



# MAA Bulletin

ISSUE 63-64  
DECEMBER 2019



## 三鶯線捷運系統計畫統包工程

Detailed Design for Sanying (Sanxia-Yingge) MRT System Turnkey Project New Taipei City, Taiwan

亞新工程顧問(集團)公司  
MAA Group Consulting Engineers  
BANGKOK BEIJING HONG KONG MACAU  
SHANGHAI SINGAPORE TAIWAN YANGON



## MAA Bulletin

Issue 63-64 December 2019

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  
**S**atisfaction  
**E**conomical Solution  
**T**imely Completion

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## ISO 9001 and LAB CERTIFICATIONS





**Public Construction Safety Golden Award recognizes institutions which maintain healthy and safe environments during construction processes. It hopes to perpetuate enterprise safety culture. In September 2019, MAA received the 13<sup>th</sup> Public Construction Safety Golden Award for the following projects: Turnkey Project for Sanxia Youth Social Housing Construction, Matou Tainan Industrial Zone Rezoning Project Management, Puli Township Sewage System Construction Project and Luzhu District Assembly Halls.**



*MAA's President Chien-I Hsu (right 2), SVP Shih-Chang Huang (left 2), Associate Principal Engineer Gwo-Jenn Liu (right 1) and Manager of Kaohsiung Office Kung-Lung Lo (left 1) attended the 13<sup>th</sup> Public Construction Safety Golden Award Ceremony.*





## TURNKEY PROJECT FOR SANXIA YOUTH SOCIAL HOUSING CONSTRUCTION



*Sanxia Youth Social Housing*

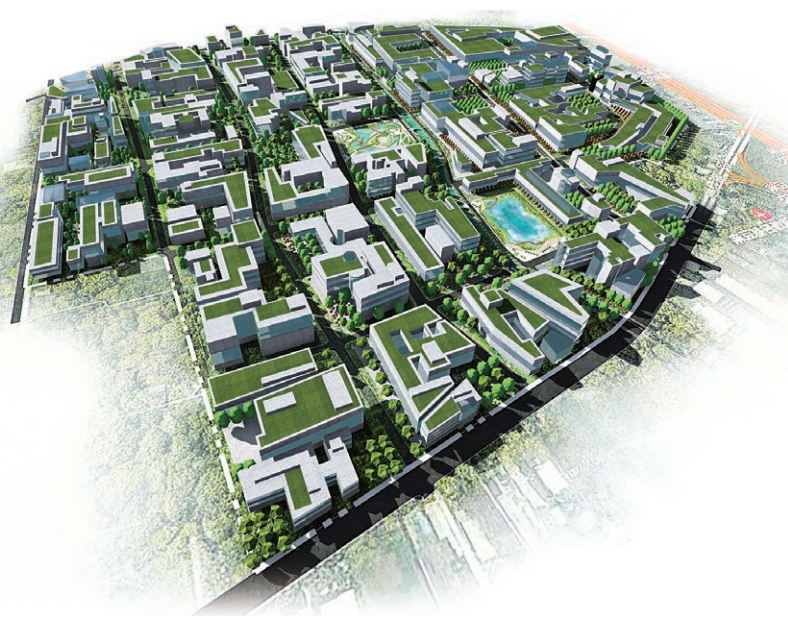
The development of youth social housing is to alleviate high housing prices and served as a remedy to housing inequality for minorities. The site area is 4,423 m<sup>2</sup>. The building can accommodate 241 households, and its design encompasses concepts of green building, universal design, and smart community. One of the main challenges of the project was the lack of land resources, which hindered the entrance/exit route. Adjustments of the land and construction schedule were made to solve this issue.

Raft foundation was used due to the nature of the geological conditions at the location and its structural load. To reduce construction risks, the building and scaffold were designed at the same height and BIM was used as a tool for implementation.. In addition, stirrups were used for improved seismic strength. This project had received several recognitions: the 8<sup>th</sup> New Taipei City Safe Public Works Award and the 13<sup>th</sup> New Taipei City Excellent Public Works Award. MAA received these awards for its PCM services.

## MATOU TAINAN INDUSTRIAL ZONE REZONING PROJECT MANAGEMENT

To promote the development of the Matou Industrial Zone, the Tainan City Government decided to proceed with land rezoning according to the industries' needs. These include planning of public facilities, roadway systems, and mitigating current flood issues within the zone, improving the functionality and usage rate of the industrial land. The project covers an area of 110.83 hectare. The Tainan government expects the Matou Industrial Zone to develop into a satellite city to the Tainan Science Park.

The main challenge of this project was to rapidly improve construction site conditions by implementing drainage systems to reduce the impact of rains and flood on the overall construction schedule. During the beginning of the construction, Matou was frequently flooded because of its low-lying elevation, which delayed the construction schedule. For that reason, box culverts were installed, using prefabrication and mechanical lifting methods. These techniques meet the four elements in construction management: standardization, prefabrication, automation, and specialization. In addition, enhanced fencing was installed around the detention basin to prevent workers from falling in. MAA received the award for its PCM services.



*Matou Tainan Industrial Zone Rezoning Project Management*

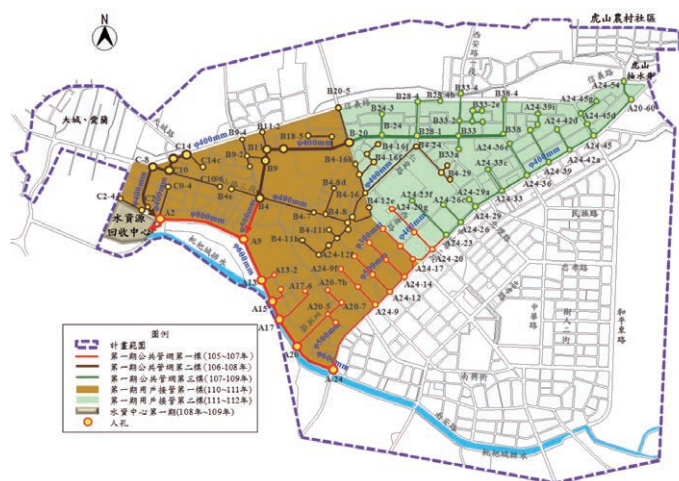


## PULI TOWNSHIP SEWAGE SYSTEM CONSTRUCTION PROJECT

The project includes the first phase of sewage system in Puli, covering a total area of 156.60 ha. The construction includes main sewers, sub-main sewers, branch sewers, lateral sewers, and household connection pipes. Pipe diameter varies between 200 mm and 700 mm. The total length is about 24,270 m. Connection pipes can reach more than 6,120 households. Pipe-jacking method is used for the construction for larger pipes (diameter  $\geq 400\text{mm}$ ). Open-cut method is used for household connection pipes (pipes diameter  $\leq 200\text{mm}$ ). MAA received the award for construction supervision and design of this project.

There were several challenges which the team overcame during the project implementation:

Puli Township is a popular tourist attraction with narrow streets; which lies above a complex network of underground utilities (including potable water, natural gas, and telecommunications lines). Since relocation of the utility network was not feasible for this project, investigative boreholes and other geological investigations were performed in the design stage to locate underground utilities to avoid contact during construction, in particular for high pressure pipes or lines.



Puli Township Sewage System Construction Map

## LUZHU DISTRICT ASSEMBLY HALLS

MAA provided award-winning PCM services for the 4 storied and one basement integrated Luzhu District Assembly Hall building. In addition to the assembly hall, with a total floor area of 1,871 m<sup>2</sup>, the building also included a daycare center, a welfare center, and a library. The site is closely situated to Taoyuan International Airport, which makes the transportation convenient. This project also received golden EEWL green label and a bronze intelligent building label.

1. Aside from investigative boreholes, trial pits were also excavated to confirm the condition of the ground. The construction site is located on gravel bed, with compressive strength between 619 kgf/cm<sup>2</sup>~1,673 kgf/cm<sup>2</sup>; and grain size between 5~15 cm. In the design stage, the distance for pipe ramming was optimized to prevent process failures.

2. Asphalt covered steel road plates were used during portions of the construction to reduce the hazard of skidding for vehicles traveling on these surfaces.

3. To address common concerns of manhole explosions, pressure relief design was implemented in manholes to mitigate possible risks for explosions. In addition, stainless steel fencing was installed around manholes for the purpose of construction safety.



Luzhu District Assembly Halls



# PUBLIC WORKS GOLD AWARD

金品獎  
108年桃園市政府公共工程

Public Works Gold Award was established by Taoyuan City Government to recognize public works which achieved a high quality. In August 2019, MAA received three awards for the following projects: Baling Integrated Administrative Building, Luzhu Sports Center, and The Chungli Land Office and Kuolin Social Welfare Center.



