

## **2023 Civil Tech Exhibition: A Conference for Industry-Government-Academia-Research Alliances**

To raise public awareness of the application of new technologies in civil engineering, the Department of Civil Engineering hosted the "2023 Civil Tech Exhibition" on April 29 at the Hsu Shou-Chlien International Conference Center. The event was guided by the New Taipei City Government and the Occupational Safety and Health Administration of the Ministry of Labor. Nearly 50 companies and institutions, including famous domestic construction companies, professional associations, AI intelligent startup technologies, and government agencies such as the Public Works Department and the Department of Rapid Transit Systems, were invited to participate in the exhibition. In the afternoon, the Department of Civil Engineering held a "Civil Engineering Technology Alliance" meeting to discuss cooperation plans for the application of technology in the civil engineering industry.

During the opening ceremony, Academic Vice President Hui-Huang Hsu delivered a speech expressing his hope that through the Civil Tech Exhibition, the public's impression of civil engineering can be changed and the latest technology can be applied to civil engineering. Dr. Lin Chieh, Chief Secretary of the Public Construction Commission, Executive Yuan, pointed out that there are 3 aspects to the importance of technology in civil engineering: improving engineering efficiency, enhancing safety, and increasing sustainability. He appreciated that the Civil Tech Exhibition brought together industry, government, academia, and research, saying "This is not an easy thing to do." Dr. Tih-Ju Chu, Deputy Mayor of New Taipei City, expressed his happiness that the Civil Tech Exhibition was held in New Taipei City, a city that is currently under construction. He hopes that the young partners who will be involved in the future construction of our country can see the hope for the future.

The Taiwan companies that participated in the exhibition included CECI Engineering Consultants, Inc., Taiwan, CTCI Chungsing Construction Engineering, SINOTECH Engineering Consultants, Ltd., Moh and Associates,

Inc., Parn Shuo Construction Co., Ltd., Kedge Construction, Fengyu Group, Chien Kuo Construction Co., Ltd., Pan Asia Construction, Ruentex Construction, Ally Logistic Property, LinkFast Technology Co., Ltd., ZenithBIM, Sanlien Technology Corp., Taiwan Engineering Consultants Group, Ho-Chien Engineering Consultants Corp., Chong Hong Construction Co., Ltd., Lih Pao Construction Co., Ltd., and 4 Dim Engineering Consultants Co. These well-known companies showcased their latest technologies in civil engineering, including interactive displays of RIEGL LiDAR scanners, GeoSLAM mobile LiDAR, Scan to BIM (point cloud aided modeling), unmanned flying vehicle applications, IoT technology, mixed reality technology, automatic theodolite, airborne LiDAR, facility management visualization, drone/LiDAR scanning in engineering applications, and more. Many of the companies also conducted recruitment activities on site. The co-organizers of the event included 1111 Job Bank, TechNice, as well as the Research Development Center of Construction Law, the Wind Engineering Research Center, and the Research Center for Building and Infrastructure Information Modeling and Management of the host university.

Professor Roy Maxion, IEEE fellow and research professor of the Department of Information Technology at Carnegie Mellon University (CMU), the No. 1 university in the world in the field of computer science, was invited to deliver a speech online at the Civil Tech Exhibition. Scholars from the United States and Malaysia also participated online. Professor Maxion talked about his current research on how to analyze information from keyboard inputs for individual recognition and pointed out that even subtle data can leave evidence. This was followed by an opening show presented by Pan Asia Construction, BeeInventor Ltd., Ho-Chien Engineering Consultants, Kedge Construction, and LinkFast Technology Co., showcasing how they combine technology and products to address safety management issues at construction sites and improve the overall environment while efficiently planning project timelines. Dr. Su-Ling Fan, Chair of the Civil Engineering Department, said: "Technology can improve work efficiency and safety, while also reducing physical differences in the work environment. The purpose of this technology exhibition is to work together to transform civil engineering and change people's stereotypes of civil engineering."

Huan-Yu Hsieh and Yu-Tsung Chang, 3rd-year students from civil engineering department, found AI technology, unmanned aerial vehicle laser scanning, and other products to be very innovative and gained a greater understanding of the technology that can be used in civil engineering. Hsieh said that the most impressive product in the opening show was the smart safety helmet brought by BeeInventor. It is crucial to be able to monitor the situation of each person at the construction site, and he mentioned the application of safety helmets in site reconnaissance, which could complete reconnaissance without having to be physically present, praising the power of AI technology.

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