

MAA Bulletin

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40 years of
TECHNICAL DEVOTION



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 55-56 SEPTEMBER 2015

Founded in 1975, **MAA** (Moh and Associates) 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.

MAA employs over 1000 professionals individuals with offices in the Greater China Region (Beijing, Hong Kong, Shanghai and Taiwan) and Southeast Asian Region (Bangkok, Singapore and Yangon), creating a strong 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

Produced By:
Moh and Associates Inc.
Oriental Technopolis Building A, 22 Fl., No.112, Xintai Wu Road, Section 1,
Xizhi District, New Taipei City 22102, Taiwan, R.O.C.
Tel: 886-2-2696-1555
Fax: 886-2-2696-1166
Email: maagroup@maaconsultants.com
Website: www.maaconsultants.com

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MAA'S 40 YEARS OF TECHNICAL DEVOTION

四十感言

四十年在人生來說是一段不短的時間，但在一個企業一個事業來講就只能說剛剛開始。自從1975年在台灣及新加坡開始，亞新工程顧問公司從一個五個人的小隊伍，經過四十年來的努力，已成長到了千人的團隊。工作的範圍也從早期的大地工程擴展到全方位的工程顧問，從初期基地規劃、工址調查及試驗，擴展到土地開發、建築、基礎建設到環境監測及處理；從規劃設計擴展到BIM的應用發展，到管理及監理；所服務的地區也擴展到了台灣、中國大陸及東南亞各國，從一個沒有特別背景及關係的團隊，能達到今天的聲譽，全靠全體同仁的努力及無私的奉獻。我們在工程技術上不斷的學習求進步及創新，四十年來完成了不少值得稱傲的計畫，如：穿越在營運中的松山機場跑滑行道的地下隧道，地下工程的風險管理，地下共同管溝的設計施工，泰國國際機場世界紀錄的土壤改良，台灣高速鐵路設計，以及特別建築及橋樑的設計/監造，在未來的四十年，我們將不斷的鞭策自己，力求創新，在ASSET 的座右銘下為國家為世界貢獻出更好更強的服務。

亞新工程顧問(集團)公司

董事長 莫若楫

CHAIRMAN'S MESSAGE

The MAA Group Consulting Engineers started 40 years ago with 5 staff. Today we have reached 40 years of age with over 1,000 staff working in 7 countries. Our scope of services expanded from site investigation & geotechnical studies in the very early days, to today's full grown consulting engineering services including planning, design, project/construction management under the banner of "Integrated Solutions for Global Impact".

In the 40 years of technical devotion of all the staff, MAA was able to introduce and to implement many innovative ideas for major projects in Taiwan and Southeast Asia countries. Some of the special projects worthy mentioning include underground tunnel under operating runway/taxiway, one of the largest scale ground improvement, risk management for underground construction, design of high speed railway, special buildings and bridges. In the years to come, we will continue to improve, to innovate, and to expand our internationalism under the motto ASSET.

MAA GROUP CONSULTING ENGINEERS

Za-Chieh Moh Chairman of the Board

MAA DEVELOPMENT

1970's

MAA AND THE RISE OF THE FOUR ASIAN DRAGONS

Major Milestones

- Dr. Za-Chieh Moh and Dr. Za-Lee Moh established MAA Taiwan and MAA Singapore
- Introduced international conferences, seminars into Asian region and co-organized three seminars in Taiwan for soil and infrastructure engineering, high-rise building technology and steel structure technology
- Implemented computer aided design (CAD) system in 1978
- Establishment of the first soil lab in Taiwan
- Dr. Za-Chieh Moh held the position of Founding Chairman for Southeast Asian Geotechnical Society
- First consultant to introduce deep excavation and slope field monitoring technology in Taiwan

Major Projects

- Taipei Songshan Airport runway, taxiway and drainage works
- Soil Test and Analysis for Dihwa Street Wastewater Treatment Plant
- Geological and Soil Investigation for Railway Along Danshui Line
- Infrastructure Project for Singapore Marina Center Development

1980's

MAA EXPANDS HER CAPABILITIES

Major Milestones

- Collection of first volume of published technical papers and the next every five years to issue one volume. To date we have collected over 600 technical papers.
- MAA expands our services from geotechnical engineering to structural, transportation and general civil engineering, and later on to land development, construction management, environmental engineering and Mechanical, Electrical and Plumbing (MEP)
- MAA began to undertake the design of large scale infrastructure-Highway no.2 Hsinchu - Guanxi section
- One of the first companies to introduce Electronic Cone Penetration Test (CPT) technology in Taiwan

Major Projects

- Geotechnical Investigation Analysis for Taipei Basin
- Geotechnical Engineering Consultancy Service for the Construction of Taipei MRT
- Design Work for Singapore BUKIT TIMAH Expressway
- Project Construction Management for Taipei ShinKong Life Tower (244m high)
- Phase 3 Development Planning for Hsinchu Science Park (Land Development)
- Rehabilitation Project for 5 Industrial Park Wastewater Treatment Plants
- Keelung River Waste River Field Redevelopment (Prefabricated Vertical Drain, PVD was used to improve ground)

1990's

MAA AND THE EMERGENCE OF CHINA AND MEKONG REGION

Major Milestones

- Establishment of MAA Beijing, MAA Shanghai and MAA Thailand
- First usage of incremental launching method in Taiwan for Highway No.2 Touqian River Bridge construction
- Use of FLAC for application of deep excavation analysis
- Dr. Za-Chieh Moh was nominated as first President of Chinese Union of Professional Civil Engineers Associations in 1992
- Dr. Za-Chieh Moh was granted Honorary Degree of Doctor of Asian Institute of Technology in 1999

Major Projects

- Songshan Airport Fuxing North Road Underpass (The first underpass construction during the operational runway in the world)
- Geotechnical Consultancy for Taipei 101 International Financial Center (the highest building in the world upon its completion with 509m height)
- Thailand Bangkok Suvarnabhumi Second International Airport Project in 1998 (the largest infrastructure with soft ground in Asia.)
- Vietnam Ho Chi Minh Binh Thuan Roadway Design (the first roadway in Vietnam with 120m width and was financed by Phu My Hung Corporation, one of the biggest developers in Vietnam)
- Geotechnical Engineering and Project Management for Core Pacific City Shopping Center (with the 31m foundation excavation depth which is the deepest in Taiwan)
- Common Utility Duct Along MRT Xinyi Line (the first common utility duct constructed with shield tunneling method in Taiwan)

2000'S

INTEGRATED SOLUTIONS FOR GLOBAL IMPACT

Major Milestones

- 2001 & 2002 SURV Taipei and Shanghai established
- 2007 Agiletech Engineering Consultants Co. Ltd. established in Beijing (Risk management extended to China and widely used in underground construction)
- 2005 Dr. Za-Chieh Moh was nominated as Chairman of Chinese Taipei APEC Engineer Monitoring Committee

Major Projects

- Tempisque Bridge in Costa Rica
- General Consultant for Electronic Toll Collection System for Taiwan Freeways
- Kaohsiung MRT Design (Lot CR4 has a circular excavation shaft with a 140 m wide diameter and a 30 m deep diaphragm wall, the largest excavation of its kind in the world at the time of construction)
- A number of Engineering Design or Audit Works for Taiwan High Speed Railway (MAA heavily involved in 195km line structure, one depot and one station. This is the biggest Build-Operate-Transfer (BOT) transportation project in the world)
- Project Construction Management for National Cheng Kung University Hospital (scale up to 1320 hospital beds)
- Geotechnical Risk Management Consultant for Taiwan Taoyuan International Airport Access MRT System Construction Project
- NeiHu Solid Waste Dumpsite Clean Up (Taiwan's first large-scale old landfill cleanup project for waste treatment handled on site and sorted)
- Geological Investigation and Database Construction for the Upstream Watershed of Flood-Prone Area (lasted 7 years, MAA had made the most completed database covering sloplands of various basins in Taiwan)

2010'S

TOTAL SOLUTIONS AND SMART + GREEN ENGINEERING

Major Milestones

- 2011 Establishment of MAA Macau
- 2011 Establishment of BIM Center
- 2013 Establishment of MAA Myanmar
- 2013-2014 Co-organized 2 seminars and 1 workshop in Yangon
- Dr. Za-Lee Moh was granted honorable Degree of Doctor of Engineering from Purdue University in 2011

Major Projects

- BIM Integrated Technology Services for Taiwan High Speed Rail Changhua Station Project (2011 BIM award)
- Planning Design for Myanmar Bago Garment Factory Project
- Engineering Design for Phase 1 Contract C220 for Macau LRT Project
- Kaohsiung Exhibition and Convention Center (2013 International Awards for Livable Communities by United Nations Environment Programme)
- Interchange of National Freeway No. 1 for Lu-Chu Science Park (detention space inside, ecological channels in the surrounding to retain some fisheries and to reduce environmental impact)
- Detailed Design for the Improvement and Environmental Planning of Zhongang Drainage Channel and Ecological River Promenade in New Taipei City (The 12th (2012) Public Construction Golden Quality Award)
- National Nanke International Experimental High School (First school campus won the Diamond certification of Green Building Label in Taiwan)

ESTABLISHMENT OF BUILDING AND FACILITIES GROUP



MAA established its Building and Facilities Group in June 2015 in order to strengthen and integrate its building-related capacities and enhance the effectiveness of its project construction management activities. The group consists of professionals and technology from MAA's Project and Construction Management Department, BIM (Building Information Modeling) Management and Engineering Integration Center, and Mechanical and Electrical Engineering Department. The Group will allow MAA to provide the total solution that its clients require.

The Building and Facilities Group is directed by MAA's Vice President, Mr. Ta- Hsing (Daniel) Lee, who received his master degree in Construction Management from National Taiwan Institute of Technology and has 32 years' experience in building

construction, turnkey projects, BOT (Build-Operate-Transfer) projects, governmental procurement and PCM (Project and Construction Management). MAA's Business Manager, Mr. Szu-Min Kang, who holds a master degree in civil engineering from National Cheng Kung University and has 20 years' experience in design and management, is in charge of the development and execution of international and domestic BIM-related projects.

