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THE HONG KONG AIR CONDITIONING AND REFRIGERATION ASSOCIATION LIMITED
會員通訊
NEWSLETTER
WINTER 2023

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Message from the President

Ir M.T. LAW
President

I would like to take this opportunity to thank you all for the support we received from members, associates and officials during the last year. I also invite you all to continue your participation in our upcoming events to promote our Association and contribute in building a comfortable, green and smart living environment for our society.

Recently, Net-Zero Carbon commitments have been reshaping the global landscape. Taking a structured approach to reduce carbon emissions makes good commercial sense in today's business environment. As an international city, Hong Kong should proactively set out a strategy to catch up with this global trend and actively participate in combating climate change. This includes promoting clean energy, improving energy efficiency and reducing emissions from transportation.

Given that close to 70% of total carbon emissions in Hong Kong come from the buildings, and as major stakeholder in the building industry, we should promote and apply decarbonization in various ways. This includes working with our clients to minimize carbon emissions from E&M systems through design and implementing whole life cycle reduction pathways.

We recognize that solutions for improving energy efficiency and reducing emissions, such as passive design, active systems and material innovation, best practices for operation, retrofitting, retro- commissioning and digital twin technology, are expected to be deployed widely in Hong Kong. This presents a great opportunity for us to familiarize ourselves with these high-end technologies, maximize the effective use of natural and renewable energy, and demonstrate to our clients how these new decarbonization technologies can facilitate the vision of "Zero Carbon Emission and Carbon Neutrality".

Decarbonization solutions are not limited to new projects; they can also be widely applied in existing buildings. Through best practices in operation, retrofitting, retro-commissioning, and AI technology, we can effectively achieve emissions reduction in existing buildings. Major stakeholders, such as EMSD and HKGBC, are providing guidelines for these issues. EMSD has launched guidelines for retrofit commissioning and best practice operation. HKGBC has also launched guidelines for retrofitting. In the E&M industry, we have developed a Digital Twin platform that integrates design,

..... *(To be continued on page 3)*

..... From cover page

installation, maintenance and operation in infrastructures and buildings. This platform effectively harnesses the benefits of BIM for facility management, operation and maintenance.

Digital Twins, driven by BIM, encompass workflows throughout the entire building lifecycle. By having all building information available, operators gain transparency and can make informed decisions and act swiftly during unforeseen events. BIM allows operators to understand and explore complex systems within buildings. The integrated data quality and document management enable efficient orchestration of BIM projects across building lifecycles. Ultimately, Digital Twins help manage assets and buildings more efficiently, extending the lifetime of assets, facilitating better decision-making, and improving the performance of plants and systems to achieve energy savings.

Retrofitting with a digital twin involves implementing a virtual expression of the building and its systems to enhance operational efficiency and optimize performance. It is important to note that retrofitting integrated with a digital twin is a complex process that requires engineering expertise in building systems, data integration, modeling, analytics and software development. Engaging with professionals experienced in implementing a digital twin can help ensure a successful retrofit. During the process of retrofitting with a digital twin, various challenges and limitations, such as data availability and quality, data integration, model accuracy, cost and complexity, legacy system compatibility, security and privacy, and system scalability, need to be addressed.

There are numerous successful cases of achieving sustainable energy saving through retrofitting and retro-commissioning, such as the replacement of air-cooled chillers with water-cooled chillers, adoption of variable chilled water flow and fine-tuning operational practices.

We should also collaborate with different stakeholders to promote the application of intelligent electrical and mechanical services, leveraging AI analysis to strengthen asset management and improve the effective operation of E&M systems. This will contribute to improving the reliability of routine operations and achieving energy saving.

“Committed to system performance improvement and exploring systematic and integrity innovation” is one of the major objectives of ACRA for our industry. We strongly encourage our members to work together to accelerate the future development of the HVAC business and formulate a direction for future roadmap towards excellence and innovation.

We welcome your views on green development, systematic and integrity innovation in people, technical operations, and business solutions for the industry. Any feedback will be collected, consolidated and communicated with different stakeholders, as it is key to our success in promoting our professionals and contributing to our society.

We are committed to combating climate change and initiating innovative solutions for the future era of E&M Intelligence. We will continue to share our past experiences with the industry and do our best to play our part in Hong Kong’s journey towards becoming a Net-Zero Carbon and Smart City.

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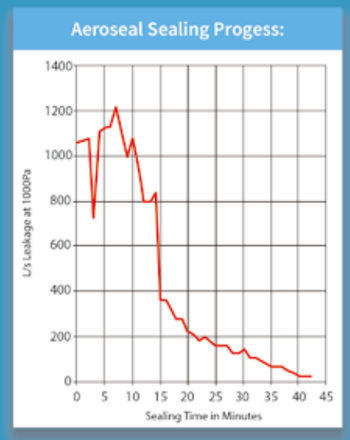

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Outlook for Refrigerant Transition in Hong Kong

K.T. Cheuk

1. History

Hong Kong, once a humble "fishing village", is a leading financial center in the world today. Similarly, refrigerant technology has undergone remarkable advancements, evolving from the 1st generation of “whatever worked” to the 4th generation, which addresses environmental impact (Figure 1). This evolution has taken place due to various factors, including safety, stability, economics, and environmental concerns.

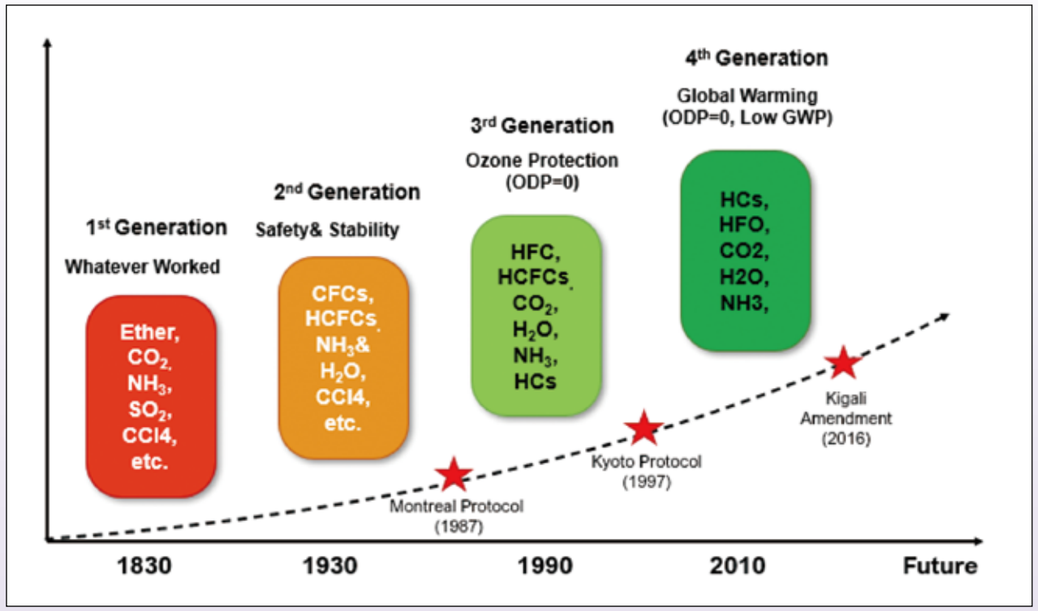

Figure 1. Development stages of refrigerants

The Montreal Protocol on Substances that Deplete the Ozone Layer, established in 1987, stands as the inaugural global environmental treaty aimed at protecting the ozone layer through gradually eliminating ozone-depleting substances (ODSs), i.e., chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), in production and consumption. To echo this global treaty, the ozone protection ordinance Cap.403 in Hong Kong was enacted in 1989. The Montreal Protocol has been successful in reducing the ODSs which have largely been replaced by hydrofluorocarbons (HFCs) as alternatives in refrigeration. As anticipated, the treaty has demonstrated innovation and success, leading to universal ratification by all countries worldwide. This collective effort affirms that the ozone hole is gradually healing and is expected to fully recover by 2045.

While HFCs are zero ozone-depleting substances, they are the potent greenhouse gases (GHGs) that contribute to climate change, causing melting glaciers, intense heat waves, and increasing ambient temperatures. In 2016, the parties to the Montreal Protocol adopted the Kigali Amendment to the Montreal Protocol to call for a gradual reduction in the consumption and production of high global warming potential (GWP) substances such as HFCs. The Amendment, which outlines plans for the phasedown of HFCs with gradual reduction targets for the participating countries, promotes the use of low-GWP alternatives and offers support to developing nations (Figure 2).

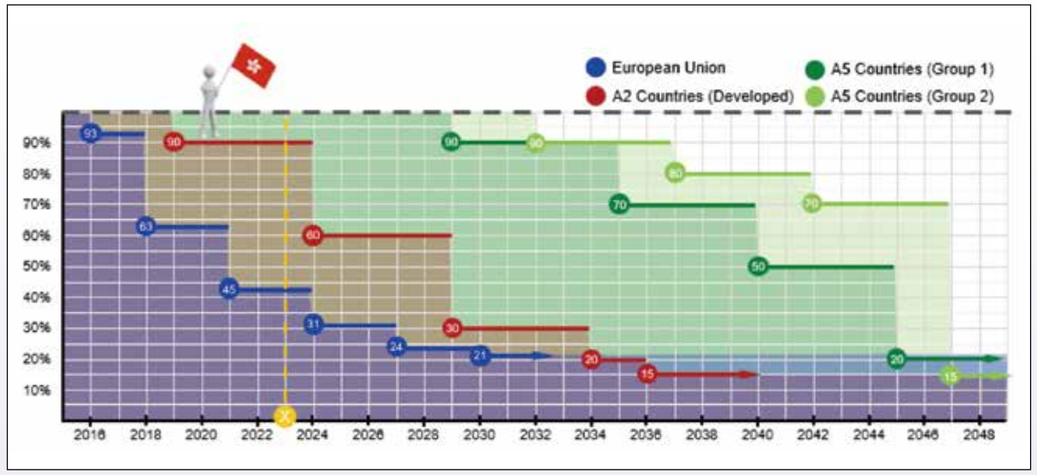

Figure 2. Pathway for a global phasedown of HFCs

2. National Treaties and Actions for Phasing Down HFCs

To effectively reduce HFC emissions, mitigate climate change, and align with the objectives of the Paris Agreement, the phasedown plans set specific targets and timetables for progressively decreasing the HFC emissions of different countries, taking into consideration their varying circumstances and capabilities. Typically, developed countries take earlier actions, implement front-loaded reduction targets, and provide transition support.

