MAA Bulletin

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MARCH 2021

OUR WORLD OUR WORK

亞新工程顧問（集團）公司
MAA Group Consulting Engineers

BANGKOK BEIJING HONG KONG MACAU
SHANGHAI SINGAPORE TAIWAN YANGON

Integrated Solutions For Global Impact

MAA GROUP

MAA Bulletin
Issue 65-66 March 2021

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:

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

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ISO 9001 AND LAB CERTIFICATIONS

MAA TAIWAN TRANSITION OF THE CHAIRMANSHIP

A MESSAGE FROM OUR MAA TAIWAN CHAIRMAN

Year 2020: Our World Our Work

The year 2020 is a unique year. 2020 is not only the year that marks the 45 years of MAA Group development of engineering services, but also is the year when the unprecedented COVID-19 pandemic hit the world, turning everything we are used to upside down. This is the year during which we need to do quiet contemplation – contemplation on the impacts of COVID-19 to the world and its transformational implications on how we will live in the future; and contemplation of MAA's core values behind its growth and its readiness to cope with the potential colossal changes brought forth by the pandemic.

The unprecedented COVID-19 pandemic has impacted almost every nation around the world, almost halting all economic activities resulting in new paradigm shifts geopolitically, economically, socially and in human behaviors. Although it seems that the pandemic has negatively impacted what we had been used to socially and economically, it has on the other hand seem to have brought positive impacts to climate changes, depletion of natural resources, and our ecological environments. With this two-pole impacts in mind, we should be asking ourselves, what would be the future roles of civil engineers in finding balanced solutions on how cities are planned, transportation modes are used, trade conducted, energy consumed, food security provided, ecological balance maintained and pollution minimized? These are just some of many questions that we as civil engineers have the responsibility to reflect upon and we need to be ready in the immediate future to provide the innovative solutions necessary.

Hence, this is also the time to go back and question ourselves, who are civil engineers and what are the roles of the civil engineering industry. And these can be done through looking at the history of MAA. We should reflect back to the founding year of MAA in the 1970s and see how MAA had evolved through the different time periods of the 1980s, 1990s, 2000s, and to the present. We should ask, what are the driving factors that made MAA grow from 3 persons to a 1200 professionals engineering consulting group of firms in ten locations throughout Asia?

How did MAA engineers tackle the many technical challenges? How did we contribute in capacity building in Taiwan, Singapore, Hong Kong, China, Macau, Malaysia, Myanmar, Thailand, Vietnam and other Southeast Asian countries? What drove our desires for the perusal of innovation and insistence on technical excellence? What united us to overcome unprecedented office fire, 921 Ji Ji earthquake, and other mishaps? What are the areas that need to be improved? What are the elements needed to form a new generation of civil engineers? I encourage our staff to contemplate these questions. These answers will be the fundamentals and foundations of our abilities to see where our world is and what works we will need to carryout to face the multifaceted global paradigm shifts.

MAA's Non Executive Chairman Dr. Za-Chieh Moh (Left 1), Chairman Richard Moh (Right 1) , Supervisor Shih-Hua Chang (Middle)

CEREMONY

On 28th September 2020, the ceremony of transition of the chairmanship was held at the Taipei office. MAA's management team was invited. Live streaming was set up for a couple of locations, including 2 conference rooms at the Taipei office, Central Office, Southern Office, and Myanmar Office. "The transition of the chairmanship symbolizes the beginning of innovation for the company", MAA's Chairman Richard Moh said. This is the 4th transition of the chairmanship in the company.

MAA's Senior Management Team

NEW OFFICERS

MAA GROUP CONSULTING ENGINEERS IS PLEASED TO ANNOUNCE THE FOLLOWING NEW APPOINTMENTS OF COMPANY OFFICERS EFFECTIVE ON 28TH SEPTEMBER 2020

Moh and Associates, Inc. (MAA Taiwan)

Dr. Za-Chieh Moh	Non Executive Chairman
Mr. Richard J. Moh	Chairman / CEO
Mr. Chung-Cheng Kao	Vice Chairman
Mr. Chen-Hui Hsieh	President / COO
Mr. Shaw-Wei Duann	Senior Vice President of General Administration Group
Mr. Travis Chien	Senior Vice President of Corporate Development Center
Mr. Ting-Chiun Su	Senior Vice President of Engineering Design Group
Mr. Shih-Chang Huang	Senior Vice President of Construction Supervision & Management Group
Mr. Ta-Hsing Lee	Senior Vice President of Building & Facilities Group

亞新工程顧問(集團)公司公告自2020年9月28日起
高層主管異動如下：

亞新工程顧問股份有限公司

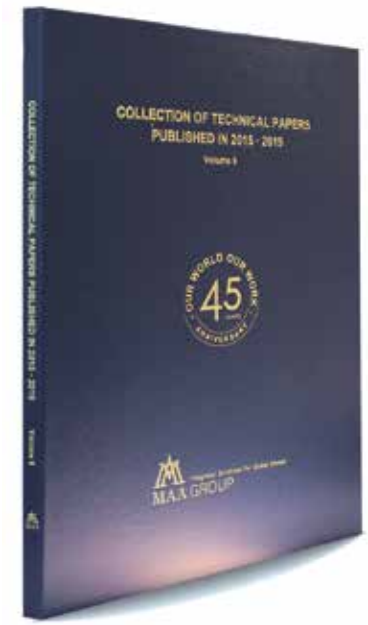
莫若楫博士	總裁
莫仁維先生	董事長
高宗正先生	副董事長
謝震輝先生	總經理
段紹緯先生	總管理處副總經理
簡堯崇先生	企業發展中心副總經理
蘇鼎鈞先生	工程設計群副總經理
黃士彰先生	工程監理群副總經理
李大行先生	建築及設施群副總經理

MAA 45TH ANNIVERSARY

MAA 45TH ANNIVERSARY - OUR WORLD OUR WORK

2020 is a critical year. COVID-19 has upended the world in the most devastating way and forced us to halt activities of all kinds. In the wake of the pandemic, rethinking how the engineering industry could serve the world is a pivotal mission. MAA will not only persevere, but also continue searching innovation solutions to better the world.

MAA 45th Booklet



Volume 9 of the collection of technical papers

As a memory of the accomplishments and contributions made by MAA for the past 45 years, a special booklet was published documenting the breakthrough projects in which MAA was involved.

The 45th Anniversary 承實booklet intention is not only to record down the evolution of MAA, but also act as a reference for us to find the answers. The booklet has been planned for many years and is not a booklet recorded by a third person, but instead is a set of recollection written by our MAA engineers. We would like to thank the editorial team, Mr. Hsiou-Min Chou, Mr. Yu-Feng Chiou, and MAA staff Hsiao-Chou Chao, Jiunn-Ming Lin, Sandra Chen, Sophia Lee, Chantal Liu, and all the engineer contributors for the countless hours put in to gather pictures, record and writing down their memorable moments. We hope that writings by MAA engineers of different generations can portray the importance of 承實 (承擔,傳承,實現).

Volume 9 of the collection of technical papers consists of 63 published journals and conference proceedings from 2015 to 2019, prepared by the MAA Group staff, was recorded on a DVD as part of the commemoration of MAA 45th anniversary.

RECEPTION AND MESSAGE BOARD

A reception was held at the Taipei office for the employees. Two weeks prior to the reception, a blue message board was designed to invite every employee to write congratulations messages on different shades of blue colored note cards and post them onto the board. On the day of the reception, employees gathered around the board to read the notes and took pictures in front of the board. The board was more than just a display or decoration for the venue. Rather, it was the heart of the reception, inviting the employees to reflect on the company's past while embracing the future of MAA.

INTERVIEW: DR. ZA- CHIEH MOH **BY BERLIN CO., LTD.**

In August 2020, Dr. Za-Chieh Moh was interviewed by Berlin Co., Ltd., a renowned paint supply company based in Kaohsiung, for their company's publication. In the interview, Dr. Za-Chieh Moh recapped the challenges during the inception of MAA and how the company established and maintained its reputation in the engineering consultant industry. Dr. Moh emphasized the company values of technological innovation, life-long learning, ethical practices, and professionalism. MAA appreciates and thanks Berlin Co., Ltd for the interview.

The interview article is presented on the following pages.

MAA's Chairman Dr. Za-Chieh Moh (Left 1, Front row) President of Berlin Co., Ltd. Peter Chen (Right 1, Front row)

企業專訪
奠定台灣工程的重要推手
亞新集團莫若楫董事長

莫若楫董事長學經歷

莫若楫董事長1931年出生於上海，浙江湖州人，1953年畢業於臺灣大學土木系，1955年獲美國愛荷華州立大學土木工程碩士，1961年獲美國麻省理工學院土木工程博士學位。莫博士曾任教於耶魯大學，其後任教亞洲理工學院，擔任過系主任、副校長兼教務長，1999年並榮獲亞洲理工學院頒發榮譽博士學位。任教亞洲理工學院期間，莫博士教育無數國內外工程界精英骨幹，迄今仍有許多土木工程前輩尊稱莫博士為「莫老師」。為拓展學術與技術交流，莫博士創立東南亞大地工程學會，並屢次主辦如亞洲區大地工程會議、東南亞大地工程會議、海峽兩岸大地工程會議等等跨領域國際學術會議。1975年，莫博士與兄長莫若嗚博士返國創立亞新工程顧問公司，積極參與國內外各項重大工程，並引進新工法、新技術在國內紮根，目前亞新集團在東南亞地區已經是首屈一指的工程顧問集團，擁有一千兩百餘位具有不同專業領域的技術人員，分公司及關係企業分布於大中華地區、東南亞地區。

亞新工程顧問公司

亞新集團創業於1975年，多年來的經營發展，已逐漸成為亞洲地區居於領先地位的國際工程顧問公司。亞新集團主要是為東亞及東南亞地區政府及私人企業提供包括基礎建設、土地開發、建物結構、環境工程及資訊科技等綜合性國際化技術與管理的全方位專業服務。

為了符合不同業主的各種需求，亞新集團全力整合所有資源，以期能為業主提供最佳經濟性、效益性的解決方案。服務範圍包括工程項目的整體方案研擬、可行性研究、經濟效益評估及適法性分析、工程規劃及設計、營建管理等不同程度面的執行。

目前，亞新集團有一千兩百餘位具有不同專業領域的技術人員，各分公司依地理位置主要分布於大中華地區（北京、上海、香港、澳門、臺北），東南亞地區（曼谷、新加坡、仰光），藉著從事專業活動的溝通與互動，將這些地區緊密的結合創造一個共同體，建構分享一個完整的專業服務網絡。

「臺灣高鐵」是近幾年逐漸帶動起臺灣一日生活圈的重要因素之一，貫穿臺灣西半部的高速鐵路，讓你我生活變得更親近。這期企業領袖專訪的公司，便是擔任設計高鐵承包案的最大功臣——亞新工程顧問公司。為了此次專訪，搭上高鐵由左營前往最北站－南港高鐵站之後，就驅車前往位在汐止的亞新工程顧問股份有限公司，亞新的辦公

室位在東方科學園區大樓中，乘著電梯到達亞新所在樓層後，電梯門打開後映入眼簾的是氣派又不失典雅的服務台，因應新冠肺炎疫情，由接待人員細心的為柏林的同仁一行人量完體溫、登記完成後，就帶著我們前往董事長辦公室，準備專訪我們本期企業領袖代表－莫若楫董事長。甫進到辦公室，就聽見莫董事長親切的問候「大家好，歡迎你們來到亞新！」莫董穿著一身合宜的西裝迎接我們，述說著因前陣子不小心弄傷腳，所以在行動上須借助手杖，還請我們不要介意，莫董的禮貌與態度就讓我們專訪的同仁們在專訪前就先上了一課。

逆境中求學　更顯堅毅

回想起當初求學過程中的艱辛，「那差得可多的呢」莫董思考一下如此說道。當初從南京金陵中學畢業後，考取了北京燕京大學（現今北京大學），不料才讀了兩個月便遇上第二次國共內戰，在民國 38 年間輾轉搭上最後一班國內航線，從北京飛往上海，後續再跟時任交通部主任秘書的父親一起來臺灣。來台之後重新考取了臺灣大學土木系，當時大學入學制度相比現在還要難，臺大工學院中最為著名的不外乎會聯想到「土木工程學系」，在那時的錄取率不到一成，報考人數都是在六百多人呢！自臺大畢業後，莫董事長即前往美國愛荷華州立大學 (Iowa State University) 攻讀碩士學位，當時沒有獎學金制度，只能擔任助教一職，每週在實驗室工作 20 多個小時，半工半讀持續了一年多之後，心想應該出來做點實務工作，於是暗自在內心下了一個決定——只申請一間學校，繼續攻讀博士學位，如果沒有申請到就開始工作，後續錄取的這「唯一」一間學校也就是影響莫董甚深的——麻省理工學院 Massachusetts Institute of Technology(MIT)。莫董笑著說當初遇到很多機遇都非常幸運，除了遇到當時美國著名的教授外，更申請到獎學金，同樣維持半工半讀的形式，儘管一個禮拜工時長達 30 小時，還能兼顧課業的進度。到了最後兩年在寫論文之前，因為不想一直被關在學校這個「象牙塔」當中，儘管系主任多次勸阻，仍擋不了莫董想加強實務工作能力的決心，接下來的兩年內，更用心在實務與學術並進，果然成功寫完論文順利畢業。

改變自己、改變後來的轉捩點

在一邊做事一邊寫論文，是在 Woodward-Clyde-Sherard and Associates 擔任工程師，這間當時在美國是一家很具規模性的大地工程顧問公司，在這裡的兩年中，做了許多大地工程調查及累積實務工作經驗，此時莫董又思考著是否有機會可以重回學術界。機運使然進入耶魯大學土木系，教授了四年左右的大地工程，有一天在哥哥那邊接到來自美國援外總署的研究單位的一通電話，詢問莫董有沒有興趣前往曼谷，就此開啟這段在泰國亞洲理工學院（Asian Institute of Technology， 簡稱 AIT）長達 11 年的杏壇時光。這段期間培訓出一批批專業的工程人才，很多當時臺灣的重要工程幹部也都是出自於曼谷 AIT 呢！