Mr. Gwo-Jenn Liu is appointed as the Project and Construction Management Department Manager. A Professional Geotechnical Engineer with a master degree in Civil Engineering from National Cheng Kung University, he has 25 years' experience in PCM and construction supervision. Mr. Yu-Chi Lin, a Professional Structural Engineer with 15 years' experience and Mr. Chih-Cheng Lin, a qualified Project Management



Professional (PMP) with 25 years' experience, are appointed as Deputy Manager and Technical Manager respectively, and are supervising project management-related projects.

Mr. Kuang-Yu Cheng is the BIM Management and Engineering Integration Center Manager. With 20 years' experience, Mr. Cheng's specialties are mechanical engineering and curtain wall design integration. Mr. Yao-Nan Chen manages MAA's Mechanical and Electrical Engineering Department and has 40 years' experience in mechanical and electrical system design and management.

The Building and Facilities Group has accumulated over 30 years' experience in PCM for various types of construction works and 5 years of experience in BIM design and system integration. This allows MAA to have well prepared operating procedures for various technical services, including BIM-related professional database and cloud communication platforms. With a vast array of building-related professionals, the group can offer a flexible deployment to provide clients with most professional and consulting services in a timely manner, allowing to offer cost-effective value engineering and management for their projects.

BIM CONSTRUCTION INTEGRATION SERVICES FOR TAIWAN FERTILIZER HSINCHU D7-A IN TAIWAN

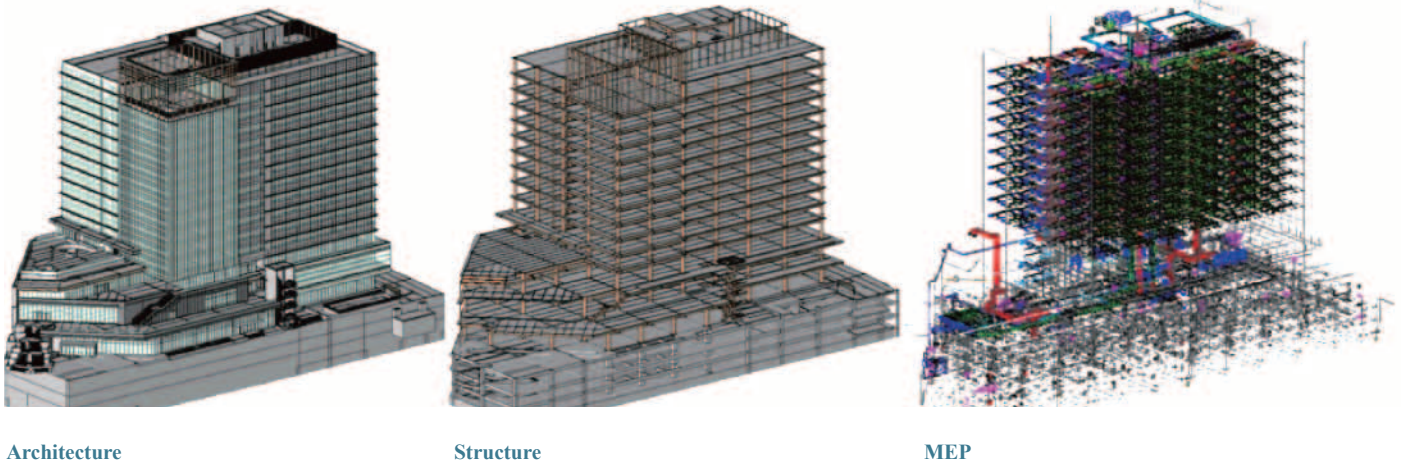


Fig 1.1 TaiFer D7-A BIM Models

PROJECT PROFILE

TaiFer Hsinchu D7-A, located in Hsinchu City, Taiwan, is a retail and office mixed-use building with 14 stories, 3 basement levels and a 70,500 m² GFA (Gross Floor Area). Structure is SRC (Steel Reinforced Concrete) above ground and RC (Reinforced Concrete) underground. This project is currently under construction and will be completed by the end of 2016. It is one of the pilot projects of Taiwan Fertilizer Company (TaiFer) and part of its plan to develop its land assets.



Fig 1.2 TaiFer D7-A Integration Models

WORK SCOPE

MAA is providing BIM construction integration management services for the architecture and structure contractor, United Steel Engineering and Construction Corporation (USEC) and the MEP (Mechanical, Electrical and Plumbing) contractor, Steel Castle Technology Corporation (SCTC) to help in dealing with a fast moving project schedule and satisfy the client's requirements. In the project, BIM (Fig. 1.1) serves as a collaboration tool between designers and contractors to conduct clash detection before commencing construction. It also uses 3D simulation to assess the building's constructability, facilitate the discussion on design choices and produce more accurate construction and shop drawings by generating plan and detail section callouts instantly.

Aside from managing the BIM aspect of this project, MAA is playing an important role in driving BIM adoption by the developer (TaiFer) and both of the contractors, namely USEC and SCTC. At the bi-weekly BIM on-site meetings, a centralized BIM model (Fig. 1.2) offers an additional information platform and allows the client to visualize and test scenarios for various building elements in 3D and to communicate effectively with all building professionals (Fig. 1.3).

BIM CLASH REPORTS

Clash detection is the most obvious benefit of BIM adoption. In this project, the project team have successfully used the BIM model's virtual environment for clash detections and incorporated it with the traditional RFI (Request for Information) procedure to facilitate construction.

Most of the clashes resulted from hidden information on the 2D drawings. A simple example is shown below: usually, the placement (inward or outward) of the fire resisting shutter hoods is not specified on 2D drawings.

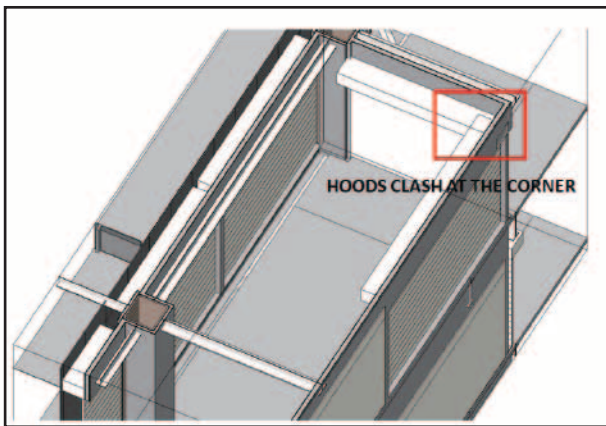


Fig 1.4 Clash Detection

In (Fig. 1.4), two shutter hoods clashed at the corner. In (Fig. 1.5), the construction workers could not work in this area due to the limited space between the curtain wall and the shutter hood. Different types of clashes, reported at the BIM weekly meetings, can include components physically clashing with each other but also components which are too close from one another and preclude workers or maintenance personal from accessing an area. The BIM model collects all information in real-time sent by designers and contractors, including updated information from the BIM clash reports and change orders from all project participants, thus creating a more accurate documentation during construction.

ON-SITE BIM SOLUTIONS

MAA has successfully delivered BIM construction integration services for many projects in the last 5 years, and developed a stringent procedure to use BIM in a creative and team-based approach under the fast

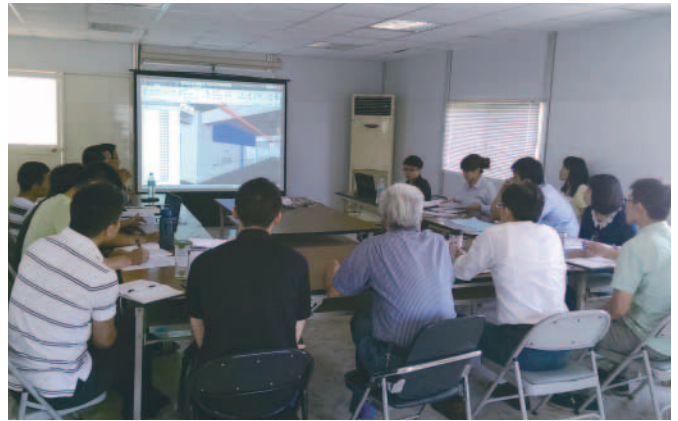


Fig 1.3 BIM On-Site Meeting

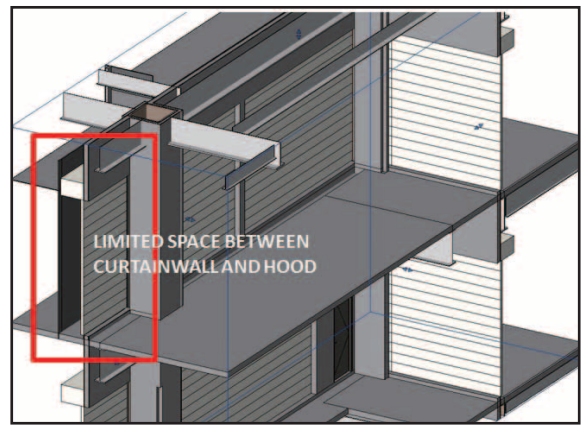


Fig 1.5 Constructability Check

track pace of a construction site, as described in the examples below:

The formwork could not be done within the limited space between the walls and beams. In this case, a site-level BIM approach was provided to quickly identify these gaps and help contractors determine in a 3D virtual environment the best methods for filling these gaps(Fig. 1.6). Because the model is supplemented with practical field information, a quantity takeoff (Fig. 1.7)and technical report could be established to help estimate the extra cost of the fillings in an efficient way.

