



MAA Bulletin

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MAA Group Consulting Engineers

TAIPEI KAOHSIUNG TAICHUNG BANGKOK YANGON
SINGAPORE BEIJING HONG KONG MACAU

MAA Bulletin

Issue 71 January 2024

Founded in 1975, **MAA** is a leading Asian engineering and consulting service provider in the East and Southeast Asian region focused in the areas of infrastructure, environment, buildings, land resources, and information technology.

To meet the global needs of both public and private clients, **MAA** has a full range of engineering capabilities providing integrated solutions ranging from conceptual planning, general consultancy and engineering design to project management.

Today, **MAA** has over 1,200 employees with companies in Beijing, Shanghai, Hong Kong, Macau, Taipei, Bangkok, Singapore and Yangon, creating a close professional network in East & Southeast Asia.

MAA's business philosophy is to provide professional services that will become an asset to our clients with long lasting benefits in a rapidly changing social-economic environment. **ASSET** represents five key components that underline **MAA's** principles of professional services:

project **A**dvanced Technology
client's **S**afety
client's **S**atisfaction
Economical Solution
Timely Completion

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ISO 9001 AND LAB CERTIFICATIONS



DIGITALIZATION

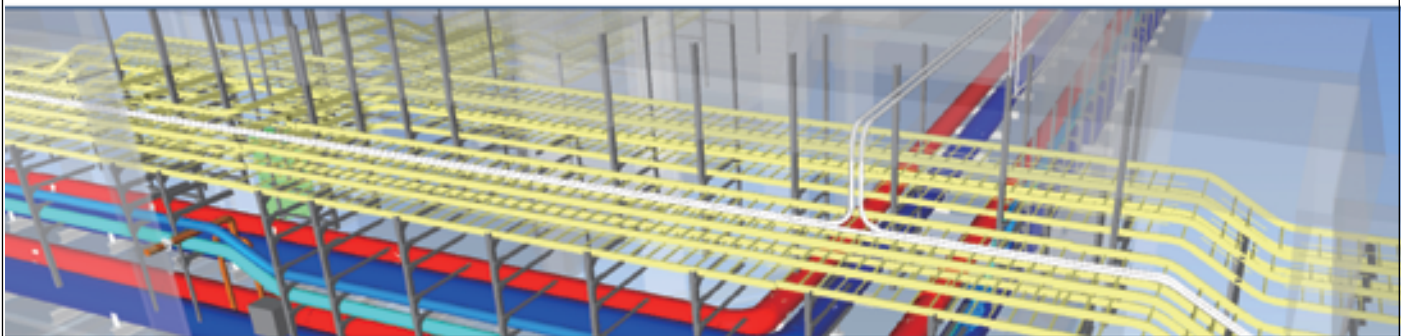
APAC BUSINESS HEADLINES: MOST RENOWNED BIM COMPANY IN 2023

MAA was distinguished by APAC Business Headline as one of the “Most Renowned BIM Modeling Companies in 2023”. This recognition underscores MAA's dedication to equipping AEC professionals with the insights and tools needed for planning, designing, constructing, and managing buildings and infrastructure. APAC Business Headlines is a publication that showcases companies standing out for their customer-focused services and cutting-edge solutions. MAA is honored to be featured in this special edition, particularly for its innovative BIM modeling techniques that increase productivity, ensure cost-effectiveness, enhance communication and collaboration, and improve real-time management.



SPECIAL
FEATURE

MOST RENOWNED BIM COMPANIES IN 2023



BIM modeling: Pioneering Excellence in AEC by Unleashing BIM Over a Legacy of Four Decades

Peeling back to the year 2008 when technology just began to take a disruptive turn, and digitalization became an inevitable part of this new trend, the two brilliant minds, Dr. Za-Chieh Moh and Mr. Richard Moh emerged with a breakthrough technology in AEC that transformed the world of engineering and construction, altogether. Though it already got a head-start long back in the ever-evolving landscape of AEC, Building Information Modeling (BIM) technology was yet to make a mark in Asian countries. The visionary duos, Dr. Za-Chieh Moh, a distinguished figure in Geotechnical Engineering, joined forces with Mr. Richard Moh, a strategic leader with exceptional business acumen skills and a keen insight into unique innovations & corporate management.

Fascinated by the breakthrough potential of this new technology, Dr. Za-Chieh Moh & Mr. Richard Moh leading one of Asia's largest privately owned AEC company, MAA Group integrated BIM technologies and methods into various projects and construction management. By implementing this technology, the company has improved and ensured efficiency.

Inspired by the staggering success of BIM, the company further extended its use in pioneering digitalization

in various complex and multidisciplinary engineering projects, including airports, expressways, metro rail, bridge engineering, high-speed railway project, water resource engineering, off-shore wind power, land development, and also underground utilities. Such transformative measure taken by the entrepreneurs has enabled MAA Group to set a new standard of excellence in East and Southeast Asia.

A Journey of Thousand Miles

In the ever-growing world of engineering and construction, staying ahead of the curve is crucial. MAA Group, founded by Dr. Za-Chieh Moh and Dr. Za-Lee Moh, has consistently demonstrated its commitment to innovation and excellence since its establishment in 1975. With a strong focus on integrating academic depth with practical implementation, MAA Group quickly became a leading engineering consulting firm in East and Southeast Asia.

From its humble beginning as a small geotechnical and structural engineering firm, MAA Group has expanded its expertise to a wide range of engineering disciplines, including Geotechnical Engineering, Structural Engineering, Transportation Engineering, Environmental and Water Engineering, and more. With over 1,200 talented

SPECIAL
FEATURE

MOST RENOWNED BIM COMPANIES IN 2023



Richard Moh
Chairman of MAA Taiwan

professionals spread across offices in major cities such as, Bangkok, Beijing, Hong Kong, Kaohsiung, Macau, Shanghai, Singapore, Taichung, Taipei, and Yangon, MAA Group has established a strong network and an indelible legacy spanning over 48 years in the Architecture, Engineering, and Construction (AEC) industry. MAA Group's commitment to knowledge sharing and industry advancement is evident through the publication of over 600 technical articles, further supporting its claim as a thought leader spearheading innovation in the AEC industry.

MAA Group's journey has been closely intertwined with the evolution of East and Southeast Asia. Over the years, the company has achieved significant milestones in offering comprehensive and integrated services to clients across various sectors. The company's expertise spans Infrastructure, Environment & Water, Buildings & Facilities, and Land Development. Whether it's the development of railways, high-speed rails, airports, bridges, tunnels, or the design of residential and office complexes, healthcare facilities, or industrial parks, MAA Group provides a one-stop, full-scope service, ensuring that clients receive professional expertise throughout the entire project lifecycle.

Key Milestones

With an unparalleled track record stretching over four decades, MAA Group possesses a wealth of



Dr. Za-Chieh Moh
Co-Founder & Chairman of MAA Group

accomplishments. Some of the most notable ones may be highlighted as follows:

- The year 1970 marked the rise of the Four Asian Dragons- MAA Taipei, MAA Hongkong, and MAA Singapore. MAA was the first to introduce deep excavation and slope field monitoring technology in Taiwan in 1975. In 1980, the company expanded its capabilities and published its first volume of technical papers. MAA played a crucial role in designing the first major geotechnical engineering specialty construction project, the integral large-scale highway in Taiwan and Taipei Mass Rapid Transit Systems.
- The 1990s marked MAA Group's expansion into China and the Mekong region, with the establishment of offices in Bangkok, Beijing, and Shanghai. The company's influence continued to grow, leading to ISO 9001:1994 certification, reaffirming its commitment to quality and excellence.
- In the 2000s, the company aimed for global impact, participating in high-profile projects such as the Taiwan High-Speed Rail Project, the largest BOT operation in the world at the time, and the Taiwan Electronic Toll Collection (ETC) Project, which received international recognition for its technology. MAA Group also embraced innovation by adopting Building Information Modeling (BIM) and played a pivotal role

SPECIAL
FEATURE

MOST RENOWNED BIM COMPANIES IN 2023



“
**MAA Group's
 dedication to BIM goes
 beyond design and
 construction modeling.**
 ”

in the transformation of landfills into sustainable developments.

In 2010, MAA Group expanded its presence in Macau and Myanmar. The establishment of the MAA Academy and the BIM Center, renamed as Engineering Digitalization Department in 2020, showcased the company's commitment to continuous learning and technological advancement, promoting smart and green engineering solutions.

Overcoming challenges

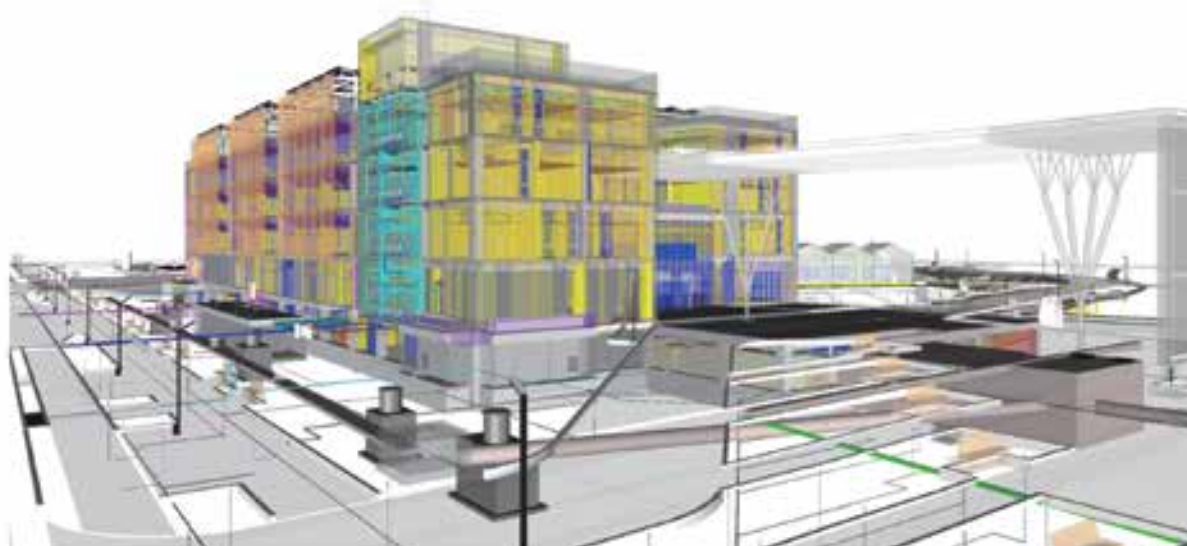
Business is a noble quest of purpose and to reach out to this lofty height every organization has to ride out the storm of failures and uncertainties. For MAA Group, establishing a professional consulting company in local areas came with its fair share of challenges. But the entrepreneurs with unflagging determination, grit, and guts have successfully navigated several hurdles that came along the way.

Adapting international engineering practices to the local context, promoting professionalism, strengthening academic-industry practices, mitigating natural disaster risks, and establishing regional and local recognition have been the major impediments faced by the company at the initial stage of their journey.

However, to address the issues, the company has adopted state-of-art solutions and implemented various innovative, resilient, and sound engineering services that align local issues with international standards. By advocating for higher standards, ethics, and quality assurance in engineering projects, MAA Group has raised the bar for engineering practices in the region, which further gained the trust of clients, stakeholders, and the broader community.

SPECIAL
FEATURE

MOST RENOWNED BIM COMPANIES IN 2023



“

Our primary goal is to become invaluable assets to our clients, rather than mere costs.

”

Pioneering Engineering with Building Information Modeling (BIM)

Sanying MRT Line stands as a testament to MAA Group's expertise in BIM implementation. As the first rail project in Taiwan to adopt engineering digitalization for the complete project lifecycle, Sanying MRT Line showcased the value brought by MAA Group's innovative engineering digitalization process.

Drawing on its expertise in engineering and information across the life cycle of a project and overwhelmed at the success of its BIM modeling services, MAA Group has

swiftly established a BIM-based operating environment, workflow, and specific requirements. The company has successfully integrated BIM-assisted applications into different areas, including education & training, modeling & implementation, API technology development, and engineering management.

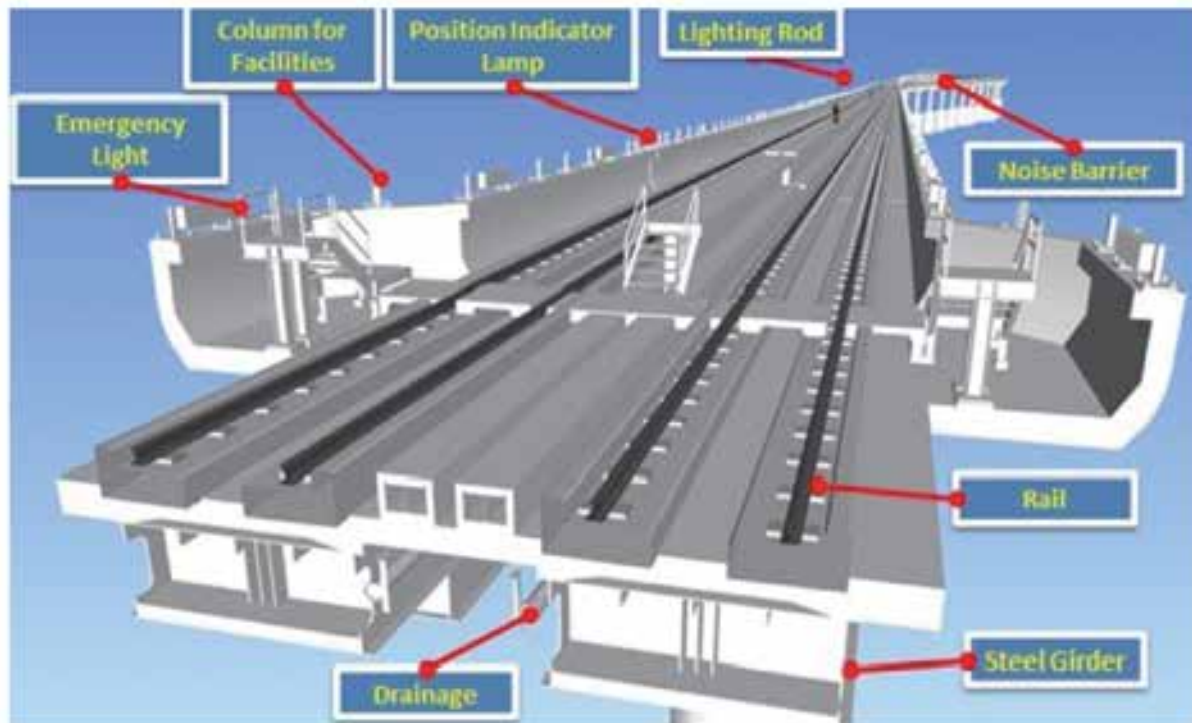
MAA Group's dedication to BIM goes beyond design and construction modeling. By combining BIM parametric modeling with their expertise in engineering and information technology, MAA Group has been able to undertake clash detection, and quantity take-off, optimize design quality, improve construction management, and enhance operational efficiency for asset owners. Furthermore, MAA Group's application of BIM has shown considerable increase in its quality, productivity, cost control, communication, collaboration, and real-time management at every step from conception to completion. The company has also actively promoted the application of BIM in engineering projects in countries such as China, Thailand, the Philippines, Myanmar, and Kuwait. By consistently delivering high-quality services with advanced technology and efficiency, MAA Group has earned the trust and satisfaction of its clients.

