

ConstructZero Mace Pledges and Actions



Why is making progress on Net Zero important to your business?

Climate change is the defining challenge of our time. As a generation. As a society. As an industry.

Greenhouse gas emissions are increasing year-on-year. The polar ice caps are melting six times faster than they were in 1990. And the world's tropical forests are shrinking at a staggering rate - the equivalent of 30 football pitches per minute.

Acting now is everyone's responsibility. We all have a part to play - individuals, companies, governments, and particularly the construction industry.

Almost 40% of carbon emissions come from the built environment. We have a duty and responsibility to challenge ourselves in how we build and operate the buildings we live, work and play in.

Over the next 40 years, it is expected that the world will build 230 billion square metres of new construction. We must dramatically transform how we respond to the needs of communities and governments around the world.

As an industry we must prioritise the repurposing of old buildings over the development of new, and where new is the only option, we must commit to designing and delivering net zero carbon buildings from 2030.

In order to achieve this, the London Energy Transformation Initiative believes that by 2025, 100% of new buildings must be designed to be net zero carbon, and the whole construction industry will need to step up to the challenge.

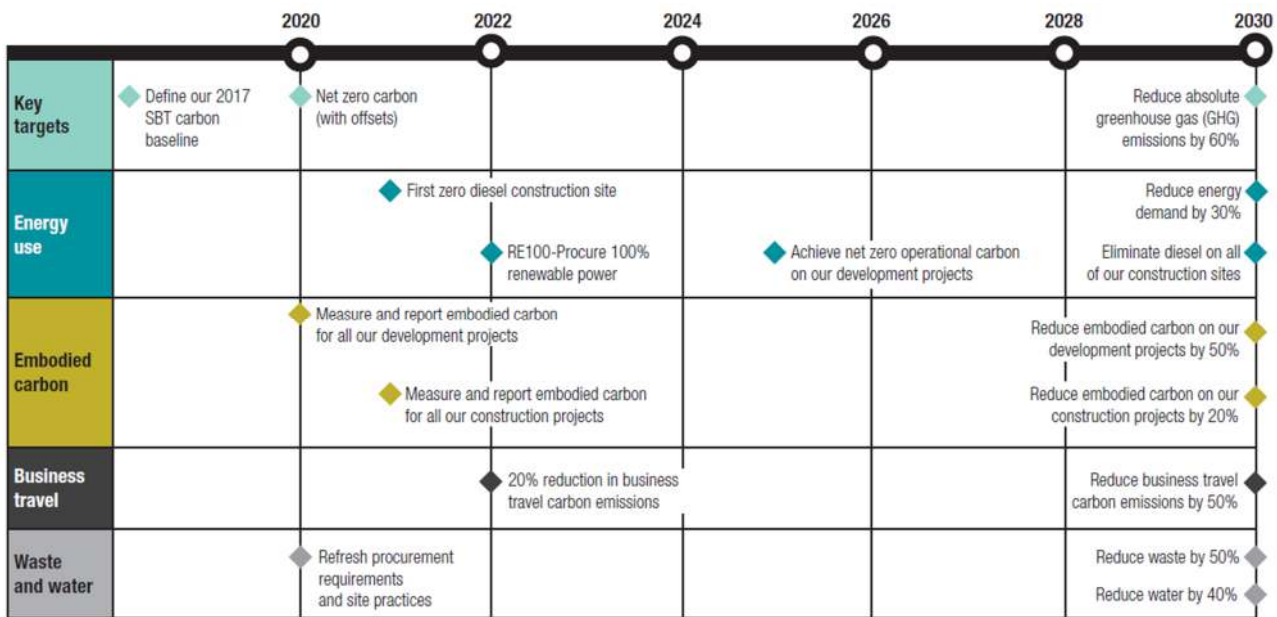
The construction industry can't stop climate change altogether, but it can have a significant impact on turning the tide. Shifting to renewable energy sources, reducing travel, better repurposing existing buildings, adopting low carbon alternatives and actively supporting new technologies - we all have a role to play. The sum of our efforts will be our turning point. In an industry that's too often been part of the carbon problem, we're determined to be part of the solutions. No going back. No holding back.