Currently, various countries have set limits to GWP values ranging from 15 to 750, factoring in local government policies and regional consumer market needs. In Asia, the GWP limits are set to more aggressive values of 15 to 100, considering the region’s geographical location, government policy and land user / industrial readiness. In the United States, the GWP limit was set to 700, while Europe has implemented the fluorinated gases (F-Gas) regulation. These efforts reflect a global commitment to mitigating the environmental impact and transitioning to more sustainable alternatives.

3. Hong Kong Action Plans on Refrigerant Regulations and Measures

In line with global efforts to reduce carbon emissions, the Hong Kong SAR government has set out more vigorous interim decarbonization targets to reduce carbon emissions and implement specific measures to actively advocate the Kigali Amendment.

- The Electrical and Mechanical Services Department (EMSD) has established a goal to reduce HFC emissions by 85% by 2036 [1] [2].

- In 2021, the Hong Kong Green Building Council (HKGBC) advocated various green measures such as adopting very low-GWP HFOs such as R-1234ze (GWP<7), and air-conditioning with high energy efficiency to minimize the environmental impact [3].
- In July 2023, the Environment and Ecology Bureau (EEB) announced a plan to promote natural refrigerants and HFOs as alternatives to HFCs. The plan includes various control strategies, production, consumption, restricting import, promoting reclaim and recycling programs, and proposes smooth acceleration to catch up with the global trend of transiting to low-GWP applications. The import and ongoing surveillance system is targeted to be regulated by 2025.

4. The trend of Adopting Low-GWP Refrigerants in Hong Kong

The global trend toward adopting low-GWP refrigerants is evident, with countries setting collective goals and implementing measures to expedite the transition. However, the consensus among countries and organizations is that refrigerants with a GWP below 150 are considered low-GWP refrigerants, as supported by the European Commission's Regulation Proposal [4] and acknowledged by reputable research institutions [5] (Figure 3).

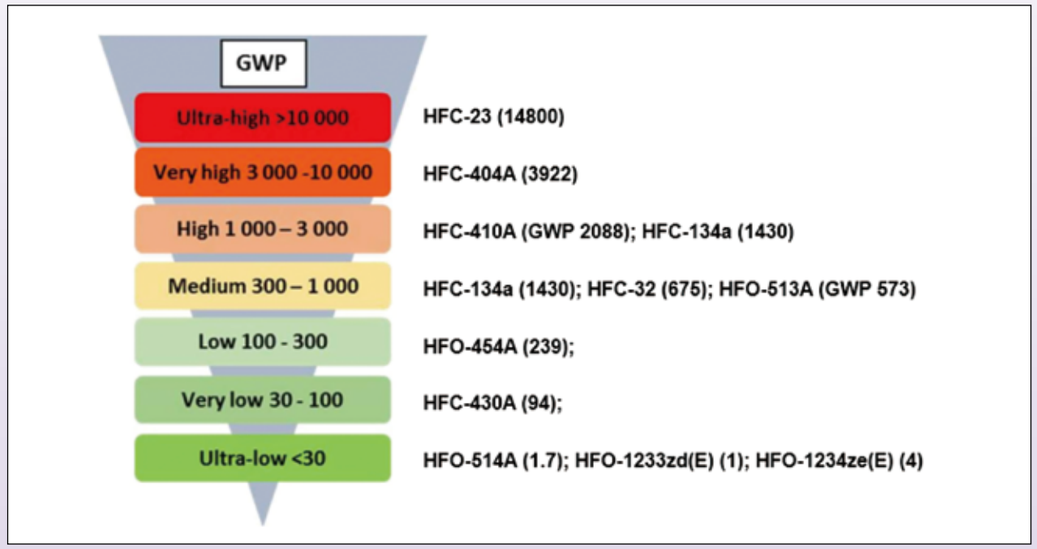

Figure 3. GWP bands based on the TEAP Task Force Report and commonly used refrigerant.

As for Hong Kong, low-GWP refrigerants were defined in the past as those with lower GWP values than conventional HFC refrigerants. Like R-32 (GWP=675), whose GWP is lower than that of R-134a (GWP=1,430), has been considered as an alternative refrigerant in household air conditioners. However, regarding its flammability, the EMSD, Fire Service Department, and Labor Department have enforced statutory regulations, including the Dangerous Goods Ordinance, Gas Safety Ordinance, and Occupational Safety and Health Ordinance to R-32 in storage, handling, and usage since July 2017. A voluntary registration scheme has been validated for technicians to handle this mildly flammable refrigerant for household air conditioners in the summer.

In line with the global trend, in 2023, Hong Kong EEB introduced a proposal for the phasedown of hydrofluorocarbons (HFCs) in refrigerants, incorporating a low-GWP criterion for specific categories of restricted equipment such as household refrigerators, water-cooled chillers, and motor vehicle air-conditioning systems. The suitability of low-GWP alternatives, including HFO refrigerants such as R-1233zd (GWP=1), R-514A (GWP=2), and R-1234yf (GWP=4), has been made available after consultations with local trade associations and professional bodies, and upon the issuance of relevant press releases by the Legislative Council of the Hong Kong SAR (LegCo). [1].

The trend of adopting low-GWP requirements has been considered by countries in major applications and presented in industry metrics, which has been comprehensively elucidated by the Technology and Economic Assessment Panel (TEAP) in its annual report of May 2022. As an authoritative advisory body to the Montreal Protocol parties, TEAP has underscored the continuous efforts of regulatory authorities to promote the adoption of refrigerants with zero ozone-depleting potential (ODP=0) and near-zero GWP (GWP≈0) [6]. This push aligns with the globalized nature of marketing trade and technology transfer [7].

5. Conclusion

Taking China's strategic and Hong Kong geographic significance into account, the Hong Kong SAR government should set ambitious goals in combating climate change. According to a LegCo paper titled *Towards A Planning Vision and Strategy Transcending 2030* (Hong Kong 2030+) and the Chief Executive's 2022 Policy Address, Hong Kong aims to create a forward-looking and innovative city to enhance its competitiveness and achieve carbon neutrality through a smart, green, and resilient city strategy. As both local and global implementation of stringent environmental standards becomes more prevalent, it is a clear indication that the Hong Kong heating, ventilation, and air conditioning (HVAC) industry will gradually transit toward adopting refrigerants with significantly low GWPs. Since Hong Kong is increasingly concerned about energy efficiency, environmental impact, and safety regulations, and ultra-low GWP HFO-type refrigerants are environmentally friendly alternatives to those with high GWPs, the adoption of such refrigerants is an inevitable trend.

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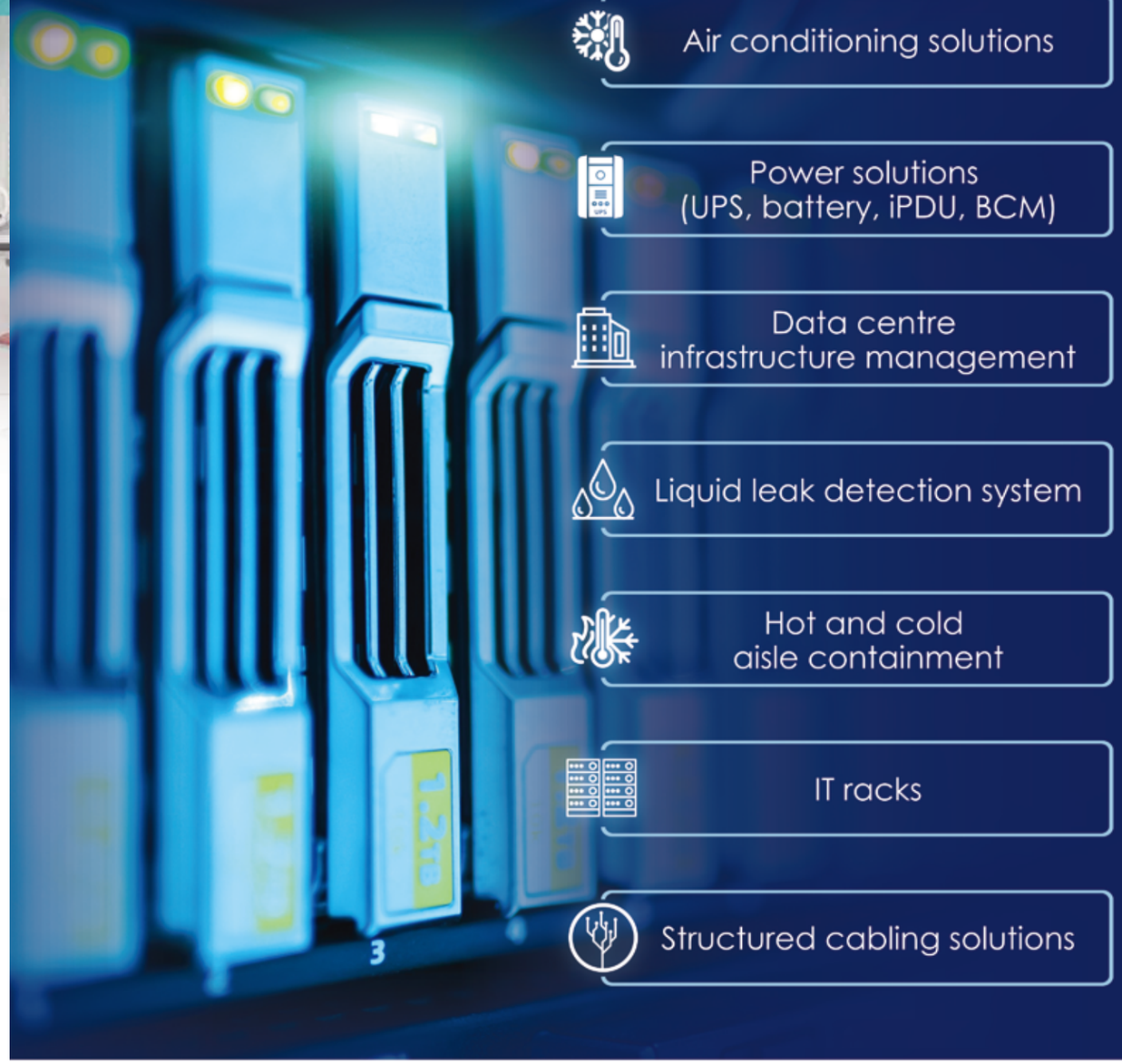

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人物專訪

曾慶祥先生（Mr. Gilbert Tsang）

曾慶祥先生在大型機電工程項目管理領域有數十年的經驗，他在這次訪問中分享了管理哲學在工程管理中的應用，希望能夠為各持份者提供一點參考。

努力進修 開拓近寬闊視野

曾慶祥先生在新菱工作期間，負責圖面施工設計，監督和管理有關合約工程的港鐵隧道及車站的抽風，供電，消防及供排水系統，致力提升工程項目的規劃和工程質量，協調各有關方面的困難和分歧，以確保該項目得以順利進行。他的專業知識和經驗使他成為團隊中不可或缺的一員。

