both Management and colleagues as appropriate. We continue to strive to ensure all relevant legislation and codes of practice are complied with at all times.

After a significant reduction in our Lost Time Incident Frequency Rate (LTIFR) in 2020, 2021 saw an increase to 3.98 incidents for every million-man hour worked (2020: 2.52). Whilst disappointing, we are pleased to say none of these incidents resulted in significant long-term harm, but our focus continues to be on improving this KPI and working towards our zero-harm strategy. Of the 30 separate business areas monitored, 21 were Lost Time Incident (LTI) free during 2021, eight have been LTI free for over five years and four for over 10 years.



SUSTAINABILITY REPORT

PEOPLE

CONTINUED



Our lost time incident severity rate (number of days lost per lost time incident) increased from a historic low in 2020 but was still a significant improvement on 2019. We introduced a new leading indicator for 2021, which looked at the number of operational working days without harm occurring, in addition to our other leading and lagging safety performance indicators including safety observations and near misses, all incident rate are monitored alongside regular auditing.

All facilities were tasked with creating a local safety action plan, identifying specific actions to improve safety within that facility or function. These plans were monitored via our Building Safety Together meetings, tracking progress as well as via traditional management meetings. As a result, the total number of accidents recorded across the business reduced from 171 in 2020 to 146 in the current year, which, considering the number of lost operational hours in 2020 as a result of the pandemic, is a significant improvement.

Our 2022 health and safety messaging will focus heavily on our Golden Rules, and we will also launch our formal behavioural health and safety program.

We continued to provide a range of health and safety related training, with key highlights within the year being:

- Over 100 supervisors and managers attending accident investigation training run by our insurance brokers;
- Running our own National Examining Board for Occupational Safety and Health (NEBOSH) Certificate course with six managers gaining the qualification bringing the total number qualified in our business to 60;
- Two Institute of Occupational Safety and Health Managing Safely courses run;

- Over 150 colleagues receiving one minute risk assessment training; and
- Members of our Building Safety Together committees were provided with coaching on the effective operation of the committees, to ensure effective engagement and resolution of safety actions.

Our colleagues continued to be provided with training, specifically the Institute of Occupational Safety and Health (IOSH) working safely course alongside the traditional risk assessment and standard operating procedure training.

MENTAL HEALTH

The business significantly increased the resources and training available to all colleagues on the topic of mental health. 57 colleagues across all our facilities were qualified as mental health first aiders. The training was delivered by Mental Health First Aid England across two days and all participants were volunteers who have a passion for wellbeing.

HEALTH AND SAFETY AWARENESS DAYS

We held our national health and safety day in September with colleagues from across the business coming together to participate in workshops designed to increase awareness on hazard spotting, personal protective equipment, mental health and risk perception along with a keynote speech on the importance of our Golden Rules.

In addition to the national event, our entire distribution team attended local safety days held at factory sites, specifically addressing the risks that are most relevant to our delivery drivers. Topics included our in-house filmed driver safety awareness video, manual handling training, the safe strapping and loading of vehicles and a hazard perception exercise.

EQUALITY, DIVERSITY AND INCLUSION

We remain committed to diversity and inclusion to ensure all levels of the business reflect a diverse workforce. At Board and senior leadership level we monitor evolving requirements, guidance and best practice and whilst Forterra currently sits just outside of the FTSE 250, we have always sought to operate in accordance with the corporate governance standards applicable to companies within the FTSE 250.

The Hampton Alexander Review set a target for 33% of Boards to be female, The Parker Review set a target of having one person of colour on the Board of FTSE 250 companies by 2024. At present our Board comprises seven individuals of which two (29%) are women with one member of the Board being a person of colour. Whilst the female representation on the Board falls slightly short of the target, with a fairly small Board, the percentage would move significantly with each appointment. The Board and Nomination Committee are monitoring the ongoing Financial Conduct Authority (FCA) consultation which would require that at least 40% of the Board are women and that at least one of the senior Board positions (Chair, CEO, SID or CFO) is a woman. Katherine Ines Ker currently holds the position of Senior Independent Director and as such Forterra would be compliant with this requirement. In addition, we are proud of the wider diversity across our organisation with success and progression based on merit as opposed to background, with both our CEO and CFO having attended nonselective state schools.

We recognise that a diverse workforce where all colleagues can fulfil their potential in an inclusive environment, brings unique perspectives and opportunities for the business. Senior leadership play an instrumental part in shaping that environment; to embed a culture of equality, diversity and inclusion. At the 2021 Leadership Conference a guest speaker was invited to present on this topic, increasing understanding and awareness. In 2022 they will continue to partner with us and deliver further training, ensuring all our leaders have the necessary skills to promote equality, diversity and inclusion in the workplace. Core to this remains our Diversity, Inclusion and Respect at Work Policy.

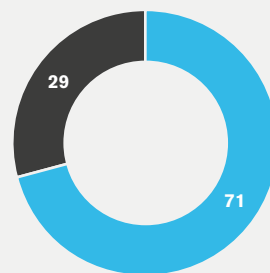
The construction industry in which we are closely connected is renowned for being very male dominated and our sector of the manufacturing industry is no different. Developing internal talent regardless of gender is paramount and in 2021 we successfully promoted a female to the role of factory manager. Diversity remains central to our annual succession planning process.

