



International  
Road Federation  
[www.irfnet.org](http://www.irfnet.org)

The International Road Federation (IRF), founded in 1948, is the only world forum advocating better and safer roads through better road design and construction bearing in mind the user. It is a unique institution that brings together members active in road infrastructure from both the private and public sectors.

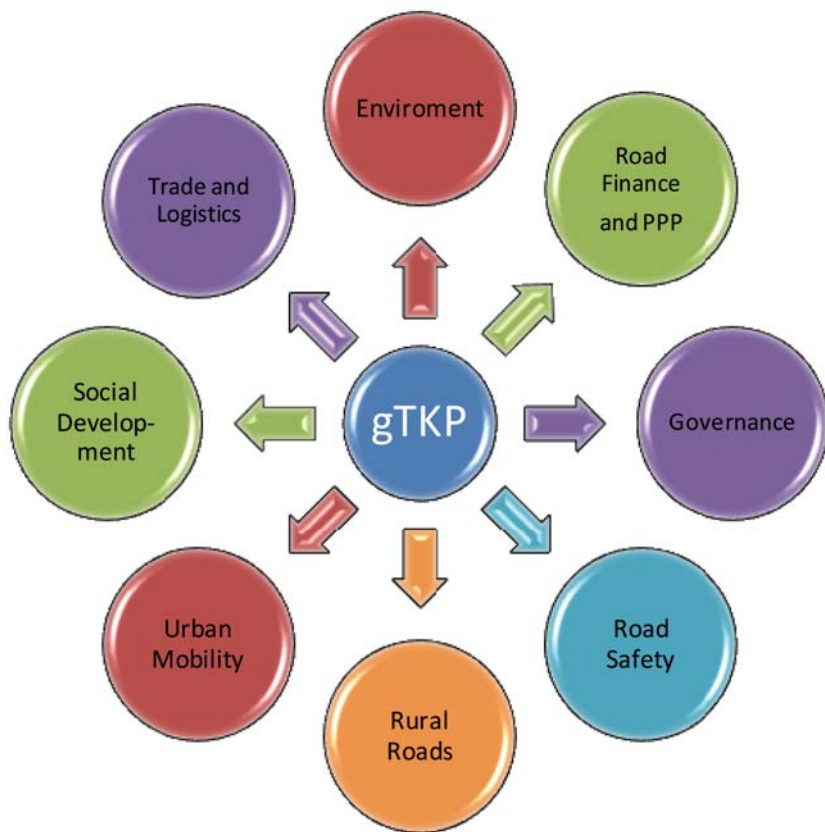
The IRF promotes roads that are safe, economically viable and ecologically friendly. The IRF believes that a sound road infrastructure brings prosperity, fights poverty, furthers education and gives better access to health services. IRF promotes sustainable mobility taking into consideration the socio-economic context, the needs of the users and promoting co-modality whenever possible. The IRF is an international not-for-profit organisation with UN consultancy status.

Geneva Programme Centre  
Chemin de Blandonnet, 2  
CH-1214 - Vernier  
SWITZERLAND  
Tel: +41 22 306 02 60  
Fax: +41 22 306 02 70  
[info@irfnet.org](mailto:info@irfnet.org) | [www.irfnet.org](http://www.irfnet.org)

Brussels Programme Centre  
Place Stéphanie 6B  
B-1050 - Brussels  
BELGIUM  
Tel: +32 2 644 58 77  
Fax: +32 2 647 59 34  
[info@irfnet.eu](mailto:info@irfnet.eu) | [www.irfnet.eu](http://www.irfnet.eu)

Washington Program Center  
Madison Place  
500 Montgomery Street 5th Floor  
Alexandria, Virginia 22314, USA  
Tel: +1 703 535 1001  
Fax: +1 703 535 1007  
[info@irfnews.org](mailto:info@irfnews.org) | [www.irfnews.org](http://www.irfnews.org)

# IRF Geneva Programme Centre manages the global Transport Knowledge Partnership (gTKP)



IRF with its flexible structure, excellent reputation and good experience in project management was chosen as the new service provider

This multi-million pound project, created in 2004 and funded by the Department for International Development (DFID) in the UK, is an initiative to promote and disseminate sustainable transport knowledge.

The core message of the gTKP is that dissemination, and therefore improvement, of good transport knowledge in developing and transition countries, will help increase the efficiency and effectiveness of transport investments and policies and thus facilitate high quality, competitive infrastructure and transport services for national development and poverty reduction.

gTKP is aimed at Africa, Asia and the EECCA (Eastern Europe, Caucasus, Central Asia). South America is also on the map, but not a priority region. For many years, the project was managed by partners less specialised in roads and transport than IRF.

