



IAC News No.142

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 issue has 3 interesting articles: 1) Tohoku University's international education program implemented in te Civil and Enviormental Engineering Major. The univesity, which has been selected as a University for International Research Excellence" by the Japanese Government, has been developing its international prograam,a and we will learn how they have been doing to keep up with meeting international standards, 2) JICA's project of transport management implemented in Nepal. Nepal. The capital Kathmandu Valley (hereinafter the project), an engineering project implemented in Kathmandu, the capital of Nepal. What you imagine about the countyr may be that it is sandwiched between India and China, located the foot of the Himalayas, blessed with a long and rich history. In the other hand, the country has been dealing with the two issues- hevly traffic congestions and traffic accidents. You see how those two issues are solved, and 3) Let's Play Karuta- the International Civil Engineering Group held the 1st Karuta game session, inviting international students and civil engineers in June. Karuta playing is a card game with long hisotry in Japan and needs your brain power and physical strength. It is a fun way to learn the Japanese language with your friends. You might want to join the next Karuta game session.

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

International Education in Civil and Environmental Engineering Major at Tohoku University

Ever since it was established in 1907, Tohoku University has been committed to its three core principles of Research First, Open-Doors, and Practice-Oriented Research and Education. With regard to Open Doors, Tohoku University was the first university in Japan to accept three female university students in 1913. It later accepted female international students in 1927. Since the university's establishment, it has stuck proudly to its Open Doors policy. Today, over 3,000 international students study at Tohoku University. Given that Tohoku University will be chosen as a University of International Research Excellence, even further advancement/deployment of international education is expected.



**Assoc. Prof.
Hideki Naito
(Tohoku University)**

The Civil Engineering major at the university has actively accepted undergraduate and graduate international students, mainly from China, Korea, and South East Asia. Many of the international students return to their native country after graduating, taking up positions in government or as executive engineers, university faculty, etc. where they engage in work to improve social infrastructure, enhance the ability to withstand and recover from natural disasters and other crises, or improve education infrastructure in their respective countries. Aspiring to be like their senior international students, the younger generation of students have a strong desire to study abroad at Tohoku University, creating a positive cycle.

To attract promising international students and ensure the university consistently develops future global leaders, the university must enhance the international education system to meet the needs of today's generation. In 2019, the Graduate School of Engineering at the university established an International Civil and Environmental Engineering Course (I-CEEC) led by Professor So Kazama and Professor Shigeki Unjoh. All the classes on this course are conducted in English, and therefore international students can gain accreditation without needing to know Japanese. I-CEEC enrollment and classes start in October, with entrance examinations taking place in February of that year. Entry candidates living overseas can also take the entry exams online. I-CEEC is linked with JICA's Long-term Training Program for Disaster Risk Reduction (DDR), with promising international students gathering at Tohoku University since the inception of the course.

To resolve major global issues, a special program has also been set up within I-CEEC in partnership with the Architecture Courses. The International Disaster Risk Management Course (DRM) and the Social Infrastructure Management Course (SIM) were set up between 2020-2022 and 2023-2025 respectively. Each course has earned slots for the MEXT Scholarship for International Students. These special programs promote networking between international students and Japanese students through learning civil engineering-related knowledge and skills in the primary I-CEEC course and risk management lectures in partnership with the university's WISE Program (Doctoral Program for World-leading Innovative & Smart Education) and International Joint Graduate Program. The university provides an environment in which international students can concentrate on their research with peace of mind thanks to a high-quality education program, financial support in the form of scholarships, and personalized academic support.

Five years have passed since I-CEEC was set up in 2019, and now I-CEEC international students can be seen throughout the research center of the civil engineering major. Rather than being separated from each other, the international students and Japanese students engage in experiments and research together in the research center. It is a common sight to see international students and Japanese students communicating in English, and these international exchanges beyond borders and culture are a valuable experience for Japanese students as well. The COVID-19 pandemic saw the number of new I-CEEC students decline and networking events scaled back. However, now in this post-pandemic era, I-CEEC is poised to help advance international education at Tohoku University.