Mission and Vision

"Our primary goal is to become invaluable assets to our clients, rather than mere costs. Through our people-

SPECIAL
FEATURE

MOST RENOWNED BIM COMPANIES IN 2023



first approach, we strive to foster strong, long-term relationships between our company and customers", summarizes the vision of the company. To cope with the advancement in technology, MAA Group brings to the table the most comprehensive, quality-oriented, and professional engineering solutions for its clients. It believes in fostering a symbiotic relationship with its clients through its exemplary services and disciplines. The company foresees Advanced Technology, Project Safety, Client Satisfaction, Economical Solution, and Timely Completion as its only mission and vision.

Days ahead

Currently, MAA Group has integrated 3D GIS technology with BIM as the core platform for engineering planning, design, management, and operation. They are also exploring the integration of green communication, design, culture, sustainability, and carbon emission management with BIM technology, aiming for digital optimization.

Looking ahead, MAA Group plans to embrace the advanced principles of Geomatics 2.0. This involves combining spatial

information with cutting-edge tools such as BIM, LiDAR, 3D technology, drones, AIoT, 5G, AR, VR, AI, and mobile devices. By integrating these technologies, MAA Group aims to achieve optimization and innovation, elevating the overall standard of construction engineering. They also have plans to establish a foundational platform for smart cities based on the concept of Geomatics 2.0, promoting a sustainable, economical, and greener future through innovative solutions for the built environment.

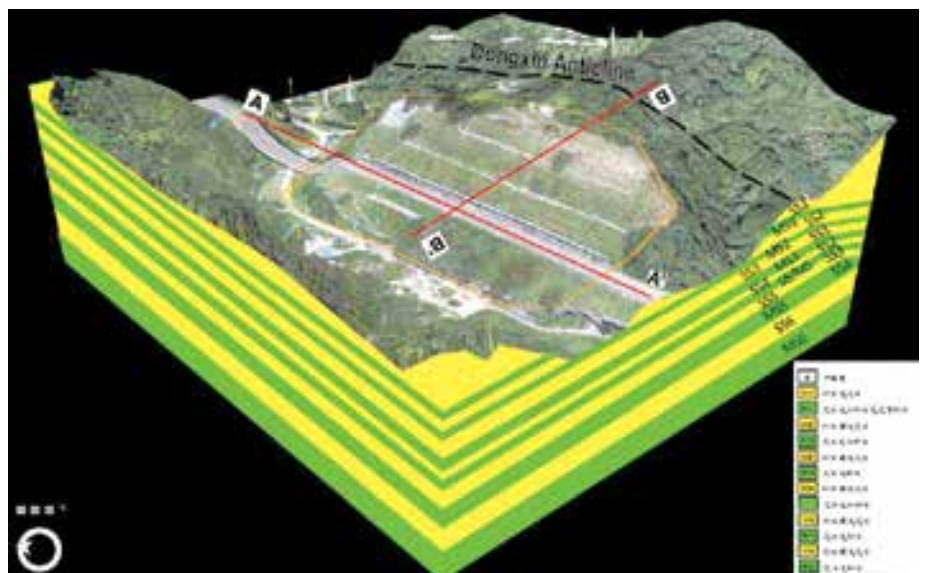
As a testament to its expertise in BIM, MAA Group has received several prestigious awards. These awards include the CICHE BIM Technology Award, Autodesk BIM Awards, and CICHE Digital Innovation Awards. Mr. Richard Moh, succeeded Dr. Za-Chieh Moh as the Chairman of MAA Taiwan, with his strategic vision and commitment to the civil engineering community has propelled MAA Group to a new height. Under his stewardship, MAA Group continues to embrace technology disruption by upholding the core values of professional engineers and contributing to society's well-being while achieving long-term sustainability in an ever-changing technological landscape.

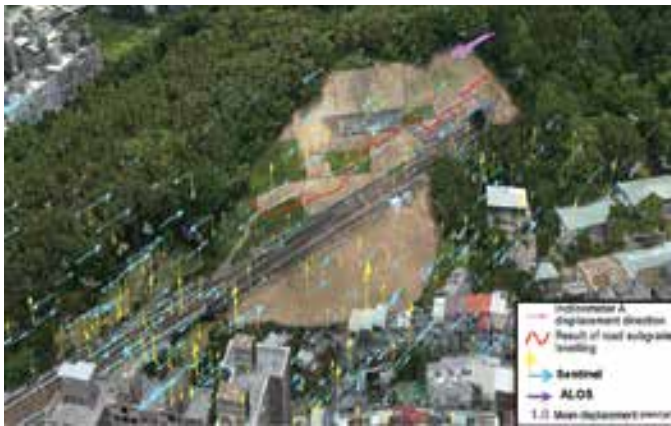
iSLOPE



In recent years, the safety of railway and highway operations has been impacted by extreme climate events, changes in geology and underground hydrology, and notably the instability of wide-area slopes surrounding the railway and highway. Traditional slope monitoring is confined to point displacement monitoring within the project area, making it challenging to detect precursors of slope displacement or collapse outside the project area in a timely manner.

iSLOPE's advanced wide-area slope survey technology surpasses weather limitations, facilitating thorough and multi-sequential surface observations. This capability enables dynamic monitoring of areas prone to potential collapse, enhancing the assessment of slope hazard risk. Additionally, iSLOPE delivers timely early warnings and comprehensive risk management information.





High altitude (satellite)

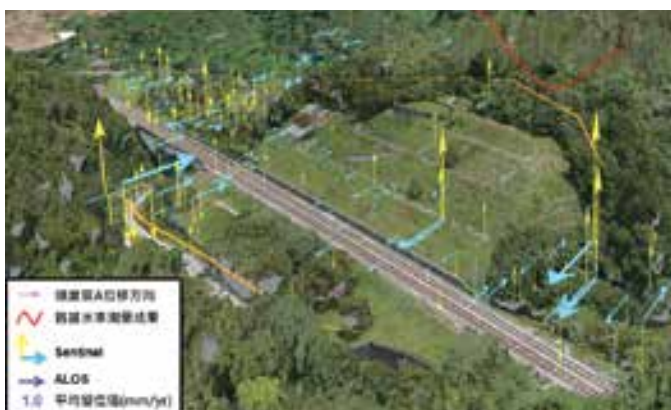
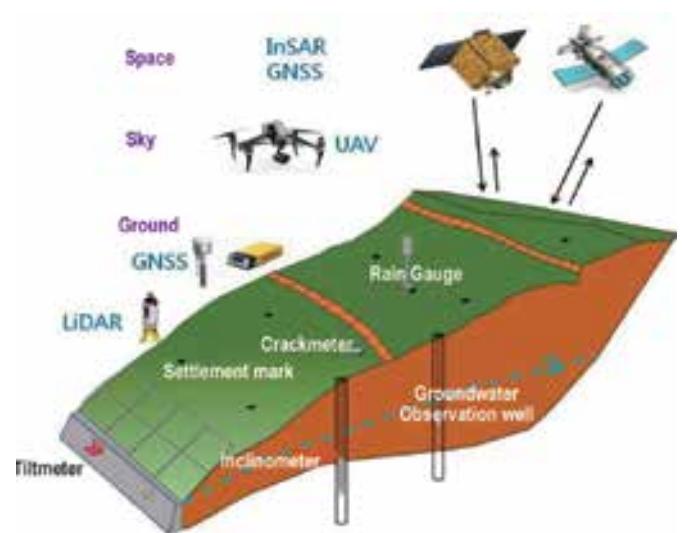
- Surface Displacement Analysis of Radar Satellite Images
- GNSS multi-period surface displacement measurement

Unmanned aerial vehicle (UAV)

- Slope aerial photography
- Airborne LiDAR Scanning

Ground

- Ground survey
- Ground LiDAR Scanning
- Displacement Analysis of Ground-Based Radar Image
- Combined with the existing slope monitoring system



SUSTAINABILITY

MAA EMBODIES THE CORPORATE SPIRIT OF ESG

Founded in 1975 by Dr. Za-Chieh Moh, MAA Group Consulting Engineers (MAA) upholds values of ethics, responsibility, dedication, and innovation. Dr. Moh's vision of sustainable management considers employees as essential assets and prioritizes their professional growth. MAA's commitment extends to social welfare and the advancement of engineering education. This includes sponsoring student association events, awarding scholarships and grants to outstanding students in need, engaging in industry-academic collaborations, offering university course lectures, providing university lectures, offering job opportunities, and participating in projects like social housing construction and water recycling. These initiatives aim to enhance public life quality, aligning with the 'Social Responsibility (S)' component of ESG.

In response to the global shift towards sustainable development, MAA, in 2020, aligned with its core values and culture, established three key pillars for its sustainable management: 'sustainability development, fundamental engineering, and digital transformation'. The company aspires to be a consulting firm that addresses major environmental challenges and contributes to a better living environment on Earth, with a particular emphasis on environmental protection (E). In 2023, MAA reaffirmed its dedication to sustainability with the initiative 'All Hands On, Towards Sustainability', aiming to advance sustainable practices and policies. This commitment encompasses six aspects: pioneering in geotechnical engineering, commitment to engineering excellence, digital innovation, practicing environmental sustainability, protecting employee welfare, and advocating social justice. These focus areas outline MAA's objectives for its ESG (Environmental, Social, and Governance) strategy.



Chairman, Richard Moh, clearly manifests MAA's dedication to promoting the spirit of ESG with the belief that 'heaven rewards diligence, earth rewards virtue, humanity rewards sincerity, business rewards trust, and industry rewards expertise.'

With 48 years of establishment, MAA has successfully completed a diverse range of engineering projects, including work in geotechnical work, metro systems, roads, buildings, water resources, environment, green energy, and urban development. MAA consistently applies principles of sustainable development throughout every project phase, from planning and design to management and supervision. MAA adheres

to sustainable development principles, achieving a balanced development that encompasses environmental protection, economic development, and social justice. This approach ensures a harmonious balance of environmental protection, economic growth, and social justice. The company continually adopts new technologies, materials, and methodologies to promote a circular economy and sustainable engineering practices. This commitment extends to fostering green communication, design, and culture throughout the project lifecycle, targeting net-zero carbon emissions and the fulfillment of the Sustainable Development Goals (SDGs). A notable example is the Shuinan Economic and Trade Park project in 2010, which incorporated seven SDG indicators (SDG 6, 7, 9, 11, 12, 13, and 15) .

MAA's commitment to ESG and SDGs extends beyond achieving net-zero emissions; it focuses on making significant contributions to sustainable development. Driven by the company's core values and philosophy of sustainable management, all employees actively engage in corporate social responsibility, environmental stewardship, and sustainable governance. These efforts ensure that the principles of sustainable development are not only embedded in their work outcomes but also in the workplace culture. Consequently, MAA's approach results in tangible impacts and contributions to both society and the environment.



APPLY OPTIMIZATION METHOD TO REDUCE EMBODIED CARBON

Aligning standard designs, sustainable development goals (SDGs), and emerging optimization techniques is a crucial step toward creating sustainable, resilient infrastructure. Optimization techniques play a key role in constructing efficient structures and reducing embodied carbon, thereby advancing global efforts to combat climate change.

Combining the standard design method with heuristic-based optimization in the design procedure yields a powerful combination of impacts. Firstly, it ensures that all engineering safety factors are met, guaranteeing structural safety. Secondly, optimization contributes to reducing the carbon footprint by minimizing the amount of carbon dioxide equivalent (CO₂e) contained in designed structures. Importantly, it helps save money on the project budget by identifying the most cost-efficient design. In addition, it automates the process, finding the optimal design without exhaustive manual trial-and-error. Furthermore, optimization provides a rapid solution, often within a few minutes, improving engineers' productivity and enhancing project efficiency.

Engineering
analysis

Quantity
take-off

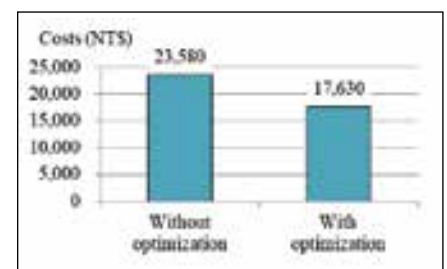
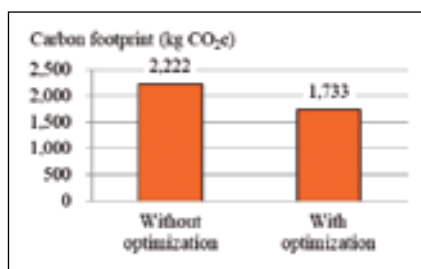
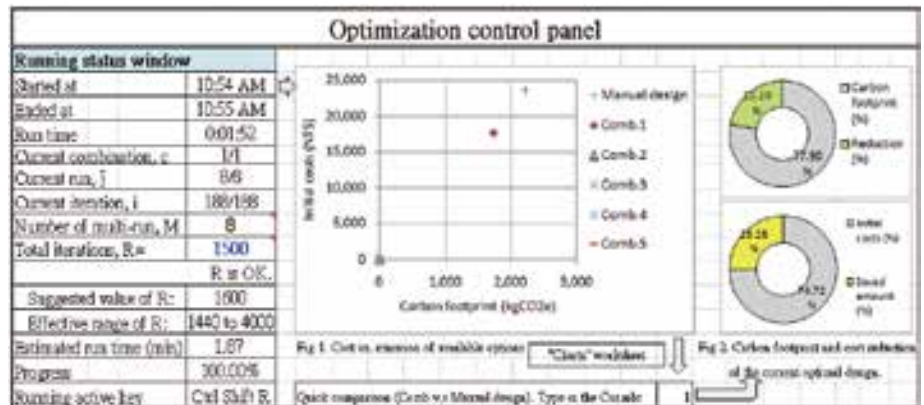
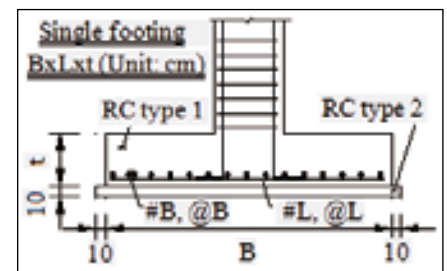
CO₂e amount &
costs computation

Heuristic-based
optimization

To achieve these benefits, the standard design method is integrated with heuristic-based optimization. This progress involves four key components, starting with a thorough engineering analysis where structural safety factors are carefully assessed.