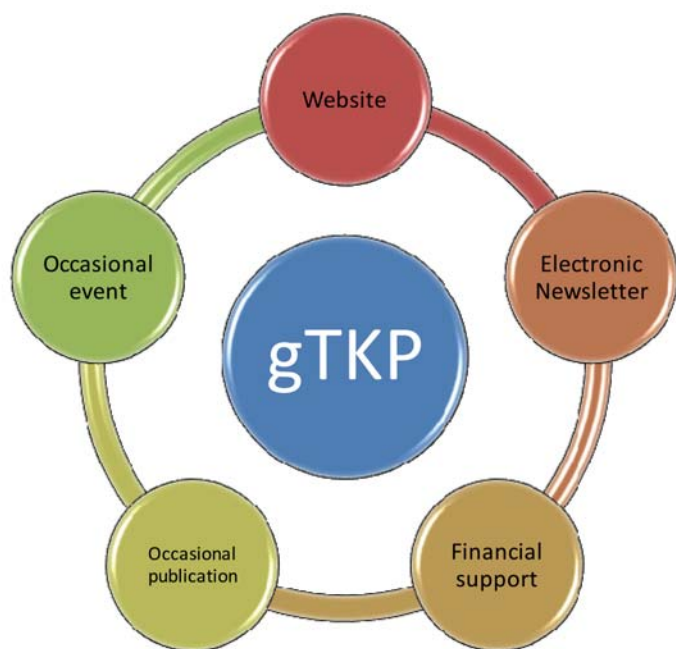
Last year, DFID invited several organisations (among others World Bank and UNOPS) to submit a tender to facilitate the gTKP. IRF with



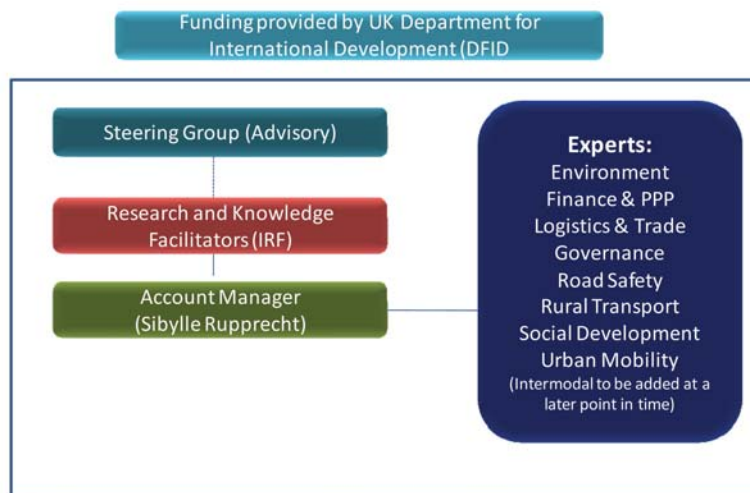
its flexible structure, excellent reputation and good experience in project management, was unanimously chosen as the new service provider. IRF has a three-year contract to manage gTKP (from February 2009 onwards).

The gTKP offers free access to sectoral experts and best practice knowledge and intelligence, around the following transport themes:

Best practices and research knowledge generated by the gTKP is disseminated through different communications channels. The most important ones are the website and the electronic newsletter: gTKP also finances regular seminars, conferences and publications.



The gTKP project is headed by a Steering Group of worldwide transport specialists, who have an important ongoing advisory function. The project will be led by an Accounts Executive, currently Sibylle Rupprecht, who will be the focal point of contact for the Steering Group and the sectoral experts.



Key experts provide specialist knowledge on the chosen transport and road infrastructure themes. IRF experts will cover the following themes in-house: environment, road finance and PPP (Public Private Partnership), and social development.

As the vision, activities and objectives of gTKP are complementary to IRF and its themes directly correlate with the aims and mission of the IRF, this project directly strengthens the IRF organisation and provides new benefits for members:

- More staff, more products and services, including new items
- Better coverage of the IRF region
- New markets and new intelligence
- Access to more practitioners and stakeholders.
- More publications and events

*Last but not least IRF enhances its reputation and offers a sound contribution to the achievement of the UN Millennium Development Goals. ■*

# Grow your own roads

Robert Petts provides a practical example of gTKP at work

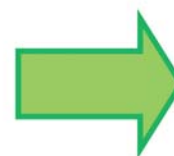
There is a substantial requirement for a range of sealers and binders in the global road infrastructure sector. The principal need is for the construction and maintenance of road surfaces and pavements. Globally, more than 100 million tonnes of bitumen are produced each year, mostly for use in the road sector. There are substantial environmental disadvantages from the production of the currently used binders-sealers which are mainly fossil fuel (bitumen/asphalt) or cement based. These product types involve energy intensive production and long transport distances from large-scale production facilities to the point of application, often over roads possibly susceptible to damage from heavy vehicle loading.

