香港空調及冷凍商會有限公司
THE HONG KONG AIR CONDITIONING AND REFRIGERATION ASSOCIATION LIMITED
SUMMER 2020
Newsletter 會員通訊

10 years+ 同心展關懷 caringorganisation

## Contents





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# Message from the President

Ir Antonio Chan
*President*

It comes to the end of the term of this office and I would like to quote a popular phrase : "At the end of a year remember the good and leave the rest, knowing it just gets better and better". On behalf of the office, I would like to express my heartfelt thanks to the Office Bearers, Council Members and to all members for your enormous support throughout the term and all the contributions for the betterment of the air-conditioning and refrigeration industry in Hong Kong.

The world has been hard hit by COVID-19 which has brought all international travelling into a halt including all related activities in the past half year of the association following the government guidelines in minimizing cross inflection. However, the spirit of our association is still in a high side and we were able to conduct few council meetings by means of video conference. It is even the first time for ACRA to conduct an on-line video training for Workers in Handling HFC and Blend Type Refrigerant Training Course.

Under this hard time, I would like to express my heartfelt thanks to all members for their support to the council and hope members are satisfied with what the council has been offering. This will not be limited to representing the interest of members to various stakeholders, but also general activities for members to participate. Adding to the platform of current communication between various government departments, ACRA has been extending our outreach both locally and in the Greater Bay Area. ACRA is committed to serve our industry for a better environment both inside and outside Hong Kong.

One important mission by ACRA is to represent all members' interest by having close liaison with various government departments in particular formulating technical guidelines, circulars and specifications. ACRA has been working closely with ArchSD on Guideline Drawings ,Chiller plant performance under extreme weather, general specification with ongoing topics such as thermal insulation material, plant room sizing demonstration by BIM, possibility of prefabrication using DfMA concept, CCMS/BMS/iBMS definition, etc. are all under continuous review by various Task Force Members.

Being a member in the Government and Trade Liaison Grouped chaired by EMSD on the development of eco-friendly refrigerant, ACRA has been busy working with EMSD in promoting the relevant training courses to the industry. In collaboration with VTC Pokfulam and the support from EMSD, continuous training courses regarding the development of Next Generation Refrigerants have become a nominal courses and ACRA is working with VTC to seek further arrangement in practical courses. The long term goal is to seek all stakeholders' support to arrange recognized course with both theory and practical such that certificate will be issued to attendees for handling eco-friendly refrigerant similar to the already existed course in Handling HFC & Blend Type Refrigerants for ArchSD Contracts.

ACRA acts an important stakeholder in Fire Services Statutory Advisory Group (FSSAG) as well as the Ventilation Installation Liaison Group (VILG) enabling essential and effective communication platform with continuous dialogue between FSD in all air conditioning and ventilation related issues and the latest one is FS requirements in Cold Store. We shall continue our dialogue with other government departments to have our members' voice be reflected in different platforms.

There hasn't been much event in the past term with our Greater Bay Counterpart due to the social activities followed by COVID-19 threat, however, ACRA will not stop in here but will gather momentum and be prepared to resume our dialogue again with them and more cross visit and exchange will be conducted once the threat has gone.

Since the formation of ACRA Youth Committee in 2016, the young and energetic representatives from ACRA members have become the sustainable resource of the association to meet the elevating demand of industry in respect of daily operation as well as the challenges ahead. They have been actively supporting numerous key events of ACRA including charity, training, sports, exhibitions, dinner and parties for the industry. For the successive development of ACRA, we target to nurture the young practitioners as future leaders of the association, industry and community at large.

On behalf of ACRA, I wish the New Council every success and please be assured with continuous support from me and all members. I wish all to stay strong and health and the threat of the virus will soon be over. Thank you.

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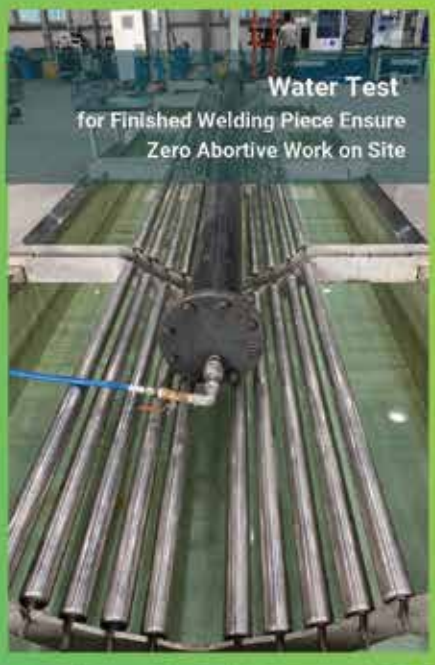

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# A Journey Accompanied by the Coronavirus

***Ir Dr. YUEN Pak Leung*** - Senior Manager of the Hospital Authority Head Office

I can remember vividly of a phone call received in the evening or at the end of that particular working day in March 2003. It was a call from high-level senior management of my work place instructing me to prepare over hundreds of isolation beds in a public hospital by the next day. I managed to deliver on the task somehow but that was not the end of the story. It had sparked off on me a far longer journey in dealing with infection control matters in healthcare settings, one which still continues on today.


▲ *ACRA presentated th Honorarium to Ir Dr P L Yuen for his contribution in upgrading general ward to isolation ward*

▲ *Invented the first MiC high standard negative pressure isolation room*

For upbringing me to the air conditioning field my greatest gratitude had to go to the renowned air conditioning engineering guru Mr. SK Wang. I had the privilege of being the first student under his tutelage to study air conditioning and ventilation in Hong Kong, and was later chosen to be the sole protégé working in his laboratory for two consecutive summers (though some fellow students jokingly notes that this may have only been due to my laboratory reports were so good as being copied by many, which ended up catching the attention of Mr. Wang). Later, I also ended up teaching part-time evening classes for Mr. Wang), which I must say had caused much inconvenience to my dating activities. As of today, I continue to apply his teachings to my everyday work, but have since further fertilized his ideas by opening up our healthcare co-workers to the engineering ventilation side of infection control through my lectures with the Jockey Club School of Public Health and Primary Care of the Chinese University of Hong Kong, and the Hospital Authority's Institute of Advanced Nursing Studies. Through these lectures, I have gained much appreciation on concerns of infection control from different angles of our healthcare colleagues. At the same time through my other role working in the Hospital Authority that upcoming hospital design can also be well steered in meeting these users' needs.

At the time around 2003, we were facing a pandemic of unforeseen proportions caused by the Severe Acute Respiratory Syndrome (SARS). At the time, we had no prior knowledge on how to tackle the spread of this virus and did not fully understand its transmission. There was evidence of potential airborne transmission, as the virus remains

viable in aerosols for at least 3 hours and mask usage proved as the best intervention to prevent infection. However, regardless of transmission routes, both suspected and confirmed patients would need to be isolated in any case. There were thousands of such patients at the time, and with only 177 public hospital isolation rooms available in 2003, how could we cope? It had been an extremely challenging time for all, but it has since passed and become history. This experience has also set me up on my mission for the years to come, which is to tackle engineering ventilation control on infectious disease transmission.

Towards the end of 2003, I worked with other government teams to convert around 1400 generic hospital beds within existing public hospitals into isolation beds in a span of six months. During which, we only had a simple single-line illustration of a single isolation room gathered from the US Centre for Diseases Control and Prevention (CDC) guideline as a basis to work from in order to execute this conversion. Greatest thanks and appreciation must be given to all the practitioners then in Hong Kong's air conditioning and ventilation industry who collaborated with us to accomplish this impossible mission with what little time and resource we had. Their great work has only set Hong Kong up for future success as such rooms can be used as hospital general wards, but can be transformed into isolation wards in the shortest amount of time to handle a pandemic. This immediately followed by the further pioneered engineering ventilation design and construction of the first ever negative pressure isolation theatre as well as negative pressure autopsy all to cater for the imminent infection control needs.

To better understand how to tackle such engineering control, I then started an engineering doctorate degree in 2003 as well, researching into incorporating isolation capability into normal hospital general wards through engineering ventilation. After eight years of hard work and research, I have developed ventilation designs that helped to eliminate the transmission of pathogens from hidden spreaders. Such design was tested out in a public hospital, and has proven to lower the level of nosocomial infection to the lowest among all other public hospital. Now this design has been further adopted by numerous hospitals in the city.

▲ *Construction of negative pressure autopsy*

▲ *Fast track conversion of Tier 2 isolation room from hospital general ward with HEPA exhaust units*

For the mechanics of this design, in simple terms: in a general hospital ward, air in the ward is drawn out through the corridor, so if a patient in the ward is carrying some hidden pathogens, the disease will spread easily. I have thus decided to develop (and did develop) a design where the ventilation setting of a high-standard isolation ward can be applied to a general ward, and applied it for parametric analysis via computational fluid dynamic simulations. By changing the direction of air flow and allowing the air to leave directly from the ward cubicles, coupled with suitable ventilation rates and exhaust locations, the infection control capability of general wards would be elevated to match up to that of a high-standard isolation ward design. In addition, this design allows for minimal disruption to the day-to-day operation, with high cost effectiveness by only installed air outlets in alternative locations and a bit of increased ventilation rates. This design will also enable hospitals to dilute the air in the wards and control the air flow with ease. This design formed a part of my doctoral thesis, and relevant research outcomes have been published internationally, including the Journal of Hospital Infection.

▲ *Inspecting hospital isolation room air flow performance*


▶ *Constructing Isolaion Rooms in the Republic of Indonesia.*

Following the success of this design, I was very much honoured to be invited by the World Health Organization (WHO) and the United Nations (UN) to design and construct isolation rooms in public hospitals throughout the Republic of Indonesia. It was both refreshing and challenging to work in an unfamiliar environment with engineering standards and conditions that were new to me. Only armed with my knowledge and several only made available of CO2 fire extinguishers (a simple tool for testing air changes and room containment), and after innumerable back and forth between Indonesia and Hong Kong, I could manage to have implemented isolation wards in more than 10 hospitals across the Indonesia and equipped each of them with a more energy saving design (using re-circulative HEPA filtered return air approach).

