

9th MALAYSIAN ROAD CONFERENCE 2014

and

**PIARC INTERNATIONAL SEMINAR ON
SLOPES, ROAD FOUNDATION DRAINAGE AND
STORMWATER MANAGEMENT**

KEYNOTE ADDRESS

by

Y. B. Dato' Sri Haji Fadillah bin Haji Yusof
Minister of Works, Malaysia

Date : 10 November 2014
Time : 11.00 am
Venue : Sunway Pyramid
Convention Centre,
Petaling Jaya,
Selangor.

1. Yang Berbahagia Dato' Sri Zohari bin Haji Akob, Secretary General, Ministry of Works
2. Yang Berbahagia Dato' Ir. Annies bin Md. Ariff, Director General of Public Works Department and Organising Advisor
3. Yang Berbahagia Datuk Sri Ir. Dr. Judin bin Abdul Karim, Chief Executive of the Construction Industry Development Board and Executive Council Member of PIARC
4. Yang Berbahagia Dato' Seri Ir. Mohd. Noor bin Yaakob, President of Road Engineering Association of Malaysia (REAM)
5. Yang Berbahagia Dato' Ismail bin Mohamed Salleh, Director General of Malaysian Highway Authority
6. Yang Berbahagia Datuk Ir. Hj. Adanan bin Mohamed Hussain, Deputy Director General of Public Works Department and PIARC Malaysian First Delegate
7. Mr. Paul Garnica, Chairman of PIARC Technical Committee 4.4

Yang Berbahagia Tan Sri-Tan Sri, Dato'-Dato', Distinguished Guests, PIARC and REAM Members, Ladies and Gentlemen.

Assalamualaikum Warahmatullahi Wabarakatuh, salam sejahtera, selamat petang dan salam 1 Malaysia kepada warga kejuruteraan jalanraya yang datang dari dalam dan luar negara untuk hadir pada pagi ini.

Distinguished Guests, Ladies and Gentlemen,

1. I am indeed honoured to be invited to deliver the keynote address and officially open the **9th Malaysian Road Conference and PIARC International Seminar On Slopes, Road Foundation Drainage and Storm Water Management**. I am very pleased to note that there are about 900 participants at this International Conference, a testimony to the participant's confidence on the outcome of the conference, and a show of real interest among the road engineering fraternity towards sustainable road development and green technologies.

Ladies and Gentlemen,

2. I was made to understand that this event is a collaborative effort between the Ministry of Works, Road Engineering Association Malaysia (REAM), and the World Road Association (PIARC). PIARC is represented by its Technical Committee 4.4 who focuses on the technical aspects of slopes, road foundation drainage and storm water management . Such collaboration is indeed very much welcomed because it provides opportunities for local practitioners to be exposed to the advancement of similar issues around the globe and adapt them to local conditions.

3. I would like to congratulate the organizing committee for their efforts in ensuring that the conference is successful in terms of participation and organization. The Malaysian Road Conference is held every two years and has now entered its 9th series and has grown from a modest beginning in 1994 to an important stage on the national and international level. This conference presents good opportunities for local and international road engineering practitioners and academicians to present their research findings, draft manuals, specifications and guidelines. It is also a place to share experiences and gain exposure to the latest technologies related to the planning, design, development, construction, management and maintenance of roads and highways.

4. I am also glad to know that the theme for this conference is Greening Our Roads. This theme is very appropriate as we have to consider the impact of our road projects on the environment. As we know, there is a great concern about global warming due to human activities and we in the road sector, should always endeavour to find new ways to ensure that our road network has high durability and is environmentally friendly.