MAA's President Chien-I Hsu Attended 2019 Public Works Gold Award Ceremony



Baling Integrated Administrative Building



## BALING INTEGRATED ADMINISTRATIVE BUILDING

This Baling Integrated Administrative Building is a three-story, RC structure, and twin house building, with a total floor area 2,331 m<sup>2</sup>. The building houses various facilities and institutional centers within the building, including Baling Village Fire Department, a recreation center, a daycare center, a public health center, and a control center. The control center is a unique part of the project which serves as a management hub during typhoons and other natural disasters. Smart building systems were also implemented into the building to facilitate these functions.

One of the challenges during the construction process was accessibility of the site due to its remote location, requiring a prolonged construction schedule. Required materials had to be prepared in advance at off-site locations due to lack of resources in the area. Another challenge was the extreme weather the workers experienced during the construction progress. In February 2018, temperatures dropped as low as 2°C, an uncommon occurrence in Taiwan. However, the project team implemented several additional measures to ensure timely completion of the project. MAA received the award for PCM services for this project.

## LUZHU SPORTS CENTER

Luzhu Sports Center offers a swimming pool, a basketball court, a ping pong room, an aerobic studio, a rock climbing studio, etc. It covers an area of 4413.8 m<sup>2</sup> and a total floor area of 12,900 m<sup>2</sup>. This integrated building comprises a 4-story sports venue and a 2-story basement. The sport center offers the first barrier free indoor swimming pool in Taoyuan. Green building and local cultural elements are incorporated in the design. In September 2019, MAA received Public Works Golden Award for project management services of this project.



*Luzhu Sports Center*

## THE CHUNGLI LAND OFFICE AND KUOLIN SOCIAL WELFARE CENTER

The Chungli Land Office and Kuolin Social Welfare Center is a 7-level and 2-basement building including an administrative office, daycare center, citizens' assembly hall, parent-child care center, etc. The total floor area is 9,746 m<sup>2</sup>. The project emphasizes energy saving and green features to provide a comfortable venue. Female-exclusive leisure rooms, medical stations, and other facilities are built to improve professional safety and health management for its personnel. MAA received the Public Construction Safety Golden Award (2018) and Public Works Golden Award (2019) for PCM Services of the project.



*The Chungli Land Office and Kuolin Social Welfare Center*



## CORPORATE SOCIAL RESPONSIBILITY (CSR)

As civil engineers, MAA continues to pursue meaningful projects to bring the society positive impact, as stated in ASCE (American Society of Civil Engineers) vision: *“Entrusted by society to create a sustainable world and enhance the global quality of life”* and in ICE (Institution of Civil Engineers) : *“Civil Engineers at the heart of society, delivering sustainable development through knowledge, skills and professional expertise”*. For past 44 years MAA has always been committed to following these ideas, and has dedicated our business practices to achieving these goals.

MAA has adopted these ideals through: (1) Business and Academia Cooperation (2) Philanthropic Activities (3) Economic Responsibility.

In an effort to promote cooperation between businesses and academia, MAA has made significant contributions to the Department of Civil Engineering at National Taiwan University since 2001 and to the master program in Department of Civil Engineering at National Chiao Tung University annually since 2006.

MAA also actively encourages participation in international engineering events held in Taiwan, with its members frequently acting as hosts and co-hosts to these events (including the Road Engineering Association of Asia and Australia (REAAA) Forum and Malaysia Engineers Exchange Forum). These efforts are made to provide Taiwan’s engineers with additional opportunities to present to the international engineering industry, as well as promote Taiwan’s engineering feats to a wider audience.

MAA has taken the initiative to contribute through international philanthropic activities. In Myanmar, MAA played a part in the “Peanut Program”, one of Daw Khin Kyi Foundation’s (DKKF)

programs (DKKF is a non-profit organization that promotes health and education in Myanmar). The program demonstrates sustainable peanut farming practices and educating farmers on novel techniques and skills suitable for their environment. In Thailand, MAA funded a library and a school in Surin Province, a rural area, in Thailand to equip children with better educational environments. The library was named in honor of Mrs. Diana Moh, MAA’s Chairman, Dr. Za-Chieh Moh’s wife.



MAA Funded a Library in Surin Province ,Thailand

MAA promotes sustainability through the application of Building Information Modeling (BIM) in projects, such as in Sanying MRT. BIM is a process that allows engineers to enhance data monitoring and analysis, risk management, and visualization in the design and preconstruction processes to avoid costly construction error, waste, and delays. BIM facilitates communication between project stakeholders, reducing project costs through minimizing construction issues. By adopting BIM into our services, MAA continually seeks to provide quality services while reducing potential economic impacts resulting from public and private projects. Through this method and other practices, we strive to demonstrate economically responsible practices.





## 921 EARTHQUAKE 20<sup>TH</sup> ANNIVERSARY INTERVIEW

In June 2019, Da Ai Television contacted MAA for their 921 Earthquake 20<sup>th</sup> Anniversary School Reconstruction TV program interview. The program aims to document and curate various 921 Earthquake reconstruction stories. On 18<sup>th</sup> July 2019, our employees who were involved in the reconstruction of Meishan Junior High School met with its current principal on campus, located in Meishan, Chiayi, for the interview.

There are several reasons for the choice of this particular project for the interview:

1. Location: The original site of the school was located on the fault and hence unsuitable as a reconstruction project. This resulted in a long process of locating a suitable project site and land approval procedures, which required permissions from several governmental institutions.
2. Preparation before the reconstruction: geological survey and water and soil conservation study were conducted prior to reconstruction works to analyze site suitability.
3. Improvement for the quality of construction in southern Taiwan: MAA was engaged by the government to perform construction supervision and to implement “Quality Management System for Public Construction”, which ensured the project was carried out in a safe manner, adhering to proper health and safety procedures as well as carrying out works to a high quality. This Project played an important role in establishing Quality Management System for Contractors in southern Taiwan and rural areas, which had a significant impact on the engineering industry.



Current Principal (left 2), former principal (right 2) of Meishan Junior High School and MAA's senior engineer Cheng-Wei Fang (left 1) and Ming-Sung Chang (right 1)





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## PROJECTS

**1<sup>ST</sup> SEPTEMBER 2018 TO 30<sup>TH</sup> NOVEMBER 2019**

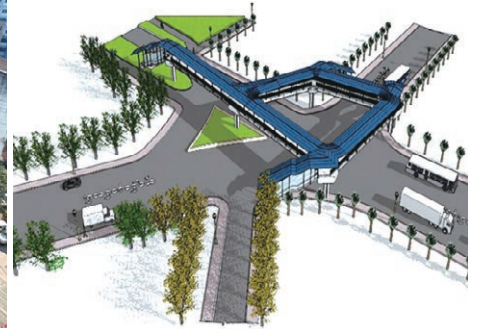
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### YCDC ROAD & BRIDGE DEPARTMENT PROJECTS, MYANMAR

These projects include a Dawbon-Yamonar passenger overpass, a Nar Nat Taw passenger overpass, a Kandawgyi pedestrian bridge, a Pyay Road AC overlying project. Except for Pyay Road AC overlying project, the other bridge projects foundations are press pile foundations. MAA coordinated and integrated work scope interfaces among contracts, such as piling contractor, production factory, pile tester and contractor. MAA was engaged by YCDC Road & Bridge Department to provide construction supervision, QA/QC, construction schedule monitoring, submission of biweekly report, and completion report. The services started from May 2019 and ended in September 2019.



*Narnattaw Pedestrian Bridge*



*Kandawgyi Pedestrian Bridge*



### YANGON REGION GOVERNMENT (YRG) BUILDING PROJECTS, MYANMAR

These projects include 3 school buildings and 9 hospital buildings. The 3 school buildings belong to Ministry of Education, and the other 9 hospital buildings belong to Ministry of Health. All of the projects are 2 to 4- story building projects. MAA provides construction supervision, QA/QC, construction schedule monitoring, submission of biweekly report, and completion report. The project services started from May 2019 and are expected to be completed in September 2020.



*Hlegu School Building*







### **YANGON HTANTABIN TECHNOLOGY PARK, MYANMAR**

The Project is located in Htantabin Township, north-west of Yangon, and adjacent to Hlaing River which is connected to Yangon River. The comprehensive industrial park provides opportunities for jobs, investments, and economic growth in the surrounding regions. The project total area is 1065.64 hectares, which includes industrial zone, residential zone, business zone, public services, port, and green zones. MAA supervised pre-engineering works, such as topographic and hydrographic survey, soil investigation, master planning, and conceptual planning. This will be the first private investment industrial park in Myanmar. The development is expected to be completed in 2025. MAA was engaged by Yangon Htantabin Technology Park Co., Ltd. to provide design consultancy, master planning, and conceptual planning. The project services started from September 2018.

### **BAGO RIVER BRIDGE, MYANMAR**

The Project is located in Hlegu Township, adjacent to the border of Yangon and Bago Region, connecting Darbein Township and Tha Pyu Township by crossing Bago River. Currently, the residents of each riverbank and adjacent township rely on boats as the only means of transportation between Yangon and Bago Region. Bago River Bridge will become a major transportation route between the two regions. The bridge is 320 m long primarily of RC and PC girders, with 60m steel girders at main span. The navigation clearance is 3.66 m and 2-lane viaduct. The bridge is funded by Yangon Region Government and Bago Region Government. MAA provided construction supervision services, implementing international practices for QA/QC systems, aiming to enhance the public construction quality of Myanmar. The project services started in May 2019 are expected to be completed in September 2022.



