

“Our team has shown that it’s possible to significantly turn the decarbonisation dial with new material technologies, cutting-edge plant, and collaborative working with local authorities and the supply chain.”

Brian Kent, national technical director - aggregates & asphalt at Tarmac

Solutions

**NET
ZERO**

Sustainable Construction

UK’s Lowest Carbon Road Maintenance Projects

In Autumn 2023, three local roads in the Northeast became the lowest carbon highways ever to be resurfaced in the UK, thanks to a project that has set a new benchmark for the way roads are maintained.

Working in partnership with Hartlepool Borough Council and Stockton-on-Tees Borough Council, together with international partners including Shell, Volvo CE, Wirtgen, and JCB, Tarmac reduced the carbon emissions of the road schemes by up to 80 per cent compared to projects using traditional methods. It is understood these projects have the lowest CO₂ emissions for road resurfacing in the UK without using carbon offsetting.

The project team combined an extensive range of low carbon materials, delivery techniques, and plant equipment for the very first time to resurface a section of the A689 in Wynyard, near Hartlepool, and two residential roads in Stockton-on-Tees Borough.

Warm mix asphalt was used together with a new bio-component binder from Shell which uses biogenic materials to create a technical carbon sink in the road to prevent carbon being released into the atmosphere. The surface course and lower layer of the pavements used 30 per cent recycled asphalt plantings (RAP) in the lower layer and 20 per cent in the surface course to reduce the need for primary materials. Tarmac’s asphalt manufacturing plant at Coxhoe was powered by a combination of biofuel and electricity.

A number of electric plant vehicles and prototypes were supplied by partners such as Volvo and Wirtgen, including electric and hybrid road rollers and an electric bond coat sprayer. Other plant vehicles were powered by hydrotreated vegetable oil (HVO), provided by Certas Energy, as an



alternative to diesel. Materials were also kept in stores provided by ZappShelter, to minimise the energy needed to dry them out before producing asphalt, and Greener Power Solutions provided a battery unit.

Councillor Mike Young, Leader of Hartlepool Borough Council, said: “The Tees Valley is an area renowned for innovation, and I’m delighted and proud that we are leading the way nationally – in partnership with Tarmac – with these low-carbon road resurfacing schemes.

“Schemes such as this reflect the Council’s determination to reduce its carbon footprint to help tackle the causes of climate change. We are committed to becoming a Net Zero emissions authority by working in partnership with a range of stakeholders.

Councillor Clare Gamble, Stockton-on-Tees Borough Council’s Cabinet Member for Environment and Transport said: “We’re so pleased to be the first area in the country to have the lowest carbon emission roads as schemes like this are a big part of our commitment to achieve a Net Zero future.