Despite all the achievements of the hospital engineering by our engineers across the two pandemic caused by coronavirus in the 21st century, nothing could have prepared us for the scale of this third coronavirus pandemic which is COVID-19. Indeed, the number of infected has well surpassed the previous two occasions. Usage of isolation rooms are ever-mounting, which demands for proactive contingent arrangement to be considered. This time round, I have once again proposed as what I did in 2003, a makeshift but time efficient solution which is deploying of local exhaust fans in each ward cubicle to create inward air flow, thereby reducing unwanted outflow of, and retaining more, clean air in the ward. On top of that, added high efficiency particulate air (HEPA) filters were also installed to the exhaust fans for prior air filtration so as to reduce the impact of exhausting less clean air to the outside ambient. Greatest gratitude is extended to the air conditioning and ventilation practitioners of Hong Kong for once again lending their expertise in building HEPA-equipped exhaust units from scratch and installing them successfully to help us to get through probably the peak demand at the time for isolation rooms requirement, plus the joining hands to realize and complete the first high standard negative pressure isolation room using modular integrated construction (MiC) method. All in all, let's not undermine the contribution of our air conditioning and ventilation practitioners because that we are actually exercising great expertise beyond doubt next to the frontline healthcare professionals in playing a very important role in the combating of the disease pandemic in Hong Kong.



▲ *Delivering talks for CHP on ventilation design for isolation operating theatre*

◀ *Constructing Isolation Rooms in the Republic of Indonesia*

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## 專訪

# 黃步城先生（Mr. P. S. WONG）

**本會非常榮幸，邀請在冷氣行業馳騁四十多年的前輩黃步城先生，抽空接受訪問。**

### 台灣升學　奠定基礎

黃先生自幼已對機電有濃厚興趣，家中電器成為他的實驗對象，當把電器修好後，均能得到母親的大力讚賞。加上當工程師的表哥能娶得當護士的漂亮表嫂，令他羨慕不已。小小年紀便立志要當工程師。中學畢業後，得家庭支持，毅然赴台灣大學攻讀機械工程。經四年努力，除了取得學位外，更操得一口流利國語，奠定日後四十年在國內事業發展的根基。

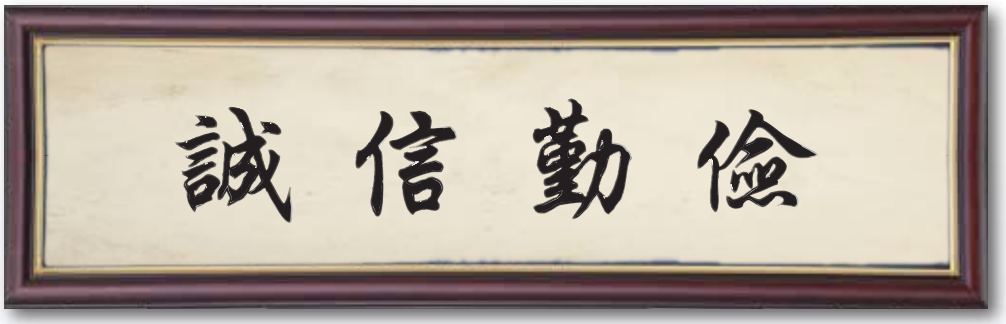
### 捕捉機遇　成功開拓國內市場　事業平步青雲

回港初期，黃先生於泛美航空公司維修部工作，開始接觸機內各種不同機械及冷氣系統，及後轉至一冷氣分包公司當助理工程師。轉業初期，由低做起，但千變萬化的冷氣技術知識亦引發起黃先生的濃厚興趣。1979年加入景福工程當助理工程師，適逢公司於1982年組織中國部開拓國內市場，並投得廣州中國大酒店冷氣空調供應項目。當時在公司能操流利國語的人選寥寥可數，黃先生便順理成章地被派往廣州負責該項目。還記得當時交通還沒那麼便利，陸路到廣州不太方便，經常要改乘通宵船前往。憑流利國語穿梭於國內各單位間，加上努力及不斷學習，黃先生於短短七年間便晉升為中國部經理。及後在投石問路，穩紮穩打的實戰中，成功完成多項大型項目，為公司於國內打穩紮實根基。於1996年黃先生被晉升為景福工程（中國）有限公司董事兼總經理，成為公司管理高層並掌管中國區業務長達數拾年，直至2019年光榮退休。

### 克服挑戰　迎難而上

在職四十年，黃先生在內地領導過不少大型項目，包括杭州黃龍飯店、北京王府飯店、北京工商銀行總部及上海靜安嘉里中心等。當中有不少難忘經歷，1986年在大連富華酒店冷氣項目，準備解僱失職的工程分包商，對方卻馬上找來百多名民工包圍工地辦公室，以粗言恐嚇，嚇得當時的工程經理夜半兩時致電黃先生，要求即日辭職回港。黃先生處變不驚，翌日大清早便緊急飛往大連妥善處理。

1998年7月，景福與佳定合作承接了北京東方廣場機電項目，適逢1999年中國五十大慶，黃先生領導團隊，日以繼夜地迅速在十五個月內完成第一期工程，趕及國慶前夕竣工。過程雖然辛苦，但能在這短時間內完成亞洲其中最具規模的的商業建築群，這經驗非常深刻可貴。

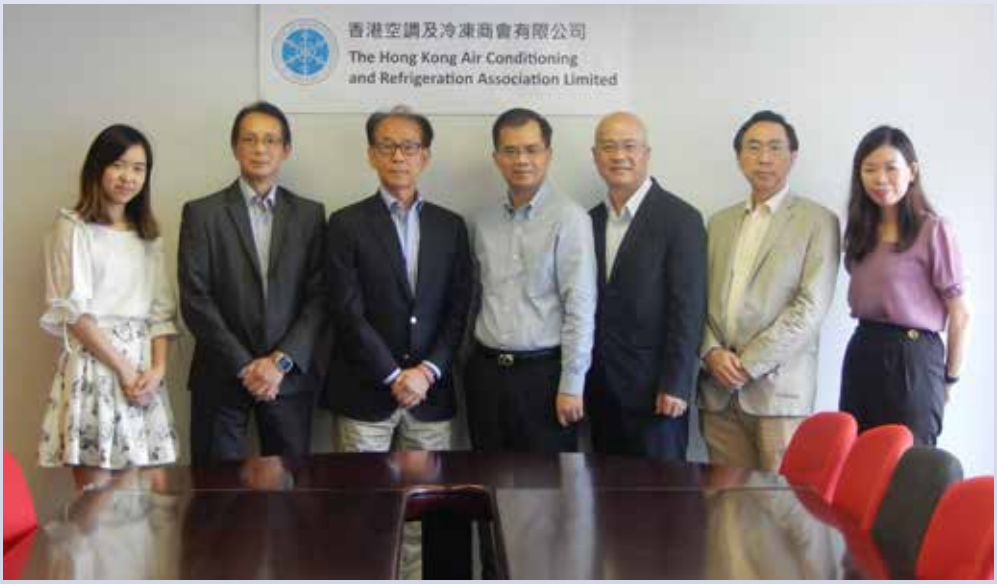



## 四字真言　寄予年青新一代

黃先生學識淵博，堅信進步及成功離不開四個字的核心價值：「誠、信、勤、儉」- 誠實，信用，勤奮和節儉。 這態度無論在做人及職場上均完全合適。誠實令人無懼無怕，信用可獲得所有人的尊重，勤奮為多勞多得，節儉令人常感富有而滿足。黃先生寄語年青人，做人做事必須把持這四個核心價值。除此之外，小心謹慎也是非常重要。每當在決策時刻，必須小心謹慎考慮，很多錯誤絕對是可以避免的。只要把持以上兩原則，加上勤奮努力，相信年青人前途必定一片光明！

## 人生下半場　充滿使命

黃先生於退休後，專注養生保健。事源於2007年在北京機場無意間翻閱吳清忠先生的「人體使用手冊」一書，讀後恍然大悟，人體五臟六腑如何操作，能量經絡穴位為何物。其後再閱數百本有關中西醫學，自然醫學，營養學，免疫學等書籍，被博大精深的養生醫學深深吸引。細味之餘，亦開始分享其保健心得，開設講座，希望帶給業內朋友及社會大眾推廣養生保健知識，黃先生退休後的願景及使命是在社區及大中小學推廣養生保健教育；改革醫療系統，推廣中、西醫及自然醫學鼎足而三，分工合作。



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# Building (Minor Works) (Amendment) Regulation 2020 Works related to Ventilation System inside Building

Minor Works Control System (MWCS) was legislated and in force since December 2010. It provides a simple channel to facilitate the building owners in carrying out small-scale building works, designated as minor works, safely and lawfully through simplified requirements. Before its implementation, all building works unless those exempted from Building Ordinance are required prior approval and consent granted by the Buildings Department before works commencement is permitted. The building owners shall appoint Registered Specialist Contractor (Minor Works) for carrying out the respective category of specialized minor works.

The present Building (Minor Works) Regulation provides six types of minor works namely Type A (Alternation and Addition Works), Type B (repair Works), Type C (Works relating to Signboards), Type D (Drainage Works), Type E (Works relating to Structures for Amenities), Type F (Finishes Works) and Type G (Demolition Works). "The Amendment Regulation aims to respond to the increasing demand from the public to extend the scope of the MWCS to include more small-scale building works so as to bring greater convenience to the public and facilitation to the industry" was promulgated in the Buildings Department's press release. The number of minor works items and designated exempted works items will increase from the present 126 to 187 and from 15 to 30 respectively. The item related to Ventilation System and building services is "various amenity features which improve the standard and quality of a building such as retractable awnings, supporting structures and metal casing for building services installations and wind guards".