Economic Importance of Road Infrastructure Network

Ladies and Gentlemen,

5. The construction sector is an important contributor to our economy. The sector contributes about 3.7% of Malaysia's Gross Domestic Product (GDP), has a multiplier effect of 6.8 times and creates employment of about 1 million, or approximately, 9% of the total workforce in Malaysia. More importantly, the highway and transportation portion of the sector plays a key role in our national transformation agenda. There has been a clear strategic thrust to resolve bottlenecks in Klang Valley, Johor and Penang, manage growth in Eastern Corridor and Sabah and Sarawak regions, and attain long-term competitive advantage towards becoming and remaining a high income economy in 2020 and beyond. In 2015, seven (7) new highways are expected to start work offering jobs worth more than RM20 billions for the construction sector. Expansion of the rural roads is currently on going to meet the infrastructure needs of rural communities, providing job and wealth creation opportunities, equitable access to markets and transform and unlock economic engine of rural areas, ultimately raising their living standards. Overall, we are expecting the construction industry to continue its double digit growth in the second-half of this year, on the back of mass ongoing construction activities of the public and private sectors.

Sustainable Infrastructure Development and Global Warming

Ladies and Gentlemen,

6. The issue of transportation and the environment has always been paradoxical in nature since transportation, although conveys substantial socioeconomic benefits, is impacting the environmental system at the same time.
7. Over the last decade or so, the road network in Malaysia has increased to slightly more than double. In December 2013, Malaysia road mileage was recorded at 204,400 km, of which, 10.6% of them are Federal Roads and

89.4% are State Roads. With thousands of kilometres of roads built, the number of vehicles has significantly increased approximately by 7% each year. Currently, there are more than 24 million registered vehicles plying our road network. The growing levels of motorization and congestion had contributed to the release of several million tons of carbon each year into the atmosphere. According to the World Bank, the carbon emission in Malaysia has reached 7.57 metric tons per capita in 2008.

8. This high level of carbon emission can lead to the degradation of the air quality which eventually has detrimental effects on our built environment, agriculture and most importantly our health. Other environmental dimensions affected are noise, water quality, soil quality and biodiversity. The environmental externalities produced by the transportation activities have now reached a point where they have become a dominant source of emission of most pollutants that have multiple impacts on the environment and contribute towards global warming.

Ladies and Gentlemen,

9. Global warming has become an area of concern to academicians, industry professionals and policy makers. We know without any doubt that our climate is changing and our weather is becoming more extreme due to human activities. According to a report released by World Meteorological Organisation in September 2014, the warming effect on our climate due to greenhouse gases like carbon dioxide (CO²) had increased by 34% from 1990 to 2013. These emissions will remain in the atmosphere for hundreds of years and in the case of emissions absorbed by the oceans, it will remain even longer. Because global warming has far-reaching impacts to our ecosystem, we need to gather all our efforts in minimizing the emissions of carbon dioxide and other greenhouse gases across the board.
10. Such efforts have been discussed exhaustively at the world stage in the past. During the tenth Commonwealth Heads of Government Meeting or CHOGM, **Langkawi Declaration on the Environment** was issued in 1989. Through the

declaration, the members were committed to support the intergovernmental panel on climate change and to promote energy efficiency, amongst others. A few years later in 1992, the United Nations held a conference on Environment and Development in Rio de Janeiro, Brazil. The two-week **Earth Summit** was the climax of a process of planning, education and negotiation among all Member States of the United Nations, leading to the adoption of Agenda 21, which is a wide ranging blueprint for actions in order to achieve sustainable development worldwide.

Ladies and Gentlemen,

11. Malaysia, as a very committed Member State of the United Nations, had pledged her commitment in reducing the nation's greenhouse gases emission intensity from its 2005's level by 40% by 2020. This is as promised by our Prime Minister during the United Nations Copenhagen **Climate Change Conference** in December 2009. The Government of Malaysia through Ministry of Energy, Green Technology and Water had published the country's National Green Technology Policies, where amongst others, two of the objectives are to reduce the energy usage rate and to ensure sustainable development as well as conserve the environment for future generations. The Government will achieve this by conducting systematic reviews and harmonising existing legislation, policies and plans, while taking into account and propose relevant adaptation and mitigation measures to address environmental issues in four main sectors, namely the energy sector, the building sector, the water and waste management sector and finally the transportation sector.