Subsequently, a quantity take-off is performed, encompassing concrete, reinforcement, formwork, excavation, and backfill. This information is utilized to compute both material and construction costs, facilitating well-informed budgetary decisions. The procedure incorporates CO₂e calculations with the goal of minimizing the project's environmental impact. Ultimately, heuristic-based optimization techniques are applied to streamline these processes and achieve the optimal solution. The illustration below showcases a standard single footing, highlighting the difference between optimized and non-optimized versions.

By applying optimization, the amount of carbon footprint can be reduced by 22% (489 kg CO₂e), and the construction and material costs can be reduced by 25% (NT\$ 5,950).





AFFORDABLE HOUSING FOR SOCIETY

In recent years, the government has launched a social housing policy aimed at constructing 120,000 units to meet basic residential needs and support youth and disadvantaged groups with urban housing. This initiative involves revitalizing underutilized or idle public land to promote affordable housing, safeguard the housing rights of disadvantaged groups in urban areas, and provide public welfare facilities. By adopting a “rent-not-sell” policy for these social housing units, this approach not only reutilizes assets but also enhances living quality, thereby realizing the principle of housing justice.

MAA has been actively involved in this initiative, handling project management, supervision, and providing special technical services for earthquake resistance certification. The company's efforts align with the government's objectives to build social housing, focusing on diverse space design, fulfilling public utility spaces, promoting land reuse, revitalizing urban functions, and constructing higher quality living environments. MAA has managed 16 social housing construction projects, amounting to a total of 9,226 units, primarily serving institutions like the National Housing and Urban Renewal Center, Taipei City Government, New Taipei City Government, and other cities.



Administrative Districts of Taipei City

In Taipei City, there are currently six ongoing Social Housing projects:

1. **Yenji Social Housing** in Songshan District
2. **Wanhua Anju Social Housing** (Sites A and B) in Wanhua District
3. **Liuzhangli Social Housing** (Sites A and B) in Xinyi District
4. **Donghu Social Housing** (in the planning stage) in Neihu District
5. **Kang Le Social Housing** (in the planning stage) in Neihu District
6. **Xing Shan Social Housing** in Neihu District



Administrative Districts of New Taipei City

In New Taipei City, seven Social Housing projects are underway:

1. **Yonghe Section Social Housing** in Tucheng District
2. **Da'an Section Social Housing** in Tucheng District
3. **Guoguang Section Phase 1 and 2 Social Housing** in Sanxia District
4. **Wenren Anju Social Housing** in Linkou District
5. **Summer University Games Athletes Village Social Housing** in Linkou District
6. **Yuanhe Section Social Housing** in Tucheng District
7. **Min'an Section Social Housing** in Xindian District



In Taoyuan City, two projects are in progress:

1. **Guoling Anju Social Housing** (in the planning stage) in Zhongli District

2. **Puxin Anju Social Housing** in Yangmei District



The planning principles for social housing are as follows:

1. **Living Space:** Bedrooms are designed with windows to maximize natural light, creating a bright and airy atmosphere. Thoughtfully arranged living and dining areas come equipped with comprehensive amenities such as full TV walls, TV cabinets, dining tables, and more. Additionally, balconies are incorporated to serve as practical spaces for drying clothes and housing air conditioning units.
2. **Public Space:** Security and facility management center is located near the entrance. The entrance and its surroundings are designed to ensure ample lighting and security, with clearly defined entry and exit points for both pedestrians and vehicles, complemented by access control systems. Additionally, rooftops are equipped with solar panels, and a minimum of 50% of the rooftop platform area is dedicated to green spaces.
3. **Open Space:** The design features low Building Coverage Ratio, emphasizing expansive open spaces without enclosing walls. This approach creates an age-friendly interaction space in the community, encouraging social engagement and supporting local commercial activities.
4. **Parking Space:** Implement designated lanes for cars and motorcycles to avoid interference, incorporating separate entry points and parking zones specifically for motorcycles. Ensure the installation of sufficient ventilation systems. Prioritize night-time safety for women, children, and vulnerable individuals. Accessible parking spaces are centrally located near staircase entrances for ease of access.

5. **Social Welfare Space:** Facilities such as daycare and nursery services are provided, offering a friendly and secure environment for all ages.

6. **Mechanical and Electrical Pipeline Configuration:** Design prioritizes a harmonious balance between usability and maintenance convenience with a specified clear height for ceilings. Independent drainage and ventilation systems with a clear pipe layout are incorporated in the design, including appropriate coverings to enhance aesthetics to preserve the overall appearance of the building.

7. **Fire Safety:** Consideration has been given to fire prevention, evacuation plans, smoke control, firefighting, and maintenance management. The design incorporates disaster prevention strategies and mechanisms for comprehensive safety management and disaster prevention planning.

8. **Property Management:** Comprehensive property management includes centralized security monitoring, waste resource management, public space maintenance, and indoor facility repair services.

9. **Circular Economy Principles:** We are committed to circular economy concepts, prioritizing resource conservation and innovative integration solutions to build sustainable social housing for the future.

Social housing projects have also incorporated the following certifications to enhance or ensure building quality:

1. **Green Building Label:** Aligning with international sustainable development goals and government policies for green building in ecological communities, the architectural planning of social housing focuses on energy conservation, efficient resource utilization, and minimizing environmental impact, thus creating ecological, healthy, energy-saving, and waste-reducing living spaces.

2. **Intelligent Building Label:** Focused on information, management, and safety for disaster prevention, this label promotes more humane and intelligent building management, aiming to reduce future operational costs of the buildings.

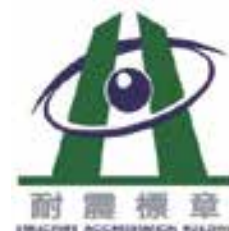
3. **Earthquake-Resistant Construction Label:** To improve the seismic resistance of building structures, the design and construction processes adhere to earthquake-resistant building standards and guidelines. The structures undergo professional structural design reviews and special construction supervision to obtain the “Earthquake-Resistant Design Label” and “Earthquake-Resistant Label”, ensuring seismic safety and secure residency.

4. **Universal Design Label:** Creating barrier-free living spaces.

5. **New Residential Building Energy Efficiency Label:** Starting from April 2023, the “Level 1 Energy Efficiency Label for New Residential Buildings system”



Intelligent Building Label



Earthquake-Resistant Construction Label



Universal Design Label



New Residential Building Energy Efficiency Label

has been implemented. Construction prioritizes the use of reusable materials and methods to reduce energy consumption and carbon dioxide emissions during the building construction process. By constructing social housing, this initiative takes a leading role in energy conservation and carbon reduction, aligned with Taiwan's goal of net-zero emissions by 2050.

Among social housing projects undertaken by MAA, several projects have been successfully completed and are currently occupied. Noteworthy among them include the Linkou District Summer University Games Athletes Village Social Housing, Sanxia District Guoguang Social Housing, Tucheng District Yuanhe Youth Social Housing, and Neihu District Xingshan Social Housing. 2017 Summer University Games Athletes Village Social Housing in Linkou District is the largest-scale social housing project in Taiwan. Beyond its primary role of providing housing for the general public, it has progressively integrated Non-Profit Organizations (NPOs) since 2019 to offer on-site services tailored to meet the diverse needs of its residents. For instance, “The Garden of Hope Foundation” has set up a shelter within the premises to provide support for abused women and children. The “Society for the Welfare of Autistic Persons” offers cohabitation services designed for adults with autism, facilitating their engagement with the broader community. The “Wheat Garden Charity Association”

extends after-school tutoring to underprivileged children residing in public housing, thus acting as a valuable support system for these families. Additionally, “The Foundation for Childless Ageing People” and the “Tatung Elderly Welfare Foundation” provide crucial care services for senior citizens. This multifaceted collaboration not only enhances the functionality of public housing but also integrates it into the overall framework of the Sustainable Development Goals (SDGs). The public housing complex has become a branch point within the social safety net, helping to create a dense and robust support network to ensure that residents of all age groups in the community receive appropriate assistance and support. This contribution aligns with the SDG goal of “leaving no one behind” and underscores the positive impact of public housing in advancing social equity and elevating the quality of life. Consequently, the success of Linkou Public Housing extends far beyond local benefits, serving as a nationwide exemplar and emphasizing the intrinsic connection between public housing and sustainable development goals. The Yuanhe Youth Social Housing features a unique 26-household co-living floor, equipped with shared living rooms, kitchens, and outdoor gardens, managed through a selective and autonomous approach. This innovative design creates a supportive, community-focused environment, catering to the diverse needs of both young and older residents.



Linkou District Summer University Games Athletes Village Social Housing

FEIAP YTDWG YOUTH TALENT INNOVATION COMPETITION (YTIC)

The Youth Talents Development Working Group (YTDWG) was founded in 2017 by MAA's Chairman Richard Moh, Ir. Yeoh Su Hong (IEM), Mr. Masato Takeuchi (IPEJ), Engr. Zaw Min Aung (MEngC), Dr. Tresna Priyasa So, and other young engineers from FEIAP. Since its inception, the YTDWG has been dedicated to promoting various international affairs. In conjunction with the FEIAP convention, set to take place in Taiwan from May 1st to 3rd 2024, a novel event series called the Youth Talent Innovation Competition (YTIC) will be launched.

The YTIC is primarily focused on fostering the next generation of youth with innovative design thinking, enabling them to break existing boundaries and providing a platform for expanding their horizons and showcasing their creativity. The competition not only allows participants to leverage their professional strengths but also brings together talents from different backgrounds and fields to share and learn from each other's creative ideas. The themes of YTIC are mainly based on 9 of the 17 Sustainable Development Goals (SDGs) published by the United Nations. Participants are required to use these as the foundation for their creative ideas, addressing current global issues.

The competition is organized into three phases: Qualification Review, Preliminaries (Concept Phase), and the Finals (Final Phase). The initial two stages, Qualification and Preliminaries, take place in a virtual setting, whereas the final phase will invite the top three teams from the preliminaries to compete in person at the convention. The live competition not only provides an international exchange platform but also an opportunity for teams from



FEDERATION OF ENGINEERING INSTITUTIONS OF ASIA AND THE PACIFIC (FEIAP)

YOUTH TALENT INNOVATIVE Idea COMPETITION

**UNLOCK YOUR POTENTIAL!
COME PRESENT YOUR IDEAS TO THE WORLD.**

- Registration Deadline (Oct. 15th, 2023)
- Open to all Young Professionals (18 - 40yrs of age)
- Innovations Related to UN's Sustainable Development Goals
- Total Prize: 6,000 USD

DEADLINE TO REGISTER
10/15 2023

For more details scan the QR code

different countries to share and interact. Additionally, YTIC offers substantial rewards, including a grand prize of up to 6000 US dollars. This serves not only as recognition for the outstanding performance of the participating teams but also as an incentive for youth to continue their involvement with SDGs, to understand the global issues at hand, and to continually seek and provide inspiration.

At present, the competition has completed the registration and qualification review stages and is now preparing for the preliminaries. The event has received an enthusiastic response, with a total of 39 teams from 7 countries participating. There is great anticipation for the creative proposals these teams will present and the meaningful contributions they are expected to make to sustainable issues.

MAJOR AWARDS

THE 23RD PUBLIC CONSTRUCTION GOLDEN QUALITY AWARDS

Public Construction Quality Awards recognize the award-winning engineering teams' outstanding professional performance in planning, design, supervision and construction. On 26th December 2023, MAA received the 23rd Public Construction Golden Quality Awards for its Construction supervision for Ankeng LRT Project.

Ankeng LRT Project



MAA's President Chen-Hui Hsieh (left 3), Project Manager of Ankeng LRT Construction Supervision Han-Ting Lo (left 4) and Senior Electric-Mechanical System Engineer Fu-Cheng Yao (right 1) attended the 23rd Public Construction Golden Quality Award ceremony



Ankeng LRT Project is located in the Ankeng area, Xindian District, with a total length of 7.5 km, a flat section of 3.2 km, and an elevated section of 4.3 km. There are 5 elevated stations, 4 flat stations and 1 depot. The project adopted sustainable practices such as ecology, environmental protection, carbon reduction, energy saving, waste reduction, ruggedness, landscape, and creativity, which were considered the key to sustainability issues. MAA Taiwan was engaged by Department of Rapid Transit Systems to provide construction supervision services for the project.

TAICHUNG CITY PUBLIC CONSTRUCTION AWARDS: TAICHUNG GREEN MUSEUMBRARY

Taichung City Public Construction Awards recognizes institutions that have exhibited excellence in construction projects. On 1st September 2023, MAA was honored with the award for its PCM service provided to the Taichung Green Museumbrary.

To bolster Taichung's cultural industry after the merger of Taichung City and Taichung County, Taichung City Government is planning a new cultural park in the Gateway City district. Called Taichung City Cultural Center, it will comprise a public library and a fine arts museum, combining art, education, and recreation in a single location. Besides serving their public functions (reading, guided tours, exhibitions), the two institutions will also fulfill policies and objectives related to reading promotion, artistic development and collection and research of artifacts. They will be tasked with integrating the resources of Taichung's branch libraries and art exhibition spaces in order to improve the city's cultural services and facilities.



MAA's Senior Vice President of Construction Supervision & Management Group Shih-Chang Huang (left 3) attended the Taichung City Public Construction Awards Ceremony



THE 17TH CONSTRUCTION GOLDEN SAFETY AWARDS

Construction Golden Safety Awards recognized institutions that maintain healthy and safe environments during construction processes. It aims to perpetuate enterprise safety culture. On 25th November 2023, MAA received The 17th Construction Golden Safety Awards for Project Management for Investigation Center of Ministry of Justice Investigation Bureau in Zhonghe District, Project Management for Southern Taiwan Science Park Special District (Zone F & G) and Design and Construction Supervision for Land Levy for Chungli Sports Park in Taoyuan City.

