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The IAC News introduces significant and unique international projects, technologies, symposium, communication undertaken by JSCE IAC, International Section, ACECC, and Research & Development Section with over 30 committees, state-of-art- civil engineering technologies and projects, great and interesting achievements of civil engineer and researcher once a month.

This month's issue covers technical to international exchanges:
1) a report about the 2024 Noto Peninsula Earthquake post-disaster servey, conducted by Mr. Shigeyoshi Tanaka the 2023 JSCE president,
2) The UK Section Mr. Teruhiko Tsumura's insightful views about the emission reduction efforts conducted in the UK and Japan, who have conduted numerous researhes in the construction industries in the UK, and the neighbouring areas,
3) JICA's report about the proejct for capacity development on bridge management system implemented in Kenya, and
4) a brief report on ACECC 46th ECM, hosted by Philippines Institute of Civil Engineers Inc. (PICE).

Enjoy these interesting and informative articles.

We are looking forward to your comments, feedback, and requests anytime. Thank you

The 2024 Noto Peninsula Earthquake: Preliminary report by the JSCE Presidential Mission

At 16:10 on New Year's Day, 2024, a huge 7.6-magnitude earthquake struck the Noto Peninsula, which had suffered a series of earthquakes three years prior. Shika-machi, located in the Hakui District of Ishikawa Prefecture, and Wajima-shi were hit by an earthquake with the maximum seismic intensity of 7, the highest on the Japan Meteolorogical Agency scale. Crustal deformation occurred in the vicinity of the fault lines, liquefaction of the ground arose in the coastal flatlands, and landslides were triggered in the nearby mountainous areas. Besides the collapse of buildings, there were fires, landslide blocked rivers in the mountains, a tsunami in coast, damage to essential utilities like power and water, and infrastructure damage to the likes of roads, bridges, and ports. This earthquake is what is known as a complex disaster in which the damage compounded and sparked further damage, leaving behind issues including preparations for future disasters, such as increasing the resistance of buildings against earthquakes and enhancing equipment to protect against fires. The region where the earthquake struck was an area with little flatland at the tip of the peninsula, meaning the roads and essential utilities connecting the mountainous settlements were cut off, causing many communities to be isolated. Furthermore, swift support to the affected areas was not forthcoming and problems with the earthquake resilience of the region's core infrastructure facilities came to light.

Shigeyoshi Tanaka (111th JSCE President, Team Leader)

Fumihiko Imamura (JSCE Vice President, Vice Leader)

From January 2 after the earthquake struck, JSCE began work to conduct the necessary investigations while paying attention to the severe damage suffered by the transportation network. Furthermore, the Earthquake Engineering Committee held a preliminary report meeting and the Coastal Engineering Committee held an investigation report meeting. In order to appropriately facilitate the subsequent restoration and recovery efforts, a special president-led investigation team was dispatched to the area, made up of President Shigeyoshi Tanaka as the team leader and experts from a broad range of relevant fields such as earthquake engineering, geotechnical engineering, coastal engineering, tsunami engineering, infrastructure planning and management, infrastructure studies, and land studies. The team conducted an investigation of the disaster-struck locations in Suzu-shi and Wajima-shi on February 5 and 6, 2024, approximately a month after the earthquake hit (Figure 1). Specifically, Horyu-machi in Suzu-shi (location of tsunami flooding), Maura-machi in Suzu-shi (location of a large-scale collapse near the Osaka Tunnel, National Highway No. 249), Kumano-machi in Wajima-shi (location of Kawaradagawa River channel blockage), and Kawai-machi in Wajima-shi (one of the towns struck by the disaster, which also suffered a large-scale fire and the collapse of buildings). Although the investigation took a while due to traffic restrictions caused by roads being out of action, the investigation team consolidated its findings by engaging in discussions while being driven around the affected areas. After investigating the disaster-stricken areas, the investigation team paid a courtesy visit to the governor of Ishikawa Prefecture, Hiroshi Hase, and then held a press conference at the Ishikawa Prefectural Government Office. A report was made on the disaster's characteristics, the mitigation of secondary damage and swift restoration and recovery attempts, how restoration and recovery efforts should be implemented, as well as insights into the future outlook. The content of this press conference was published immediately on the JSCE website.

