



# REAAA

Road Engineering Association of Asia and Australasia

## Business Forum



### NEW TECHNOLOGIES ON ROAD CONSTRUCTION

**Date: Tuesday, 1st November, 2016**

**Time: 13:00-15:40**

**Venue: Hotel Sunroute Ariake, Room "Hana-Akari" (2nd Floor)**

**Hosted by: REAAA, Japan Road Association**

**Supported by: Ministry of Land, Infrastructure, Transportation, and Tourism (MLIT)**

#### Background and Objectives

REAAA is holding the 104th Council Meeting in Tokyo on Monday, October 31 and Tuesday, November 1, 2016. Taking this occasion to visit Japan, REAAA is planning to hold the Business Forum ("BF") in Tokyo on Tuesday, November 1, 2016, to provide the opportunity to connect Business-to-Business and Government-to-Business in road engineering. REAAA organized the BF twice: the 1st BF took place in Bali, Indonesia in April, 2014 and the 2nd was held in Sydney, Australia in October, 2014. The theme of the 3rd BF is "New Technologies on Road Construction." Specialists from various fields will make presentations about their new technologies at BF.

It is expected to exchange road engineering information and to enhance relationship among business persons, institutions, and companies of REAAA member countries.

#### BF Program \*

**Participation: Free of Charge**  
**120 Seats**

13:00	<b>Opening</b>
13:00-13:20	<b>Opening Remarks</b>
13:20-13:40	<b>"History and Pavement Technology of the porous asphalt mixture"</b> <i>Institute of Research and Development, Taisei Rotec Corp.</i> Kazunari HIRAKAWA
13:40-14:00	<b>"Application of New Steel Technologies to Bridge Construction in Urban Areas"</b> <i>Steel Structure Engineering Sector, JFE Engineering Corp.</i> Tooru WATABIKI
14:00-14:20	<b>"Development and Construction of High-Durable Bridge"</b> <i>Technical &amp; Engineering Service Dept. No.1, Sumitomo Mitsui Construction</i> Naoki NAGAMOTO
14:20-14:40	<b>Coffee Break</b>
14:40-15:00	<b>"New Technology of Maintenance for Expressway"</b> <i>International Affairs Div., Technical Consulting Dept., Metropolitan Expressway Co., Ltd.</i> Mitsuhiro NARISAWA
15:00-15:20	<b>"Utilization of Big Data for Road Planning and Management in Japan"</b> <i>Road Department, Pacific Consultants Co., Ltd.</i> Sungjoon HONG
15:20-15:40	<b>"Global Latest Developments of Road User Charging"</b> <i>ITS Business Section, ITS Business Dept., Mitsubishi Heavy Industry Mechatronics Systems, Ltd.</i> Takakazu TSUJI <b>"Traffic Management System"</b> <i>Global 2nd Systems Dept., Transportation and City Infrastructure Div., NEC Corporation</i> Michihiko YUSA Shinji HARA
15:40	<b>Closing</b>

\* Official language is English only.

## REAAA Business Forum Presenters and Abstracts

### ***“History and Pavement Technology of the porous asphalt mixture”***

*Institute of Research and Development, Taisei Rotec Corp.*

*Kazunari HIRAKAWA*

Japan Road Constructors Association technical committee had edited the pavement technology in Japan aiming at Tokyo Olympic in 2020, and published this as “O·MO·TE·NA·SHI” Technology Provide the Comfort and Safety from the Road Pavement for the People Visiting from the World”. In this Business Forum, focusing on Porous asphalt mixture, its history and technology will be reported. In addition, solar ray reflective pavement and water retaining pavement, those are based on the porous asphalt mixture, will be introduced as advanced technology for the future.

(gijutsubu@dohkenkyo.or.jp)



### ***“Application of New Steel Technologies to Bridge Construction in Urban Areas”***

*Steel Structure Engineering Sector, JFE Engineering Corp.*

*Tooru WATABIKI*

Traffic jams in urban areas cause huge economic losses and become one of the most crucial social issues almost all over the world. This presentation demonstrates how the state-of-the-arts steel structure technologies can be effective to construct viaducts and provide grade separations in urban areas to solve the social issue. The virtues derived from the steel structures enable to shorten the site construction periods and minimize the impacts to local environments and the existing traffic. The presentation also shows the steel structures with newly developed treatments can prolong the service life of infrastructures as well as minimize the life cycle cost resulting in providing “high quality infrastructures” promoted by the Japanese government.