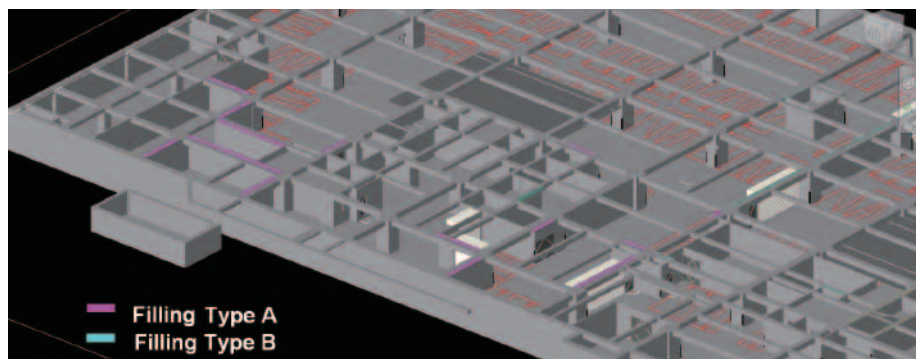


Fig1.6 Fillings Between the Walls and Beams

位置	描述	工法	寬(間隙寬)(m)	長(m)	高(m)	體積(m ³)
A~B/7	梁與左側牆間隙15cm	RC增築	0.15	2.65	0.90	0.358
B~C/7	梁與左側牆間隙15cm	RC增築	0.15	8.35	0.90	1.127
C~D/7上	梁與左側牆間隙15cm	RC增築	0.15	3.03	0.90	0.41
C~D/7中	梁與左側牆間隙15cm	RC增築	0.15	3.53	0.90	0.477
C~D/7下	梁與左側牆間隙15cm	RC增築	0.15	3.03	0.90	0.41
D~E/7	梁與左側牆間隙15cm	RC增築	0.15	9.3	0.90	1.256
E/7下	梁與左側牆間隙間隙達25	填塞	0.25	1.03	0.83	0.214
F~G/9上	小梁b27與左側牆間隙10cm	RC增築	0.1	0.43	0.65	0.028
F~G/9下	小梁b27與左側牆間隙10cm	RC增築	0.1	8.68	0.74	0.645

Fig 1.7 Quantity Takeoff

Once construction had started, the architect requested a design change with the creation of a 100 m setback at the entrance of the driveway to the basement (Fig. 1.8), which resulted in a reduction of clearance with the code compliance grade. BIM model quickly provided clearance information, a kind of task specific information which usually cannot be retrieved promptly on site, before the traditional CAD drawings were ready (Fig. 1.9). In this case, MAA also generated an effective workflow for change orders and tied up all expertise to consolidate or coordinate, and optimize BIM benefits.

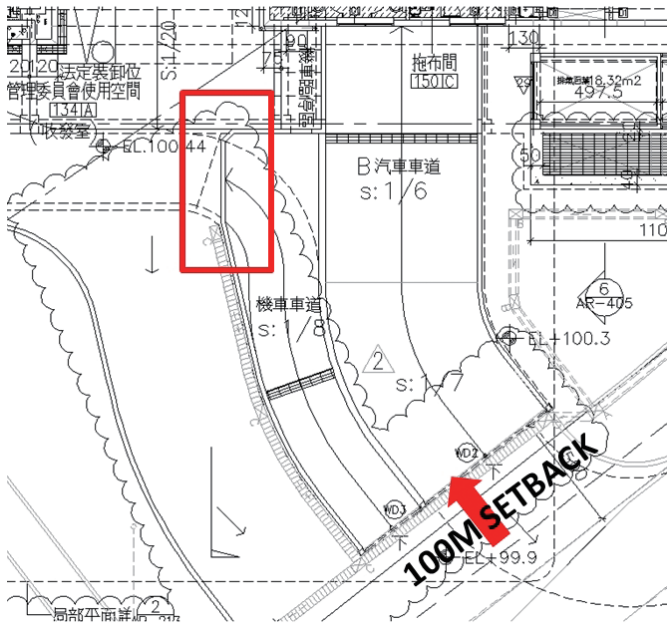


Fig 1.8 Design Change

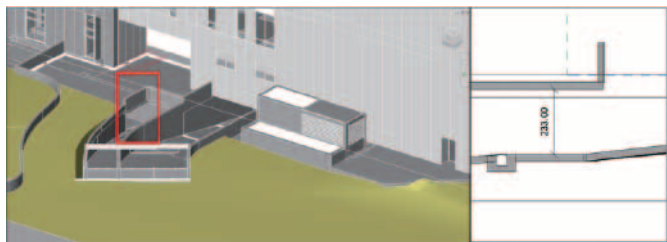


Fig 1.9 Clearance of the Driveway

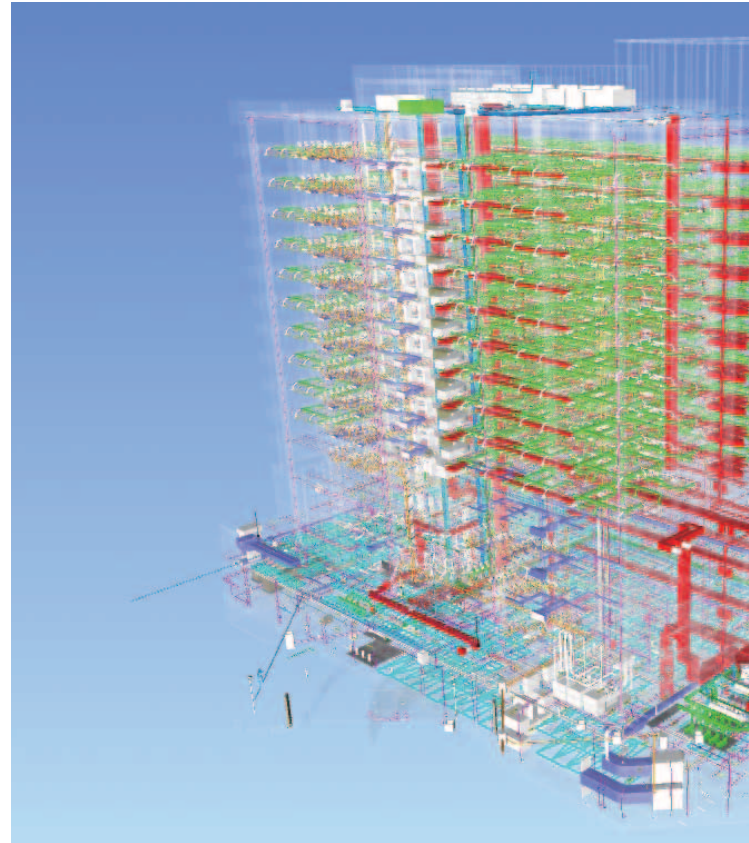


Fig 1.10 BIM Based MEP Design

BIM BASED MEP DESIGN

The use of BIM by MAA has played a crucial role for the MEP design procedure in this project for the following reasons:

Firstly, BIM was used as a platform to ensure that all MEP system detailers and sub-contractors had the most updated information to develop the design.

Secondly, the BIM platform served as an information sharing center enabling to capture some needed information, usually hidden in the 2D drawings, to facilitate the MEP design process. As the system was able to identify the clearance in any space in the building (figure 1.11), some of the detail elements were built in the model for specialty clash detections. For example, the suspended signages were built in the basement to detect interference with the MEP system and the ceiling due to the limited and changing story height there.(Fig. 1.12, 1.13)