Table 1 Investigation Team Members

Team Leader	Shigeyoshi Tanaka	President of JSCE (Taisei Corporation)
Vice Leader	Fumihiko Imamura	Vice President of JSCE (Tohoku University)
Team members	Hitoshi Ieda	National Graduate Institute for Policy Studies
	Miho Ohara	University of Tokyo
	Toshikazu Kitano	Nagoya Institute of Technology
	Shunichi Kobayashi	Kanazawa University
	Hisakazu Sakai	Hosei University
	Hirokazu Tatano	Kyoto University
	Masatoshi Yuhi	Kanazawa University
	Junji Miwa	Executive Officer of JSCE

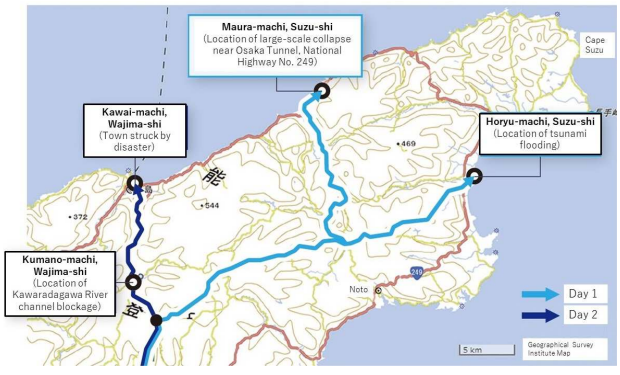


Figure 1: Observation route focusing on Suzu-shi and Wajima-shi (source: created by adding observation locations and routes to a Geographical Survey Institute Map (Geospatial Information Authority of Japan website))

Photo 1 Horyu-machi, Suzu-shi (an area struck by complex disasters in the form of tsunami flooding, a strong earthquake motion, and liquefaction)

Photo 2 Maura-machi, Suzu-shi (location of large-scale collapse near Osaka Tunnel, National Highway No. 249)

Photo 3 Kumano-machi, Wajima-shi (location of Kawaradagawa River channel blockage and landslides across a wide area, including locations that had been restored from the earthquake that struck in 2007)

Photo 4 Kawai-machi, Wajima-shi – one of the towns struck by the disaster (Top: location of widespread fire, Bottom: collapsed building)

Photo 5 Meeting on bus

Photo 6 Courtesy visit paid to Ishikawa Prefecture Governor, Mr. Hiroshi Hase

Photo 7 JSCE President Shigeyoshi Tanaka speaks at press conference

Photo 8 Investigation team members and persons who provided assistance

• Contributors: Ministry of Land, Infrastructure, Transport and Tourism, Hokuriku Regional Development Bureau, Ishikawa Prefecture Government, Suzu-shi Municipal Government, Wajima-shi Municipal Government

• Special acknowledgments: I would like to take this opportunity to express my appreciation to the Ministry of Land, Infrastructure, Transport and Tourism, Hokuriku Regional Development Bureau, Ishikawa Prefecture Government, Suzu-shi Municipal Government, Wajima-shi Municipal Government, and all other organizations involved in the undertaking of this investigation.

【Reported by Team Leader Shigeyoshi Tanaka (JSCE Fellow Member, 111th JSCE President, and Chairman of the Board Representative Director, Taisei Corporation) and Vice Leader Fumihiko Imamura (JSCE Fellow Member, JSCE Vice President, and Professor at the International Research Institute of Disaster Science at Tohoku University)】

Message from Mr. Teruhiko Tsumura, JSCE UK Section

Taking an Action to reduce emissions in UK and Japan

Teruhiko Tsumura (JSCE UK Section)

The UK is leading the G7 in reducing global greenhouse gas emissions (hereinafter referred to as emissions). The country's emissions level of 2022 was 48% lower than that of 1990, at 6.2 tons of carbon dioxide equivalent per capita. Japan's comparative figures were 8% and 9.1 tons, respectively.

The UK is also in a much better position when it comes to future prospects. Several commercial projects are already in the implementation stage regarding hydrogen and CCUS, which are essential for decarbonizing the industrial sector. In addition, its operating capacity of offshore wind power and battery storage stands at 14GW and 3.5GW, respectively, making it outstanding among the G7 countries. However, many believe that unless investment accelerates drastically, the country will not be able to meet its pledge to reduce emissions by 68% compared to the 1990 level by 2030. For example, the offshore wind power capacity needs to be 3.6 times the current level at 50GW.

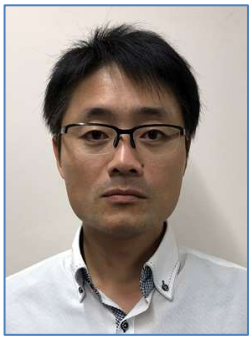
Low-carbon investment to reduce emissions in Japan has been sluggish, at less than 0.6% of GDP in 2022, the lowest among the G7 countries. One reason for this is that Japan's carbon tax is so low that it practically does not play a role in encouraging low-carbon investment. Carbon tax should give financial advantages to renewable energy-based power generation over coal- or gas-fired generation and thereby bring further investment into renewable energy.

