Organizer 主辦單位:

Supporting Organizations 支持單位:

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf
建築物再造，建築管理之大數據分析及機械學習 及
典型度假村的物業設施管理：澳門漁人碼頭

Date 日期 : 15 April 2019 (Monday) 2019 年 4 月 15 日（星期一）
Time 時間 : 2:00pm – 5:30pm (Registration will start at 1:15pm) 下午 2 時至 5 時 30 分（下午 1 時 15 分開始註冊）
Venue 地點 : Macao Studio City (3/F - Grand Ball Room No. 3) 澳門新濠影匯 3 樓 - 3 號大宴會廳

Seminar Program 研討會流程 **:**

1:15PM – 1:50PM	**Registration** 註冊
1:50PM – 2:00PM	**Welcome Address and Opening Speech** 歡迎及開幕詞 *Mr. Syed Mubarak, President - ASHRAE MACAO Chapter* *美國供暖製冷及空調工程師學會 澳門分會 – 會長*
2:00PM – 3:30PM (90 minutes)	**Building Re-Invented – Digital Transformation for Optimizing Building Energy, Reducing Operational Cost and Enhancing Comfort** 建築物再造 – 數字化改造供優化建築能源，降低運營成本，提高舒適度 *Ir Tang Chi Hang, Calvin 鄧智恒 工程師* *BEng(Hons), MEng, CEng, MHKIE, MIET, MCIBSE, MASHRAE, WELL AP, FHKAAST*
3:30PM – 3:40PM	**Question and Answers** 答問時間 *Moderated By: Ir Peter Chan, Immediate Past President - ASHRAE MACAO Chapter* *主持人 ： 陳錫邦 工程師, 美國供暖製冷及空調工程師學會 澳門分會 – 前會長*
3:40PM – 4:00PM	**Tea Break** 茶點時間
4:00PM – 4:45PM (45 minutes)	**Big Data Analytics and Machine Learning in Buildings Management - Application and Impacts** 建築管理之大數據分析及機械學習 - 應用及影響 *Ir Gary Hui 許鎮中 工程師* *MEng, CEng, RPE, MIET, MHKIE, MHKAEE, BEAM Pro, LEEP AP, MASHRAE*
4:45PM – 5:30PM (45 minutes)	**Experience Sharing: Facilities Management of a Destination Resort: The Macao Fisherman's Wharf** 經驗分享：典型度假村的物業設施管理：澳門漁人碼頭 *Mr. George Marques 馬浩庭先生* *MASHRAE , MHKAEE, WELL AP, MPF, LEED GREEN ASSOCIATE*
5:30PM – 5:45PM	**Question and Answers** 答問時間 *Moderated By: Ir Peter Chan, Immediate Past President - ASHRAE MACAO Chapter* *主持人 ： 陳錫邦 工程師, 美國供暖製冷及空調工程師學會 澳門分會 – 前會長*

Sponsors 贊助商:

Organizer 主辦單位:

ASHRAE Macao Chapter

Supporting Organizations 支持單位:

ASHRAE Hong Kong Chapter | 澳門工程師學會 Associação dos Engenheiros de Macau The Macau Institution of Engineers | 澳門特種設備協會 Associação de Equipamento Especial de Macau Special Equipment Association of Macao | 中國機械工程學會 港澳會員聯絡專員辦公室 CMES Liaison Officer Membership Office (Hong Kong and Macau)

澳門機電從業員協會 Associacao dos Profissionais de Electromecanica de Macau Macau Electrical & Mechanical Professionals association | 中國綠色建築與節能(澳門)協會 China Green Building and Energy Saving (Macau) Association | 澳門物業設施管理協會 Macau Properties and Facilities Management Association | soe