Project Management for Investigation Center of Ministry of Justice Investigation Bureau in Zhonghe District

Ministry of Justice Investigation Bureau aims to expand its office space due to the lack of space in the Forensic Serology Laboratory, Ministry of Justice Investigation Bureau in New Taipei City, Investigation of National Security Affairs, and field offices in Northern Taiwan. Thus, this project will provide more office space and integrate the resources in Northern Taiwan. There are 4 buildings in this project: Forensic Serology Office Building (2-story basement, 10 stories above ground, 14,908 m²), New Taipei City Investigation Bureau and National Security Affairs Office Building (13,031 m²), Field Office of Northern District (5 stories above ground, 31,050 m²), and Police and Communication Office (553 m², 2-story RC structure). The total area of the project is 31, 597 m².



MAA's Senior Vice President of Building & Facilities Group Ta-Hsing Lee (left 2) attended the 17th Construction Golden Safety Awards Ceremony



Project Management for Southern Taiwan Science Park Special District (Zone F & G)

The project aims to promote the Southern Taiwan Science Park Special District and improve the quality of public facilities in it. The Southern Taiwan Science Park development area covers an area of 100.13 ha., the detailed information on the land use consists of the following:

1. 64.02 ha. for building use
2. 31.85 ha. for public facility use
3. 0.26 ha. for irrigation use
4. 4 ha. for agricultural use



MAA's Project Manager Chien-Yi Hsieh (right 2) attended the 17th Construction Golden Safety Awards Ceremony



Design and Construction Supervision for Land Levy for Chungli Sports Park in Taoyuan City

This land levy project is a part of Pingzhen and Lunggang District Expanded Adjustment Plan. The total area for the project is 72.97 ha. The project aims to improve the recreational environment, quality of living, and local traffic that works with the MRT construction plan. This project follows a sustainable approach to creating an ecological environment and sports facilities. Other planned construction projects include residential and commercial districts, parking lots, green spaces, and schools.



MAA's Project Manager Pi-Chiung Chang (left 2) attended the 17th Construction Golden Safety Awards Ceremony



PCM and Construction Management for Kaohsiung Industrial High School Parking Garage

The project aims to solve the limited parking space in the city by constructing a parking garage. The project also includes a school building and a LRT auxiliary machine room. The details include the following:

1. Planning for a 24377.32 m² parking garage: a 5-story, steel structure, green building, which encompasses the following green designs and facilities: (1) Building envelope performance and energy-saving lighting enhance ventilation, natural lighting, and energy cost (2) Permeable pavement (3) Water-efficient labeled toilets (4) Stormwater and wastewater treatment management facility (5) Plant diversity for biodiversity and green roof for heat reduction
2. Planning for a school building: a 2-story building with a 2,200 m² large-size conference room and a 2,200 m² workshop room for the electronics engineering major.



MAA's Project Manager Jheng-Sheng Nian (right 2) attended the 17th Construction Golden Safety Awards Ceremony



NEW TAIPEI CITY PUBLIC CONSTRUCTION SAFETY AWARD: PROJECT MANAGEMENT FOR INVESTIGATION CENTER OF MINISTRY OF JUSTICE INVESTIGATION BUREAU IN ZHONGHE DISTRICT

The Public Construction Safety Award recognizes institutions that prioritize and uphold safety standards, fostering a culture of health and security during construction endeavors. The recognition underscores MAA's dedication to creating and maintaining secure construction environments. On 6th September 2023, MAA was honored with the 12th Public Construction Safety Award for its exemplary project management at the Investigation Center of the Ministry of Justice Investigation Bureau located in Zhonghe District.

Ministry of Justice Investigation Bureau aims to expand its office space due to the lack of space in the Forensic Serology Laboratory, Ministry of Justice Investigation Bureau in New Taipei City, Investigation of National Security Affairs, and field offices in Northern Taiwan. Thus, this project will provide more office space and integrate the resources in Northern Taiwan. There are 4 buildings in this project: Forensic Serology Office Building (2-story basement, 10 stories above ground, 14,908 m²), New Taipei City Investigation Bureau and National Security Affairs Office Building (13,031 m²), Field Office of Northern District (5 stories above ground, 31,050 m²), and Police and Communication Office (553 m², 2-story RC structure). The total area of the project is 31,597 m².



MAA's Manager of Project & Construction Management Dept. I Chao-Sheng Hsu (right 3) attended the New Taipei City Public Construction Safety Award Ceremony



TAINAN CITY PUBLIC CONSTRUCTION EXCELLENCE AWARDS

Tainan City Public Construction Excellence Awards acknowledge institutions with high-quality construction projects. On 1st October 2023, MAA won the Excellence Award for project management for Southern Taiwan Science Park Special District (Zone F & G).

In recent years, the Southern Taiwan Science Park has experienced substantial growth in output value, leading to an increase in employment opportunities. Recognizing this trend, Tainan City Government has accelerated the development of Zone F

and G to meet the growing demands for essential life functions. This initiative involves allocating land for residential and commercial purposes and building roads and Backloan Boulevard to facilitate more convenient external transportation, contributing to the overall improvement of the surrounding environment. Furthermore, the project focuses on increasing park greenery and recreational spaces while implementing detention basins to mitigate the risk of floods. The overarching goal is to establish a comprehensive regional disaster prevention system.



MAA's Project Manager Chien-Yi Hsieh (left 1) attended the Tainan City Public Construction Excellence Awards

OTHER NEWS

THE 15TH ANNIVERSARY OF AGILETECH ENGINEERING CONSULTANTS COMPANY

The construction of a subway system is usually carried out in a congested urban environment with limited underground space, where any hazardous events could cause serious damage to the surroundings. In the early 2000s, through the endeavors of Dr. Zachieh Moh in promoting the concept and application of risk management by extensively sharing his valuable knowledge and practical experience in occasions including international and local symposiums, the engineering society gradually recognized the importance of risk management.

Agiletech Engineering Consultants Company (AECC) is a corporation specializing in construction and safety risk management for urban rail systems. AECC was co-founded by Beijing Urban Construction Design & Development Group Company, MAA Engineering Consultants International Company, Beijing Urban Rail Transportation Consultants Company, and Beijing Urban Construction Exploration & Surveying Design Research Institute Company in 2007. Over the years, AECC has established advantageous technical capacities and a comprehensive information system in quality and safety control for infrastructures spanning from

construction to operation phases. Until now, AECC has provided risk management services for underground rail systems in more than 40 cities across the country.



To celebrate the 15th anniversary of AECC, Mr. Richard Moh, Chairman of MAA, together with the other founding members, including Mr. Song Ming-Hua, the formal President of Beijing Urban Construction Design & Development Group Company, Mr. Yang Xiuren, Dean of the National Urban Rail Transportation Green and Safety Construction Technology Lab, Mr. Jin Huai, Vice President of the Beijing Urban Construction Design & Development Group Company, and other esteem leaders and colleagues from the stakeholders participated in the celebration ceremony held in Guoyi Hotel Beijing on 30th Oct 2023.





CICHE 50TH ANNIVERSARY CELEBRATION

The 50th Anniversary Celebration of Chinese Institute of Civil and Hydraulic Engineering (CICHE) was held at the Taipei International Convention Center on 21st September 2023. MAA's Chairman Richard Moh and Vice Chairman Chung Cheng Kao was invited as the Chief Executive Officer and Chair of the organizing committee, and Moh and Associates, Inc. took charge of the preparation and organization works for the event.

The theme, “土開五域 水創十方”, is inspired by the initiating spirit of civil and hydraulic engineering. “土開五域” represents the professional advancement of infrastructure and construction in the five cardinal directions (east, south, west, north, and central), laying the foundation for Taiwan’s livelihood and economic development. “水創十方” symbolizes the trajectory of hydraulic engineering, as the mighty rivers create civilizations across ten different lands. Combined, the theme can be explained as “Civil and Hydraulic Engineering Initiates Fifty Years”, signifying the remarkable spirit that has propelled these two professions into a new era for engineering in Taiwan since the merger of the Civil Engineering Association, established in 1936, and Hydraulic Engineering Association, established in 1931, in 1973.



The celebration featured a range of activities, including:

1. Asian Pacific Civil Engineering Societies Collaboration MOU Signing Ceremony

A total of 17 units from 16 countries in the Asia-Pacific region participated in the 45th Executive Committee Meeting of Asian Civil Engineering Coordinating Council (ACECC), sharing ideas on engineering as well as topics related to sustainable development. At the same time, all the delegations have the same ideas to strengthen the cooperation through signing the MOU. The representatives hope that effective local solutions can be devised through collaboration between all the academies and associations from around the world in response to global challenges.



2. National Universities Joint Compilation of Civil Engineering General Course Materials Launching Ceremony

To cultivate young students' interest and comprehension of civil and hydraulic engineering, CICHE President Yu Chi Sung brought together faculties and professors from departments related to these fields across Taiwan universities. This collaborative effort resulted in the creation of the "Introduction to Civil and Hydraulic Engineering" general course material. At the same time, the "National Universities Civil and Hydraulic Engineering Exchange Platform" was established. The material aims to provide future generations with a concise overview of civil and hydraulic engineering, enhancing their enthusiasm for learning and enabling a swift start.





Group photo with Premier of Executive Yuan Chien-Jen Chen



3. Slogan Chanting

A total of 11 groups chanted their slogans to bless wishes for CICHE.

4. Cake-cutting Ceremony

The Past President of CICHE was invited to cut the birthday cake.

5. Retrospection of Taiwan's Public Construction Sharing Seminar

Mr. Chien Jen Chen, Premier of Executive Yuan, delivered the opening speech at the seminar. Representatives from various units including Water Resources Agency, Ministry of Economic Affairs, Taiwan High Speed Rail Corporation, Department of Rapid Transit Systems, Taipei City Government, Highway Bureau, Ministry of Transportation and Communications (MOTC), Freeway Bureau, MOTC, Railway Bureau, MOTC, Taiwan Water Corporation, and Taiwan Power Company, served as the keynote speakers.





President Ing-Wen Tsai delivered her speech at gala dinner

All the speakers and participants played important roles in Taiwan's diverse engineering projects, encompassing railways, highways, water and environmental, electrical engineering, etc. From planning, construction, execution to operation and maintenance, we can see the tireless dedication of everyone's efforts, creating a better living environment for Taiwan.

In the evening, President Ing-Wen Tsai was invited to attend the Gala Dinner with her esteemed presence, where she not only congratulated CICHE for its 50th Anniversary but also delivered a compelling and insightful speech that captivated all attendees.

With the presence of about 500 participants in the celebration events, the CICHE 50th Anniversary Celebration was considered a complete success.



Group photo with President Ing-Wen Tsai

REAAA SMART HIGHWAY AWARD OFFICIAL LAUNCH ANNOUNCEMENT

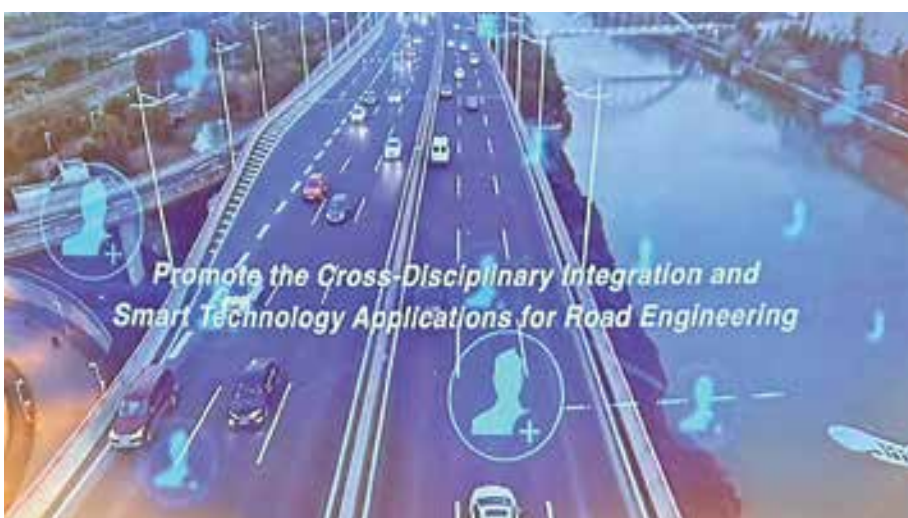
The China Road Federation (CRF) has been promoting its collaboration with international road engineering societies since its first participation in the 2nd Governing Council Meeting of REAAA in 1978. As a long-term member of the REAAA, CRF is pleased to establish the Smart Highway Award as a gesture of gratitude for the long-term support from REAAA. The Award has been set up in accordance with the endorsement at the 119th REAAA Council Meeting in 2023.



The Award aims to recognize REAAA members for their outstanding achievements and contributions to the development and application of smart highway management systems. Additionally, it seeks to facilitate the exchange and sharing of experiences in smart highway development and to promote cross-disciplinary integration and smart technology applications for road engineering in response to the rapid advancement of AI, 5G, Big Data, IoT and other smart technologies.



The 120th REAAA Council Meeting, along with the 50th Anniversary Celebration was held in Labuan Bajo, Indonesia from 23rd August 2023 to 27th August 2023. MAA's Chairman Richard Moh participated in the meeting virtually, while MAA's Chief Technology Officer Jaw-Chang Laiw attended in person. Mr. Richard has announced the official launch of Smart Highway Award and presented the award video, which received favorable comments and positive feedback.



PROJECTS

PROJECT MANAGEMENT FOR TAIPEI POST OFFICE PUBLIC OFFICE URBAN RENEWAL PROJECT

The Taipei Post Office, established in 1898 during the Meiji era, was one of the three premier post offices in Taiwan during the Japanese colonial period. In response to increased postal operations, the building was redesigned in 1928 and reopened in 1929, marking it as the largest post office in Taiwan at the time. On August 14, 1992, it was officially recognized as a municipal third-grade historic site under the Cultural Heritage Preservation Act.