創立亞新　扎根臺灣工程界

在曼谷 AIT 加速發展時，莫董也從教職工作擢升為副校長，不過在事務

工作越來越繁複之下，莫董與哥哥（莫若礪）開始思考如何加強實務經驗，經過多方考量後兩人決定偕同一位得意門生一同回臺，創立「亞新工程顧問公司」。公司成立初期很難拿到案子，「亞新不像柏林有自己的產品，因為顧問公司賣的都是 know-how」莫董與我們津津樂道地分享，亞新有一件很有意思的特殊工程案件－台北松山機場跑道緊急搶修。當時 (1977 年) 松山機場是台灣唯一的國際機場，「你們都太年輕了，沒有遇過那個情況」莫董對著大家說。當時跑道處處都是沉陷，很多單位都在抗議，極需要找到適合工程單位緊急搶修，基於松山機場是當時唯一的國際性機場，不能夠隨意停飛，於是莫董向當時民航局局長提出一個想法——評估建議書 (proposal)，讓有能力的公司來提建議書，再從中選擇合適的公司。憑藉著大膽的判斷，加上學術與實務經驗上對於整個土壤做出專業的評估，亞新擺脫以往需要超過兩個禮拜時間的工程，僅僅用六個小時完成重新搶修的工作，完成一塊 6mX6m 的道面換置，包括混凝土道面、級配及土壤基礎的重置，亞新的團隊運用非常多事前試驗及相關的評估。當初動員上百工人，整組人馬採軍事化管理，徹夜嚴格管控每一個工程的細節，不過在工程執行當天卻偏偏又遇上了颱風！如此嚴苛的施工環境之下，亞新團隊漏夜搶工，終於在清晨六點鐘準備迎接第一班飛機降落，所有工程團隊、包含民航局長官通通屏息以待，一同見證這一刻，當飛機順利降落在跑道上並逐漸滑行停止後，所有人員為了這場「勝仗」無不歡欣鼓舞。這樣的工程現在沒有單位敢批准，莫董非常感謝當初包含政府各單位的配合及信任，也因為有這股 GUTS，才能在臺灣做出如此傲視群倫的工程！

打造工程顧問服務的專業形象

臺灣以往許多大型公共工程，都是限定由幾間大型工程顧問公司來承接，但這不一定能夠找到擁有適當技術的工程公司，於是莫董提出使用 proposal 的模式來進行工程單位的評估，也因為推動發包前提出 proposal 的概念，亞新才有機會開始跟幾家大型工程顧問公司進行齊頭式的良性競爭，透過專家評委，檢視各公司呈上的計劃書，並從中選出擁有最恰當的 idea 或是設計，才委任進行工程設計。復興北路機場地下道工程也是藉由提案才讓亞新爭取到工程設計的機會，莫董謙遜地說：「亞新這一仗應該算是滿成功的」，亞新以一個完全百分之百的民營公司，沒有政府任何支持的情況下，的確是創下非常不容易的一個紀錄。在工程設計當中，其實「創新力」非常重要，但創新也不是亂做就算數的，需要在事前做相當多準備工作，畢竟一個工程案需要非常謹慎地注重細節，如果沒有使用計劃書進行更專業的技術評估的話，很多廠商會開出低價來進行搶標，這樣對於工程的執行上是會產生很大問題的，更可能導致危險工程的後果。目前在兩千萬以上的工程案，很多必須要預先設計出施工建議書給業主評審，每一本 proposal 也都是要耗費百萬元以上經費去研究撰寫，在美國寫 proposal 不難，只須大致呈現所要建構的雛型、概念即可，但現在我們寫的 proposal 不簡單，有些甚至是要預先呈現出 1/3 的工程設計呢！透過多年來編寫 proposal 的實務操作，也讓亞新爭取到臺灣高鐵這樣具有代表性的工程

案，當初 12 標當中亞新就爭取到參與 10 標的機會，這可以說是相當驚人的成績呢！其實每一個工程都有很多細節是不一樣的，即便都屬於捷運系統，每一條捷運經過的路線不同，也會影響每次工程設計的細節。現在做公共工程最有困難的一個問題點，就是政府效率非常有限，時常發包案子要請我們設計工程，當工程都確認設計完畢，可能連最基本的地權都還沒有申請完成，這當中就會有非常多不必要的資源浪費產生。其實公共工程也是在民主制度下比較難以兩全的一個問題點，譬如像美國建設高鐵的議題，就會遇到很多正反不一的意見影響工程進行；除了高鐵之外在地鐵也是有一樣的問題，亞新在洛杉磯原本也有爭取到地鐵工程，但是前後經過了三年多，後來決定撤出該工程案，一方面是因為政府推動力道反反覆覆，另一方面也是因為在外國的工程會無形中增加許多成本。

找到激勵　勇敢創新

在柏林當中，總經理 Peter 也常跟所有同事分享，創新需要建立在一定的技術上，擁有技術後更需要的是找到促使你創新的 inspiration（激勵因子）。關於「創新」，莫董事長有不同的看法，所謂創新的激勵因子有很多時候是「機遇」，當機會來臨時，有能力我們就多多去嘗試，當機會還沒到來之前，我們就踏實地做好本分。譬如以亞新為例，其實很多工程可以拿到的利潤相當少，因為很多時候我們必須要先投入資金在學習新的技術上，我們必須得要修正一個想法，今天亞新做工程的目的不是為了要賺大錢，在工程顧問這門專業上，真正能夠發財的其實非常有限，甚至很多都是做到後來卻變成是把公司經營到一個程度後，變成在交易公司，把做工程顧問的初衷忘記，反而變成像在做生意。當時有很多重要人物，他們一心只想到該如何做好當下的事情，如何再加強創新的力量，但現在不比以往，多了諸多受限於法令的部分，反而會有很多事情沒有辦法處理。在那之後其實也是有許多工程顧問公司竄起，只是現在很多都已經歇業了，因為就像前面所說的，還是很多公司是以賺錢為主，這些公司都沒有一定的實力去跟大型企業抗衡，所以現階段在臺灣的諸多民營企業跟許多國營事業體相較之下，還是會有許多不甚平等的地方。Peter 認為創新是企業成長唯一的信仰，做生意跟做企業是兩件完全不一樣的事情，這當然對於企業領導人也是一種抉擇。「現代大多數的人都還是要看到有『實際產品』比較習慣」莫董提起他看了柏林的網頁，認為柏林的優勢在於擁有自己設計生產的產品，要善用這個優勢再去做創新，但是亞新沒有這種優勢，就是專門協助提供一個設計概念跟建議，後續得要有業主跟施工單位願意接受才行。要完成一個工程設計的建議書，除了要具備一定的技術、知識之外，莫董從當初在 AIT 教學一直到現在創立亞新，經過投身在工程界上努力數十年的經驗下來，深刻體悟到空有知識能量不夠，如果環境沒有提供適合成長、發揮的空間，也沒有辦法有所提升。

另外在公司經營上，該如何建立一個獎勵制度，鼓勵同仁們持續以技術為本、創造持續創新的文化呢？莫董提出亞新的做法，公司不斷往前邁進的過程中，盡力回饋給同仁，針對公司章程也逐步進行修改，希望在利潤的分配比

例上，能夠讓員工們都能依照其努力的程度獲得相對應的獎勵，可以讓這些同仁們對於公司整體更有信心與向心力，現在有一百多名員工，都持有亞新的股份，能夠跟隨公司的腳步一同成長！亞新在設定目標方面，並沒有硬性規定，但是會鼓勵同仁們可以不斷精進。在工程上我們並沒有申請專利，因為在大地工程界當中，需要可以有更多專業知識進行共享，唯有透過更多更廣泛的知識共享，整個工程界才有可能不斷往上提升。亞新也鼓勵做比較創新的技術，例如 BIM（建築資訊模型 Building Information Modeling），在臺灣來說亞新也算是這塊領域的先鋒，我們沒有很多資金可以操作，但是這兩年下來，亞新同仁在工程案上的發表還是明顯不讓這些大公司的。

善待同仁　培養正確工作態度

柏林在因應目前疫情情況下，沒有做出減薪或是無薪假的政策，即便遇到這波疫情影響整體市場經濟衰退，柏林還是希望可以維持住員工們基本的薪資及福利制度。亞新針對這次疫情衝擊之下，一樣沒有裁員、減薪或是無薪假等行為，透過與政府政策的配合，在第一波群聚感染爆發後，先依照政府公佈的群聚地點，請有去過相關地點的同仁在家進行自主隔離，同時公司照常給付薪資，有許多同仁即便是在居家隔離期間，也是會把握時間協助處理公司事務，同時亞新也提倡同仁們應該隨時注意政府警示地點，減少外出或到人多的地方。當然在第二次的警戒地點公佈後，因為持續有在提醒，當然就沒有提供那些不聽勸阻，仍前往警戒場所的同仁們有居家隔離給薪的福利了。亞新把同仁的健康放著第一，因為亞新善待所有同仁們，這些同仁自然會更願意為了公司付出更多的努力。有一句話這麼說「留得青山在，不怕沒柴燒」，唯有擁有健康的身體，未來才能夠跟公司一同成長。即便如同前面所提，現代社會觀念逐漸轉變成為以物質為主，針對亞新招攬人才上莫董有著不同的想法，如果公司跟員工之間的價值觀偏差甚大，亞新其實比較不會強留員工，畢竟在後續的合作上可能還會產生諸多問題。但有很多細節、態度其實在面試的時候就可以看出一些端倪，可以透過一些問題去了解面試者內心的想法、價值觀，才不會等到正式錄用後才發現彼此觀念不一。最近莫董對這點剛好有一些感觸，少數同仁進來公司三個禮拜左右就離職了，這些人可以跟他進一步溝通討論後，了解他實際的想法，就如同當初莫董在學校面試學生一樣的道理，曾經有一位臺大第一名的學生來面試 AIT，因為學校有提供全額獎助學金，面試過程中莫董相當有自己原則，也不因為他是臺大第一名的學生就直接認可，談話過程中詢問這位學生「既然你是臺大第一名，你一定也有申請其他間優秀的學校，假設我們 AIT 跟其他間美國學校都給了你 offer，你會怎麼選擇？」因為 AIT 是從八月份開始新的學期，但美國學校是從十月份開始。聽到這個問題後學生想也不想地回答「這非常好，這樣我既可以有免費機票到泰國遊玩兩個月，又可以在後續繼續就讀美國的學校！」聽完這番話莫董內心馬上就對這位學生的態度打了折扣。「我們寧願這個學生才能稍微差一點，但是願意靠著勤奮、努力來補足那些學識上的不足，這樣的人才是未來的可造之材。」果真

AIT 出來的校友，很多後來都是成為各個國家重要的人物，由此可知「態度」才是影響人生最重要的因素。

學海無涯　永遠保持學習心

一個企業，需要訂下一個大目標，要能夠讓公司文化「再塑造」，透過同仁之間互相學習彼此優點，如同論語里仁篇中所提：「見賢思齊焉，見不賢而內自省也。」透過互相良性競爭，共同成長並建立出好的文化，讓適合的人、努力的人，能夠有對的方式去獲有他應有的回報，成為良性的循環。因為要讓大家能夠帶動這樣的觀念，現在很強調除了「學習」之外，要能夠更加卓越，也就是「青出於藍勝於藍」的概念。如同做工程上的設計，有很多規範實際上很難做更動，但是我們就得要在各種不同的工程環境下「多思考一點」，能夠去找到國內外更多新穎的技術、資訊來輔助工程設計。現在大環境要突破的確不容易，很多東西不是幾個人努力就會有成果的。必須得要有一個團隊，擁有相似的想法，透過集思廣益才有可能有新的 idea，莫董也鼓勵員工不要害怕失敗，認為有初步想法就去嘗試，透過溝通後讓主管階層都能夠即時了解進度，莫董這邊也會透過聽取不同工程的簡報來適時給予建議。專訪至此，才發現原來莫董事長現在仍舊每天上班八小時，保持著高度積極的心態學習許多事物，「很多東西對我來說都是很新穎的」九十歲高齡的莫董每天仍舊不斷閱讀，從現有的一些雜誌、書刊等，從中找尋一些實質上可能對公司有所幫助的一些知識，再將相關的技術、知識等，提供給所需單位的幹部們去進行研討，身為後輩的我們更應該學習這份精神。面對著現今科技不斷發展，有越來越多創新的科技、AI 技術等，儘管對於工程、諸多產業面衝擊性很大，但莫董鼓勵同仁盡量去學習，同時也派同仁研究相關新的技術，例如「無人飛機」，實際上臺灣工程有運用到無人機的就屬亞新為先鋒，目前亞新有 6 架無人機，很多不同的 project 在初步規劃時，就用無人機去進行整個環景的拍攝，施工之後就也可以使用無人機搭配，在週遭環境進行即時狀況的更新。另外也舉 BIM 為例，有時候莫董會去了解現在趨勢上有什麼新的技術，接著就會邀約幾位工程師一起研究，會依狀況分配不同的時數，讓工程師進行相關 paper 的研究，後續再一起做簡報討論。莫董分享他對於公司的責任就是協助工程師成長並「給予正確方向」，再由這些工程師仔細琢磨、培養出新的技術能力，如果過程中有發現一些問題，我們會再依據遇到的困難點提供建議，包括相關書籍，甚至是介紹該專業領域上的教授、學者等，讓工程師可以做自主深入學習，如果工程師在設計想法會有一些不同時，再開會共同討論，以實務的經驗去輔助，除了可以讓專案更順利之外，更能讓團隊的成員都能在自己的能力、經驗上再提升。

桃李滿天下　邁向國際化的企業拓展

亞新在泰國、中國、緬甸都有公司，當初為什麼會選定這些國家設立分部，莫董又把話題回到起初提到的「機緣」。當初莫董在泰國擔任教職長達 11 年，這 11 年的耐心耕耘，帶領出一批批對工程懷抱熱忱的學生們，所以最一開始就是由泰國的一些畢業生共同開創這個舞台，幾年之後當地的學生想回到自己的國家，亞新再看有沒有機會，讓學生將

亞新的技術能量，帶回到自己的國家，後續才會成立其他分公司。另外在緬甸比較特別，是政府單位直接找上亞新，請亞新幫忙建立當地的工程系統、品管制度等，雖然每個國家有所差異，但相同的是亞新都有培訓出當地一群專業的工程師。談到國際化的分工，如何在不同國度當中，找出亞新適合當地的營運模式，這一點相信許多人都相當好奇。莫董以最新成立在緬甸的公司為例，主要由臺灣派人過去，帶著一批當地的人才進行培訓，現在當地有 3 位臺灣的幹部，其他 20 多位都是當地培育出的人才。很有意思的是在仰光的政府工程部門，會直接把很多工程的標案直接交給亞新，沒有透過什麼招標的程序，其實這也是有好有壞，這些工程的層次可以說是參差不齊，但是就是透過讓亞新統一提供服務，等同亞新幫忙仰光當地的公共工程建立起一套「QA&QC」制度。

尊重專業　推崇工程倫理

臺灣現在的問題就是政府對於專業技能所訂定的報酬比率 (percentage) 太低，相較美國甚至不到 1/3，一件工程案承包下來，在工程設計上可能只分配到總成本的 1%，訂定規範的單位通常會說「工程顧問公司缺乏實務經驗」，所以沒有辦法在成本上分配太多比重給工程設計公司，這一點反而是本末倒置的。但是莫董提到在臺灣還好有一個優點——「銀行借款利息低」，很多時候都是先跟銀行借款來進行工程設計，可能經過兩年後才能拿到工程設計款項，透過銀行利息低的優勢，可以讓顧問公司有能力負擔；假如在 25 年前的臺灣利率，真的沒有辦法負擔得起。很多工程案是完工之後，還沒辦法拿到款項，這是非常不合理的事情，這些業主單位會有一個想法，「你雖然設計完了，但是還是要等我施工完畢之後才可以支付你」，有一次莫董也不客氣地反問他「這樣你平常工作是不是也會不拿薪水？還是要等到每一次工程案結束後才拿呢？」如此豪爽的問法，讓專訪團隊再次感受到莫董的直率。回歸到技術官僚體制的問題，因為一開始的錯誤觀念，導致很多政府單位用了錯誤的觀念去制定相關制度，這就違反了所謂的「工程倫理」。什麼叫工程倫理？有些人說工程倫理是先進行完整的顧問式服務，再進行後續的建構，但莫董卻更強調是在政府機關應該要給予適當的誘因，在一次國際會報中莫董提出，目前在全世界工程界中，美國表現得最為恰當，政府機關對於公共工程的態度，能夠思考到這些工程設計是有其專業性，既然有專業性就應該給予適當的報酬，不會因為工程設計沒有實際施工或是其他理由來積欠該給的款項，這篇文章不單只有國人看過，有來自全球各地的閱讀流量，可見很多開發中的國家也都開始重視關於「工程倫理」的議題。

