

Project case study

# Wellington

## M5 Junction 26 concrete road replacement project exceeds expectations

### Product

Asphalt (Era 140 warm mix asphalt; Tufflex D); recycled materials

### Volume

17,000 tonnes of asphalt;  
7,300 tonnes of recycled concrete

### Main Contractor

Heidelberg Materials Contracting

### Client

Somerset Council



### Project description

**A £5.7 million scheme to replace a worn out 51-year-old concrete road was carried out by Heidelberg Materials as part of its term maintenance contract with Somerset Council.**

### Overview

Heidelberg Materials UK has completed a complex and challenging project in Somerset to replace a rapidly deteriorating concrete road with asphalt ahead of schedule and using a number of innovative lower carbon techniques to minimise its environmental impact.

The project, funded through Government grants successfully bid for by the council, required the closure of Junction 26 of the M5 as well as the A38 Chelston Link Road in Wellington, both of which were built in 1974.

The work involved all the slip roads at Junction 26, the roundabout and the A38 link road from the M5 to the Chelston roundabout, and was originally programmed to take seven months.

The depth of the excavations required necessitated closure of the road and junction, severely impacting the local communities and businesses, which

made it imperative that the work was completed as quickly as possible.

As a result, Heidelberg Materials' contracting team re-programmed the scheme to be delivered in just four months by extending working hours, including adding overnight shifts, using innovative techniques and prioritising work that would enable the road to reopen as soon as possible.

This meant that the company was able to complete the scheme a week ahead of the reprogrammed deadline, exceeding the expectations of the client and the local community.



## Recycling and the circular economy

On the A38, B&A Group, a leading construction soil and aggregate recycling company which became part of the Heidelberg Materials' family in May 2024, used an innovative technique known as rubblication to break up the existing concrete road surface using heavy machinery. This method of recycling meant that instead of removing 7,300 tonnes of concrete from the site, the material was able to be retained and recycled as the sub-base for the new road, promoting the circular economy.

As well as enabling the work to be completed faster, using this technique saved 200 tonnes of carbon emissions and more than 1,100 lorry movements compared with traditional road construction methods. This was achieved by removing the need to take the waste material for recycling offsite and bring in new primary aggregate for the sub-base.

This technique could not be used on the Junction 26 roundabout due to the height of the overhead bridges. As a result this section required excavation to over one-metre in depth in order to build the new road.

B&A Group also recycled all other hard waste, such as kerbs, on site and Heidelberg Materials supplied a total of 17,000 tonnes of asphalt, which was laid by the company's contracting team as part of its framework agreement with the council.

## Asphalt solutions

The base and binder course material was produced using Heidelberg Material's Era 140 warm mix asphalt (WMA) process, which allows asphalt to be produced at up to 40°C lower temperature than conventional hot mix, helping to cut the CO<sub>2</sub> emissions associated with production by up to 15 per cent.

The reduced temperature of the asphalt also allowed for faster completion of work, which contributed to the early reopening of the road.

Heidelberg Materials' Tufflex D asphalt was used for the surface course. Tufflex D has a low void content, protecting the surface from water ingress, and offers high resistance to deformation, delivering National Highway's highest level of wheel rut resistance – level three. It included 6mm high PSV (polished stone value)

aggregate, which enhances skid resistance and improves safety.

"Utilising 6mm aggregate, rather than the standard 10mm for this type of application, also added to the project's overall sustainability credentials," said Tim Doyle, Heidelberg Materials' Somerset Framework Manager.

"This size of aggregate is generally underutilised yet offers the required performance for surface course asphalt. It is produced as a by-product of the crushing process and our Craig-yr-Hesg quarry in south Wales had a readily-available supply of high PSV 6mm aggregate that would otherwise have been unused.

"After visiting the quarry with senior representatives from Somerset Council, it was agreed to use the material, adding to the circularity of the scheme."



I am proud of their efforts to deliver these long overdue improvements much earlier than planned.”

Cllr Richard Wilkins, Somerset Council's Lead Member, Transport and Waste Services



### Concrete recycling

The asphalt was produced at Heidelberg Materials' asphalt plant at Whatley quarry, near Frome, which also processed the concrete waste produced on the Junction 26 roundabout, creating recycled aggregate for use in other projects.

Creating a new drainage system to minimise the risk of surface water flooding was also part of the project, and other partner organisations also took advantage of the closures to carry out essential improvement works which would have otherwise required traffic management.

“Replacing the concrete with asphalt has created a smoother road and helped mitigate against noise pollution,” added Tim Doyle. “It will also make any future maintenance interventions quicker and easier.

“Our strong working relationship with Somerset Council enabled the use of innovative techniques and materials to lower the carbon impact of the improvement works and reopen the motorway junction and link road well ahead of schedule.”

Cllr Richard Wilkins, Somerset Council's Lead Member for Transport and Waste Services, added: “We appreciate this has been a hugely challenging project

to deliver and would like to thank our project team and contractors Heidelberg Materials for their hard work.

“I am proud of their efforts to deliver these long overdue improvements much earlier than planned. It means the government funding we worked so hard to secure has been put to good use and we can all benefit from a smoother, quieter road surface with improved drainage for years to come.”

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