【Reported by Assoc. Prof. Hideki Naito (Tohoku University)】

The Project for Introduction of Urban Transport Management in Kathmandu Valley

This report introduces the project for Introduction of Urban Transport Management in Kathmandu Valley (hereinafter the project), an engineering project implemented in Kathmandu, the capital of Nepal. Have you ever visited Nepal? Nepal is a landlocked country surrounded by India and China. I'm sure you all picture the Himalayan Mountains when you think of Nepal. Located at the foot of the mountain range approximately 1,350 meters above sea level is the Kathmandu Valley (hereinafter the valley). The valley is one of the most developed regions in Nepal, with a population of 3.26 million (as of 2021). It is made up of three districts, the Kathmandu District, Lalitpur District, and Bhaktapur District. The valley is also home to many temples and historic buildings built between the 16th and 18th centuries. It is a history-rich region with seven World Heritage sites.

A focal point of culture and history, the valley has two issues: road congestion and road accidents.

With regard to the first issue of road congestion, the main factors are: (1) an increase in population and reliance on automobile transportation, (2) the use of limited land, and (3) inefficient operation of existing roads. While the population of the valley is estimated to reach 3.84 million in 2031 (Asian Development Bank, 2018), up from 3.26 million in 2021, no railroad transport organizations have been set up and there is a strong dependence on road transportation such as cars, buses, motorbikes, mopeds, etc. In addition, the number of vehicles registered annually has increased by about 280%, rising from about 24,000 in 2000 to approximately 67,000 in 2014. Therefore, in order to ensure the infrastructure can sufficiently handle this amount of traffic, improvement measures such as widening the roads and large-scale intersection modifications are required. However, as buildings are congested in the valley and there are many historic regions, the amount of land that can be used for roads is limited. Furthermore, there is also the issue of operating existing roads and intersections efficiently. There are many intersections with no left- or right-turn lanes, as well as inefficient traffic lights with extremely long cycle lengths.

With regard to the second issue of road accidents, if we compare the number of fatalities per 10,000 automobiles by country, Nepal has 40.0, which is higher than neighboring countries Bhutan (16.7), India (13.0), and Sri Lanka (7.1) (World Bank, 2019). Also, the number of road accidents in the valley has increased from 8,958 in fiscal 2014/15 to 11,507 in fiscal 2017/18. According to the Nepal Traffic Police, at least 70% of road accidents are caused by drivers' lack of road safety awareness.

To resolve these two issues, the main project began in February 2022, with the help of Nippon Koei Co., Ltd. and ALMEC Corporation (to be implemented until July 2025). The project consists of four main activities: (1) formulate a traffic management plan, (2) improve intersections, (3) improve the operations/management of traffic lights, and (4) educate about road safety. The aim is to implement appropriate traffic management measures, as well as contribute to improving traffic congestion and promoting road safety in the valley.

This next section introduces three efforts that have been implemented most recently: (1) pilot project to Improve

Intersections, (2) road safety education activities, and (3) training in Japan.

During the project period, the pilot project to improve intersections selected two intersections, which can be improved relatively effectively without requiring land acquisition. The pilot project carries out construction work (setting up a dedicated right-turn lane and a median strip, etc.) to improve the intersections together with traffic light operations. Construction work at one of the intersections was completed at the end of December 2023. When measuring the effectiveness of the improvements in December 2023, a comparison with pre-construction work data showed an approximate 60% increase in travel speed (mornings and evenings) and an approximate 30% reduction in the intersection delay length (mornings and evenings).

As for road safety education efforts, various initiatives have been deployed to help improve awareness of road safety, such as road safety classes for elementary and junior high school students, volunteer-led efforts to promote the obeying of traffic lights, surveys to assess awareness/behavior changes of drivers and pedestrians, and efforts to educate road safety using social media and flyers.

