
Let's Build Beyond
Wienerberger
Let's build for the future we want.
Our innovation insights


The Loom
Bóthar Dúnta
ROAD CLOSED

Foreword from *Keith Barker*

Beyond tomorrow

Wienerberger's drive to innovate is inspired by the global challenges of our time and our responsibility as a leading provider of building solutions. In an industry confronted with the impacts of climate change and the shortage of skilled labour, we simply cannot stand still. We are innovating for the future to equip our customers with the quality products and services they need to tackle these issues.

The Wienerberger team is passionate about innovation and our daily work pushes us forward toward achieving our ambitious sustainability targets and enabling our customers to do the same. I am proud to say that we have a huge amount of expertise and creativity within our business and are reaching out to collaborate with others who share our pioneering vision.

We are making innovation a priority both culturally and commercially. Our innovation efforts aim to decarbonise our manufacturing processes, implement circular initiatives that facilitate building deconstruction and material reuse, and develop product and service innovations that help our customers minimise the whole-life carbon impact of buildings, as well as adapt to climatic changes.

As a business, we want to celebrate our achievements and share the progress we have made so far, and we invite you to collaborate with us. It is an exciting time for Wienerberger and the industry, as the innovations we are making today have the potential to change the future of our built environment.

Keith Barker
Chief Operating Officer,
Wienerberger UK & Ireland

What's inside?

Our Innovation priorities

We see innovation as essential in enabling the creation of smarter and better-performing buildings that reduce our impact on the environment and improve people's quality of life.

With a legacy of over 200 years, Wienerberger's extensive product offering now ranges from roof, wall, landscaping, and façade solutions to innovative pipe and water management systems. We're building beyond what we know to be possible today, and rethinking how we create value for our customers, our people, and our communities.

Driven by the need to respond to the global crises of climate change, biodiversity loss, and resource scarcity, we launched our sustainability strategy "Let's Build Beyond" in 2021. Outlining our ambitions to 2030, it has three guiding principles: Safeguarding our planet, Innovating for the future we want, and Moving forward together.

In this follow-up, "Let's build for the future we want: Our Innovation Insights", we are taking a closer look at the innovations we have implemented, offering insights into activities coming soon, and the results we have achieved across three priority areas: Manufacturing processes, Circular initiatives and our Products and services.

Investing in Innovation

Since 2019 we have:

Increased our workforce in Innovation roles by

44%

Increased our Capex dedicated to Innovation projects by

692%

Increased our Opex dedicated to Innovation activities by

66%

Innovating for the future we want

We have chosen three priority areas where we think investment in innovation can make the biggest impact in meeting our sustainability targets and wider company goals. The areas where we are focussing our innovation efforts are Manufacturing Processes, Circular Initiatives, and our Product and Services.

Manufacturing processes

Developing and deploying technology and processes that support our sustainability ambitions.

Why is this important?

The embodied carbon of our products is heavily influenced by our manufacturing process. Technology and process innovations will be game-changing.

Our ambition for 2030

Our manufacturing processes will assist Wienerberger's transition to a net-zero emission, nature-positive company.

Making this happen

- We have established enduring partnerships with suppliers and universities to develop, test and deploy new technologies and processes.
- We continue to pursue funding opportunities that enable us to trial novel technologies.
- We are switching to renewable energy sources.
- We are reducing the amount of raw materials used within our manufacturing processes, for example, through dematerialisation projects and launching Eco-brick.
- We will use new additives in production to enhance process efficiency.

Circular initiatives

Going beyond recycling to create products, services and business operations that neither deplete the planet's resources nor create waste.

Why is this important?

Designing products and services with a whole lifecycle approach, facilitating building deconstruction and material reuse, will reduce our impact on the environment.

Our ambition for 2030

We will have integrated circular economy principles into our business model by designing out waste across the whole product lifecycle.

Making this happen

- We will seek partnerships with organisations who challenge the status quo of a linear economy.
- To support the development of a circular economy for our current product range, we will publish customer deconstruction and reuse guidance for each product category.
- We are reintroducing secondary raw materials from internal and external sources into the production processes after thorough quality checks.
- We are reducing our consumption of virgin raw materials through our business operations.
- We will design new products to be reusable or recyclable at the end of their service life.