This is a particular issue for Developing



and Emerging economies which are predominantly consumers rather than producers of sealers and binders, and which have limited financial resources.

The International Energy Agency warns that the natural output from the world's oilfields is declining faster than previously thought. The temporary downturn in demand due to the current widespread recession will give way to renewed



pressure on global fossil fuel resources and re-ignite energy prices in the medium term future. We thus have a window of opportunity to take stock of the predicament, to investigate and develop alternative greener and more sustainable solutions to our global binder and sealer needs.

For many developing countries, it is believed that a significant proportion of



► these imported raw materials and products could be substituted with locally sourced alternatives. Sealer/binder products could be made from materials arising from local agricultural and manufacturing operations, and waste streams from industrial activities and power generation. It may also be possible to provide demand for new agricultural crops without compromising current food crop production, by using marginal land or multiple cropping.

New manufacturing opportunities could be created to use appropriate technology to deliver suitable road building materials. Such innovation would stimulate local economies as well as reduce the carbon footprint of road building activities. There would also be potential for carbon sequestration as bio carbon would be bound within road surfaces for many decades.

The good news is that substantial progress has already been made and some commercial products are already on the market (see below). However this is only the start of what could become an important global, environmentally friendly, industry.

A recent gTKP report, 'Eco-Road Building for Emerging Economies,' is the result of a technology scouting exercise. The report may be downloaded from [www.gtkp.com](http://www.gtkp.com) and an accompanying Transport PowerPoint presentation is also available. Six main technology areas with significant potential for beneficial exploitation for road surfacing and paving purposes have been identified. The following are interesting extracts from the report.

**Wood or palm lignin:** One of the most abundant organic polymers in the world, it contains 30% of non-fossil organic carbon, and about 50 million tonnes is produced annually as residue in paper production. In the form of Lignin sulphonate, a paper pulp industry waste stream, it has been used for about a 100 years to control dust and stabilise gravel on unpaved roads in the USA and Sweden. Furthermore, the new biofuels industry is expected to deliver abundant fibrous lignin from palm oil extraction.

**Drying oils and semi-drying oils:** A 'drying oil' is an oil that hardens to a tough, solid film after a period of exposure to air, through a chemical polymerisation reaction in which oxygen is absorbed from the environment. This property is the basis of conventional paint technology. The cross linking process can be manipulated by catalysis heat and oxygen. Unsaturated vegetable oils are widely available from a range of oil seed crops and, through the new biofuel industry, non-food vegetable oils such as Jatropha are becoming available. It should be possible to devise waterproof sealing systems with sufficient resilience for low volume road surfacing.

**Oil, resin and biomaterial blends:** Recent innovations using blends and emulsions of pine pitch, rosin and vegetable oils have begun to reach commercial success as ecologically acceptable alternatives to bitumen based products (for example Vegecol™ and Ecopave™). They appear to use a wide range of organic waste streams and may be adaptable to a variety of local resources. This is probably the most

promising initial approach for replacement of bitumen/asphalt binders as both technology and experience in use is available.

**Pozzolanas as cement substitutes and other waste streams:** One of the most exciting opportunities is the replacement of Portland cement with rice husk pozzolanas and lime. Up to 130 million tonnes of husk could be available annually on a global basis for pozzolana production. As the ash content by weight is about 20%, there are potentially 26 million tonnes of Rice Husk Ash (RHA) available as a pozzolana. Other sources of pozzolanas include fly ash from power stations, kilns and furnaces. Apart from the attractions of cost and foreign exchange savings and zero net carbon footprint, there is scope for encouraging local low technology industries.

The report highlights potential leads relating to pine resin or tall oil, geotextile and biofibre reinforcement.

In summary, there is enormous potential to escape from the high-energy, environmentally damaging, dependence on petro-chemical and cement-based industries, to develop sustainable, low carbon footprint solutions utilising local resources and initiate productive local employment in developing countries. This could create a fast-track solution to the universal provision of affordable, sustainable, basic access to the more than a billion people living in poverty in developing countries.