*Bago River Bridge Construction Site*



*Bago River Bridge*



## YCDC BUILDING DEPARTMENT PROJECTS, MYANMAR

YCDC Building Department assigned MAA as the construction supervision consultant for 29 projects, which were undertaken throughout 2018-2019. These projects include 2 PPP projects, 11 building projects, 5 fencing projects and 11 electrical projects. The 2 PPP projects included a 7-story, 1 basement building and seven 5-story buildings. Apart from the 2 PPP projects, the remaining projects are constructed by contractors under the YCDC. Among them, there are two projects that will be extended to the next year (2019-2020), including a building with 16-story and 1 basement, and a 8-story office building with a 8-story mechanical parking lot adjacent to it. MAA is engaged by YCDC Building Department to provide construction supervision, QA/QC, monitoring of construction schedule, assistance to construction acceptance process. The service period started in May 2019 and ended in September 2019.



*H.E. U Phyo Min Thein, Chief Minister of Yangon Region Attended In Sein Town Hall Opening Ceremony*



*Ms. Hlaing Maw Oo, Secretary of Yangon City Development Center (YCDC) (left 5), Chih-Hung Lin, Representative of MAA Myanmar (left 1), and Office Manager of MAA Myanmar Ms. Felicity Yang (left 4) Attended Shwe Pyi Thar Town Hall Opening Ceremony*



*Inn Sein Town Hall*



*Shwe Pyi Thar Town Hall*

## MINGALAR MARKET BUILDING PROJECT, MYANMAR

The construction of Mingalar Market is to improve the lifestyle of Yangon citizens and establish a better market place for the old vendors; YCDC decides to rebuild and upgrade Mingalar Market which connects between Thingangyun Township, and South Dagon Township. MAA is engaged by YCDC as the construction supervision consultant to implement international practice of QA/QC system into public work, aiming to enhance the public work quality in Yangon. The project services started from August 2019 and are expected to end in March 2022.



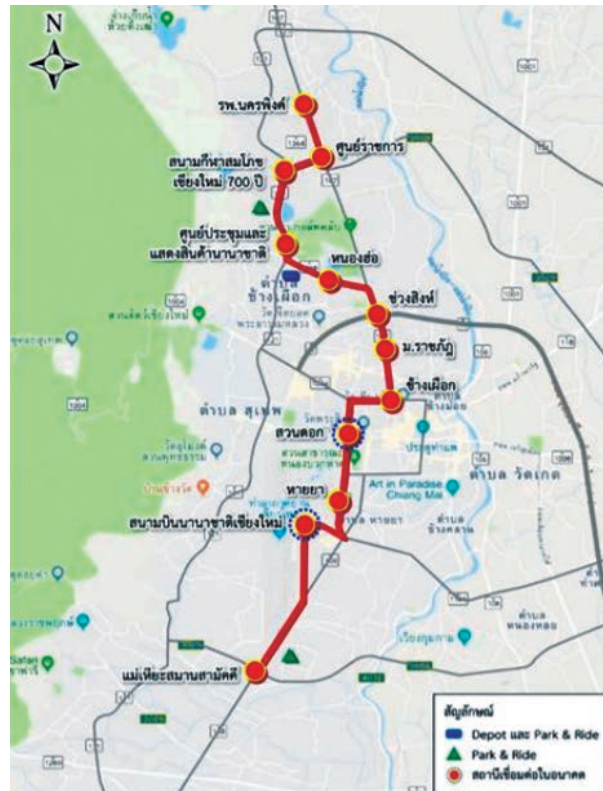
*Mingalar Market Building Project*





## FEASIBILITY STUDY AND DESIGN FOR CHIANG MAI LIGHT RAIL TRANSIT SYSTEM PROJECT; RED LINE: AIRPORT – CHIANG MAI UNIVERSITY – INTERNATIONAL CONVENTION CENTER ,THAILAND

There are 3 main lines for the Chiang Mai Light Rail Transit System in Thailand, including Red Line (15.65 km), Blue Line (11.14 km) and Green Line (13.81 km). Red Line: Airport – Chiang Mai University – International Convention Center. This line starts from Chiang Mai International Airport – Chiang Mai University (Suan Dok) – Wattanothai Payap School - Chang Phueak Bus Terminal - Chiang Mai Rajabhat University - 700<sup>th</sup> Anniversary Stadium (was built to commemorate the 700th Anniversary of Chiang Mai's establishment) – Chiang Mai International Convention Centre – Nakormping Hospital. MAA is engaged by Mass Rapid Transit Authority of Thailand (MRTA) to provide feasibility study and preliminary design. The project services started from May 2019 and are expected to be completed in April 2020.



Chiang Mai Light Rail Transit System Project Map

## FEASIBILITY STUDY, DESIGN AND IEE FOR THE IMPROVEMENT OF CAPABILITY AND CAPACITY THE DOUBLE-TRACK RAIL PROJECTS I.E. HUA MAK – CHACHERNGSAO SECTION AND; SRIRACHA - MAP TA PHUT SECTION, RAYONG ,THAILAND

The double-track rail development projects will connect major cities for travel and transportation and link with the Eastern Economic Corridor (EEC), enabling the transport of goods to major economic cities and ports for overseas shipments. MAA is engaged by the State Railway of Thailand (SRT) to perform feasibility study, detailed design and initial environmental examination – IEE for the improvement of capability and capacity for double-track rail projects i.e. Hua Mak – Chacherngsao Section – total distance 46 km. and Sriracha-Map Ta Phut Section, Rayong – total distance 85 km. The project services started in October 2018 and completed in September 2019.



The Double-Track Rail Projects Map





## TURNKEY PROJECT FOR KAOHSIUNG MRT GANGSHAN-LUZHU EXTENSION (PHASE 1)

This turnkey Project is located near key industrial parks in the region, such as Kaohsiung Science Park, Telecommunications Park, Benjhou Industrial Park, and Yongan Industrial Park Service Center. These areas are expected to generate 120,000 labor force and 75,000 increased population. The Project aims to connect these areas to benefit the industries, as well as provide the people with a convenient means of travel. The Project spans from Gangshan South Station (R24) on MRT Red Line, through Jieshou Road Bridge, Agongdian Bridge, and north part of Provincial Highway, and arrives at its terminal station, Gangshan Train Station. The Project includes an elevated train station (RK1), a 150 m steel bridge across Agongdian River, and with 564 m prestressed concrete viaduct. The total length of the route is 1.46 km. It is a part of Executive Yuan's Kaohsiung Business City Plan. MAA is engaged by New Asia Construction Company to provide detailed design, civil, structural, geotechnical, architecture, and landscape engineering works. The project services started in October 2018 are expected to be completed in November 2021.

## PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR TAOYUAN ARMED FORCES GENERAL HOSPITAL NEW MEDICAL BUILDING

The purpose of the construction is to replace the 20-year-old outdated hospital. The construction will consist of a 7-story and 1 basement building, and a 4-story building with a parking tower. MAA is engaged by Taoyuan Armed Forces General Hospital to perform preliminary design, tender document assistance, and construction supervision. The service period started from November 2019 to October 2024.





## PROJECT CONSTRUCTION MANAGEMENT FOR KAOHSIUNG RENWU INDUSTRIAL PARK

Located close to Provincial Highway 10, Renwu District is currently zoned as an aerospace industrial land by Kaohsiung City Government. The total area of the Renwu District is 74 ha, with 47 ha of the land demarcated for industrial use.

The industrial park is expected to open in 2021, which will connect existing aerospace businesses with new ones. Upon the completion of the project, the industrial zone is expected to attract 21.3 billion worth of investment and create 6,300 job opportunities. The scope of the services includes grading, road, common ducts, sewage system, and landscape constructions. The first phase of the project covers an area of 51.4 ha. MAA is engaged by the Economic Development Bureau, Kaohsiung City Government to provide planning, design, and project management services. The project services started in February 2019 are expected to be completed in December 2022.





## PCM SERVICES FOR TAMSUI SEWER SYSTEM PHASE IV BOT PROJECT

To improve the overall living environment and public health in New Taipei City, New Taipei City government has been promoting sewerage network connectivity in recent years. The effort has won the highest performance achievement for six years consecutively by the Construction and Planning Agency, Ministry of the Interior. The BOT Project includes construction of sewerage network and connection for 2,709 hectare area, a 56,000 CMD wastewater facility, including operations for a period of 35 years. MAA is engaged by Water Resources Department, New Taipei City Government to provide construction supervision, QA/QC, project management, concession BOT project management, project supervision and inspection, project frame monitoring, project HSE checking, compliance assessment, and project coordination. The project services started in August 2018 and are expected to be completed in July 2021.