顧問式服務的精髓

未來的世界一定是資訊化程度越來越高、AI 智能發展越來越成熟，技術成分也會越來越密集的文明，在工程顧問當中，是非常著重在知識與資訊領域上的發展，如何在業界當中時常保持足夠的技術能量？莫董提出亞新的做法，針對新技術，會花費一定的金錢、時間，去深入做研究，很多時候同仁會提出需要採買較高配備的設備、電腦的需求，了解原因後，莫董會二話不說地批准這些需求，他也理解設備是用來輔助

公司，以便在未來可以爭取更多創新的project、創造更高的利潤，這種必要成本本來就是一種有價值的投資，而不是一種浪費。莫董也期望亞新在新的領域、新的technology，或是跟AI智能有關的技術層面上，能夠成為在業界中不斷學習的角色。當初建立「亞新」這個名字也是希望能代表「亞洲新技術」，面對工程顧問這一門真功夫，莫董相當肯定地說這一定沒有辦法輕易被取代，因為工程施工當中，還是有太多因素需要靠人在實務上經驗去做判斷，並不是說單純施工就能輕鬆完成工程，還是得要依靠專業技術人士的判別，促使整個工程可以隨時維持在最佳效率上，沒有辦法完全只依靠機器的運作，這是顧問服務一個很重要的差異點。譬如說大地工程，很多人會覺得現今科技發達，可以依靠電腦來進行設計、演算，十個當中幾乎有九個會發生失誤，不是over-design就是under-design，如果一個工程師沒有去把每一個細節了解到透徹的話，一般的工程還不會有什麼大問題，但是稍微遇到比較有挑戰性、變化性的工程，他就會開始處處碰壁，這些專業技術經驗及學識不是機器能夠比擬的。機器也是需要靠工程師輸入恰當的指令才有辦法進行運算，莫董最常講電腦設備是「Garbage in, garbage out!」所有的工程設計是善用科技、設備，加上最重要的經驗，來讓工作變得更加有效率及完美，而不是一味地依賴這些設備來做事，否則將來人類就會越來越沒有價值。因為亞新在顧問式工程服務已經是非常具有經驗的領航者，對於未來柏林要在防蝕上做到顧問式的服務，莫董也不吝嗇給予許多珍貴的意見，以工程管理來說，有時候人家會說工程管理跟監工人員沒什麼兩樣，監工是依據工程圖來監督整個工程的進度，但是工程管理實際上是協助施工單位在一些特殊工法、施工技術等，提供更正確、更有效率的建議。假設未來要往防蝕顧問工程服務發展，也期望柏林可以運用以往累積下來的防蝕施工經驗，以更全面、更專業的建議去提供給施工單位，畢竟顧問式的服務就是建構在穩固的施工經驗，搭配能夠依據現場條件調整的能力，給予施工上最強大信心的重要服務。

遵循八字訣　打造企業不凡氣度

聽完莫董對於工作的態度與精神後，非常好奇莫董是不是有屬於自己的座右銘，只見他緩緩拿出手邊的一張早已準備好的手稿，氣定神閒地對我們分享八個字「創新、敬業、負責、倫理」。創新就如同前面所說，要不斷累積自己的技術能量，再從團隊的集思廣益中擷取靈感，迸發出新的火花；敬業就是面對一件事情，規規矩矩地去做好；如果在過程中發現有缺失，要盡全力去改正、優化，讓事情能夠有始有終，這樣才算是負責任的態度；至於「倫理」，則是伴隨著整個產業永續發展重要的因素之一，舉例來說，以往施工是用價格來決定，工程顧問公司同樣也是如此，但現在風氣逐漸開始轉變，改為評估一間顧問工程公司的idea及整體設計特點，以能力來取代價格取向，這也是一種工程倫理。有些人只是為了要拿到標案，不惜用殺價搶標的方式，這種單位就算拿到標案也不會好好去做，其實倫理包含的非常廣泛，譬如說不同工程顧問公司之間的競爭，在良性競爭的狀況下，不同公司的作法會有所差異，但不

能用薪資或其他利益手段去進行挖角，這會在產業鏈當中發展出不佳的倫理風氣。

走過海內外產業發展數十年的莫董事長，對我們這些後輩們來說，儼然是一本擁有諸多故事及珍貴經驗的教科書，莫董也鼓勵我們，平時就是認真地做事，遇到不懂的事情，就可以盡量去發問、去學習，懷抱著不恥下問的精神，即便遇到比自己還要小的後進，只要他們身上有值得我們學習的事，就盡量去學習。在本份上不斷精進，學習新知，千萬不要故步自封、對於現有的成就感到滿足，更不能萬事都把金錢、利益當做第一。亞新集團非常強調一個字「ASSET」，並提倡要使業主發自內心認為顧問公司是他們珍貴的資產，如果顧問公司能夠被這些業主或公司所重視，彼此能夠互相尊重，就能為了共同的權益著想，亞新一直以來就是以成為工程業主的珍貴資產為目標，「創新、敬業、負責、倫理」這八個字也可以說是莫董帶領亞新不斷前進的重要原則，莫董在專訪尾聲仍然不忘勸勉柏林所有同仁，如同他當初回到臺灣投入工程界的初衷，希望每個人都可以在自己的產業當中不斷精進，設定目標後就要乘風破浪地前往，凡事都需要靠自己努力去爭取，因為你不會知道機會什麼時候會降臨，唯有在機會來臨之前就作好萬全的準備，就能夠擁抱每一段「機緣」，祝福大家都能創造屬於自己精彩的人生。

結束了此次專訪之前，柏林同仁們駐足於莫董事長偌大辦公室中的諸多擺設前，這些都是莫董事長數十年來在工程界中耕耘的點點滴滴，其中不乏與當時泰國國王、政商名流等合照，也有從泰國 AIT 一直到回臺後陸續獲得的獎章、獎盃等，每一項榮耀彷彿都為莫董事長見證他在工程界的付出。從學術界一直到拓展亞新企業版圖，一路走來莫若楫董事長在國際間建立了良好的人脈關係，也在國際工程界中建立了一套適切的建議書制度，同時不斷地追求技術再提升、更周全的顧問式服務，即便已經是九十歲的高齡，仍然維持每日至公司報到，懷抱努力不懈的學習心，將每一件事情做好，從細微之處成就人生的真善美。秉持著對於工程顧問服務的堅持，讓莫董事長享有「臺灣大地工程界教父」的盛名，在臺灣高鐵、捷運等公共建設擁有豐富經驗的亞新，相信未來一定能夠憑藉著工程設計上獨到的專業能力，讓臺灣的工程實力能夠在國際間發光發熱。「與君一席話，勝讀十年書」透過這次專訪也讓我們更加了解莫董事長的處世精神，在企業不斷追求進步的同時，更要注重倫理的重要性，也期許柏林每一位同仁能夠跟隨公司成長的腳步，讓柏林能夠在防蝕界中，效法這股對於顧問服務的毅力，以踏實的腳步闖蕩出新的一片天！

圖為莫若楫董事長（前排左一）與專訪團隊合影。（前排右為陳哲生總經理、後排由左至右依序為簡阿松經理、徐智輝經理、吳忠民經理、刊物編輯張育瑞）

COVID-19 **RESPONSE**

The Covid-19 pandemic was declared by WHO a global pandemic in March 2020. Although the pandemic has been well controlled in Taiwan, everyone is still exercising caution and aware of the high rise of an outbreak. MAA's Covid-19 Prevention Task Force was formed to develop strategic solutions from the very onset of the pandemic. The task force has a wide range of duties, which include, but not limited to: tracking the pandemic situation daily and present it to the senior management team weekly, sending pandemic alert emails to inform the employees about pandemic-related policies and government announcements, and conducting surveys to keep a record of employees' travel and contact history weekly.

Latest COVID-19 news and regulations are displayed on the screen at the entrance

Body temperature camera is set up at the entrance of the office

Apart from the above initiatives the task force has been taking, the IT Center, HR Department, and General Affairs Group also have been taking actions to support the safety of the employees the pandemic requires. The actions include: (1) carry out external communication via on-line meeting whenever needed, (2) prepare the tool and standard procedures for employees who need to work-from-home, (3) prepare remote access for necessary design and project software, (4) rearrangement of office work space to avoid close contact, (5) set up infrared temperature sensor and automatic alert system, (6) real name registration for all visitors, (7) workplace disinfection and sterilization, (8) group buying for masks and alcohol disinfectant are available.

Guests are prohibited from entering the work space

As an engineering consultant company, MAA believes in creating a better environment for the world and by providing clear guidelines and proactive measures, we can prevent the spread of Covid-19.

ADVANCED **ENGINEERING UNIT** ESTABLISHMENT

To meet the demands of ever-changing markets, continuing generate and transform innovative ideas into sustainable solution, and lead the way with the solutions in new realms of engineering discipline, MAA launched the Advanced Engineering Unit (AEU) in January 2020. As one of MAA's divisions expected to carry on the legacy that started the company, the goals of AEU are making difference by inspiring innovation through design and system thinking approach, bridging the gaps among specialty departments, and bringing sustainable impacts to the company with new mindset and paradigm.

Monthly Design Thinking Workshop hosted by Dr. Chao, Manager of Advanced Engineering Unit

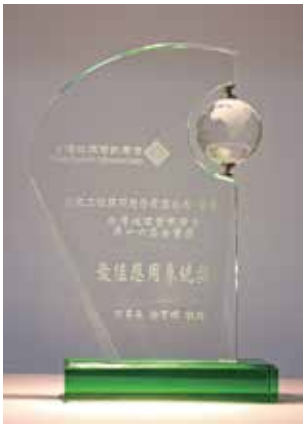
For making difference, the design thinking workshop is held monthly at the MAA multifunctional room where a creative space and environment are designed for interdisciplinary teams composed of personnel from all divisions to present and discuss their findings on new skill, new procedure, new solution, and emerging opportunities. Combining approaches of design thinking, system thinking, data analytics, and lean start-up are adopted in the workshop for attendees to generate, structure, and select ideas. A prototype based on the selected ideas is thereafter regularly created and tested for triggering changes, preparing the organization for a new mindset, and making necessary transformation. For bridging the gaps, AEU collaborates with MAA Academy, Digital Engineering Development Department, and project teams or people across departments in the Company on an ad hoc, agile, and networked basis via the activities such as risk management, project review, and project conclusion report. For bringing sustainable impact, AEU continuously supports enhancing the technical competency and developing new techniques to meet the demand of changing markets under the Company's technology strategy. AEU also assists applying proven approach in new ways to advance project performance in the aspects of rigors, effectiveness, and quality of delivery. Through dealing with uncertainties, participating in the development of multidimensional business model, researching solutions, recognizing and shaping opportunities for future challenges, and endeavoring to necessary organizational transformation, AEU plays an important role in making sustainable impact to the Company for the future.

MAJOR **AWARDS**

TAIWAN GEOGRAPHIC INFORMATION SOCIETY (TGIS) GOLDEN MAP AWARDS FOR BEST APPLICATION AWARD - THE IROAD SYSTEM

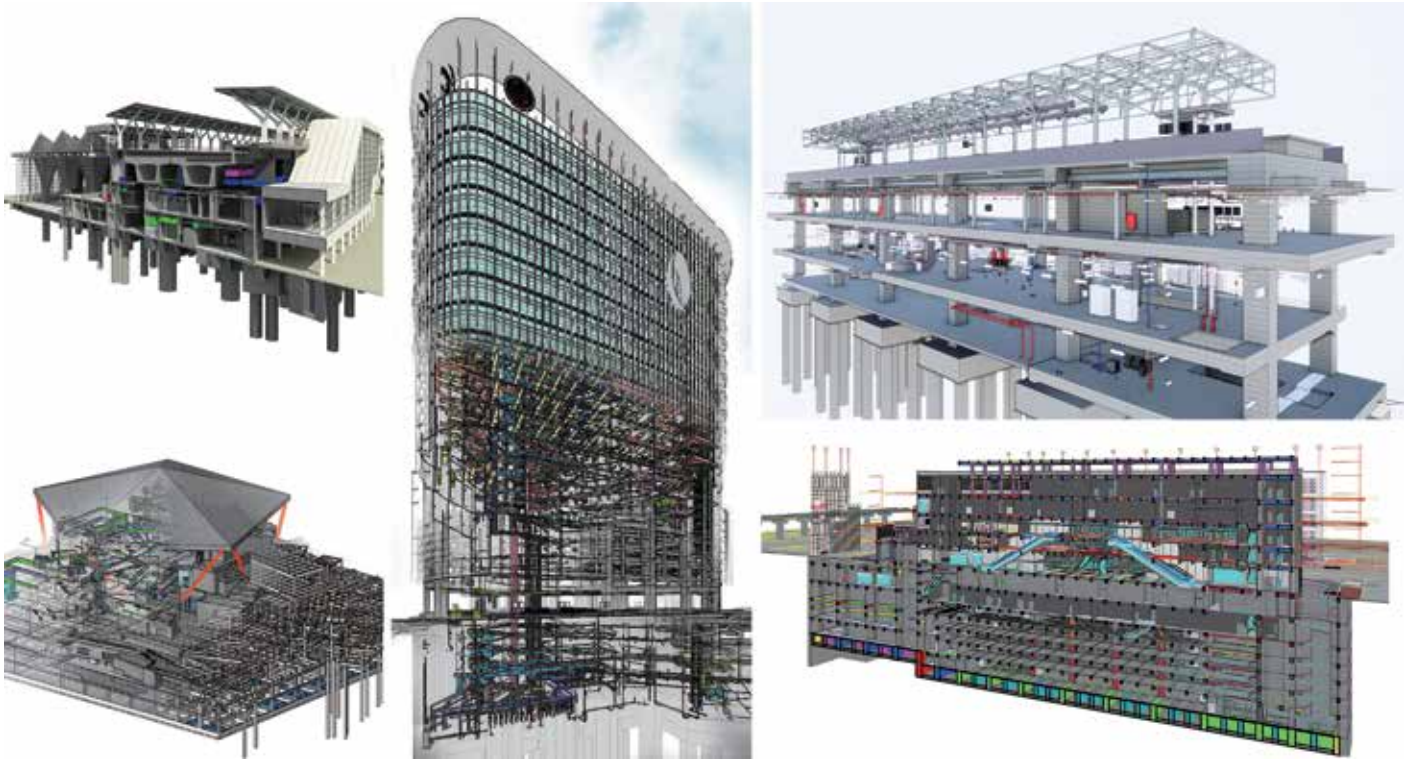
MAA received a certificate of appreciation from New Taipei City Government on 16th July 2020 and Taiwan Geographic Information Society (TGIS) Golden Map Award for Best Application Award on 10th December 2020 for the iRoad System.