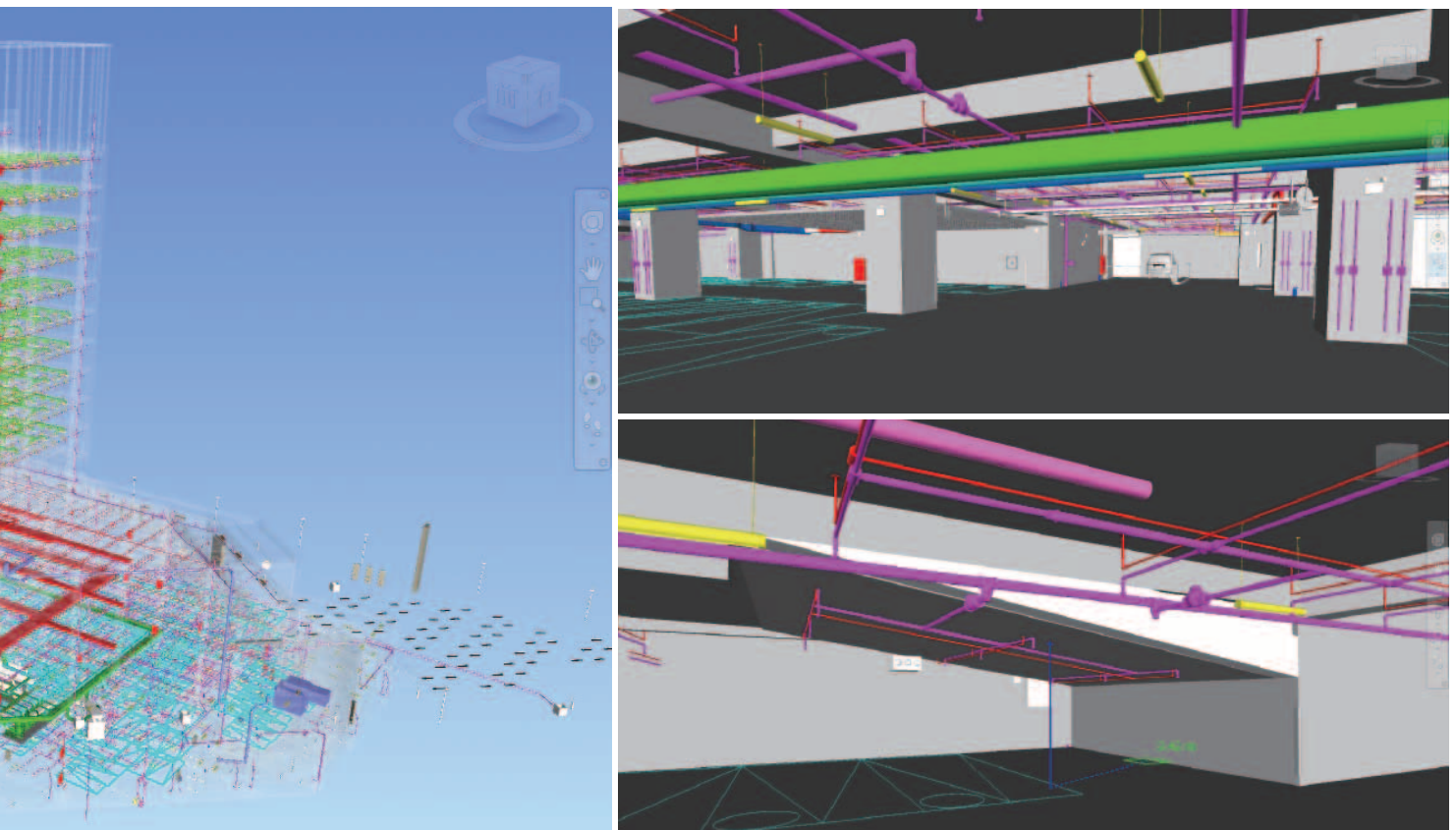


Fig 1.11 Identify the Clearance

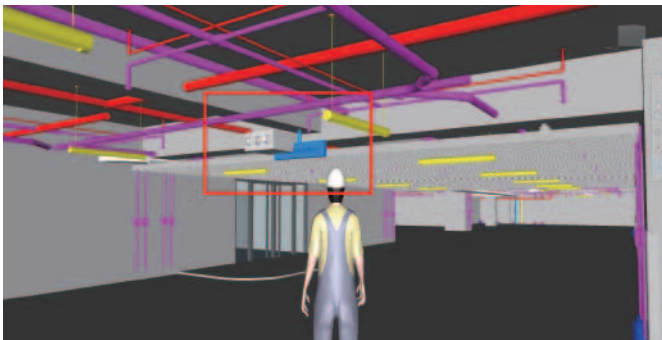


Fig 1.12 Suspended Signages Clashed MEP System

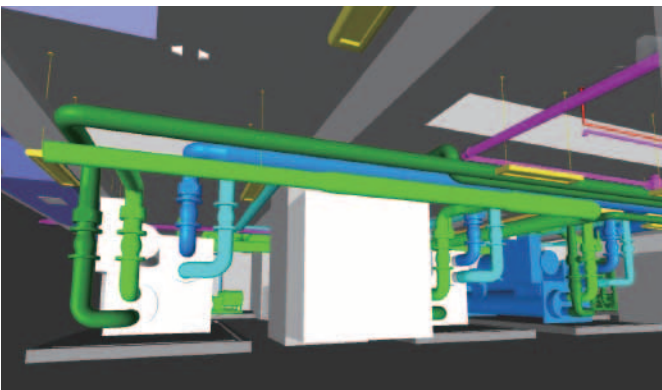


Fig 1.13 MEP System Detail

Last but not least, MEP system designers and subcontractors became more and more willing to participate in the bi-weekly BIM meetings on site to resolve the conflicts in a 3D virtual environment with other professions and stakeholders.

LEVERAGE BIM FOR CONSTRUCTION SERVICE

Potential benefits of BIM on the construction site have been addressed and identified in numerous technical papers. In this project, the BIM implementation services provided a platform for all the experts not only to exchange data but also to learn from each other.

PROJECTS 1ST JANUARY 2014 TO 30TH NOVEMBER 2014

ECONOMIC, ENGINEERING AND ENVIRONMENTAL IMPACT FEASIBILITY STUDY AND PLANNING FOR THE CHIANGMAI – CHIANGRAI MOTORWAY IN THAILAND



Chiangmai-Chiangrai Motorway, Thailand

The project consists of providing design and analysis services, including engineering design, for several interchanges and intersections with existing local roads along the route to meet the requirements of a toll collection system, of the existing geometric and road network, and of the anticipated traffic volume. The project also includes designing the drainage system and road-related facilities as well as undertaking safety and environmental assessment studies. This work started in May 2014 and is expected to be completed by November 2015.

KROKKAODOR – MAUNG MAAD – SANAKAM – BAAN WANG – BAAN NUMSANG SECTION IN THAILAND AND LAOS



R11 Route Plan, Thailand

The R11 route's 151 km long Krokkaodor – Maung Maad – Sanakam – Baan Wang – Baan Numsang section is a part of the Chiangmai-Vientiane Economic Corridor (CVEC). The whole R11 route begins in Chiangmai province, passes through the Phu Do toll gate in Utaradit province and ends in Laos' capital Vientiane, with a total length of 629 km. The Chiangmai-Vientiane Economic Corridor's road network is currently being developed to become a Transport Corridor. Construction of the R11 route's first and last portions in Laos is underway, including the construction of a bridge across the Mekong River. The Krokkaodor – Maung Maad – Sanakam – Baan Wang – Baan Numsang Section will complete the link between the transportation networks of Laos and Thailand. The project started in October 2014 and is expected to be completed by July 2015.

URBAN LAND CONSOLIDATION OF DISTRICT 2 OF XIN TAI WEN ZI ZUN AREA, NEW TAIPEI CITY



Urban Design in Wen Zi Zun Area, Taiwan

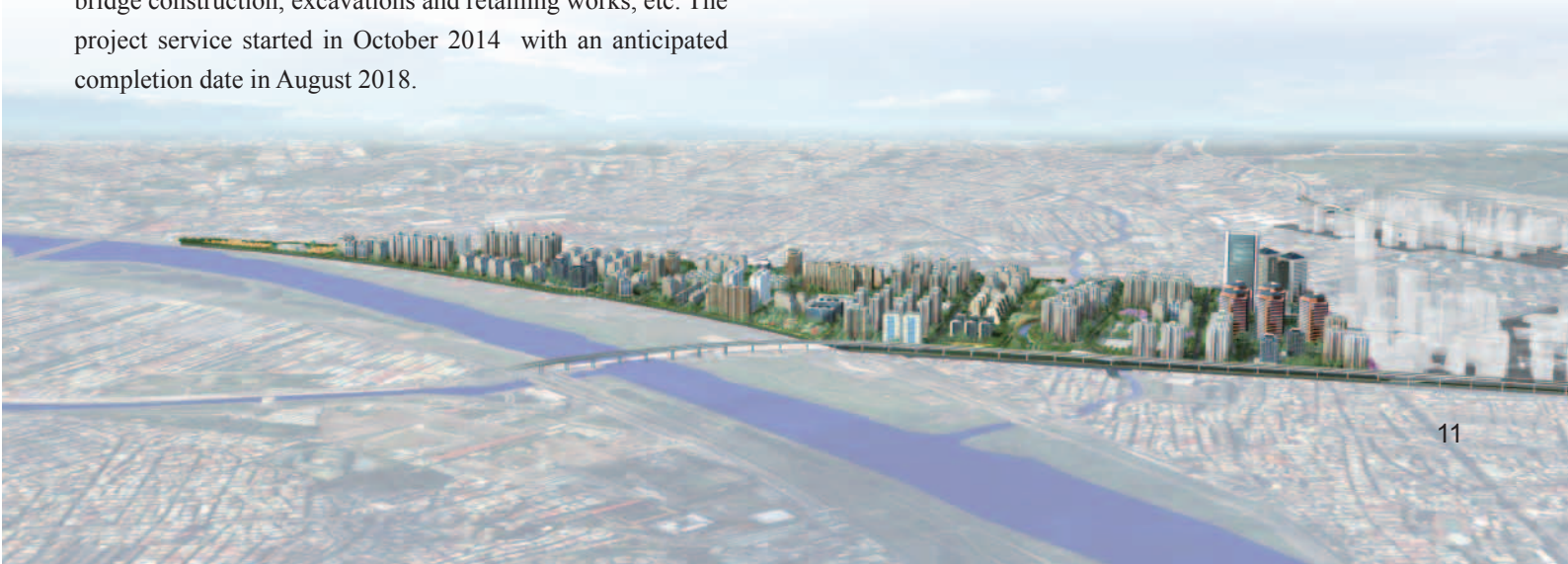
The urban land consolidation of the Xin Tai Wen Zi Zun area is divided into two districts by Zhongzheng Rd. This project is located in District 2. The total development area, which belongs entirely to Xinzhuang District, is 122.11 ha. The MRT system acts as core for the new urban development, while the future road network will satisfy the daily requirements of local residents. The administrative, transportation and regional commercial educational center will provide an ideal environment for residential use, business development and multimodal transportation, which make this district an integral part of the New Taipei City metropolitan area. MAA was engaged by New Taipei City Government to provide design and technical services for public facilities including land preparation, road construction, transportation facilities, drainage system, sewage engineering, water pipe engineering, landscape engineering, public lighting, common utility duct, bridge construction, excavations and retaining works, etc. The project service started in October 2014 with an anticipated completion date in August 2018.

THE ENVIRONMENTAL MONITORING OF TAMKANG BRIDGE AND ITS EXTENSION ROAD, TAIWAN



Tamsui River, Taiwan

Located across the Tamsui River, close to the Taiwan Strait and connected to the western coastal highway, the Tamkang Bridge was built in order to mitigate traffic congestion between Bali and Tamsui. It will shorten the commute between the two river banks by 15 km, complete the northern coastal highway system and improve the development of local industries. MAA was commissioned by the Ministry of Transportation and Communications to provide environmental monitoring services during the three different stages of the process i.e., before, under and after construction and to assist the client with tracking, monitoring and assessing all required technical support. The project started in December 2013 and is expected to be completed by December 2022.



CONSTRUCTION SUPERVISION CONSULTANT OF THE FIRST PHASE OF TAMHAI LRT SYSTEM, TAIWAN

Danhai New Township currently has a population of 16,000, projected by the planning agency to rise to about 300,000 inhabitants by 2041. The main goal of the project is to provide Danhai New Town and Danshui Township with a convenient means of public transportation, which will stimulate development in the area and ease traffic congestion on local roads. The total construction cost for the 13.99 km long, 20 station system is NT\$15.3 billion. The first stage comprises the Green Mountain Line, with 7 elevated stations, 4 at-grade stations, and a further three at-grade stations of the Blue Sea Line connecting the system to Danshui's Fisherman's Wharf. The 9.55 km track, which will connect Taipei MRT's Hongshulin Station to Danhai New Township, is budgeted at NT\$12.8 billion (US\$439 million). MAA Taiwan was engaged by the Department of Rapid Transit Systems to provide construction supervision services for the project, including:

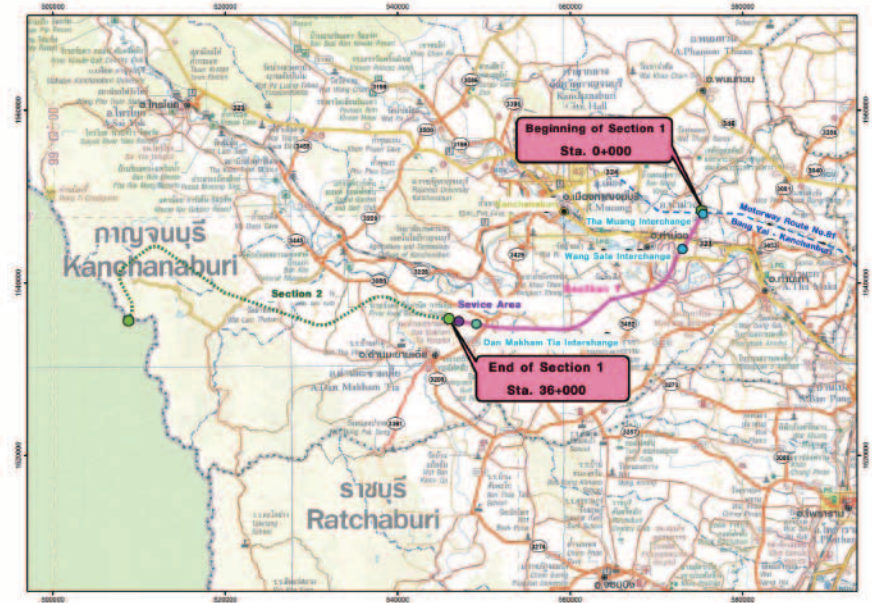
- Core system
 - Tram units
 - LRT (Light Rail Transit) signal system and traffic signal system
 - Power supply system
 - Communication system
 - Depot facilities
 - Automatic ticketing system
- Traffic control system and Tram control system
- Track system
- Civil engineering (including depot)
- Elevators and escalators
- E&M, Environment, Plumbing
- System integration and coordinations
 - RAMS
 - Operation readiness
 - Testing
- Assistance for final inspection
- Others (relocation of pipelines and recovery work)

The ground-breaking ceremony was held on 3rd September 2014 and led by New Taipei City Mayor Chu Li-Luan. The first phase of the project is scheduled to be completed and operational by 2020.