12. According to these policies, we have to incorporate elements of green technology in building the transportation infrastructure. Green technology in this context refers to products, equipments and systems which minimises the degradation of the environment, has a zero or low greenhouse gas emission, safe for use and promotes healthy and improved environment for all forms of life, conserves the use of energy and natural resources and promotes the use of renewable resources. Going forward, we must try our best in meeting these

criteria by incorporating the green concept when planning, designing, constructing and maintaining our roads.

Green Road Concepts

Ladies and Gentlemen,

13. Green concept for roads should begin at the planning stage. A comprehensive environmental review, including public consultation, should be undertaken during the feasibility study to ensure that the development has minimum impact on the ecology and social fabric while maximises the economic benefits. Thus, it is very important to conduct Environmental Impact Assessment and Social Impact Assessment at this early stage. The assessments will allow potential environmental and social problems to be foreseen and addressed in the beginning of the project, thus avoiding any costly mistakes afterwards.

14. A green road design also has to be environmental friendly. It has to have a comprehensive Environmental Management Plan including an Erosion and Sediment Control Plan that details out the runoff flow control and quality, as well as silt control procedures. The incorporation of such system in a road project will help in ensuring minimal pollution to nearby water basins and rivers. When designing a road, appropriate consideration should be given to the affected fauna too. More often than not, when roads are constructed across species-rich area, they will impede wildlife movement and fragmentise their living habitat. Roads in these areas create barriers which cut animals off from a larger landscape and will keep the animals away from food and potential mates as well as become deadly for them to cross. A special wildlife crossings in the shape of underpasses, overpasses, tunnels or culverts must

be provided. This is as practiced in the Aring – Tasik Kenyir road project near Sungai Deka, Terengganu where an eco-viaduct was built to allow animals such as elephants, deers, leopard cats and others to cross the road safely. Another successful implementation of such crossing is at Sungai Yu, Kuala Lipis – Merapoh trunk road where Sungai Yu is an important forest corridor that bridges the Main Range of Banjaran Titiwangsa and Taman Negara, two areas which are crucial for tiger conservation.

15. Roads that pass through mountainous range often offer scenic and breathtaking views. At these locations, road designers should consider constructing look out platforms or vistas for road users to enjoy the views. The vistas will also help drivers to unwind and freshen up before continuing with their journey. Where roads are built near areas with historical and high heritage values, adequate access from the road to these areas should be provided to promote the art/culture or community values.

Ladies and Gentlemen,

16. Another feature of a green road that should be considered when designing road is safety for all road users. In order to achieve that, all road projects must undergo a road safety audit process. Pedestrian bridges with bicycle rams should be provided at locations where a high volume of pedestrian is expected to cross the roads, for example, near schools, mosques and shopping malls.
17. Intelligent Transportation System (ITS) can also become part of the green concept for urban roads. Variable Messaging Signs (VMS) will be able to prewarn drivers of the traffic situation ahead such as road construction activities and accidents, and provide drivers with options to take alternative routes. An efficient and smart traffic technology can be very helpful in increasing the efficiency of the road network in urban area thus reducing the carbon emission of the traffic.

18. In designing some components of the road such as pavement, if possible, engineers may design it as a long life pavement which can last for more than 10 years. This will reduce the need for maintenance and consequently lower its operational costs. Additionally, by using permeable and quiet pavement surface technology, we can expect some reduction in the noise level generated by the traffic. Using recycled materials for new pavement should also be an option for designers to consider, since it will allow the construction to get away with the need to transport fresh aggregates. The use of warm asphalt or emulsion mix will also help reduce the total amount of energy needed to produce a road surfacing. Besides pavement, engineers also need to explore other ways of greening their design in order to reduce any adverse impact to the environment and improve the overall energy efficiency of the project.