在入職的第三年，曾慶祥先生有機會前往日本接受進一步的培訓。這個培訓使他獲得了更深入的知識和技能，並為他的職業生涯帶來了更多的發展機會。培訓結束後，他回到香港並擔任港鐵機場線香港站樓宇設備承判合約總項目經理。然而，他強調基本培訓只是一個開始，日後在職場的道路上還有很多需要學習的地方。

跳出舒適圈 迎來新挑戰

曾慶祥先生在新菱工作了28年，其後轉到金門負責機電工程的工作。這次轉職讓他跳出了自己的舒適圈，希望更能發揮本身的潛能，所以勇敢地接受了這個挑戰。對他來說，這一次轉職是一場挑戰和機遇，但這樣的挑戰也讓他不斷成長和進步。曾慶祥先生不僅對工作充滿熱情，還希望能夠幫助金門的發展。在2008年，他負責了更多範疇，包括地基工程、樓宇工程和幕牆工程。他開始思考如何透過自己的工作來影響和幫助金門的發展。特別是在幕牆工程中，由於需要大量人手處理預製圖，他意識到科技和電腦軟件處理、預製圖和在製造工場數碼化的無縫連接是提高效率的關鍵。他提到了機電裝備合成法（MiMEP）和組裝合成（MiC）的應用，這些技術可以改善工程的流程及減少人為上的錯誤，而令工程走向工廠製造流程上的嚴謹，讓公司更具競爭力。同時，承建商也需要看到利益和好處，才會願意在機電方面提供支援。當然，市場的需求和規模也是一個重要的考量因素。

滿腔熱忱 為客戶提供專業服務

曾慶祥先生在工作上參與了多個工程項目，其中印象最深刻的包括港鐵香港站、澳門威尼斯人以及竹篙灣檢疫中心。他在這些項目中學到了很多新事物，並且從中找到了樂趣。在香港站這個項目中，曾慶祥先生學到了做事要有責任心和溝通的重要。作為一個建築業的專業人員，他明白自己的責任是確保工程的順利進行，並且符合相關要求。這個項目確實給他帶來了壓力，但他堅持不懈地努力工作，令團隊有向心力及團隊精神，以確保項目能成功完成。

接下來是澳門威尼斯人項目。在這個項目中，曾慶祥先生學到了與業主代表建立信任的重要性。這是一個大型的建築項目，需要與不同的利益相關者合作，包括業主代表。曾慶祥先生明白只有通過建立信任和良好的溝通，才能確保項目順利進行。

另外是竹篙灣檢疫中心，這是第一個採用Modular Integrated Construction（MiC）的工程項目。雖然曾先生在這方面經驗尚淺，但明白到香港COVID-19的嚴峻情況，憑著建築處的領導下，並且有效應用科技，利用MIC及機電預製組件，使工程能夠更有效率地進行。他從中學習前人的經驗，從管理層的角度看待工程，並關注整個環境，希望透過這些改革，改變建築業生態，提高管理效率。

寄語年輕人 實現自我價值 勇創新路向

曾慶祥先生認為香港年輕人以其出色的國際視野而聞名，但他認為從前的年輕人需要面對的困難更多。在這樣的環境下，曾慶祥先生對於年輕人提出了一些建議，他認為當遇到自己不懂的問題時，年輕人應該多問、多看。在工作中，他強調了「聆聽、學習和觀察」的重要性。他認為一切不一定能夠盡如人意，但至少我們應該做到問心無愧。曾慶祥先生提醒年輕人不要固步自封，不能完全依賴上級的指示，應該再踏出一步，多作思考。同時，他強調了與團隊建立良好關係和培養團隊精神的重要性。在工作中，建立自己的個人形象也是非常重要的，他建議年輕人要多幫助身邊的人。

曾慶祥先生還提到，年輕人應該多向大灣區學習，了解大灣區在成本控制上的卓越的管理，並從中尋找學習的機會。他強調了公司之間要創造共贏的機會，並指出，目前各公司在招聘上存在互相競爭的情況，各自擁有不同的系統，工程項目需要重新學習。他鼓勵年輕人做事要多啟發自己的創新思維，不斷學習，開拓自己的視野，使在競爭激烈的職場環境中取得成功。另一方面，在現今工程合約中，設計趨向較複雜，建築成本上的考慮及有經驗的項目管理人員的不足和熟練工人的短缺，而直接及間接產生施工及維修的不安全因素。但我們要堅守安全是各持份者在工程計劃，設計和施工的基本責任，因"生命冇TAKE TWO"，希望和各位分享上述理念。

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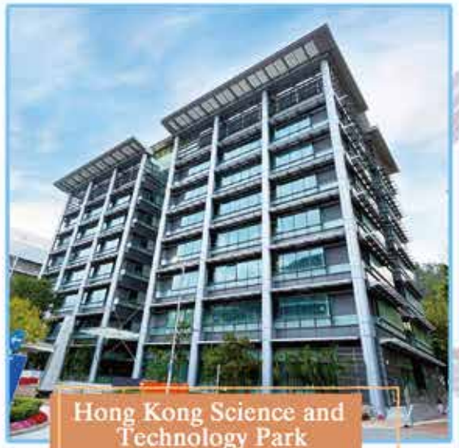

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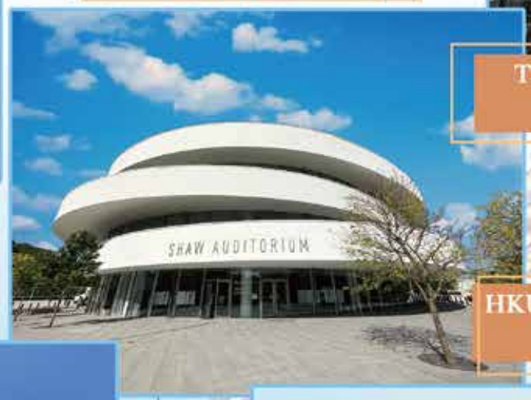

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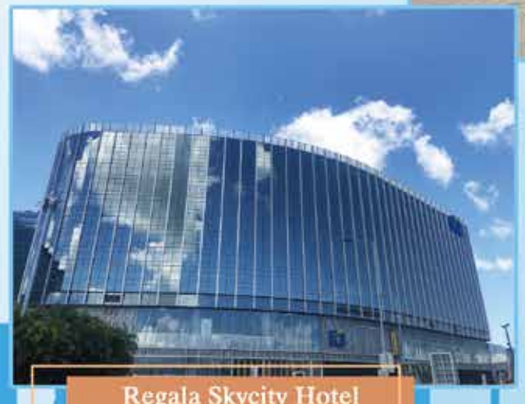

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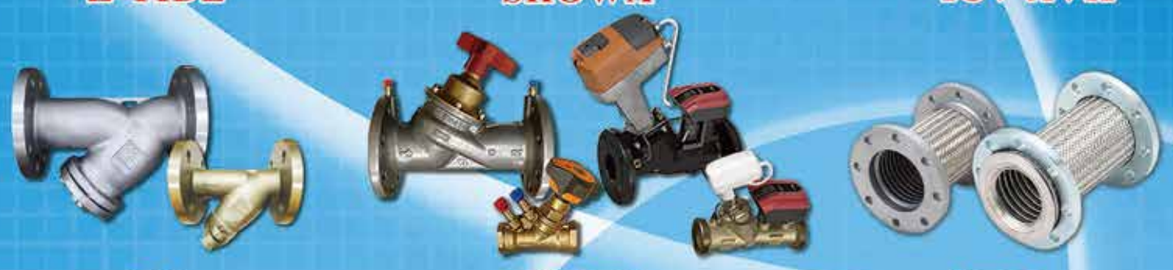

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Voluntary Registration Scheme for Technicians Handling Mildly Flammable Refrigerant of Household Air-conditioners

Electrical and Mechanical Services Department introduced the Registration scheme in May 2023 to enhance the practices and safety awareness of handling mildly flammable refrigerant of household air-conditioners. Technicians possess necessary qualifications and experience in connection with the installation and / or repair of household air-conditioners using mildly flammable refrigerant may register under the scheme, which is voluntary in nature at the present stage.

The scheme cover window type, single split type and multi-split type, with cooling capacity not exceeding 12kW and does not cover variable refrigerant flow (VRF) system.

Registered technicians in this scheme shall undertake to follow a set of code of conduct and be monitored under a performance monitoring system. The scheme recognizes the competency of technicians handling mildly flammable refrigerant of household air-conditioners and encourages more technicians to receive relevant safety training, with a view to uplifting their professional image. The public can also check online the list of registered technicians under the scheme. Up to September 2023, more than 700 technicians had registered in this scheme.

Registration Classes

Under the scheme, there are 2 registration classes for technicians handling mildly flammable refrigerant of household air-conditioners as shown below. An applicant shall only apply for either of the registration classes:

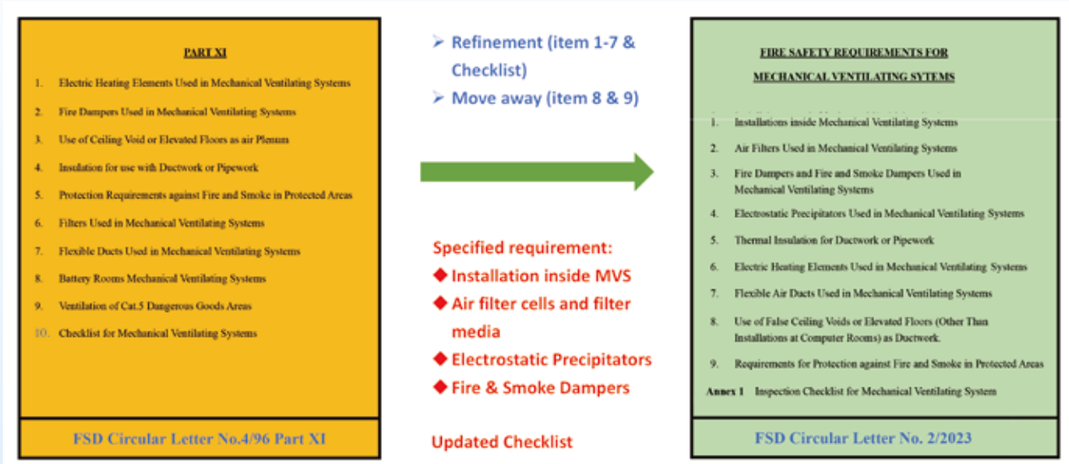
Class	Work that the technician is qualified to carry out
A	Installing window type air-conditioners using mildly flammable refrigerant
B	Installing household air-conditioners using mildly flammable refrigerant and carrying out relevant work processes involving handling mildly flammable refrigerant*

** The work processes include installing split type air-conditioners and repairing refrigerant pipework of air-conditioners.*

Please visit EMSD following website for details and download application form:
https://www.emsd.gov.hk/en/other_regulatory_services/flammable_refrigerant_safety

FSD Circular Letter No. 2/2023
Fire Safety Requirements for Mechanical Ventilating Systems

Fire Services Department (FSD) issued this Circular Letter on 7 June 2023 to announce the revised fire safety requirements for mechanical ventilating systems and arrangements of their implementation. These requirements effected on 1 September 2023, and superseding relevant requirements stipulated in Part XI of FSD Circular Letter No. 4/96.