*Tamsui Sewer System Phase IV BOT Project*



## 2017 SOIL LIQUEFACTION HAZARD STUDY FOR PINGTUNG COUNTY

Soil liquefaction refers to the liquefaction of soil during earthquakes resulting in significant loss of strength to the soil during such an event. These events can cause severe hazards, including damage to buildings, etc. According to the statistics from the Central Geological Survey, MOEA, Pingtung County includes 8 areas which are categorized as high risk for liquefaction, with Wandan Township and Xinyuan Township in particular due to the high population density and older buildings in these districts. The Ministry of Economic Affairs initially published soil liquefaction risk map in 2016 on its official website, providing the public

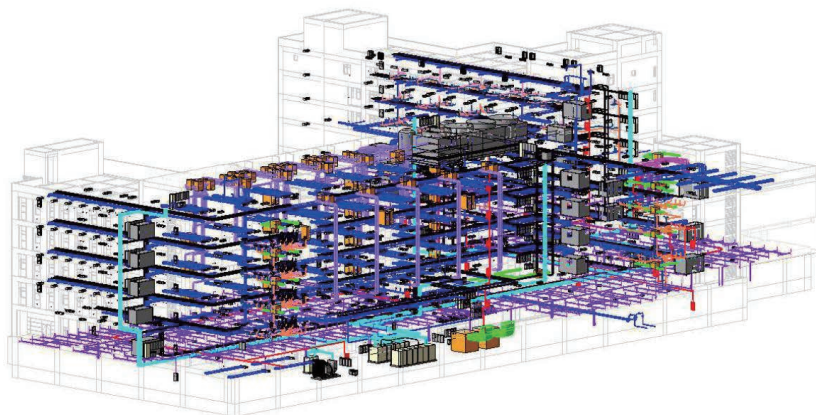
with a method to check the potential for soil liquefaction based on their residence area. The Project seeks to perform more detailed investigations in mid to high risk areas to provide additional information to the public, as well as for local governments to take necessary actions to mitigate potential hazards. MAA is engaged by The Pingtung County Government to provide geotechnical investigation, soil liquefaction study and assessment, and county wide liquefaction hazard map development. The project services started in August 2018 and are expected to be completed in December 2019.



*2017 Soil Liquefaction Hazard Study for Pingtung County*

## PROJECT CONSTRUCTION MANAGEMENT FOR SOUTHERN CAMPUS OF ACADEMIA SINICA

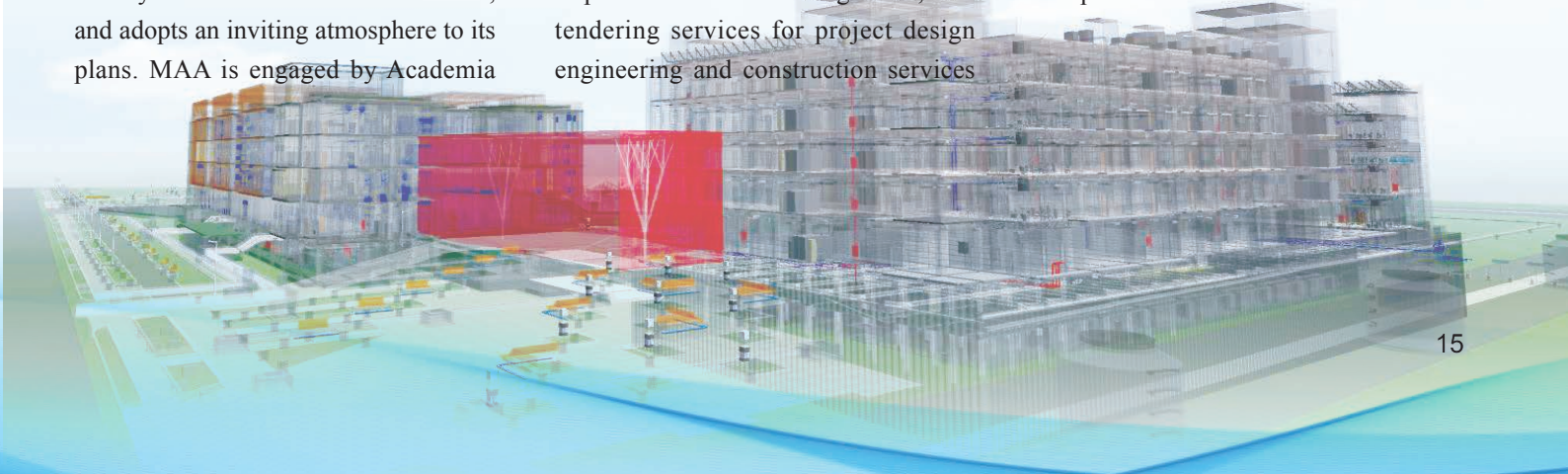
The Southern Campus Project for the Academia Sinica is located in the Shalum Smart Green Energy Science City, Tainan. The southern campus will focus on development and expansion of agricultural technology, academic research, sustainable development, and cultural research. This is the second phase of this Project, which will include a multi-disciplinary research lab building, a mixed research building (including meeting rooms, administrative offices, research labs, etc.). The Project aims to construct an international world-class facility and environment for research, and adopts an inviting atmosphere to its plans. MAA is engaged by Academia



*Project Construction Management for Southern Campus of Academia Sinica - BIM Service*

Sinica to provide planning, design, management, project supervision, BIM implementation and integration, and tendering services for project design engineering and construction services

selection. The project services started in June 2018 and are expected to be completed in June 2021.





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## PROFESSIONAL ACTIVITIES

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- *Professional Activities*
- *Professional Awards / Honors*
- *Seminars and Conferences*
- *Technical Publications*

### ► Professional Activities

#### WORLD-RENOWNED GEOTECHNICAL ENGINEERING PIONEER IN TAIWAN, CONTEMPORARY ENGINEERING EXPERT-INTEGRATING ACADEMICS AND PRACTICES: DR. ZA-CHIEH MOH

Dr. Za-Chieh Moh is a renowned expert in the civil engineering academic world. Dr. Za-Chieh Moh is dedicated to the development of Taiwan's civil engineering techniques, leading Taiwan towards an international direction. His monumental effort has been well-respected and valued by the geotechnical community. Dr. Za-Chieh Moh was interviewed by Sino-Geotechnics Research and Development Foundation on 22<sup>nd</sup> May 2018 for the *Legacy Column* in their *Sino-Geotechnics Publication* December 2018 Issue. The article documented Dr. Za-Chieh Moh's contributions and the major projects he devoted himself to. On 23<sup>rd</sup> February, 2019, Dr. Za-Chieh Moh attended Sino-Geotechnics Research and Development Foundation's Spring Banquet and was awarded with *Legacy Award*.

*Legacy Column* interviews geotechnical engineering predecessors who have life-long dedications in Taiwan's geotechnical projects. The column demonstrates its appreciation for engineering pioneers, and also shares valuable engineering techniques and projects for the next generation of young engineers.



MAA's Chairman Dr. Moh Received Legacy Award from Sino-Geotechnics Research and Development Foundation





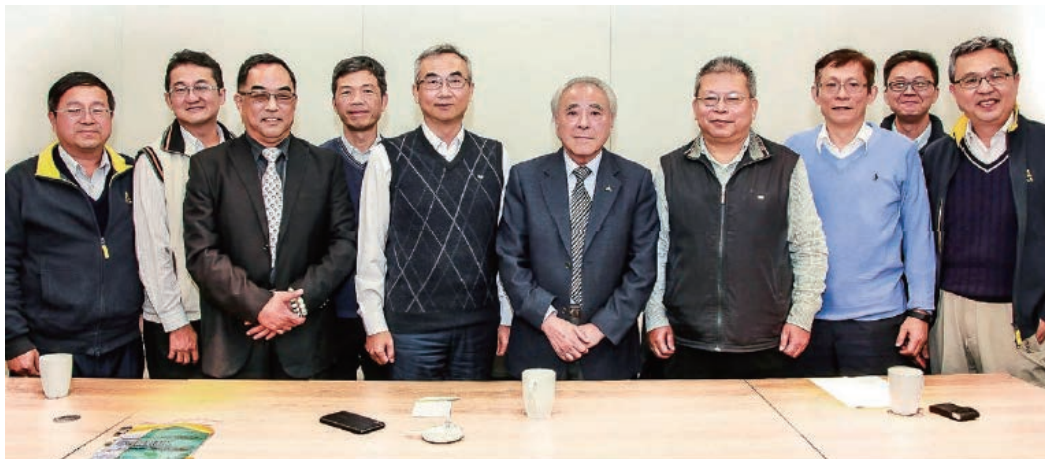
## DR. ZA-CHIEH MOH'S INTERVIEW FOR PROFESSIONAL GEOTECHNICAL ENGINEERS

The Taiwan Professional Geotechnical Engineers Association consists of geotechnical engineering professions who specialize in soil, rocks, engineering geology, slope stability, excavation, tunnel, and soil and water conservation projects. The association believes in integrating industrial, governmental, and academic resources to overcome technical challenges in geotechnical engineering. Dr. Za-Chieh Moh is a well-respected figure who has taught and trained many exceptional engineers internationally. Due to his dedication in the geotechnical engineering industry, Dr. Za-Chieh Moh was interviewed for the association's Professional Geotechnical Engineers June. He was also given a memento gift as an appreciation for his lifelong devotion.