The charts opposite show our headline gender diversity statistics. Currently, 11% of our total workforce were female, with 24% of management positions (defined as direct reports to Executive Committee members) filled by females.

Gender Pay reporting is contained in our 2021 Annual Report under Remuneration (page 133).

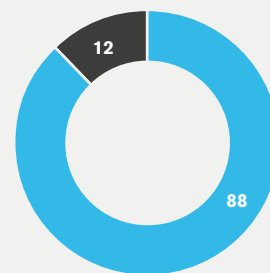
GENDER DIVERSITY

DIRECTORS OF THE COMPANY



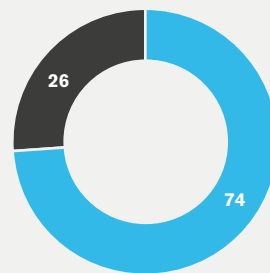
%
■ Male
■ Female

EXECUTIVE COMMITTEE



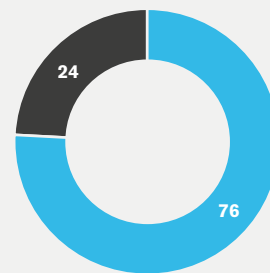
%
■ Male
■ Female

DIRECT REPORTS OF EXECUTIVE COMMITTEE



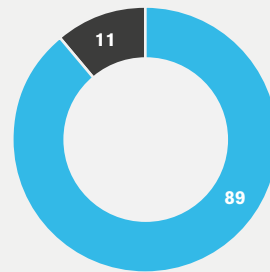
%
■ Male
■ Female

COMBINED EXECUTIVE COMMITTEE AND DIRECT REPORTS



%
■ Male
■ Female

ENTIRE COMPANY



%
■ Male
■ Female

SUSTAINABILITY REPORT

PEOPLE

CONTINUED

HUMAN AND LABOUR RIGHTS

We understand our responsibility to help eliminate slavery and human trafficking, both in our business and wider supply chain. We undertake our responsibilities under the Human Rights and Modern Slavery Acts including clear Company policies and relevant declarations. Our anti-slavery policy specifically covers the role of suppliers in meeting the same standards which we set ourselves.

The Board values and appreciates the contribution made by all employees at every level and is committed to protecting and respecting human rights. Each employee is treated fairly and equally and the Company has measures in place to ensure that the Group is free from discrimination. Throughout the Group there is a zero-tolerance approach to any form of harassment or bullying, forced or involuntary labour, and child labour in any form. The Board is invested in the development of employees and has put in place measures to protect both their physical and mental wellbeing. The Group embeds its commitments to the protection of human rights through its Human Rights Policy.

We are proud to be an accredited member of the Living Wage Foundation, with a firm belief that a hard day's work deserves a fair day's pay. Our commitment to pay the real living wage to all employees is unwavering and being a recognised Living Wage employer, this will help us attract and retain employees.

DATA PROTECTION AND PRIVACY

The public is more aware than ever of the role businesses play in their lives through targeted use of our personal data, and all businesses are expected to act in accordance with a higher standard of transparency.

The protection and privacy of our employees', customers' and suppliers' data is of paramount importance and we fully recognise the increased risk to businesses across the world from cyber attacks using ever sophisticated means. As part of our ongoing commitment to information security, we have successfully obtained ISO 27001 accreditation via independent external audit. A key component of maintaining this international standard is the demonstration of continuous improvement and we will further invest in this area throughout 2021. This respect for others' data extends to using this information only for reasons of which they explicitly agree, as laid out within the General Data Protection Regulations (GDPR).

Unfortunately, this did not prevent us becoming victim of a cyber security issue during 2021, something that unfortunately is happening to more and more companies and which despite being detected very quickly, did lead to our systems being compromised. As soon as this became clear, we contacted the Information Commissioner and wrote to all current and former employees whose personal information could have been compromised during this breach, informing them and offering each of them a credit reference agency subscription for a year in order to monitor for potential identity theft.

SKILLS DEVELOPMENT

Recruitment in 2021 proved to be challenging due to the ongoing skills shortages in the UK labour market, as well as the impact of Covid-19 shifting working patterns. Of particular concern to the business was the shortage of qualified, skilled HGV drivers. To address the skills shortage, we launched our 'Works to Wheels' scheme to attract internal candidates offering factory staff the opportunity to train to be HGV drivers.

Our commitment to the 5% Club (targeting 5% of our workforce being in 'earn and learn positions' by 2025) exceeded expectations during the year. We delivered on our promise to increase our apprenticeship intake by a third, and also recruited our first female mechatronics apprentice. We also had an overwhelming response to our graduate scheme and recruited our largest ever intake of graduates in 2021. In total eight talented graduates joined the business in areas including, operations, commercial and finance. We also increased our internship placements and recruited our first intern into the newly created Research and Development function.

At the end of 2021 we had 65 employees in earn and learn positions representing 3.7% of the workforce. We will continue to increase this figure through expanding our recruitment of graduates, apprentices, internships and providing sponsored learning and development through various academic qualifications such as MBAs. Through our ongoing partnerships with approved apprenticeship training providers (locally and through Make UK, the UK Manufacturers' organisation) we commit to generating development opportunities for both current and future apprentices.