Product & service innovations

Reduce the environmental impact of the built environment with products and services that minimise whole lifecycle emissions from buildings and help inhabitants adapt to the impacts of climate change.

Why is this important?

Our products already facilitate energy and water efficiency in buildings. In future the construction sector will require more products and services that improve people's quality of life.

Our ambition for 2030

Our products and services will improve people's quality of life and promote efficient use of energy and water in the built environment.

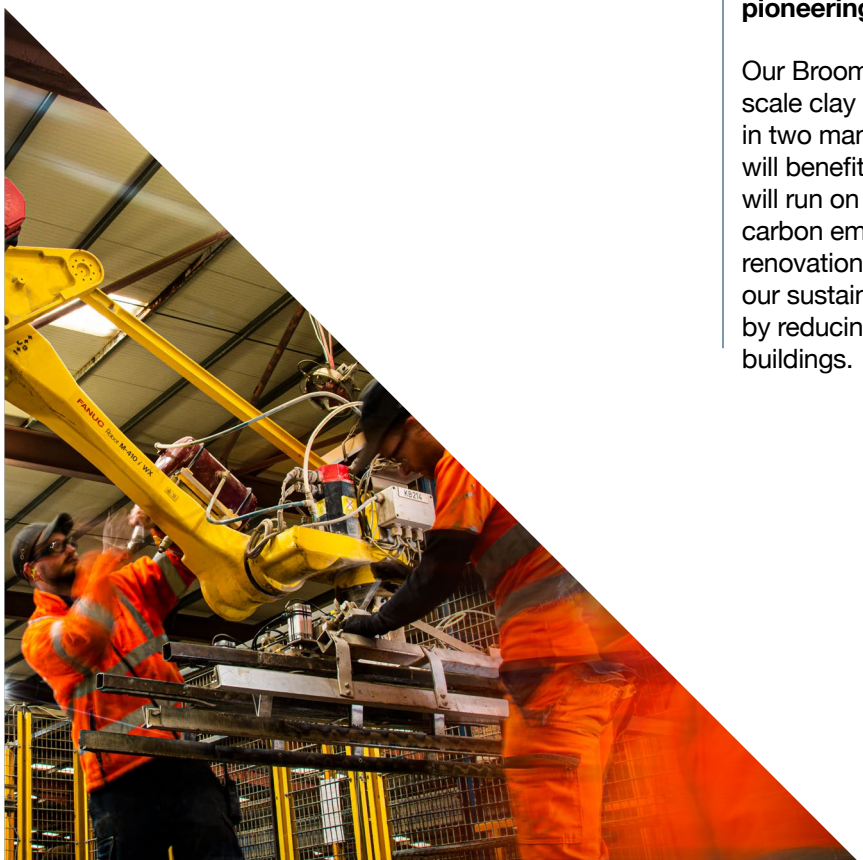
Making this happen

- We have responded to our customers' needs with new products and services, such as our Architectural and Design services.
- We founded "Project Tomorrow", our low-carbon product and service innovation workstream, to ensure we meet our customers' and home buyers' future needs.
- We have introduced a range of products and services to make it easier for our customers to meet key legislation such as Part L of the Building Regulations.
- We are looking ahead to the future needs of the industry and how more challenging legislation and skills shortages could create a shift to new technologies. To do this we have invested in our people, new technology, and processes.

Manufacturing processes

As a proud UK manufacturer, the first place we need to look when considering how we can innovate to create a better future is how we make our products.

Wienerberger has committed to reducing specific carbon emissions by 40% by 2030 compared to 2020, and the decarbonisation of manufacturing processes is a huge step towards meeting this goal. Our decarbonisation efforts will directly benefit our customers, as the embodied carbon ⓘ of the products we manufacture is reduced, therefore the buildings we help build will have a lower carbon impact.



Case studies

Electrification of Kilns

We want to lead the way when it comes to innovating how clay products are made, and our Broomfleet site in Yorkshire is an excellent example of how we are pioneering decarbonisation in our field.

