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The Differences between the Japanese and UK Civil Engineering Industries: Career Development & Networking

On September 30, 2022, the JSCE UK Section held a special meeting to discuss the topic above. I will outline a report of the event as the discussions consisted of content that I think will be of use to civil engineers both in Japan and UK.

During the meeting, the attendees discussed what skills are required at each career path level and how to acquire the said skills. In Japan, as illustrated by collective training held for all new employees, there are large-scale initiatives that systematize and collectively carry out the education of new and young personnel. Meanwhile, in UK, it is often the case that the scale of collective education of new and young personnel is either small or non-existent (as I will explain later on in this report, the reason for this is thought to be that employees often do not stick with a single employer for a long time). The Japanese initiative of collective training, which aims to raise the bar and uniform standards, is beneficial in areas such as minimum quality assurance and safety and will seemingly be a strength when exporting infrastructure overseas in the future.

For personnel in the more advanced stages of their career, required skills such as business management capabilities and the ability to learn new skills differ from that of younger personnel. In UK, however, the systematized training of such skills is very rare. For example, while the management skill levels of company executives/directors differ to personnel who do not hold such titles, they improve their skills such as by acquiring an MBA or learning accounting despite being an engineer, with such efforts recognized by their employer or society as a whole.

In Japan, specified employment systems have started to be proposed, and this will also likely impact the civil engineering industry in the future. Specified employment clearly states the job description for each post. In UK, if there is a vacancy or a post for a new project, personnel are chosen based on the job description. Such cases often involve hiring an employee of another company, and so by clearly stipulating the length of the contract according to the project, the end of the recruitment contract comes to a smooth end. This becomes more noticeable the higher up the ladder the position of the post. In UK, while this initiative ensures the smooth movement of human resources, it encourages each individual to take responsibility for their own skills once their career has passed a certain point.

I use the term skills as a one-size-fits-all expression to refer to a wide range of skills from those that can be

acquired relatively easily such as through courses to those that must be acquired through experience. With projects becoming more and more complex, the importance of project management is increasing. For example, as methods for acquiring management skills at a time where there are lots of risks such as in executing overseas projects, there is on-the-job training and shadowing for installing good project management sense into personnel during their early days. However, there is basically no immediately effective method. That is why in UK, if there is no relevant personnel within the company, the issue is dealt with by either hiring from outside or by outsourcing. There are many elements of management in Japan that cannot be applied directly to management overseas, such as the need to analyze a draft of a contract from the perspectives of potential risks, etc. Also, given the recent rise of other Asian countries in the international civil engineering marketplace, foreign language proficiency, which enables smooth communication, is an indispensable skill. With the adoption of digital platforms becoming more widespread and job approaches changing, some elements are becoming more convenient for Japanese personnel. If we are to improve project management for overseas projects on a country-wide level in the civil engineering field in the future, JSCE, etc. will need to discuss matters such as how we will increase and enhance human resources across the board.

In addition to skills, networking is also important. In Japan, networking is often done among parties belonging to the same industry, representing one's company or position. In UK, however, it is also common for individuals to engage in networking. Therefore, networking events consist not only of those aimed at generating business but also those that benefit individuals, such as the meetings and technical workshops of the Institution of Civil Engineers. In UK, projects and policymaking that go beyond existing boundaries, such as collaboration between the civil engineering and electrical industries, are common. It is thought that this smooth networking of personnel beyond different industries is what supports this. For individual networking, the social media platform LinkedIn is popular in UK and other regions overseas. In UK, to win contracts, ascertaining the needs of other parties through networking is a vital factor in addition to technical capabilities. The fact that connections lead to business or employment opportunities is common in both Japan and UK.

【Reported by Taku Fujiyama, President, JSCE UK Section】

The 24th International Summer Symposium

The International Summer Symposium has been hosted by the International Student Network Group, International Activities Center since 2012, and this year marked the 24th time it has been held. The symposium is held for international students studying in Japan, Japanese students, and young civil engineers, to present research, interact and collaborate with people of different nationalities and fields of research, and network in English. This year the symposium consisted of two parts during the JSCE Annual Meeting: (1) the presentation of papers in English in the International Sessions as part of the JSCE Annual Conference and (2) the International Workshop for Young Civil Engineers. It was the first time in three years that the symposium was held in person.