In an effort to modernize postal services, integrate, and repurpose public land, and rejuvenate the North Gate's cultural landscape, the Executive Yuan facilitated a meeting on August 5, 2016, bringing together stakeholders to agree on a public urban renewal strategy. The initiative aimed to enable efficient land reuse, forge a national hub for innovation and finance, and repurpose the historic post office into a postal museum. Pursuant to Article 12 of the Urban Renewal Act, the Taipei City Government approved Chunghwa Post Co., Ltd. as the implementer of the public urban renewal project for the Taipei Post Office (hereinafter referred to as this project) on April 22, 2020. The project encompasses seven plots of land in the Zhongzheng District of Taipei City, spanning 14,228 square meters (approximately 4,304 pings). Notably, building number 603 has been declared a municipal historic

site (the Taipei City Government's Department of Cultural Affairs delineating plots 31, 32-1, and 32 as part of the heritage site on March 15, 2022), currently mainly used by the Taipei Beimen Post Office and the National Yang Ming Chiao Tung University.

The project management and technical service for this project were jointly bid by MAA & J.A. Chen Architects & Associates, and were awarded the contract on January 31, 2023. The contract was executed on February 24, 2023, with design supervision and urban renewal consultancy bidding intended for completion by September 2023. The construction contract is expected to be finalized by the end of December 2025, with the entire project expected to reach completion and undergo acceptance by the end of December 2030.



The project area presently accommodates the Beimen Post Office and National Yang Ming Chiao Tung University campus. Directly to the north is the Taipei Station Special District, while the surroundings to the east, west, and south are mainly composed of commercial office buildings. The historic North Gate and the Railway Department Cultural Park are notable landmarks to the northwest, with Beimen Square providing an open space on the northwest side of the base. Positioned conveniently close to Taipei Main Station and the Z10 exit of the Station Front Underground Street, the location guarantees easy access to public transportation. Key development ventures in the surrounding area include the Shin Kong Mitsukoshi Station Front complex and the E1E2 and C1D1 development projects. The northeast side is adjacent to the Mitsui Warehouse; the northwest side faces the North Gate and the Railway Department. A network of pedestrian paths and green spaces intertwine, enhancing the environmental quality of the area. This urban renewal initiative, coupled with the strategic urban axis design, is set to improve the interconnectivity of the area's open spaces.

In accordance with the stipulations of the industrial district urban planning, land use controls, and urban design guidelines, the preliminary planning for the project is as follows:

1. The site area is 4,304 pings (approximately 14,228 square meters), and the design plan includes a steel-structured building with 4 underground levels and 43 above-ground levels, reaching a height of approximately 208 meters.
2. The total floor area ratio of the building is set at 800%, amounting to a planned 34,432 pings of usable floor space, with a total building floor area of about 52,847 pings (including a sales area of 50,528 pings and 450 parking spaces).

Construction Timeline: Expected to span from 2026 to 2030.

Intended Usage:

1. The front building, a municipal historic site known as the Taipei Beimen Post Office, is planned to be transformed into a national-level postal museum.
2. The land on the rear side is to be redeveloped into a building designated as the 'National Innovation, Creativity, and Financial Center'.

BIM ISO 19650 IMPLEMENTATION GOALS

The project plans to adopt the international standards of BIM ISO 19650 and BS8001 to be practiced within its scope.

To effectively integrate the interface design and project engineering management of the new construction with the historic site, the international standard operational procedures of BIM ISO 19650 will be implemented. This will facilitate integration at various stages of the project and establish comprehensive life cycle information for the building. The project will initiate BIM ISO 19650 standard procedures to execute comprehensive engineering integration and establish a complete lifecycle model for the building. Design and construction units involved in the project are required to achieve certification under BIM ISO 19650-2 as a part of this project, establishing procedures that comply with BIM international standards.



To enhance the professional capabilities of those involved in asset operation and engineering management, the design and construction entities must not only obtain BIM ISO 19650-2 certification but also assist in achieving BIM ISO 19650-3 international standard certification for asset management. During the full lifecycle of the project, these units are expected to obtain certification in ISO 19650-4 and help the project achieve the target of ISO 19650-3 international standard certification. Therefore, both the design and construction units must secure ISO 19650-2 and ISO 19650-4 certifications and assist the project in attaining BIM ISO 19650-3 international standard certification.

The project anticipates the incorporation of circular economy concepts, targeting energy management, safety and disaster prevention, as well as health and comfort in architectural space planning. Building on the existing architectural foundation, the principles of a circular economy will be integrated to ensure optimal resource utilization and maximum economic value. Consequently, design and construction units must consider the essential information for a circular economy and assist the project in obtaining BS8001 certification.

BIM ISO 19650

The execution team for this project has invited a non-profit organization, Taiwan Construction Research Institute, to act as a consultant. The Institute has previously assisted various domestic leading consulting firms, major construction companies, and electronic industry engineering projects in adopting ISO 19650. By leveraging past successful implementation experiences, they will assist with the introduction and certification of ISO 19650 for this case, including comprehensive guidance, providing relevant education and training for the owner, the design/construction firms, and the management team, up to the final certification to perfect the overall operation of ISO 19650.



Within the scope of the BIM international standard ISO 19650, it is divided into five parts, namely: ISO 19650-1 professional collaboration, ISO 19650-2 delivery processes, ISO 19650-3 asset management, ISO 19650-4 information exchange, and ISO 19650-5 information security. Among these, this project targets the certification of ISO 19650-3 asset management, aiming to become the first public project in the country to receive the ISO 19650-3 project-specific certification. To obtain the international standard ISO 19650-3 certification, the design and construction units involved in this project must achieve certification in ISO 19650-2 delivery

processes and ISO 19650-4 information exchange, ensuring that the entire project's operational workflow and information exchange are in compliance with ISO 19650 international standards.

All relevant units of this project have adopted the BIM international standards ISO 19650-2 and -4, to implement comprehensive project management and delivery standards. Moreover, an Asset Information Model (AIM) that complies with the ISO 19650-3 standard will be delivered to Chunghwa Post Co., Ltd.



PROJECT MANAGEMENT FOR CHIAYI URBAN AREA ELEVATED RAILWAY EXTENSION PROJECT

The project encompasses the area from the north side of the Liao Ding Community level crossing, situated just south of Dalin Station in Chiayi County (at mileage K284+800), to the north end of Jiabei Station in Chiayi City (at kilometer mark K293+720). This section will seamlessly link with the Chiayi City Railway Elevation Project, spanning a total distance of approximately 8.92 kilometers.

The project involves transforming the current Minxiong Station into an elevated station with two island platforms and four tracks. The route traverses five existing level crossings—Liao Ding Community, Zhuxiang, Donglong Road, Touqiao, and Senyong Factory Front; three vehicular overpasses, namely Minxiong, Wenlong, and Touqiao, are part of the scope; and one Minxiong vehicular underpass, all of which will be removed upon the completion of the railway elevation.

The project includes track work (including temporary track work), elevated bridge work, elevated station work, approach and foundation work, grade road work, drainage work, landscape work, temporary level crossing work, general mechanical and electrical work, temporary track (including existing track relocation and temporary station) and permanent track overhead lines, signals, telecommunications, and other system mechanical and electrical engineering.

MAA's services include design and bidding phase contract management, performance review, and coordination integration work. This includes consulting and review of the design, consulting and review of the tender and awarding process, independent verification and validation (IV&V) of system mechanical and electrical design, and other professional technical services.

The project aims to elevate the existing Taiwan Railways within the designated scope, seamlessly uniting the areas on both sides of the railway line and eliminating level crossings within Chiayi County. This undertaking is expected to foster urban development, optimize land use, enhance regional traffic, and improve environmental landscapes.





PROJECT MANAGEMENT FOR LAND ACQUISITION OF SOUTHERN TAIWAN SCIENCE PARK SPECIFIC ZONE A, B, C, D, E, N & O IN TAINAN

As Tainan City will celebrate its 400th anniversary of establishment, its long history of development is undeniable. After the establishment of the Southern Taiwan Science Park, Tainan has become a pivotal center for high-tech manufacturing and research and development (R&D). In pursuit of sustainable spatial development, the city government has articulated the vision of a "Livable City," aiming to transform the city into a "Cultural Capital, New Smart Tech City, Low-Carbon City, and Tourist Paradise." According to the announced "Tainan City Land Use Plan," the development concept for the Greater Tainan area revolves around "One City", "Two Sciences," "Three Centers," "Four Chains," and "Five Zones." This project, Land Acquisition of Southern Taiwan Science Park Specific Zone A, B, C, D, E, N & O in Tainan (hereinafter referred to as 'this project'), is adjacent to one of the "Two Sciences" in the Greater Southern Science metropolitan area.

The Southern Taiwan Science Park Specific Zone serves as a vital developmental core in central Tainan. Adjacent floating zones F, G, L, M have been developed consecutively, with a current population of 119,000 people. To fully connect the semiconductor industry clusters and provide backup land for the park's workforce, the project is highly time-sensitive and urgent. Once the development of the surrounding areas is completed, the Southern Taiwan Science Park will become a new town with a population of up to 180,000 people. This project facilitates the rational use of land via land acquisition and creates a livable and safe urban environment. The project aims to attract high-tech talents to settle in the livable new town, fulfill the infrastructure needs of industries, provide land for the expansion of the science park and its surrounding industries, and offer essential living facilities and services for the specific zones.





Guided by the existing environmental landscape, the project introduces a vision for a 'Cultural, Sustainable, and Technological City'. It pivots on three pillars: 'Ecology', 'Production', and 'Living'. The area is interconnected using landscape parks, green corridors, and other ecological pathways. Keeping in mind the rising instances of extreme rainfall linked to global climate change, the project promotes harmonious coexistence with water. It emphasizes highly effective flood prevention through the establishment of detention basins within a permeable sponge city framework. Beyond embracing smart, green energy, and low-carbon urban designs, the project takes proactive measures to address local concerns, promotes public engagement, and is dedicated to creating an inclusive environment for all ages, paving the way for a sustainable future lifestyle.

Archaeological sites, as vital cultural assets, are abundant around this project area, which reflects Taiwan's rich cultural heritage. Preserving and maintaining these sites is essential to this project. In its previous engagements with development zones F and G in the Southern Taiwan Science Park Special District and the land readjustment in Xishu Bay, MAA had experience with the processes and approaches in managing cultural relics and historic sites. Before undertaking any developmental actions, the company conducts a preliminary

investigation into the cultural accumulation and distribution of the sites within the project area and applies appropriate engineering designs. This approach ensures the protection of these sites while minimizing construction disruptions and harmonizing development with preservation.

In recent years, urban development has surged at a rapid pace, resulting in high-density population activities and the clustering of industrial and commercial enterprises that exacerbate ecological degradation. In a move to turn environmental liabilities into assets, this project assesses its alignment with the United Nations' "Sustainable Development Goals (SDGs)" through a self-evaluation process that takes into account inherent geographical conditions, population demands, and industrial trends within the project area. The assessment reveals the project aligns with eight goals: 'Clean Water and Sanitation' (SDG 6), 'Affordable and Clean Energy' (SDG 7), 'Industry, Innovation, and Infrastructure' (SDG 9), 'Sustainable Cities and Communities' (SDG 11), 'Responsible Consumption and Production' (SDG 12), 'Climate Action' (SDG 13), 'Life Below Water' (SDG 14), and 'Life on Land' (SDG 15). The project aspires to forge an urban environment that is both livable and conducive to residents' well-being.

PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR PUXIN ANJU SOCIAL HOUSING IN YANGMEI DISTRICT, TAOYUAN CITY

To materialize the social housing policy and promote housing justice, the National Housing and Urban Renewal Center (hereafter "the Center"), operating under the Ministry of the Interior, is tasked with the planning and oversight of social housing projects. These initiatives strive to judiciously distribute and repurpose public resources, with the primary goal of addressing the residential needs of youths and disadvantaged groups through constructing 'rental-only' social housing.

To reduce the time and manpower required for on-site construction, the project's tendering documents mandate the use of precast structural elements such as columns, beams, floor slabs, and exterior wall units. Extending practices initially applied to exterior walls in previous social housing projects, such as 'Wanhua Anju' in Taipei and 'Zhongya Anju' in Hsinchu, this method is now being applied to internal structural components as well. The project incorporates the BIM (Building Information Modeling) technique and, considering the demands of future use, it assesses the feasibility of construction in architecture, structure, landscaping, and electromechanical services in the most economical way to prevent resource wastage. Additionally, the contractor is obligated to deliver the final BIM model upon project completion, facilitating seamless integration into the Center's management during the operational and maintenance phase. The entire project is developed based on the concept of the total lifecycle cost. The long-term operational and management expenses are crucial factors in ensuring the operational sustainability and maintenance of high-quality living conditions. By engaging facility management within this framework, these long-term operational expenses, especially in terms of 'personnel services', 'maintenance', and 'daily energy consumption', can be properly managed.

The project is located at the intersection of Wenhua Street, Zhongxing Road, and Jinlong Second Road. It is close to public facilities such as Zhiping High School, Ruipu Elementary School, Yangmei No.1 Social Housing, and the Puxin Branch of the City Library, offering a rich educational



environment. The project also aims to energize the neighborhood through social housing, fostering local youth employment and facilitating the establishment of families..

The architectural design of the project features a 12-story building with 2 underground floors, consisting of three separate buildings totaling 486 social housing units. The modular design employs open units and precast balconies to bring in airflow and natural light, creating a suitable living space. The three buildings enclose a central open space to create a performance stage, offering flexible open space for community activities. For maintenance and management, the main lobby is centrally located in Building B, combining the entrances of Buildings A and C, which facilitates personnel access control and serves as an emergency evacuation space in conjunction with the courtyard plaza in case of emergencies.