Our Broomfleet factory will become Europe's first large-scale clay roof-tile plant to eliminate the use of natural gas in two manufacturing lines. Starting in 2024, Broomfleet will benefit from the installation of two electric kilns, which will run on 100% renewable electricity. Expected to reduce carbon emissions from these lines by around 75%, this renovation represents a significant step towards meeting our sustainability targets and will also benefit our customers by reducing the embodied carbon of their pitched roof buildings.

Waste Heat Recovery Initiatives

We are implementing innovations to recover waste heat at our Broomfleet roof tile factory and our Warnham brick factory.

At Broomfleet, we partnered with Heatcatcher Ltd, experts in implementing systems to recover waste heat and power, to install a heat exchanger on a kiln exhaust at Broomfleet. The new system recovers waste heat from the tunnel kiln exhaust gas and reuses it to preheat the combustion air and drying chamber air. Since August 2022, the heat exchanger system is saving approximately 525 MWh of energy per month. This equates to a reduction of over 700 tonnes of carbon dioxide emissions per year, equivalent to 721 return flights from London Heathrow to JFK airport.

Meanwhile, at Warnham brickworks, we have invested £4.5m in an electric heat pump. This pump will recover and recirculate low-grade high-humidity heat within the drying chambers. By replacing the drying chamber gas burners with a heat pump using electricity from renewable sources, this project is expected to reduce carbon emissions from Warnham brickworks by 3,710 tonnes per year, the equivalent saving of over 1.5 million litres of gasoline.

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Dematerialisation Projects

Wienerberger is conducting research on material mixes and the dematerialisation of our product range. Our goal is to reduce the embodied carbon of our products, whilst maintaining their quality and functionality.

For example, we're researching ways to make our products more resource-efficient, such as increasing the indentations, 'voids', in our soft mud brick range. Through dematerialisation, we are helping to conserve natural resources, reduce carbon emissions during the transportation process (as more bricks could be transported per HGV load), and once on site, the lighter bricks also have the health and safety benefit of being easier for bricklayers to handle. All this is achieved without compromising the technical properties and performance of the bricks.

We are also trialling alternative material mixes, altering the proportions of clay to sand in our bricks. This change could reduce carbon emissions from our manufacturing process. For instance, changes made at our Todhills factory will save 112 tonnes of carbon emissions per year, equivalent to the average annual energy consumption of 95 households.

Product & service innovations

For the construction industry to adapt to legislation changes, net-zero targets, and skills shortages, the systems we use and the way we build must evolve. This is why we are developing a portfolio of sustainable and smart products and complementary services that will best equip our customers to tackle the challenges ahead.

We continue to explore how we can successfully bring cutting-edge building solutions to the market and share the benefits of new construction methods with our customers. In doing so, we have nurtured a culture of innovation within Wienerberger, one that reimagines partnerships, processes, and technology. We have embraced modern digital technology to drive our product and service innovations forward.

Case studies

Sandtoft in-roof solar

Setting a new standard for modern roofing, our in-roof solar offering is an integral part of our solution for creating homes that achieve Part L Building Regulations, with tangible energy bill savings for the homeowner.

Wienerberger's innovative in-roof solar solution is designed to save valuable time and labour on new build projects where the skills shortage within the roofing trade is an obstacle to overcome. Unlike other conventional on-roof and in-roof products on the market, our in-roof solar panels are designed to be installed directly onto the roof battens, where the panel-to-panel connection takes less than a minute thanks to a smart interlocking and lightweight system. Manufactured to the ethical standard SA8000, this solution keeps things simple with a minimal number of parts, so no specialist equipment or individual panel flashing is required. We also offer free full-installation training for in-roof solar installers to ensure that we support our roofing contractors by developing their knowledge and application of solar installations.

Eco-brick offers an estimated

31%

reduction in upfront embodied carbon emissions in comparison to standard bricks

Eco-brick

Already paving their way as a lower environmental impact brick alternative in Europe, our Eco-bricks are the first of their kind in the UK, offering a new solution for housebuilders and specifiers working towards the uplifted Part L Building Regulations. Our evolutionary Eco-brick system offers all the performance and aesthetics of a standard format brick system, whilst being 37.5mm narrower, allowing for additional insulation and lower U values.

Eco-bricks offer some impressive sustainability benefits in comparison to standard bricks, such as an estimated 31% reduction in upfront embodied carbon emissions, a 36% reduction in mortar and on-site water requirements, a 37% reduction in HGV journeys, and easier handling thanks to each brick being 36% lighter.