With the expansion of minor works items, a new type of minor works namely Type H (Works relating to Ventilation System inside Building) is added and the respective Registered Minor Works Contractor is allowed to carry out under Class I for works item 1.46 and 1.51 and Class II for works item 2.42 and 2.46. Extraction of the work items are:

### Minor Works item 1.46

Erection or alternation of any metal ventilation duct or associated supporting frame inside a building, but only if -

a) The works do not result in any additional load to any cantilevered slab;

b) The smallest cross-sectional dimension of the duct is more than 900mm; and

c) The largest cross-sectional dimension of the duct is more than 1.8m.

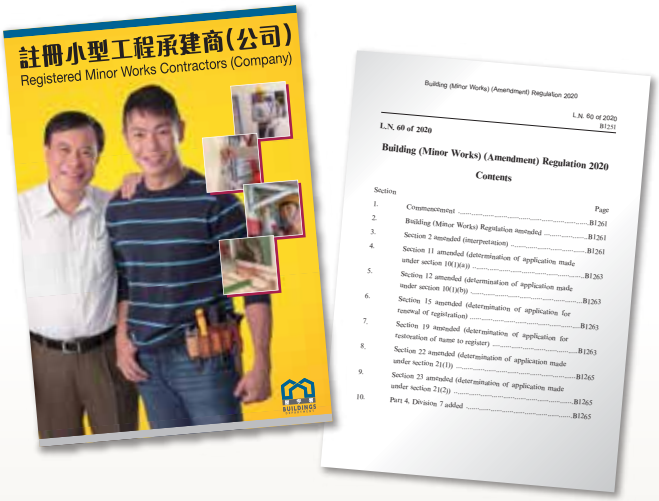
### Minor Works item 1.51

Erection or alternative of any supporting frame for suspending an air-conditioning plant or mechanical ventilation plant inside a building, but only if –

a) The works do not result in any additional load to any cantilevered slab;

b) The works do not involve the alternation of any other structural elements; and

c) The frame is designed for an air-conditioning plant, or a mechanical ventilation plant, of more than 150kg in weight.




**Minor Works item 2.42**

Erection or alternation of any fire damper in a ventilation system.

**Minor Works item 2.46**

Erection or alternation of any metal ventilation duct or associated supported supporting frame inside a building, only if –

a) The works do not result in any additional load to any cantilevered slab;

b) The smallest cross-sectional dimension of the duct is more than 900mm; and

c) The largest cross-sectional dimension of the duct is not more than 1.8m

Registered Specialist Contractor (Ventilation) most probably at the moment, if also a Registered Minor Work Contractor, shall have registration under MWCS to include Type E (Works relating to Structures for Amenities), while registration with this amendment as necessary shall extend to include the newly added Type H (Works relating to Ventilation System inside Building) which qualified RSC (Ventilation) to carrying out the minor works items under Type H, and at the same time being competent to assume the duties of Prescribed Registered Contractors for minor works under Section 9AA of Cap 123 Building Ordinance for continuous supervision, notify the Building Authority of any contravention of the building regulations and comply with provisions of the Ordinance. Similar control and regulatory mechanism shall apply to the ducting system and installation of the Smoke Extraction System and Staircase Pressurization System that Fire Service Installation Contractor shall be the competent party for executing and inspecting the works and reporting to Fire Service Department for the executed modification to the existing installation.

The extended minor works items and designated exempted works related to ventilation system are erection, alternation or removal of the external metal ventilation duct or associated supporting frame on-grade or on roof of a building or external to a building with conditions and limits set out such as no additional loading to cantilevered slab, highest point of the duct or frame, projected size of the duct or frame, largest cross-sectional dimension of a duct, etc. in response to the increasing demand from the public as promulgated by the Building Department.

The Amendment Regulation although provides transitional arrangements to enable Registered Minor Works Contractor to continue the minor works that have commenced before the its operation in force to avoid undue disruption, members in ventilation field shall be fully aware of the changes in this Regulation for responding with extending the registration under MWCS to cover the added Type H and for executing and reporting the minor works in compliance without contravention to any statutory and regulatory controls under Building Department and other related government departments.

* The regulations will come into operation on 1 September 2020.
Please visit web-site of the Building Department
***https://www.gld.gov.hk/egazette/pdf/20202419/es22020241960.pdf for details.***

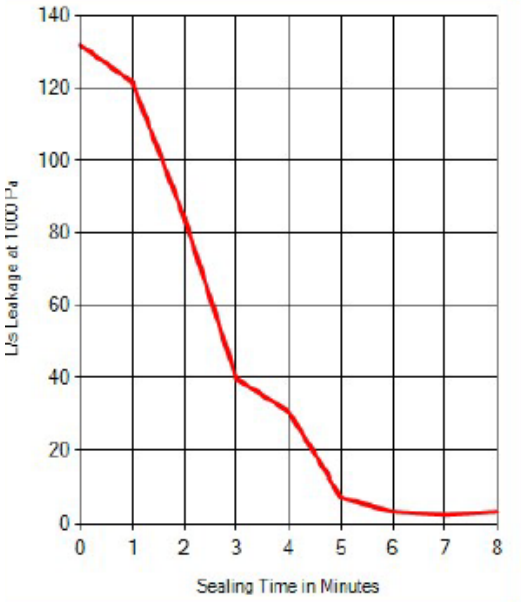
AEROSEAL®
Duct Sealing From The Inside

HKFSD APPROVAL

**Comply with BS476 Part 6 &7**

## Applied into Metal Ductwork & Concrete Duct Shaft

# 風喉補漏 Duct Leakage Reduction -90%




When we arrived,
YOUR DUCTS HAD:
132.3 L/s of Leakage, equivalent to a
37.4 cm² Hole

After we finished,
YOUR DUCTS HAVE:
3.5 L/s of Leakage, equivalent to a
1.0 cm² Hole
This corresponds to a 97.4% Reduction in Duct Leakage.

UL LISTED

HVCA DW/143

SMACNA

Enquiry: Aeroseal (HK) LTD.
Tel: 852-2511 2118 Fax: 852-2507 5078
Email: ivanlee@aerosealhk.com Website: www.aeroseal.com
Address: 3/F, Unit A, Kader Building, 22 Kai Cheung Rd, Kowloon Bay, HK

# 無滴汗風咀

## SWEATLESS DIFFUSER

**沒有倒汗水的風咀。**

專利設計
符合香港消防局要求
* BS476: Part 6 ; BS476: Part 7

Job Reference :
**香港** - 慈山寺, 海洋公園, 灣仔君悅酒店, 柏寧酒店, 何文田地鐵站, 荃灣車廠, 城市大學, 沙田馬場, 香港眼科醫院...
**澳門** - 威尼斯人, 銀河, 金沙, 永利, 新濠天地, 新葡京, 下環街市 ...

# DDS STAINLESS STEEL ELECTRIC HEATING ELEMENT

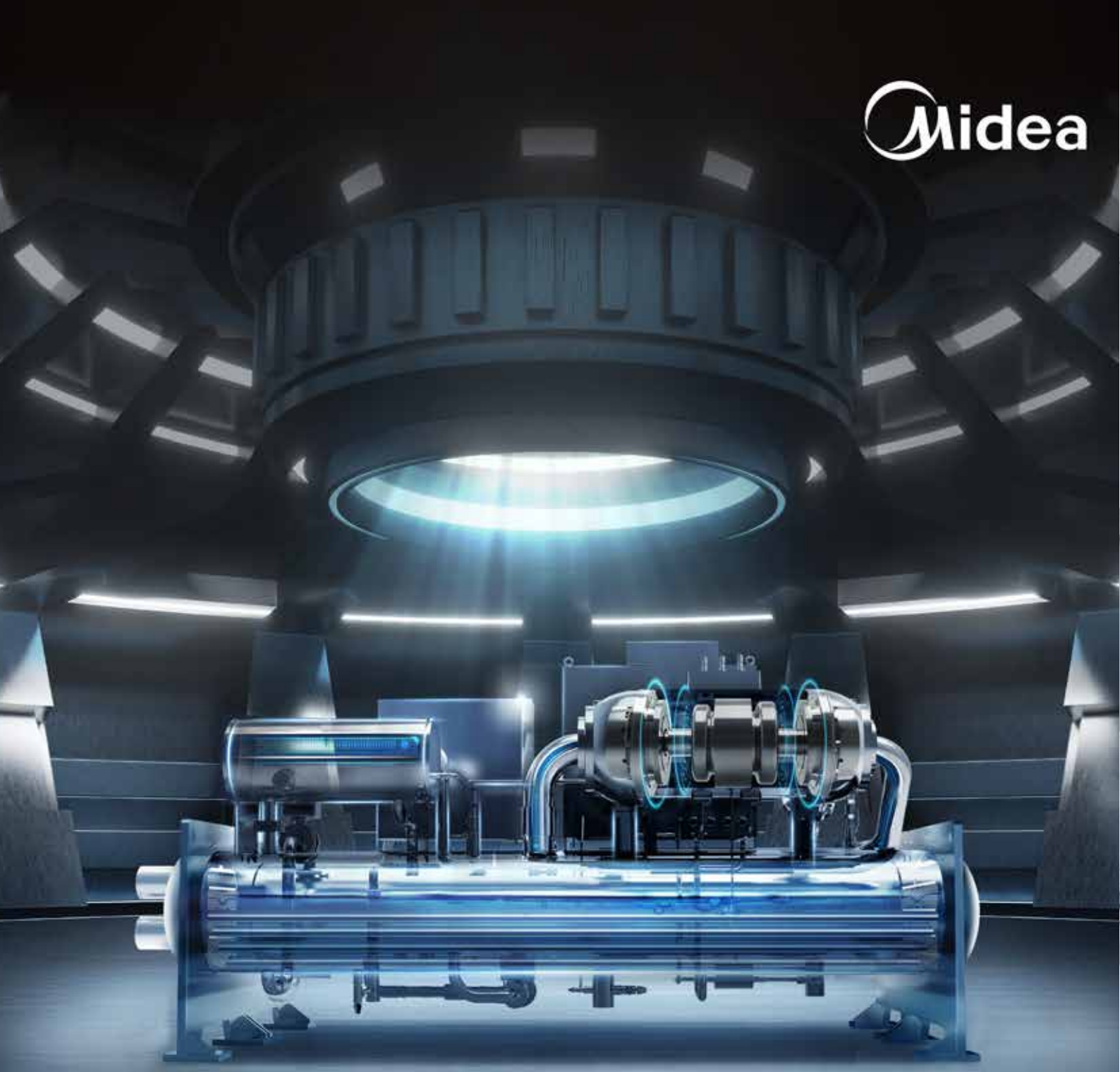
FCU Heater Box

AHU / PAU
Heater Box

- **Heater**
- **Heater Box**
- **304 stainless steel tube and fin material**
- **Black heat type**
- **Country of origin - PRC**