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf

建築物再造，建築管理之大數據分析及機械學習 及 典型度假村的物業設施管理：澳門漁人碼頭

Language 語言	English / Cantonese 英語 / 廣東話	**Application Deadline** 申請限期	4 April 2019 (Thursday) 2019 年 4 月 4 日（星期四）
Fee 申請費用	Free of Charge 費用全免	**Quota** 名額	100 ; First Come, First Served 先到先得
On-Line Registration 網上申請	https://docs.google.com/forms/d/e/1FAIpQLSffgKjy7udiIO_oMID8wvnmZLMBAgGVyMfOFQ1MkI65ZY_4uQ/viewform?usp=pp_url Successful applicants will be notified by e-mail on or before 8 April 2019 (Monday). 成功申請者將於 2019 年 4 月 8 日（星期一）前經電郵被通知。		
Enquiry 查詢	For any query, please contact our Student Branch – President, Mr. Lin Bin at (853) 68276290 or email at info@ashrae-macao.com 如有任何疑問，請致電（853）68276290 聯繫學生分會 – 會長 林斌先生或發送電子郵件至 info@ashrae-macao.com		
Remark 備註	Target Attendee : Electrical Engineering, Electromechanical Engineering 對象: 電機工程、機電工程 3-Hour CPD certificate will be distributed after the Technical Seminar. 技術研討會後分發 3 小時 CPD 證書 (CPD Application to Macau Government - CAEU is in process.) 本研討會已向澳門政府 建築，工程及城規規劃專業委員會申請 CPD 批核進行中。		

Speakers 講者:

Ir Tang Chi Hang, Calvin (鄧智恒 工程師)
BEng(Hons), MEng, CEng, MHKIE, MIET, MCIBSE, MASHRAE, WELL AP, FHKAAST
屋宇裝備工程學(榮譽), 工程碩士, 英國特許工程師, 香港工程師學會 會員, 英國工程技術學會 會員,
英國屋宇裝備工程師學會 會員, 美國供暖、製冷及空調工程師學會 會員, WELL AP（WELL 認證專家）,
香港科技協進會 副會長

Ir Calvin Tang has over 20 years of professional experience in the industry & building control and automation engineering, he has been qualified as a Chartered Engineer UK since 2003. Ir. Tang has been involved in a variety construction and products development projects in Hong Kong, Mainland China, Taiwan and other counties in Asia Pacific, acting the role of senior management, technical advisor.
Apart from work, Ir. Tang also actively participated in community services in different organization and activities to spread the care and love to our society, he was appointed as technical adviser of Employees Retraining Board (ERB) in 2012 to 2014.
He had served as the President of ASHRAE Hong Kong Chapter 2009-2010 and Governor of ASHRAE Hong Kong Chapter 2014-2015, Honorary Secretary of The Hong Kong Institution of Engineers – Control, Automation & instrumentation Division in the same year. Ir Tang was also elected vice president of the Hong Kong Association for the Advancement of Science and Technology 2017-2019.
In May 2018 , Ir Tang formed a team of A.I and Agricultural experts to join the international Challenge : Autonomous greenhouse – boost greenhouse vegetable production by artificial intelligence in Netherlands , the challenge was organized by Wageningen University and Tencent , more than 70 teams around the world joined this international challenge. Ir Tang leaded his team to award best 15 team of worldwide and 1st runner up of Asia Pacific region.

Sponsors 贊助商:

JYH KOOU | BELIMO | 新益冷氣工程有限公司 SAN YIK AIR CONDITIONING ENG.CO.,LTD | 永達工程 | 豪信系統工程有限公司 Hensen System Engineering Limited | McQuay International

Organizer 主辦單位:

Supporting Organizations 支持單位:

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf
建築物再造，建築管理之大數據分析及機械學習 及 典型度假村的物業設施管理：澳門漁人碼頭

Ir Tang Chi Hang, Calvin (鄧智恒 工程師)