MOTORWAY SURVEY AND DETAILED DESIGN ; KANCHANABURI – THAILAND / MYANMAR BORDER SECTION 1

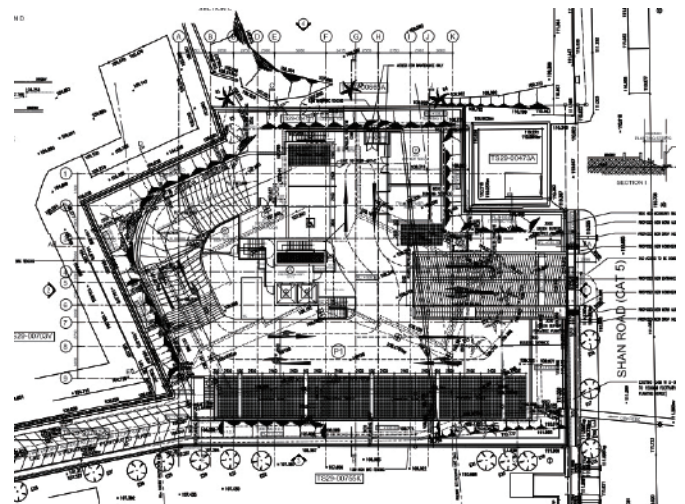
The purpose of this motorway is to provide a fast route to the Myanmar border as well as better access to development areas in Kanchanaburi province. A 36 km long motorway from Kanchanaburi, Thailand to the Myanmar border, Section 1 starts from motorway No. 81 and ends at the intersection of highway No.3209 (at STA.36+000). The project work includes designing an elevated interchange, a bridge across the river, junctions at every interconnection with existing local roads along the route, and other motorway service stations. The design focuses on traffic safety, a closed toll collection system and utilizes the existing geological conditions along the route. The project started in September 2014 and is expected to be completed by September 2015.



Motorway from Kanchanaburi, Thailand to Myanmar Border

PROPOSED ERECTION OF A BLOCK OF 15-STOREY RESIDENTIAL FLATS (TOTAL 72 UNITS) IN SINGAPORE

The proposed development comprises the construction of 4 blocks of 5-storey (2 blocks), 13-storey (1 block) and 15-storey (1 block) commercial buildings with basement car-park and underpass connection to an existing shopping mall (Causeway Point) in the Western part of Singapore where construction difficulties associated with the local granite rock's erratic profile are anticipated. Geotechnical engineering services include soil investigation work consisting of 4 boreholes located within the Railway Safety Zone regarding the foundation system and basement works of the proposed development. MAA Singapore was engaged by TA Realty Pte Ltd to provide Geotechnical engineering services included soil investigation work consisting of 4 boreholes within the Railway Safety Zone with regard to the foundation system and basement works of the proposed development. This project lasted from July to August 2014.



Residential Flats Plan, Singapore



Picture sourced from Railway Reconstruction Bureau

South Link Railway, Taiwan

RAILWAY ELECTRIFICATION ENGINEERING PROJECT FOR TAIWAN RAILWAY SOUTH LINK LINE FROM TAITUNG TO CHAOZHOU

The South Link Railway runs through the Central Mountain and Dawu fault's end ridge, hence the terrain along the railway is mostly streams and valleys, with varied and complex geological conditions. Furthermore, the steep terrain on the East coast causes salt corrosion prone to excessive moisture, which makes the South Link Railway the most dangerous and challenging section of the island's railway network from a geological point of view. The South Link Line's terrain is mostly metamorphic rock, which possess a lot of rupture surfaces and fragments. During heavy or prolonged rains, soils become saturated and landslides happen. This section has been in operation for 25 years, in 1991, since then slope deformation and dislocation has occurred on numerous sections. As a consequence, MAA was engaged to provide safety and site investigation services for slope protection facilities along the railway. The project started in December 2013 and is expected to be completed by March 2015.

NATIONAL TAIWAN UNIVERSITY MAIN CAMPUS NEW CONSTRUCTION PLAN ENVIRONMENTAL IMPACT ASSESSMENT, TAIWAN

The new construction plan of National Taiwan University includes the following 7 buildings: teaching building phase 2, Outstanding United Center Building, HVAC (Heating, Ventilation and Air Conditioning) equipment room, teaching building parking lot, institute joint building, Outstanding Research Building phase 3 and Bio-electronic Information Teaching Research Building. They are built to enhance the overall teaching environment in the campus. Environmental monitoring has been carried out in accordance with the relevant EIA (Environmental Impact Assessment) Act provisions and environmental impact statements' commitments before, under and after construction. The project started in December 2013 and is expected to be completed by December 2021.



New Construction of National Taiwan University

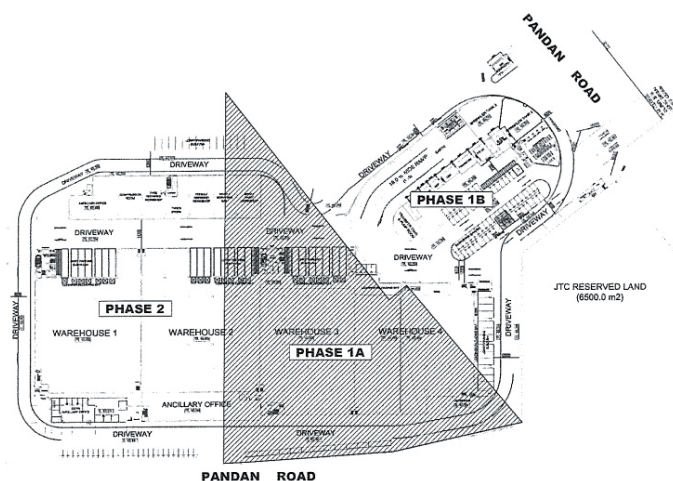
TAICHUNG LNG PLANT PHASE II EXPANSION PROJECT



Taichung LNG Storage Tanks, Taiwan

This contract is for the design and construction of three full containment type LNG (Liquefied Natural Gas) storage tanks. Each tank has a maximum working volume of 160,000 m³ with a total volume not less than 200,000 m³. The inside diameter of tank is about 78 m and the base slab of tank about 81 m wide. The tanks are supported by pile foundations on ground improved by sand compaction piles. MAA was engaged to implement soil investigation, pile foundation analysis and soil improvement for compacted piles on this project. The service period was from December 2013 to December 2014.

PROPOSED INDUSTRIAL DEVELOPMENT (WAREHOUSE), SINGAPORE



Industrial Development, Singapore

Proposed development for the construction of a single user general warehouse facility comprised a 7-storey ramp-up warehouse building with carpark and other ancillary facilities. MAA Singapore was engaged by M/s Poh Tiong Choon Logistics Limited to provide geotechnical engineering services including soil investigation work consisting of 13 boreholes with regard to the foundation system of the proposed development. The project period was from January to March 2014.

P ROFESSIONAL ACTIVITIES

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

► Professional Activities

MOU & AGREEMENTS

In 2014, MAA signed MOUs and agreements with the following organizations:

1. On 19th May, MAA signed a MOU with the School of Civil Engineering, Beijing Jiaotong University for the establishment of the **BJJU-MAA BIM Research Center**.



2. On 6th November, MAA signed a Strategic Agreement with **CCCC Highway Consultants Company Limited** on mutual technical services and support for works outside China.



3. In January 2015, MAA signed an Agreement with **Beijing Municipal Engineering Consulting Corporation (BECC)** for the establishment of a BIM Service Center.



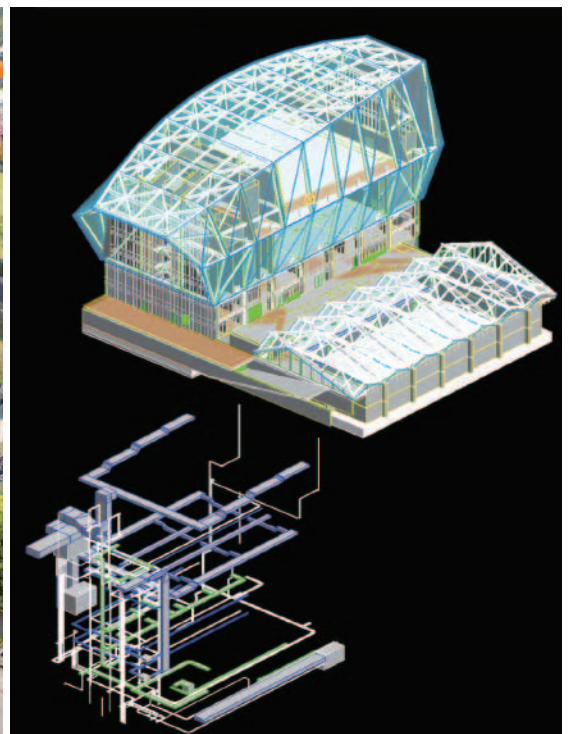
CHINA ZHENGJIANG TRAFFIC GROUP VISIT

On 28th October 2014, a delegation of 12 people led by China Zhengjiang Traffic Group Chairman Mr. Zhang De Jun and EC Technology Development Corporation Executive Mr. Huang Tai-Yang visited MAA. MAA BIM Center Manager Mr. Kang Szu-Min made a presentation entitled “BIM Application on Building Design and Construction Management”.