More importantly, Japan does not have such an effective institutional framework that exists in the UK to ensure net zero by 2050. In the UK, (1) the government has a duty to deliver a five-year carbon budget (the total amount of emissions allowed) that aligns with a net zero trajectory, and (2) an independent expert panel, which has been established to provide evidence-based advice to the government, has also a duty to report to the Parliament on the progress in reducing emissions.

Those who are in the construction sector in Japan, including civil engineers, are in a position to propose, plan and/or implement projects that directly or indirectly reduce emissions. Their proactive actions, based on the monitoring of the development of different low carbon technologies in Japan and the world, are therefore sought-after for example with resource and energy savings, project assessment taking carbon prices into account, maximizing the use of renewable energy including ground heat, etc.

【Reported by Teruhiko Tsumura, JSCE UK Section (London Research International Ltd.)】

Project for Strengthening of Capacity Development on Bridge Management System - Japan Leads the Way with Technical Assistance -



Katsuya Fujiwara (JICA Expert)

The total length of the road network in Kenya is estimated to be about 246,800 km, with 93% of cargo and passenger transportation said to be reliant on road transportation[*1]. While the establishment of a new road network is, of course, one of Kenya's key policies, there are hardly any main roadway bypasses in the country and so the proper maintenance of existing roads and bridges is an extremely important issue for the lives of the people of Kenya as well as the growth of the country's economy. However, maintenance-related technologies, personnel, and frameworks are insufficient, and the poor state of the roads and the replacement of collapsed or severely damaged bridges have led to financial problems, as well as increased transportation costs and longer travel times due to extensive detours.

In order to resolve these problems, the Japan International Cooperation Agency (JICA), undertook a project from 2010 to 2019 to enhance road maintenance capabilities in Kenya and made improvements to the state of the roads while helping to develop the country's economy and its social infrastructure. While up to now Japan and other countries have assisted in constructing, repairing, and replacing complex bridges due to awareness that they play a crucial role in developing a safe and sustainable transport network, engineers in Kenya lacked the necessary experience and skills for establishing, repairing, and maintaining bridges adequately. Furthermore, inspections of such structures were not being carried out and the necessary resources and database for undertaking maintenance were lacking. Therefore, as a subsequent project to its road project, in 2020, JICA launched a project to enhance Kenya's bridge maintenance capabilities. During the project, long-team experts were dispatched to the country.

To establish the basic skills for maintaining bridges, manuals for bridge inspection, diagnosis, repair, and cost estimation were created. Methods for effectively using the Bridge Management System (BMS), put in place with the help of the African Development Bank, were promoted by working together with the related parties. The project is being implemented with a participatory-based approach, with the aim of building a sustainable framework for bridges all across Kenya. As a result, the project involves not only the main counterparts but also discussions with stakeholders such as major roadway organizations overseeing bridges, research institutions focusing on materials, and training organizations.

The Kenyan engineers who have gained experience up to now have a greater awareness of appropriately undertaking the cycle of inspection, diagnosis, repair, and budgeting. While, more recently, these engineers have made requests themselves asking for help in improving the manuals and implementing training.

The photos in this report are of bridge inspection training in Kenya. The training emphasized a safety-first approach. While road restrictions are a given in Japan, it was hard work to ensure they were understood as well as prepare the necessary materials in order to properly put in place the road restrictions. Putting in place the best possible road restrictions in Kenya to ensure safety is, albeit, a small accomplishment, but I was very happy when we pulled it off.

The establishment of restrictions and inspection work done using the bridge inspection vehicle, which was introduced in Kenya for the first time during this project, increases the attention paid toward safety. Nowadays, a morning assembly is held before on-site training and the morale-boosting motto “Go-Anzen-Ni!,” which is Japanese for “Safety First!,” can be heard.

The Project for Strengthening of Capacity Development on Bridge Management System is ongoing thanks to Japan leading the way with technical assistance. It is expected that bridges in Kenya will increase in scale and number going forward. By sharing its experience and know-how, I hope Japan will continue to focus its efforts on building a framework for sustainable maintenance in Kenya.