鄧智恒 工程師 在工業和建築控制及自動化工程領域擁有超過 20 年的專業經驗，自 2003 年以來，他一直擁有英國特許工程師的資格。鄧工程師曾參與香港，中國大陸，台灣及亞太地區的各種建築及產品項目發展，擔任高級管理層，技術顧問等工作。
除了日常業務，鄧工程師還積極參與不同社區服務的組織及活動，以傳播對社會的關懷和愛心。他於 2012 年至 2014 年被任命為僱員再培訓局（ERB）的技術顧問。
鄧工程師曾於 2009-2010 擔任 ASHRAE 香港分會會長，並於 2014-2015 擔任 ASHRAE 香港分會監督，於同年擔任香港工程師學會名譽秘書 - 控制，自動化及儀表部門。鄧工程師當選為 2017-2019 香港科學促進會副會長。
2018 年 5 月，鄧工程師成立了人工智能專家和農業專家之團隊，挑戰國際比賽：自主性溫室 - 通過人工智能促進溫室蔬菜生產在荷蘭，此比賽由瓦赫寧根大學和騰訊舉辦，圍繞世界有 70 多個團隊加入這個國際比賽，鄧工程師帶領他的團隊，被授予全球最佳 15 支隊伍以及亞太地區第一名。

Building Re-Invented – Digital transformation for Optimizing Building Energy, Reducing Operational Cost and Enhancing Comfort
建築物再造 - 數字化改造供優化建築能源，降低運營成本，提高舒適度

Presentation Abstract 演講摘要:

In Hong Kong & Macau, more than 60% commercial building, hospital and hotel installed building management system, over 10 thousand data from building equipment, control environments, user work place upload to the system, every minute, every hour. How to make use of these data to optimizing building energy, reducing operation cost and enhancing comfort, becomes a new challenge for today modern green building.
Building management is getting easier and more powerful thanks to innovative technology that leverages the Internet of Things (IoT). By connecting devices with software and services, today's buildings – and the people within – can work smarter. The presentation shares two cases studies to identify main success key factors for digital transformation of new and existing building, maximizing value through latest innovation technology.

在香港和澳門，超過 60%的商業建築，醫院，酒店已安裝樓宇管理系統，每分鐘或每小時超過 1 萬個來自建築設備，控制環境，用戶工作場所的數據上傳到系統。如何利用這些數據優化建築能源，降低運營成本，提高舒適度，成為當今現代綠色建築的新挑戰。
利用物聯網（IoT）的創新技術，樓宇管理變得更加輕鬆和強大。通過將設備與軟件和服務連接起來，今天的城市以及內部工作人員可以更智能地管理各種事務。該演講分享了兩個案例研究，以確定新建築和現有建築數字化轉型的主要成功關鍵因素，通過最新創新技術實現價值最大化。

Sponsors 贊助商:

Organizer 主辦單位:

Supporting Organizations 支持單位:

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf
建築物再造，建築管理之大數據分析及機械學習 及 典型度假村的物業設施管理：澳門漁人碼頭

Ir Gary Hui (許鎮中 工程師)
MEng, CEng, RPE, MIET, MHKIE, MHKAEE, BEAM Pro, LEEP AP, MASHRAE
英國工程碩士，英國註冊工程師，香港註冊專業工程師，香港能源工程師學會會員，
建築環保評估協會會員，美國綠建築協會專業認證，美國供暖、製冷及空調工程師學會會員

Gary is a thought leader, pioneer and innovator in demand-side energy, expert in energy and sustainability of the built environment.
Trained as an engineer, Gary generates values through strategy development, management advisory, development planning, building design, system procurement, assets operation and maintenance. Gary likes to challenge status quo transforming the way we do things by bringing best of the breed professional knowledges, technologies and perspectives from different sectors together.
Passionate about absolute efficiency, Gary translates engineering opportunities into commercial returns. His goal is simple but ambitious, that is to yield optimal operation efficiency achieving lowest possible asset ownership cost for buildings.

