

# FIG WORKING WEEK 2025 Delegate Report *Executive Summary*

Reported by:

Chris NG Chairman Bernard LEE Secretary General Freddy HO Head of Membership Kathy NGAN Head of Internal Affairs

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#### Introduction

The FIG Working Week 2025, held from April 6 to 10, 2025, at the Brisbane Convention & Exhibition Centre in Brisbane, Australia, was a pivotal event for the global surveying and geospatial community. Themed *Collaboration, Innovation and Resilience: Championing a Digital Generation*, the conference brought together professionals, researchers, and industry leaders to address pressing challenges and opportunities in the surveying profession. Representing the Hong Kong Institution of Engineering Surveyors (HKInstES), delegates Chris NG (Chairman), Bernard LEE (Secretary General), Freddy HO (Head of Membership), and Kathy NGAN (Head of Internal Affairs) attended the event. This report provides a comprehensive summary of the key sessions, technical visits, exhibitions, and governance activities, highlighting their relevance and the broader surveying industry.

The event, co-hosted with Locate25, emphasized sustainability, digital transformation, and resilience in the face of global challenges such as climate change, urbanization, and technological disruption. featured technical sessions, lt workshops, exhibitions, and the 48th FIG General Assembly, offering a platform for knowledge exchange, networking, and strategic planning. This report is to cover the event's governance, structured technical sessions, exhibitions, technical visits, and their implications for future initiatives.



(Left to Right) Kathy NGAN, Chris NG, Winnie SHIU, Freddy HO and Bernard LEE

This year, the international FIG program joined forces with the Geospatial Council of Australia's annual Locate conference, creating a unique and impactful event. The theme, "Championing a Digital Generation," highlights the importance of innovation, collaboration, and sustainability in addressing global challenges. It reflects FIG's commitment to staying relevant, supporting climate action, and advancing the Sustainable Development Goals (SDGs). The theme also emphasizes diversity and the use of geospatial technologies, uniting professionals across cultures and disciplines for a more inclusive future.





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AND





# 48th FIG General Assembly

The FIG General Assembly, held on April 6 and 10, 2025, was a cornerstone of the Working Week, addressing governance, strategic priorities, and the future direction of the International Federation of Surveyors (FIG). Chaired by FIG President Diane Dumashie (2023-2026), the assembly tackled several critical issues:

- **Elections and Appointments**: The assembly elected Chairs Elect for the ten FIG Commissions for the 2025-2026 term, with a competitive election for Commission 3 (Spatial Information Management). This process underscored FIG's commitment to fostering leadership within its technical commissions.
- **Future Event Hosting**: Bids for the 2029 FIG Working Week were reviewed, with Halifax, Canada (Canadian Institute of Geomatics) and Kampala, Uganda (Institution of Surveyors of Uganda) presenting proposals. The selection process, conducted via online voting through SimplyVoting, highlighted FIG's global outreach and inclusivity.
- Membership and Financial Matters: The assembly addressed membership issues, including the admission of new member associations and the expulsion of associations with arrears (e.g., Algeria, Bahamas, Sri Lanka) or suspensions (e.g., Palestine, Russia). Financial reports, 2024 accounts, and budgets for 2025-2028 were reviewed, alongside setting subscription rates for 2027.
- **Strategic Updates**: Task forces on Sustainable Development Goals (SDGs), climate action, diversity, and geospatial ecosystems presented updates, aligning FIG's initiatives with the UN Sustainability Agenda. Reports from commissions, networks, the FIG Foundation, and upcoming events (e.g., 2026 Congress in Cape Town) reinforced FIG's role in advancing the global surveying profession.

The assembly provided insights into FIG's governance structure and strategic priorities, offering opportunities to strengthen its position as a member association. The focus on diversity and sustainability aligns with our goals of promoting inclusivity and environmental responsibility in Hong Kong's surveying practices.





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Brisbane, Australia 6–10 April

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# **Technical Sessions**

The technical sessions at FIG Working Week 2025 showcased cutting-edge advancements in geospatial technologies, surveying standards, and professional education. Below is a summary of key sessions attended by HKInstES delegates, emphasizing their relevance to the profession.