The "iROAD System" integrates the originally decentralized individual management system into an interconnected, intelligent road management and control platform management system designed for New Taipei City. In addition to an emphasis on improving roadwork quality, it also further integrates road maintenance management, public utility map and asset establishment, disaster prevention and relief management, transparent governance, and facility management into a single platform. The iROAD system also uses intelligent management as a means to systematically handle complex roads management issues, improving the overall effectiveness of road quality management.



CONSTRUCTION TECH REVIEW -2020 TOP 10 BIM CONSULTING SERVICE COMPANY IN APAC (THE ASIA-PACIFIC)

MAA was recognized by Construction Tech Review as a Top 10 BIM Consulting Service Company in APAC (The Asia-Pacific) for 2020. Published from Fort Lauderdale, Florida, U.S., Construction Tech Review is a magazine that covers leading construction companies and their technological knowledge in the construction industry. MAA is honored to be featured in The Construction Tech Review special edition of Building Information Modeling BIM APAC.



MAA's BIM selected projects

TOP 10 BIM CONSULTING/SERVICE COMPANIES IN APAC - 2020

MAA Group Consulting Engineers

Breaking Down Traditional Information Silos in BIM

Dr. Za-Chieh Moh,
Chairman of MAA Group

The rapid international expansion of BIM (building information modeling) is facilitating new ways of breaking down traditional information silos between project team members and generating exciting new opportunities for improving efficiency and productivity, along with project outcomes. While traditionally, the focus has been on the "M" ('modeling') of BIM, the world is now seeing a rapid shift to focus on the "I"—information. As a result, enhanced data communication and coordination among various project stakeholders, coupled with improved construction productivity, is now providing a leading edge to the BIM users such as various AEC (architecture, engineering, and construction) industry practitioners.

Consequently, the BIM software tool is becoming exceptionally popular among end-users owing to its lucrative advantages such as increased return on investments (ROIs), time- and money-saving. The high cost of software and a limited number of trained professionals, however, are hindering the market growth to an extent. Moreover, given the early stage of BIM technology, many organizations are not familiar with BIM software and operation. To overcome these hurdles and move into the future of building and AEC, what organizations now need is an experienced partner who can help them reap significant benefits of BIM solutions. At this juncture, the BIM consultant that cuts above the rest is MAA Group Consulting Engineers.

MAA is one of the promising engineering service provider in the East and Southeast Asian regions carving its niche in the areas of infrastructure, land resources, environment, buildings/facilities, and information technology. The company has committed itself to become a key change enabler for the AEC industry. Founded in 1975, MAA specializes in the disciplines of building information modeling (BIM), in particular for railway systems (including High-Speed Rail and Mass Rapid Transits), roads and highways, tunnels, bridges and viaducts, and common utility ducts. The company believes that BIM technology has the ability to preserve ecology and the environment, and driven by this understanding, it actively pursues opportunities to promote a sustainable, economical, and greener future through innovative solutions. The BIM services provided by MAA covers the entire project life cycle everything from planning to operation and maintenance. From designing of BIM solutions to system integration, to all the way

through project and construction management service, the subject matter experts of MAA can guide clients through a multitude of complex and integrative buildings and systems. "We offer wider and diverse BIM services to cover all the fields of the construction industry," highlighted by Dr. Za-Chieh Moh, the co-founder and chairman of MAA Group. In addition to BIM, MAA has extensive experience in geotechnical engineering, structural engineering, transportation engineering, environmental and water engineering, project and construction management, architecture and planning services, mechanical, electrical and plumbing (MEP), and geomatics.

The company's wide range of consulting services for BIM include 3D modeling, clash detection, integration for architecture, structure, and MEP models, 3D model visualization, initial structural and energy analyses, and quantity take-off. Additionally, in the areas of project and construction management consultation, MAA provides data management, construction simulation and scheduling services. With MAA's Close-to-reality simulation and state-of-art techniques, AEC practitioners can easily simulate building schedules, coordinating with contractors to shorten timescale and ensure constructability. The company can handle multifaceted projects through our combined professional knowledge from different field engineers. Further, for facility management and asset management service in the field of BIM, MAA integrates IoT equipment, Augmented Reality (AR), and Virtual Reality (VR) technologies into BIM to develop a platform for facility and asset management.

> "We offer wider and diverse BIM services to cover all the fields of the construction industry"

Notably, MAA's BIM services for Taipei MRT System Sanying Line Project is one of its prominent success stories. MAA helped the client to construct architecture, structure, and MEP models of underground facilities, viaducts, foundations, tracks, and stations for the MRT system to enhance 3D visualization for design coordination and integration. Furthermore, MAA conducted clash detections, simulations, quantity take-off, etc. to provide an efficient, economical, and safe solution for the client. Such extensive BIM services helped the client to reduce the obstacles of the visualization for the underground facilities and save cost and time for the specific project.

Having already established itself as a trusted BIM consulting company, MAA is focusing on the application of BIM in the maintenance phase and combining new technologies with BIM. IoT equipment, augmented reality (AR), and virtual reality (VR) technologies are integrated into BIM to develop a platform for facility and asset management in the maintenance phase. MAA is combining BIM with 3D GIS, UAV, and 3D point cloud to achieve solutions for geotechnical engineering projects. In the coming months, MAA Group is heading towards using BIM for smart city and incrementally applying it in the whole project lifecycle.

Construction Tech Review

BUILDING INFORMATION MODELING SPECIAL

FEBRUARY - 5, 2020

CONSTRUCTIONTECHREVIEW.COM

Top 10 BIM Consulting/Service Companies in APAC - 2020

The days of 2D drawings are over, as the digital era brings with it 3D building information models that deliver bottom-line benefits. Trends may come and go, but every so often they end up shaping the world we live in, just like BIM (Building Information Modeling) did. Along with the standard design parameters, details such as geometrics, aesthetics, and thermal and acoustic properties are now included in a project so as to enable engineers to see how a decision affects the costs of a design at an early stage. In 2020, more and more companies are expected to move beyond 3D-BIM to 4D, 5D, and even 6D BIM. The global survey of 412 senior property leaders revealed that 89 percent believe BIM will have either a "significant" or "disruptive" impact on the development industry, while just 10 percent think it will have minimal or no impact.

Another major trend is that governments around the world are acknowledging the potential and the capability of BIM and looking to it for large public projects. They are finding the 2D models of concept visualizations outdated and unappealing and are really seeing the benefits of it for both construction and infrastructure projects. With this realization, comes the requirement of recognized accreditations and relegations to be put into place and met. Particularly in the AEC industry, this has led the 3D CAD modelling being overtaken by the BIM due to its comprehensive benefits. Along with this, organizations adopting green BIM technology and using it for education and advancement within the construction sector.

In the wake of these technology transitions, we are glad to feature top companies that are continually proving their mettle in the field of BIM services with several innovative technological capabilities and success stories up their sleeves.

With the BIM techniques gaining adoption, the builders are discovering new ways to compete, innovate, and grow profitably even as they face challenges from volatile costs, workforce shortages, proliferating regulations, and a host of evolving risks. Meanwhile, commercial real estate's that are enabled by BIM, are particularly well poised to capture value in current global markets through the development of new functional solutions to address global unmet wants and needs.

We hope the issue of Construction Tech Review helps you build the partnership you and your firm need to enable technology-driven BIM.

We present to you Construction Tech Review's "Top 10 BIM Consulting/Service Companies in APAC - 2020."

Company:
MAA

Description:
A promising engineering service provider in the East and Southeast Asian regions with a focus in the areas of infrastructure, land resources, environment, buildings/facilities, and information technology

Key Person:
Dr. Za-Chieh Moh,
Chairman of MAA Group

Website:
maaconsultants.com

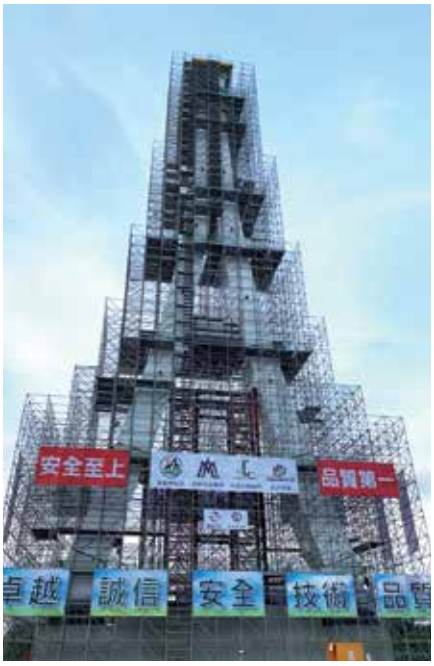
THE 20TH PUBLIC CONSTRUCTION GOLDEN QUALITY AWARDS – SPECIAL ACHIEVEMENT AWARD

The photos of the PCM projects that MAA won for the past 5 years

On 24th December 2020, MAA received 3 Public Construction Golden Quality Awards this year, which include an Excellence Award, Honorable Mention Award, Special Achievement Award(特別貢獻獎). Once every 5 years, Special Achievement Awards will be presented to office in-charges and companies who have won the most awards in the past 5 years.

MAA's Chairman Richard Moh (Left 1) attended The 20th Public Construction Golden Quality Awards

THE 20TH PUBLIC CONSTRUCTION GOLDEN QUALITY AWARDS - PROJECT CONSTRUCTION MANAGEMENT EXCELLENCE AWARD: COUNTY ROAD 157 LINE 29K+800~30K+759 WIDENING RECONSTRUCTION (SUAN TOU BRIDGE)



The project intends to widen the bridge into a two-way four-lane roadway. The main bridge of this long-span bridge is 165m (main span is 110m). To emphasize the landscape characteristics, the inclined span bridge is adopted in part of the long span main bridge (deep river trench area) while the lead bridge is planned as prestressed I-type bridge and steel box girder bridge to connect both sides of approach road. The integration of landscape design and the use of landscape and long-span bridges can serve as a new landscape landmark and reflect the beauty of the adjacent Southern Branch of the National Palace Museum.

Suan Tou Bridge

THE 20TH PUBLIC CONSTRUCTION GOLDEN QUALITY AWARDS - DESIGN SERVICE HONORABLE MENTION: REDEVELOPMENT OF CAOTA AREA SECTIONS 1, 3, AND 6, AT GUANYIN DISTRICT, TAOYUAN CITY

The Project is a smart city which encompasses recreational and residential functions as well as provides job and travel opportunities. The location is 20 minutes away from Taoyuan High Speed Rail Station and 15 minutes away from Taoyuan International Airport. The completion of the area will encourage migration to the redeveloped district, reducing the gap between urban and rural areas. The Project placed an emphasis on its sustainable engineering approach, which included:

1. Taoyuan City's first land reconsolidation project which demonstrated the concept of circular economy. By using recycled aggregates, carbon emission equivalent two years of the carbon dioxide absorption of Taipei's Daan Forest Park were reduced by this effort. This approach can be used for the future construction of Taoyuan Aerotropolis.

2. "Water of Hills", another park that will be built within the development includes villages, farm lands, ponds, and creeks, leverages the adjacent natural resources to build a multifaceted park.

3. Low Impact Development (LID) is implemented through the use of permeable pavement and detention basin. Cut and fill was applied individually in each section of the construction.

4. LED street lights are parts of the intelligent energy-saving system. It offers on-demand adaptive lighting, making the street lights adjust their brightness based on the presence of cars.

Challenges in the construction include:

1. Due to the high water table in the region, pipe jacking method was used for wastewater where over 4m fill would be necessary, and cut-cover method for areas where less than 4m fill would be necessary.These methods reduced overall construction risk, resulting in good construction quality.

2. New techniques and practices were applied to the rainwater box culverts, which improved efficiency and quality. Modular design with welded wire fabrics (WWF) and application of sliding formwork construction technique were used.

MAA's Senior Vice President of Construction Supervision & Management Group Shih-Chang Huang (Right 1) attended Taipei City Distinguished Public Construction Awards

TAIPEI CITY DISTINGUISHED PUBLIC CONSTRUCTION AWARDS

The Distinguished Public Construction Awards symbolizes the highest honor for Taipei City Government's public constructions. On 14th August 2020, MAA received two of these prestigious awards for Construction Supervision for Beitou Shilin Technology Park Earthworks and barrier-free elevators at exit 3 in Daan Station and exit 2 in Xinyi Anhe Station.

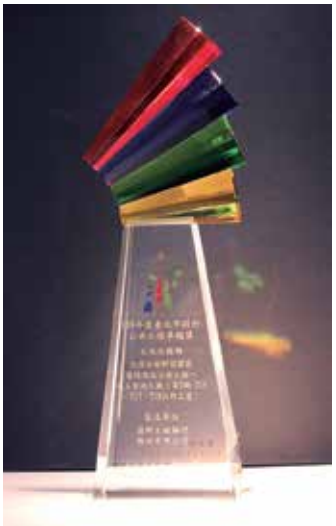
TAIPEI CITY DISTINGUISHED PUBLIC CONSTRUCTION AWARDS - CONSTRUCTION SUPERVISION: BEITOU SHILIN TECHNOLOGY PARK EARTHWORKS

The project covers an area of 90 ha. It is a technology park embodies smart technology and ecological development. The implementation of novel technologies increased the efficiency of the construction supervision. UAV, satellite devices, time-lapse photography, and instant messaging apps were utilized. There were several special features of the project:

1. With the primary geological condition consisting of thick clay layers, vertical drain method was used to increase the rate of drainage from the clay layer. This allowed the overall schedule to be shortened and decreased the risk of settlement.

2. The low-lying elevation of the area makes installing drainage system in addition to preloading both crucial procedures. To minimize potential impact to existing drainage system and any underground utilities, a comprehensive study of existing underground utilities were preformed prior to construction.

3. High amounts of preloading soil can cause large settlements in soil areas, which may adversely impact the ground stability and structural safety of nearby structures. Expanded Polystyrene (EPS) blocks were implemented to replace earthwork fills as method to mitigate this risk.



MAA's Senior Vice President of Engineering Design Group Ting-Chiun Su (Right 2) attended Taipei City Distinguished Public Construction Awards

TAIPEI CITY DISTINGUISHED PUBLIC CONSTRUCTION AWARDS – DESIGN SERVICES: BARRIER-FREE ELEVATORS AT EXIT 3 IN DAAN STATION AND EXIT 2 IN XINYI ANHE STATION

The Project included constructions for two elevators respectively at Exit 3 in Daan Station and Exit 2 in Xinyi Anhe Station. This process of the construction was challenging and demanding due to the following obstacles:

1. Initial public opposition to the construction. In the early phases of construction, local residents were opposed to the locations of the exits as it would obstruct access to nearby stores and buildings. However, with limited alternatives available, the entrance was later removed and covered using concrete slab. The public later petitioned for the entrance to be replaced after several years.