Which of the nine priorities (detailed below) are most relevant to your business and clients and why?

We recognise that Mace is in a pretty unique position in the sector. Not only are we a contractor delivering over £1.5bn of construction output for our clients every year, we are a consultant advising clients on over £30bn of construction activity each year. So our ability to influence is enormous. For me, the most relevant priorities are how we use that influence to enhance the energy and carbon performance of both new and existing buildings, and how we bring our experience of actually delivering carbon savings to bear. We know how to deliver carbon savings in portfolios of operational buildings and we want to apply that knowledge to the 24,000 schools, 1,250 hospitals, 110 prisons and countless offices and homes across the UK and beyond. Twenty-eight percent of global carbon emissions come from operational buildings, and most of the buildings that are going to be here in 2050 are already standing, so we have to start there. The challenge and the opportunity are massive.

What are you doing to make progress against the relevant priorities in the short and long-term? (Could include targets or milestones)

We published our Steps Without Footprints strategy in January 2020 outlining the activities we would take up to 2030 to reduce our carbon emissions and become a net zero carbon business. We reduced our carbon emissions by 50% in 2020, and at the end of the year off-set our residual emissions to become a net zero carbon business in December 2020. However, our actions don't stop there, and our upcoming activities are shown on the timeline below.

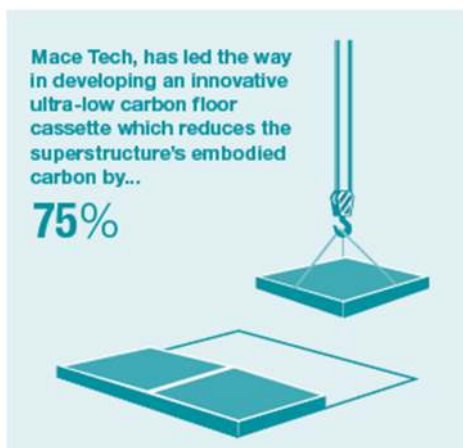


Transport

Zero emission vehicles and onsite plant

We are actively encouraging our workforce to use low carbon forms of transport to get to our offices and sites. Our business travel booking system provides low carbon alternatives for all of our travel, and reports the carbon emissions associated with all of our journeys. Our sub-contractor contracts and site transport and logistics plans strongly encourage the use of low carbon forms of transport, and the use of low emission vehicles for deliveries to and from our sites.

We require the use of zero emissions construction equipment and delivered our first diesel-free construction project in early 2021. We have signed a partnership with AFC Energy to pilot hydrogen fuel cells on our sites to replace the use of diesel generators, and have piloted over 70 clean technologies across our construction projects, including hybrid and electric excavators, hydrogen lighting towers and electric concrete pumps. We are committed to all of our construction sites being fossil-fuel free by 2030.



Maximising Modern Methods of Construction

Mace has invested heavily in MMC, including the establishment of our Mace Tech division. Mace Tech has developed an ultra-low carbon floor cassette which reduces the superstructure's embodied carbon by 75%. All of our construction projects apply our 'construction to production' strategy to ensure that MMC opportunities are maximised and the benefits are realised.

Championing low carbon modes of transport and zero emission vehicles

Our development business has updated its sustainability standards to increase the provision it makes for electric vehicle charging infrastructure.

