

SUMMARY

ERR 15
Fall 2009 • RGRA

EDITORIAL

The big question

Alain Le Coroller

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Environmental analysis of road projects

CHANGER, the IRF GHG Calculator

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Better roads can only be built by practitioners who are fully aware of the full ecological repercussions of their activities, and of the growing potential for enhancing positive while reducing negative impacts. The International Road Federation (IRF) has designed a methodology for the calculation and modelling of greenhouse gas (GHG) emissions from road construction projects. The ultimate purpose of CHANGER is multifaceted: 1. Facilitating a detailed environmental analysis of road projects; 2. Providing an authoritative basis for comparative analysis of various road-building techniques and materials; 3. Optimising road construction site supply schemes with respect to raw material providers, choice of suppliers, delivery locations and material transport modes; 4. Enabling detailed estimation of GHG emissions that are specifically attributable to the road construction industry.

Susanna Zammataro

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Scotwilson

Bio-fluxing agent

A new range of storable cold mixes with no volatile organic compounds (VOC)

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As part of its endeavour to protect the environment, improve working conditions, promote renewable resources, save energy and reduce greenhouse gas (GHG) emissions, Colas has developed high-performance bio-flux agents that can be used in every type of road surfacing. In addition, bio-fluxes have proven to be the perfect choice in the design and manufacture of storable cold mixes, which usually require a heavy dose of oil-based – hence volatile – flux. The use of conventional flux, which is also flammable, leads to the evaporation of volatile organic compounds in the atmosphere, a potential danger for the people involved and a risk for the environment, not to mention a waste of fossil fuel.

Christine Deneuvillers, Abdeltif Belkahia, Eric Godard

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Colas

DBFO Urban Tollway

Toll Motorway Projects in Greece: The case of Attica Tollway

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Attica Tollway is the 65-kilometre-long urban toll motorway that forms the Ring road around the city of Athens, Greece. The Tollway operates under a flat-rate, open toll system regime and it is a 24-year Design-Build-Finance-Operate (DBFO) project. Attica Tollway was the first Hybrid – PPP road infrastructure project and the first Tollway in Greece to implement 7/24/365 traffic management, road maintenance, environmental monitoring, thorough customer care and provision of advanced Electronic Toll Collection (ETC) services during its operation stage, thus setting a standard for new concession projects, including the entire National Network of Toll Motorways that followed and that is currently under development.

Bill M. Halkias, PE

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Metamorphosi
Interchange



Attica Tollway

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Low temperature sulphur technology

Shell Thiopave® modified sulphur pellets for asphalt paving mixtures. Focus on use of available resources 25

Sulphur extended asphalt (SEA) mixtures were used commercially in the 1970s and 1980s in North America as well other parts of the world, i.e. Middle East and Europe (France, United Kingdom). Performance properties of sulphur extended mixtures were shown to be equal or sometimes even better than conventional asphalt mixtures. However, handling and safety issues were of concern, as molten sulphur was difficult to use and sometimes generated unacceptably high H₂S emissions. Asphalt mixture containing sulphur is resurging as an alternative to meet high energy demand forecasts and Shell has made efforts to develop a new sulphur technology. This technology, based on sulphur in pellets, initially known as Shell SEAM has been further developed and is now known as Shell Thiopave.

Jacques Colange, Nicolas Lunot, Simon Banbury

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Central European Research in Transport Infrastructure (CERTAIN) project



Road research laboratories

20 Years of FEHRL 39

FEHRL (The Forum of European National Highway Research Laboratories) celebrates 20 years of road engineering research and coordination. Registered as an International Association with a permanent Secretariat based in Brussels, Belgium, FEHRL provides a coordinated structure for the interests of over 30 national research and technical centres from Europe, together with associated Institutes from around the world. Developed over the past 20 years, it has grown from a meeting of associations held on October 23 – 24, 1989 to investigate the general interest among the road research laboratories for closer cooperation, to today, where this collaboration has grown into a membership of 33 countries, including members throughout the European Union States, European Free Trade Association (EFTA) countries, and Eastern and Central European countries, as well as three non-European Countries – Israel, South Africa, and most recently, the United States.

Claude Van Rooten, Valérie Henry

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Dublin Port Tunnel in operation



Tunnel Safety in Operation and Maintenance

Tunnel Safety Officer: Roles and responsibilities 45

The last events occurred in European Tunnels since 1999 demonstrated the needs for preventing and mitigating tunnel accidents. The European Directive 2004/54/EC details the responsibilities for owners of tunnels longer than 500m, one of them is about the Tunnel Safety Officer who is nominated by the Tunnel Manager and gives advises about preventive and safeguarding measures. This article provides a brief overview of the reaction of the tunnel community and the role of a Tunnel Safety officer, who is particularly involved in Operation and Maintenance activities.

Yannick Mallet

Testing equipment for pavement

Equipment and methods used for non destructive tests on airport runway pavements 50

Security is a key factor in the field of transport, and a particularly sensitive topic in air transport. In order to keep an optimal level of services, the managers of airport platforms, vital organs of the network, must have a perfect knowledge of their conditions states. A certain number of normalized index allow to access the quality of these infrastructures and therefore rationalizing management and planning maintenance operations. Rincint BTP group is an independent company which carries out one part of its activities of measures and diagnostics, in the field of runway and road pavement. It is at the service of airport managers, realizing diagnostic works, but also developing, selling and maintaining innovative materials in accordance with the requested quality demands. The company is very much in demand in the airport field and achieves some woks on the five continents.

Joseph Vinsu, Anthony Gauthier, Jean-Claude Tijou

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Tozeur Airport, Tunisia