With a view to enhancing fire safety standards of mechanical ventilating systems, a Sub-working Group joined by the Ventilation Installation Liaison Group (VILG) and the Fire Safety Standard Advisory Group (FSSAG), conducted a holistic review on relevant requirements. ACRA is member of the Sub-working Group to provide opinion on behalf of our industry. The Sub-working Group revised the fire safety requirements for mechanical ventilating systems falling within the scopes of the following government regulations respectively as follows.

(i) Building (Ventilating Systems) Regulations (Cap. 123J)
(ii) Ventilation of Scheduled Premises Regulation (Cap. 132CE)

The revised requirements "Fire Safety Requirements for Mechanical Ventilating Systems", is attached to the circular letter. Apart from updating of relevant requirements with reference to the current international/national standards, main areas of revision are as follows:

a) Specified requirements for installations inside mechanical ventilating systems;
b) Specified requirements for air filter cells and air filter media, electrostatic precipitators, and fire and smoke dampers used in mechanical ventilating systems;
c) Updated requirements for installation of insulation materials near fire dampers;
d) Updated "Inspection Checklist for Mechanical Ventilating System".

Please visit following FSD website for details of the Circular Letter and Appendix :
https://www.hkfsd.gov.hk/eng/fire_protection/notices/circular.html

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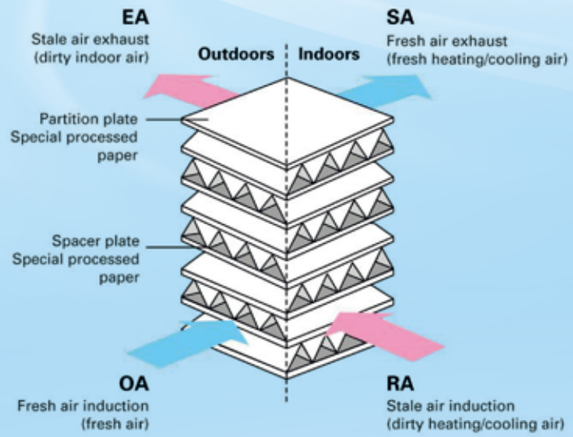
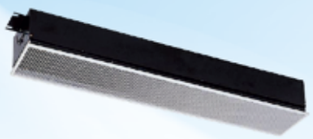


The Lossnay core is a crossflow plate-fin total heat exchanger composed of partition plates and spacer plates made of special processed paper. As the air-supply and exhausting passages are completely separated by partition plates, fresh air is constantly introduced with no mixing of fresh and stale air.

Other Ventilation Products

Air Swing Fan



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Town Gas Absorption Chillers

- To achieve all-weather operation, Town Gas Absorption Chillers were installed to provide chilled water and heating water for all indoor pools and office areas
- Applying the technology of "Condensing Heat Recovery" inside the gas absorption chiller, those chillers can be operated in "Cooling Mode" and "Heating Mode" simultaneously, which lead to an enhancement of overall system efficiency
- With the portable mobile devices, operators can have 24/7/365 real-time remote monitoring to the operation performance of the chiller
- Using water as refrigerant that do not have any Global Warming Potential (GWP) involved

Town Gas Condensing Hot Water Boilers

- Provide hot water supply for indoor heated swimming pool, shower in changing room and desiccant dehumidification
- 90% or above efficiency achieved thanks to the condensing design which recover the heat energy from exhaust gas, with lower exhaust temperature

Town Gas Hot Water Type Desiccant Dehumidifiers

- High indoor humidity is a key concern for indoor swimming pool. Water vapor from the warm surface of pool condenses and induce the aging of facilities
- The desiccant wheel removes moisture directly, achieving precise humidity control with lower cooling load, bringing saving in energy and cost
- Better indoor air quality (IAQ) with less musty smell and bacteria helps improve swimmers' experience

Town Gas Catering Appliances

- Towngas catering appliances are used in the 3 Food and Beverage outlets in Water Park, providing a wide choice of international flavors, including Kebab's, BBQ and local favorites
- Environmental friendly design with heat recovery functions, facilitates cool working environment for chefs

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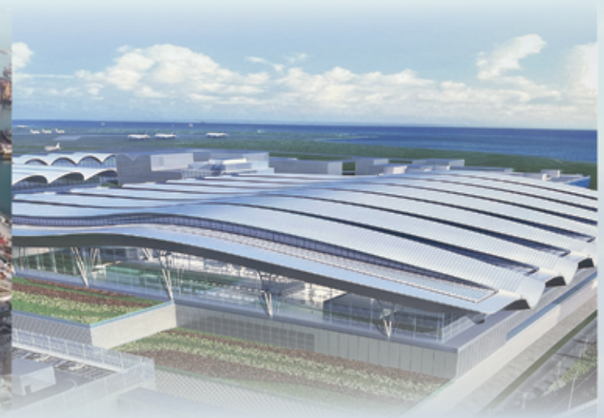

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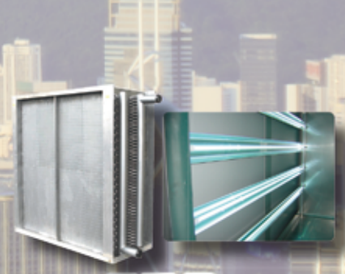

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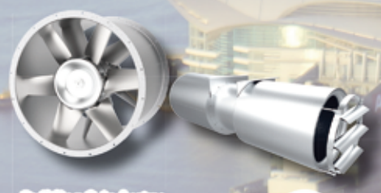

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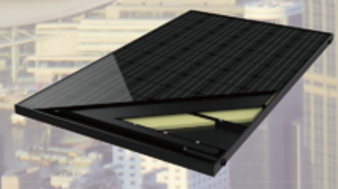

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Variable Flow Cooling Towers to Improve the Overall Performance of the Cooling System COP

Introduction

Chilled water systems constitute a major portion of energy consumption in air conditioning systems of commercial buildings. Global warming causes steadily increasing the earth's average temperature which also boosts the energy consumption ratio will continue to rise even further. Most new chillers can run at variable flow even at the condenser providing more opportunities for operational savings. The cooling towers being an integral part of the system and consuming only 3-7% of total energy consumption. There are significant energy savings for cooling towers operating at the variable flow conditions which are in its most efficient manner. The rational use of cooling towers to improve the overall performance and conserve energy of the chilled water system COP will be the trend.

"The chiller saves 3.6% of energy for every 1°C reduced condensing temperature, ultimately higher chiller COP" – ASHRAE

Variable Flow Over Cooling Towers

Installing the three-stage water distribution basin before the nozzle cups to maximize the effectiveness of the process flow from 20% to 110% is shown in Figure 1.

The variable flow nozzles distribute the hot water uniformity over the infill area to maintain air-water contact for maximum efficiency and utilize full heat transfer capability even when the process flow is low maintaining the same level of the cooing efficiency. When the flow rate is low, each cubic meter of water is allocated to a larger cooling area to improve the heat transfer efficiency. This performance improvement will be fed back to the chiller to improve the COP of the chilled water system.

High Flow Rate

Low Flow Rate

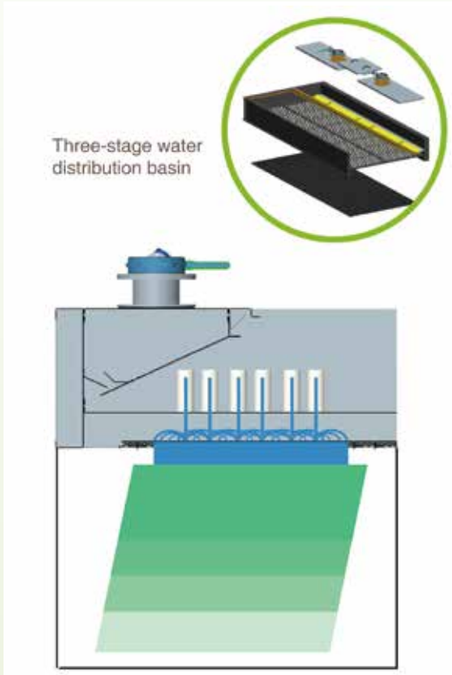
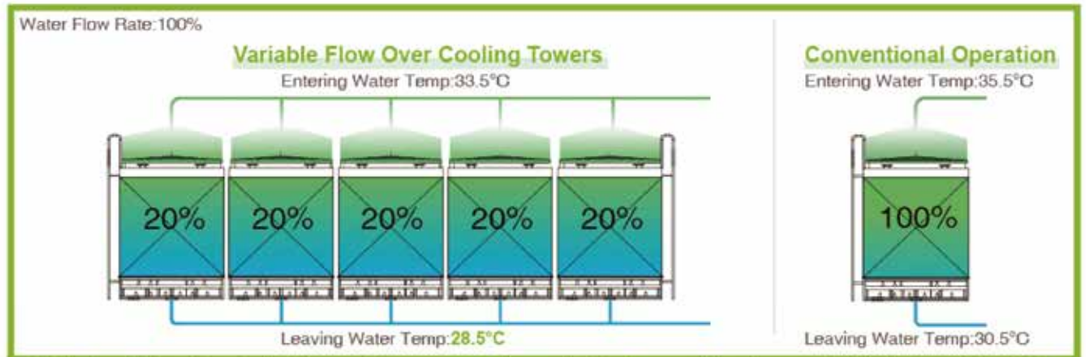


Figure 1

In the conventional partial load condition, when the heat load is reduced to a minimum level, few cooling towers remain operative in proportion to the heat load. With the variable flow over cooling tower, energy savings can be improved by spreading the reduced flow rate to the available towers, even when the tower is running as low as 20% of process flow for the available tower, the three-stage water distribution basin allows the cooling tower to manage the variations of the process flow automatically, and to keep the air-side pressure drop maintained well over the infill area for optimal heat rejection performance.