2. Removal of the concrete slab. Residents later petitioned for the entrance to be rebuilt in the same location, which required removal of the concrete slab. To reduce potential impact to businesses and residents nearby, vibration and noise mitigation measures were taken in addition to reducing overall schedule.

3. Limited construction space. Site location above ground was situated on the sidewalk and adjacent bike lane with limited construction space. To keep the sidewalk and bike lane unblocked, the fencing area was narrowed as much as possible.

4. Management of operational interference. The construction underground was constructed during off-hours at night to prevent any disturbance of the MRT's operation. Therefore, the work hours per day were limited to 3 to 4 hours.

THE 14TH PUBLIC CONSTRUCTION SAFETY GOLDEN AWARDS - PROJECT CONSTRUCTION MANAGEMENT EXCELLENCE AWARD: COUNTY ROAD 157 LINE 29K+800~30K+759 WIDENING RECONSTRUCTION

Public Construction Safety Golden Awards recognizes institutions which maintain healthy and safe environments during construction processes. It hopes to encourage companies and enterprises to promote safety as a key value. On 20th November 2020, MAA received the 14th Public Construction Safety Golden Award for Project Construction Management Services for County Road 157 Line 29K+800~30K+759 Widening Reconstruction. (Suan Tou Bridge)

MAA's Chairman Richard Moh (Right 2) attended Public Works Gold Awards Ceremony

Suan Tou Bridge

PUBLIC WORKS GOLD AWARDS – DESIGN EXCELLENCE AWARD: REDEVELOPMENT OF CAOTA AREA SECTIONS 1, 3, AND 6, AT GUANYIN DISTRICT, TAOYUAN CITY

Public Works Gold Awards was established by Taoyuan City Government to recognize high quality public works. On 14th August 2020, MAA received Public Works Gold Award for Turnkey Project for the Redevelopment of Caota Area Sections 1, 3, and 6, at Guanyin District, Taoyuan City.

MAA's Senior Consultant Chien-I Hsu (Right 1) attended Public Works Gold Awards Ceremony

PROJECTS

DESIGN AND PROJECT MANAGEMENT FOR ØRSTED O&M FACILITIES

Ørsted has signed of a wharf lease and a 20-year operations and maintenance (O&M) lease with the Port of Taichung, managed by Taiwan International Ports Corporation (TIPC) and TIPC Marine Construction. The wharfs at the Port of Taichung will be upgraded and utilized for the construction and operation of the Greater Changhua offshore wind farms from 2022. The Port of Taichung has been selected as the most suitable operations & maintenance (O&M) base for these wind farms due to its proximity to the sites, water depth, wharf facilities and navigational access quality. This building will be a green building with a gold rating from the Leadership in Energy and Environmental Design (LEED), making it the flagship O&M center for Ørsted Asia Pacific. It will be constructed in accordance with similar European design principles and installed with green solutions, such as recycling of rainwater, maximal application of local green materials, solar panels and charging stations for electric cars and scooters. MAA was engaged by Ørsted to provide site investigation, geological condition investigation, geological analysis, preliminary design, basic design, structural design, construction supervision, construction management, project management, investigation and analysis, and surveying. The services began in 2020, with expected completion in 2022.

GENERAL DESIGN AND PLANNING FOR 3D DEVELOPMENT AT RIVERSIDE IN NORTH LUZHOU DISTRICT

This Project is located on the north side of the MRT Depot in Luzhou District and its surrounding area. To effectively develop the riverside area as a high tourism value destination, the plan is based on a diversified development perspective, combining internationalization, tourism, leisure and recreation, and economic development. The total area is 9.7 ha, which includes a 3.7 ha wholesale market, 4 ha riverside renovation, and 2 ha market. MAA was engaged by New Taipei City Government, Department of Agriculture to provide services including overall development, environmental analysis, architectural planning, financial analysis, and procurement and bidding services. The services began in May 2020 and are expected to end in December 2021.

PROJECT MANAGEMENT SERVICES FOR THE THIRD MEDICAL BUILDING OF TAICHUNG VETERANS GENERAL HOSPITAL

The purpose of the Project is to build more spaces for patients with critical conditions, such as operating rooms, ICU rooms, and radiology rooms. The site is located at the parking lot of the east side of the south branch of Taichung Veterans General Hospital. The land is listed as medical use. The building consists of 12 floors above ground and 6 floors underground. The coverage rate is 50% and the floor area ratio is 400%. The total floor area is 97.410 m2. The building includes 29 operating rooms, 10 OPD rooms, 2 hybrid operating rooms, 152 ICU beds, 713 acute beds, 4 radiology rooms, a connection hallway, 610 parking spaces for cars, and 639 parking spaces for motorcycles. The planning of the building is in accordance with the standard of a golden smart green building. MAA was engaged by Taichung Veterans General Hospital to provide design services for structural and environmental design, BIM services, traffic impact assessment, EIA, water conservation, electrical systems and facilities, air conditioning system, and smart building system. The services began in January 2020 are expected to end in December 2028.

BIM SERVICES FOR PUBLIC FACILITIES CIVIL WORKS AT TERMINAL 3 IN TAOYUAN INTERNATIONAL AIRPORT

MAA was engaged by TECO Electric & Machinery Co., Ltd./Wei Chuan Construction Co., Ltd. to provide BIM services for the energy center, west side of the electrical substation utility ducts, box culverts on Mainline H, and the U-Turn between Beiyi Gang and the east side of Puxin Creek. In regard to the scope of civil works for utility ducts, the north boundary of the utility tunnel is 1K+180 at mark; southern boundary is Terminal South Rd.; east boundary is the energy center; west boundary is the utility connection point of the west side and WC taxiway. The services began in July 2019 and ended in December 2023.

PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR WANHUA SOCIAL HOUSING

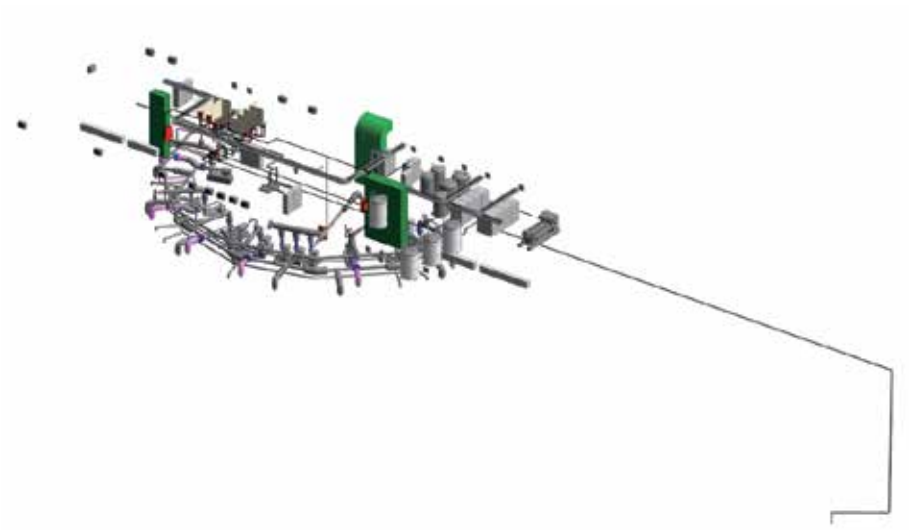
The development of youth social housing is to alleviate high housing prices and served as a remedy to housing inequality for minorities. The building is for rent only. There are reserved spots for those whose jobs and schools require them to stay in the area and those who are under the age of 35. Located on Hua Jiang and Yanji Street in Wenhua District, Taipei City, the site area is 2,727 m2. It consists of 13 stories above ground, 2-3 stories underground, 90 motorcycle parking spaces, 75 car parking spaces, with the building coverage ratio is 45% and floor area ratio is 225%. This Project encompasses a low building coverage ratio, urban open space, community shared space, and reserved space at corners for shops. MAA was engaged by National Housing and Urban Regeneration Center to provide project management, construction, supervision, preliminary design, tender document preparation services, design review and consultancy, vibration monitoring, and contract management. The services began in May 2020 and ended in December 2024.

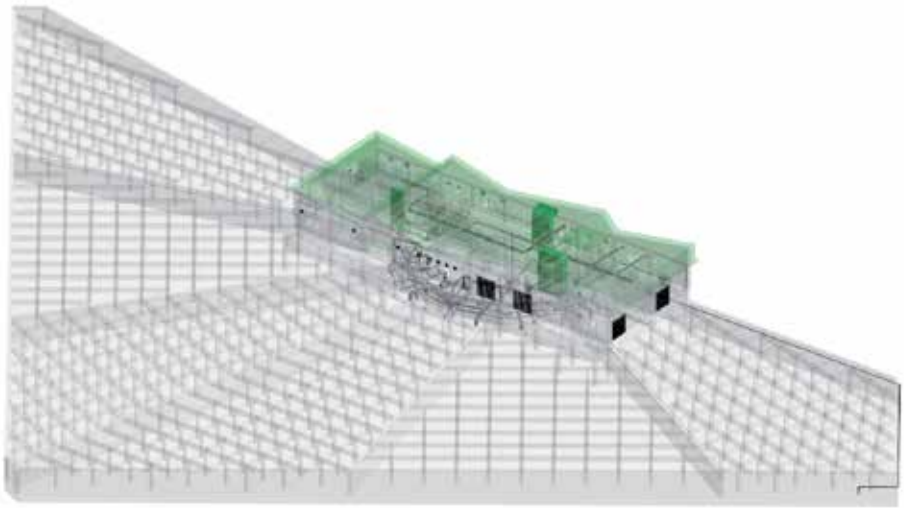
GENERAL CONSULTANT FOR LING JIOU MOUNTAIN BUDDHIST SOCIETY DEVELOPMENT

Master Hsin Taois the founder of Ling Jiou Mountain (LJM) Society, the Museum of World Religions, and the international non-governmental organization, “Global Family for Love and Peace”. His beliefs contain a combination of Zen Buddhism, Theravada Buddhism, and Tibetan Buddhism. To spread Master Hsin Tao’s value (an integration of education, love, and peace), temples, conference venues, and bodhim are planned to be constructed for this project. MAA provides professional consultancy and development strategies to assist LJM in achieving its overall facility development needs. The services started from July 2019 and ended in December 2020.

TURNKEY PROJECT FOR ANPING RECLAIMED WATER PLANT CONSTRUCTION IN TAINAN

The project includes Anping reclaimed water plant (full period capacity is 37,500CMD, first phase is 10,000CMD) and environmental education center. It is expected to begin the first phase water supply in September 2022 and the full period water supply will begin in October 2024. The reclaim water expected to be sent to the distribution pool via the 22.42 km pipeline. The design capacity of the distribution pool is 37,500CMD, and apply high-level treatment technology of bromide chemical dosing method to meet the contracted water quality requirement (urea<0.005mg/L). This center can process wastewater from Yongkang sewage system and industrial wastewater from Southern Taiwan Science Park. It will also improve the domestic water system and advance the development of reclaimed water industry in Tainan. This Project will provide both practical and recreational purposes. This is the largest reclaimed water plant that supports high technology in Taiwan. MAA was engaged by HDEC Corporation to provide basic and detailed design services. The services began in July 2020 and ended in December 2024.





INVESTIGATION BUREAU UNITS IN ZHONGHE DISTRICT BUILDING

Zhonghe Investigation Park is consisted of 5 departments, Northern Mobile Team, Forensic Science Division, the New Taipei Field Division, National Security Operations, and security guard office. The Project takes an area of over 31, 500 m2. The Park is separated into two sections. The first section is for the Northern Mobile Team and the other is for the rest of the departments. Common facilities of the Park include an underground parking lot, restaurants, kitchen, and outdoor area. This is a development with Golden Green Building Certificate and Bronze Intelligent Building Certificate. The segregation of pedestrians and vehicles creates a safe space for the personnel. AC and permeable pavements are designed for a more sustainable construction. It is expected to be completed in 2023. MAA was engaged by Investigation Bureau to provide PCM services. The services started in October 2019 and ended in December 2025.

CONSTRUCTION SUPERVISION FOR UNDERPASS AT XINPU MINSHENG MRT STATION

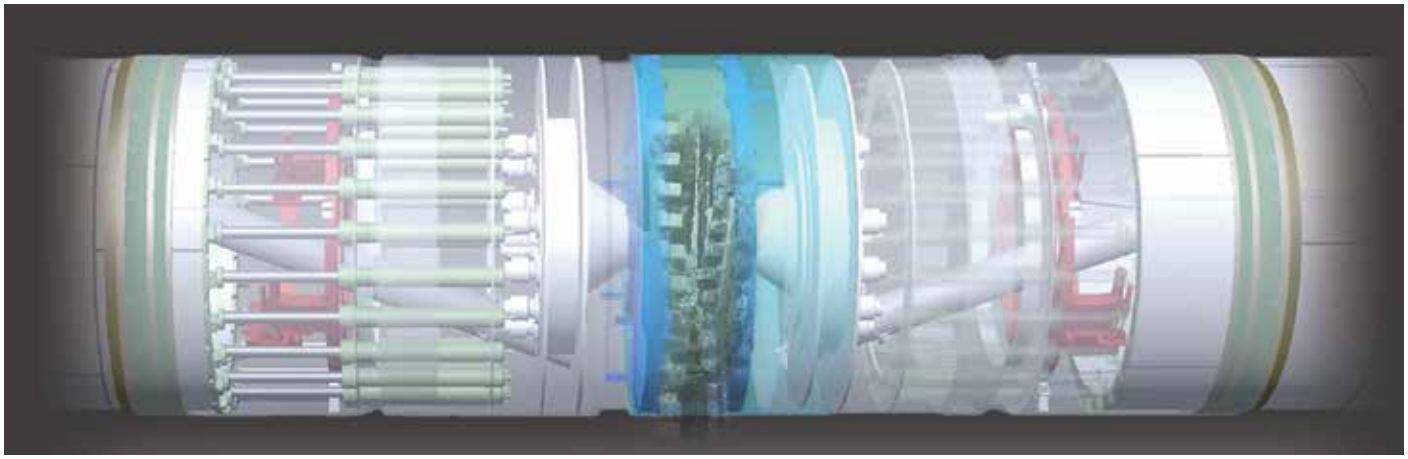
Xinpu Minsheng MRT Station is a part of the Circular Line in New Taipei City. Xinpu Minsheng MRT Station is located on the north side of Minsheng Road and Wenhua Road. The road layout of this section is complex: the gateway of Provincial Highway 64 is located on the west side of Mingshen Road and there are 2 double lane roads. Pedestrians have to cross the road if they want to get to the station. Without a tunnel, crossing the road in such congested section can be potentially dangerous. The Project seeks to achieve road safety by proving an underpass across Minsheng Road. MAA was engaged by Department of Rapid Transit Systems, New Taipei City Government to provide construction supervision for the following constructions: underpass, monitoring, drainage, piping, maintenance of traffic, elevator, landscaping, and pipe roofing. The services began in April 2020 and ended in August 2023.