*MAA's Chairman Dr. Za-Chieh Moh Received a Memento Gift from Taiwan Professional Geotechnical Engineers Association*

In the interview, Dr. Za-Chieh Moh focuses on engineering development in Taiwan, including organizing and facilitating international academic and technical exchange events, seminars, and associations around the world. The works that he has put into in the geotechnical engineering world set great examples for engineers in the industry.



*MAA's Chairman Dr. Za-Chieh Moh (right 5) was Interviewed by The Taiwan Professional Geotechnical Engineers Association*



Full Interview Link: <http://www.pga.org.tw/web/PagePDF.aspx?id=0002746299>



## TAIPEI NANGANG EXHIBITION CENTER, HALL 2 GRAND OPENING CEREMONY & TAIPEI INTERNATIONAL MACHINE TOOL SHOW 2019



Taipei Nangang Exhibition Center, Hall 2 (TaiNEX 2) Grand Opening Ceremony and Taipei International Machine Tool Show (TIMTOS) were held on 4<sup>th</sup>–9<sup>th</sup> March 2019 conjointly. President Ing-wen Tsai, Jia-Chyuan Su from Legislative Yuan, Wen Sheng Zeng from Ministry of Economic Affairs, Ba-Xi Ke from Taiwan Association of Machinery Industry, MAA's Chairman, Dr. Za-Chieh Moh, MAA Associate Senior Vice President Ta-Hsing Lee, and various institutional and governmental delegates attended the ceremony.

TaiNEX 2 is Taiwan's first "Golden-Standard Green Exhibition Hall", and is the largest exhibition venue in Taiwan. It is designed by a team of renowned architectural firms, including gmp Architects von Gerkan, Marg and Partners from Germany and J.J. Pan and Partners from Taiwan. The design was inspired by ancient Roman architecture's principles: practicality, sturdiness, beauty, transparent, and simplicity. MAA provided project construction management services to the project.



*MAA's Chairman Dr. Moh and Associate Senior Vice President Ta-Hsing Lee Attended the Opening Ceremony for Taipei Nangang Exhibition Center 2*

The building includes a smart parking system with 1,000 parking spaces. The total floor areas of 156,700 square meters and the exhibition hall contain a maximum capacity of 32,000 persons. The 1st and 4th floor can accommodate up to 2,300 vendors. The multi-purpose conference room on the 7th floor is the largest beam-free conference room in Taiwan, with a 6,100 square meter rooftop garden outside overlooking Taipei 101.





## 2019 YOUNG ENGINEER EXCHANGE FORUM

Young Engineer Exchange Forum was held in Hong Kong 25<sup>th</sup>-27<sup>th</sup> April, 2019 by Young Members Committee of the Hong Kong Institution of Engineers (HKIE-YMC). Last year, Malaysia-Taiwan Young Engineer Exchange Program was organized and led by Mr. Richard Moh, the ESVP of MAA and Chairman of Young Engineer Committee of CIE in Taiwan. The forum was successful and praised for being able to gather and share experiences amongst young engineers from different international engineering societies. In the spirit of the exchange forum, HKIE-YMC decided to continue the event this year, inviting more participants from different engineering societies. Delegates from Japan, Macau, Hong Kong, Malaysia, Philippine, Singapore, and Korea attended the event. Yuan-Sheng Lin and Yi-Xian Lin from MAA and Chinese Institute of Engineers attended the forum as Taiwan delegates.



*MAA's Employees Yuan-Sheng Lin and Yi-Hsien Lin Attended Young Engineer Exchange Forum in Hong Kong*

### TECHNICAL VISIT AND NETWORKING EVENT

The young engineers took visits to four different sites: Diamond Hill Comprehensive Development Area, EMSD InnoZone, West Kowloon Cultural District, and Hong Kong West Kowloon Station.

1. Diamond Hill Comprehensive Development Area is mainly an area for public housing. The focus of the visit emphasized the use of BIM on public housing and its techniques.
2. EMSD InnoZone is a mechanical engineering department and office. The visit took place in its Interactive Learning Center and E&M InnoZone. Interactive Learning Center contains interactive learning systems and professional VR training systems. The center provides a safe and efficient place for

professionals who seek for trainings. E&M InnoZone provides various displays and equipment, including a virtual reality environment called CAVE, 3D printing, and many more.

3. West Kowloon Cultural District is one of the largest cultural projects in the world, mixed with art, education and an open space. This cultural tourist spot resembles to Taiwan's Pier2 Art Center in Kaohsiung. Participants toured around the parks within the district and experienced self-driving cars.
4. Located near Victoria Harbor, Hong Kong West Kowloon Station is the starting station of Canton-Shenzhen-Hong Kong High Speed Rail. The train station consists of a large underground station and a three- hectare outdoor public space. One of the distinct features about the station is the glass ceiling above the underground station. It provides great lightings for the underground station during evening.

## INTERNATIONAL YOUNG ENGINEER EXCHANGE FORUM

One of the major highlights of the event included the exchange forum, engineering experience sharing and committee introduction activities. The topic of the forum was "Gear towards the Future Innovative and Sustainable Cities". Delegates from Korea, Japan, Singapore, and Philippine introduced their own committee and overall engineering environments in their own country. Interactive Panel was the last activity in the morning and prompted the young engineers and students to share their professional experiences. In the afternoon, Chinese Institute of Engineers (CIE) , as one of the co-hosts of last year's event, gave a presentation about the history of CIE and review of last year's forum.



*Site Visit*





## GROUNDBREAKING CEREMONY FOR TAICHUNG GREEN MUSEUMBRARY

Taichung Green Museumbrary is designed by SANAA, a prominent Japanese architecture firm which received the Pritzker Architecture Prize in 2010, and Ricky Liu & Associates Architects+Planners from Taiwan. It is the first library-museum joint-use building and the largest library (total floor area of 58,016 m<sup>2</sup>) in Taiwan. MAA is the project construction manager.

The museumbrary consists of 8 connected buildings that carry ecological attributes. Key features of the museumbrary include: (1) The combination of “library in the park and museum in the forest” (2) Library buildings are each designed to accommodate the potential visitors based on the target age group (3) The museumbrary is connected to the park, which conjointly serves as a public open space (4) A modern museum with abundant space (5) The exterior design of the walls can be used as a part of public art.

On 16<sup>th</sup> September 2019, MAA’s President Chien-I Hsu and Mayor of Taichung Shioh Yen Lu attended the groundbreaking ceremony for Taichung Green Museumbrary. It is expected to begin its operation in 2025.



*MAA's President Chien-I Hsu Attended the Groundbreaking Ceremony for Taichung Green Museumbrary*

## GROUNDBREAKING CEREMONY FOR FU SHING CAMPSITE RECONSTRUCTION



*MAA's President Chien-I Hsu Attended the Groundbreaking Ceremony for Fu Shing Campsite Construction*

The reconstruction project encompasses the renovation for the 50-year old campsite and constructions for two new buildings, which both will consist of a 2-story basement and a 9-story office building. The Project also includes a recreational center and a small conference room. On 11<sup>th</sup> July 2017, the president of Executive Yuan Chuan Lin and Ministry of National Defense Shih-Kuan Feng attended the groundbreaking ceremony for Fu Shing Camp reconstruction. MAA was appointed to provide PCM and construction supervision services for this project. It is expected to be completed in 2020 and will improve the quality of veteran’s living environment.



## GROUNDBREAKING CEREMONY FOR SOCIAL HOUSING CONSTRUCTION AT SANXIA, XINDIAN AND TUCHENG- TUCHENG EXTENSION

This social housing project is planned to accommodate 543 households and comprised of a business start-up service center for young entrepreneurs, elder care facilities, playgrounds, and observation decks in the public area, creating a well-equipped community. The development covers an area of 0.8 hectare, which includes a 12-story building and a 14-story building with basements. Smart and green buildings are integrated in the design to construct a sustainable housing complex. The groundbreaking ceremony for this project was held on 20th February 2019. Mayor of New Taipei City Hou You-Yi and MAA's president Chien-I Hsu attended the ceremony. MAA provided PCM and construction supervision services. The project is expected to be completed in 2021.



*MAA's President Chien-I Hsu Attended the Groundbreaking Ceremony for Social Housing Construction at Sanxia, Xindian and Tucheng-Tucheng Extension*

## GROUNDBREAKING CEREMONY FOR SOCIAL HOUSING IN LINGYA DISTRICT, KAOHSIUNG CITY

The development is the first social housing in southern Taiwan. Designed by Mecanoo, an internationally renowned architecture firm for its residential building works, this social housing is expected to become a world-class residential building. Thirty percent of the households are allocated for minorities and the remaining units will be for college students and young professionals.