► Professional Awards / Honors

“ZHONGHE SPORTS CENTER, ONE OF THE COOLEST NEW BUILDINGS ON THE PLANET” by Business Insider



Zhonghe Sports Center and its BIM Model

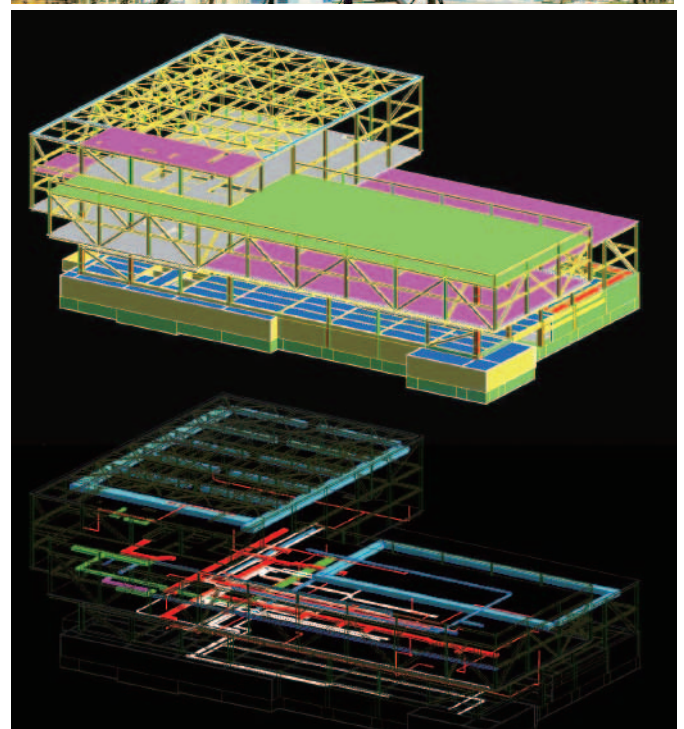
The World Architecture Festival is the world's largest international architectural event. It includes the biggest architectural awards programme in the world, dedicated to celebrating excellence via live presentations to delegates and international juries. This year, more than 700 entries from architects and designers across the world with projects from 47 countries were submitted for this architecture event, and 338 buildings shortlisted. Zhonghe Sports Center and Tucheng Sports Center in New Taipei City both have been selected for final consideration. The best building of the year 2015 will not be announced until November. US news website "Business Insider" made his own shortlist of 27 coolest new buildings on the planet from the 338 contenders. Business Insider is an American business, celebrity and technology news website launched in February 2009. It was an official Webby honoree for Best Business blog in 2009. In June 2012, its unique numbers of visitors reached 5.4 million. The 27 coolest buildings on the planet include a ribbon-inspired wedding chapel in Hiroshima, Japan, Zaha Hadid's £240 million London Aquatics Centre and the Zhonghe Sports Center.

Opened in 2014, located in New Taipei City, the municipality that surrounds Taiwan's capital, the Zhonghe Sports Center provides public facilities for a range of sports and activities including badminton, basketball, rock climbing and hockey. The appearance of the main building shows a zigzag configuration which reflects the mountain line sitting behind the building. The building takes up half of the 86,900 m² site, while the other half was used to create a sunken hockey rink. The hockey rink is separated from the main building and buried deep into the basement, revealing only its triangulated roof with grass on top. The grass and soil covering the roof of the hockey rink prevents summer heat from penetrating directly into the interior space. Another nominated project Tucheng Sports Center, with a site area of 13,400 m², is made out of three interlocking cuboids stacked on top of one another. Both the red (ball courts) and the dark massing (ice hockey arena) cantilever 9 meter out from the blue massing (swimming pool), which creates a persistent walkway underneath used for semi-open air exercises, for example, easygoing walking, rock climbing and road moving. MAA was engaged to provide BIM management service for these two projects including design integration, structural system integration and electro-mechanical system integration.

Resource:

https://www.worldarchitecturefestival.com/webform_submission/5713

https://www.worldarchitecturefestival.com/webform_submission/5711



Tucheng Sport Center BIM Model

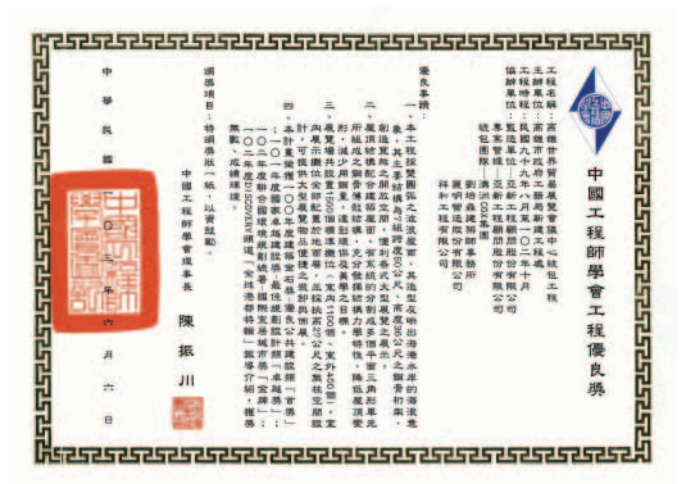
THE 2014 GOLD MEDAL PRIZE IN PUBLIC ENGINEERING OUTSTANDING CIVIL QUALITY CONSTRUCTION



In June 2014, the Taipei MRT Xinyi Line Project Design Lot DR148 Xiangshan Station won the 2014 Gold Medal Prize for Public Engineering Outstanding Civil Quality Construction of The National Construction Excellence Awards. The Awards, launched in 2004 by the Real Estate Association of Republic of China, focus on selecting each year's best projects to promote good architectural and engineering design in Taiwan.

DISTINGUISHED ENGINEERING AWARD

Taipei MRT Xinyi Line Contract CR580A project and Kaohsiung Exhibition & Convention Center received a Distinguished Engineering Award from the Chinese Institute of Engineers in June 2014.



2014 TAIPEI CITY PUBLIC WORKS EXCELLENCE AWARD

The sewer system and the house connections made for Taipei City in 2008 won the 2014 Taipei City Public Works Excellence Award.



2014 GEOTECHNICAL ENGINEERING AWARD

Detailed design work for Taipei MRT Songshan Line Contract DG166 received the 2014 Geotechnical Engineering Award awarded by the Taiwan Geotechnical Society.



IN JUNE 2014, MAA RECEIVED THE 2014 M&A AWARD AND HAS BEEN SELECTED AS 'CONSULTANCY SPECIALISTS OF THE YEAR - MYANMAR.'



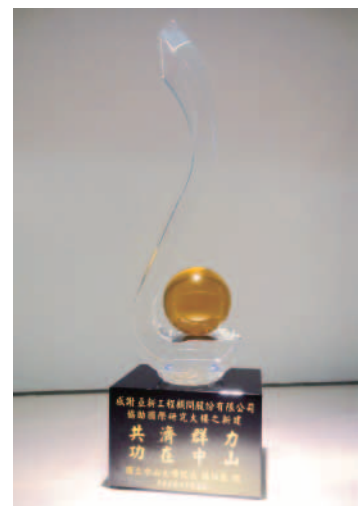
M&A Award was established by Acquisition International Magazine in UK. Since 2010, its annual awards have been celebrating excellence, innovation and performance across the business, legal, financial and investment communities. Voted for by a global network of expert M&A professionals, advisers, clients, peers and industry insiders, the awards celebrate excellence in all areas of M&A, recognizing not only individual deal success but also the firms and individuals behind the scenes whose tireless efforts and unrivalled expertise have contributed to the dramatic increase in global M&A activity over the past year.

LETTER OF APPRECIATION

MAA received a Letter of Appreciation from the Miaoli County Government for the satisfactory achievement of PCM and construction supervision services provided for public facilities in the Taiwan High Speed Rail Miaoli Station project.



MAA received an Appreciation Plaque for assisting the construction of National Sun Yat-Sen University's International Research Building.



► Seminars and Conferences

MAA successfully co-organized a Seminar in Yangon Myanmar in 2014. The workshop “Construction Quality Management Methods and Experiences”, held on 27th September 2014, was organized by the Committee for Quality Control of High-rise Building Projects (CQHP) and MAA.