**Job Reference :**
**HK** - HKU, OpenU, Diocesan Girl's School, HKJC, HK Museum of Art, HZM Bridge, Gleneagle Hospital, Hysan Place, Ocean Park Kaola project, ICC Ritz Carlton Hotel ...

DDS 佳得風管系統有限公司
Delta Duct Systems Ltd.
☎ +852 2511 2118 ✉ sales@dpx.hk 🌐 www.dds.com
3/F, Unit A, Kader Building, 22 Kai Cheung Road, Kowloon Bay, HK



# Self-designed Back to Back Magnetic Centrifugal Chiller

- Oil-free Magnetic Bearing Compressor
- High Efficiency Full Falling Film Evaporator
- VFD Micro-channel Refrigerant-cooled VFD Technology
- Wider Capacity Range and Lower Noise Operation
- Intelligent Control System with Touch Screen


**Midea Electric (Hong Kong) Limited**

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Telephone: **3669-4888** Email: **project1@mideahk.com** Website: **www.mideahk.com**

# TOSHIBA


**TOSHIBA SMMS VRF** air conditioner lineup lets you cool and heat many rooms with a single system, offering the best reliability, a more compact and flexible design. The SMMS expands interior design ideas, open the door to stylish and elegant lifestyle.

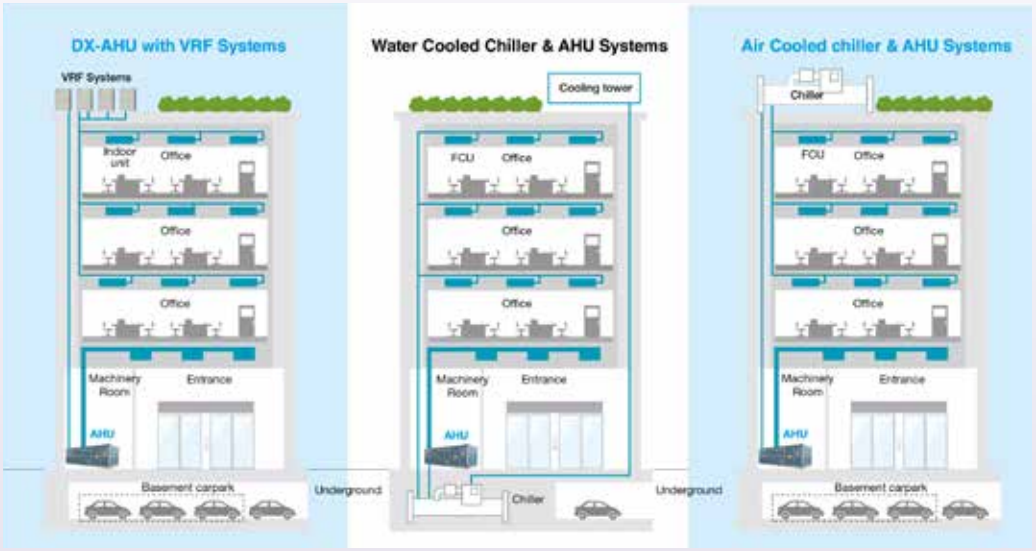
Carrier Hong Kong Limited
10/F., 8 Lam Chak Street, Kowloon Bay, Kowloon, Hong Kong
Tel: (852) 2694 5333 Fax: (852) 2694 5358 Website: www.carrier.com.hk

Better Air Solutions

# DX-AHU with VRF

In general, central air conditioning system typically can be categorized into two type: Chilled Water System and Multiple Direct Expansion System or now called Variable Refrigerant Flow System (VRF). Both systems have their own pros and cons in different applications. In most of the commercial buildings, chilled water would be supplied by air-cooled or water-cooled chiller. Air-cooled chiller just simply uses ambient air to condense the refrigerant, on the other hand, water-cooled chiller system requires a cooling tower to provide condensing water to condense the refrigerant. Thus, water-cooled system needs special service and maintenance.

Air handling unit (AHU) would use either from chilled water or refrigerant as the medium to cool the air in both chilled water and DX AHU respectively. This article will focus on the recent advancement of the Variable Refrigerant Flow (VRF) and its application with the DX-AHU. Later on, we called this system as VRF AHU.




**Advantages of VRF AHU:**

1. **More energy efficient**
   Higher COP can be achieved as no extra heat transfer process of cooling the chilled water. Some of them is able to achieve COP 5.3.
2. **Installation space**
   Require less space for equipment as there is no cooling tower, chiller, pump and water pipes throughout the building.
3. **Maintenance**
   Fewer different kind of equipment to maintain reduces cost.
4. **Dual mode**
   Cooling and heating mode can be achieved in the same coil without the need for a separate heating coil.

**Disadvantages of VRF AHU:**

1. **Refrigerant pipe constraint**
   The refrigerant flows in the refrigeration piping creates lots of pressure drop. Due to this the length of the refrigeration tubing and the distance between the condenser and the air handling unit should be kept minimum possible. This restraint makes it less ideal for large building application.
2. **Refrigerant Leakage**
   Potential leak of refrigerant that would be hard to locate.

Based on the characteristics of VRF AHU mentioned above, the best applications for the system are:

- Low to mid rise buildings with limited spaces and low capital investment cost (i.e. Schools/community halls)
- Existing buildings where the current chiller load is at capacity and there is a need for additional AHU to cater new cooling loads
- Dual coil – a combination of chilled water and DX-coil within one AHU, the additional DX-coil can act as a backup or post cooling function

## CASE STUDY

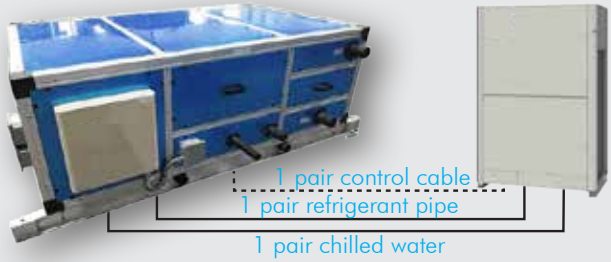
### Project 1 – Integrated Roof Top System

Replacement of 3 units of old packaged rooftop units to VRF DX-AHU with high efficiency to provide air conditioning for the assembly hall of a community centre.

**Project Data**

| | VRF-AHU | VRF-AHU |
|---|---|---|
| Quantity | 1 | 2 |
| Airflow (l/s) | 3,000 | 6,000 |
| Cooling Capacity (kW) | 72 | 146 |
| COP | 3.47 | 3.39 |

### Project 2 Dual-Coil System




Replacement of 3 units of old packaged rooftop units to VRF DX-AHU with high efficiency to provide air conditioning for the assembly hall of a community centre.

**Project Data**

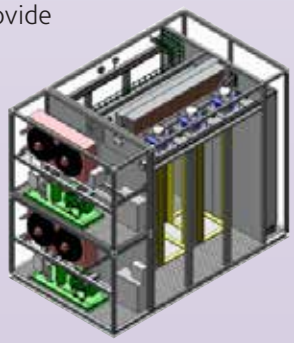
| | VRF-AHU | VRF-AHU |
|---|---|---|
| Quantity | 1 | 1 |
| Airflow (l/s) | 750 | 1,500 |
| Cooling Capacity (kW) | 45 | 91 |
| COP | 3.76 | 4.05 |

### Modular Integrated Construction (MiC)

As the HK construction industry is starting to embrace the concept of the MiC, there are opportunities for VRF AHU to play a part in this concept. Some of the new construction ideas that VRF AHU system can be applied are discussed below:

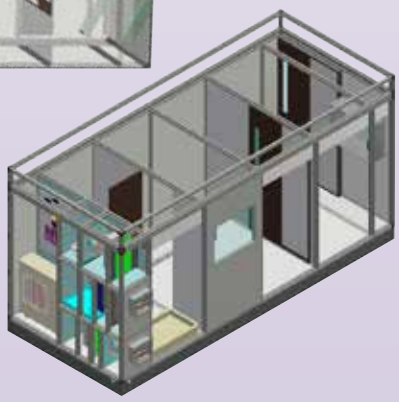
### Modular Datacenter

Typically set on site away from main buildings, modular datacenter is a containerized unit that houses all the servers and equipment similar to a standard datacenter, VRF AHU can provide the high cooling loads that datacenter requires without the need for chilled water availability.