EMPLOYEE EXPERIENCE

Over the past two years the Covid-19 pandemic has demonstrated the importance of staying in touch with our employees and taking care of their mental health and wellbeing. In 2021, we successfully trained 57 mental health first aiders in partnership with Mental Health First Aid England. Our qualified mental health first aiders come from all spectrums of the business. We also provided £1,000 to each of our facilities to promote positive mental wellbeing.

We also launched our new intranet portal and mobile application, Mason, enabling us to stay connected to all 1,800 employees. On these platforms we promoted various topics such as our Employee Assistance Programmes and communicated our five-year strategy 'Building our future together – The next five years'. Roadshows conducted by the CEO, Stephen Harrison supported by members of the Executive Committee took place during the month of September, providing an opportunity for employees to have face-to-face interactions.

In 2021 we ran a number of focus group sessions around the business focused on the topic of culture. This was followed by a culture survey of the wider leadership team. A common theme coming from the findings is our employees want greater empowerment. Follow-up focus groups on how we can achieve greater empowerment are planned in 2022.

The Employee Forum continued to operate during the year. In July 2021, eight newly elected representatives were appointed for a four-year term. Key topics through the year included participating in a culture focus group, and advising Management on charitable giving priorities. Attending the Employee Forum meetings were CEO, Stephen Harrison, HR Director, Shahbaz Idriss, and Martin Sutherland, Non-Executive Director who provided feedback to the Board.

EMPLOYEE SURVEY

Our HearMe employee engagement survey was conducted in December 2021. The key themes arising out of the survey relate to employee recognition and employee development. In 2022 we will provide additional training for all first line leaders on how to conduct qualitative and meaningful conversations with their team members, acknowledging and recognising their contributions and encouraging their development.

Within the survey we also asked additional questions centred around health and safety. The results positively showed that our employees understand our Golden Rules, they feel safe at work and that Forterra lives by the core value of 'Safety First'.

We will continue to conduct regular 'pulse' surveys on specific themes such as health and safety, employee communications, and quality. The collective voice of our employees continues to be crucial in ensuring that we provide the best possible employee experience.



SUSTAINABILITY REPORT

PEOPLE

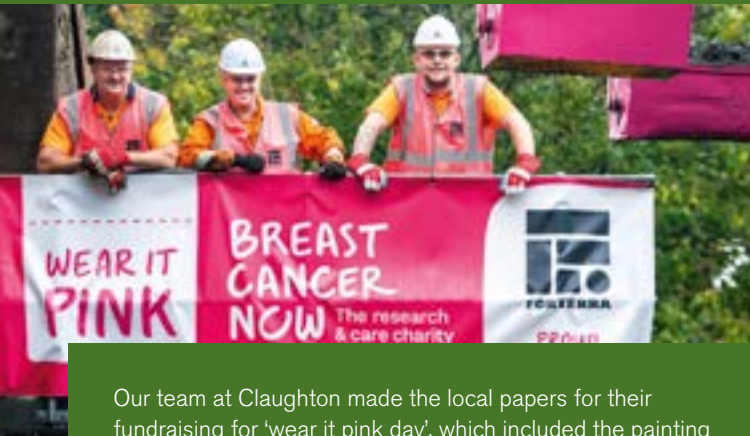
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LOCAL COMMUNITY AND CHARITY ENGAGEMENT

The communities in which we operate are hugely important to us. They are where our past, present and future employees live. While many Forterra employees are active members of their communities, organising and participating in activities and events, we want to make it easy for local charities, clubs and groups to approach us directly for support. To facilitate this,

we have recently established the Forterra Community Fund. In launching the Forterra Community Fund we have been able to formalise and simplify the process by which local charities, clubs and groups approach us, and have launched a dedicated webpage and online application form making it easier for groups to reach out to us.

2021 COMMUNITY AND CHARITY ENGAGEMENT HIGHLIGHTS



Our team at Cloughton made the local papers for their fundraising for 'wear it pink day', which included the painting of the buckets on the famed aerial ropeway to help raise awareness of charity Breast Cancer Now's annual Breast Cancer awareness campaign.



We often received requests from local groups for financial support and have always made it a priority to align ourselves with them wherever we could. In 2021, for example, we contributed to the cleaning of our communities. When the Bison flooring installation team was unable to work safely due to high winds, they decided to spend their time litter picking in the local village. Similarly, the iconic 'Red Bank Corner' in Measham, named in honour of our local factory, has been given a new lease of life thanks to our donation to Measham Parish Council to fund the cleaning and renovation.



We were also delighted to make a donation of both bricks and blocks to a couple from Market Deeping, following a devastating house fire which left them homeless.



We like to promote the importance of health and safety to the community. In our industry, we are very familiar with the effectiveness of hi-vis clothing in keeping safe and so, as part of a campaign supported by road safety charity 'Brake', we donated hi-vis vests along with some hard hats and construction toys to more than 40 children who attend a pre-school close to our Northampton head office, helping them stay safe and to educate them on the importance of road safety.