► TECHNICAL PUBLICATIONS

1	Chang, J.F., Feng, C.Y., Chen, M.S., Yu, N.Z. (2015) "Design, Construction and Monitoring Feedback of Closely Spaced Shield Tunnels for Songshan Line of Taipei Rapid Transit System", <i>Sino-Geotechnics</i> , Taipei, Taiwan, No.144, June, pp.25-36 (in Chinese)
2	Chao, H.C., Yang, K.R., Chen, H.T., Huang T.C.(2013), " Construction Risk Management for the Double-O Tube Bored Tunnel of the Taoyuan International Airport MRT Link", <i>Cross-Strait Seminar on Tunnel and Underground Engineering</i> , Nantou County , Taiwan , 1 st -2 nd November (in Chinese)
3	Chao, H.C.,Huang C.C.,Chen W.Y.,Chen H.K.,Huang C.Y.,Chang W.S.,Ma L.C. (2014) "Construction Risk Management for Deep Excavation adjacent to Bored Tunnels", <i>The 13th Cross Strait Seminar on Tunnels and Underground Construction</i> , Nanning, China, 16 th -17 th August (in Chinese)
4	Chao H.C., Huang, C.C.(2014) "Limit State Design and Construction Control for Deep Excavation and Protection of Adjacent MRT Running Tunnels", <i>2014 HKIE-IEM-CIE Tripartite Seminar on Recent Development in Limit State Design for Geotechnical Works</i> , Hong Kong, China, 28 th November
5	Chou, C.R., Wu, T.E., Su, T.C., Chao, H.C., Chen, C.H. (2015) "Design Considerations for Orthogonal Adjacent Shield Tunnel Construction", <i>Sino-Geotechnics</i> , Taipei, Taiwan, No.144, June, pp.37-46 (in Chinese)
6	Hsieh, Y.H., Chou, C.R., Cheng, J. F. (2014), "Solutions for Shield Tunnels Driven in Gravel", <i>Professional Engineering Journal</i> , No. 66, June, pp 62-68 (in Chinese)
7	Kang, S.M., Moh, R., Tseng, Y.Y. (2014) "BIM application on Building Lifecycle", <i>The Magazine of the Chinese Institute of Civil and Hydraulic Engineering</i> , Vol.41, No.3, pp.35-41 (in Chinese)
8	Lee, W.L., Lin J.M, Kang S. M., Moh R., Hsieh H.C., Shu Z. H. (2014) "Applications of BIM Technology on Management of Taiwan HSR Changhua Station Project", <i>The Conference of the ASEAN Federation of Engineering Organisations</i> , Yangon, Myanmar, 9 th -13 th Novrmber
9	Lo, H. T., Su T. C., Yang, C.T., Hsu, C.C. (2013), "Automatic Monitoring System of Slopes of National Freeway", <i>Cross-Strait Seminar on Geotechnical Engineering</i> , Taipei, Taiwan, 5 th -7 th November (in Chinese)
10	Tseng, H.C., Chen, D.J., Mitsui, T. (2015) "Application of Caisson Method to Shafts for Shield Tunneling", <i>Sino-Geotechnics</i> , Taipei, Taiwan, No.143, March, pp.51-58 (in Chinese)
11	Zhou, Y.K., Kang, Y.S., Kang, S.M., Moh R. (2014) "Tekla BIM Application on structural Parametric Design and Detailed Design", <i>Tekla China User Meeting 2014</i> , Shanghai, China, 21st-23rd May (in Chinese)

P PERSONNEL PROFILES



Chen-Hui HSIEH
謝 震 輝

Mr. Chen-Hui Hsieh was promoted to Engineering Design Group Director and Senior Vice President in November 2014 leading all engineering design departments in MAA Taiwan. Mr. Hsieh received his B.S. degree in Civil Engineering from Chung Yuan Christian University, Taiwan in 1986 and Master degree in Structures from National Central University in 1991. He joined MAA Taiwan in 1991 after graduation. In the 24 years at MAA, Mr. Hsieh has been involved in many projects including structural design for tunnels, bridges, buildings, viaducts, underground MRT Stations, sewerage systems, wastewater treatment plants, and various facilities and MRT lines. Examples include the Fushin North Road Extension Tunnel under Sung Shan Airport, Taipei MRT Mucha extensions, Kaohsiung MRT Depot stations, facilities at the Keelung Harbor, Tien Mu sewerage system and widening of a North Second Freeway section. Mr. Hsieh was honorably selected as the distinguished alumnus of the Department of Civil Engineering, National Central University in 2008 and Chung Yuan Christian University in 2012. Mr. Hsieh is not only a Director of Value Management Institute of Taiwan but also members of Chinese Arbitration Association, Chinese Taipei Tunnelling Association and Chinese Institute of Civil and Hydraulic Engineering.



Shih-Chang HUANG
黃 士 彰

Mr. Shih-Chang Huang was promoted to Construction Supervision & Management Group Director and Associate Senior Vice President in June 2015 leading the Construction Supervision Department, MAA Taichung Office and MAA Kaohsiung Office. Mr. Huang received his bachelor's degree of the National Cheng Kung University in 1988 and master's degree from the same university in 1990. Prior to joining MAA, Mr. Huang was employed as a Civil Engineer by Pacific Engineers & Constructors, Ltd and was involved in works including feasibility study of Northern Taiwan LNG Terminal & Construction of Power Plant, Safety Evaluation of Wu-Zai Dam, Hydraulic Analysis of Nan-Pu Power Plant. Mr. Huang joined MAA in 1994, and has undertaken several major projects including the Taipei and Kaohsiung City Common Duct Master Plan, Kaohsiung MRT Orange Line detailed design and Taipei MRT Hsinyi Line detailed design. Mr. Huang is a Registered Professional Engineer (Hydraulics), Registered Quality Control Engineer and Registered Reinforced Bar Radial Investigation Engineer. He is also a member of the Chinese Institute of Engineers and Chinese Institute of Civil and Hydraulic Engineering.



Yau-Chorng CHIEN

簡堯崇

Mr. Travis Chien joined MAA in October 2014 as Senior Vice President responsible for overseas business and corporate development. Mr. Chien received his master degree in Environmental Engineering from New Jersey Institute of Technology, USA in 1986. Mr. Chien has served in several major International well-known consulting engineering companies including Camp Dresser & McKee Inc. (CDM, 1987-2006), Metcalf & Eddy Ltd (Maunsell AECOM, 2006-2008) and AECOM Asia (2008-2014). Major works undertaken at CDM included major Environmental Infrastructure Projects covering municipal and industrial water, wastewater, solid waste, environmental rehabilitation and urban improvement located in USA, South East Asia, Taiwan, Hong Kong, and China. Mr. Chien also established CDM China operation and served as CDM China Country Managing Director from 2000 to 2006. From 2006 to 2008, Mr. Chien served in Metcalf & Eddy Ltd (Maunsell AECOM) as Executive Director and was responsible for China Water Sector operation including marketing, business development, technical innovation and major pursuit and implementation. He was also served as project directors and specialists for mega infrastructure projects in Hong Kong including water, wastewater treatment plants and solid waste projects. In 2010, as Senior Vice President of AECOM Asia, Mr. Chien served as China Deputy Regional Leader responsible for regional operations including merger & acquisition (M&A), strategic planning, branding, marketing, and

operational integration. In 2012, as Managing Director Water Market Sector AECOM Asia, he was responsible of Asia Water Market Strategy Development, Major Merger & Acquisition, Key Initiatives (Water, Wastewater, Water Resources, and Alternative Project Delivery, EPC, DBO), and Technical Excellence Development including key client accounts and major strategic pursuits. Operation geography covers China, Taiwan, Hong Kong, India and South East Asia (Singapore, Indonesia, Vietnam, Philippine and Thailand).

Mr. Chien is a Registered Professional Engineer and Chartered Engineer in USA, UK and Hong Kong. He received a prestigious Shanghai Magnolia Award in 2003 from Shanghai Municipal Government, China for recognizing his exceptional contribution and special devotion to the environmental development of Shanghai. To date, Mr. Chien has published more than 20 technical papers in various engineering journals and international conferences.



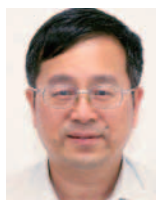
Ta-Hsing LEE
李 大 行

Mr. Ta-Hsing Lee was promoted to Building and Facilities Group Director and Vice President in June 2015 leading Project & Construction Management Department, BIM Center and Electric & Mechanical Engineering Department. Mr. Lee received his master degree in Construction Management from National Taiwan Institute of Technology and has 32 years of rich experience in building construction, turnkey projects, BOT projects, governmental procurement and PCM (Project & Construction Management). Examples of his work include geotechnical investigation work for Zhong-Zhou sewage disposal factory and ocean outfall pipe in Kaohsiung, geotechnical investigation work for Taiwan Power Company transmission tower foundation from the 3rd Nuclear Power Plant to Kaohsiung Port; project coordination and contract management for Hsin Kong Life Insurance Company's 50-storey Hsin Kong Life Tower (then the tallest building in Taipei), contract management for Ta-Chee Resort and Taipei MRT ChungHo Line Project and the 2009 World Games; project management for many universities and/or government agency; general consultant for BOT of CKS (Taoyuan) International Airport and Taipei City link and a feasibility study for the privatization of the Tainan Mass Rapid Transit System. Over the years, he has participated in 24 technical papers published in various engineering journals and research papers.



Tyng-Huar HU
胡 庭 豪

Mr. Tyng-Huar Hu joined MAA in August 2015 as Senior Vice President supervising Structural Engineering Department and Rail Engineering Department in MAA Taiwan. Mr. Hu received his Bachelor's degree in Civil Engineering from National Cheng Kung University in 1977 and master degree in Structural Engineering from National Taiwan University in 1979. From 1979 to 1987, Mr. Hu had served in CTCI Corporation as engineer involving civil and structural design in various projects including Indonesia Factory of China Steel, Petrochemical Plant of Formosa Chemicals & Fibre Corporation, CPC Corporation and USI Corporation. He was also involved in several high-rise building structural design like China Development Financial office building (19 stories). From 1987 to 2015, Mr. Hu had served in Sinotech Engineering Consultants involving various rail systems design projects including Taipei MRT (13 contracts), Kaohsiung MRT and Taoyuan International Airport Access MRT System general consultant phase 1 to 3. Mr. Hu is a Registered Professional Engineer (Civil). He was awarded as "Outstanding Engineer" by the Chinese Institute of Engineers in 2005. He had recognized a variety of technical training including value engineering, PMP and A Class of Labor Safety and Health Program.



Shaw-Wei DUANN
段紹緯

Mr. Shaw-Wei Duann was appointed as Senior Vice President of Administration in November 2014. Mr. Duann received his bachelor in civil engineering from Chung Yuan Christian University in 1977, master in civil engineering from National Cheng Kung University in 1981 and master in geotechnical engineering from University of Massachusetts at Amherst in 1986. Mr. Duann joined MAA Taiwan shortly after his graduation in 1986. Since then, Mr. Duann has participated and led many major projects including North Second Freeway, Geotechnical Characteristics of the Taipei Basin Deposits, power plants, Geotechnical Engineering Specialty Consultancy of Taipei MRT, Taiwan High Speed Rail, and several sections of Taipei MRT and Kaoshiung MRT. Mr. Duann has also undertaken many deep excavation projects and successfully trouble-shooted many geotechnical problems. To date, he has published 27 technical papers. He is a member of the Chinese Institute of Civil and Hydraulic Engineering, Chinese Institute of Geotechnical Engineer, and Southeast Asian Geotechnical Society.