The details of the project are as follows:

- Two 14-storied buildings, with a 2-storied basements
- Reinforced concrete structure
- Accommodate 245 households
- A 18m deep slurry wall
- Stores and social welfare facilities and services included

The groundbreaking ceremony was held on 30<sup>th</sup> May 2019. Mayor of Kaohsiung Han Guo Yu and MAA's President Chien-I Hsu attended the ceremony. MAA provided project management services for this project, which is expected to be completed in 2022.



*MAA's President Chien-I Hsu Attended the Groundbreaking Ceremony for Social Housing in Lingya District, Kaohsiung City*

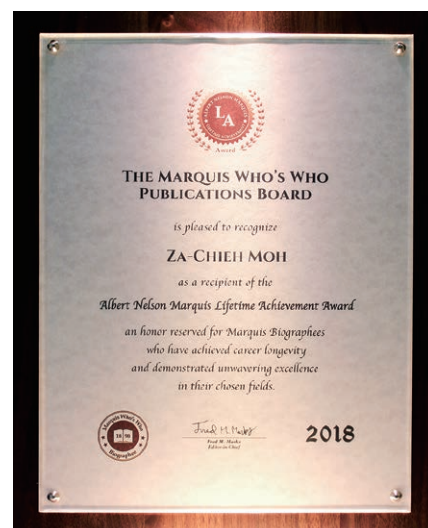


## ► Professional Awards / Honors

### MARQUIS WHO'S WHO ALBERT NELSON MARQUIS LIFETIME ACHIEVEMENT AWARD

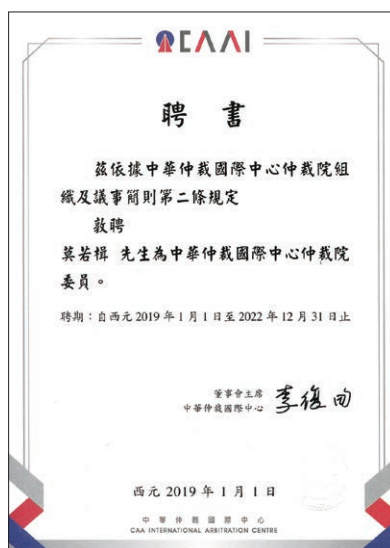
Marquis Who's Who, one of the most acclaimed biography publishers, presented Dr. Za-Chieh Moh with the Albert Nelson Marquis Lifetime Achievement Award in 2018. The Albert Nelson Marquis Lifetime Achievement Award is an honor reserved for persons who have demonstrated leadership, excellence, and longevity within their respective industries and professions. One of the highest distinctions available through Marquis Who's Who, the award entitles biographies to a listing on the Lifetime Achievers website alongside fellow honorees, as well as a professional announcement detailing induction.

About Marquis Who's Who: Since 1899, when A. N. Marquis printed the First Edition of Who's Who in America, Marquis Who's Who has chronicled the lives of the most accomplished individuals and innovators from every significant field of endeavor, including politics, business, medicine, law, education, art, religion and entertainment.



### CERTIFICATE OF APPOINTMENT FROM CAA INTERNATIONAL ARBITRATION CENTRE (CAAI)

The Chinese Arbitration Association, Taipei (CAA) is the first non-profit organization with quasi-judicial function in Taiwan established in 1955. MAA's Chairman, Dr. Za-Chieh Moh, received a certificate of appointment from CAA International Arbitration Centre (CAAI) on 1<sup>st</sup> January, 2019 to become a committee member of Court of Arbitration.



### 2018 EXCELLENT GEOTECHNICAL ENGINEER LIFELONG HONOR AWARD



On 9<sup>th</sup> March 2019, MAA's Laboratory Chief Dr. I-Chou Hu, was awarded with 2018 Excellent Geotechnical Engineer Lifelong Honor Award by Chinese Taipei Geotechnical Society (CTGS).

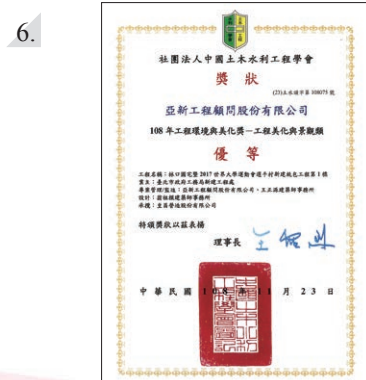
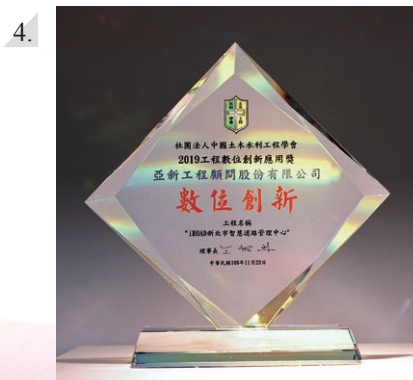
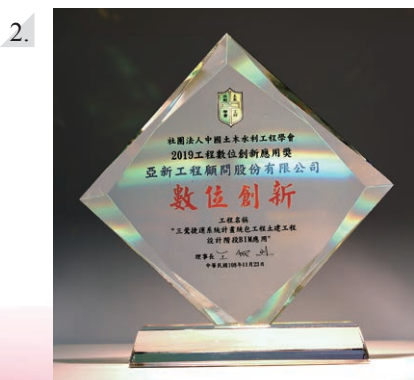
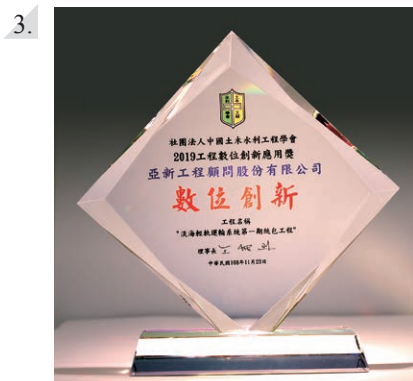


## APPLICATION OF DIGITAL ENGINEERING INNOVATION AWARD AND CONSTRUCTION BEAUTIFICATION DISTINGUISHED AWARD

“Application of Digital Engineering Innovation Award” was established by the Chinese Institute of Civil and Hydraulic Engineering (CICHE) to recognize exceptional firms and institutions that have implemented automation, intellectualization, big data, The Internet of Things (IoT), Augmented Reality (AR), BIM, and Artificial Intelligence (AI). The major selection criteria for the award included demonstrating the ability to promote work efficiency and quality through use of digital engineering innovations. Applications of these technologies originated in various AEC fields, including planning, design, construction, and operations and maintenance phases.

MAA won the award for the following projects: Turnkey Project for the Redevelopment of Coata Area Sections 1, 3, and 6 at Guanyin District (photo 1), Taoyuan City and Sanying MRT Turnkey Project – BIM Services (photo 2), and Construction Supervision Consultant of the First Phase of Tamhai LRT System (photo 3), New Taipei City iRoad Management Center (photo 4). Award ceremony for the event was held on 23<sup>rd</sup> November 2019 at Chientan Youth Activity Center during CICHE annual meeting.

MAA also received Construction Beautification Distinguished Award (工程環境與美化獎特優獎) from CICHE for Construction Supervision Consultant of the First Phase of Tamhai LRT System project (photo 5). MAA also received Construction Beautification Excellent Award (優等) from CICHE for Linkou Public Housing and the 2017 Summer University Games Athletes Village project (photo 6).







MAA's ESVP Mr. Richard Moh Attended the 110<sup>th</sup> REAAA Council Member Meeting and Conferences

## ► Seminars and Conferences

### THE 110<sup>TH</sup> REAAA COUNCIL MEMBER MEETING AND CONFERENCES

The 110<sup>th</sup> Road Engineering Association of Asia and Australia (REAAA) Council Meeting was held at Taipei International Convention Center (TICC) in Taipei, Taiwan from 9<sup>th</sup> -12<sup>th</sup> April 2019. REAAA is a regional body whose focus is to promote and advance the science and practices for road engineering and related professions. REAAA was established in June 1973 with its current secretariat in Malaysia. Regional co-operation and technical harmony are the underlying principles of the Association. REAAA currently has more than 1,400 members in over 24 countries and holds regular events including triennial international conferences, technical visits and study tours, trade exhibitions, seminars, forums, and workshops.

Over 150 delegates from over 10 countries (including Philippines, Malaysia, Singapore, Indonesia, Thailand, Japan, Korea, Taiwan, Australia, and New Zealand) attended this four-day event, which included the 7<sup>th</sup> Business Forum, 15<sup>th</sup> Young Engineers & Professionals Meeting (YEP), and Pavement Technology Committee Meeting (PTCM), and Technical Visit. The event kicked off with the 7<sup>th</sup> Business Forum with the goal to present and share Taiwan's practical technical applications in the realms of smart, sustainable and resilient roads, and also to appreciate the 50 years of road and highway development and its basis for future evolution. REAAA encourages leaders in the field to share their experiences, as well as to invite member countries to share experiences from their respective countries.