### Modular Isolation Ward

A modular containerized unit that integrated all the amenities of an isolation ward (bed, toilet, medical equipment, ante room, and showers etc.). VRF AHU can provide 100% pre-treated fresh air to cater the fresh air requirement of isolation ward.



SAIVER® SINCE 1959 Panasonic

# VRF AHU/PAU

SAIVER®/PANASONIC is known as famous International brands in HVAC System. Now join force to bring SAIVER® DXAHU with PANASONIC VRF System, **VRF AHU/PAU**, a new comprehensive and advanced air conditioning solution to the market through cutting edge technologies and superior reliability. **SAIVER®/PANASONIC VRF AHU/PAU** had been widely use in Hong Kong with its unique advantages.

Available for


- **Energy saving**
  - High C.O.P. outdoor units
  - Free cooling application
  - EC plug fan with IE4 efficiency EC motor and built-in inverter
- **Dual Coils for alternative operation**
  - Combination of water coil and DX coil
- **Compact and custom-made size for indoor unit**
  - Suit ceiling void spacing
- **Smart AHU design with easy operation**
  - 3 modes auto-changeover (Cooling / Heating / Free Cooling)
  - Simple remote control
- **Outdoor application**

Panasonic Controller

Cheung Ching Community Centre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REGIN THE CHALLENGER BMS & HVAC Controls

Panasonic FSV / FS MULIT

# Alliance Contracting Company Limited
# 聯和承造有限公司

**is a well-established specialist in the field of building services installation since 1979**







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Work Shop : 11/F., Sui Ying Industrial Building, No.1 Yuk Yat Street, To Kwa Wan, Kowloon, Hong Kong.
Tel : (852) 2891 9083 Fax : (852) 2838 2120
E-mail: enquiry@alcc.com.hk Web-site : www.alcc.com.hk


Certificate No.:CC532
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018

商界展關懷 caringcompany

# The St. Regis Hong Kong

**Project Name :**

**The St. Regis Hong Kong, 1 Harbour Drive, Wan Chai, Hong Kong.**

**Member's Role in the Project :**

- **Heating, Ventilation, Air-conditioning installation, Central Chiller Plants, Staircase Pressurization System and Dynamic Smoke Extraction System Installation**
- **Electrical Installation**

**Completion Year :**

**2019**

**Member/ Company Name :**

**Alliance Contraction Company Limited**

## Project Overview

The St. Regis Hong Kong hotel is a redevelopment project at Wan Chai consisting of two portions – a new Hotel block & the renovation of the existing 7/F of the China Resources Building. Alliance Contracting Company Limited was awarded with the contracts in 2016 as the E&M subcontractor for the HVAC Installations and the Electrical Installations.

The Hotel Block is a new 29-storey building including of 3 levels of Basement, 7-storey Podium floors and the guest room floors with 121 nos. of guest room. The multifunction rooms are located at existing 7/F of China Resources Building after the corresponding renovation work. The project was completed and the Hotel has commeneed full operation in 2019.

## HVAC System Description:

The Chiller plant consisting of 3 nos. of 1,020 kW & 1 no. of 570 kW fresh Water-cooled Chillers are installed at 1/F Main Chiller Plant Room, 3 nos. of 350 kW Heat Pumps are installed at 6/F and also 4 nos. of 1,343 kW Cooling Towers at 5/F Cooling Tower respectively.

15 nos. of AHU/PAU locating at Podium Floors of the Hotel Block provide central air-conditioning to the lower floors including the arrival lobby, main lobby, and various restaurants. 8 nos. of AHU/PAU are installed at 9/F of the existing China Resources Building to serve the ballroom, function rooms and kitchen at 7/F in the same block. The 118 nos. Hotel guest rooms, 2 Deluxe suites and 1 president suite are served by 4-pipe fan coil system with pre-treated fresh air from PAU located at 28/F.

Fire safety is of extremely high importance for this internationally renowned hotel located in the dense urban area of Hong Kong . Dynamic Smoke Extraction System (SES), Staircase Pressurization System (SPS) and Ventilation and Air Conditioning Control System (VAC) are designed and installed to ensure the fire safety of this new building.

Dynamic Smoke Extraction Systems (SES) are provided at basement areas, hotel common corridors and guest lift lobbies. Two (2) sets of SES system completed with 4 hours fire rated ductwork are installed to serve the basement areas and another two (2) sets of SES system completed with 2 hours fire rated ductwork to serve the hotel common corridors and guest lift lobbies. The Smoke Extraction Systems are all designed by fire engineering approach and will be activated either by the Automatic Fire Alarm (AFA) System or manually operated by a Supervisory Panel located in the F.S. Control Room at G/F.

Staircase Pressurization Systems (SPS) are provided at the MOE and the firefighting staircases serving the basement, podium and tower floors of the Hotel Building. One (1) sets of SPS is installed to serve for Basement areas, one (1) set for Podium floors and the other two (2) sets for guest room floors. The relief vents with Barometric Relief Dampers and the Bypass ducts installed in parallel with the pressurization fans completed with a modulating bypass damper controlled by a differential pressure sensors installed inside the staircase are designed and installed to regulate the amount of air entering the staircase, so as to control and maintain the staircase pressure and the air flow with proper velocity in case of fire. The SPS systems will be automatically triggered when a "Fire" signal is received from the Automatic Fire Alarm panel.

VAC Control System is provided to trip air ventilating equipment at the Hotel Block when fire occurred. The Hotel Block is separated into 3 different VAC zones (the Basement, Podium and Tower zones) where Method "A" is adopted. The VAC system will be triggered by the fire alarm cutout signal provided by the Automatic Fire Alarm panel at FS Control Room at G/F. Method "C" is adopted for the hotel areas located at the 7/F of the existing China Resource Building.

# JCCC HVAC&R System in Buliding 2019

From 15th October to 26th November 2019, the joint comprehensive certificate course on HVAC&R System in Buildings organized by ACRA, ASHRAE-HKC, HKIE-BSD, BSOMES and CIBSE-HKB has been held successfully. This course is designed for all levels of engineers and practitioners to enrich their knowledge in HVAC&R system lectured by the esteemed guest speakers with wide-ranging experience and academical background in the industry.


# 空調管道隔熱材料安裝技術及知識之証書課程

根據政府規定，承判政府工程之隔熱保溫安裝，承判商必須提供不少於一成（10%）安裝技術人員持有本會或同等認可機構發出合資格証書的技術人員指導施工。繼2019年上旬，本會於2019年11月8日舉辦了第二班為期一天隔熱保溫安裝技術講座，當中內容包括「發泡橡塑保溫及玻璃棉課程」和「泡沫酚醛及PID直接風管系統課程」。

# ACRA Badminton Tournament 2019 (IES Cup)

One of our most exciting sport events, the ACRA Badminton Tournament sponsored by IES Engineering (Hong Kong) Limited was magnificently concluded on 17 December 2019. It is not surprising that the participated badminton players can demonstrate professional skills competing for the championships.

Congratulations to the tournament winners:

**盃組賽**

| | |
|---|---|
| **Champion** | ATAL Engineering Limited |
| **1st Runner-up** | Young's Engineering Company Limited |
| **2nd Runner-up** | IES Engineering (Hong Kong) Ltd. |
| **3rd Runner-up** | The Jardine Engineering Corporation Ltd. |

**碟組賽**

| | |
|---|---|
| **Champion** | Southa Technical Limited |
| **1st Runner-up** | Alliance Contracting Company Limited |
| **2nd Runner-up** | Winston Air Conditioning & Engineering (Hong Kong) Company Limited |


# Year End Party

The annual thrilling event – ACRA's Year End Party 2019 has been held on 27 December 2019. It has attracted numerous council members, subcommittee members and youth committee members to join given the pleasurable past experience from this event. You are most welcome to join this party to start off connecting with us!

# Web Revision Course on Handling HFC & Blend Type Refrigerants ArchSD Contracts


The Revision Course on Handling HFC & Blend Type Refrigerants for ArchSD Contracts tailor-made for the registered workers was conducted via e-tutorial in view of COVID-19 on 6 April 2020. Through this revision course, the workers were able to refresh the training information as well as learning the latest development of refrigerants.

# ACRA Golf Day – SustainE CUP 2020

On 10 January 2020, ACRA Golf Day – SustainE CUP 2020 was organized at the PHOENIX HILL Golf Club. As the most popular sport event of ACRA, it received overwhelming response from various members with outstanding golfing skills to participate in the tournament. It is definitely an exciting and relaxing occasion to catch up with the industry insiders outside of Hong Kong.

# Caring Event – Joyful Lunch 2019
# 關懷社區活動 – 長者萬歲午宴

On 14 December 2019, ACRA Caring Committee together with Open Door Ministries (開心社區服務) has organized the Joyful Lunch at Lam Tin for 10 consecutive years. With the support of our caring committee, benevolent sponsors, members and volunteers, this event of pampering the 200 low-income elderlies with lunch during this Winter Solstice Festival period was completed admirably once again.

We are much appreciated to know that the elderlies were all looking forward to this joyful lunch and beamed with gratification. Special thanks to the participated volunteers and sponsors as shown below:

1 Alliance Contracting Co Ltd
2 ATAL Building Services Engineering Ltd.
3 Auto Integrated Limited
4 Bun Kee (International) Limited
5 Cheung Kee Metal Company Limited
6 Eaxon International Company Limited
7 Fook Loong (HK) Ltd.
8 Getwick Engineers Limited
9 Golden Leaf International (Hong Kong) Limited
10 Krueger Engineering (Asia) Ltd.
11 Raising Engineering Limited
12 REC Engineering Company Limited
13 Smartech HVAC & Engineering Limited
14 Southa Technical Limited
15 The Jardine Engineering Corporation Limited
16 Welcome Air-Tech Limited
17 White Hippo Limited
18 Wo Lee Steel Co., Ltd.
19 Zenith International Enterprise Ltd.