#### AI and GIS Transforming the Geospatial Landscape

This session, organized with Esri Australia, explored the transformative potential of Artificial Intelligence (AI) and Geographic Information Systems (GIS) in geospatial analysis. Key points included:

- **GeoAl and ArcGIS Integration**: GeoAl combines Al with GIS to enhance spatial data processing. ArcGIS, developed by Esri, leverages GeoAl for data extraction (e.g., computer vision for imagery analysis, natural language processing for unstructured text) and data analysis (e.g., machine learning for classification, deep learning for predictive modeling). Applications include cloud removal from satellite imagery, timeseries analysis for deforestation tracking, and segmentation for feature identification.
- Al Assistants: ArcGIS incorporates Al assistants to automate workflows and enhance user experience. ArcGIS Survey123, for example, streamlines geospatial data collection through surveys, improving efficiency in field operations.
- **Broader Impact**: The integration of GeoAI in ArcGIS addresses global challenges like climate change and urbanization by enabling rapid data extraction and insights. This is particularly relevant for urban planning, environmental monitoring, and disaster response.

This session highlighted the potential of GeoAI to enhance surveying practices, particularly in urban development and infrastructure management. Adopting ArcGIS tools could improve data-driven decision-making in Hong Kong's dense urban environment.











#### DigitalCities4Us and Digital Twins

The DigitalCities4Us project, led by Hexagon and the University of Applied Sciences and Arts Northwestern Switzerland (FHNW), was a focal point of the conference. The session explored the role of digital twins in urban planning, with contributions from Leica Geosystems:

- **Project Overview**: Active from 2023 to 2025, DigitalCities4Us uses high-resolution 3D point cloud data to create digital twins, focusing on accessibility for individuals with mobility restrictions. The project spans Building Information Modeling (BIM), geovisualization, infrastructure management, and smart city solutions.
- **Applications in Basel**: In Basel, Switzerland, surveys of areas like Barfüsserplatz have generated 3D geodata for barrier-free route planning and inclusive urban design. The digital twin supports precision analysis (millimeters to centimeters) for urban planning.
- **Broader Applications**: Digital twins in St. Gallen and Munich support urban simulations, construction coordination, and climate resilience planning. These applications demonstrate the scalability of digital twin technology.
- Leica Geosystems' Role: Leica's Pegasus Mobile Mapping System (MMS) enables efficient data collection for digital twin creation. Tools like Pegasus Two: Ultimate and Cyclone 3DR support road infrastructure documentation and simulations.

This session underscored the relevance of digital twins for smart city initiatives. Our Government could explore implementing similar technologies, enhancing accessibility and sustainability in urban planning.







#### **Standards in Surveying - FIG Standards Network**

The FIG Standards Network session focused on advancements in geospatial and surveying standards, critical for ensuring interoperability and collaboration:

- **ISO/TC 211 Geographic Information/Geomatics**: Presented by Nic Donnelly, this segment outlined the standardization of geographic information, emphasizing data management and integration with IT standards.
- **ISO Geodetic Registry (ISOGR)**: The ISOGR, a database for coordinate reference systems and transformations, supports global geospatial interoperability. The session highlighted the 59th ISO/TC 211 Plenary Meeting in Sydney (November 2024), marking a leadership transition.

These standards are vital for us to ensure compatibility with global geospatial frameworks, particularly in cross-border projects and data sharing.



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#### **Innovations and AI in Property Valuation**

This session explored the application of AI and Automated Valuation Models (AVMs) in property valuation:

- Al and AVMs: Al-powered AVMs integrate machine learning with economic modeling for rapid, objective property assessments. Blockchain enhances data accuracy and governance.
- **Standardization**: Using Taiwan as an example, the session emphasized the ISO 191 glutathione series for open data formats, improving market transparency.
- **Emotion Recognition**: Al-driven emotion recognition analyzes buyer responses to property attributes, adding a novel dimension to valuation methodologies.
- **Challenges**: Data security, biases, and opaque markets pose challenges, necessitating human oversight and ethical practices.

Adopting AI in property valuation could enhance efficiency in Hong Kong's competitive real estate market, though ethical considerations must be prioritized.

#### Mobile Technologies for Inclusive Sidewalk Mapping

This hands-on session demonstrated mobile technologies for inclusive urban mapping:

- **Tools**: An AI-powered computer vision system with a 360-degree camera and smartphone apps (e.g., My Walk, Vespucci) enabled real-time sidewalk mapping. RapidEditor facilitated accurate updates to OpenStreetMap (OSM).
- **Practical Application**: Participants mapped Brisbane streets, observing immediate OSM updates, highlighting the efficiency of these tools.

