

Why National Highways' A46 road scheme stands out a green mile in drive for net zero carbon

Contractors have gone that extra green mile when resurfacing a dual carriageway on the National Highways' network – by recycling more than half of the materials from the old road back into the new one and cutting the carbon footprint by 23%.

Some 17,432 tons of material were reused from the layers of road surface and saved from landfill as well as helping to make the A46 Warwick Bypass much smoother and safer for drivers.

A stretch of the busy road had deteriorated to a condition that, following a number of temporary repairs to ensure safety, a full depth reconstruction was needed, digging down almost 15 inches to replace the layers of road surface.

Kier led the project on behalf of National Highways and recruited Aggregate Industries (AI) to carry out the resurfacing on 3.5 miles of the northbound carriageway between Sherbourne roundabout and the Leek Wootton roundabout.

Much of the material in the lower levels contained tar which is classed as carcinogenic – has the potential to cause cancer – and must be dealt with as hazardous waste and disposed of at a licenced waste processing facility.

But tar-bound material can be safely recycled and encapsulated back into the pavement layers by processing and re-mixing it. Kier and AI devised a low carbon pavement solution for the resurfacing project and discovered the greenest and most cost-effective way to do this was by recycling the existing carriageway material and reducing the amount that would have to go to landfill.

The old layers of road were recycled back into the new carriageway using AI's ex situ cold recycled Foamix asphalt. Foamix is a fully cold process and can be laid and compacted at a much safer ambient temperature which reduces the asphalt fumes on site which workers are exposed to.

The material was mixed on site to minimise vehicle movements and reduce the scheme's carbon footprint. Using recycled material meant there was less raw material needed for the works too and without the trips to the waste site as well, around 82,000 road miles were saved on this scheme.

Some 56% of materials were recycled from the old road into the new one. Any remaining material not used in this scheme, which ran between late July and September, was recycled back across the road network through other projects.

National Highways Project Manager, Ryan Davies, said:

We have committed, through our net zero carbon plan, to rapidly cut carbon from road construction, maintenance and operations, and support the transition to zero emission vehicles.

A vital part of meeting our ambitious objectives is having the support of our supply chain on schemes such as this. Through close collaboration with partners such as Kier and AI we are taking great strides on our journey to net zero carbon.

National Highways has already started sustained action towards decarbonising England's motorways and A-roads so they can continue to bring significant benefits to motorists, communities and businesses in a net-zero future.

The net zero plan will put roads at the heart of Britain's net zero future through three key commitments; achieving net zero for its own operations by 2030; delivering net zero road maintenance and construction by 2040; and supporting net zero carbon travel on our roads by 2050.

AI's National Technical Manager, Neil Leake, said:

Good collaboration and an innovative approach were at the heart of this scheme, with people working together to achieve the same low carbon goal. We had some significant challenges to overcome to make sure this scheme could be delivered on time and still meet the low carbon goal we set ourselves.

Kier Managing Director, Scott Cooper, said:

This is the first time that Foamix has been used on this type of road on the Area 9 Strategic Road Network and this work on the A46 scheme really demonstrates how innovation and excellent collaboration across the value chain is needed if Kier and our partners are to succeed with reaching our net-zero ambition and combatting climate change.

Members of the public should contact the National Highways customer contact centre on 0300 123 5000.

Journalists should contact the National Highways press office on 0844 693 1448 and use the menu to speak to the most appropriate press officer.