SUSTAINABILITY REPORT

OUR REPORTING



STREAMLINED ENERGY AND CARBON REPORTING (SECR)

We have used the operational control approach to determine our organisational boundary for emissions purposes and calculated these emissions based on the UK Government's Environmental Reporting Guidelines (2019) and emission factors from the DEFRA 2021 Green House Gas (GHG) Conversion Factors for Company Reporting. Scope 2 emissions have been reported using both the location based method of calculation and, to account for our use of renewable electricity through the purchase of REGOs, the market-based method for calculation. Our underlying energy use figure has been reported in GWh and includes fuel used in mobile plant, on-site generators, and company vehicles. All our facilities are covered by the scope of our ISO 50001 certification which we have held since 2015. This is a third party audited and certified scheme and has continual improvement at its core. We adopt a number of approaches to maximise energy efficiency; from LED lighting and the installation of variable speed drives on motors, through to the recycling of waste process heat from our kilns to power other areas of the plant.

	2019	2020	2021
Scope 1 emissions (tonnes) (market based)	299,679	198,921	280,381
Scope 2 emissions (tonnes) (market based)	19,617	-	-
CO₂e intensity per tonne	123.4	115.3	117.5
Scope 1 emissions (tonnes) (location based)	299,679	198,921	280,381
Scope 2 emissions (tonnes) (location based)	19,617	13,263	15,576
CO ₂ e intensity per tonne	123.4	122.9	124.1
Total energy used GWh	956.3	698.7	952.8


















SUSTAINABILITY REPORT

OUR REPORTING

CONTINUED

GROUP SUSTAINABILITY REPORTING

The following table covers our wider sustainability metrics, which is aligned where possible to the SASB disclosure for construction materials. We will continue to review this data suite on an ongoing basis for future reporting periods.

Pillar	Topic	Metric	2019	2020	2021
Planet	Group CO ₂ e emissions	Tonnes	319,296	198,921	280,381
Planet	Group CO ₂ e emissions	 Kg CO ₂ e / tonne	123	115	118
Planet	Clay products CO ₂ e emissions	Kg CO ₂ e / tonne	256	237	237
Planet	Concrete products CO ₂ e emissions	Kg CO ₂ e / tonne	21	21	20
Planet	Electricity sourced from on-site renewables	 %	–	–	–
Planet	Electricity from renewable sources	 %	–	100	100
Planet	Waste to landfill	 Kg / tonne	0.16	0.03	0.02
Product	New product index (revenue from new products)	% of revenue	0.6	1.2	1.1
Product	Plastic packaging consumed	Tonnes	1,951	1050	1,711
People	Health and safety – Lost time incident frequency rate (LTIFR)	 No. of accidents per million-man hours worked	7.35	2.52	3.98
People	Percentage of employees in 'earn and learn' positions	%	3.20	3.50	3.74
Planet	Carbon emissions (Scope 1 and 2)	 Tonnes	319,296	198,921	280,381
Planet	Carbon emissions (Scope 1)	 Tonnes	299,679	198,921	280,381
Planet	Ultra-low emission vehicles (cars)	% of fleet	n/a	17	31
Planet	Mains water (absolute)	 m ³	287,101	265,508	309,216
Planet	Mains water (litres / tonne)	 Litres / tonne	111	154	130
Planet	Air quality – SO ₂ emissions	Tonnes	5,783	3,273	3,720
Planet	Waste generated	 Tonnes	107,609	77,897	100,611
Planet	Waste recycled	 %	99.10	99.20	99.96
Planet	Energy consumption (absolute)	 MWh	956,266	698,655	952,788
Planet	Energy consumption (kWh / tonne)	 kWh / tonne	369	405	399
Planet	Percentage from grid electricity	 %	100	100	100
Planet	Hazardous waste generated	 Tonnes	88	65	186
Product	Percentage of suppliers covered by internal compliance system	%	85	85+	85+
Product	Output clay products	 Tonnes	1,129,173	751,188	1,071,303
Product	Output concrete products	 Tonnes	1,459,242	974,713	1,314,083
People	Apprentices	No.	31	26	48
People	Graduates	No.	7	6	8
People	Charitable contributions	£	41,370	48,040	25,592

SUSTAINABILITY REPORT

CLIMATE RELATED RISKS AND GOVERNANCE

CLIMATE RELATED FINANCIAL DISCLOSURES

The Task Force on Climate Related Financial Disclosures (TCFD) has developed a suite of consistent climate related financial disclosures that are useful to investors, lenders and other stakeholders in understanding material climate related risks facing businesses. TCFD compliance is now mandatory for UK premium listed companies including Forterra. Whilst we early-adopted a number of the requirements in the prior year, we are pleased to have made the step to full compliance this year by additionally including scenario analysis highlighting how different increases in global temperatures could impact on our business.

The Task Force recommends that these climate related financial disclosures are provided in public annual filings and as such we have provided a comprehensive Sustainability Report covering the topics specified by TCFD along with others across the wider environment, social and governance (ESG) field.

The Task Force structured its recommendations around four thematic areas that represent core elements of how organisations like ours operate:

- Governance;
- Strategy;
- Risk management; and
- Metrics and targets.