FREEZING SOIL TEST IN GEOTECHNICAL INVESTIGATION FOR IN-GROUND LNG STORAGE TANK

In 2020, MAA carried out the first freezing soil tests in Taiwan for the past 30 years. To meet the natural gas demand and achieve the energy target that gas power generation accounts for 50% of overall power generation by 2025, Taiwan Government has brought into actions to ensure stable supply of natural gas by expanding existing or building new infrastructures for receiving and stockpiling liquid natural gas (LNG). As part of the master plan, three 200,000 kiloliter in-ground LNG storage tanks with the diameter of 80m and depth of 57m will be built as the expansion project for the CPC Yung-An LNG receiving terminal at Kaohsiung. MAA was commissioned by the Tokyo Gas Engineering Solutions Corporation, the designer for the Front-End-Engineering-Design, to conduct the soil investigation program composed of six boreholes to the depths of 150m and 200m, nine CPT drilling holes to the depth of 45m, and comprehensive sets of in-situ and laboratory tests.

Tests on frozen soils were carried out by nine unconfined compression tests and three frost heave tests with the temperatures controlled to as low as -20oC on the soil samples retrieved by thin-walled tube from the depths as deep as 50m. Unconfined compression strength, modulus of deformation, frost heave ratio, and thaw shrinkage ratio of the frozen soils were derived from the test results and in turn applied to evaluate the soil behavior below the freezing point under the situation of LNG leakage.

DALIN ~XINGAOGANG 1ST AND 2ND ROAD 345KV CABLE



In response to the increasing demand of electricity for future development in the great Kaohsiung area and to enhance the effectiveness and competition of the power supply system, the Taiwan Power Company planned to adopt 4-345kV-loop underground cables to connect Dalin Power Plant with Kaokang Substation, with a total length of about 12.4 km. This project is primarily in charge of about 7-km-long shield tunnel (inner diameter of 5.7 m) and its facilities located in Siaogang and Daliao District of Kaohsiung City.

Advanced technologies in shield tunneling were introduced to conquer challenges encountered in land acquisition and tight schedule of the project. They included, (1) Boring machine head-to-head connection in the ground rather than in the shaft; (2) Fast boring that enables excavation and segment erection operated at the same time; (3) Straight bolts and wedge connectors applied as fast joints to replace traditionally-used curved bolts for segment erection; (4) Boring machine and segment design for alignments with radius of curvature as small as 30; and (5) Recycling system for excavated mixture to minimize the amount of waste mud for disposal. Upon the completion of construction in mid 2020, the project accomplished (1) First case in Taiwan for boring machine head-to-head connection in the ground; (2) First case in Taiwan that fast boring (including boring and joints) was adopted in alluvium, gravels and rocks with advancing rate of more than 350 m per month; (3) Pioneer in Taiwan that applied BIM (Building Information Modeling) to check cable layout and space allocation within shafts during design stage; (4) The 2nd largest section (inner diameter of 15 m and depth of 40.9 m) in Taiwan for anchor caisson; and (5) Design and construction of shield tunneling for ratio of radius of curvature to outer diameter smaller than 5.

CONSTRUCTION SUPERVISION FOR YCDC PUBLIC WORK PROJECTS

MAA was engaged by YCDC (Yangon City Development Committee) to provide construction supervision services for public buildings, roads, and bridges projects for two consecutive fiscal years 2018-2019 and 2019-2020.

Among the building projects, the 15 storey Mingalar Market is the first PPP (Public-Private Partnership) market project in Yangon city. The building complex provides spaces for vendors, shops, offices and parking space with a total floor area of 1,163,242 ft2. The other significant building projects are the three Town Hall buildings of Hlaing Thar Yar, Insein and Shwepyithar townships. The newly opened town halls feature wide indoor and outdoor spaces, not only providing comfortable working spaces for civil servants, but also bringing more convenient services to the citizens.

A comprehensive road pavement rehabilitation program was implemented by the Road & Bridge Department which covers the city's trunk lines such as Pyay Road and many more alleys in the city.
In addition, to enhance the safety of pedestrians, Road & Bridge Department continued to construct pedestrian bridges and underpass. The Dawbon-Yamonar Pedestrian Overpass provides an escalator next to the stairs for the convenient use of disabled and elderly people. The Kandawgyi Park walkway was rebuilt to replace the rotten wood bridge. Seik Pyo Yay Underpass project is located at Kamaryut Township near TTC campus and Junction Square Supermarket and crosses the Pyay Road. The underpass provides a safe walking environment with vendor shops on both sides of the walkway as the additional feature.

Pyay Road Pavement Rehabilitation

Dawbon-Yamonar Pedestrian overpass

Minaglar Market Building

Maougone

Shwepyithar townhall

CONSTRUCTION SUPERVISION OF BAGO RIVER BRIDGE

The Project is located at the border of Yangon and Bago Region in Hlegu Township. The bridge is 320 m long with 60m Steel Girders at the main span and RC and PC girders at side spans. The bridge is funded by Yangon Region Government and Bago Region Government. MAA provides construction supervision services to implement international practice of QA/QC system.

TENDER DOCUMENTATION ASSISTANCE FOR CONSTRUCTION OF THE NORTHERN LINE DOUBLE TRACK RAILWAY PROJECT; DEN CHAI–CHIANG RAI–CHIANG KHONG ROUTE

The Northern Line Double Track Railway Project Den Chai–Chiang Rai–Chiang Khong Route has a total distance of 323 km. Railway track structure is an at-grade profile and elevated profile where the profile runs across the river or road. There are 26 railway stations along the route, 14 km long of 4 railway tunnels, 40 railway overpasses and 102 railway underpasses. The whole project route is guarded by fencing on both sides of railway line to prevent access to the railway for safety reason. MAA Thailand was engaged by State Railway of Thailand to provide bidding and tendering assistance and risk monitoring and assessment. The services began in April 2020 and are expected to end in December 2020.

PROFESSIONAL **ACTIVITIES**

Minister of Transportation and Communications Lin Chia-Lung (Left 13), New Taipei Mayor Hou Yu-Ih (Left 11), MAA's Chairman Richard Moh (Left 9), and President Chen-Hui Hsieh (Left 8) attended the opening ceremony

OPENING CEREMONY FOR THE FIRST SECTION OF THE BLUE SEASIDE LINE OF THE DANHAI LRT SYSTEM

On 15th November 2020, Minister of Transportation and Communications Lin Chia-Lung, New Taipei Mayor Hou Yu-Ih, MAA's Chairman Richard Moh, Vice Chairman Chung-Cheng Kao, SVP of Engineering Design Group Ting-Chiun Su attended the opening ceremony for the first section of the Blue Seaside Line of the Danhai LRT system in New Taipei City. MAA is the construction supervision consultant for this Project.

The new 2-kilometer section of the line has three stations -- Taipei University of Marine Technology, Shalun, and Tamsui Fisherman's Wharf, a popular sightseeing area. The line is scheduled to be completed in 2024.

MAA's Chairman Richard Moh (Left 2), Vice Chairman Chung-Cheng Kao (Right 3), President Chen-Hui Hsieh (Right 1), Senior Vice President of Engineering Design Group Ting-Chiun Su (Left 1) took a test ride

President Tsai Ying-Wen (Left 5), Ministry of Justice Tsai Ching-Hsiang (Left 4), MAA's Chairman Richard Moh (Left 2, 2nd row), and SVP of Building & Facilities Group Ta-Hsing Lee (Left 1, 2nd row) attended the groundbreaking ceremony

GROUNDBREAKING CEREMONY FOR INVESTIGATION BUREAU UNITS IN ZHONGHE DISTRICT BUILDING

On 30th December 2020, President Tsai Ying-Wen, Ministry of Justice Tsai Ching-Hsiang, MAA's Chairman Richard Moh, and SVP of Building & Facilities Group Ta-Hsing Lee attended the groundbreaking ceremony for the Investigation Bureau Units in Zhonghe District Building. Zhonghe Investigation Park will house four departments: Northern Mobile Team, Forensic Science Division, New Taipei Field Division, and an office for national security operation. The Project takes an area of over 31, 500 m^2, comprising 4 buildings. MAA is the PCM consultant for this Project. It is expected to be completed in 2023 and create more space for the Bureau.

MAA's Chairman (Right 3), SVP of Building & Facilities Group Ta-Hsing Lee (Right 2), and the architecture team

MAA's Chairman (Left 1) and Deputy Mayor of Taichung Bruce Linghu (Left 5) attended the groundbreaking ceremony

GROUNDBREAKING CEREMONY FOR ØRSTED O&M FACILITIES

The construction for Ørsted Operations and Maintenance (O&M) facilities base is to support the 900MW Greater Changhua 1 & 2a Offshore Wind Farms. These onshore facilities include offices (2100 m^2), a warehouse (1352 m^2), an antenna tower (30 m), etc. These facilities are expected to support the offshore wind power generators to ensure around the clock operations. This Project will become the largest O&M base in Taiwan once completed and the first in the region to adopt a sustainable minded building design. MAA was engaged by Ørsted to provide site investigation, geological condition investigation, geological analysis, basic design, detailed design, construction supervision, construction management, project management. On 22nd September 2020, MAA's Chairman Richard Moh and Deputy Mayor of Taichung Bruce Linghu attended the groundbreaking ceremony. The services began in 2020, with expected completion in 2022.

MAA's Chairman (Right1) attended the groundbreaking ceremony

Premier Su Tseng-Chang (Right 6), Chunghwa Post Chairman Hong-Mo Wu (Right 5), and MAA's Chairman Richard Moh (Right 2) the groundbreaking ceremony

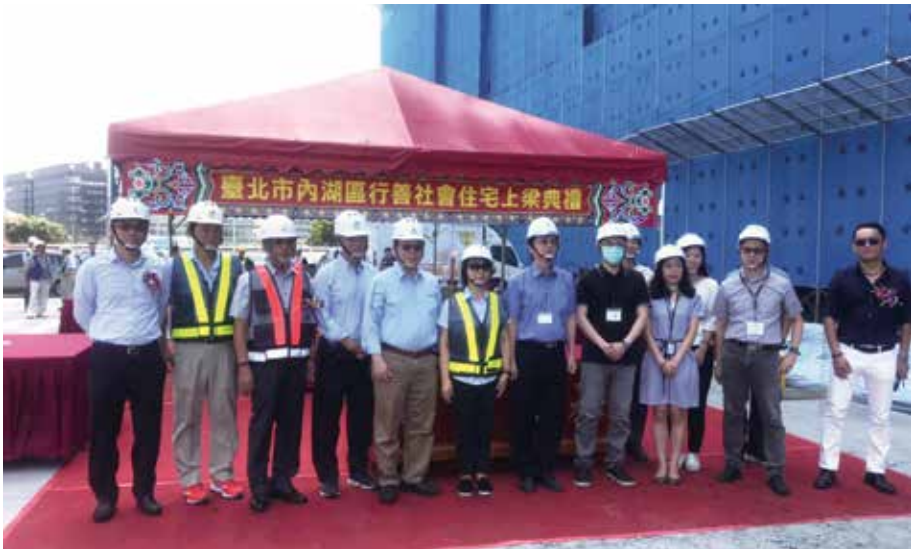
GROUNDBREAKING CEREMONY FOR THE CHUNGHWA POST LOGISTICS PARK

Chunghwa Post Logistics Park is to span 17.14 hectares and consist of five buildings: a logistics center, a northern Taiwan mail processing center, an information center, a training center and an industrial plaza. In addition to parcel-sorting machines, robots and automated vehicles, the park would also be equipped with the latest information and communications technology to monitor the delivery of mail and parcels.

On 18th Janurary 2021, Premier Su Tseng-Chang, Chunghwa Post Chairman Hong-Mo Wu, and MAA's Chairman Richard Moh attended the groundbreaking ceremony for northern Taiwan mail processing center and training center. The completion of the park will facilitate the need for rapid postal services, which is expected to be completed in March 2024.

BEAM RAISING CEREMONY FOR NEIHU XINGSHAN PUBLIC HOUSING

The Project consists of 2 buildings that are both 10 stories above ground and 3 stories underground. The first and second floor are for residential units, amenities, electrical rooms, and a green roof. Underground stories are for parking and electrical rooms. The Project incorporates green and smart building practices, such as having energy-saving management, safety and disaster preventions, and ICT. On 2nd September 2020, MAA's SVP of Building and Facilities Ta-Hsing Lee attended the beam raising ceremony. MAA was engaged by Department of Urban Development, Taipei City Government to provide PCM for this project. The Project is expected to be completed in May 2021.



MAA's Senior Vice President of Building & Facilities Group Ta-Hsing Lee (Left 5) attended the beam raising ceremony for Neihu Xingshan Public Housing

MAA'S CHAIRMAN RICHARD MOH AS GUEST SPEAKER AT TAMKANG UNIVERSITY

MAA's Chairman Richard Moh was invited to Tamkang University in New Taipei City as a guest speaker on 12th June 2020. Tamkang University awarded Richard Moh with a certificate for his speech titled "Technology, Future, and Workplace".

MAA'S CHAIRMAN RICHARD MOH AS GUEST SPEAKER AT NATIONAL TAIWAN UNIVERSITY

MAA's Chairman Richard Moh was invited to National Taiwan University (NTU) in Taipei City as a guest speaker on 12th June 2020. He spoke on various topics, including climate change, natural disaster, technological advancement, digital application, engineering ethics, and professionalism.

THE 112TH AND 113TH REAAA COUNCIL MEMBER MEETING AND CONFERENCES

MAA's Chairman Richard Moh (Right) and Council Member Yu-Min Su (Left) attended the meeting

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. Due to COIVD-19, the 112th Road Engineering Association of Asia and Australia (REAAA) Council Meeting was held online on 7th July 2020. MAA's Chairman and CRF's Chairman Richard Moh attended the meeting. The 113th REAAA Council Meeting was held online on 27th November 2020. It was decided in the meeting that the Technical Committee will form a technical journal task force. Task force members are from Malaysia, Taiwan, Indonesia, Japan, and Australia. There are three new subsidiary organizations under the Technical Committee, Pavement Committee, Climate Change/Sustainability/ Emergency Management Committee, and Transportation Safety Committee.

REAAA Zoom conference meeting

FEIAP – YOUTH TALENTS DEVELOPMENT WORKING GROUP (YTDWG) WEBINAR SERIES

The Federation of Engineering Institutions of Asia and the Pacific (FEIAP) is an international non-profit professional organization founded on 6th July 1978. Its establishment following an exploratory meeting convened and organized by The Engineering Institute of Thailand under The King's Patronage with the support of the United Nations Educational Scientific and Cultural Organization (UNESCO) on 3rd July 1978 in Chiang Mai. Being an independent umbrella organization for the engineering institutions in the Southeast Asia and the Pacific region, the objectives of FEIAP 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.