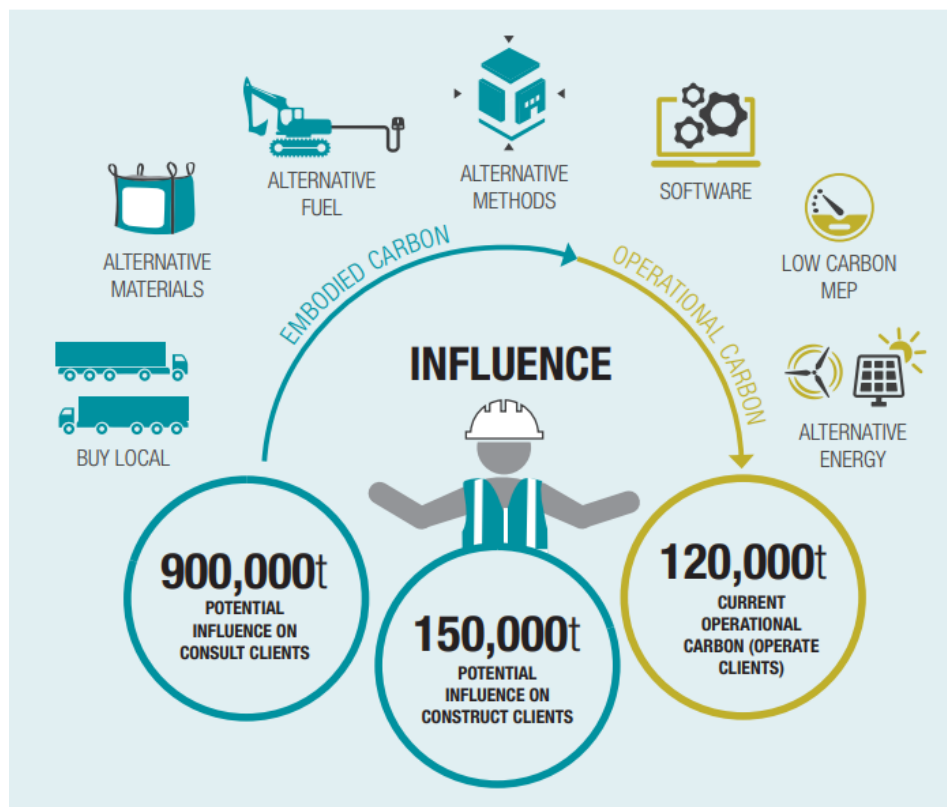
Mace Living Solutions’ modular homes solution incorporates full house-to-car energy sharing infrastructure to promote the adoption of electric vehicles.

Through our consultancy work we have developed scopes and delivered electric vehicle charging points for a major Government department and have enabled future implantation of EVCPs on a number of sites.

Buildings

Deliver retrofitting to improve energy efficiency of the existing housing stock

We have made a commitment to save 1m tonnes of client carbon by 2026 as part of our business strategy. Our teams are working with clients across our four engines (Develop, Consult, Construct and Operate) to identify and implement carbon savings across their operations. This will include our clients in the housing sector such as a number of large housing associations, numerous local authorities and Homes England.



Increase industry capability to deliver low carbon heat solutions

We are actively engaging with our construction supply chain to build capacity and pipeline in heat pump delivery. We have committed all of our development sites to be fully electrically heated using air source heat pumps from now on. Our consultancy teams are supporting the construction of district heating networks in major UK cities and are helping to develop the hydrogen economy in the North West of England in partnership with Cadent, Inovin and regional authorities.

Enhancing the energy performance of new and existing buildings

We are committed to driving energy efficiency across all engines of our business. Our develop business has pledged to achieve the London Energy Transformation Initiative 2030 targets for both operational and embodied carbon emissions from 2026.

Our Construct engine has committed to identify operational and embodied carbon efficiency enhancements to our clients' projects during tendering and offer a lower carbon alternative. We will do this with all of our major bids. We are actively trialling low carbon alternatives on our live sites and are incorporating successes into our future projects.

We are delivering energy efficiency enhancements in both operational and new buildings through our Consult engine. For Northern Trust we designed and implemented energy efficiency programmes that have reduced our clients' carbon footprint by nearly 60% since 2015, saving over 64,000 tonnes of carbon. With a UK ministerial department, we have led the design of near zero carbon buildings that will emit close to 90% less CO₂ over their lifespan than those currently in construction. We are committed to repeating these savings with other clients and making at least 1m tonnes of savings by 2026.

Our Operate engine has committed to drive down the carbon footprints of the buildings we manage for our clients, with an aim to save an additional 120,000 tonnes of client carbon by 2026. Since 2016 we have reduced the carbon footprint of a major international bank by 31% by improving the energy efficiency of the buildings.