GOVERNANCE

Governance and oversight responsibility around climate related risks and opportunities ultimately sits with the Board. The Board's Risk and Sustainability Committee is already responsible for oversight of the Group's sustainability approach and includes the following within its terms of reference:

- (a) defining the level of the Group's ambitions with regard to reducing its environmental impact and addressing climate risk;
- (b) overseeing the development of the Group's sustainability policies, covering both environmental and wider social (people) matters;
- (c) setting challenging environmental targets in order to meet the Group's goals and monitoring progress against these;
- (d) monitor the Group's reporting under TCFD, Sustainable Accounting Standards Board (SASB) and other protocols as appropriate; and
- (e) ensuring that sustainability policy still satisfies its desired outcomes and evaluating Management's performance in implementing policy and achievement against the targets set.

The Risk and Sustainability Committee receives twice yearly progress updates as to the execution of the Group's sustainability strategy reviewing progress against targets. As well as receiving feedback from the Executive Directors, and members of the Executive Committee, the Head of Sustainability regularly attends Committee meetings. The Group's Head of Sustainability reports to the Strategic Projects Director, who holds day-to-day accountability for delivery of our key investments that will allow us to achieve our sustainability targets, namely, reduction of greenhouse gas emissions and reducing our use of plastic packaging. During 2021, the Group also formed a Sustainability steering group, comprising the Chief Executive Officer and Chief Financial Officer as well as a number of senior managers representing other functions of the business including strategy, finance, marketing and investor relations. The steering group meets monthly and is tasked with ensuring that the Company's Sustainability ambitions and targets are on track, and that all climate related risks are reported to the Risk and Sustainability Committee.

The Board's Audit Committee has also considered the sustainability and climate disclosures contained within the 2021 Annual Report as part of its wider consideration as to whether the Annual Report is fair, balanced and understandable, and whether it provides the necessary information for the shareholders to assess the Group's position, performance, business model and strategy.

STRATEGY

We have a clear strategy to grow our business and create shareholder value whilst at the same time reducing our impact on the environment. Our strategy recognises that sustainability is critical in ensuring our longevity as a business. Our long-held strategic priority of Manufacturing Excellence sits hand-in-hand with our goal of reducing our impact on the environment. Increased use of modern methods of manufacturing improve efficiency, reducing both energy use and waste, reducing not only our costs but the impact we have on the environment. We have embedded challenging sustainability targets within our strategy (for more information please see our targets on page 7).

We have described in detail on pages 32 to 34 the key climate related risks that may impact upon our business in the future. We also highlight the climate related opportunities that may present themselves and where, if we are able to adapt quickly enough, we may be able to gain competitive advantage.

SUSTAINABILITY REPORT

CLIMATE RELATED RISKS AND GOVERNANCE

SCENARIO ANALYSIS

METHODOLOGY

We have undertaken a scenario analysis exercise to better understand the possible range of risks and opportunities our business could face under different future climate forecasts. The approach consisted of two stages, the first being a qualitative analysis to identify and assess the likely risks, and the second including quantitative modelling. In line with TCFD recommendations, we examined three scenarios (+1.5°C, +2.0°C, +4.0°C above pre-industrialised levels by 2100) in order to capture the widest range of plausible impacts on our business. Both qualitative and quantitative analyses included a thorough assessment of transition and physical risks, and were modelled around the widely recognised Representative Concentration Pathways (RCPs) and Shared Socio-economic Pathways (SSPs).

During the qualitative phase, granular assumptions about the policy (Government), built environment, technological, and physical changes associated with each warming pathway were examined by a working group comprised of the respective heads of relevant business functions (Strategy, Operations, Finance, Sustainability, Marketing). The risks and opportunities identified in the qualitative phase were then transferred to the quantitative modelling in order to assess the scale of their potential impact.

The quantitative modelling was undertaken with support from a specialist corporate climate modelling consultancy, and interrogated the warming pathways, modelling impacts across four categories: Operations, Supply Chain, Demand, and Physical Effects. The outputs of this quantitative process allow us to better understand the relative impacts and opportunities arising from climate change, and a shift to a lower carbon macroeconomic model.

A NOTE ON WARMING PATHWAYS

We have used the Representative Concentration Pathways (RCPs) as our framework for modelling different emissions pathways and their associated impact on the climate. To explore the associated market and customer trends underpinning our commercial resilience, we have also included a view of different socioeconomic futures (known as the Shared Socioeconomic Pathways, SSPs).

MIDDLE OF THE ROAD ~ 2°C WARMING

The 2°C warming scenario is considered the most likely scenario, and assumes the UK remains on its current path to decarbonisation, broadly meeting its stated policy goals, with a range of adherence to targets by other nations. In specific terms, this means the UK achieves Net Zero by 2050 and meets its other environmental industrial strategy aims. The scenario assumes some demand-led growth in low carbon masonry products, driven by carbon prices inflating the cost of emissions-heavy products.

Policy: The UK integrates product carbon labelling across sectors in the near term, although these labels do not become mandatory until the medium term. The UK phases out coal usage completely by the mid 2020s and it establishes its first net zero industrial cluster by 2040. Building regulations stipulate that public buildings and infrastructure must meet both embodied and whole life carbon targets.

