THE FUTURE OF SURVEYING

Commended in the 2023 CIHT Awards, the Mapping And Visual Imaging Scooter uses the latest camera and data collection technology to deliver detailed footway surveys

If you live in the London Boroughs of Ealing, Barnet, Merton, Greenwich or Newham, you may have seen a curious machine roaming around your streets. It looks like a mobility scooter, but with a camera on the roof and a sign saying 'Surveying' on the back. This is a Mapping And Visual Imaging Scooter – or MAVIS – and it's providing authorities with detailed information about the condition of their footways.

As a small mobility scooter, MAVIS has the advantage of being able to go where standard vehicles can't, getting close to the footway to capture high-definition imagery that, taken with GPS data, can provide local authorities with comprehensive carriageway and asset condition surveys in order to cut costs, improve efficiency and reduce the number of site visits.

ACCESSIBILITY ASSESSMENT

The idea of using a mobility scooter to carry the technology required to assess footways first came from a desire to improve accessibility. James Wallis, executive director at XAIS Asset Management, needed a vehicle that could travel around areas that were simply inaccessible to cars.

"Having the mobility scooter allows us to assess footways and hazards by getting close to them," says Wallis. "One of our first projects was on a housing estate for pensioners and there were a number of access issues, which we identified using the scooter. We're actually getting a lot of interest from housing associations to assess their footways for defects."

EYE IN THE SKY
The Mapping and Visual Imaging Scooter can remotely identify access issues and areas requiring work

HAVE CAMERA WILL TRAVEL
MAVIS uses data gathering and AI tech to produce detailed road and footway surveys

But it's not just trip hazards that MAVIS can identify. The 360-degree, high resolution camera will capture other footway issues such as illegally parked cars, overgrown hedges and poor lighting, collecting the visual information before the data is processed by AI to deliver highly detailed analysis of the condition of the carriageway.

"The nature of defects on footways is quite sporadic," says Wallis. "There are a number of different assets and materials on footways, as well as trees and vehicles, so you need to get much closer to them to the footway to make a valuable assessment."

EFFICIENCY BOOST

The AI technology behind MAVIS is tailored to UK footway requirements, identifying UK Pavement Management System defects, highlighting fretting on the footway, and recommending cut-back where the footway is overgrown. Once the data has been uploaded, organisations have the digital tools to complete a number of online tasks, such as:

- Measure distances and quantities
- Check the inventory
- Forecast works and budgets
- Produce appropriate activity schedules and bills of quantities
- Identify any possible issues that need to be investigated further.

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In addition, local authorities can identify accessibility issues and obtain a first-hand picture of how their network is performing against key accessibility metrics, with clear visual evidence of any areas that may require more immediate attention.

"As an example, we surveyed the highway network for Buckinghamshire, which enabled verge extraction and produced a cutting regime," says Wallis. "They knew the state of the verges and the number and location of assets such as manholes, so they knew whether they needed a lawnmower or a strimmer, and could create a bill of quantities."

NEW AVENUES

The next step for MAVIS is to expand the service by increasing the amount of scooters available and improving the technology to make it even quicker, with more information available.

According to Wallis, as well as the UK's road authorities, the rail industry is also interested in using the technology to remotely survey the state of its station platforms.

"We're exploring a number of different options for expansion," he says. "There's lots of potential in many different areas, but highways and footways are definitely our main focus at the moment."

MORE DETAILS
For more information on MAVIS, go to bit.ly/XAIS-MAVIS