These technologies are highly applicable to Hong Kong, where inclusive urban design is critical due to high population density and diverse mobility needs.











#### **Professional Education in Surveying**

This session addressed innovative approaches to surveying education:

- **Project-Based Learning**: The University of New South Wales (UNSW) capstone course encourages student-led projects, fostering technical and soft skills through collaboration with industry partners.
- **Lifting the Veil**: This program aims to increase surveying enrollments through awareness campaigns, hands-on experiences, and financial support, addressing barriers like limited educational access.
- **Global Geomatics Education**: A web-based initiative maps 700 global geomatics programs, standardizing curricula and professional requirements.

We could leverage these approaches to enhance the educational outreach, attracting and retaining talent in Hong Kong's surveying sector.

#### Women's Land Rights and Access to Land

This session highlighted gender-inclusive land governance:

- **WOLTS in Mongolia**: The Women's Land Tenure Security (WOLTS) project promotes gender-sensitive policies, training 300 land officers and empowering herders against mining violations.
- **Kiribati Women in Mapping (KWIM)**: KWIM empowers women in GIS, undertaking projects like salinity assessments despite funding challenges.
- Women in Surveying in Queensland: Initiatives like the Women in Surveying program address the surveyor shortage (female participation <5%) through awareness campaigns and networking forums.

These initiatives inspire us to promote gender equity in Hong Kong's surveying profession, fostering inclusivity and diversity.











# **Exhibitions**

The exhibition hall was a vibrant showcase of geospatial technologies, featuring booths from global companies, government agencies, and academic institutions. We engaged with demonstrations of GNSS, LiDAR, UAVs, BIM, and smart land management systems. Key takeaways included:

- **Technology Insights**: Hands-on demonstrations highlighted advancements in data collection and analysis, relevant to Hong Kong's infrastructure projects.
- **Networking**: Interactions with exhibitors facilitated potential collaborations, strengthening HKInstES's global network.
- **Research and Education**: Booths showcased ongoing research and educational programs, offering ideas for HKInstES's professional development initiatives.

The exhibition underscored the importance of staying abreast of technological trends, encouraging us to integrate new tools into its practices.





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# **Technical Visit**

The visit to the **Museum of Lands, Mapping and Surveying** in Brisbane provided a historical perspective on surveying:

- **Exhibits**: Displays included historical instruments (e.g., 12-inch Altazimuth Theodolite, c. 1883), maps (e.g., 1839 Moreton Bay plan), and panels on notable figures like Sir Augustus Charles Gregory and Clem Jones.
- **The Data Lounge**: An artwork by Jane James visualized Queensland's rainfall data, blending art and science.
- **Cultural Significance**: The museum highlighted Aboriginal land knowledge and Queensland's cartographic heritage, emphasizing the role of surveying in land development.

This visit inspired us to consider preserving Hong Kong's surveying history.





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# **Closing Assembly**

This closing assembly was a celebratory reflection on the week's achievements, recapping keynote speeches, technical sessions, and networking events. The symbolic handover to the next host city emphasized FIG's ongoing mission. The assembly reinforced the value of collaboration and lifelong learning, motivating them to apply new insights in Hong Kong.

# Implications

The FIG Working Week 2025 provided HKInstES with actionable insights and opportunities:

- **Technological Adoption**: Integrating GeoAI, digital twins, and mobile mapping technologies can enhance Hong Kong's surveying practices, particularly in smart city development and accessibility planning.
- **Educational Outreach**: Adopting project-based learning and recruitment initiatives like Lifting the Veil can address talent shortages in Hong Kong's surveying sector.
- **Gender Inclusivity**: Promoting women's participation aligns with global trends, fostering a diverse and resilient profession.
- **Global Collaboration**: Strengthening ties with FIG and partners can position us as a leader in geospatial innovation.

# Conclusion

The FIG Working Week 2025 was a transformative experience for HKInstES, offering a platform to explore cutting-edge technologies, engage with global standards, and address professional challenges. The event's focus on collaboration, innovation, and resilience resonated with HKInstES's mission to advance surveying in Hong Kong. By leveraging the insights gained, HKInstES can drive technological adoption, enhance education, and promote inclusivity, contributing to a sustainable and digital future for the profession.





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Address: No. 79 Tsuen Wan Post Office, New Territories, Hong Kong Phone: +852 5625 2312 Email: it@hkies.org.hk or chairman@hkies.org.hk