許鎮中工程師是在用能需求、建築可持續發展方面的先驅和革新者。專業工程師出身的他專注于通過為項目制定管理營運策略、制定及調整發展規劃和建築設計、為設備系統採購和建築設備及系統營運與維修保養找到最優方法為建築樓宇管理創造價值。許鎮中先生尤其喜歡通過對傳統工程智慧、最新科技和營運理念進行整合從而找出解決問題最優的方法，從而對現有的技術及各個行業管理方法進行革新。許鎮中先生對建築營運和管理效能的提高充滿熱忱，致力於將工程方面發現的改進機會轉化為直接的經濟回報。他的目標簡單而充滿雄心：用建築最少的營運經費達到最優化的營運效能。

Big Data Analytics and Machine Learning in Buildings Management - Application and Impacts
建築管理之大數據分析及機械學習 - 應用及影響

Presentation Abstract 演講摘要:

With the availability, volume, variety and velocity of data exponentially spiking, big data analytics and machine learning surged to empower organizations to achieve growth and high performance. While Big Data Analytics anchors on collecting and analyzing data sets to identify useful and hidden patterns, Machine Learning "trains" computers to perform complex data analytics that human don't usually know how to accomplish.
The current talk shares our practical experience and application examples using big data analytics and machine learning in optimizing building performance. It highlights the real-life examples and user experience of big data analytics and machine learning on building performance while explaining the positive impacts and challenges with Live Demo and Case Study.

在目前數據可用性、數據量、數據類別和數據傳輸速度都在指數性增長的時代，大數據分析及機械學習成為了幫助各種組織達到其有效增長及高效能運作的重要工具。大數據分析著重于收集和分析大量的數據從而發現數據中隱含的趨勢及聯繫。而機械學習則為"訓練"電腦去完成繁複、複雜而人類通常無法完成的工作。
這個演講將通過應用實例分享我們通過大數據分析和機械學習來優化建築管理效能的經驗。我們將重點關注實際應用實例及用家對大數據分析和機械學習的實際反饋，并利用案例研究和現場對數據平台的演示操作闡述大數據分析和機械學習的優點和重要影響。

Sponsors 贊助商:

Organizer 主辦單位:

Supporting Organizations 支持單位:

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf
建築物再造，建築管理之大數據分析及機械學習 及
典型度假村的物業設施管理：澳門漁人碼頭

Mr. George Marques (馬浩庭先生)
MASHRAE , MHKAEE, WELL AP, MPF, LEED GREEN ASSOCIATE
美國供暖、製冷及空調工程師學會會員，WELL AP 建築認證專家，澳門物業設施管理協會副會長，香港能源工程師學會會員，美國綠建築協會專業認證

George was born in Macao, educated in the US, majoring in Mechanical Engineering. With over 20 years of experience in the Medical, Retail and Hospitality industry， George is very passionate about Healthy Environment, Green Building, Sustainability and Innovations. George's focus in management is teamwork because he believes that his staffs are his greatest competitive advantage.

馬浩庭先生出生於澳門，在美國接受教育。馬先生專業為機械工程，在醫療，零售和酒店行業擁有超過 20 年的豐富經驗。馬先生熱衷於創建健康環境，綠色建築，關注可持續發展和創新。馬先生的管理核心觀念是團隊合作，因為馬先生深信其最大的競爭優勢是其優秀的團隊成員。

Presentation Abstract 演講概要:

Experience Sharing: Facilities Management of a Destination Resort: The Macao Fisherman's Wharf
經驗分享：典型度假村的物業設施管理：澳門漁人碼頭

The pursuit and challenges of managing a built environment in a coastal area will be addressed. The current talk will also include Green Building practice， Sustainability and future projects.