With the higher heat rejection surface area in the variable flow cooling towers that help to reduce 2°C condenser water temperature over the conventional operational cooling tower

Resulting the chiller saves 7.2% energy

Case Study — High Performance Building Project in China

The chiller plant cooling capacity was 4,580 RT with 5 centrifugal chillers.
Before the retrofit, the measured cooling capacity in 2019 was 19,280 MWh, and the overall power consumption was 6,742 MWh.
The original design parameters of the cooling tower were changed from 37°C Entering Water Temperature and 32°C Leaving Water Temperature to 35.5°C and 30.5°C respectively. Moreover, motors of the towers were replaced from 15 kW to 7.5 kW to save further of 50% energy. With total of 12 cells of variable flow cooling towers at 400 m³ /hr each at power consumption ratio of 0.019 kWh/m³ were selected for conserve energy.

With the system optimization operation programs, the cooling tower is operating as per the wet-bulb temperature cooling requirements, because the heat load of the system and the external air state are continuously changing, the cooling tower has the conditions to make the return water temperature closer to the external wet bulb temperature. In addition, the power consumption of the cooling tower in the cooling system is much lower than the chiller. The COP of the chilled water system is greatly improved by considering the energy efficiency ratio (EER) of the two devices and weighting them.

Summary

With design enhancement of group control strategy and variable flow over cooling tower to optimize the condenser water supplying temperature make greater contributions to power reduction in the chilled water system, the energy saving effect was significant, and the annual EER value increased from 2.89 to 5.56.

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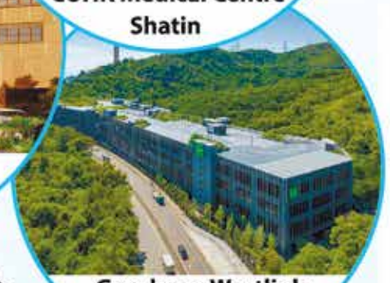

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McQuay MCP MODULAR CHILLER PLANT

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Each modular chiller plant can be customised to suit your building's needs.

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The modular chiller plant is completed with fully insulated enclosure and build-in chilled water FCU for cooling.

TIME & COST SAVING

The modular chiller plant is assembled and tested in factory prior to shipping. The unit is compact and is easy to install at site. The on-site installation time can be reduced by 30%.

BAS INTEGRATION

Designed with high level interfacing, the modular chiller plant allows control and monitoring of chiller pumps, motorized valve and other accessories..

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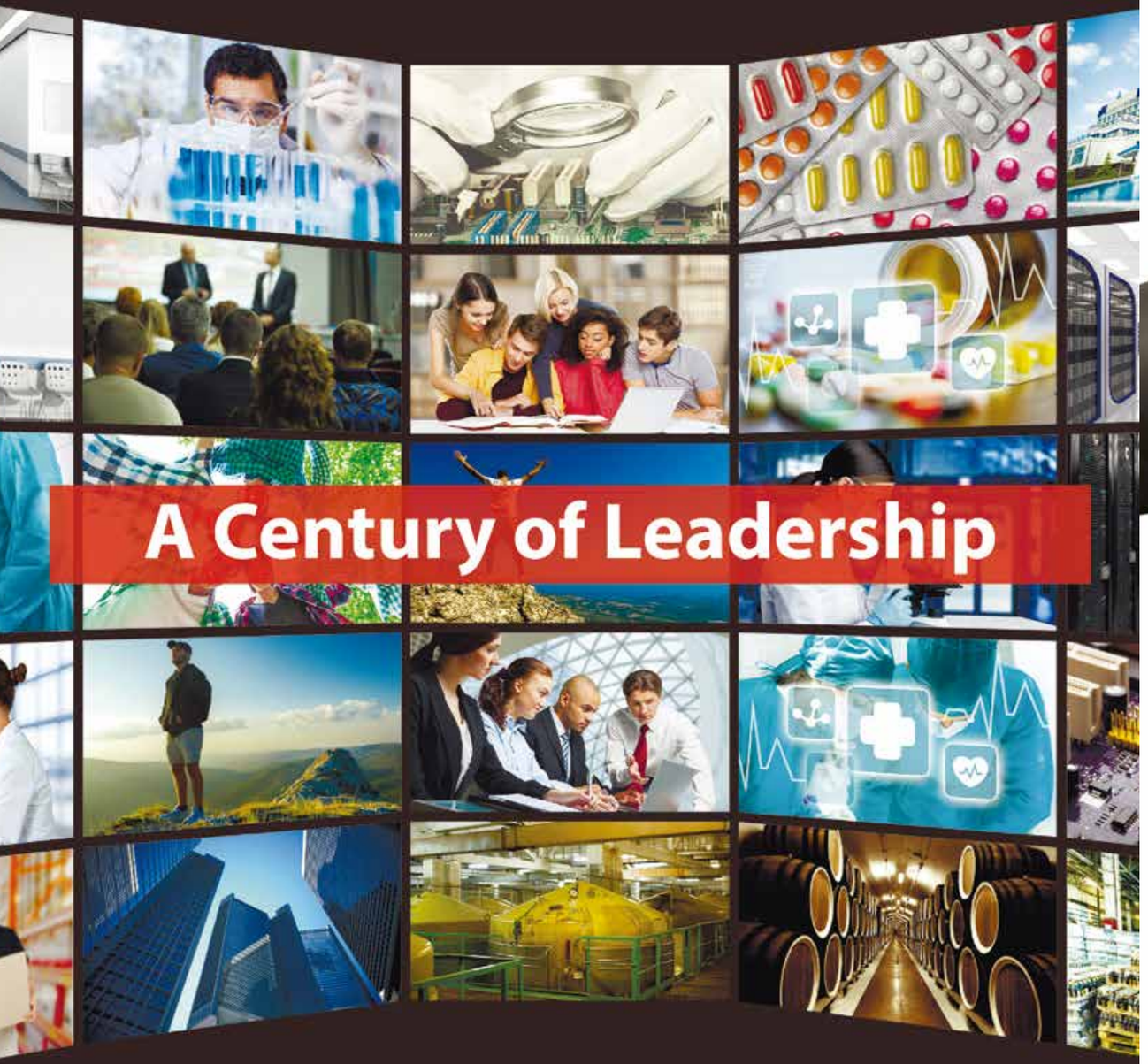

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BEYOND BETTER

AIRSIDE (Mall)

Project Name
AIRSIDE, 2 Concorde Road, Kai Tak, Kowloon

Member's Role in this Project
- Mechanical Ventilation and Air Conditioning Installation Contractor
- Intelligent Building Management System (IBMS) Supplier and Contractor

Completion Year
2023

Member / Company Name
ATAL Building Services Engineering Ltd.

Project Overview
Developed by Nan Fung Group, AIRSIDE is located at the Kai Tak area and New Landmark of Central Business District (CBD) 2.0. AIRSIDE is a new mixed-use commercial development in the Kai Tak Area, covering on area of 1.9 million ft^2 comprises 1-storey of basement, 32-storey Grade A office and 11-storey of multi-storey retail complex with an interconnected with the first 24/7 underground shopping street in the district.

District Cooling System Description
Today, **District Cooling System (DCS)** is rising in popularity for its high energy efficiency and considered an ideal energy saving system for new district development and applied to **The Kai Tak Development (KTD)** which is large scale project with high demand for air-conditioning system. DCS is a centralized air-conditioning system which utilizes sea water cum seawater pump house and central chiller plant to produce chilled water and distributes to AIRSIDE through underground water piping network.

Being the most important component of the MVAC system in AIRSIDE : **One (1) pair of Dia. 500mm** chilled water supply and return pipes are installed at B1/F DCS Substation connected with Seven (7) different pump sets and transfer chilled water to the AHU, PAU and fan coil units located at Block A to Block E and Colonnade to provide central air-conditioning to the main entrance, lobby, corridor and more than 100 nos. of retail shops and F&B outlets.

Building Information Modelling
BIM is a process for creating and managing information on a construction project throughout its whole life cycle. BIM is a digital representation that includes a combination of information-rich models and associated data such as equipment information, record of testing and commissioning and handover information and can be used to operate the built asset.

Dynamic Smoke Extraction System and Hot Smoke Test
Dynamic smoke extraction system is designed at the atrium to remove smoke and maintain a tenable conditions below smoke layer during fire. Since the height of atrium is higher than 12m headroom with irregular geometrical dimensions, hot smoke test is required to fulfill the requirement of FSI Code.

Due to the complicated building geometry of AIRSIDE atrium where smoke extraction points are not designed at the highest point and visual smoke clear height at below 2m is not absolute clear during the self-test, special environment control including temperature pre-cool and air flow distribution is needed during the hot smoke test.

Design for Manufacture and Assembly (DfMA)

Application of DfMA is a key element of modern construction which involves construction being designed for off-site manufacturing in a controlled environment, before being on-site assembly. Installation works for smoke extraction fans and electrical control panels are combined and 5 sets of modules were prefabricated off-site. Equipment are assembly in a controllable environment of prefabrication factory thus the workmanship is improved due to stringent quality control. Also, installation in modules is reducing the construction time and the amount of manpower required on-site high-level installation works as compared with the traditional method.

Data Sharing and Analytics Platform of Sustainable Development Strategies
AIRSIDE has taken the lead in adopting a real-time digital system, leveraging 5G, IoT (Internet of Things), and building management technology, to accurately collect and measure real-time consumption of electricity, fuel, heating and cooling, and water, as well as waste generation and management data from tenants. AI technology and analytics monitor the environmental performance of leased premises, and data collected is shared with tenants in real time. AIRSIDE also conducts carbon audits for tenants and provide tailored proposals and assistance in formulating sustainable development strategies to help tenants attain their environmental goals based on audit results.

Green Living through Unique "Wholeness" Concept and Impact Retail
AIRSIDE introduces the unique and innovative urban lifestyle concept of "wholeness" that connects people and nature to build a sustainable, low-carbon society. As part of the wholeness lifestyle concept, AIRSIDE houses a 4,000 ft^2 urban farm that is home to over 50 varieties of produce, which is supplied to F&B outlets at the mall to offer a true farm-to-table experience for visitors; the remaining produce will be shared with the community. With the urban farm, AIRSIDE hopes to promote a low-carbon-footprint lifestyle and nature-based solutions to the public.

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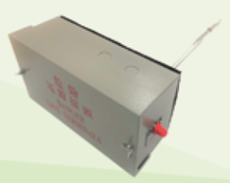
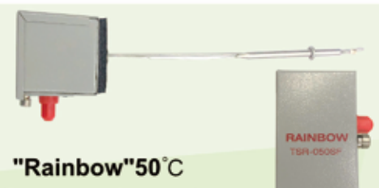


FCU Heater Control Box (All in One)

PAU.AHU Heater Box



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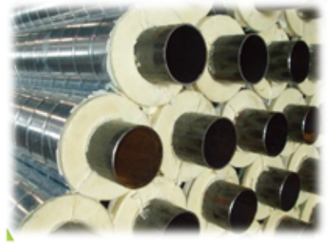

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Go Kart Competition - SAIVER WELAIRE Cup & ACRA President Cup

For the very first time of ACRA, the electrifying Go-Kart Competition – SAIVER WELAIRE Cup & ACRA President Cup has been hosted at Shenzhen Xtreme Speedway on 16 September 2023. This race divulged that many of our professional engineers not only are expert at air conditioning but also talented at Go-Kart racing. Special thanks to our event sponsor – Welcome Air-Tech Limited for allowing us to have such a distinct experience which will be likely to retain for the coming years.