Putting in place traffic restrictions


Setting up traffic restrictions and bridge inspection vehicle

Morning assembly before work


Inspection training using bridge inspection vehicle

*1 APRP (Annual Public Roads Programme) 2022/2023

【Report by Katsuya Fujiwara, JICA Expert】

The Asian Civil Engineering Coordinating Council (ACECC) 46th Executive Committee Meeting in Manila, Philippines

1. Overview

The Asian Civil Engineering Coordinating Council (ACECC) is an organization established in September 1999 to improve and develop sustainable social capital in the Asian region. At present, with the help of the 17 engineering-related academic societies affiliated with the ACECC, the organization is engaged in various activities to promote learning and skills. The Executive Committee Meeting (ECM), the highest-level decision-making body of the ACECC, is held twice a year by affiliated academic societies on a rotating basis. The 46th Executive Committee Meeting was held from February 29 to March 2, 2024, in Manila, Philippines. From JSCE, a total of 10 people attended the event in person, including JSCE Representative Eiki Yamaguchi (Kyushu Institute of Technology), Chairperson Hironori Kato (The University of Tokyo), myself, and the speakers at the Technical Committee (TC) and Future Leaders Forum (FLF) seminars. The schedule of each event is shown in Table 1. This is a report on these meetings.

Table 1 ECM Schedule

Date	Local Time	Event
Thursday, February 29	9:00-11:00	Technical Coordination Committee Meeting (TCCM)
	11:30-12:30	Finance Committee Meeting (FCM)
	13:30-16:00	Planning Committee Meeting (PCM)
	16:15-18:45	[Technical Sessions] TC 27: Water Futures and Foresight TC 28: Application of Monitoring Technology for Infrastructure Maintenance TC 31: Reframing the Sustainable and Resilient Infrastructure Capacity-Building FLF: Engineering Frontiers-Global Perspective on Infrastructure, Innovation, and Leadership
	19:30-21:30	Welcome Reception
Friday, March 1	9:00-10:30	Planning Committee Meeting (PCM)
	10:30-12:30 13:30-15:00	Executive Committee Meeting (ECM)
	15:15-18:45	[Technical Sessions] PICE (Philippine Institute of Civil Engineers): Philippine Infrastructure Flagship Projects TC 21: Transdisciplinary Approach for Disaster Risk Reduction: Practices in Japan and the Philippines TC 22: Measures to Reduce Earthquake Disaster Risk: The Experience of Asian Countries TC 26: Addressing Water Management on the Onset of El Niño and Climate Change in the Asian Region TC 30: Robotics Technology in Construction
	18:30-21:00	Farewell Dinner
Saturday, March 2	8:30-12:00	Technical/Sightseeing Tour

2. The 46th ECM

(1) Technical Coordination Committee Meeting (TCCM)

At the TCCM, reports were given on the efforts of the 12 active Technical Committees (TCs), with reports made on the endeavors of TC21 (Transdisciplinary Approach for Building Societal Resilience to Disasters, Chair: Mikio Ishiwatari (JICA)) and TC28 (Application of Monitoring Technology for Infrastructure Maintenance, Chair: Eiki Yamaguchi), which are chaired by JSCE. Under the name “Advancing Artificial Intelligence Education in Civil Engineering,” the launch of a

Photo 1 ACECC ECM

new TC was proposed to cover AI education in civil engineering. It was approved as TC33. From JSCE, Ji Dang (Saitama University) and Yasutaka Narazaki (Zhejiang University) are set to be involved in the new TC.

(2) Planning Committee Meeting (PCM)

At the PCM, a report was made on the activity status of the ACECC's Strategic Plan, which examines the direction of ACECC's forthcoming activities and the outlook of the civil engineering field in Asia. The publishing of a technical paper summary collection and technical paper collection of the 9th Civil Engineering Conference in Asian Region (CECAR 9) held in 2022 was also announced. There were also reports regarding discussions about subsidizing the budgets of TCs and the state of preparations for CECAR 10.

Before the PCM, there was also the Financial Committee, which is chaired by Hironori Kato, and discussions took place on budgeting for the next fiscal year and addressing the accounts of CECAR 9.

(3) Executive Committee Meeting (ECM)

At the ECM, the decisions made at the TCCM and PCM were approved. The upcoming 47th and 48th ECMs were also discussed. It was decided that the 47th ECM will be held in New Zealand from October 20 to 22, 2024, together with the events to celebrate the 25th anniversary of the Asian Civil Engineering Coordinating Council. Meanwhile, the 48th ECM will be held in Myanmar in the spring of 2025.