Built environment: Building designs become more energy efficient, helping to drive down emissions and heating costs. Demand for high thermal mass products such as bricks and blocks continues to grow accordingly. Renovation and retrofitting increase in importance as growth drivers in the medium term, especially as a response to green building regulations and rising electricity prices. As buildings become more thermally efficient, the component of embodied emissions from materials in the whole-life carbon footprint of buildings increases. This helps to drive steady demand for low carbon products and sustainable alternatives, with potential pricing premiums for the lowest emissions products.

Technology: The carbon intensity of the electricity grid is assumed to hit current targets, and is modelled on a linear basis to 2050. Within the building products sector, landfilled pulverised fuel ash (PFA) is being utilised as coal plants begin to shut down and in the long term, the UK's Government support package directs funds towards carbon capture, utilisation and storage (CCUS) technology, CCUS-enabled 'blue' hydrogen, and electrolytic 'green' hydrogen. Carbon-cured concrete and lighter bricks become increasingly common.

Physical: Physical impacts of climate change appear gradually over the period, though effects on the UK are relatively minor to 2050. These effects include having eight days per month above 25°C in summer months. Damage to UK non-residential property is expected to increase by 26% and flooding damage to facilities in UK coastal regions is expected to increase by 48%.

Factors	SSP1 – Steady path to sustainability	SSP2 – Middle of the road	SSP5 – Fossil-fuelled global growth
RCP	2.6	3.4	8.5
SSP	1	2	5
Temperature rise	1.5°C	2-2.4°C	4°C
Likelihood	Low	High	Medium
Societal response	Proactive, Orderly	Proactive, Disorderly	Reactive
Carbon price	2030: £150/tCO ₂ e 2050: £400/tCO ₂ e	2030: £100/tCO ₂ e 2050: £300/tCO ₂ e	2030: £70/tCO ₂ e 2050: £80/tCO ₂ e
Share of free UK ETS allowances	2030: 15%, 2050: 0%	2030: 20%, 2050: 0%	2030: 35%, 2050: 10%
Grid intensity / Energy mix	Directed away from fossil fuels, towards efficiency and renewables	Some investment in renewables but continued reliance on fossil fuels	Directed towards fossil fuels; alternative sources not actively pursued

STEADY PATH TO SUSTAINABILITY ~ 1.5°C WARMING

The 1.5°C pathway assumes significant proactive public and policy support for climate action, and a broadly unified global response. It assumes a wide range of factors including stronger regulatory interventions; enabling and disrupting technologies emerging sooner; and demand-led effects being more material. Rather than a predictive exercise in modelling, the scenario allows us to examine the various impacts of a faster shift towards addressing climate change.

FOSSIL-FUELLED GLOBAL GROWTH ~ 4°C WARMING

The 4°C warming scenario assumes that the global growth continues to be driven by fossil fuels, with limited changes to current economic models. Regulatory interventions are delayed or absent, with a broad range of achievement of national decarbonisation targets. Towards 2050, the effects of climate change become readily apparent to electorates, and rapid reactive change is effected late in the period. The pathway has limited impact on Forterra's near and medium-term operations, with significant impact in the long term.

RESILIENCE OF OUR STRATEGY

The scenario analysis we have undertaken has assisted in better understanding the risks and opportunities across a broad range of climate scenarios.

We would likely be subject to transition risks in a 1.5°C and 2°C warming scenario, which, if left unmitigated, would likely lead to potentially higher operational costs and lower revenues. This is especially true if demand for low carbon products rises, a Government penalty is implemented on high-carbon products, competitors are better able to access low carbon sources of energy and carbon costs rise. These financial impacts would be higher in a 1.5°C compared to a 2°C scenario as public and policy support for climate mitigation is assumed to be stronger. In order to avoid these risks, our

IMPLICATIONS FOR PRODUCTS (UNDER 2°C - EXAGGERATED UNDER 1.5°C AND DELAYED UNDER 4°C)

- Bricks and blocks that are manufactured at a lower carbon intensity are likely to gain popularity
- Environmental product declarations (EPDs) and lifecycle assessments are likely to become the norm as product labels become mandatory
- Products that are geared toward refurbishment are likely to gain popularity
- Products with strong thermal characteristics are likely to gain popularity as rising energy costs increase the drive for better insulation
- Production facilities that are close to CCUS cluster zones, or that have hydrogen as part of their decarbonisation plans will likely benefit from lower costs as carbon prices increase

strategy includes reducing the carbon intensity of our products and factories, as demonstrated by our targets (on page 7), and actively pursuing the opportunities outlined within this TCFD statement.

We would assume more physical risks in a 4°C warming scenario, resulting in increased cost from operational disruption. However the majority of our factories are at low risks of extreme weather events such as flooding and so the overall financial impact of these risks is considered manageable.

Our strategy will continue to respond to evolving climate risk projections, with established procedures in place to identify and escalate climate related risk as described on page 4.

SUSTAINABILITY REPORT

CLIMATE RELATED RISKS AND GOVERNANCE

CONTINUED

RISK MANAGEMENT

Our wider risk management protocols are explained in detail within the risk section of the 2021 Annual Report and can be found in the Risk Management section starting on page 77.

