



mouchel 

Pavement engineering



Pavement design

The Mouchel Pavement Engineering team has developed innovative and versatile design procedures. We deliver sustainable solutions which minimise Whole Life Cost and provide value for money. The Team considers the environmental effect of any solution given to the client and encourages reuse/recycling of materials, including in-situ recycling processes.

For strengthening design the Pavement Team uses the Shell Pavement Design Method-PC (SPDM_PC) which allows the thickness of the new material to be minimised. In-House design procedures include a Pavement Expert system that is particularly appropriate for quickly checking designs and provides options for alternative treatments and comparison of costs.



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Environmentally friendly and sustainable solution

With the awareness and emphasis on 'green' construction, the importance of using recycled instead of virgin aggregates has been recognised. With the ever increasing Landfill Charge, there is a real economic benefit of recycling. At Mouchel, we always take sustainable construction as a priority and we ensure that wherever possible, opportunities for introducing recycled materials (in-situ or ex-situ) are considered. Many of our clients have adopted our advice and carried out reconstruction using recycled aggregates such as PFA/cement and foamed bitumen.

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Pavement evaluation

A key area of Mouchel Pavement team's business is the identification and investigation of pavement failure mechanisms. The investigations are supported by a strict regime of laboratory analysis and utilise the standard tools currently available with the assistance of highly experienced and trained engineers.

Our partners and sub-contractors provide us with the highest quality of raw data collection. With our established links with specialised contractors we are capable of influencing design options at an early stage.



Ideas and innovations

Our Pavement Engineering Team has developed a new process of Digital Video Survey by combining our data collection system with a proprietary viewing software. This provides a very accurate, high resolution and spatially referenced video record of any roadway environment. This can be obtained at normal traffic speeds (up to 80 km/h) without the need for traffic management. There are a total of 4 cameras which record information every second. The use of a Trimble Differential Global Positioning Systems (DGPS) and Omnistar's virtual base station (VBS) correction service enables sub-metre accuracy of the positioning data. An optical distance measuring device is also used for the purposes of dealing with any potential signal dropouts from the DGPS. The images are spatially referenced using the accompanying GPS positions. This software has recently been successfully used for 300km survey for the A5 Northern Ireland Western Transport Corridor project.



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Value management

The Pavement team has extensive experience in Value Management. We are involved in the Value Management process for the Highway Agency's Areas 1, 3, 5 and 9. We have knowledgeable and trained engineers available to extract, evaluate and analyse Pavement condition information from Highway Agency Pavement Management System (HAPMS) for the value management process. The process also includes analysis of pavement performance and deterioration mechanism and analysis of Whole Life Cost with the help of Software of Whole-life Economic Evaluation of Pavements (SWEEP).

Scheme Engineer (SE) Mouchel has worked with a team of specialist engineers to develop a system for use on our highway network schemes. It is designed to incorporate a transparent and effective management system for identifying and prioritising highways maintenance schemes. It utilises all relevant data to prioritise the deficient sites within the highway network. It also supports the use of condition projection to estimate the state of the highway network at a specified time in the future. It can work either stand alone or within existing UKPMS systems and manages network, condition data, schemes, budgeting, value management and allows us to view data easily on a map based system.