Photo 2 ACECC ECM Attendees

(4) Seminars

During the ECM, various seminars were held by the likes of TC21, TC28, TC30, and the Future Leaders Forum. TC21 held a seminar entitled "Transdisciplinary Approach for Disaster Risk Reduction: Practices in Japan and the Philippines." From Japan, presentations were made by Kuniyoshi Takeuchi (Emeritus Professor at the University of Yamanashi), Mikio Ishiwatari (JICA), and Yoshihiro Katsuhama (Nippon Koei), in which case studies of collaborations between different fields and departments in Japan and the Philippines were given and discussed. Meanwhile, TC28 held a seminar entitled "Application of Monitoring Technology for Infrastructure Maintenance," with Japanese members JSCE Representative Eiki Yamaguchi, Masaaki Nakano (Nippon Koei), and Tetsuro Goda (Nippon Koei) giving presentations. Presentations and discussions were held on formulating

guidelines for infrastructure-related maintenance. TC30, which covers Smart Construction, saw Japan-based members Pang-jo Chun (The University of Tokyo) and Mototaka Yamauchi (PWRI) give online presentations on the latest research and case studies. The FLF, a team of young researchers and engineers 35 years old or younger, also held a seminar. From Japan, Sayaka Sugiyama (Graduate Student at the University of Tokyo majoring in Civil Engineering) gave a presentation on her research in Sri Lanka. You can watch footage of these seminars on the new ACECC YouTube channel (https://www.youtube.com/@TheAsianCivilEngineering). Videos of previous seminars are also available, so please subscribe to the channel and give them a watch!

Photo 3 TC28 Seminar

3. Conclusion

Recently, ACECC has been strengthening its efforts to put out more information and has given its website a design makeover (https://acecc-world.org/). I hope you will take the opportunity to take a look. A page has also been created for posting papers for the 10th Civil Engineering Conference in Asian Region (CECAR 10), which will be held on Jeju Island in South Korea from October 21 to 24, 2025 (https://www.cecar10.org/Papers.asp). The submission deadline for abstracts is August 20, 2024, while the deadline for the full version of your papers is January 31, 2025. I encourage everyone to actively share your papers!

【Reported by Masashi Inoue, Secretary-General of the Committee on ACECC
(Eight-Japan Engineering Consultants Inc.)】

Updates

◆In response to 2024 Noto Peninsula Earthquake
https://www.jsce-int.org/node/873

◆The International Infrastructure Archives
– A Compilation of Japan's Greatest Projects in Transfer of Civil Engineering Technology in Service –
http://www.jsce.or.jp/e/archive/

◆Infrastructure System Resilience: An Engineering Framework for Assessment, Management, and Governance
https://ascelibrary.org/doi/10.1061/9780784485088

◆IAC "News Pick Up!!" on the JSCE Japanese website
https://committees.jsce.or.jp/kokusai/iac_dayori_2024

◆【YouTube】 Civil Engineering, in Your own Words (Full ver.)
https://youtu.be/r1Dc37kABXM?feature=shared

◆The English Summary Edition of JSCE Standard Specifications for Concrete Structures
https://www.jsce.or.jp/committee/concrete/e/web/pdf/Summary_edition_20240227.pdf

◆Summary of featured articles in JSCE Magazine Vol. 109, No.6, June 2024
http://www.jsce-int.org/pub/magazine

◆Journal of JSCE
https://www.jstage.jst.go.jp/browse/journalofjsce

◆Call for Nominations for the ACECC Young Engineer Professional Achievement Award
https://committees.jsce.or.jp/acecc/node/59

◆Frontiers of Concrete Technology, 7th JSCE Concrete Committee Webinar
https://www.jsce-int.org/node/893

◆Safe and Healthy Work in the Digital Age 2023-2025 Campaign
https://healthy-workplaces.osha.europa.eu/en/media-centre/events/launch-ceremony-healthy-workplaces-campaign-safe-and-healthy-work-digital-age-2023-2025

◆【YouTube】 Taiwan Public Infrastructure Archives: Public Water Supply Series
https://youtu.be/mMMvODevd_Q?feature=shared

◆ACECC Future Leaders：https://aceccfutureleaders.org/

◆CECAR10：http://www.cecar10.org/

◆The Japan Foundation Indo-Pacific Partnership Program (JFIPP Research Fellowship)
https://www.jpf.go.jp/e/project/intel/exchange/jfipp/research/index.html

◆IABSE Symposium Tokyo 2025
https://www.iabse.org/Tokyo2025/

◆ECCE Manifesto for Action for the EU term 2024-2029
http://www.ecceengineers.eu/news/2024/ecce_manifesto_2024.php?id=41

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