TARMAC

Location	A11 Wymondham
Client	National Highways
Principal Contractor	Morgan Sindall
Planing Contractor	National Road Planing
Completion	Ongoing

Proven performance

UPGRADING THE A11 BETWEEN SPOONER ROW AND THE TUTTLES INTERCHANGE FOR THE NATIONAL HIGHWAYS CONCRETE ROADS PROGRAMME

Background

According to National Highways, around 400 miles of England's motorway and long-distance A-road network is made from concrete and was built mainly in the 1960s and 1970s. These concrete roads are coming to the end of their performance life.

Although a relatively small part of the overall road network, the long-term management of these roads to make sure they remain safe, dependable and durable, represents a unique challenge.

To address this, National Highways set up a Concrete Roads programme with a long-term strategy for repair or replacement of these roads.

The challenge

National Road Planing were selected to work on one of the roads covered by this programme, the A11, a vital strategic link connecting Norwich to Thetford. The plan was to fully replace the jointed concrete slabs with a new asphalt-based road surface. However, removing the old concrete would be challenging, as the slabs were reinforced with 20mm steel reinforcement bar running both longitudinally in the direction of the road and transversely across the carriageway. Planing out 320mm of this concrete road would also generate huge quantities of waste material from the site which would need to be responsibly managed.

Our solution

The experienced team at NRP worked collaboratively with the Main Contractor Morgan Sindall to understand the challenge and then with plant supplier Wirtgen to come up with a solution.

A number of modifications would need to be made to the planing machine including adjusting the forward speed and drum size, the spacing on the drum and the thickness of the pick – the cutting tool that would plane out the concrete slab.

These changes helped to optimise the performance of the planer and the efficiency of the process. By working with the wider Tarmac materials recycling network, a plan was also put in place to reprocess the materials from site and re-use them to build the new road.

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Results and benefits

The NRP team has been able to plane out around 240 metres of the old concrete road per day. So far around 26,000 tonnes of material have been removed from the southbound carriageway.

Careful project planning and material processing has enabled this material to be processed and re-used to build the base of the new road. This circular approach to materials recycling will replace thousands of tonnes of primary materials that would have been needed along with the associated carbon emissions needed to manufacture and transport them.

This is an exceptional result for the client which will help them on their journey towards a net zero future for highways maintenance. It also delivered on their stated commitment to work to high environmental standards, work with the supply chain on reducing their carbon footprint and reuse the materials removed from concrete roads on the road network.

All part of the service

The experience and technical knowledge demonstrated on this scheme means that NRP are proud to be able to offer this service on similar roads to help create the sustainable road network of the future.

As Jamie Town, General Manager of National Road Planing explained, this now complements an industry leading portfolio of specialist planing services that NRP can offer. This includes 3D Topcon Smoothride planing for accurate levelling, uniform paving thickness and improved ride quality; diamond fine milling - for accurate, consistent texture and full width milling for increased productivity and improved road profile.

This project is just another example of how National Road Planing is using the experience gained on resurfacing world-class race circuits like Silverstone to build the roads of the future.

SUPPORTING A LOW CARBON, CIRCULAR ECONOMY BY REUSING MATERIALS IN NEW ROADS

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