(watabiki-toru@jfe-eng.co.jp)



### ***“Development and Construction of High-Durable Bridge”***

*Technical & Engineering Service Dept. No.1, Sumitomo Mitsui Construction*

*Naoki NAGAMOTO*

In order to reduce future maintenance work, the Non-metal Bridge was developed. It is concrete structure, but completely eliminated the use of steel members such as steel reinforcements and prestressing steel. Aramid FRP rods are used as prestressing tendons. To eliminate the need for shear reinforcement, the Butterfly web structure was applied to it. To investigate this structure, several experiments were carried out such as wheel loading test and its structural performances were verified.

Based on those results, the actual pilot bridge was built and has been used as a part of a temporally construction road with full-time monitoring system.

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### ***“New Technology of Maintenance for Expressway”***

*International Affairs Div., Technical Consulting Dept., Metropolitan Expressway Co., Ltd.*

*Mitsuhiro NARISAWA*

Since its first opening of 50 years ago, the Metropolitan Expressway Company has been addressing protection of expressway structures as a toll road operator in Japan and has developed technologies to treat unexpected types of damages and to manage unmanageable amount of maintenance works as well.

After a brief introduction of company profile, background of maintenance, and future maintenance plan, ‘InfraDoctor’, which is a newly developed system, utilizing GIS and point cloud data to improve efficiency and accuracy of maintenance works on road and structures, would be introduced.

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## REAAA Business Forum Presenters and Abstracts

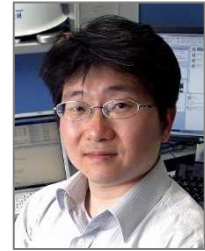
### ***“Utilization of Big Data for Road Planning and Management in Japan”***

*Road Department, Pacific Consultants Co., Ltd.*

*Sungjoon HONG*

Demand for the use of big data is increasing dramatically. Various kinds of data sources are available, and commercial data providers are increasing in Japan. Big data is also essential for road and transport planning and management these days, because it provides information of which the measurement was impossible before, such as origin, destination, and route of individual trips, driving behavior including speed, acceleration, and deceleration. This presentation shows examples of the use of big data in the road planning and management field in Japan including the data collected by ETC 2.0 vehicles, trucks, mobile phones, driving recorders, etc.

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### ***“Global Latest Developments of Road User Charging”***

*ITS Business Section, ITS Business Dept., Mitsubishi Heavy Industry Mechatronics Systems, Ltd.*

*Takakazu TSUJI*

Road is indispensable social infrastructure to support livable economy. The sustainable funding scheme to build and maintain the road is critical issue. Currently in the world economy, Road User Charging is getting popular as social mechanism to impose levy on the motorist to use roads, and classified into four categories in terms of policy goals; tolling to reimburse the construction cost, congestion charging to manage traffic demand, heavy truck charging to secure operation and maintenance cost for damaged roads, and external diseconomies charging to reduce negative externality such as air pollution.

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### ***“Traffic Management System”***

*Global 2nd Systems Dept., Transportation and City Infrastructure Div., NEC Corporation*

*Michihiko YUSA/Shinji HARA*

For efficient and safe traffic, it is important to provide traffic information for drivers, road operators and so on. To realize it, valuable and actual information are needed. But there are many sensors on the road, for example CCTVs, emergency telephones, seismometers. So for smooth processing, big data technology are needed. And also from point of BCP views, disaster recovery system is very important. Thanks to this system, operators can continue their operation even if huge disaster happen. This presentation shows sophisticated traffic management system that has those functions and contributes to efficient and safe traffic environment.

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## (Guide Map) Hotel Sunroute Ariake



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### Related Meeting

#### The 104th REAAA Council Meeting

The 104th Council Meeting will be held at the Hotel Sunroute Ariake on the afternoon, Monday, October 31 and on the morning, Tuesday, November 1, 2016. REAAA council members will also attend at BF.

#### Highway Techno Fair (HTF) 2016

HTF has been held to introduce expressway related new technologies, new construction methods, equipment and materials, field support systems, and environmental preservation technologies since 2004. There were more than 200 exhibitors and nearly 18,000 visitors in 2015.

HTF 2016, the 13th HTF, will take place from 10:00am to 5:00pm at Tokyo Big Sight (West 3rd and 4th hall), 10 minutes walk from Hotel Sunroute Ariake, on 1st and 2nd November, 2016.

Participants to the BF including REAAA council members are expected to visit HTF.



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