Climate related risks are captured within our existing risk management process. We have amended our risk scanning horizon to allow the capture of longer-term climate related risks which may not have an immediately measurable financial impact. In identifying climate related risks, in accordance with the recommendations of TCFD, we have identified both the transitional risks associated with adapting our business to a lower carbon economy, along with both the longer-term acute risks associated with increasing severe weather events and the physical risks of long-term climate change such as sea level rise. As part of the wider scenario analysis work undertaken in 2021, we have further considered the time horizon of each risk under the scenarios considered, as well as including a number of opportunities not previously disclosed.

KEY

Short: 2021-2024

R Risk

Mid: 2025-2034

O Opportunity

Long: 2035-2050

Risk	Potential impact	Possible mitigation / action	Scenarios			
			1.5°C	2°C	4°C	
TRANSITIONAL RISK						
POLICY AND LEGAL						
We recognise a number of policy and legal risks that may stem from changes to existing requirements or additional requirements being imposed on our business. Each of the policy and legal risks could lead to an increase in our operating costs but can also be mitigated by continuing to operate above levels demanded by our regulators and continuing to pre-empt potential changes and seek to make reductions in our emissions.						
R	Enhanced or changing reporting obligations	Increased costs due to third parties who verify our emissions and compliance	Continue to operate above the levels demanded by regulators and ensure third party verification	Short	Mid	Long
R	New or changing legislation that may impact our existing products; potential for mandatory embodied carbon limits	Loss of market share if we fail to keep pace with changes, changes in architectural trends and difficulty in selling higher carbon products to customers with regulatory constraints; early closure of existing plants due to changes in legislation	Continue to pre-empt potential changes and make reductions in our emissions. Invest in improving carbon efficiency of production, enter partnerships for carbon capture and storage, and use of renewable energy. Communicate actions clearly to stakeholders. Undertake lifecycle assessments to provide evidence of longevity and reusability reducing embodied carbon over time	Short	Mid	Long
R	Exposure to litigation in relation to our past activities	Financial and reputation damage to the business	Continue to operate above the levels demanded by regulators	Long	Long	Long
R	Increased prices of carbon credits or reductions in the amount of 'free' allowances	Rising operational costs; reduced competitiveness against lower carbon products	Invest in improving carbon efficiency of production, partnerships for carbon capture and storage, and use of renewable energy	Short	Mid	Long
R	Limitations on availability of suitable fuels	Inability to source sufficient lower emission fuels to continue our manufacturing processes	Seeking to reduce our reliance on fossil fuels by procuring green electricity and also reducing our gas usage by improving efficiency and utilising hydrogen	N/A	Short	Mid
R	Limitations on availability of suitable raw materials	Increasing costs of materials such as PFA; increasing cost of alternative raw materials where demand increases	Establish alternative PFA supply chains; source PFA alternatives and innovate product recipes	Short	Short	Short

Risk	Potential impact	Possible mitigation / action	Scenarios			
			1.5°C	2°C	4°C	
TRANSITIONAL RISK (CONTINUED)						
MARKET						
As society continues to recognise the importance of sustainability and the risks that climate change presents, there is an expectation of a trend towards greener processes and products. The risk of failing to make changes at the expected rate can be mitigated by effectively making a case for the sustainability credentials of our existing products, whilst at the same time investing to reduce the environmental footprint of our products and supply chains, and adding further greener products to our range through innovation.						
R	Customers substitute our products with greener alternatives, should they exist	Reduced demand for our existing product range and a consequential closure of existing facilities	Focus on effective emissions reduction taking advantage of new market opportunities driven by demand for lower carbon products	Mid	Mid	Long
R	We are ineffective when investing in new technology; either in terms of achieving the desired outputs or overspending in the process	Excessive capital expenditure may be required where our investment is not right first time	Ensuring that our efforts to mitigate climate related risks are well resourced; especially in respect of providing the highest level of management support	Short	Mid	Long
R O	Broader technology innovation such as carbon capture, utilisation and storage (CCUS) and Hydrogen usage do not progress swiftly enough	Forterra unable to reach long-term emission reduction targets; loss of carbon-competitiveness to other building products	Maintain and extend approach to piloting transformational technologies in the manufacture of building products	N/A	Mid	Mid
R	Industrial cluster zones (net-zero industrial hubs whereby all industries in a region collectively reduce their carbon)	Forterra sites excluded from cluster zones; rising costs; reduced competitiveness	Source clay resources near clusters or other low carbon heat sources; invest in decarbonising current products or alternative products	Short	Long	Long
O	Thermal mass (the ability of a material to absorb, store and release heat) recognition	Architectural trends; increased demand for products; increased popularity with customers needing to reduce operational carbon emissions of buildings	Ensure thermal properties of masonry products are well communicated; clearly demonstrate energy cost savings for standard homes	Short	Mid	Mid
O	CCUS research	Potential for increased carbon-competitiveness; increased access to capital; Increased ability to react to demand for low carbon product	Establish partnerships and pilot schemes	Mid	Mid	Long
TECHNOLOGY						
As greener technologies emerge or existing technologies evolve we want to ensure we are in a position where we can use the latest technologies to reduce climate related risks and make these changes effectively, something we can mitigate by continuing to engage with technology innovators and how they can help our business in its sustainability goals.						
R	Changing customer behaviour and additional scrutiny of higher carbon products	Reduced demand for some or all of our products if new products cause the desirability of masonry homes to decrease	Continue selling products until demand decreases; invest in sustainable technologies, energy or alternative product ranges	Short	Mid	Long
R	Changes in our supply chain	Operational costs increase as a result of scarce raw materials, increased energy costs or increased taxation; increasing the attractiveness of alternatives	Effectively engage with all stakeholders, specifically within the supply chain, continuing to invest where new and innovative raw material solutions can be utilised	Mid	Mid	Mid
R	Uncertainty in our markets and fears of economic uncertainty damaging the housing market	Changes in our revenue mix could impact profitability; our reserves of raw materials, our plant and machinery or facilities could become less valuable	Effectively making a case for the sustainability credentials of our existing products whilst ensuring we innovate in line with changing market trends and expectations	Mid	Mid	Long
R O	Prioritisation of energy efficiency over additional space in home improvement market	Core product offering becomes more difficult to sell; new products focusing on thermal properties are required to meet demand	Focus on thermal property of products should energy efficiency gain more popularity/regulatory emphasis	Mid	Long	Long
R O	Increased ESG weighting from investors	Potentially reduced access to capital	Ensure Forterra's ESG disclosures and decarbonisation plan are well communicated to investors	Short	Mid	Long
R O	Emergence of eco-brick market	Increased demand for eco products; pricing premiums for low carbon products; new revenue streams from new markets	Invest in improving carbon efficiency of production, partnerships for carbon capture and carbon curing, and use of renewable energy	Mid	N/A	N/A