Congratulations to the extraordinary racing winners:

SAIVER WELAIRE Cup

Champion	Westco Air-conditioning Ltd.	Mr. Yuen Ho Fei, Jacky
1st Runner-up	Westco Air-conditioning Ltd.	Mr. Ho Siu Hung, Wisly
2nd Runner-up	McQuay Air-conditioning Limited	Mr. Lee Ka Tsun

ACRA President Cup

Champion	Practical Engineering (H.K.) Co., Ltd.	Mr. Chan Tsz Chung
1st Runner-up	McQuay Air-conditioning Limited	Mr. Chan Wai Kin
2nd Runner-up	Westco Air-conditioning Ltd.	Mr. Yuen Ho Fei, Jacky

Joint Caring Event 2023 – Happy Bags Delivery to Elderly

Throughout the years, ACRA has been devoted to continually implement unreserved caring activities for our community on behalf of the HVAC&R industry. On 23 September 2023, ACRA Caring Committee has jointly hosted the Happy Bags Delivery to Elderly with Open Door Ministries（開心社區服務）and HKFEMC at Lam Tin. Over 100 low-income elderlies were grateful to receive the happy bags from our appreciated council members, caring committee, sponsors and volunteers on this special day. Thank you for all wholeheartedly participants for exerting their best effort to support this meaningful event.

E&M GO!

On 26 September 2023, the E&M GO! campaign organized by EMSD and E&M Trade for promoting the E&M industry to young people was accomplished once again. Provided the various promising forthcoming large-scale infrastructure projects situated in Hong Kong, it is undoubtedly a good motivation for the young people to join the E&M industry discovering their potential for long-term career development. We look forward to witness the revolutionary innovations for the industry that our youngsters will create in our future society.

ACRA Golf Day – Daikin CUP

Sponsored by Daikin Airconditioning (Hong Kong) Ltd., the ACRA Golf Day – Daikin CUP which attracted a total of 40 competitive contestants has been held at PHOENIX HILL Golf Club on 16 June 2023. This most popular sport event of ACRA provides a good opportunity for the participated members to enjoy their preferred sport while connecting with other professionals in the industry under this relaxing environment.

WorldSkills Hong Kong Competition

Organized by VTC, the WorldSkills Competition on Refrigeration and Air-Conditioning installation, testing and commissioning in addition to associated health and safety management was conducted from 20th to 21st July 2023. ACRA is glad to be invited by VTC to have five of our proficient council members and committee members supporting this meaningful occasion through assessing the participants' hands-on skills and knowledge.

Joint Comprehensive Certificate Course on HVAC&R System in Buildings 2023

The Joint Comprehensive Certificate Course on HVAC&R System in Buildings organized by ACRA, ASHRAE-HKC, HKIE-BSD, BSOMES and CIBSE-HKB has been successfully held from 17 October 2023 to 28 November 2023. Through these wide-ranging lectures on key elements of HVAC&R offered by respected industry guest speakers across different sectors, applicable HVAC&R information of the latest market situation can be effectually enhanced for the participants.

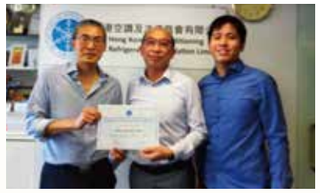
Association News

New Council Members

Mr. Danny Cheng
Efatar Environmental Protection Equipment Ltd

Mr. Jimmy Ho
Johnson Controls HK Ltd.

New Members



Bonda Engineering Limited 百利達工程有限公司	September 2023
China Overseas Mechanical & Electrical Engineering Limited 中國海外機電工程有限公司	July 2023

Haier International Co., Ltd. 海爾國際有限公司	November 2023
Hong Kong Wai Mung Technology Limited 香港偉夢科技有限公司	November 2023

Reunion of Past Presidents on 1 November 2023

ACRA Youth Committee

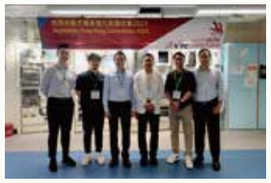
On behalf of the ACRA Youth Committee, it is our pleasure to share our works in the past months.

Theme Talk on AI Technology

As more AI Technology opens to the public, there has been heated debate on its existance and its effect on daily lives. Based on this topic, HKFEMC YC aranged a theme talk with a Japanese Sake Dinner. ACRA YCs are invited to the event, learn from the professionals and enjoy a great dinner.

WorldSkills Hong Kong Competition 2023

Special thanks to VTC's invitation as part of the judge team of Refrigeration and Air Conditioning session. Trainees from different companies present their skill in a professional manner.



Webinar on Government Structure

Being in this trade, interaction with government officals is inevitable. As an internal training, we invite experienced members to share their knowledge of government structure, duties of departments and relevant contact methods.

80cc Go Kart Challenge 2023

More than 20 participants join the day trip to Shenzhen - Exciting Go Kart experience and delicious lunch. Thank you all sponsorship and support on the event.

Joint Caring Event 2023

In association with HKFEMC, we continue to join Happy Bags delivery to Elderly. With the sponsorship and participation of member companies, we hope to deliver and share our love and care to the society.

Joint Comprehensive Certificate Course 2023

This course is co-organised by ACRA, ASHRAE HK, BSOMES HK, CIBSE HK and HKIE BSD, once every 4 years, to provide attendents updated information on HVAC&R System in buildings. Being part of the organising team, allows us to meet elites from different associations and be able to learn from them.

Upcoming Events

More joyful activities are to expect, including but not limited to Beer Competition, outdoor activities, technical visit and trade seminars. So, keep your eyes on us for more fascinating activities!

MEMBERSHIP LIST

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	Company Name		Contact Number	Website / Email	Trade
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	Carrier Hong Kong Limited	開利(香港)有限公司	2694 5375	www.carrier.com.hk	C M S Sp
	Krueger Engineering (Asia) Limited	高雅機電工程有限公司	2860 7333	www.krueger.com.hk	C
	Newland Engineering Limited	新陸工程有限公司	2967 8620	moshiu@newland.com.hk	C S
	REC Engineering Company Limited	盈電工程有限公司	2619 8888	www.rec-eng.com	C S
	Shinryo (Hong Kong) Limited	新菱工程香港有限公司	2519 3383	www.shinryo.com	C
	Shun Hing Engineering Contracting Company Limited	信興機電工程有限公司	2419 8282	www.shecon.com	C
	The Jardine Engineering Corporation Limited	怡和機器有限公司	2807 4511	www.jec.com	C S Sp
	Trane Hong Kong	特靈香港	2770 2975	www.tranehk.com	M S Sp
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	Hsin Chong Aster Building Services Limited	新昌亞仕達屋宇設備有限公司	2675 3300	www.aster.hk.com	C
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	Lik Kai Engineering Company Limited	力佳工程有限公司	2611 4501	ericyung@likkai.com.hk	C
	Lucky Engineering Company Limited	運通冷氣電業有限公司	2780 5285	general@luckyeng.com.hk	C
	McQuay Air-Conditioning Limited	麥克維爾空調有限公司	2893 6261	www.mcquay.com.hk	C M S Sp
	MECO Engineering Limited	德寶工程有限公司	2774 8200	headoffice@meco.com.hk	C
	Midea Electric (Hong Kong) Limited	美的電器(香港)有限公司	3669 4888	www.mideahk.com	C M Sp
	Quad-Tech Engineering (Hong Kong) Company Limited	高得工程有限公司	2573 1832	qt@quadtech.com.hk	C
	Raising Engineering Limited	威信工程有限公司	2395 6081	simonsiu@raising.com.hk	C
	Ryowo (Holding) Limited	菱和(集團)有限公司	2391 8381	www.ryowo.com	M
	Siemens Limited	西門子有限公司	2107 6506	andy.wong@siemens.com	Sp
	Skyforce Engineering Limited	天科工程有限公司	2885 1620	www.skyforce.com.hk	C
	Southa Technical Limited	南龍機電工程有限公司	2963 7175	www.southa.com	Sp
	Standard Refrigeration & Engineering Company Limited	立德工程有限公司	2781 0871	SRE@hklpg.com.hk	C S Sp
	Takasago Thermal Engineering (Hong Kong) Co., Ltd.	高砂熱學工業(香港)有限公司	2520 2403	sales@takasago.com.hk	C S
	Technicon Engineering Limited	得力確工程有限公司	3193 1300	technic@technicon.com.hk	C
	Welcome Air-Tech Limited	偉基空調有限公司	2806 8316	www.saiver-welaire.com.hk	M S Sp
	Westco Airconditioning Limited	威高冷氣工程有限公司	2426 3123	mandylo@scee.com.hk	C