# New Members

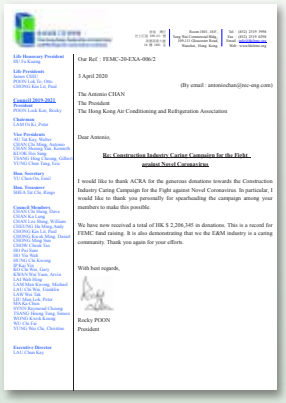

**Nov.19 to Apr. 20**

| | | | |
|---|---|---|---|
| 1 | Associate Member | Man Tung Air-Conditioning E & M Ltd. | Dec-19 |
| 2 | Associate Member | Bollfilter Hong Kong Ltd. | Mar-20 |
| 3 | Associate Member | Johnson Controls-Hitachi Air Conditioning Trading (Hong Kong) Limited | Mar-20 |

# Campaign for Fight Against Novel Coronavirus - CIC Funding

Since the pandemic of Novel Coronavirus spread in Hong Kong early this year 2020, it has created devastating influence to the public health and social operations. Due to this matter, CIC has established a funding campaign on 20 February 2020 to relief the financial difficulties that any registered workers are facing during this hard time.

We would like to thank you our members for your generous donations and support towards this campaign. Let's fight against COVID-19 together!

Our Ref.: FEMC-20-EXA-096/2

3 April 2020

(By email : antoniochan@rec-eng.com)

The Antonio CHAN
The President
The Hong Kong Air Conditioning and Refrigeration Association

Dear Antonio,

**Re: Construction Industry Caring Campaign for the Fight against Novel Coronavirus**

I would like to thank ACRA for the generous donations towards the Construction Industry Caring Campaign for the Fight against Novel Coronavirus. In particular, I would like to thank you personally for spearheading the campaign among your members to make this possible.

We have now received a total of HK $ 2,206,345 in donations. This is a record for FEMC fund raising. It is also demonstrating that we the E&M industry is a caring community. Thank you again for your efforts.

With best regards,

Yours sincerely,

Ricky POON
President

# 【沉痛悼念】全國暖通空調學會兩委會名譽理事長 - 吳元煒先生（1935-2020）

（來源：網上圖片 http://www.chinahvac.com.cn/Article/Index/7898）

全國暖通空調學會兩委會名譽理事長，吳元煒先生，於2020年6月12日因病在北京逝世，享年85歲。

吳元煒教授1935年2月18日出生於江蘇省武進縣。1951年考入哈爾濱工業大學暖通專業，1957研究生畢業後，從事空氣淨化及國內最早期的熱泵研究工作。歷任中國建築科學研究院總工程師及空氣調節研究所長，中國建築學會暖通空調分會主任委員，中國製冷學會空調熱泵專業委員會主任委員，中國製冷學會名譽副理事長。2006年至逝世前，任全國暖通空調學會兩委會名譽理事長。

吳教授畢生致力於暖通空調技術進步，早期根據熱泵理論提出應用輔助冷凝器作為恒溫恒濕空調機組二次加熱器的流程是當時世界首創，熱泵機組實現了中國第一項恒溫恒濕工程。其後開拓了城市集中供熱、建築節能、空調設備檢測、空調淨化設備標準化等工作，為學科技術和行業標準化發展奠定了基礎。吳教授建立了與美國、日本、歐洲等國家及香港、臺灣地區學術交流渠道，搭建了與國際學術組織溝通的橋樑，促進了與國際的技術交流與合作。ASHRAE授予"James國際獎"，表揚吳教授在國際影響力與交流方面所作出的突出貢獻。1975年，他帶頭創辦國內第一本行業期刊《建築技術通訊· 暖通空調》（《暖通空調》雜誌前身）。

為了傳承發揚吳元煒教授刻苦鑽研、積極進取、努力奉獻的精神，2010年特設立以吳教授名字命名的"吳元煒暖通空調獎"，用於表彰為國內暖通空調行業做出突出貢獻的科技工作者，以期推動全行業的技術進步，該獎項現已成為中國暖通空調行業人士的最高榮譽獎。

