

CASE STUDY

WHERE? Stephenson Drive, Leicester

WHEN? 2011

WHO WAS THE CLIENT? Leicester City Council Highways and Drainage Dept.

OVERVIEW:

Leicester City Council Highways & Drainage Department had improved the stability of the concrete through a specialist crack and seat process, but some differential movement potentially remained, which would be exacerbated by tree root growth and inevitable service trench excavation and filling. It was estimated this would have needed wide scale maintenance within a maximum of 10 years had provision not been made for a SAMI.

To achieve an asphalt surface which would accommodate this residual instability, Bardon Contracting started by installing a 0/6mm sand asphalt regulating course to provide a smooth layer over the uneven broken concrete foundation. Foster Contracting then sprayed a bond coat of 160/220 pen straight run bitumen @ 1.1 l/m² using one of their own calibrated tankers, immediately followed by their specially developed plant to install the Glasstex® P100 composite directly onto the bitumen bond coat layer.

Due to instant break time of the 160/220 pen bitumen bond coat, the installation of the final 40mm asphalt surface course could commence immediately, causing no delay to the surfacing operations.

“This type of asphalt reinforcement solution has been shown to reduce maintenance by a factor of at least two, even with such potential for instability,” adds Craig Andrews, Asphalt Reinforcement Systems Manager for Tensar. “By making a slightly greater investment to achieve a solution tailored to the site’s needs, we can demonstrate real savings in long term maintenance requirements.”





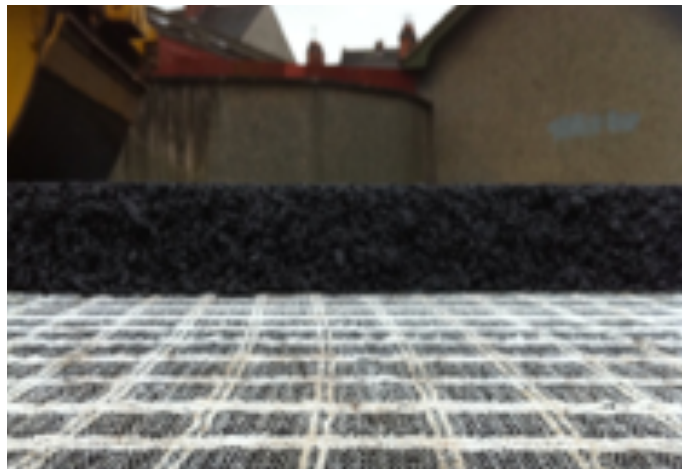
WHAT WERE THE CHALLENGES?:

The reflective cracking that had previously appeared in busy Stephenson Drive, a bus route close to Leicester city centre, was accompanied by potholes and widespread surface deterioration. The principle cause was the instability of the concrete paving slabs underneath the asphalt surface course, due to rainwater infiltration into the founding support.

There was also evidence of asphalt fatigue and rutting, extensive patching over fractured slabs, potholes, numerous service trenches, movement due to tree roots and some potential subgrade driven failures.

THE SOLUTION:

To mitigate the effects of the reflective cracking in the new asphalt surface layers, Tensor proposed Glasstex® as a stress absorbing membrane interlayer (SAMI) to help dissipate the stress from potential movement in the unstable concrete foundation and as such, potentially halve the road maintenance requirements.



BENEFITS TO CLIENT:

Leicester City Council and its term maintenance contractor Bardon Contracting have reconstructed a busy bus route in the city using Tensor's Glasstex pavement reinforcement material. A 600m long by 8m wide stretch of Stephenson Drive to the west of the city centre has been reconstructed to mitigate the potential effects of reflective cracking in the carriageway.

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