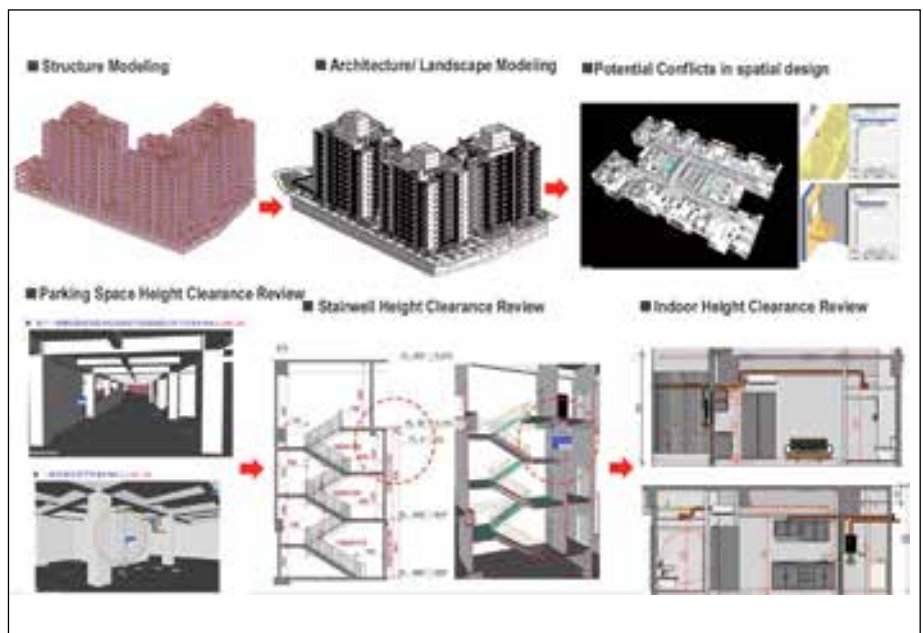


The project aligns with the principles of the circular economy, categorized into six essential aspects. During the ‘construction’ phase, the building embraces modular construction techniques. These include the use of precast elements and system formwork, specifically aluminum formwork. Recycled construction materials are applied, such as integrating recycled aggregates into concrete, recycled high-pressure bricks, green and eco-friendly building materials, electric arc furnace rebar or steel, copper busbars design, and assembled construction offices. To further reduce the consumption of building materials, the BIM technique is deployed for preliminary checks. This facilitates the use of fixed-length rebar and factory-processed rebar, as well as the employment of bagged cement and sand products, ensuring optimal resource utilization. During the ‘use’ phase, clean energy sources

such as solar energy and rainwater collection devices are utilized. Energy conservation and carbon reduction are accomplished by implementing efficient lighting and selecting high-efficiency domestic appliances and equipment. The sharing economy aspect involves the design of flexible shared spaces and shared charging stations (with reserved distribution panels).

MAA and Da-Link Architects and Associates were engaged by the Center to provide services of project management, construction supervision, and special earthquake resistance supervision on April 20, 2023. The design-build team is jointly undertaken by Ruentex Engineering & Construction Co., Ltd. and Zhuli Joint Architects Office. The construction license is expected to be obtained in July 2024, and the project is scheduled to be completed by the end of June 2027.

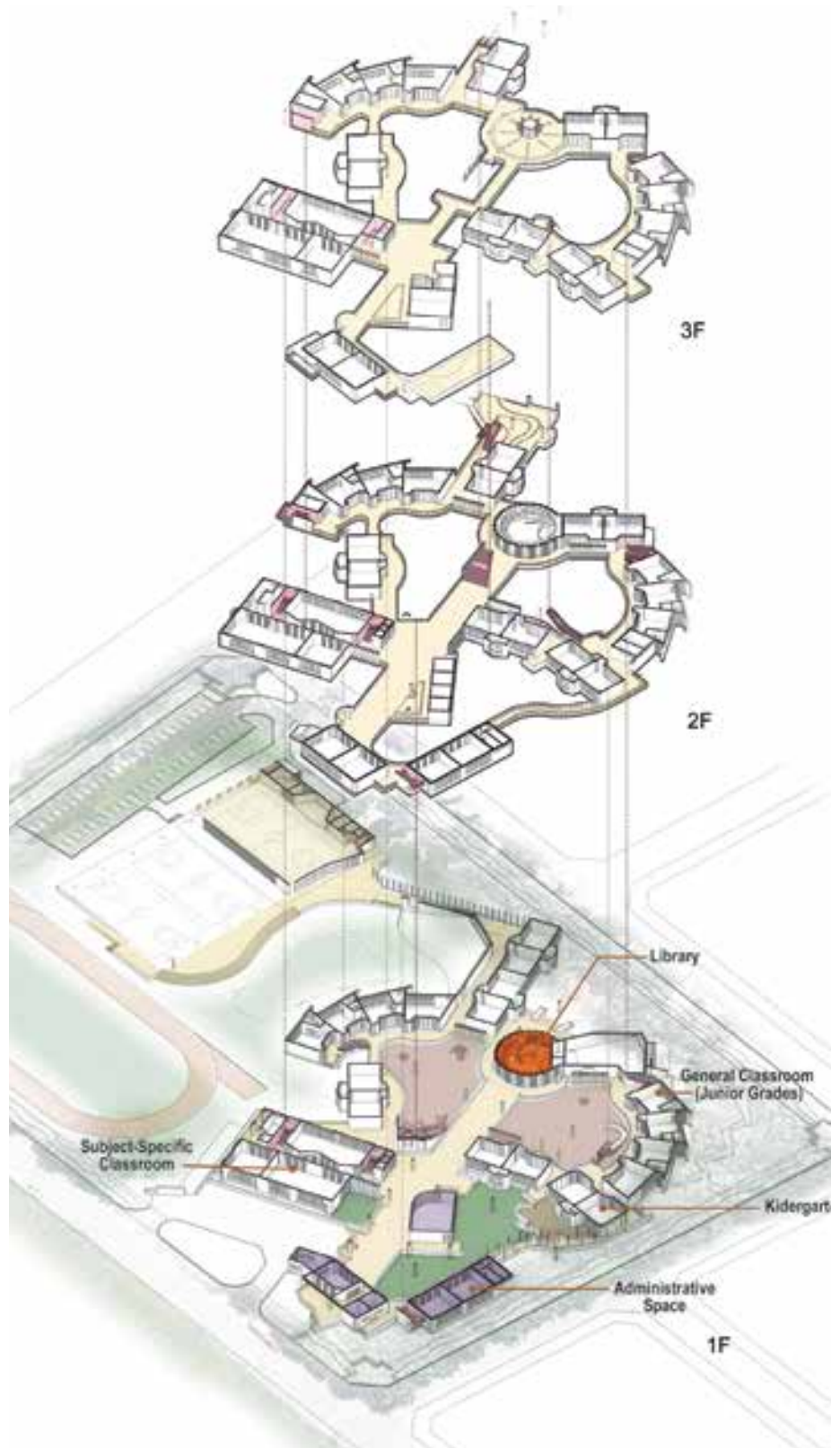
In terms of first-level energy efficiency, high-efficiency equipment is used to reduce electricity demand, including LED lighting, air conditioning equipment with Grade 1 energy conservation label or higher, gas water heaters and dual-burner gas stoves with Grade 2 energy conservation label or higher for two-bedroom types, above one horsepower ground type pumps with IE3 energy efficiency certification, basement fans with CO detectors and IE3 certified variable frequency control motors, transformers with variable frequency permanent magnet synchronous motor elevators, and IH stoves for studio apartments.



PROMOTING GREEN ENERGY AND LOW-CARBON ARCHITECTURE PROJECT FOR THE ‘NEW PRIMARY SCHOOL CAMPUS IN THE NANZI DISTRICT (WENXIAO 2 LAND) IN KAOHSIUNG CITY’

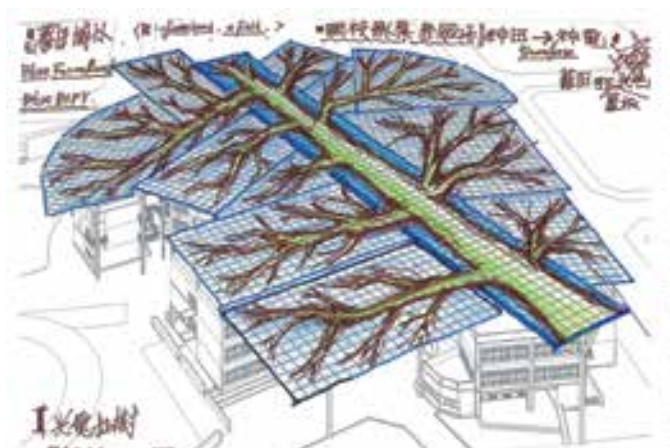
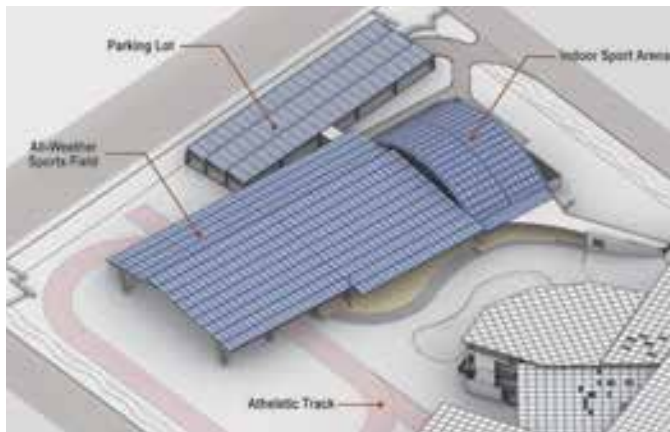
In recent years, spurred by population migration and shift in urban planning, the emerging communities in North Kaohsiung have thrived, leading to a steady rise in the residential population in Nanzi District. In response to the regional educational needs, a new primary school construction project is underway, employing a design-build approach. The bidding for the design-build contractor was completed in October 2023, with the project anticipated to conclude by 2026. Upon completion, it will provide facilities for 48 classes and related educational spaces (including kindergarten, infant care center, specialized classrooms, special education classrooms, shared reading stations, etc.).

This project aims to build a smart, energy-efficient, and sustainable primary school. By integrating a comprehensive solar photovoltaic system paired with a smart grid, a green campus powered by green energy will be established. The solar power system will supply electricity for students' learning needs, thereby reducing carbon emissions and mitigating global warming to achieve a sustainable and healthy campus environment. The goal is to achieve recognition with the Green Building Bronze Badge, Intelligent Building Bronze Badge, and LCBA (Low Carbon Building Alliance) Bronze Badge.



Features

1. A low-carbon, green energy, and smart campus with an uninterrupted power supply—intelligently integrating solar photovoltaic and energy storage systems.
2. Solar energy and campus architectural aesthetics coexist harmoniously - integration of solar photovoltaic with architecture.
3. A healthy and friendly sustainable smart green building campus - promotion of smart buildings with ultra-low energy consumption strategies.



The planning and design of this project take into consideration ultra-low energy consumption, allowing teachers and students to grow in a healthy, natural, and barrier-free space. Leveraging the climate characteristics of less rainfall and high sunlight exposure in the area, solar energy resources are extensively utilized. Solar energy is harmoniously integrated with architecture, and an energy management system efficiently supplies electrical power for teaching. The building adopts a steel frame structure to achieve the goals of material recycling, waste reduction, and sustainable development, aligning with the following United Nations Sustainable Development Goals (SDGs):

- Goal 4: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"
- Establish and improve education facilities suitable for children, individuals with disabilities, and gender sensitivity.
- Goal 7: "Ensure access to affordable, reliable, sustainable, and modern energy for all" - Increase the proportion of renewable energy in the global energy mix.
- Goal 12: "Ensure sustainable consumption and production patterns" - Achieve sustainable management and efficient use of natural resources.
- Goal 13: "Take urgent action to combat climate change and its impacts" - Enhance education and awareness of mitigation and adaptation to climate change, impact reduction, and early warning.

MAA has undertaken the role of project management and construction supervision consultant for this project, dedicated to realizing the vision of green, smart, and low-carbon buildings. From the inception of the planning phase, we have actively collaborated with the owner, defining design principles in orienting the project towards a low-energy consumption building. Throughout the design and construction phases, our responsibilities include conducting design reviews and providing construction supervision to ensure the realization of an educational campus that aligns seamlessly with the predefined goals.

DETAILED DESIGN FOR PRIVATE SECTOR PARTICIPATION IN THE BTO PROJECT FOR WASTEWATER RECLAMATION AT THE FENGSHAN RIVER WASTEWATER TREATMENT PLANT IN KAOHSIUNG CITY



As urbanization progresses and industrial characteristics evolve in Taiwan, there has been a noticeable increase in annual water consumption for both residential and industrial needs. The effects of global climate change, notably the uneven distribution of rainfall, have resulted in water supply shortages. Taiwan has recently been ranked 18th among nations facing water scarcity. To alleviate the pressure on water resources, the government has initiated measures to utilize various water sources. Urban wastewater, characterized by its consistent flow regardless of climatic conditions, transforms into a reliable alternative source once it follows treatment and reclamation. To alleviate the water pressure in Kaohsiung and enhance the flexibility of water resource utilization and allocation, construction of the Fengshan River reclaimed water treatment plant commenced in 2016. The project was planned in two phases: an initial supply of 25,000 CMD in 2018, ramping up to a full supply capacity of 45,000 CMD by 2019. By 2024, the facility is set to expand its reclamation capacity from 45,000 CMD to 50,200 CMD, marking an increment of 5,200 CMD.

At its inception, this project set the precedent as a pioneering demonstration facility in the country. Currently, it features a reclaimed water treatment infrastructure with a capacity of 45,000 CMD, meeting one-fifth of the daily water requirement of the coastal industrial zone. The construction includes 7.2km of water distribution pipelines and the

optimization of nitrogen removal at the existing wastewater facility. The treated effluent undergoes an advanced fast filtration + ultrafiltration (UF) + reverse osmosis (RO) membrane treatment process. The expanded design includes the addition of raw water intake pumps, UF systems, RO systems, water delivery pumps, and the essential sewage pipeline infrastructure. Furthermore, an auxiliary water intake and its associated distribution pipelines will be integrated into the current water supply framework of the industrial precinct. This design significantly enhances the reliability and versatility of water resource management.

This project aligns with the United Nations Sustainable Development Goals (SDGs) as follows:

1. SDG6 (Clean Water and Sanitation): Ensure the availability and sustainable management of water and sanitation for all.
2. SDG7 (Affordable and Clean Energy): Highlight the provision of reclaimed water sources.
3. SDG9 (Industry, Innovation, and Infrastructure): Prioritize resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
4. SDG11 (Sustainable Cities and Communities): Strive to create inclusive, safe, resilient, and sustainable urban environments.
5. SDG12 (Responsible Consumption and Production): Advocate for a green economy while ensuring sustainable consumption and production methodologies.

PROFESSIONAL ACTIVITIES



MAA's management team at the signing

MOU WITH ASIAN INSTITUTE OF TECHNOLOGY (AIT)

On 27th September 2023, Prof. Kazuo Yamamoto, President of the Asian Institute of Technology (AIT), paid a courtesy visit to MAA's Non-Executive Chairman Dr. Za-Chieh Moh in Taiwan. During their meeting, they explored potential collaborations in research and various capacity-building areas. A significant outcome of this meeting was the signing of a Memorandum of Understanding (MoU) to formalize cooperation between AIT and MAA.

