

Special Program on Road Asset Management for Participants of Long Term Training

- Period: 5 Days, August 19 to August 23, 2019
- Participants: 8 participants for Long Term Training on JICA Road Asset Management, (5 countries from Lao PDR, Cambodia, Mongolia, Bangladesh, and Egypt)

Output

- To acquire practical knowledge and experience in line with the actual circumstances in their countries by understanding the current status and issues for maintenance of Japanese road assets
- To build a network contributive to the future activities between participants and the Japanese researchers and various related bodies

Program Contents

1) Lecture:

- Introduction of Infrastructure Management in Japan,
- How to Identify Deterioration Mechanism of Concrete Member from Inspection,
- Human Resource Development on Road & Bridge Engineers in Gifu University

2) Study Tour:

- N2U-BRIDG, E-MAC and Infrastructure Museum for Engineers' training facility,
- Construction site utilizing advanced technologies for maintenance,
- Bridge Inspection utilizing Advanced Technologies on Kakamigahara Bridge

Demonstration of Bridge Inspection utilizing Advanced Technologies



Fig. 1 Kekemigahara Bridge

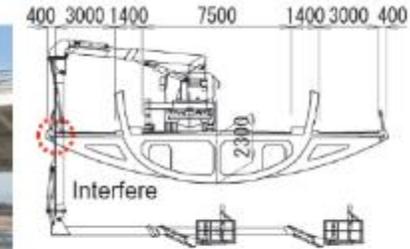
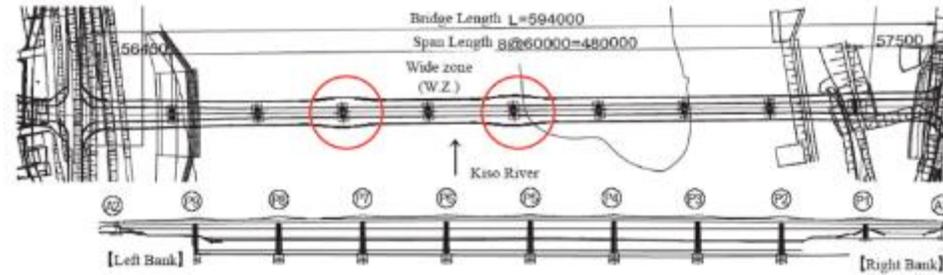


Fig. 2 Inspection with a general large bridge inspection vehicle



	No.1	No.2	No.3	No.4	No.5
Technology	Bridge Inspection Robotic Camera	Bridge Inspection Camera System	Drone Inspection	Internal Steel Materials Rupture Detection	Mobile Mapping System
Instrument					
Efficacy	Capable of measuring crack widths in locations where a person cannot easily go	Implementation of inspection on bridges where inspection is difficult (large bridges having large cross-sections, etc.)	Bridge inspection by Drone, Automatic deterioration extraction by AI, and Result report by 3D-model with a photo of damage point	Nondestructive inspection method for examining soundness of internal steel materials by porcelain sensing and data analysis by IoT	Laser-surveying device mounted on the vehicles for the measurement of 3D coordinate data and the acquisition of sequence of images of the road and its surroundings

Bridge Inspection Robotic
Camera by Sumitomo Mitsui
Construction Co., Ltd.



Bridge Inspection
Camera System
by Zivil, Ltd.



Drone Inspection by Hitachi Systems, Ltd.



Internal Steel Materials Rupture
Detection (Nondestructive
inspection method) by Konica
Minolta, Inc.



Mobile Mapping System
(Measurement of 3D coordinate
data) by Pasco Corporation



2. Support for JICA Technical Support

Academic specialist (e.g., professors) concerning JICA technical support projects regarding road infrastructure maintenance management suggested...

- Inspection and checkup technic effectively available as practical applications
- Educational program for technicians were suggested and implemented at their universities

For example...

Bridge Maintenance Capacity Building Project (Phase 2) in Zambia, cooperation with Prof. Rokugo (education for technician) and Assoc prof. Kinoshita (bridge inspection technology) in terms of...

- Introduction of the lecture of Gifu University to educate maintenance experts
- Proposal of practical application and availability of robotic technology utilized for the bridge inspection

The Project for Capacity Development on Countermeasures of Slope Disaster on Roads in Bhutan, cooperation with Prof. Yashima (slope monitoring technology) in terms of...

- Proposal of practical application and availability of slope disaster management implemented in Japan

Project for Capacity Development of Road and Bridge Operation and Maintenance in Myanmar, cooperation with Assoc prof. Nagai (inspection and monitoring technology) in terms of...

- Introduction of results of survey and precept of Myaungmya Bridge collapse
- Industry-Academia-Government collaboration for disaster management
- Suggestion of necessity of platform and utilization in technical support program

Cooperation with Gifu University in Zambia for build up sustainable human resource development system

The Bridge Maintenance Capacity Building Project in Zambia (Phase2) (Mar., 2019-Feb., 2023)

RDA(Road Development Agency) focuses on sustainable human resource development system, thus...

- RDA and University of Zambia concluded MoU (focusing on human resource development) to improve road infrastructures
- Gifu University and University of Zambia concluded Academic Agreement in January 30th in 2019



The objective of this agreement is...

- University of Zambia build up systems for human resource development with RDA based on the lecture to educate bridge maintenance technicians
- Sustainable human resource development will be realized by University of Zambia based on the educational method of Gifu University for maintenance experts

Academic Agreement between the Faculty of Engineering at Gifu University and the Graduate School of Engineering at University of Zambia (Jan. 30, 2019)

2019.02.28

The Faculty of Engineering at Gifu University and the Graduate School of Engineering at University of Zambia signed a faculty-level agreement on Wednesday, January 30, 2019. The signing ceremony was held that day with the presence of Professor Luke Evuta Mumba, Vice-Chancellor, Dr. Michael N. Mulenga, Dean of Graduate School of Engineering, and Mr. Kennedy Msusa, Administrative Assistant to the Vice Chancellor from University of Zambia. The signing ceremony was also attended by the following members from Gifu: Mr. Kanenawa, the Director for Team 1, Transportation and ICT Group, Infrastructure and Peacebuilding Department, and his team member Ms. Kumazawa, from Japan International Cooperation Agency (JICA), Dr. Fumiaki Suzuki, Executive Director for International Relations and Public Relations, Professor Toshiaki Murai, Dean of the Faculty of Engineering, Associate Professor Koji Kinoshita (Liaison for the University of Zambia), and Professor Emeritus Keitetsu Rokuogo, from Gifu University.

The Faculty of Engineering at Gifu University has been seeking various ways to support University of Zambia in the Phase II of the Bridge Maintenance Capacity Building Project under JICA's leadership, which has led to this partnership agreement.



Source: http://www.eng.gifu-u.ac.jp/news_en/2019/02/28.html

Succession to Japan Society of Civil Engineers (JSCE)

Expected Activities...

- Utilization of Technologies which Private Company in JSCE possesses
- JICA provides the Short Term Internship program in Private Company to JICA Long-Term Participants (Scholarship) for the human network in future.
- JICA provides the opportunities of study of technical skill in developing countries (JICA projects) for Japanese young engineers.



Expected Achievement...

- Inspecting infrastructure, utilizing advanced technologies in developing countries
- Scheduling refurbishment periods of old structures in detail
- Effectively scheming financial issues
- Building up future financial support systems based on financial schemes
- Contributing to schemes of Japanese government to export infrastructure technologies



Conclusion of the Memorandums of Cooperation between JSCE and JICA for Road Asset Management on Mar. 5th, 2019 in order to success the results of cooperation with SIP.