The China Road Federation (CRF) was pleased to co-host this year's council meeting. The non-profit organization traces its origins back to 1960, when the Taiwan transportation community commenced the planning and organization of a national organization affiliated to the International Road Federation (IRF). Mr. Richard Moh, Executive Senior Vice President from MAA Group Consulting Engineers, and Chairman of the International Affair Committee of CRF, was the main organizer and the forum chair for this year's meeting. Mr. Richard Moh and his team succeeded in promoting thought-provoking discussions in the event and creating a platform for engineers around the world.

On 1<sup>st</sup> November 2019, MAA's Executive Senior Vice President and CRF's Chairman in International Affair Committee attended CRF's 28<sup>th</sup> Annual Meeting and 1st Committee Meeting. He received a palate from CRF for his dedication in hosting 110<sup>th</sup> REAAA in Taipei this year.







MAA's Chairman Dr. Za-Chieh Moh Attended 16ARC

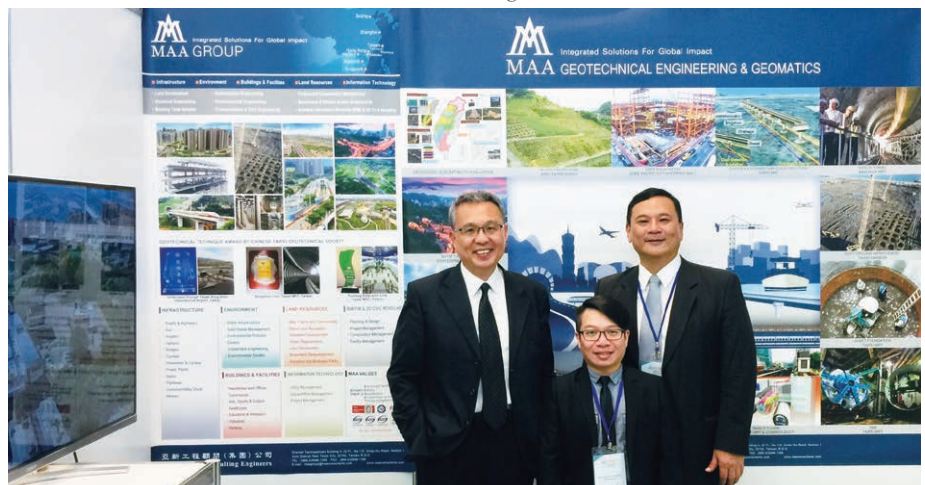
## THE 16<sup>TH</sup> ASIAN REGIONAL CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING (16ARC)

The 16<sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering (16ARC) was held from 14<sup>th</sup>-18<sup>th</sup> October 2019 at Taipei International Convention Center (TICC) in Taipei, Taiwan. The main theme of the 16ARC is “Geotechnique for Sustainable Development and Emerging Market Regions”.

On the 14<sup>th</sup>, MAA's Chairman Dr. Za-Chieh Moh was invited to the conference to present a mentoring lecture entitled “Integrated Solutions for Geotechnical Projects”. On the 15<sup>th</sup>, Dr. Za-Chieh Moh gave a speech in “Are We Over-designing” in CAPG session. MAA's Dr. Chang presented a paper entitled “Pile Construction Effects on Adjacent Shield Tunnels”; Dr. Chao presented a paper entitled “Risk Perception for Deep Excavation Based on Results of Numerical Analysis”; and Dr. Chang, Dr. Chao, I.-J. Wang, and H. -T. Chang from Taipei City Government co-presented “Pile Construction and Loading Effects on Adjacent Shield Tunnels”.



MAA's Chairman Dr. Za-Chieh Moh Presented a Mentoring Lecture at 16ARC



MAA's Vice President Ting-Chiun Su (left 1), Deputy Manager of Geotechnical Eng. Dep. Chung-Ren Chou (right 1) and Engineer of BIM Center Wen-Chun Huang (middle) at 16ARC



## IEM-CIE-HKIE TRIPARTITE SEMINAR 2019 ON “GEOTECHNICAL HAZARD MITIGATION-SOUTHEAST ASIAN EXPERIENCE”

The IEM-CIE-HKIE Tripartite Seminar aims to create a venue for interactive discussions and sharing of experience in multi-discipline engineering between Chinese Institute of Engineers (CIE, Taiwan), Hong Kong Institution of Engineers (HKIE), and The Institution of Engineers, Malaysia (IEM). On 18<sup>th</sup> October 2019, CIE hosted a one-day IEM-CIE-HKIE Tripartite Seminar with the theme “Geotechnical Hazard Mitigation - Southeast Asian Experience”. MAA’s Chairman, Dr. Za-Chieh Moh, was invited to the seminar to deliver the opening speech. Experts from each professional institution presented various papers on geotechnical hazard mitigation.



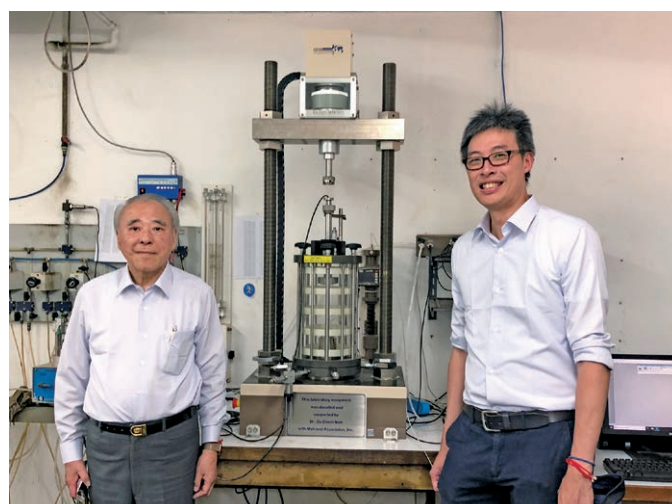
*MAA's Chairman Dr. Za-Chieh Moh Delivered the Opening Speech at the Tripartite Seminar*

## AIT 60<sup>TH</sup> ANNIVERSARY

In celebration of Asian Institute of Technology's 60<sup>th</sup> anniversary this year, multiple events were held throughout the year. This celebration culminated in a three-day event from 23<sup>rd</sup> October to 25<sup>th</sup> October, which included the 60<sup>th</sup> Anniversary Gala Banquet, Princess Maha Chakri Sirindhorn's gracious presence, the President's forum, and AIT Open House. MAA's Chairman Dr. Za-Chieh Moh and Executive Senior Vice President Richard Moh were invited to attend the three-day event. In addition, Dr. Za-Chieh Moh donated a triaxial testing equipment to AIT.



*MAA's Chairman Dr. Za-Chieh Moh and ESVP Mr. Richard Moh Attended AIT 60<sup>th</sup> Anniversary*



*MAA's Chairman Dr. Za-Chieh Moh Donated a Triaxial Testing Equipment to AIT*



## THE 5<sup>TH</sup> FEIAP CONVENTION AND 27<sup>TH</sup> FEIAP GENERAL ASSEMBLY

Federation of Engineering Institutions of Asia and the Pacific (FEIAP) is an international non-profit professional organization founded on 6<sup>th</sup> July 1978. Being an independent umbrella organization for the engineering institutions in the Southeast Asia and the Pacific region, the objectives of the organization are to encourage the application of technical progress to economic and social advancement throughout the world; to advance engineering as a profession in the interest of all people; and to foster peace throughout the world.

The 5<sup>th</sup> FEIAP Convention and 27<sup>th</sup> FEIAP General Assembly were held on 29<sup>th</sup>-30<sup>th</sup> June 2019 in Xian, China.). MAA's Executive Senior Vice President Mr. Richard Moh participated the Youth Talent Development Work Group (YTDWG) as a committee member on June 29<sup>th</sup>, 2019. Mr. Richard Moh promoted the idea of organizing and continuing international young engineer networking events, such as Hong Kong YEP Exchange Forum and Malaysia-Taiwan Young Engineer Exchange Forum, under FEIAP, as a means to form more structured and international events in the future.



MAA's ESVP Mr. Richard Moh Attended The 5<sup>th</sup> FEIAP Convention and 27<sup>th</sup> FEIAP General Assembly

## ► Technical Publications

Balakumar V., Huang, M.J., Oh Erwin, Hwang, R.N., Balasubramaniam, A.S., (2019), "Piled Raft on Sandy Soil- An Extensive Study", pp.136-141, Vol.50, No.3.

Chang, J.F., Hu, I.C., Chao, H.C., Wang, I.J., Chang, H.T., (2019) "Pile Construction and Loading Effects on Adjacent Shield Tunnels", The 16<sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering.