This MoU signifies a commitment to fostering closer ties between AIT and MAA in various academic and professional endeavors, benefiting both institutions and their students. The MoU outlines several key areas of collaboration including academic exchange, industry-



AIT President Prof. Kazuo Yamamoto (left) and MAA's Chairman Richard Moh at the signing



university joint research, academic support, student internships, and employment opportunities.

The event was also attended by MAA's Chairman Richard Moh. Notable attendees also included Ms. Joanne Mei-Yen Chung, Executive Director of AITAA Taiwan Chapter, and senior

management staff of MAA. Prof. Yamamoto was accompanied by Mr. Sanjeev Jayasinghe, Executive Director of the Office of Advancement & Alumni Affairs; Ms. Chotiros Mongkolchotirat, Director and Executive Secretary of the Office of the President; and Dr. Geoff Chao, Associate Professor and Department Head of SET at AIT.

MOU WITH SHIP AND OCEAN INDUSTRIES R&D CENTER



MAA's Chairman Richard Moh (left 2) at the signing

In response to the government's energy transition goals and the demonstration planning for floating wind farms, the Ship and Ocean Industries R&D Center (SOIC) invited leading engineering consulting firms and the College of Engineering of National Taiwan University to jointly sign a Memorandum of understanding (MoU) for developing design technique for floating foundations of offshore wind turbines under the witness of Mr. Cheng-Wei Yu, Director General of Energy Administration, Ministry of Economic Affairs. The collaboration aims to contribute to the upcoming incentive program for the floating wind farm demonstration project and accelerate the development of floating wind farms.



On 2nd November 2023, SOIC, in collaboration with Moh and Associates, Inc. and several leading engineering consulting firms with extensive experience in providing comprehensive engineering consulting services and solutions, along with the College of Engineering of National Taiwan University, a representative unit in the field of academic research for floating wind power engineering in Taiwan, jointly signed an MOU. This collaboration aims to increase the visibility of local achievements in the design of floating foundations of offshore wind turbines, as well as to cultivate talents in this field, thereby strengthening the design capabilities of Taiwan's industries, academia, and research units in the field of floating wind farms.

ENGINEERING PRACTICE COURSE AT THE ASIAN INSTITUTE OF TECHNOLOGY

The Asian Institute of Technology (AIT) was founded in 1959 with the support from twenty three countries around the world. With a steadfast commitment to the principles of promoting technological advancement and sustainable development, AIT has been at the forefront of cultivating professional talents for countries in the Southeast Asian region through high education, research and outreach.

As a prominent engineering consulting firm in the East and Southeast Asian region, Moh and Associates, Inc. (MAA) received an invitation to deliver a credit-bearing course on engineering practice during the summer session of 2023. With the aim of offering students an immersive experience in understanding the challenges and solutions associated with multidisciplinary engineering projects in the industry, a two-credit course was delivered intensively over a period of three weeks, spanning from 8th June to 28th June 2023.

The course commenced with the lecture titled Our World Our Work to provide comprehensive overview of the mindset, knowledge, skills, attitudes, and values required for aspiring civil engineers. The course was then structured into thirteen lectures, revolving around four main themes: urban tunneling, deep excavation, foundations and geotechnical risk management. Several projects carried out by MAA in the past twenty years in the areas of rapid transit system, airport link, skyscraper, and special-type building were chosen to serve as case studies. The contents of these case studies cover both general geotechnical engineering practices and specific issues. Topics include double-O tube tunneling, expressway underpinning, direct shield machine coupling, shield tunneling in ground with significantly varied stiffness, and others.

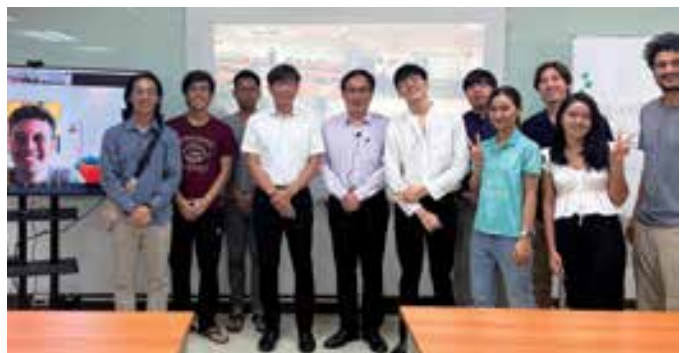
Registrants of the class were composed of 2nd year graduate students from the Geotechnical and Earth Engineering program (GTE) hailing from the nationalities of Thailand, Myanmar, Nepal, and the Philippines. The performance of these students throughout the course was exceptional. Beyond delivering high-quality work on assignments, their commitment to learning in the aspects of class discussion, group discussion, and feedback was evident. It is a pleasure to witness the student's enthusiasm for learning and their ability to excel their studies.



AIT main gate



Class photo

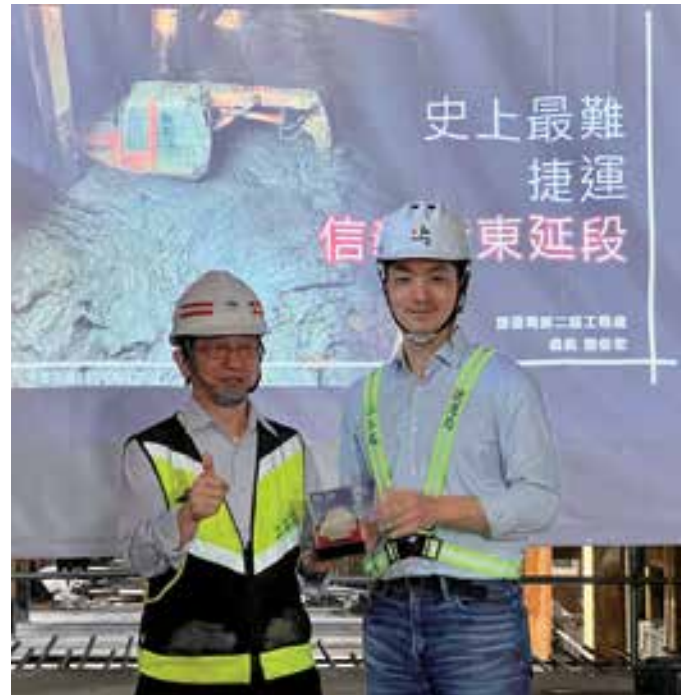


Group photo

MAYOR INSPECTS WORK PROGRESS FOR EAST EXTENSION OF MRT XINYI LINE

The east extension of Taipei MRT Xinyi Line commences from Xiang Shan Station and traverses through Xin Yi Road section 6, concluding at Yucheng Park Station. Spanning approximately 1.42 km, the project encompasses two underground stations (named R05 and R03), two sections of shield tunnels with a diameter of 5.6 m, and one cross-over track. MAA was engaged by Department of Rapid Transit System, Taipei City Government to provide detailed design and construction consultancy services. The design works include civil, architecture, and electrical system.

On 10th April 2023, Mr. Wan-An Chiang, Mayor of Taipei City Government, conducted an inspection to assess the construction progress of the project. During the visit, he expressed his support for those dedicated to the monumental undertaking, emphasizing that the current endeavor represents the most challenging project in Taipei's rapid transit development.



Taipei City Mayor Wan-An Chiang inspected the east extension of Taipei MRT Xinyi Line



REOPENING CEREMONY FOR METROPOLITAN HALL ART SQUARE AND TAIPEI CITY ARTS PROMOTION OFFICE



The outdated facility at the Metropolitan Hall poses challenges to maintenance and management, giving rise to safety and environmental concerns. In addition, the interior design and layout fall short of requirements, necessitating a renovation. The floor of Metropolitan Hall covers an area of 5,289 m² and the floor area of Taipei City Arts Promotion Office spans 11,101 m².

Situated in the central area of Taipei City, Taipei City Government hopes to create a better performance space in the Metropolitan Hall, enhancing the artistic experience of performance groups and citizens. MAA was engaged by Taipei City Arts Promotion Office to provide project management and supervision services. On 18th December 2022, MAA's President, Chen-Hui Hsieh, and Senior Vice President of Construction Supervision and Management Group, Shi-Chang Huang, attended the reopening ceremony



MAA's President Chen-Hui Hsieh and Senior Vice President of Construction Supervision & Management Group Shih-Chang Huang attended the reopening ceremony for Metropolitan Hall Art Square and Taipei City Arts Promotion Office

SHIELD TUNNELING MACHINE LAUNCHING CEREMONY FOR TAOYUAN MRT GREEN LINE CONTRACT GC02



MAA's Chairman Richard Moh (left 1) attended the shield tunneling machine launching ceremony for Taoyuan MRT Green Line Contract GC02

The Taoyuan MRT Green Line is a rapid transit line of the Taoyuan Metro which consists of 6 lines. The MRT Green Line has a total of 21 stations (10 underground stations and 11 elevated stations) with a total length of 27.8km. Taoyuan MRT Green Line is scheduled for completion in 2025. The Taoyuan City Government aims to create a comprehensive transportation network by connecting the MRT Green Line, the Taoyuan Airport Line, the MRT Green Line Extension to Zhongli, the MRT Brown Line, the Sanying Line Extension to the Bade, and the underground Taoyuan Railway, forming a cohesive ring-shaped system. This integrated network is designed to offer a mass, fast, and convenient travel service, contributing significantly to overall urban redevelopment.

Contract GC02 includes 4 underground stations with two drives of 5.4km of tunnels and 3 ventilation shafts, amounting to a total length of 6.75km. The construction team utilizes the shield tunneling method, conducting drilling operations at depths exceeding 10 meters underground. MAA was engaged by Taoyuan City Government to provide project management and construction supervision consultancy services. On 17th March 2023, MAA's Chairman, Richard Moh, attended the shield tunneling machine launching ceremony.



MAA's project team of Taoyuan MRT Green Line Contract GC02 at the ceremony



MAA's management team at the ceremony

GROUNDBREAKING CEREMONY FOR CF680A SECTION CONTRACT OF MRT CIRCULAR LINE NORTH SECTION



The MRT Circular line aims to provide more efficient and budget-friendly transfers. The CF680A section contract spans the districts of Xinzhuang, Wugu, and Luzhou, including three underground stations: Y19A, Y19B, and Y20. The total length is 3.3 kilometers. Starting from the New Taipei Industrial Park Station of the New Taipei City Circular Line, the route runs on an elevated track along Wugong Road for approximately 500 meters before going underground. MAA is engaged by Department of Rapid Transit Systems, Taipei City Government to provide design services for the daylighting section (334 m), Y19A Station (177 m), Y19A to Y19B shield tunneling section (1,202 m), Y19B Station (184 m).

On 15th October 2023, MAA's Chairman, Richard Moh, attended the groundbreaking ceremony.



MAA's Chairman Richard Moh (left 3) attended the groundbreaking ceremony for CF680A Section Contract of MRT Circular Line North Section

BEAM RAISING CEREMONY FOR INVESTIGATION BUREAU IN ZHONGHE DISTRICT OF INVESTIGATION CENTER OF MINISTRY OF JUSTICE

Due to office space limitations in various units of Investigation Bureau, including the Forensic Science Department, New Taipei City Field Division, Security Protection Workstation, and Northern Mobile Team of the Ministry of Justice Investigation Bureau (MJIB), an integrated office building expansion project has been proposed as the “MJIB Investigation Center Project in Zhonghe District.” The project aims to extend its office facilities as well as consolidate both human and equipment resources within the northern office of Investigation Bureau. The project encompasses 4 buildings: Forensic Science Office Building (2-story underground, 10-story aboveground, 14,908 m²), New Taipei City Field Division and National Security Protection Office Building (13,031 m²), Northern Mobile Team Office Building (5-story aboveground, 31,050 m²), and Security Guard Investigation Office (2-story RC structure, 553 m²). The total area of the project is 31,597 m². MAA was engaged to provide Project Management Service to this project.

On 8th August 2023, MAA’s President, Chen-Hui Hsieh, and Senior Vice President of Building & Facilities Group, Ta-Hsing Lee, attended the beam raising ceremony.



MAA's President Chen-Hui Hsieh and Senior Vice President of Building & Facilities Group Ta-Hsing Lee attended the beam raising ceremony for Investigation Center of Ministry of Justice Investigation Bureau in Zhonghe District

BEAM RAISING CEREMONY FOR PARKING GARAGE IN SANHE PARK AND COMMUNITY CENTER IN YUANLIN



MAA's Senior Vice President of Construction Supervision & Management Group Shih-Chang Huang (left 3) attended the beam raising ceremony for Parking Garage in Sanhe Park and Community Center in Yuanlin

This project involves the construction of a parking garage and a community center, both designed to meet the needs of Changhua County residents.

The parking garage, situated on Lot 806, is a crucial component of the "Prospective Infrastructure in Rural Area, Solutions to Parking Problems" Plan initiated by the Directorate General of Highways under the Ministry of Transportation and Communications. It is designed with two underground levels and offers a total of 258 parking spaces, providing a convenient and ample parking space solution.

As for the community center, it has been designated as a Level B facility according to the Ministry of Health and Welfare's Long-term Care Plan. Spanning an area of 600 m², the center

is thoughtfully organized to accommodate various functions. The first floor encompasses a conference room, gathering hall, offices, storage rooms, a handicapped-accessible restroom, and an elevator. Meanwhile, the second floor features a care center, a community classroom, a multipurpose room, a kitchen, a bathroom, a stockroom, and additional office spaces.

MAA was engaged to provide Project Management Service to this project. On 10th July 2023, MAA's Senior Vice President of Construction Supervision & Management Group, Shi-Chang Huang, attended the beam raising ceremony.

PROFESSIONAL AWARDS / HONOR

TAIWAN REAL ESTATE EXCELLENCE AWARDS

On 28th July 2023, MAA received Taiwan Real Estate Excellence Awards from The Real Estate Association of R.O.C. for the following projects:

- Turnkey Project for Youth Social Housing in Yuanheduan, Tucheng District



- Turnkey Project for Taoyuan Aerotropolis Land Acquisition Lot B1



- Project Management for Land Readjustment of Matou Industrial Zone



- First Phase of Sewage System Construction in Yong Kang Area, Tainan City (PA Sewage Zone)



- Turnkey Project for Youth Social Housing in Minganduan, Xindian District



CHINESE INSTITUTE OF CIVIL AND HYDRAULIC ENGINEERING (CICHE) – APPLICATION OF DIGITAL ENGINEERING INNOVATION AWARD AND CONSTRUCTION BEAUTIFICATION DISTINGUISHED AWARD

On 1st December 2023, MAA won four awards from Chinese Institute of Civil and Hydraulic Engineering (CICHE): the Application of Digital Engineering Innovation Award for Design, and Construction Supervision for Land Levy for Chungli Sports Park in Taoyuan City, and Construction Beautification Distinguished Award for Turnkey Project Youth Social Housing in Yuanheduan of Tucheng District, and Turnkey Project for the Redevelopment of Caota Area Sections 1, 3, and 6, at Guanyin District, Taoyuan City.