Youth Talents Development Working Group (YTDWG) was established in 2017 by MAA's Chairman Richard Moh and other young engineers in FEIAP. The Group aims to foster international exchange among young engineers. Due to Covid-19, the proposed agenda was delayed this year. The members discussed the ways to maintain communication in the meantime, which eventually led to the decision to hold a webinar series on Skype. "FEIAP Youth Development in Action Webinar Series 1~5" started in May 2020 and ended in December 2020. The 4 YTDWG members collaborated to host this webinar. Richard Moh was the panelist for the first webinar and the moderator for the other 4 webinars. In addition, professionals and researchers from Taiwan were invited to share their knowledge. There were 20 member countries and 300~500 members registered.

DATE	TOPIC
2020/5/15	Series 1-Coping up with Covid-19: Young Engineers Perspective
2020/6/20	Series 2-Asia Pacific View in Engineering Education in the midst of global pandemic
2020/9/12	Series 3-ICT: Trends and Technologies that Aid Asia-Pacific Countries During the Global Pandemic
2020/10/24	Series 4-The Calling: Disaster Preparedness Programs in the Asia-Pacific Region (Collaborate with Natural Disaster Stand COMM)
2020/12/19	Series 5-Engineers in Action: Green Initiatives Across Asia-Pacific Region (Collaborate with Eng. Environment Stand COMM)

FEIAP Zoom Conference meeting

MAA's Chairman Richard Moh recieved a certificate from FEIAP

THE 2ND CIE YOUNG ENGINEER COMMITTEE NETWORKING EVENT

MAA's Chairman Richard Moh founded the Young Engineer Committee under the Chinese Institute of Engineers (CIE) in January 2017. CIE is one of the oldest-established and largest multimodal professional organizations in Taiwan, and consists of more than 18,000 members from a variety of engineering disciplines across the industry, the public sector, relevant organizations and academic institutions. Following the success of last year's Young Engineer Committee networking event, the committee organized the second networking event on 23rd October 2020 at Backstage Café at National Taiwan University (NTU) in Taipei. This event inspired young engineers to discuss the following topics: resource integration, team cohesiveness, engineering ethics elevation, talent gap, and development for international perspectives. This year, the event attracted more than 80 attendees, suppressing last year's number of 50.

Professor Liang Jenq Leu from NTU was invited as the speaker to speak on circular economy. The circular economy is a comprehensive model to provide sustainable approaches by reducing waste and pollution out of our economic system, keeping products and materials in use as long as possible. As today's businesses have learned the importance of balancing economic growth and environmental protection, circular economy has gained more attention in recent years and become the new roadmap when providing products and services.

MAA's Chairman Richard Moh gave opening remarks

Professor Liang Jenq Leu from NTU gave a speech on circular economy

Moreover, the establishment of Young Engineers Alliance was officially announced at the event. MAA's Chairman Richard Moh is the initiator of the Alliance. Young Engineers Alliance aims to recruit young engineers from members of CIE, The Chinese Association of Engineering Consultants, China Road Federation, Chinese Institute of Civil and Hydraulic Engineering, Chinese Taipei Tunneling Association. The above domestic associations have partnerships with several international associations, such as World Federation of Engineering Organizations (WFEO), International Federation of Consulting Engineers (FIDIC), International Road Federation (IRF), Federation of Engineering Institutions of Asia and the Pacific (FEIAP), The Asia Pacific Network of Science & Technology Centres (ASPAC), and Road Engineering Association of Asia and Australia (REAAA). The objectives of

Students accepted 2020 Outstanding Engineering Student Scholarship, introduced by MAA's engineer Yuan-Sheng Lin (Right 1)

Some of the attendees and MAA's Chairman Richard Moh (Right 1) and engineer Yi-Hsien Lin (Left 3) took a group photo

Young Engineers Alliance are to create a platform for domestic associations and international associations; to foster interdisciplinary lateral communication. The benefits of lateral communication enable decentralized operation and effective information flow. Through lateral communication among young engineers, each member can take turns to be a leader for an event, which can result in creating more diversified content for the members. With the combination of two concepts, lateral communication and diversified content, members can expand their knowledge and career network. The events Young Engineers Alliance plans on hosting include monthly gatherings, group discussions, seminars, site visits, “Meal with a Leader” Program, engineering experiences exchange, intergenerational knowledge exchange forums, technical skills building, career counseling, leadership and communication training.

2020 NATIONAL COLLEGE CREATIVE ENGINEERING IDEA COMPETITION

National College Creative Engineering Idea Competition was started by MAA's Chairman Richard Moh in 2014, aiming to encourage college students to develop innovative ideas and knowledge inheritance. The objectives of the competition are to promote interdisciplinary development, innovative ideas, hands-on experiences, and collaboration between professionals and students. It is hosted by Chinese Institute of Civil and Hydraulic Engineering (CICHE), The Chinese Association of Engineering Consultants (CAEC), and Institute of Engineering Education, Taiwan (IEET).

This year marked the 6th year of hosting the Competition. Over 14 schools, 19 teams, 91 students participated. MAA's Yuan Sheng Lin was the President for the Competition, with top-notch professionals from the engineering industry invited to participate as judges. This year's theme is the Applied Innovations for Circular Economy in Construction Industry. The registration started in early April and ended in early May. Nineteen teams initially qualified in July, with eight teams entering the second round in October. The top 3 teams were selected on 20th November 2020. The awards ceremony was held on 28th November 2020. The detailed information of the top 3 teams is as follows:

GOLDEN AWARD

Team Name: No. 200 is not standard sieve size.

Project Theme: Feasibility in sand and bricks mixture application

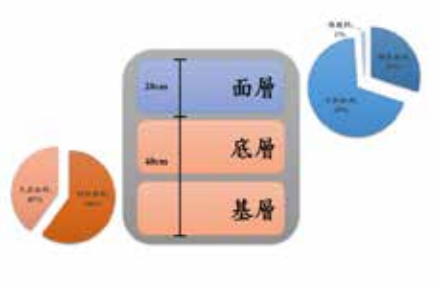
Project Description: Due to the distinct characteristics of sand and bricks mixture: absorbable, high permeable and low carbon, it could be a replacement for structural concrete. Sand and bricks mixture can be used in geotechnical engineering and moisture retention for farmland improvement.

SILVER AWARD

Team Name: 4L

Project Theme: Revival of the tenderness: pavement in circular economy

Project Description: The incorporation of 3 types of recycled particle materials in asphalt concrete pavement can reduce the cost of production and carbon emission. To ensure the availability of the materials, a circular economy inquiry platform can be created online for administrative bureaus, companies, and the general public.

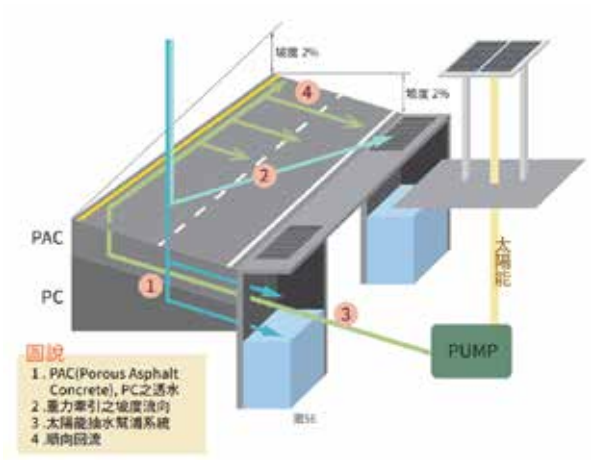


BRONZE AWARD

Team Name: 3╳2=6

Project Theme: Low carbon, permeable, self-curing concrete

Project Description: Slag and fly ash are wastes which could be processed into a new type of material- the low carbon, permeable, self-curing concrete. This new material can be applied on permeable pavement, which can lead to larger drainage capacity, disaster mitigation, and equip cities to drive a resilient recovery.



PROFESSIONAL **AWARDS/HONOR**

CHINESE INSTITUTE OF ENGINEERS DISTINGUISHED AWARD


中國工程師學會工程優良獎

中華民國109年8月7日

On 7th August 2020, MAA received CIE Distinguished Project Award for Danhai LRT.

2019 GEOTECHNICAL ENGINEER ACHIEVEMENT AWARD


社團法人中華民國大地工程學會

獎 狀

亞新工程顧問股份有限公司之作品

「臺北都會區大眾捷運系統環狀線第一階段工程DF113設計標之基礎工程」

獲選為本學會

108 年度大地工程傑出工程獎

特頒此狀 以茲表揚

理事長 田永銘

中華民國 109 年 9 月 1 日

On 1st September 2020, MAA received 2019 Taiwan Geotechnical Society Distinguished Project Award for Taipei MRT Circular Line First Phase Detailed Design DF113 Lot.

JUNG-FENG CHANG RECEIVED 2019 GEOTECHNICAL ENGINEER ACHIEVEMENT AWARD FROM TAIWAN GEOTECHNICAL SOCIETY


社團法人中華民國大地工程學會

獎 狀

張榮峰 先生

獲選為本學會

108年度傑出大地工程師工程成就獎

特頒此狀 以茲表揚

理事長 田永銘

中華民國 109 年 9 月 1 日

Jung-Feng Chang was awarded with 2019 Geotechnical Engineer Achievement Award by Taiwan Geotechnical Society.

CERTIFICATION OF APPRECIATION


感謝狀

亞新工程顧問股份有限公司

承辦本公司345kV 大林～新嘉港管理維修工程，使工程得以順利完成加入系統供電，謹頒此狀，敬表謝忱。

台灣電力公司總管理工程處

協議工處 處長 蔡耀宗

中華民國 109 年 9 月 15 日

On 15th September 2020, MAA received a certification of appreciation for Dalin ~Xingaogang 1st and 2nd Road 345kV Cable from Taiwan Power Company.


感謝狀

感謝 亞新工程顧問股份有限公司 贊助本系舉辦「第24屆營建工程與管理學術研討會」，使本次會議得以圓滿成功，嘉惠學子良多，特贈此狀，以表謝忱。

國立臺灣科技大學營建工程系

系主任

中華民國 109 年 8 月 5 日

On 5th August 2020, MAA received a certification of appreciation from National Taiwan University of Science and Technology for the sponsorship for the Construction Major's 14th Construction and Management Seminar.


感謝狀

感謝

亞新工程顧問股份有限公司

協助辦理 107 年度公共設施管線資料庫管理供應系統之建置，經內政部營建署評定新北市政府榮獲全國第 1 名暨直轄市型特優。

特頒此狀 謹致謝忱

處長 馮兆麟

中華民國 109 年 1 月 13 日

On 13th Janurary 2020, MAA received a certification of appreciation from Maintenance Office, New Taipei City Government for 2018 Common Duct Utility Information System Management.


感謝狀

茲感謝 亞新工程顧問股份有限公司

協助辦理「108 年度公共設施管線資料庫管理供應系統考評實施計畫」，經內政部營建署評定新北市政府榮獲全國第 1 名暨直轄市型特優。

特頒此狀 謹致謝忱

處長 馮兆麟

中華民國 109 年 8 月 20 日

On 20th August 2020, MAA received a certification of appreciation from New Taipei City Government for 2019 Common Duct Utility Information System Management.


優良農建工程獎

亞新工程顧問股份有限公司承當管理「彰化漁港開發建設(可開港管理)計劃建設第一階段漁筏伸出碼頭及浮動碼頭興建工程」榮獲行政院農業委員會108年度優良農建工程獎優等獎，特頒斯獎牌，以資鼓勵。

主任委員 陳吉仲

中華民國一〇九年二月二十六日

On 26th Feburaray 2020, MAA received 2019 Agricultural Construction Distinguished Award for Chunghwa Fishing Harbor Development Phase 1.


高雄市政府工務局

感謝狀

茲感謝

亞新工程顧問股份有限公司協助本府受內政部營導「108年度直轄市、縣(市)政府推動共同管道業務」列為甲等

特頒此狀以茲謝忱。

局長 吳明昌

中華民國 109 年 5 月 13 日

On 13th May 2020, MAA received a certification of appreciation from Public Works Bureau of Kaohsiung City Government for pushing forward the development of common duct in 2019.

MAA's Vice Chairman Chung-Cheng Kao (Right 5) attended CIE's year-end banquet

CHUNG-CHENG KAO RECEIVED FELLOW AWARD FROM THE CHINESE INSTITUTE OF ENGINEERS (CIE)

MAA's Vice Chairman Mr. Chung-Cheng Kao was awarded with Fellow Award by Chinese Institute of Engineers (CIE) on 12th August 2020. Honorary Fellow Award is awarded to engineers who have devoted in the engineering industry for more than 20 years with fruitful professional work experiences and major contributions in either the engineering industry or CIE.

MAA's Vice Chairman Chung-Cheng Kao (Right 1) received 2020 Fellow Award

TECHNICAL **PUBLICATIONS**

MAA'S 2020 TECHNICAL PUBLICATIONS

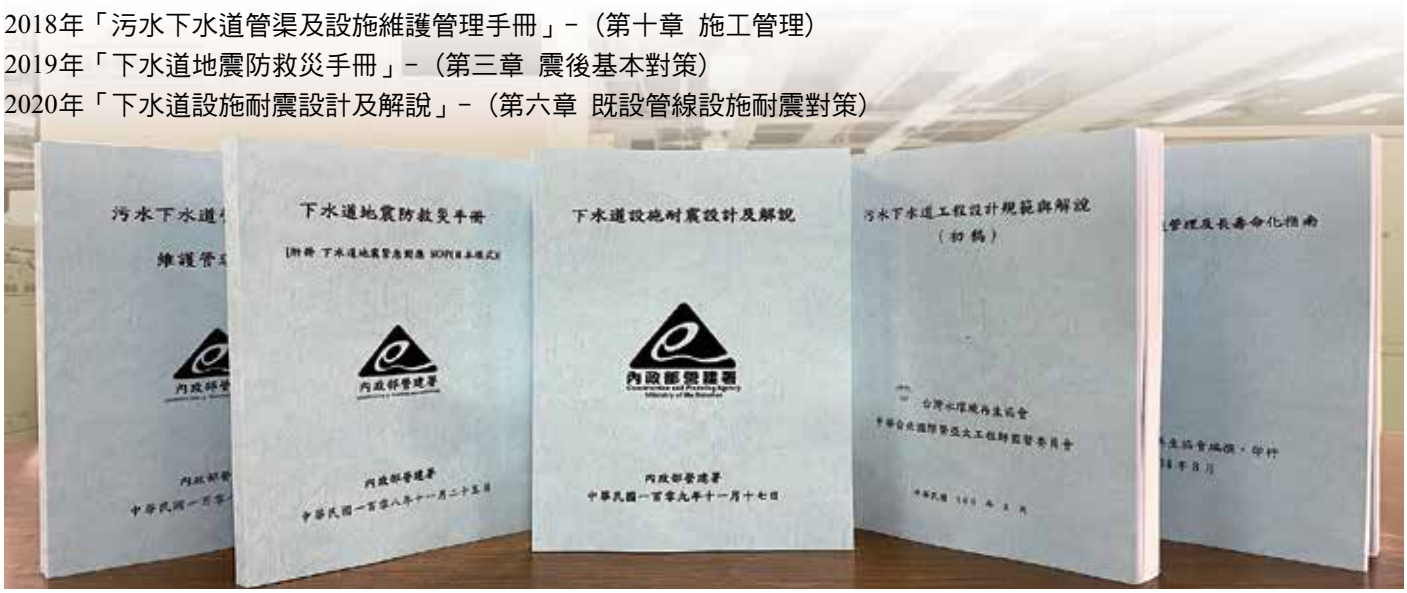
Lo, Y.H., Peng, J.F., Chou, C.R., Chen, W.H., (2020), *"Discussion of Mapping Soil Liquefaction Potential Maps for Changhua County"*, Proceedings of the 18th Conference on Current Researches in Geotechnical Engineering in Taiwan, pp.K-6. (in Chinese)