# Member List

| | Company Name | | Contact Number | Website / Email | Trade |
|---|---|---|---|---|---|
| ACRA Fellow Members | ATAL Engineering Limited | 安樂工程有限公司 | 2561 8278 | www.atal.com | Contracting, Servicing, Supplier |
| | Carrier Hong Kong Limited | 開利 (香港) 有限公司 | 2694 5375 | www.carrier.com.hk | Supplier |
| | Krueger Engineering (Asia) Limited | 高雅機電工程有限公司 | 2860 7333 | www.krueger.com.hk | Contracting |
| | Newland Engineering Limited | 新陸工程有限公司 | 2967 8620 | moshiu@newland.com.hk | Contracting |
| | REC Engineering Company Limited | 盈電工程有限公司 | 2619 8888 | www.rec-eng.com | Contracting, Servicing |
| | Shinryo (Hong Kong) Limited | 新菱工程香港有限公司 | 2237 8624 | www.shinryo.com | Contracting |
| | Shun Hing Engineering Contracting Company Limited | 信興機電工程有限公司 | 2419 8282 | www.shecon.com | Contracting |
| | The Jardine Engineering Corporation Limited | 怡和機器有限公司 | 2807 4511 | www.jec.com | Contracting, Servicing, Supplier |
| | Trane Hong Kong | 特靈香港 | 3128 4756 | www.tranehk.com | Manufacturing, Servicing, Supplier |
| | Winston Air Conditioning & Engineering (Hong Kong) Company Limited | 永通冷氣工程 (香港) 有限公司 | 2764 1200 | www.winston-hk.com | Contracting, Servicing |
| | York International (Northern Asia) Limited | 約克國際 (北亞) 有限公司 | 2590 0012 | www.johnsoncontrols.com | Contracting, Manufacturing, Servicing, Supplier |
| | Young's Engineering Company Limited | 景福工程有限公司 | 2235 0900 | www.youngs.com.hk | Contracting, Servicing |
| ACRA Ordinary Members | Alliance Contracting Company Limited | 聯和承造有限公司 | 2891 9083 | www.alcc.com.hk | Contracting |
| | Analogue Technical Agencies Limited | 安樂科技有限公司 | 2561 8278 | www.atal.com | Supplier |
| | ATAL Building Services Engineering Limited | 安樂機電設備工程有限公司 | 2561 8278 | www.atal.com | Contracting, Servicing, Supplier |
| | Bun Kee (International) Limited | 彬記 (國際) 有限公司 | 2748 9319 | www.bunkee.com | Supplier |
| | BYME Engineering (Hong Kong) Limited | 嘉福機電工程有限公司 | 2881 6690 | www.bymehk.com | Contracting, Servicing |
| | Carewin Engineering Limited | 嘉榮行工程有限公司 | 2898 2183 | admin@carewinhk.com | Contracting, Servicing |
| | Chevalier (E & M Contracting) Limited | 其士 (機電工程) 有限公司 | 2111 4811 | www.chevalier.com | Contracting |
| | China State Mechanical & Electrical Engineering Limited | 中國建築機電工程有限公司 | 2823 7888 | www.cohl.com | Contracting |
| | Chun Wo E & M Engineering Limited | 俊和機電工程有限公司 | 3758 8007 | www.chunwo.com | Contracting |
| | Daikin Airconditioning (Hong Kong) Limited | 大金冷氣 (香港) 有限公司 | 3966 9528 | www.daikin.com.hk | Supplier |
| | Efatar Environmental Protection Equipment Limited | 怡輝環保器材有限公司 | 2606 6922 | www.cold-magic.com | Manufacturing, Servicing, Supplier |
| | Fook Loong (HK) Limited | 福隆 (香港) 有限公司 | 2393 7773 | www.flhk.com.hk | Supplier |
| | Gammon E&M Limited | 金門機電工程有限公司 | 2516 8823 | www.gammonconstruction.com | Contracting |
| | Gate Way Valve & Fitting Limited | 基法水管配件有限公司 | 2688 2666 | www.gatewayv.com.hk | Supplier |
| | Honeywell Limited | 霍尼韋爾 (香港) 有限公司 | 2331 9133 | www.honeywell.com | Servicing, Supplier |
| | Hsin Chong Aster Building Services Limited | 新昌亞仕達屋宇設備有限公司 | 2579 8238 | www.aster.hk.com | Contracting |
| | Johnson Controls Hong Kong Limited | 江森自控香港有限公司 | 2590 0012 | www.johnsoncontrols.com | Contracting, Manufacturing, Servicing, Supplier |
| | K-Thorn Engineering Company Limited | 旗鋒工程有限公司 | 2481 2918 | main@k-thorn.com.hk | Contracting |
| | Lik Kai Engineering Company Limited | 力佳工程有限公司 | 2611 4501 | ericyung@likkai.com.hk | Contracting |
| | Lucky Engineering Company Limited | 連通冷氣電業有限公司 | 2780 5285 | general@luckyeng.com.hk | Contracting |
| | McQuay Air-Conditioning Limited | 麥克維爾空調有限公司 | 2893 6261 | www.mcquay.com.hk | Contracting, Manufacturing, Servicing, Supplier |
| | MECO Engineering Limited | 德寶工程有限公司 | 2774 8200 | meco-engltd@yahoo.com.hk | Contracting |
| | Midea Electric (Hong Kong) Limited | 美的電器(香港)有限公司 | 3669 4888 | www.mideahk.com | Contracting, Manufacturing, Supplier |
| | Quad-Tech Engineering (Hong Kong) Company Limited | 高得工程有限公司 | 2573 1832 | qt@quadtech.com.hk | Contracting |
| | Raising Engineering Limited | 威信工程有限公司 | 2395 6081 | simonsiu@raising.com.hk | Contracting |
| | Ryowo (Holding) Limited | 菱和 (集團) 有限公司 | 2391 8381 | www.ryowo.com | Manufacturing |
| | Siemens Limited | 西門子有限公司 | 2107 6506 | andy.wong@siemens.com | Supplier |
| | Skyforce Engineering Limited | 天科工程有限公司 | 2885 1620 | info@skyforce.com.hk | Contracting |
| | Southa Company Limited | 南龍有限公司 | 2963 7175 | www.southa.com | Supplier |
| | Southa Technical Limited | 南龍機電工程有限公司 | 2963 7175 | www.southa.com | Supplier |
| | Standard Refrigeration & Engineering Company Limited | 立德工程有限公司 | 2781 0871 | SRE@hklpg.com.hk | Contracting, Servicing, Supplier |
| | 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 | Contracting, Servicing |
| | Technicon Engineering Limited | 得力確工程有限公司 | 3193 1300 | technic@technicon.com.hk | Contracting |
| | Welcome Air-Tech Limited | 偉基空調有限公司 | 2806 8316 | www.saiver-welaire.com.hk | Manufacturing, Servicing, Supplier |
| | Westco Air Conditioning Limited | 威高冷氣工程有限公司 | 2426 3123 | mandylo@scee.com.hk | Contracting |
| ACRA Associate Members | ABB (Hong Kong) Limited | | 2929 3838 | www.abb.com.cn | Supplier |
| | A-Gas Environmental Services HongKong Limited | | 3188 5078 | www.agas.com | Servicing |
| | A & R Engineering Company Limited | 奇樂工程有限公司 | 2408 2960 | general@arengco.com.hk | Contracting |
| | Aires Engineering Company Limited | 毅力機電工程有限公司 | 2658 8856 | adrianwong@aires.com.hk | Contracting |
| | Air Star Air Conditioning Technology Group (Hong Kong) Limited | 燕通科技(香港)有限公司 | 2607 4131 | www.yantong.cn | Manufacturing, Supplier |
| | Alpha Appliances Limited | 第一電業有限公司 | 2529 7555 | www.alpha-general.com | Supplier |
| | Anway Engineering Company Limited | 正佳工程有限公司 | 2598 4228 | www.anway.com.hk | Supplier |
| | Armacell Asia Limited | 阿樂斯亞洲有限公司 | 2574 8376 | www.armacell.com | Manufacturing |
| | Arnhold & Co., Ltd. | 安利有限公司 | 2807 9400 | patricklai@arnhold.com.hk | Supplier |
| | A Shing Engineering Company Limited | 亞成冷氣工程有限公司 | 2537 1818 | wilkiengan@ashing.com.hk | Contracting, Supplier |
| | Auto Integrated Limited | 奧力科技有限公司 | 2612 0758 | rickie@autoinhk.com | Manufacturing, Supplier |
| | BELIMO Actuators Limited | 搏力謀執行器有限公司 | 2687 1716 | www.belimo.com | Manufacturing |
| | Bollfilter Hong Kong Ltd. | 波勒過濾系統(香港)有限公司 | 2715 5000 | www.bollfilterchina.com | Contracting, Supplier |
| | Biocline Healthcare Services Limited | 新康醫療器材工程有限公司 | 2672 1111 | bio@biocline.com | Contracting, Supplier |
| | Bitzer Refrigeration Asia Limited | 比澤爾制冷亞洲區有限公司 | 2868 0206 | www.bitzer.de | Supplier |
| | Brisky Limited | 穿梭科技有限公司 | 2511 3161 | tkwan@briskyltd.com | Contracting, Servicing, Supplier |
| | Castco Testing Centre Limited | 佳力高試驗中心有限公司 | 2597 8333 | www.castco.com.hk | Laboratory Testing |
| | Centalink International Limited | 信嘉國際有限公司 | 2626 1897 | andy@centalink.com.hk | Manufacturing, Supplier |
| | CDBM Engineering Consultant Company Limited | 新雄力工程顧問有限公司 | 2598 1088 | mail@cdbm.asia | Contracting |
| | Cheung Kee Metal Company Limited | 祥記五金有限公司 | 2393 1448 | www.ckmetal.com | Supplier |
| | Chi Yip Engineering Company | 志業工程公司 | 3078 9984 | canny@acmv-cy.com | Contracting, Supplier |
| | Chin Tat Trading Company | 展達貿易公司 | 3521 1589 | www.chintat.com.hk | Supplier |
| | Chit Tat Electrical Engineering Limited | 捷達機電工程有限公司 | 2529 8888 | chittat@yahoo.com.hk | Contracting, Manufacturing, Servicing |
| | 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 | Contracting, Supplier |
| | C.J. Wishing International Limited | 惠生電業有限公司 | 2799 9797 | cjwish@cjwish.com.hk | Supplier |
| | CLP Power Hong Kong Limited | 中華電力有限公司 | 2678 7350 | www.clpgroup.com | Manufacturing, Servicing, Supplier, Electricity Supply |
| | Clydeman Engineering Limited | 佳電工程有限公司 | 2332 3591 | daniel@clydeman.com | Contracting, Servicing, Supplier |
| | CMA Testing & Certification Laboratories Limited | 廠商會檢定中心 | 2698 8198 | www.cmatesting.org | Laboratory Testing |
| | Compass Engineering Limited | 康栢工程有限公司 | 2688 7778 | compassengltd@yahoo.com.hk | Contracting, Servicing |
| | Crowntin Limited | 冠殿有限公司 | 8202 0830 | clchoy@crowntingrp.com.hk | Contracting, Supplier |
| | Daikin Arkema Refrigerants Asia Limited | 大金阿科瑪冷媒亞洲有限公司 | 2295 6608 | www.daikinarkema.com | Manufacturing |
| | Delta Pyramax Company Limited | 佳澤科技有限公司 | 2511 2118 | www.deltapyramax.hk | Supplier |
| | Dictson Engineering Ltd. | 迪迅工程有限公司 | 2891 8070 | lui@dictson.com.hk | Contracting, Servicing |
| | Dynalink International Technology Limited | 匯能國際科技有限公司 | 3955 0203 | www.di-technology.com | Contracting, Servicing, Supplier |
| | Eaxon International Company Limited | 恩索有限公司 | 3590 4656 | gamescheung@eaxon.hk | Manufacturing, Servicing, Supplier |
| | ebm-papst Hong Kong Limited | 依必安派特香港有限公司 | 2145 8678 | info@hk.ebmpapst.com | Manufacturing, Supplier |
| | Electrodrive Engineering Limited | 高宜工程設備有限公司 | 2573 7211 | info@electrodrive-eng.com | Supplier |
| | Enviro-Tech Engineering Company Limited | 鷹達工程有限公司 | 2827 0688 | steveli@envirotech.com.hk | Supplier |
| | Ever Cool Refrigerating & Air-Conditioning Co., Ltd. | 嘉毅冷凍空調設備有限公司 | 2356 8598 | info@evercoolhk.com | Manufacturing, Supplier |
| | Evergreen Environmental Technology Company Limited | 冬青環保科技有限公司 | 2562 3331 | www.evergreen-environmental.com | Supplier |
| | Extensive Trading Company Limited | 精基貿易有限公司 | 2889 1681 | www.extensive.com.hk | Supplier |
| | Far East tEngineering Services Limited | 遠東工程服務有限公司 | 2898 7331 | www.fareast.com.hk | Contracting, Servicing |
| | Fortune Links Hong Kong Limited | 鑫力香港有限公司 | 2562 9399 | info@fortunelinks.com.hk | Manufacturing, Servicing, Supplier |
| | Fungs E & M Engineering Company Limited | 馮氏機電工程有限公司 | 2682 7200 | fungscww@netvigator.com | Contracting |
| | GTECH Services (Hong Kong) Limited | 英國通用工程 (香港) 有限公司 | 2123 0888 | www.gtechservices.com.hk | Contracting |
| | GELEC (HK) Limited | 香港通用電器有限公司 | 2919 8383 | hq@gelec.com.hk | Supplier |
| | Gether-Force Air-Conditioning Engineering Co., Ltd. | 群力冷氣工程有限公司 | 2890 2622 | geforce@hknet.com | Contracting |
| | Getwick Engineers Limited | 佳域工程有限公司 | 2893 3600 | getwick@getwick.com | Contracting |
| | Glory Air-Conditioning Limited | 天恩空調有限公司 | 3487 9092 | wallace@gloryacltd.com | Contracting, Servicing, Supplier |
| | Golden Leaf International (Hong Kong) Limited | 金葉國際(香港)有限公司 | 2648 1000 | info@glint.com.hk | Contracting, Servicing |
| | Goodway Electrical Engineering Limited | 佳濤電業有限公司 | 2405 0888 | www.goodwaygrille.com | Manufacturing, Supplier |
| | Gotop Engineering (HK) Limited | 高陞工程 (香港) 有限公司 | 2459 3038 | gotopco@yahoo.com.hk | Contracting |
| | Great Top Engineering Limited | 宏鋒工程有限公司 | 2345 2219 | general@greattop.com.hk | Contracting |
| | GRUNDFOS Pumps (Hong Kong) Ltd. | 高福水泵(香港)有限公司 | 3540 0300 | www.grundfos.com | Manufacturing |