As for training in Japan, related parties in Nepal have been invited to Japan twice to date to learn about urban transport management-related measure frameworks, methods of collaboration with related organizations, as well as intersection improvement, traffic light control, and transportation management methods. These efforts bring about multiple benefits within the project. This training involves lectures and site observation visits with the cooperation of the Ministry of Land, Infrastructure, Transport and Tourism, related police departments, local governments, and private enterprises.

My final thoughts are that seeing firsthand the ongoing road transportation issues in Nepal has only strengthened my belief in the excellence of Japan's road infrastructure. I believe the most important thing is that Japan's excellent skills and know-how are leveraged to resolve issues in Nepal through the project to ultimately enhance economic and social development across the entire region.

JICA will continue to provide support in the road field in developing countries. Thank you for your continued support and cooperation!



BEFORE

AFTER

Before and after Pilot Project to Improve Intersections



Efforts to educate about road safety
(photo credited to Kathmandu Valley Traffic Police)



Training in Japan (observation of intersection in Osaka)

【Reported by Jun Kunihiro, Japan International Cooperation Agency 】

Let's Play Karuta

On June 8th, 2024, the Civil Engineering International Students support team of the Japan Society of Civil Engineers (JSCE) organized a unique and engaging event titled "Let's Play Karuta" to enhance Japanese language skills and promote cultural exchange among international students. This event marked a significant milestone as the first face-to-face gathering of the Japanese language program that commenced in January 2024.

The primary objective of "Let's Play Karuta" was to provide international students with an opportunity to practice and improve their Japanese communication skills in a fun and interactive environment. By participating in this event, students could apply the language skills they had developed through the program's chat rooms and online sessions in a real-world setting, thereby boosting their confidence and fluency. The event saw the enthusiastic participation of around 20, from different universities and companies.

Key Activities and Highlights

➤ Self-Introductions in Japanese

The event kicked off with self-introductions in Japanese, where each student briefly shared their background, interests, and experiences. This activity not only served as an icebreaker but also showcased the remarkable progress students had made in their language skills. Many students expressed how the structured practice in chat rooms had significantly enhanced their vocabulary and conversational abilities, making them more confident in their day-to-day interactions.



➤ **Playing Karuta**

A major highlight of the event was the Karuta game session. Two special sets of Karuta cards were used: Civil Engineering Karuta and Civil Engineering Safety Instructions Karuta. Karuta, a traditional Japanese card game, involves players quickly identifying and grabbing cards that match a spoken prompt.



In this context, the game was not only entertaining but also educational, as it helped participants familiarize themselves with essential civil engineering terms and safety instructions in Japanese. This innovative approach ensured that students could learn while having fun, reinforcing their technical vocabulary in a memorable way.



➤ **Appreciation**

To acknowledge and encourage participation, the organizers presented appreciation prizes to all student participants. These tokens of gratitude not only recognized the students' efforts and progress but also motivated them to continue their language learning journey with enthusiasm.



➤ **Dinner and Networking**

Following the Karuta game session, the event concluded with a dinner, providing a relaxed atmosphere for further conversation and networking. This informal setting allowed students to continue practicing their Japanese, share their experiences, and build stronger connections with their peers and organizers. The dinner was a fitting end to a successful event, leaving participants with a sense of accomplishment and camaraderie.



➤ **Benefits of the Japanese Language Program**

Throughout the event, it was evident that the Japanese language program had been highly beneficial for the students. Several participants shared testimonials about their improved language skills and the positive impact it had on their academic and social lives. The program's blend of structured lessons, interactive chat rooms, and practical events like "Let's Play Karuta" has created a comprehensive learning environment that supports students' linguistic and cultural integration.



【Report by Rahul Garg, IAC International Civil Engineers Group】

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
- ◆ 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.8, August 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>
- ◆ 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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§ IAC Facebook §

Recent activity of International Activities Center is introduced on this Facebook. Please see this home page (<https://www.facebook.com/JSCE.en>).

Comments and Questions

Please send us your feedback and comments to help us improve the IAC news. We look forward to hearing from you.
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