• For further information contact Rob Petts: [rob@intech-consult.demon.co.uk](mailto:rob@intech-consult.demon.co.uk). ■

## IRF BPC releases key discussion paper on safer infrastructure for PTWs

As the popularity of PTWs in European cities constantly increases, the need for Europe to adapt its road infrastructure environment in order to better cater for the needs of these particular users is becoming everyday more vital.

Conscious of this pressing need, the Brussels Programme Centre of the IRF released a discussion paper on 'Road Infrastructure Safety of Powered Two-Wheelers' in order to kick-start a broad reflection on the topic and find shared solutions which will ensure PTW riders benefit from the safest possible road environment.

Road safety statistics for PTWs show an increasing trend of fatal accidents: PTW riders now represent 17% of fatalities on European roads. This indicates the problems encountered by riders when faced with an unsuitable road environment. The specific needs of PTWs, in fact, need to be taken into account in all stages of the lifetime of infrastructure, from planning to building and maintenance, to guarantee a safer environment.

In particular, dedicated and specific cost-effective infrastructure measures, such as predictable road geometry, good quality road surfaces, road maintenance, forgiving and self explaining roads and new road restraint systems, which are important for all road users, become essential for PTWs as they help avoid crashes and mitigate their consequences.

The IRF BPC discussion paper, by analysing major accident scenarios caused by road infrastructure deficiencies (manholes, potholes, roadside clutter and inappropriate road barriers) and by outlining two key safety aspects, prevention and mitigation, in which good or bad infrastructure can determine the survival or not of a PTW rider, seeks to provide all interested parties with the necessary information, essential to the common shared objective of ensuring safer infrastructure for PTW users.





www.irfnet.org



## IRF Holds 2009 Road Scholar Program

The Fellowship Orientation and Executive Leadership Program of the Washington Program Center is now the IRF Road Scholar Program. It encompasses the ten-day Fellows' Orientation Program, the Executive Leadership workshop, and the brand new IRF career fair. This year, 25 students from 19 countries participated, bringing the 59-year-old program total to 1,180.

The Fellows, from universities across the United States arrived unsure, for the most part, of what the next ten days would bring.

"I was very excited to be a part of this great Program," said Yuqing Zhang, attending Texas A&M. "My sponsoring professor was a fellow also and she told me of the many opportunities the program would provide. I knew it was going to be a good experience."

During the ten-day program, the fellows visited IRF members who can help to shape their careers, gained exposure to many of the public and private organisations that are active in the road industry, and heard first hand from top-level executives what it takes to become leaders who will make a difference in the road industry.

Mike Dreznes, vice president, Barrier Systems Inc, taught the Executive Leadership workshop and impressed upon

the fellows the tools and traits one must have to be a successful leader. But Dreznes always says he learns more from the fellows than they learn from him.

Throughout the course of the Road Scholar Program, the fellows visited with AASHTO, AEM, ARTBA, Barrier Systems, HNTB, Hot Lanes Beltway Project, Institute of Transportation Engineers, Louis Berger Group, Parsons, Parsons Brinckerhoff, The World Bank, Turner Fairbanks Research Facility, US Federal Highway Department and Wilbur Smith Associates.

"Visiting IRF members was definitely a highlight of the week," said Julio Roa, a Fellow from Virginia Tech. "Being able to visit with such high-level executives and learn directly from them is an unforgettable opportunity. I am very grateful to IRF for letting me be a part of this unique program."

More than 100 students from nearly 30 universities attended IRF's first ever career fair held on 14 January during the IRF Road Scholar Program. The fair was set up to provide IRF members access to top quality students seeking a career in a road-related field. For students, the career fair was an opportunity to meet recruiters, human resource representatives, CEOs, vice presidents and other executives to discuss career opportunities.

"This was a very valuable opportunity to

network with top level people," said Oscar Gonzalez, a graduate student at Virginia Tech. "Being able to meet face-to-face will definitely be an advantage for me when going in for follow-up interviews."

IRF members who participated were given table space and a book of resumes from all the students who signed up. Companies who participated also received free signage and offices were set aside for on-site interviews.

"For the first of its kind job fair, I feel that the IRF did a remarkable job," said Howie Appel, Corporate Recruiter, HNTB. "The set up, student interviews, and close down went very smoothly and the book of resumes they presented us made our process much easier. We indeed had a most productive day."

Only students who were given an endorsement by their professors were allowed to register for this event, providing members with a group of high caliber students.

And with a steady stream of qualified students visiting the booths, company representatives were kept busy. "It was a pleasure to participate in a well put together event," said Kevin Green, Project Director of AgileAssets. "We were overwhelmed with the caliber of talent attending and look forward to continuing conversations with the individuals." ■