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	A-Gas Environmental Services HongKong Limited		3188 5078	www.agas.com	S
	A & R Engineering Company Limited	奇樂工程有限公司	2408 2960	general@arengco.com.hk	C
	Aires Engineering Company Limited	毅力機電工程有限公司	2658 8856	adrianwong@aires.com.hk	C
	Alfa Laval (China) Ltd.	瑞典阿法圖拉化伐(中國)有限公司	2589 3859	www.alfalaval.com	M S Sp
	Alpha Appliances Limited	第一電業有限公司	2529 7555	www.alpha-general.com	Sp
	Anway Engineering Company Limited	正佳工程有限公司	2598 4228	www.anway.com.hk	Sp
	Armacell Asia Limited	阿樂斯亞洲有限公司	2574 8376	www.armacell.com	M
	Arnhold & Co., Ltd.	安利有限公司	2807 9400	www.arnhold.com.hk	Sp
	A Shing Engineering Company Limited	亞成冷氣工程有限公司	2537 1818	wilkiengan@ashing.com.hk	C Sp
	Associated HVAC Contracting Company Limited	華聯冷氣工程有限公司	2573 1716	aec@aechvachk.com	C S
	Auto Integrated Limited	奧力科技有限公司	2612 0758	rickie@autoinhk.com	M Sp
	Belimo Asia Pacific Limited	搏力謀亞太有限公司	2682 7837	www.belimo.com	M
	Bollfilter Hong Kong Ltd.	波勒過濾系統(香港)有限公司	2715 5000	www.bollfilterchina.com	M S Sp
	Bonda Engineering Limited	百利達工程有限公司	2401 7880	enquiry@bondaengineeringltd.com	Sp
	Biocline Healthcare Services Ltd.	新康醫療器材工程有限公司	2672 1111	bio@biocline.com	C Sp
	Bitzer Refrigeration Asia Limited	比澤爾制冷亞洲區有限公司	2868 0206	www.bitzer.de	Sp
	Castco Testing Centre Limited	佳力高試驗中心有限公司	2597 8333	www.castco.com.hk	**Laboratory Testing**
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	Chi Yip Engineering Company	志業工程公司	3078 9984	canny@acmv-cy.com	C Sp
	Chin Tat Trading Company	展達貿易公司	3521 1589	www.chintat.com.hk	Sp
	China Overseas Mechanical & Electrical Engineering Limited	中國海外機電工程有限公司	2823 7821	http://www.cohl.com	C Sp
	Chit Tat Electrical Engineering Limited	捷達機電工程有限公司	2529 8888	www.chittat.com.hk	C M S
	Chong Kin Air-Condition Trading Engineering Co., Ltd.	創建冷氣貿易工程有限公司	2307 5159	www.chongkinaircon.biz.com.hk	C Sp
	C.J. Wishing International Limited	惠生電業有限公司	2799 9797	cjwish@cjwish.com.hk	Sp
	CLPe Solution Limited	中電源動有限公司	2678 7900	www.clpesolutions.com	C S
	Clydeman Engineering Limited	佳電工程有限公司	2332 3591	daniel@clydeman.com	C S Sp
	Crowntin Limited	冠殿有限公司	8202 0830	clchoy@crowntingrp.com.hk	C Sp
	CYH Limited	仲賢行有限公司	2967 3999	www.cyhltd.com.hk	Sp
	Delta Pyramax Company Limited	佳澤科技有限公司	2511 2118	www.deltapyramax.hk	Sp
	Dictson Engineering Ltd.	迪迅工程有限公司	2891 8070	lui@dictson.com.hk	C S
	Eaxon International Company Limited	恩索有限公司	3590 4656	gamescheung@eaxon.hk	M S Sp
	ebm-papst Hong Kong Limited	依必安派特香港有限公司	2145 8678	info@hk.ebmpapst.com	M Sp
	Electrodrive Engineering Limited	高宜工程設備有限公司	2573 7211	info@electrodrive-eng.com	Sp
	Enviro-Tech Engineering Company Limited	鷹達工程有限公司	2827 0688	steveli@envirotech.com.hk	Sp
	Ever Cool Refrigerating & Air-Conditioning Co., Ltd.	嘉毅冷凍空調設備有限公司	2356 8598	info@evercoolhk.com	M Sp
	Evergreen Environmental Technology Company Limited	冬青環保科技有限公司	2562 3331	www.evergreen-environmental.com	Sp
	Extensive Trading Company Limited	精基貿易有限公司	2889 1681	www.extensive.com.hk	Sp
	Far East Engineering Services Limited	遠東工程服務有限公司	2898 7331	www.fareast.com.hk	C S
	Fortune Links Hong Kong Limited	鑫力香港有限公司	2562 9399	info@fortunelinks.com.hk	M S Sp
	GTECH Services (Hong Kong) Limited	英國通用工程(香港)有限公司	2123 0888	www.gtechservices.com.hk	C
	GELEC (HK) Limited	香港通用電器有限公司	2919 8399	www.gelec.com.hk	Sp
	Gether-Force Air-Conditioning Engineering Co., Ltd.	群力冷氣工程有限公司	2890 2622	admin@getherforce.com	C
	Getwick Engineers Limited	佳域工程有限公司	2893 3600	getwick@getwick.com	C
	Glory Air-Conditioning Limited	天恩空調有限公司	3487 9092	wallace@gloryacltd.com	C S Sp
	Golden Leaf International (Hong Kong) Limited	金葉國際(香港)有限公司	2648 1000	info@glint.com.hk	C S
	Goodway Electrical Engineering Limited	佳濤電業有限公司	2405 0888	www.goodwaygrille.com	M Sp
	Gotop Engineering (HK) Limited	高陞工程(香港)有限公司	2459 3038	gotopco@yahoo.com.hk	C
	Great Top Engineering Limited	宏鋒工程有限公司	2345 2219	general@greattop.com.hk	C
	GRUNDFOS Pumps (Hong Kong) Ltd.	高福水泵(香港)有限公司	3540 0300	www.grundfos.com	M
	Haier International Co., Ltd.	海爾國際有限公司	2169 1206	www.haier.com	C M Sp
	Hensen System Engineering Limited	豪信系統工程有限公司	2884 9001	info@hensen.com.hk	Sp

MEMBERSHIP LIST

ACRA Associate Members

Company Name		Contact Number	Website / Email	Contracting	Manufacturing	Servicing	Supplier
Hilti (HK) Limited	喜利得(香港)有限公司	2954 1751	www.hilti.com.hk		●		
Hofmann Construction Material Ltd.	香港好夫曼建材有限公司	3157 1841	www.hofmannhq.com				●
Honest Air Conditioning Limited	明發冷氣有限公司	2396 8108	www.achonest.com	●			●
Hong Kong Wai Mung Technology Limited	香港偉夢科技有限公司	6801 7362	catherine@waimungtech.com	●		●	
H.W. International Air Conditioning Limited	豪華國際空調有限公司	2796 8888	info@hooair.com		●		
IES Engineering (Hong Kong) Limited	恒豐工程(香港)有限公司	2992 0830	www.ieshk.com.hk			●	●
InnoTec Engineering Ltd.	科技工程有限公司	3706 6333	info@innoteceng.com	●			
Integral E&M Contracting Limited	宏高機電安裝有限公司	2272 3690	www.buildking.hk	●			
Intelligent Technologies Limited	毅智科技發展有限公司	2301 4868	info@intelligent-net.com				●
JC (HK) Engineering Limited	悅峰工程有限公司	2898 9885	jc.hk.eng@gmail.com	●	●	●	●
Jetford Engineering & Trading Company Ltd.	捷科工程有限公司	3101 2323	www.jetford.com.hk	●		●	●
J & J Network Engineering Company Limited	信卓網絡工程有限公司	3579 5263	www.jjnetwork.com.hk				●
Johnson Controls-Hitachi Air Conditioning Trading (Hong Kong) Limited	江森自控日立空調貿易(香港)有限公司	2590 0012	www.jci-hitachi.com		●		●
Joneson Environmental Technologies Limited	忠誠環保科技有限公司	2889 8220	jet@fsenv.com.hk	●	●	●	●
Join Rich Engineering Limited	億聯工程有限公司	3153 2048	www.joinrich.com.hk	●			
Jinchat Engineering (HK) Company Limited	正卓工程(香港)有限公司	2687 1755	jyin@jinchat.com		●	●	●
Jun Feng Company Limited	駿峯有限公司	2707 3088	www.junfeng.com.hk			●	●
Kamui Cold Chain Engineering & Service Limited	淦鎧冷鏈工程服務有限公司	2554 6666	admin@kamui.hk	●		●	
Keio Engineering Company Limited	京王工程有限公司	2695 8872	www.keio.com.hk	●			
Kembla (Hong Kong) Limited	金特霸(香港)有限公司	2528 0999	www.kembla.com.hk				●
Kin Wo A/C Engineering Limited	健和冷氣工程有限公司	2398 0157	kw@kinwo.com.hk	●			
Kinetics Noise Control (Asia) Limited	建力聲震控制(亞洲)有限公司	2191 2488	www.kineticsnoise.com		●		●
Kings View Airconditioning Engineering Co., Ltd	景匯空調工程維修有限公司	2796 2417	admin@kingsview.com.hk	●			
Kitz Hong Kong Company Limited	香港開滋有限公司	2728 2199	www.kitz.co.jp		●		●
K-Flex (Hong Kong) Insulation Company Limited	凱門(香港)保温材料有限公司	2668 5202	www.k-flex.com		●		
KSB Limited	凱士比有限公司	2147 1226	www.ksb.com		●		
K.Y.H. Steel Company Limited	金源行鐵倉有限公司	3473 2332	www.kyh.com.hk				●
Laser Resources (Asia) Company Limited	全美(亞洲)有限公司	2516 7500	laasiahh@netvigator.com		●		●
Lap Kei Engineering Company Limited	立基冷氣工程有限公司	2798 8210	www.lapkeieng.com	●		●	
LeBlanc Water Treatment & Chemicals Limited	利邦化工水處理有限公司	2408 2000	www.leblanc.com.hk			●	
Lee Tack Engineering Company Limited	李德工程有限公司	2305 3111	ltec@leetack.com.hk	●			
Lee Yip Metal Products Compnay Limited	利業金屬有限公司	3651 2698	www.leekeegroup.com				●
Legend Engineering Company Limited	卓越聲控工程有限公司	2815 0928	info@legendjt.com.hk	●	●		●
Lifa Air Limited	麗風空氣有限公司	2511 7076	www.lifa-air.com			●	●
Life Air IAQ Limited	活力空氣品質科技有限公司	3527 0106	winston@lifeairiaq.com		●		●
Link The Best Company Limited	必發(香港)有限公司	2568 4092	www.linkthebest.com.hk		●		●
Luen Fat Air Condition (Holding) Trading & Engineering Co., Ltd.	聯發冷氣(集團)貿易工程有限公司	2345 0280	www.luenfat.com				●
Luen Ming E & M Engineering Ltd.	聯明機電工程有限公司	3619 9186	info@luenmingem.hk	●			
Luen Ming Pengshan Air Conditioning Factory Ltd.	聯明坪山冷氣製品廠有限公司	2797 2168	www.luenming.com				●
Man Tung Air-Conditioning E & M Ltd.	萬通冷氣機電有限公司	3165 8698	www.manshungroup.com.hk	●			
Mason Industries (HK) Limited	梅森實業有限公司	2967 9639	www.mason-hk.com				●
Maxwell Electrical Asia Ltd.	美基電器亞洲有限公司	3583 5088	www.maxwell-asia.com		●	●	
Mesan Fiberglass Engineering (International) Limited	明新玻璃纖維工程(國際)有限公司	2787 5717	www.mesanct.com		●		
Mitsubishi Electric (Hong Kong) Limited	三菱電機(香港)有限公司	2887 4572	www.mitsubishielectric.com.hk				●
NAP Acoustics (Far East) Limited	NAP 聲學工程(遠東)有限公司	2866 2886	www.napacoustics.com.hk	●	●	●	●
Nanofil Filtration Technology Limited		3708 1838	www.nanofil.com.hk		●		
Nation Engineering Company	力信工程公司	2728 2955	info@nec-hk.com	●	●	●	●
New Way Engineering Company Limited	新法機械有限公司	2325 6892	www.newway.com.hk				●
O-Link Limited	奧聯(國際)有限公司	2619 8888	www.o-link.com.hk		●		
Oxprime (International) Limited	鑫輝(國際)有限公司	2590 8088	info@oxprime.com				●
Pacific Sense Enterprises Limited	栢昇企業有限公司	3749 5272	www.pacificsense.com.hk	●			●
Paul Y. (E&M) Contractors Limited	保華機電工程有限公司	2831 8338	www.pyengineering.com	●			
Pekko Engineers Limited	柏高工程有限公司	3973 0698	www.leightonasia.com	●			
PowerTech IPC Company Limited	科力發展有限公司	3105 3928	www.powertechipc.com			●	●
Powers Technical Services Limited	寶華技術服務有限公司	2770 2110	sosaitung@gmail.com	●			