Construction Activity

Implementing carbon measurement

We have been measuring and reporting our operational energy and carbon footprint since 2012. The scope of what we measure and include in our carbon footprint has been expanded to include the embodied carbon from our development sites, business travel, carbon associated with waste production and water consumption and, recently, that associated with home working. We use our data to test the viability of carbon reduction options and share our experience with our clients, peers and supply chain. From 2021 we will have our carbon performance independently audited.

Become world leaders in designing out operational and embodied carbon

We are committed to designing out carbon in our own developments and in those that we deliver as a consultant or contractor. We have engaged specialist engineering practices to work with us to deliver operational and embodied carbon savings. We are recruiting more carbon specialists within our business and are working closely with our supply chain to boost their capacity and capability, but also to share knowledge and experience. In our consultancy roles we are linking carbon performance both during construction and operation to project KPIs and incentives and are promoting collaborative working practices to ensure that the full project team is aligned to deliver carbon reduction.

Development of innovative low carbon materials

We are already testing low carbon alternative materials, in particular concrete. We've successfully used Earth Friendly Concrete and are looking to scale up its use. This, combined with Mace Tech's approach to MMC, will deliver substantial carbon savings in the buildings we construct. We are also a signatory to SteelZero, an industry initiative to produce net zero carbon steel. We have pledged that 50% of the steel we use will be SteelZero by 2026, with 100% by 2040.

How have you helped your supply chain understand what is required against the nine priorities?

We've been engaging with our construction supply chain through the Mace Business School. We recognise that our suppliers are the foundation of our business, and without them we can't achieve our targets. So we set them all a challenge at the start of 2020 to join us on our net zero carbon journey, take action themselves and work with us to develop new approaches to reducing carbon emissions. And they've been fantastic. They've supported the ideas we want to try, have brought their own innovations, and together we're making big strides. We've given advice to a number of our partners on how they can make improvements in everything from simple data capture to how to offset their residual carbon emissions. The level of enthusiasm has been incredible.

What do you think the biggest challenge is and how are you working to overcome it?

I think it is skills and capacity. The level of interest in achieving net zero carbon has gone up exponentially in the last 18 months, and the supply of skills, equipment and people is struggling to keep up. We're investing heavily in training our own teams so they have much better knowledge of how to design, build and operate low carbon solutions. We're working with our clients to understand their net zero strategies so we can plan our pipeline more effectively and work with designers, contractors and suppliers to work through capacity issues and give suppliers the confidence that their products have a market.

In your view what is the one innovation or change that is going to have the biggest impact on carbon or progress in our industry?

Carbon pricing and it being included within project budgets. British Land has a great model where projects pay an internal 'carbon tax', and the proceeds from that tax are used for investment in decarbonising existing buildings. It makes the price of 'do nothing' higher than the price of decarbonising which drives investment and helps to tackle the biggest problem we have which is dealing with carbon emissions from our existing stock of buildings.

What do your peers and wider employees within your company think about the business's approach to Net Zero?

It's almost universally supported. We've run a lot of internal staff comms events over the previous 16 months that are linked to our purpose and priorities, of which pursuing a sustainable world is front and centre. The events we've run on carbon have been some of the best attended, and the enthusiasm of almost all of our colleagues in the business is great. We've seen attitudes shift, and more and more of our people 'get it', and are proud to work for a business that wants to make a difference.

What do you do in your daily life/job that makes a difference?

I'm really lucky that my day job is helping our clients save carbon. I get to spend my day working with clients, designers and contractors to push the boundaries on what we can achieve and bust the myths that delivering net zero is too hard and too expensive. From a personal perspective I'm incredibly proud of the work that we've been doing with clients over the last 12 months. We're designing new buildings that will use 70% less energy and emit nearly 90% less carbon than comparable buildings that are only halfway through construction. It's a remarkable achievement, and it is testament to the ambition and of the whole team what can be achieved when we all work together.

Dave Wakelin, Mace ConstructZero Business Carbon Champion.

Dave has nearly 20 years' experience in the environmental and sustainability sector working across all stages of the property lifecycle. He has worked with clients across the public and private sector to deliver highly sustainable projects both in the UK and overseas. Currently he is supporting UK Government departments in achieving their net zero carbon commitments.