19. In order to have a truly successful green road, we cannot run away from having a good and effective construction quality management system. A diligent construction monitoring and supervision is of great importance at this point in time, to ensure that the project meets all relevant regulations and quality standards such as Environmental Implementation Plan and Erosion and Sediment Control Plan. Noise, dust and mud are some of the environmental dimensions that have to be taken care of during construction. Our failure to do so might incur flash flooding or emission of excessive dusts which can be harmful to our health. The construction site also needs to be well kept and free from any stagnant water so as not to become mosquito breeding grounds. We must also endeavour to reduce and eliminate waste at the construction site. This can be done by using more environmentally friendly materials and identify materials to be recycled at every phase of the construction.

Ladies and Gentlemen,

20. Once constructed, there is an issue of operating and maintaining the road. A properly designed green road must have high reliability and high energy

efficiency with lower maintenance costs. The industry must take advantage of the latest technology and technique available in the market for such purposes. For example, the Public Works Department Malaysia is currently applying Cold-in-Place Recycling (CIPR) for its pavement maintenance program. This technology is an eco-friendly pavement rehabilitation process that is performed without the use of heat. Because it is a cold process, there is no heat applied to the asphalt and this reduces the noxious fumes thus creating very little pollution. Besides that, having an appropriate management system with effective maintenance technology and technique will ensure that the road assets are well maintained and are always at their optimal functional purposes.

Ladies and Gentlemen,

21. Another element in greening our road which is quite important is the rating tools. There is now a need to develop decision support tools and calculators that will help the industry to determine or gauge the achievement of the green level at every stage of the project. It is with great pleasure that I would like to inform that the Public Works Department Malaysia has successfully collaborated with Ministry of Energy, Green Technology and Water in developing MyCREST or Malaysian Carbon Reduction & Environmental Sustainability Tool, which is a tool that aims at quantifying built environment's impacts in terms of carbon emissions and environmental implication while taking into account a more holistic life cycle view of the built environment. One of the elements in MyCREST is Green Product Scoring System which is a system to measure the percentage of green products used in an infrastructure project. Such tools will assist the Ministry of Works in ensuring that all its road projects will have minimal impact on the environment. I hope in the near future we can move forward and award road and highway projects on their green rating. Ultimately, I envisage that green performance should also be monitored during the operation and maintenance stage throughout the life cycle of the roads.

Conclusions

Ladies and Gentlemen,

22. Roads often open a Pandora's Box of environmental problems. But we also need roads for our societies and economies. So the challenge is to decide where to put new roads, where to avoid them, and once a route has been selected, how to minimise the adverse impact on the surrounding ecosystems and biodiversity. As demand for new roads and connectivity remains incessant, road planners and scientists must work together to determine the best route for new roads to maximise their benefits for people while minimising carbon emission and any ecological damage. In other words, we must balance the competing demands of development and environmental protection. Proactive and strategic planning to reduce environmental damage should be central to any discussion about road expansion. We must promote innovative thinking and prioritise research and development areas towards achieving sustainable and green roads and highways.

23. For the last six years, our country had taken clear steps towards a cleaner future for a more sustainable economy and a balanced energy mix as targeted in the Climate Change Summit in 2009. This year's United Nations Climate Summit had called for all hands to be on deck to tackle climate change. In order to do so, we need to put our best effort in greening every activity related to our country's transportation sector, from designing to constructing and to maintaining the roads. Aside from that, every player in the industry needs to understand their relevance to the cause and must play an effective role in ensuring the sustainability of our environment. The manufacturers should incorporate green elements in their products. The consultant needs to produce designs that will not endanger the environment. The contractor must protect the environment during construction and maintenance. And the Government has to explore more ways of being effective governor and regulator of the industry. As a matter of fact, compliance of infrastructure projects with the Green Index or Penarafan Hijau JKR (pHJKR) is one of my Key Performance

Indicator (KPI). The truth is, time is not on our side and we don't have any other choice but to go green in this industry. It is hoped that this conference can become such platform to achieve that.

Ladies and Gentlemen,

24.I am honored to officiate the **9th Malaysian Road Conference and PIARC International Seminar On Slopes, Road Foundation Drainage and Storm Water Management**. I wish all participants will benefit from this Conference.

Thank you.