Client Side

London looks for long life roads

Investment in bespoke pavements incorporating high performance materials is going into London's road network, in line with Mayor Boris Johnson's strategy for a 'smoother more reliable driving experience'.

Reducing future road maintenance 'interventions' and therefore disruption for users of London's roads is a key plank of Mayor Boris Johnson's transport strategy. For Transport for London (TfL) this means getting the capital's Red Route network up to a state of good and – critically – long lasting repair.

The Mayor's strategy is manifest in TfL's latest business plan, published in March 2011, and in the capital works programme now being developed by TfL's London Streets team. Achieving greater durability of asphalt pavements is key and for this aim TfL is investing both financial and intellectual capital.

Around £50M is due to be spent on Red Route renewals over the next year. And with working groups including TfL's supply chain of three geographically spread main contractors – RingwayJacobs, EnterpriseMouchel and Amey – and their asphalt developers, problematic carriageway pavements are being treated with a holistic approach.

According to TfL London Streets Senior Technical Specialist for highways, Michelle Baran, asphalt mixes of higher density are being sought, with other sundry pavement technologies that can contribute to creating better performing pavements. Polymer modified bond coats are included in this, as are crack retarding and stress absorbing membrane interlayers, where necessary for bridging across underlying substrate problems.

"The past push for low noise road surfaces has tended to result in more open textured materials, leading to a general loss of durability," Ms Baran says. "In our desire for improved whole life costs and value for money, we are looking to target the right asphalt mix for the right application. So far we have five different sites where we are piloting this new approach with alternative asphalt mixes, including EME2 materials for instance. High performing proprietary and SMA type thin surfacings with tightened grading curves and top end binder grades are part of the overall 'mix'. We are also investigating the possibility of low carbon asphalts."

An initial pilot project of TfL's long life pavement initiative has been carried out near Monument Station

Ultimately, a new common specification will be written for all London boroughs to use. This will be developed as part of TfL's wider 'Transforming London's Highways Management' collaboration project with the London boroughs.

But first, TfL will review a range of new materials before deciding on how to collate and present a larger palate of options into a technical specification. "We are setting up and performing client led trials at present, whereby TfL specifies the desired pavement performance characteristics and our suppliers are challenged to come up with innovative material solutions," she says.

One pilot scheme already designed and constructed took place in King William Street close to Monument Underground station. A hybrid 14mm SMA type thin surfacing course with a 'tight' grading curve (containing an increased proportion of 10mm aggregate) was designed to reduce void content while maintaining minimum surface texture. The asphalt mix also contained an elastomeric SBR polymer modified binder for added durability. The trial took place in late 2010 and was laid over an area of 5000 square metres, at night, by RingwayJacobs.

"These efforts will contribute to the Mayor's strategy of improving the resilience of London's roads and making driving in the capital a smoother more reliable experience," adds London Streets Highways Asset Manager Les Hawker. "We have an important key performance indicator in the percentage of Red Route carriageway in a state of good repair. Although condition has deteriorated slightly over the past couple of years, due to the recent severe winters, with better investment and an intelligent approach, we plan to reduce this deterioration significantly."

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