Shen, S.W., Tseng, H.C., Chou, C.R., (2020), *"The Relationship between the Stratigraphic Structure, Groundwater Level and Soil Liquefaction in the Pingtung Plain"*, Proceedings of the 18th Conference on Current Researches in Geotechnical Engineering in Taiwan, pp.K-5. (in Chinese)

PUBLICATIONS FOR TAIWAN WATER REUSE ASSOCIATION

Over the past 8 years, MAA contributed to the publications of codes, specifications, manuals, guidelines, and books of practice, issued by Construction and Planning Agency, Ministry of the Interior and Taiwan Water Reuse Association. The publications include the following:

亞新參與「台灣水環境再生協會」編撰書籍-目錄
2011年「下水道工程設計規範(污水下水道部分)」-(第八章 小規模污水下水道系統)
2012年「下水道管渠學」-(第十三章 耐震設計、第十五章 下水道管渠作用土壓及回填)
2013年「下水道管渠(線)實務」-(第七章 管線耐震設計考量)
2014年「下水道管線健全維護管理及長壽命化實務」-(第十章 施工管理)
2015年「下水道廠站設施管理及長壽命化實務」-(第三章 安全衛生管理)
2018年「污水下水道管渠及設施維護管理手冊」-(第十章 施工管理)
2019年「下水道地震防救災手冊」-(第三章 震後基本對策)
2020年「下水道設施耐震設計及解說」-(第六章 既設管線設施耐震對策)



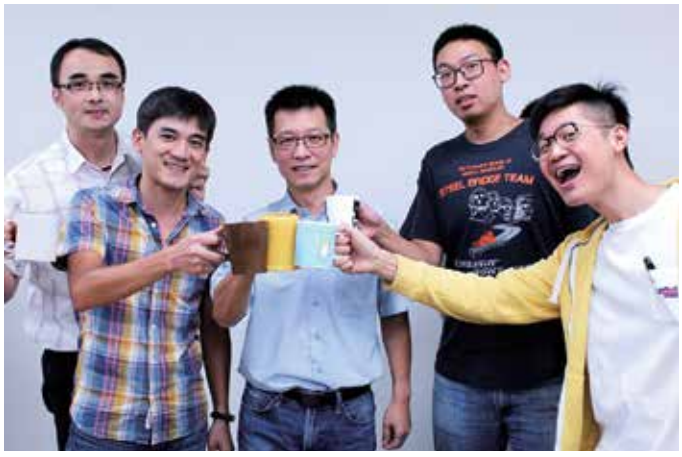
CORPORATE SOCIAL **RESPONSIBILITY**

Corporate Social Responsibility (CSR) is a practice that a companies adopt to improve the quality of environment, society, and economy. United Nation established Sustainable Developmental Goals in 2012, which later became the basis of most businesses' CSR framework. Many companies have shared the positive results of CSR, pertaining employees and stakeholders' satisfaction, community contribution, and revenue growth. MAA has long been committed to CSR and has practiced it both internally and externally.

SOCIAL EVENTS

Resource Sharing Day

There is no secret that shared experiences can bring people together. MAA's long held tradition, Family Day, has been a successful CSR event throughout the years. On the day of end-of-the-year banquet each year, Family Day is planned with a series of activities for the employees' children. Children participate in Bring Your Child to Work Day prior to the banquet. HR Department also offers office tours and fun activities. At the banquet, children perform in the talent show, which is always one of the major highlights of the annual celebration. Sustainability can be integrated into social events to encourage employees to take green actions on a personal and public level. Employees donated their secondhanded items on Resource Sharing Day, which was a viable way to make good use of finite resources and reduce consumption. As for MAA's office happy hour, no disposable cups were used; everyone who attended the event was required to bring their own mug.



Happy hour

Red envelopes are given to MAA's employees' children on Family Day

Multipurpose Room

WORKPLACE DESIGN FOR WELL-BEING

Workplace is more than a place to put your time in. Physical working environments contribute to psychological health and productivity. MAA's open office design is meant to generate creativity and facilitate communication. To further support the well-being of employees, earlier this year, the multipurpose room that used to be just another open space, it is now decorated with Zen elements to create a mindful and peaceful environment. The space has become a studio for employees to practice yoga and Qi Ji Dao Yin (氣機導引) during club meetings.

Employee well-being program at the multipurpose room

LIBRARY

In today's business environment, corporate libraries are essential in the era of information overload. The abundance of information results in confusion and affects decision making and productivity. With an organized and systematic corporate library and a well-trained librarian, corporate employees can manage and access information easily. What separates a corporate library from typical libraries is that it offers employees to exchange industry-related technical materials and projects, which facilitates the advancement of technical development and knowledge exchange in the company.

During the inception of MAA, a library area was already founded. The area has engineering publications, and technical documents and materials. In 1985, library filing system was listed in the company's organizational policy manual. In 2000, MAA officially established a library and the automation system was introduced. In the meantime, a corporate librarian was hired. The corporate librarian manages acquisition processes, classification, and circulation service. In 2020, the children's library was added as an additional section in the library. The collection in the children's section consists of Chinese and English children's books, videos, and problem solving games. A rest area is created within the section, which adds new nuances to the library. During summer and winter vacations, the children's books are the most borrowed books in the library. The library also promotes dialogic reading, which assists open communication between parents and children, relationship bonding, cognitive skills building, and creative thinking.

MAA's Children's Library

PROFESSIONAL **PROFILES**

MAA is pleased to announce and congratulate the following promotions in 2020.
The list of the promotions is as follow:

Hsiao-Chou Chao	趙 曉 周	Director of Advanced Engineering Unit
Hsi-Fu Pan	潘 錫 富	Chief Engineer of Engineering Design Group
Chien-Chung Huang	黃 建 忠	Chief Engineer of Engineering Design Group
Kuo-Hsiung Chen	陳 國 雄	Manager of Project & Construction Management Department I
Chi-Chieh Huang	黃 琦 傑	Manager of Central Taiwan Office
Hou-Chi Chang	張 厚 起	Manager of Southern Taiwan Office
Yung-Chieh Yang	楊 詠 傑	Manager of Administration Department
Song-Tsang Lin	林 松 蒼	Manager of Transpiration and Civil Engineering Department
Chung-Ren Chou	周 忠 仁	Manager of Geotechnical Engineering Department
Hung-Yen Lee	李 泓 彥	Deputy Manager of Transpiration and Civil Engineering Department
Chi-Ming Lee	李 啓 銘	Deputy Manager of Environmental & Water Resources Engineering Department
I-Chou Hu	胡 逸 舟	Deputy Chief Engineer of Geotechnical Engineering Department and Laboratory Chief
Hui-Yuan Chang	張 暉 苑	Deputy Chief Engineer of Structural Engineering Department
Jung-Ta Chen	陳 榮 達	Deputy Chief Engineer of Environmental & Water Resources Engineering Department
Jaw-Shuenn Lin	林 照 順	Deputy Chief Engineer of Transportation and Civil Engineering Department and Project Manager of Sanying Line MRT Project
Han-Ting Lo	駱 漢 鼎	Project Manager of Ankeng LRT Project

Hsiao-Chou Chao
趙 曉 周

Hsiao-Chou Chao was promoted to Director of Advanced Engineering Unit in January 2020. Dr. Chao received his bachelor's degree in civil engineering from National Taiwan University in 1989, master's degree in civil engineering from Pennsylvania State University, and Ph.D in civil engineering from Northwestern University. Prior to rejoining MAA, Dr. Chao worked for the Infrastructural Technology Institute of Northwestern University at Evanston, Illinois as a Post-Doctoral research associate. His researches focus on the guided wave theory, probability analyses, instrumentations for guided wave experiments on various waveguides and signal processing and analyses in 3D domain. The projects he involved included the Central Artery/Tunnel and Chicago EL line. With solid background in numerical analytics and instrumentation, Dr. Chao rejoined the MAA in 2004 and since then have been attended the tasks of geotechnical investigation, design, construction, numerical analyses, hazard analyses, and risk assessment for the Taipei MRT Songshan Line, Taoyuan International Airport Rapid Transit, Taipei MRT Luchou Line, Pekin Subway Line 10, Taichung MRT Green Line, Kaohsiung MRT Red Line, Taiwan Railway Kaohsiung Project, Thailand SRT railway track doubling projects, the N-WH Harbor project, large scale excavation for residential and commercial buildings, and more. The practical engineering experience of Dr. Chao covers the consulting works for geotechnical investigation and interpretation, railway design and construction, residential and commercial building design and construction, hazard analyses, risk assessment, and code development. His most recent project was soil investigation on FEED Services for the in-ground LNG storage tank expansion in Yung-An. Dr. Chao is affiliated with Chinese Taipei Tunnelling Association (CTTA), Taiwan Geotechnical Society (TGS), Southeast Asian Geotechnical Society (SEAGS), and American Society of Civil Engineer (ASCE).

Chi-Chieh Huang
黃 琦 傑

Chi-Chieh Huang was promoted to Manager of Central Taiwan Office in June 2020. Mr. Huang received his bachelor's degree in transportation engineering from Feng Chia University in 1992. He joined MAA in 1992. In the first 5 years at MAA, Mr. Huang was mainly responsible for planning and design for road projects. He was one of the first engineers at the company who had the capability to use LAND DESKTOP (DCA) computer software design to assist the team minimizing errors and omissions, and reduce production time, provide more design options, and thus gain competitive advantages. The recent projects he has involved include Huwei Military Camp, Ching Chuan Kang Base, Chiayi Chang Gung Hospital and Central Park Surrounding and Landscape, Nangan Social Housing, and Shuei-Nan Economic & Trade Park.

Hou-Chi Chang
張 厚 起

Hou-Chi Chang was promoted to Manager of Southern Office in July 2020. 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 second comprehensive review for Kaohsiung City utility common duct system, PCM for Renwu Industrial Park development project, urban land readjustment of Bei'an, Tainan City commercial zone, PCM for N-WH Project, PCM for Taichung Center Park, project management for the Matou Industrial Zone for Tainan City Government, and preliminary design for Zuoying Second Harbor facilities. 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.

Han-Ting Lo
駱 漢 鼎

Han-Ting Lo was promoted to Manager for Ankeng LRT Construction Supervision Project in August 2020. Mr. Lo received his bachelor's degree in civil engineering from Tungnan University in 1986 and master's degree in geotechnical engineering in 2004. He joined MAA in 2003. At MAA, he has involved in multiple MRT design projects, including Taipei MRT Songshan Line Contract DG166, Kaohsiung MRT Contract CO1, Taipei MRT Tucheng extension Contract DD170. In 2010, he set up automatic monitoring system for the dip slopes located from 2k+700 to 8k+180 of National Freeway No.3. He is a registered Quality Engineer of Public construction, R.O.C. and has received Basic Qualification Training Course for Professional Procurement Personnel and ISO 9000: 2000 Series Auditor/ Leader Auditor Training Course.

Song-Tsang Lin
林 松 蒼

Mr. Song-Tsang Lin was promoted to Manager of Transportation and Civil Engineering Department in September 2020. He received his B.S. degree and M.S. degree in hydraulic and oceanic engineering from National Cheng Kung University in 1988 and 1990. Since graduation, Mr. Lin joined MAA and he has participated in design and planning for drainage of hillslope developments, new town developments, industrial developments, access roads, PCM and construction supervision for HSR special districts. Some specific examples include urban land consolidation of the first industrial zone in Linkou District, New Taipei City, Shuei-Nan Economic & Trade Park development project, planning, design and supervision services of Hsinchu City Provincial Highway 68 Extension Project, urban land consolidation of district 1 of Xinzhuang Taishan Wen Zi Zun area in New Taipei City, an ecologically sustainable new country village development Project, Jiaxing City, Zhejiang Province, China. He is a registered Quality Control Engineer, R.O.C.

Chung-Ren Chou
周 忠 仁

Mr. Chung-Ren Chou was promoted to Manager of Geotechnical Engineering Department in September 2020. He received his B.S. degree in civil engineering from Chung Yuan Christian University in 1992 and M.S. degree from University of Texas in 1995. He is currently a member of Taiwan Geotechnical Society. Prior to MAA, Mr. Chou worked at Ken-Yuan Engineering Consultant Co. Ltd., Plato Engineering Consultant Co., and Taiwan Area National Expressway Engineering Bureau. He joined MAA in 1998 and his works involved pile foundation design for Taipei 101, E-W Expressway in Ilan and Taiwan High Speed Rail, slop design of Hsin-I Extension Line, access road for Tai Power Bee-Hai Plant and Taiwan High Speed rail C220, geotechnical consultant of Lunman Project for Taipower Nuclear Plant, studies of rock classification & the establishment of engineering database for tunnel cases in Taiwan, station excavation and building protection, and design of MRT Xinyi Line and Songshan Line.

Hung-Yen Lee
李 泓 彦

Hung-Yen Lee was promoted to Deputy Manager of Transportation and Civil Engineering Department in October 2020. He received his bachelor's degree in civil engineering from Chung Hua University in 1999 and master's degree in civil engineering from Chung Yuan Christian University in 2007. Mr. Lee joined MAA in 2005 and has involved in The National Biotechnology Research Park construction project of Academia Sinica, zone-expropriation for north side of Xinzhuang Knowledge and Industrial Park in New Taipei City, PCM for Danhai New Town Development, Urban Land Consolidation of District 2 in Xin Tai Wen Zi Zun area, New Taipei City, and Urban Land Consolidation of Caota Area, Guanyin District, Taoyuan City. He is a registered Public Construction Commission Quality Control Engineer and International Project Management Professional.

Chi-Ming Lee
李 啓 銘

Chi-Ming Lee was promoted to Deputy Manager of Environmental and Water Resources Engineering Department in October 2020. He received his bachelor's degree in civil engineering from Chung Yuan Christian University in 1996 and master's degree in harbor and river engineering from National Taiwan Ocean University in 1998. Mr. Lee joined MAA in 2009. During 20 years of his professional career, Mr. Lee has been involved in many large-scale public construction projects and industry projects such as Sewerage System Engineering in Dongshan and Letzer Area, Sijhih Area, Hualian City, Jhudong Town, Puding City Plan Area, Kaohsiung County Jhong-an Road Area, Yangmei Are, Puli Town, etc. His works focus on analysis and design works for sewer pipeline. He is a registered Public Construction Quality Management Personnel and Public Construction Professional Procurement Personnel.

Integrated Solutions For Global Impact

MAA GROUP

http://www.maaconsultants.com

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