SUSTAINABILITY REPORT

CLIMATE RELATED RISKS AND GOVERNANCE

CONTINUED

Risk	Potential impact	Possible mitigation / action	Scenarios			
			1.5°C	2°C	4°C	
TRANSITIONAL RISK (CONTINUED)						
REPUTATION						
We have developed the Forterra brand in recent years and possess a collection of product specific brands that are long established and well regarded. There is an opportunity to further strengthen these brands with a sustainability focus however if we fail to do so the reputational cost could be significant. This can be achieved through effective action on climate related matters and the increased education of the sustainability attributes of our products.						
R	Shifts in consumer preferences	Reduced demand for our products due to change in customer perception. Architectural trend changes; greater difficulty in selling our products compared to alternatives	Focus on reducing carbon intensity of clay bricks, whilst also building out a more sustainable alternative product range	Mid	Mid	Long
R	Negative perceptions of our business / sector; restrictions in access to debt and capital	Have greater difficulty in obtaining planning permissions for new capacity and struggle to attract employees. Increasing cost of equity and debt as investors and lenders switch to perceived greener investments	Fully engaging with our stakeholders and increasing the education around the sustainability credentials of our products. with a >100-year life if homes built from brick, our products are inherently sustainable	Mid	Mid	Long
R Q	Competitors engage in 'greenwash' communication (communication that misleads people as to the green credentials of certain products)	Difficulty in selling products to environmentally conscious customers; reduced access to capital with ESG-driven investors	Communicate widely on industry challenges; establish industry standards for 'eco-bricks'; provide detailed decarbonisation plans to ensure credibility	N/A	Mid	Long
R Q	Alternative building materials	Potential for new revenue streams; Increased access to capital; Increased ability to react to demand for low carbon products	Invest in low carbon material alternatives and increase communications spend to promote use of innovative sustainable materials	Mid	N/A	N/A
Q	Population increase through migration	Increased demand for products	Opportunity to build more homes, ensuring materials are able to meet increasingly stringent sustainability focused building regulations	N/A	Long	Long
PHYSICAL RISK						
ACUTE						
We have seen a number of weather-related events (such as flooding) in recent years and recognise that these risks have the potential to increase in likelihood and have a greater impact in the coming years. We recognise that we cannot stop these events from occurring alone. However, we can ensure that we are better prepared for them or can mitigate their impact through suitable planning.						
R	Site flood risk	Increased insurance premiums; both short term and prolonged inability to operate facilities potentially causing damage that could be expensive to repair and leading to lost sales	Suitable planning, capital expenditure and preventative maintenance	N/A	N/A	Long
R	Increased operating temperatures	Increased operational costs for heating and cooling and/or lack of mains water	Suitable planning, capital expenditure and preventative maintenance	N/A	N/A	Long
CHRONIC						
We also recognise that the impact of rising sea levels over time triggered by increasing temperatures, may lead to some low-lying areas of the country becoming unsuitable for housing.						
R Q	Variability in weather patterns	Loss of working days; Loss of productive days; stock shortages	Increase production during winter; new supplier partnerships in lower risk zones	N/A	N/A	Long
R Q	Rising sea levels	Low-lying areas of the country becoming unsuitable for housing and driving demand for use of our product elsewhere	Ensure ability to supply at level the market demands whilst also continuing to manufacture the products we do that sacrificially address flooding issues	N/A	N/A	Long



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