Chang, J.F., Tseng, H.C., Yan, D.L., Su, T.C., (2019), "Introduction of Pile Design in Macau –An Example in Macau LRT Phase 1 Projects", Sino-Geotechnics, pp.33-41, No.160. (in Chinese)

Lee, H.Y., Liu, C.W., Chan, H., (2019), "The Application of BIM in the Design of Underground Pipelines", 地下管道, pp.31, Vol.39. (in Chinese)

Watanabe K., Hosoi T., Matsushita S., Balasubramaniam, A.S., Hwang, R.N., (2019), "Technical Issues on Static Load Tests on Barrettes and Bored Piles", Geotechnical Engineering Journal of the SEAGS & AGSSEA, pp.124-135, Vol.50, No.3.

Wu, T.E., Liou, G.J., Hsueh, C.M., (2019), "GS-6 Challenges and Experiences: The Professional Construction Management Consultancy service of renovating sports venues for 2017 Taipei Summer Universiade", Proceedings of the 8<sup>th</sup> CECAR, Tokyo.



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## PROFESSIONAL PROFILES

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**Gwo-Jenn Liu**  
劉國鎮

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Mr. Gwo-Jenn Liu was promoted to Associate Principal Engineer in May 2019. Mr. Liu received his bachelor's degree and master's degree in geotechnical engineering from National Cheng Kung University in 1985 and 1987. He joined MAA in 1989, two years after his graduation. He has participated in a significant number of geotechnical analysis works. He was responsible for foundation piling and diaphragm wall construction of China Times Building. He also participated in geotechnical design and consultancy services for Living Mall construction, Taipei MRT Nangang Line Design Project C173, National Taiwan University Biomedical Science Park construction, Taipei Financial Center construction, and Nangang Exhibition Center construction. Recent projects include PCM service of relocated and youth houses construction project at Sanxia District. He is a Registered Professional Geotechnical Engineer, R.O.C., a Class C qualified Labor Safety and Health Management Manager and had received Professional Procurement Personnel Training. Mr. Lin is also a member of Taiwan Geotechnical Society.



**Gwo-Liang Lee**  
李國良

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Gwo-Liang Lee was promoted to Senior Civil Engineer and Project Manager of Ankeng LRT Construction Supervision in April 2019. Mr. Lee received his bachelor's degree in civil engineering from Republic of China Military Academy in 1976 and his master's degree in civil engineering from National Taipei University of Technology in 2007. Mr. Lee had worked for RSEA for 30 years, during which, he had participated in project management for National Biotechnology Research Park, Zhong Fu Plaza, Taipei City MRT Songshan Line, Section CG590B, and Taipei City MRT Xinzhuang Line, Section CK570C. He joined MAA in 2019 and is currently providing construction supervision services for the Ankeng LRT Project. He is a qualified Quality Control Engineer, R.O.C and Registered Professional Construction Site Manager, R.O.C.





**Hou-Chi Chang**  
張 厚 起

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Hou-Chi Chang was promoted to Senior Engineer and Technical Manager of Kaohsiung Office in September 2019. Mr. Chang received his bachelor's degree in civil engineering from Chung-Cheng Institute of Technology in 1985, master's degree in military engineering from National Defense University in 1989, and Ph. D in military technology from National Defense University in 2008. He had worked for multiple governmental military institutes before joining MAA in 2016. He is experienced in military-related construction projects. He had participated in PCM services for N-WH Project, PCM services for Taichung Center Park, project management of the Matou Industrial Zone for Tainan City Government, and preliminary design for Zuoying Second Harbor facilities. His current work is project management for Renwu Industrial Park Development. He is a Registered Professional Engineer (civil engineering), R.O.C. He is also a qualified Quality Control Engineer, R.O.C., Building Safety Inspector, and has International Project Management Professional Certification.



**Chin-Sheng Hsu**  
許 晉 盛

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Chin-Sheng Hsu was promoted to Senior Structural Engineer in June 2019. Mr. Hsu received both his bachelor's and master's degree in civil engineering from National Central University in 1993 and 1995. He had worked for Fu Tsu Construction before joining MAA in 2001. He was responsible for quality control and instrumentation, construction measurement, schedule control, and materials management. He joined MAA's High Speed Rail Project Department and participated in structural engineering works for a numerous of high speed rail construction projects, including Contract C291, C260, C270. He was also involved in vibration mitigation for Tainan Science Park, Taichung MRT Wujih Depot engineering consultant service work, detailed design and technical services for Kaohsiung and Chaozhou Pingtung. He is the engineer-in-charge for his most recent project, which is project management for several building constructions in Taoyuan.





**Fu-Cheng Yao**  
姚 富 程

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Fu-Cheng Yao was promoted to Senior Electric-Mechanical System Engineer in June 2019. Mr. Yao received his associate degree in mechanical engineering from Fu Xing Private College of Commerce & Industry in 1984. He had worked at Department of Rapid Transit Systems, Taipei City Government before joining MAA, during which, he had participated in electrical systems projects for numerous MRT lines and stations, such as Nangang Exhibition Center Station, Zhonghe–Xinlu Line, and Wenhua Line, for about 26 years. His duties included budget planning, schedule control, general affair management. After joining MAA in 2016, he participated in Tamhais LRT System construction supervision project, which is his current project. He received certifications in Taipei City Government Construction Site Manager Training Course (First Round), Public Construction Quality Control Training Course (with Electrical Engineering Quality Control Certificate), Class A Labor Safety and Health Management Manager Training Course, and MRT System Training Certificate, and Real Estate Salesperson License.



**Chi-Wei Chen**  
陳 奇 蔚

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Chi-Wei Chen was promoted to Senior Environmental Engineer in June 2019. Mr. Chen received his associate degree in environmental engineering from National United University in 1993 and his master's degree in heat flow energy and smart technology from Yuan Ze University in 2007. He is experienced in environmental analysis, environmental assessment, and composing environmental permits. He joined MAA in 2013 and has since participated in Kaohsiung Nansing Free Trade Port Zone Phase I Greenhouse Gas Management, EIA for Dong-Chang Northern Section Phase 1, environmental inspection for Fugang Fishery Harbor reconstruction. His most recent project was environmental impact assessment and tree protection project for Shezi peninsula zone expropriation in Shilin District, Taipei City. He has certifications in New Taipei City Indoor Air Quality Management, Public Construction Quality Management, Product Carbon Footprint Counselors, Environment Education Personnel, Class A Waste Treatment Dedicated Personnel, Class B Air Pollution Control Dedicated Personnel, Class B Wastewater / Sewage Treatment Dedicated Personnel, Class B Professional and Technical Management of Toxic Substances, and Project Management of Professional (PMP). He is also a member of The Chinese Institute of Environmental Engineering.





**Tzu-Ming Huang**  
黃 慈 銘

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Tzu-Ming Huang was promoted to Senior Engineering Geologist in June 2019. Mr. Tzu received his bachelor's degree in geosciences and master's degree in geology from National Central University in 1998 and 2000. He joined MAA in 2002 and participated in slope geological disaster survey, aerial photograph interpretation, and GIS system design and implementation. He had spent 5 years conducting surveys, which included a total area of 16,000 m<sup>2</sup> and 38,000 items. This project was presented at Taiwan Geographic Information Society Seminar in 2005 and 2007. In MAA, he participated in implementation of underground utilities database and GIS management system, geological survey and assessment for various districts in Taiwan and Project N-WH Project Management, which is his most recent project. He has certifications in Public Construction Quality Training, Professional Construction Management (PCM), Head of Occupational Safety and Health in Construction Industry Training, and Professional Procurement Personnel. He is a member of Chinese Society of Photogrammetry and Remote Sensing and Geological Society Located in Taipei.



**Pei-Chiang Hsu**  
徐 沛 江

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Pei-Chiang Hsu was promoted to Senior Engineer in June 2019. Mr. Hsu received his associate degree in architecture from Nanya Institute of Technology. He had worked at P Space for about 20 years, during which, he worked with multiple international construction companies, artists, local construction consultant companies. He was involved in a numerous amount of cultural projects, such as design and construction management for art museums, music halls, libraries, and restoration of historic buildings and monuments. The most iconic project that he had worked on was the Performing Arts Center in Taipei National University of the Arts. He joined MAA in 2015 and was responsible for China Life Taipei Hostel development project, and SUBARU Moto Factory Renew Construction Audit and Q.S. project, Taichung Intelligent Taichung Intelligent Operation Center project, which is his current project. He has certifications in Public Construction Quality Control Engineer and Professional Building Interior Decoration Personnel.





**Chien-Ming Cheng**

鄭健銘

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Chien-Ming Cheng was promoted to Senior Civil Engineer in June 2019. Mr. Cheng received his bachelor's degree in civil engineering from Chung Hua University in 1996. He is an expert in transportation engineering, pavement engineering, budget planning, data analysis, and slope grading. He had participated in railway constructions for High Speed Rail projects when working for TST-JV Department. After joining MAA in 2004, Mr. Cheng participated in consulting services for the master planning and design of common duct and tendering process for Kaohsiung City Multi-purpose Economic and Trade Park, design for public facilities at Miaoli HSR Station. His current projects are management for The National Biotechnology Research Park of Academia Sinica and technical consultancy services for Yangon 1600 acre industrial development plan.









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