Chung-Ren CHOU
周忠仁

Mr. Chung-Ren Chou was promoted to Deputy Manager of Geotechnical Engineering and Geomatics Department in March 2015. Mr. Chou received his bachelor's degree in Civil Engineering at Chung-Yuan Christian University in 1992 and received his master's degree in Civil Engineering at University of Texas, U.S.A in 1995. Mr. Chou joined MAA as a geotechnical engineer in June 1998. He was involved in the optimum design of pile foundation for Taipei 101, the pile design of E-W Expressway in I-Lan and Taiwan High Speed Rail Contract 220. Other major projects undertaken by Mr. Chou include geotechnical consulting for the Lung-man Taipower Nuclear Plant Project, the study of rock classification & the establishment of engineering database for tunnel case in Taiwan, and the design of station excavation and building protection of Construction Contract CK570E, CK570, CL700B and CG590B, respectively, as well as the detailed design of Design Lot DR148 of Xinyi Line, Design Lot DG166 of Songshan Line, Design Lot DD170 of Tucheng Line, and Design Lot DR149 of Xinyi Line in Taipei Metro Rail System. He is a member of the Southeast Asian Geotechnical Society and Taiwan Geotechnical Society. Besides, he is an AVS-Associate Value Specialist for Value Management Institute of Taiwan. To date, he has authored / co-authored 17 published technical papers.



Chung-Jung YU
游 中 榮

Mr. Chung-Jung Yu. was promoted to Technical Manager of Geotechnical Engineering and Geomatics Department in March 2014. Mr. Yu obtained his bachelor's degree in Civil Engineering at Tamkang University in 1996 and received his master's degree in Applied Geology at National Central University in 1998. His major work includes slope stability, tunnel engineering, rock mechanics, GIS., remote sensing and engineering geology. Mr. Yu joined MAA in 1999 and was assigned to work on the Taiwan High Speed Rail Project Contract C220 design in October 2000. He was then assigned to the Geomatics Department, mainly working on GIS applications and environmental geology investigation. Other major projects at MAA undertaken by Mr. Yu included Zoning of Landslide - Landslip Geologically Sensitive Areas - Nantou County, the Investigation of Potential Debris Flow Torrent in 2012, Investigation on Debris Flow Torrents and Geological Sensitive Area of Debris Flow Disaster and Establishment of Geographic Information System (GIS) and databank on public utilities of Lienchiang County phase II etc. Mr. Yu is a Registered Professional Geotechnical Engineer. He is also a member of the Geological Society of China, the Chinese Society of Photogrammetry & Remote Sensing and Taiwan Professional Geotechnical Engineers Association. To date, he has participated in 11 technical papers published in various engineering journals and research papers.



Chih-Cheng LIN
林 志 成

Mr. Chih-Cheng Lin joined MAA in August 2014 as a Senior Engineer in the Construction Management Department and was promoted to Technical Manager in June 2015. Mr. Lin obtained his bachelor's degree in Construction Engineering at National Taiwan University of Science and Technology in 1990 and received his master's degree in Civil and Disaster Prevention Engineering from National Taipei University of Technology in 2008. During his 24 years professional career, Mr. Lin has specialized in schedule, cost and quality control, design and construction interface integration and management, and project management. He has also basic level, chief and supervisor experiences in both the owner's side and on the contractor's, on the worksite and in office, for public and private construction projects. Major projects undertaken include Ma-chou-hou Industrial Park Development, Fengshan Community Village, Chong-de & Long-sheng Community Village, Shilin Official Residence Urban Lands Collection & Citizen Residence Turnkey Project, Neihu Sports, Science and Technical Park Service Center's Turnkey Project, etc. Mr. Lin is a registered Project Management Professional (PMP) in the USA and a member of the Construction Management Association of the Republic of China, the Chinese Institute of Civil and Hydraulic Engineering and the Project Management Institute (PMI), USA. To date, he has published 5 technical papers.



Wei-Liang LIN

林偉良

Mr. Wei-Liang LIN joined MAA in October 2013 as a Senior Mechanical Engineer of the Electrical & Mechanical Department. Mr. Lin received his bachelor's degree from Tam Kang University in 1982 and his master's degree in Mechanical Engineering from Chung Yuan Christian University in 1988. After graduation, Mr. Lin worked for E & C Engineering Co. from 1988 to 2013. Within this period, major works undertaken by Mr. Lin included cooling load calculations, flow diagram design, plan view layouts, specification preparation etc. for HVAC and FP design in the following projects: Nuclear Power Station, Combined Cycle Power Station, Parking Tower, Incineration Plant, Metropolitan Area Mass Rapid Transit Station, Semi-Conductor Manufactory (including clean room) & General Building. Mr. Lin has over 11 years of working experience in Heating, Ventilation and Air Conditioning system (HVAC) and over 15 years of working experience in Fire Protection Systems (FP).



Shei-Zern JOW

卓學仁

Mr. Shei-Zern Jow joined MAA in July 2014 as a Senior Engineer in the Construction Management Department. Mr. Jow received his bachelor's degree in Mechanical Engineering at Cheng-Shiu University in 1979 and his master's degree in Civil Engineering at the National Pingtung University of Science & Technology in 2007. During his 25 years professional career, Mr. Jow has accumulated a rich experience in construction management for various types of projects. Major projects included Public Works of Beitou-Shilin Technology Park, the reconstruction of Kaomei Bridge, Project #4-1 of Elevated Expressway II in New Taipei City, Tainan High Speed Rail Station, etc. Besides, Mr. Jow has been certified as a Class A Technician for Construction Management, Class B for Lathing Technician. He is also certified in Quality Management of Public Works and Administrator for Labor Safety & Health Management by the Ministry of the Interior. To date, he has published 2 technical papers.



Yuan-Yi WANG

王元益

Mr. Yuan-Yi Wang joined MAA in March 2014 as a Senior Engineer of the Construction Management Department. Mr. Wang received both his bachelor's and master's degree in Civil Engineering from National Cheng Kung University, Taiwan in 1989 and 1991. Mr. Wang has more than 20 years of on-site construction supervision and management experience, involving technology factories, residential buildings, office buildings, public works and MRT projects; In addition, he has also been engaged in contracting and construction budget and is familiar with the progress of the projects, quality control, interface management and stages of the integration work. Major projects undertaken included the Kaohsiung MRT and Taoyuan Airport MRT projects, Fubon Bangdunnan University, Taipei City office buildings, the Hsinchu Science-based Industrial Park and Joe Technology Factory, Danshui Line MRT Taipei main station engineering and underground works, etc. Mr. Wang is a Registered Professional Engineer in Civil Engineering, ROC, a member of the Taiwan Professional Civil Engineers Association and Taipei Professional Civil Engineers Association. Mr. Wang is currently working on the National Taipei University Placement and Youth Residential Building in Sanxia District and serves as Site Project Management Engineer.



Integrated Solutions For Global Impact
MAA GROUP

<http://www.maaconsultants.com>

MAA Engineering Consultants International Ltd.

Room 605, 6F, Opulent Building, 402-406 Hennessy Road, Wanchai, Hong Kong SAR, China
Tel: (852) 2527-0747 Fax: (852) 2861-2081 E-mail: maai@hk.maaconsultants.com

Moh and Associates, Inc.

Oriental Technopolis Building A, 22F, No.112, Xintai Wu Road, Section 1, Xizhi District, New Taipei City 22102, Taiwan, R.O.C.
Tel: (886-2) 2696-1555 Fax: (886-2) 2696-1166 E-mail: maagroup@maaconsultants.com

Taichung Office

7F-2, No. 241, Sec. 3, Wenxin Road, Xitun Dist., Taichung 40753, Taiwan, R.O.C.
Tel: (886-4) 2293-6497 Fax: (886-4) 2293-5911 E-mail: maatc@maaconsultants.com

Kaohsiung Office

6F, No.239, Yixin Yi Road, Qianzhen District, Kaohsiung City 80652, Taiwan, R.O.C.
Tel: (886-7) 536-8800 Fax: (886-7) 536-2200 E-mail: maakh@maaconsultants.com

MAA Engineering Consultants (Beijing) Co., Ltd.

Room 1402-1405 East Tower, Sichuan Plaza, No.1 Fu Wai Street Xicheng District Beijing 100037, China
Tel: (86-10) 8833-7680 Fax: (86-10) 8833-7681 E-mail: maabeijing@163.com

MAA Engineering Consultants (H. K.) Ltd.

Room 605, 6F, Opulent Building, 402-406 Hennessy Road, Wanchai, Hong Kong SAR, China
Tel: (852) 2527-0747 Fax: (852) 2861-2081 E-mail: maai@hk.maaconsultants.com

MAA Engineering Consultants (Shanghai) Co., Ltd.

4F, 2nd Building, No.776, Huai Hai Middle Road, Shanghai 200020, China
Tel: (86-21) 6120-3100 Fax: (86-21) 6120-3058 E-mail: maashltd@maashanghai.com

MAA Consultadoria em Engenharia S.A. Sucursal de Macau / Macau Office

15-G Rua De Ferreira Do Amaral, Edif. Lau Luen 1/F, Macau
Tel: (853) 2852-8787 E-mail: maagroup@maaconsultants.com

MAA Consultants Co., Ltd.

221/1 Soi Prachachuen 37, Prachachuen Road, Bang Sue, Bangkok 10800, Thailand
Tel: (66-2) 975-9300, 975-9310 Fax: (66-2) 975-9312 E-mail: maa@maathai.com

Moh and Associates (S) Pte. Ltd.

#04-09 Golden Mile Complex, 5001 Beach Road, Singapore 199588
Tel: (65) 6295-0611, 6295-0608 Fax: (65) 6298-7653 E-mail: maaspl@singnet.com.sg

MAA Consultants (Myanmar) Co., Ltd.

NO. 30 Ma Naw Hari Street, Dagon Township, Yangon, Myanmar
Tel: (95-01) 222-543 E-mail: maagroup.myanmar@gmail.com

SURV

TAIPEI

Oriental Technopolis Building A, 22F, No.112, Xintai Wu Road, Section 1, Xizhi District, New Taipei City 22102, Taiwan, R.O.C.
Tel: (886-2) 2696-2807 Fax: (886-2) 2696-1782 E-mail: surv.tpe@urbanmatics.com

SHANGHAI

5F, 2nd Building, No.776, Huai Hai Middle Road, Shanghai 200020, China
Tel: (86-21) 6415-9950 Fax: (86-21) 6472-0895 E-mail: surv.sha@urbanmatics.com