Roof and Wall Specification Services

In our role as a leading manufacturer, often the support and advice we provide to our customers is as valuable as the quality of our products. Our desire to go beyond what is expected of a manufacturer means that we need to be innovative in our approach to the services we provide to our customers that provide added value to their projects.

Our HomeSpec service offers a full external building envelope solution from specification to construction for housebuilders. By taking a holistic view of the building project process, our HomeSpec service considers every item required for the internal and external walls, the roof, and any accessories necessary for the project. All of this is available from one source, includes on-site support, and includes a 15-year warranty. The close collaboration and warranty provides housebuilders with peace of mind, confidence in product performance, and support in achieving legislative requirements.

Through our Architectural and Design services, our qualified and experienced experts offer the design and master planning of residential projects via one interface. Through this service, our clients are involved throughout the project from start to finish and are provided with information-rich 3D models. With greater pressure on project costs and sustainability measures in construction, our Architectural and Design services provide a collaborative process to help our customers cut costs, minimise project time, and reduce waste.

Circular initiatives

Improving the reusability and recyclability of our solutions is incredibly important in confronting the challenge of designing, constructing, and maintaining healthy buildings that accommodate the changing needs of its occupants over time, whilst using as few natural resources as possible.

By innovating with circularity in mind, we have made a commitment that from 2023, 100% of our new products will be designed to be reusable or recyclable. This supports our customers in their decarbonisation efforts and reduces their waste expenditure by giving them the guidance to plan for material recovery at their building's end-of-life stage.

Case studies

Material Recycling

Photographer: Uwe Strasser

Across our UK factory sites, we minimise wastage through tight production controls. Where products do not meet our high-quality standards, we adopt several methods to reuse them at the factory. By reprocessing production waste, we limit our consumption of natural resources and thereby reduce the overall environmental impact.

Beyond our factories, we are piloting initiatives that involve collecting and recycling end-of-life concrete roof tiles as raw material in our manufacturing process. By segregating, washing, and crushing the tiles, we can ensure that only quality-graded raw material goes back into our factories.

Both these initiatives will help our customers drive down their carbon footprint, reduce waste sent to landfill, and potentially earn credits for a BREEAM or LEED assessment by using materials with recycled content.

Reduction of Plastic Packaging

Plastic packaging 'skirts' at our Denton factory

To reduce our plastic packaging, we collaborated with customers and logistics partners to undertake extensive trials on reduced thickness shrink wrap, reduced quantity packaging, and the removal of plastic wrapping entirely. All our developments had to pass our stability tests for transportation, safe storage, and protecting product quality.

We have successfully adapted our plastic packaging in several ways to deliver on our commitment to reduce single-use plastic packaging. We have phased out the use of coloured ink in our plastic packaging, meaning that the plastic can be recycled as a higher-grade material. This means less is disposed of via landfill or incineration, lessening our customers' waste costs, and ultimately reducing consumption of virgin raw materials. Removable paper labels are now added to provide the product name, details, and handling advice. For our brick products, we have standardised the thickness of the plastic used and have moved away from full wraps to partial hoods at some of our factories.

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Moving Beyond Today

The next generation of spaces where we live, work, and play are fast approaching with the Future Homes and Buildings Standards of 2025. We hope that the innovations we are progressing today will allow us to play our role in creating homes and buildings that are constructed with low carbon materials, with a high standard of thermal and water efficiency, and feature electrical services. Let's work together to achieve this and ensure your projects have a lower environmental impact, are well-built, and innovative.

So, what happens next? We continue to seek innovation opportunities that allow our customers to succeed in a rapidly changing construction industry, as well as meeting our ambitions set out in Let's Build Beyond. We will keep you updated on investments, collaborations with like-minded partners, and our pipeline of pioneering initiatives as they progress.

To find out more or to discuss a potential collaboration, please get in touch using the contact details overleaf.

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Wienerberger UK supports and enables the construction industry to create a better future for the built environment. We do this by providing outstanding, sustainable building solutions, long-lasting partnerships and exceptional, enduring careers.

Together we are future-building.

Let's Build Beyond