YUAN YE AWARDS 2023 - KAOHSIUNG JUDICIOUS CREATIVE ARCHITECTURE ASSOCIATION



On 27th October 2023, MAA received Yuan Ye Awards from Kaohsiung Judicious Creative Architecture Association for Turnkey Project Youth Social Housing in Yuanheduan of Tucheng District.

BIM+ AWARDS 2023

On 8th December 2023, MAA received the Digital Application Innovation Award of BIM+ Awards 2023 from Taiwan Construction Research Institute, Autodesk and Taiwan Architecture & Building Center for Orsted O&M Facilities in Taichung.



THE 2023 URBAN CONSTRUCTION GOLDEN QUALITY AWARDS

On 14th December 2023, MAA received the 2023 Urban Construction Golden Quality Awards from Kaohsiung Architects Association for sewage system in Yong Kang area, Tainan City (PA sewage collection area) and Kaohsiung Industrial High School Parking Garage.



LETTER OF APPRECIATION



On 6th September 2023, MAA Chairman, Richard Moh, received a letter of appreciation from China Engineering Consultants, Inc. for his distinguished dedication to the International Outreach Camp for Young Engineers.



On 24th April 2023, MAA was honored to receive a letter of appreciation from National Taiwan University for supporting its activities.



On 2nd June 2023, MAA received a letter of appreciation from Chinese Taipei Tunnelling Association, acknowledging its significant contributions to society.



On 3rd May 2023, MAA was honored to receive a letter of appreciation from National Kaohsiung University of Science and Technology for its contribution to the 60th-anniversary job fair of the Department of Civil Engineering.



On 13th July 2023, MAA received a letter of appreciation from National Yang Ming Chiao Tung University, acknowledging its contribution to The 27th Symposium on Construction Engineering and Management and International Conference.



On 19th October 2023, MAA was honored to receive a letter of appreciation from National Yang Ming Chiao Tung University for its contribution to Rock Engineering and Geotechnical Engineering Seminar.



On 25th October 2023, MAA received a Certificate of Appreciation for its contribution and support in SEAGC 2023 Bangkok Thailand.

SEMINARS AND CONFERENCES

MRT DESIGN-BUILD PROJECT EXPERIENCE SHARING SEMINAR

On 12th May 2023, the Department of Rapid Transit Systems, New Taipei City Government, in collaboration with the Civil Engineering Technology Research and Development Foundation, and the Chinese Institute of Civil and Hydraulic Engineering, co-hosted the “MRT Design-Build Project Experience Sharing Seminar”. The Department of Rapid Transit Systems, New Taipei City Government, along with engineering consulting firms and construction companies, shared their execution experiences from various MRT design-build projects, including the Danhai LRT System Design-Build Project (Phase 1) and the Ankeng LRT System Design-Build Project, both of which were completed and opened to traffic over the past six years, as well as the Sanying MRT System Design-Build Project. Discussions centered around how to enhance Design-Build contracts from institutional, contractual, and execution perspectives, with the aim of providing valuable insights for other infrastructure contracts.

MAA’s Chairman, Richard Moh, also a member of Board of Directors of the Civil Engineering Technology Research and Development Foundation, delivered the opening remarks. The seminar has invited Mr. Han-Ting Lo, Senior Geotechnical Engineer of MAA and Project Manager of Ankeng LRT Construction Supervision Project, and Mr. Jaw-Shuenn Lin, Deputy Chief Engineer of Transportation and Civil Engineering Department and Project Manager of Sanying Line MRT project, to be the speakers, presenting on the topics of “Feedback and Review of Construction Supervision Experience in MRT Design-Build Project; A Case Study of the Ankeng LRT Project,” and “Experience Sharing on Design for MRT Sanying Line,” respectively.



CIE YOUNG ENGINEERING ALLIANCE COMMITTEE (YEAC) NETWORKING EVENT 2023: CROSS-GENERATIONAL INHERITANCE OF OUTSTANDING FEMALE ENGINEERS

On 30th May 2023, the Youth Engineering Alliance Committee (YEAC) of the Chinese Institute of Engineers (CIE) held the “CIE YEAC Networking Event 2023” at the Backstage Café of National Taiwan University. At the beginning of the event, Mr. Richard Moh, President of the YEAC, welcomed the attending engineers and students, expressing the hope that everyone would engage in relaxed and pleasant interactions with pioneers and experts during this event.

The theme of the event specifically focused on the cross-generational inheritance of outstanding female engineers. YEAC has invited Ms. Hui Mei Chu, Director of Public Works Department, New Taipei City Government, Ms. Wen Zhen Xue, President of the Female Engineers Committee, CIE, and Ms. Wan-Chi Huang, Deputy Manager of Sinotech Engineering Consultants, Ltd., to be panelists. All three panelists have shared their experiences and insights from their careers, encouraging female engineers to make good use of abilities such as listening, sensitivity, and empathy and being flexible communicators or coordinators within a team.

In the second half of the event, YEAC connected with Nick Valentines, the founder of the UK organization “CHAIN”. He introduced the philosophy of the CHAIN to everyone, expressing the hope for regular forums or networking activities to be held in collaboration with the YEAC. The purpose is to continuously provide a platform for knowledge exchange and cooperation for young engineers.



MAA's Chairman Richard Moh gave a welcome speech



Cross-generational inheritance of outstanding female engineers

Last but not least, YEAC invited two outstanding young engineers who received the Excellent Young Engineers Award in 2022: Mr. Wei Cheng Lien, CEO of Hyson Technology Inc. and Mr. Chong-Wei Sie, Researcher of Sinotech Engineering Consultants, Ltd. They gave their insights from the industry, sharing some real-life case studies and personal experiences to bring the event to a perfect conclusion.



Group photo of all the participants

FIDIC 2023 FUTURE LEADERS MANAGEMENT COURSE

Organized by the International Federation of Consulting Engineers (FIDIC), the 2023 Future Leaders Management Course aims to cultivate future managerial expertise within the engineering sector. Traditional engineering education primarily equips students with technical capabilities, yet the management of a consulting firm demands a broader spectrum of knowledge than what universities typically provide. This course consists of six web-based seminars coupled with an intensive three-day workshop held in Singapore, followed immediately by a two-day FIDIC annual conference.

FIDIC, with its inception in 1913, stands as a globally esteemed entity, formed through the collaborative efforts of engineering associations from Belgium, France, and Switzerland. Garnered with the endorsement of pivotal organizations like the World Bank, FIDIC's 110-year heritage is a testament to its unwavering commitment to Quality, Integrity, and Sustainability. Renowned for their equitable essence, FIDIC's contract templates have garnered widespread international acceptance and application.

The online course segments company management into four core domains: Human Resources, Project Management, Finance, Marketing, Quality, Integrity, and Sustainable Development. These segments serve as pillars for the curriculum, which was imparted by industry professionals. Following the completion of the course, participants were tasked with a case study assignment that encouraged the practical application of the newly acquired concepts within organizational contexts. The guidance from tutor Andrew Steeves was particularly enlightening, as he encouraged a deep-dive approach, urging us to transcend surface-level analysis and engage with the fundamental principles of



Group Photo of all the participants

management. He advised us to consider the bigger picture before diving into the specifics, such as evaluating whether a tender is worth the bid. This perspective is rarely encountered during regular design operations and was a valuable opportunity to receive industry mentorship.

The on-site sessions were equally impressive and could be considered the highlight of the course. Participants from around the world had to overcome barriers of language, culture, and background in just two days to forge meaningful dialogues and collaboratively work on a presentation. For someone who grew up in the Eastern culture, the dynamism and apparent disarray in these discussions initially came as a surprise, nevertheless, it is precisely this kind of dialogue that gathers the most diverse ideas and leads to optimal solutions.

Following the on-site course was the annual conference, where engineering experts and government officials from various fields gathered to discuss global sustainability issues. Despite over a decade of discussions on global sustainability and the net-zero carbon emissions target, the Earth is still "burning". The consensus was that all sectors need to accelerate their efforts towards global sustainable development; the role of engineers is increasingly critical, and sustainability must be integrated into design and planning.

The consulting engineering industry is about people, and the most valuable part of this event was the opportunity to meet engineers from different countries and regions. We could discuss our work, lives, and visions for the future of engineering face-to-face. The focus areas are vastly different across regions, such as Ghanaian engineers who pay great attention to infrastructure, or Japanese engineers who incorporate maintenance thinking into their mature domestic construction designs. Casual conversations also yielded profound insights from female engineers on "the impact of maternity leave on career development." The differences in culture and language were a novel experience.

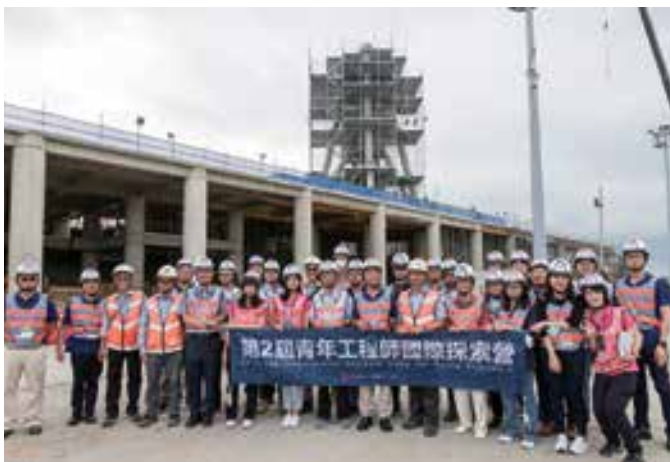
This event was a rare opportunity to receive direct guidance from industry professionals and to make friends with engineers from different regions, making it both professionally enriching and personally memorable.



INTERNATIONAL OUTREACH CAMP FOR YOUNG ENGINEERS

Engaging in “The Second International Outreach Camp for Young Engineers” was truly profound, a sentiment encapsulated by the saying that “Every difficult situation presents a new opportunity; every encounter leads to a new destiny.” Having been part of the inaugural camp last year, I consider myself fortunate to have received a recommendation to participate once again in this year's enriching experience.

The core emphasis of this camp is centered on “Smart Transportation.” In our contemporary technologically advanced era, the age-old saying “Knowledge is power” finds a fitting rephrasing: “Information is power.” Smart transportation emerges from the fusion of information technology, utilizing sensory data, transmission media, and feedback devices to connect people, vehicles, and infrastructure. This synergy provides real-time transportation information to all, aiming to enhance traffic safety, minimize environmental impacts, boost transport efficiency, and increase economic productivity. Beyond relaying instant traffic updates, it also encompasses integrated ticketing systems, seamless transitions between different modes of transport, cross-industry collaborations, driving safety enhancements, and diverse traffic management services. The development of smart transportation rests on four fundamental pillars: seamless travel, information sharing, road safety, and ensuring smooth traffic flow.



One day at the camp was a visiting trip to three companies, each embodying aspects of seamless travel, information sharing, and smooth traffic flow in smart transportation:

1. Surutto KANSAI's Kansai Thru Pass: This company showcased an integrated ticketing system, a collaborative effort with diverse private transport and travel agencies. The Kansai Thru Pass not only simplifies the travel experience but also represents a harmonious partnership in the pursuit of integrated transportation solutions.
2. Osaka Metro's MaaS and DRTs: Osaka Metro demonstrated a forward-thinking approach by embracing Mobility as a Service (MaaS) and Demand Responsive Transit Service (DRTs). This initiative reflects a comprehensive strategy for providing flexible and efficient transport options.



3. Hanshin Electric Railway Company: The company presented an insightful strategy of deploying additional trains during events to alleviate crowding. This not only reflects an acute understanding of customer needs but also showcases a proactive approach to ensuring smooth traffic flow during peak periods.



As pointed out by MAA's Chairman, Richard Moh, Taiwan's technological prowess is truly on par with global standards. An exemplary illustration of this is the EasyCard, which offers a range of transportation modes, seamlessly grants access to diverse recreational facilities and facilitates convenient small payments. Taipei's Good Go system, featuring MaaS and VR maps, even assists visually impaired individuals in crossing streets. During peak events, the Taipei Metro Bannan Line can dispatch a train every 140 seconds. Despite the maturity of Taiwan's technology, there is much to learn from Japan in effectively integrating organizational interfaces and promoting information sharing through various approaches.

Furthermore, my observations in Japan revealed the implementation of numerous inter-departmental interfaces, exemplified by the creative repurposing of spaces liberated by railway elevation projects. These transformed areas now serve as vibrant open plazas, roads, or commercial spaces, highlighting the efficacy of cross-departmental and cross-system integration.



In summary, my participation in "The Second International Outreach Camp for Young Engineers" was immensely rewarding. Beyond delving into the transportation-focused theme, it provided insights into Japanese workplace and commuting cultures - insights that are not easily gleaned from online resources. This experience truly embodied the saying, "Traveling thousands of miles is better than reading thousands of books."

CORPORATE SOCIAL RESPONSIBILITY (CSR)

SIGNING CEREMONY FOR DR. HENG MOH MEMORIAL SCHOLARSHIP

On 26th May 2023, Dr. Za Lee Moh, Co-founder of Moh and Associates, Inc., signed a donation agreement with Dr. Cheng Hong Yang, President of the Chinese Institute of Engineers (CIE), to set up the “Dr. Heng Moh Memorial Scholarship” in the name of his father at CIE. The Scholarship is to encourage students interested in the fields of transportation, railways, and civil engineering.

Dr. Heng Moh served as the Director-General of Taiwan Railways Administration, MOTC from 1949 to 1961. During his 12-year tenure, he made significant contributions to the restoration and construction of Taiwan's railways. In 1955, he became the 19th President of CIE. He was known for his integrity, diligence, and sense of responsibility and was actively involved in various construction projects in Taiwan.

The establishment of the "Dr. Heng Moh Memorial Scholarship" not only recognizes outstanding engineering students but also commemorates the significant contributions of former chairman Dr. Heng Moh in the field of railway engineering construction in Taiwan. We believe that the scholarship will inspire future generations to strive for excellence in the field of engineering and contribute their efforts to Taiwan.



MAA's Co-founder Dr. Za-Lee Moh (right) at the signing





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