

Enfield Lane Rental
Industry Publication

Strengthening the network via plastic recycling (MacRebur)

Introduction



Over two billion passenger journeys take place on buses across the capital every year; with approximately 675 bus routes, 19,000 bus stops and 9,000 buses in operation. Maintenance of this network is therefore vital to ensure continued service and performance. At bus stops, rutting and other structural defects can occur, so strong and flexible materials are required to counter both the weight and turning movement from buses.

This, along with the increasing issue of plastic waste (the UK using around 13 billion plastic drinks bottles a year), the London Borough of Enfield set out to trial products which utilise plastic waste to replace part of the bitumen in asphalt mixes from MacRebur

The Project

In summer 2017, five bus stops were resurfaced using products from MacRebur, who specialise in producing recycled pellets which replace part of the polymer modified bitumen, with industrial grade plastic which proposes to provide the equivalent strength of conventional products but with greater flexibility.

The bus stops were built using 60mm binder course and 50mm surface course, both with MacRebur MR6 and MRI0 recycled plastic pellets. MRI0 provides greater flexibility, countering the turning movement from the buses and MR6 provides a much greater stiffness needed to withstand the weight of buses.





Outcomes

There were no issues experienced in the construction of the bus stops and took only three days to complete during the summer. Observations found that the products mixed homogenously into the asphalt providing additional stiffness and flexibility to the surfacing. Early indications show that the use of these products may result in less maintenance and a reduction in the carbon footprint of the council.



Conclusion/ Recommendations

The London Borough of Enfield has successfully trialled products which replace part of the bitumen content with recycled plastic at five bus stops.

Early indications show the potential of reduced maintenance and carbon, while increasing the longevity of the asset and ability to recycle more plastic.

It is recommended that the bus stops are monitored closely and more cores taken throughout the lifecycle of the product to gain an understanding of the long term performance of these recycled materials.

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TfL Lane Rental Scheme

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