In the International Sessions (Table1) held between September 15 and 16, 42 papers were presented across a wide range of fields such as geotechnical engineering, earthquake engineering, structural engineering, disaster prevention and resilience, emerging technology, and the environment and materials. The sessions were full of life, with lively discussions and Q&As involving speakers and attendees.

Table1: Structure of International Sessions

Session Name	No. of Presentations	Chairperson
Session (1) Geotechnical Engineering (Tunnels and Basics)	7	Assist. Professor Goit Chandra Shekhar, Saitama University
Session (2) Structural Engineering and Resilience	7	Associate Professor Michael Henry, Shibaura Institute of Technology
Session (3) Environmental and Material Engineering	7	Professor Yoshikazu Takahashi, Kyoto University
Session (4) Disaster Prevention and Resilience	7	Professor Kuniaki Sasaki, Waseda University
Session (5) AI, Data Science, DX	7	Associate Professor Michael Henry, Shibaura Institute of Technology
Session (6) Geotechnical Engineering (Geomaterials)	7	Associate Professor Yasuo Sawamura, Kyoto University
Total	42	

From 13:30 to 16:50 on September 16, the International Workshop for Young Civil Engineers was held in the International Conference Hall within the Clock Tower Centennial Hall of Kyoto University. The title of the workshop for this year was “Future of Civil Engineering with AI and DX”, and the theme was to examine ideas for utilizing AI in the field of civil engineering.

The workshop was facilitated by Professor Yoshihiro Okumura of Kansai University, and at the beginning, Project Associate Professor Pang-jo Chun of the University of Tokyo gave a talk online on basic knowledge about AI and introduced specific examples of where AI has been implemented and utilized. This was followed by participants splitting into groups according to the topics of hydraulics (Associate Professor Takafumi Kitaoka), ground (Associate Professor Yasuo Sawamura), construction and management (Associate Professor Kohei Nagai), disaster prevention (Assistant Professor Goit Chandra Shekhar), transportation planning (Associate Professor Michael Henry), and structures (Associate Professor Ji Dang). Lively discussions took place during the group work. At the end of the workshop, each group presented their ideas for utilizing AI, with many fascinating and engaging ideas to be heard.

“Future of Civil Engineering with AI and DX” Workshop

The International Summer Symposium will be held at the JSCE Annual Meeting in 2023 as well. The theme of the International Workshop for Young Civil Engineers will be “The Role of Civil Engineering in Achieving the SDGs”, and discussions will be held with international students. I encourage many international students to participate in the International Summer Symposium next year. Finally, I would like to take this opportunity to express my sincere gratitude to the chairpersons and the participants.

【Reported by Ji Dang, International Student Network Group, IAC (Saitama University)】

Updates

◆JSCE-ASCE Infrastructure Resilience Research Group
https://www.infraresil.jp/

◆The 4th International Conference on Transportation Infrastructure and Sustainable Development (TISDIC 2023)
https://tisdic2023.dut.udn.vn/

◆International Joint Seminar of VJU and NILIM
- Introduction of Road Technology and Policy Making -
https://www.jsce-int.org/node/785

◆JSCE Feedback Web Form「多門に多聞&多問」
https://committees.jsce.or.jp/chair/node/59

◆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/

◆JSCE Concrete Committee International Newsletter No. 66
https://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter66/index.html

◆IAC "News Pick Up!!" on the JSCE Japanese website
https://committees.jsce.or.jp/kokusai/iac_dayori_2022

◆Summary of featured articles in JSCE Magazine Vol. 107, No.11 November 2022
http://www.jsce-int.org/pub/magazine

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

◆The 4th Asian Concrete Federation (ACF) Symposium on Emerging Technologies for Structural Longevity (ACF2022_ETSL): https://acf2022.aconf.org/index.html

◆The 9th International Conference on Flood Management (ICFM9)
https://www.icfm9.jp/index.html

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JSCE IAC: iac-news@ jsce.or.jp