是次分享是關於解決沿海地帶的設施管理的挑戰及工作目標，亦包含綠色建築實例，可持續發展和未來規劃項目。

Sponsors 贊助商:

Organizer 主辦單位:

Supporting Organizations 支持單位:

Building Re-invented, Big Data Analytics and Machine Learning in Buildings Management, Facilities Management of a Destination Resort : The Macao Fisherman's Wharf
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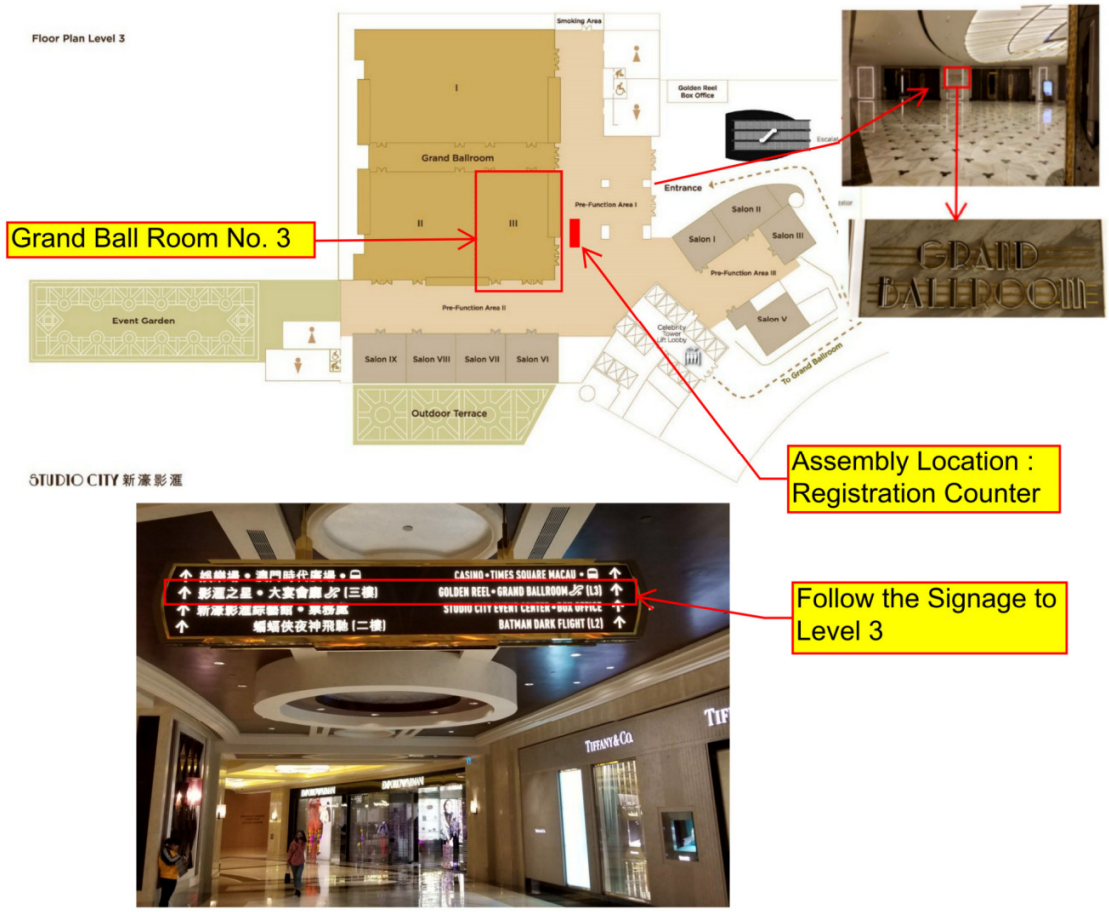
典型度假村的物業設施管理：澳門漁人碼頭

Date & Time	:	15 April 18 (Monday) 2:00pm – 5:30pm	**Registration**	:	1:15pm – 1:50pm
Assembly Point	:	Studio City, Level 3, Grand Ball Room No. 3（新濠影匯 - 3 樓 - 3 號大宴會廳）			



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