ACRA Associate Members

Company Name		Contact Number	Website / Email	Contracting	Manufacturing	Servicing	Supplier
Practical Engineering (Hong Kong) Company Limited	百利高工程(香港)有限公司	2402 2772	practical@practical.hk	●			●
Pyrofoe Engineers Limited	衛安工程有限公司	2388 8038	www.pyrofoe.com.hk	●			
Ready Electrical Metal Work Limited	全達電器金屬製品有限公司	2898 8623	kw_leung@ready-group.com	●	●		
REC Green Technologies Company Limited	盈電環保科技有限公司	2619 8817	www.rec-gt.com			●	●
Ritech Engineering & Supply Company Limited	偉達工程材料有限公司	2410 1819	www.ritech-hk.com				●
San Yik Air Conditioning Engineering Company Limited	新益冷氣工程有限公司	3565 5812	www.sanyikgroup.com	●		●	●
Sanby Trading Company Limited	聖備貿易有限公司	2573 4219	www.sanby.com				●
Samsung Electronics H.K. Company Limited	三星電子香港有限公司	2862 6300	www.samsung.com.hk		●		
Satchison Engineering Limited	長和工程有限公司	2357 9382	ray@satchison.com.hk				●
Shenling Environmental Systems (Hong Kong) Ltd.	申菱環境系統(香港)有限公司	2603 0002	www.shenling.com				●
Shun Hing E & M Engineering Limited	順興機電工程有限公司	2387 2882	project@shunhingeng.com	●			●
Shun Hing Electric Service Centre Limited	信興電器服務中心有限公司	2406 5333	www.shunhing-service.com			●	
Shun Hing Electronic Trading Co. Ltd.	信興電器貿易有限公司	2733 3888	www.shunhinggroup.com	●			●
Shun Tung Engineering Company Limited	順通冷氣電機工程有限公司	2633 6866	info@shun-tung.com	●			
Sing Kin Limited	陞建有限公司	2333 1518	singkin@gmail.com	●			
Smartech HVAC & Engineering Limited	智能空調工程有限公司	2521 9768	info@smartech-hvac.com.hk				●
Southa Engineering Limited	南龍工程有限公司	2963 7241	www.southa.com	●			
Stars (Hong Kong) A/C & R Company Limited	恒星(香港)冷熱設備有限公司	6116 7832	stanley_yuen@hstars.com.cn		●		
Sun Chun (E & M) Engineering Limited	新駿(機電)工程有限公司	3613 0755	info@sunchuneng.com	●			
Sun First International Limited	昇福國際有限公司	2807 7888	www.sunfirst.com.hk				●
Sun Yu Chau Engineering Company Limited	新宇宙工程有限公司	2345 9355	www.sycengg.com.hk	●			
Sunny Fire Engineering Ltd.	華輝建材有限公司	2395 6766	sunnyfireengltd@gmail.com	●			
Sun Ying Prefab Products Limited	新鷹預製件有限公司	2547 7877	www.sunying.com.hk		●	●	●
Superpower Pumping Engineering Company Limited	力霸水泵機械工程有限公司	2745 3562	www.sppump.com				●
Sustainable Energy Limited	恒澤節能有限公司	2332 3077	www.sustaine.com.hk		●	●	
Tak Cheong Air-Con. Equipment Supply Co., Ltd.	德昌冷氣設備供應有限公司	2310 0011	www.tcaircon.hk			●	●
Target Energy Solutions Limited	達標能源管理有限公司	2345 0298	www.targetensol.com			●	
Teembase Development Limited	天基發展有限公司	2554 6263	www.teembase.com				●
The Hong Kong & China Gas Company Limited	香港中華煤氣有限公司	2963 3368	www.towngas.com				●
Tinwood Pacific Limited	天匯太平洋有限公司	6325 1197	www.sinro.com		●		
Tom's Equipment Company Limited	義隆設備有限公司	2757 5539	tom@toms-equipment.com				●
TICA-SMARDT Hong Kong Limited	天加思茂特香港有限公司	2772 8448	kenneth.lee@smardt.com				●
Tin Sing Chemical Engineers Ltd.	天成化工有限公司	2619 8858	www.rec-tsc.com			●	●
TROX Hong Kong Limited	妥思香港有限公司	2861 2261	www.troxapo.com				●
Tung Shing Hardware Company Limited	東成五金有限公司	2626 9983	www.tungshinghardware.com.hk				●
Union (Luen Hop) Refrigeration Co., Ltd.	聯合冷氣工程有限公司	2627 4600	hs.sin@unionhk.hk	●			
United Controls (Hong Kong) Limited	統一儀器(香港)有限公司	2556 1001	www.ucl668.com			●	●
Victaulic Hong Kong Ltd.		6898 6823	www.victaulic.com		●	●	●
Victory Engineering Service Company Limited	維陞工程有限公司	2979 4068	pamela@ves.hk				●
Viewco Building Services & Engineering Co., Ltd.	偉保工程有限公司	2543 0610	engineering@viewco.com.hk	●			
Vircon Limited	雲建有限公司	2617 2770	www.vircon.com.hk	●		●	●
Wai Luen Air - Conditioning Limited	偉聯空調設備有限公司	2890 9321	garychan@wailuenhk.com	●			
Wardson Engineering Limited	華順工程有限公司	2329 8268	wsengltd@yahoo.com.hk	●			
White Hippo Limited	白河馬企業有限公司	2303 1318	www.kshop310.hk				●
Wilco Engineering Limited	駿陶工程有限公司	2344 7725	info@wilcoenghk.com	●			
Wing Shing Air-Flow Company Limited	永盛風咀製品廠有限公司	2792 6331	accounting@wingshing-hvac.com		●		●
WinTech Century Company Limited	宏達世紀有限公司	2760 4883	www.tanda.info	●	●	●	●
Wo Lee Steel Company	和利鋼鐵有限公司	2393 0131	www.wolee.com				●
Wolter Asia Limited	華德亞洲有限公司	2456 0198	info@wolter.com.hk		●		●
Wysermann Company Limited	威士文有限公司	2614 2213	wysermann@wysermann.com.hk		●		●
Yin On Trading Limited	賢安建材貿易有限公司	2572 7110	office@yinon.com.hk				●
Yordland Engineering Limited	日島工程 有限公司	2362 2186	www.yordland.com	●		●	●
York Choi Industrial Limited	旭彩實業有限公司	2795 8286	www.yorkchoi.com		●		
Yuen Fong Air-Condition Products (HK) Limited	圓方空調設備製品(香港)有限公司	2880 5880	yuenfongaircondition@hotmail.com				●
Zenith International Enterprise Ltd.	盛豐國際企業有限公司	2815 5852	www.ebara.com.hk				●

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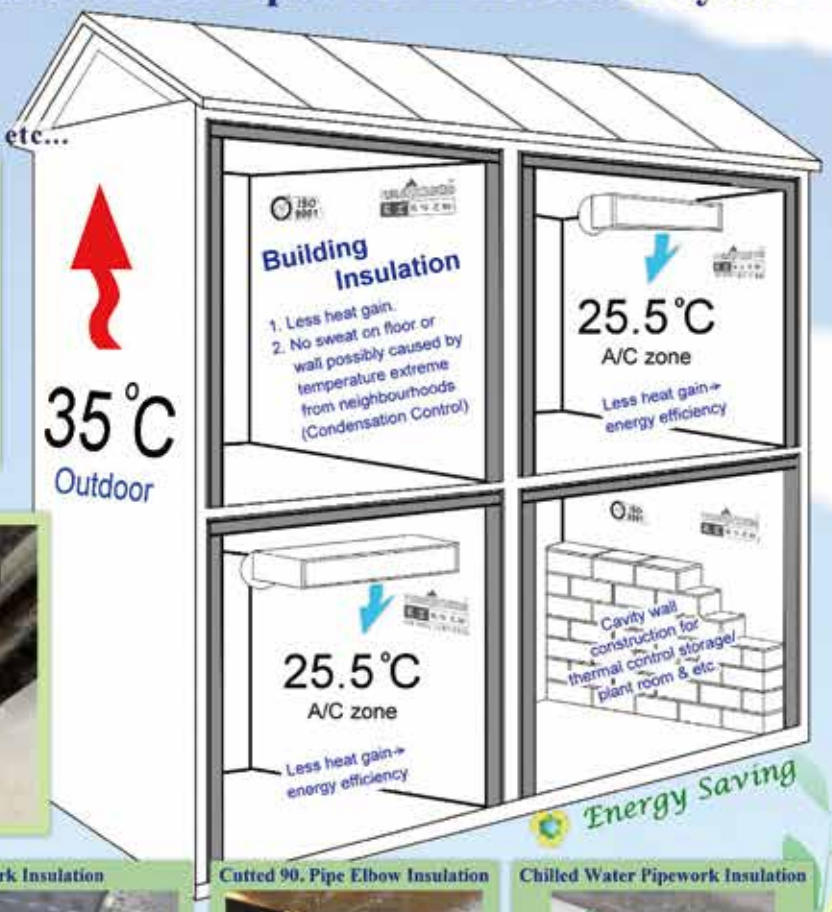

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19/Fl., Skyline Tower, 18 Tong Mi Road, Kln., HONG KONG.
Email : flhk@flhk.com.hk 2393-7773
www.flhk.com.hk FAX : (852) 2390-6377

2017 MTR Express Rail Link, West Kowloon Terminus

1996 Court of Final Appeal, Central

2007 Nina Tower

2015 Fire and Ambulance Services Academy

2020 Liantang / Heung Yuen Wai Boundary Control Point

2023 onward...

2022 East Kowloon Cultural Centre

* Major Job Reference

1994 General Cancer Centre, Prince of Wales Hospital

2013 Central Mail Centre

2018 Passenger Clearance Building, Hong Kong Boundary Crossing Facilities, Hong Kong-Zhuhai-Macao Bridge

2021 ESF Island School

1998 International Financial Centre Phase I (IFC-I)