## ACRA Associate Members

| Company Name | | Contact Number | Website / Email | Trade |
|---|---|---|---|---|
| Hang Ji Industries International Co., Ltd. | 恒基工貿國際有限公司 | 2721 6129 | www.hangji.com | Manufacturing |
| Hensen System Engineering Limited | 豪信系統工程有限公司 | 2884 9001 | cecil@hensen.com.hk | Supplier |
| Hilti (HK) Limited | 喜利得 (香港) 有限公司 | 2773 4705 | www.hilti.com.hk | Manufacturing |
| Hi Tak Thermal & Acoustic Insulation Eng. Limited | 喜德保溫隔聲工程有限公司 | 2770 7703 | www.hitakinsul.com | Contracting, Manufacturing, Supplier |
| Hofmann Construction Material Ltd. | 香港好夫曼建材有限公司 | 3157 1841 | www.hofmannhq.com | Supplier |
| Honest Air Conditioning Limited | 明發冷氣有限公司 | 2396 8108 | aircond@netvigator.com | Contracting, Supplier |
| H.W. International Air-Conditioning Limited | 豪華國際空調有限公司 | 2796 8888 | info@hooair.com | Manufacturing |
| IES Engineering (Hong Kong) Limited | 恒豐工程 (香港) 有限公司 | 2992 0830 | www.ieshk.com.hk | Servicing, Supplier |
| InnoTec Engineering Ltd. | 科技工程有限公司 | 3706 6333 | info@innoteceng.com | Contracting |
| Intelligent Technologies Limited | 毅智科技發展有限公司 | 2301 4868 | info@intelligent-net.com | Supplier |
| Jade Star Engineering Limited | 捷陞工程有限公司 | 3998 3256 | jadestarhk@yahoo.com.hk | Contracting, Servicing |
| JC (HK) Engineering Limited | 悅峰工程有限公司 | 2898 9885 | jc.hk.eng@gmail.com | Contracting, Manufacturing, Servicing, Supplier |
| J & J Network Engineering Company Limited | 信卓網絡工程有限公司 | 3579 5263 | www.jjnetwork.com.hk | Supplier |
| 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 | Manufacturing, Supplier |
| Joneson Environmental Technologies Limited | 忠誠環保科技有限公司 | 2889 8220 | jet@fsenv.com.hk | Contracting, Manufacturing, Servicing, Supplier |
| Join Rich Engineering Limited | 億聯工程有限公司 | 3153 2048 | www.joinrich.com.hk | Contracting |
| Jinchat Engineering (HK) Company Limited | 正卓工程 (香港) 有限公司 | 2687 1755 | jyin@jinchat.com | Manufacturing, Servicing, Supplier |
| Jun Feng Company Limited | 駿峯有限公司 | 2707 3088 | www.junfeng.com.hk | Servicing, Supplier |
| Keio Engineering Company Limited | 京王工程有限公司 | 2695 8872 | www.keio.com.hk | Contracting |
| Kembla (Hong Kong) Limited | 金特霸 (香港) 有限公司 | 2528 0999 | www.kembla.com.hk | Supplier |
| Kin Wo A/C Engineering Limited | 健和冷氣工程有限公司 | 2398 0157 | kw@kinwo.com.hk | Contracting |
| Kinetics Noise Control (Asia) Limited | 建力聲震控制 (亞洲) 有限公司 | 2191 2488 | www.kineticsnoise.com | Manufacturing, Supplier |
| Kingsfield Engineering Ltd. | 堅輝工程有限公司 | 2815 9560 | www.kelhk.com | Servicing |
| Kings View Airconditioning Engineering Co., Ltd. | 景匯空調工程維修有限公司 | 2796 2417 | admin@kingsview.com.hk | Contracting |
| 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 | Manufacturing |
| KSB Limited | 凱士比有限公司 | 2147 1226 | philip.chow@ksb.com.hk | Manufacturing |
| K.Y.H. Steel Company Limited | 金源行鐵倉有限公司 | 3473 2332 | www.kyh.com.hk | Supplier |
| Laser Resources (Asia) Company Limited | 全美 (亞洲) 有限公司 | 2516 7500 | laasiahh@netvigator.com | Manufacturing, Supplier |
| LeBlanc Water Treatment & Chemicals Limited | 利邦化工水處理有限公司 | 2408 2000 | www.leblanc.com.hk | Servicing |
| Lee Tack Engineering Company Limited | 李德工程有限公司 | 2305 3111 | ltec@leetack.com.hk | Contracting |
| Legend Engineering Company Limited | 卓越聲控工程有限公司 | 2815 0928 | info@legendjt.com.hk | Contracting, Manufacturing, Supplier |
| Lifa Air Limited | 麗風空氣有限公司 | 2511 7076 | www.lifa-air.com | Servicing, Supplier |
| Life Air IAQ Limited | 活力空氣品質科技有限公司 | 3527 0106 | winston@lifeairiaq.com | Manufacturing, Supplier |
| Link The Best Company Limited | 必發 (香港) 有限公司 | 2568 4092 | sales@linkthebest.com.hk | Manufacturing, Supplier |
| 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 | Supplier |
| 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 | Supplier |
| Man Tung Air-Conditioning E & M Ltd. | 萬通冷氣機電有限公司 | 3165 8698 | www.manshungroup.com.hk | Contracting |
| Mason Industries (HK) Limited | 梅森實業有限公司 | 2967 9639 | www.mason-hk.com | Supplier |
| Maxwell Electrical Asia Ltd. | 美基電器亞洲有限公司 | 3583 5088 | www.maxwell-asia.com | Manufacturing, Servicing |
| Mesan Fiberglass Engineering (International) Limited | 明新玻璃纖維工程 (國際) 有限公司 | 2787 5717 | www.mesanct.com | Manufacturing |
| Mitsubishi Electric (Hong Kong) Limited | 三菱電機 (香港) 有限公司 | 2887 4575 | www.mitsubishi-ryoden.com.hk | Supplier |
| NAP Acoustics (Far East) Limited | NAP 聲學工程 (遠東) 有限公司 | 2866 2886 | www.napacoustics.com.hk | Contracting, Manufacturing, Servicing, Supplier |
| New Way Engineering Company Limited | 新法機械有限公司 | 2325 6892 | www.newway.com.hk | Supplier |
| O-Link Limited | 奧聯(國際)有限公司 | 2619 8888 | www.o-link.com.hk | Manufacturing |
| Oxprime (International) Limited | 鑫輝 (國際) 有限公司 | 2590 8088 | info@oxprime.com | Supplier |
| Pacific Sense Enterprises Limited | 栢昇企業有限公司 | 3749 5272 | www.pacificsense.com.hk | Contracting, Supplier |
| Paul Y. (E&M) Contractors Limited | 保華機電工程有限公司 | 2831 8338 | www.pyengineering.com | Contracting |
| Peterson Engineering Limited | 必德信工程有限公司 | 2365 0372 | stso@peterson.com.hk | Contracting |
| PowerTech IPC Company Limited | 科力發展有限公司 | 3105 3928 | www.powertechipc.com | Servicing, Supplier |
| Powers Technical Services Limited | 寶華技術服務有限公司 | 2770 2110 | powers.pts@gmail.com | Contracting |
| Practical Engineering (Hong Kong) Company Limited | 百利高工程 (香港) 有限公司 | 2402 2772 | practical@practical.hk | Contracting, Supplier |
| Pyrofoe Engineers Limited | 衛安工程有限公司 | 2388 8038 | www.pyrofoe.com.hk | Contracting |
| Ready Electrical Metal Work Limited | 全達電器金屬製品有限公司 | 2898 8623 | kw_leung@ready-group.com | Contracting, Manufacturing |
| REC Green Technologies Company Limited | 盈電環保科技有限公司 | 2619 8817 | www.yaulee.com | Servicing, Supplier |
| Regin Controls Hong Kong Limited | 瑞晶溫控香港有限公司 | 2407 0281 | saleshk@regin.se | Manufacturing, Supplier |
| Ritech Engineering & Supply Company Limited | 偉達工程材料有限公司 | 2410 1819 | www.ritech-hk.com | Supplier |
| San Yik Air Conditioning Engineering Company Limited | 新益冷氣工程有限公司 | 3565 5812 | www.sanyikgroup.com | Contracting, Servicing, Supplier |
| Sanby Trading Company Limited | 聖備貿易有限公司 | 2573 4219 | www.sanby.com | Supplier |
| Samsung Electronics H.K. Company Limited | 三星電子香港有限公司 | 2862 6300 | www.samsung.com.hk | Manufacturing |
| Savills Engineering Limited | 第一太平戴維斯設備工程有限公司 | 2508 4668 | ronaldfung@savills.com.hk | Contracting, Servicing |
| Shenling Environmental Systems (Hong Kong) Ltd. | 申菱環境系統 (香港) 有限公司 | 2603 0002 | www.shenling.com | Supplier |
| Shun Hing E & M Engineering Limited | 順興機電工程有限公司 | 2387 2882 | project@shunhingeng.com | Contracting, Supplier |
| Shun Hing Electric Service Centre Limited | 信興電器服務中心有限公司 | 2406 5333 | www.shunhing-service.com | Servicing |
| Shun Hing Electronic Trading Co. Ltd. | 信興電器貿易有限公司 | 2733 3888 | www.shunhinggroup.com | Contracting, Supplier |
| Shun Tung Engineering Company Limited | 順通冷氣電機工程有限公司 | 2633 6866 | gabriel@shun-tung.com | Contracting |
| Sing Kin Limited | 陞建有限公司 | 2333 1518 | singkin@gmail.com | Contracting |
| Smartech HVAC & Engineering Limited | 智能空調工程有限公司 | 2521 9768 | info@smartech-hvac.com.hk | Contracting, Supplier |
| Southa Engineering Limited | 南龍工程有限公司 | 2963 7241 | www.southa.com | Contracting |
| Stars (Hong Kong) A/C & R Company Limited | 恆星 (香港) 冷熱設備有限公司 | 6116 7832 | stanley_yuen@hstars.com.cn | Manufacturing |
| Sun First International Limited | 昇福國際有限公司 | 2807 7888 | www.sunfirst.com.hk | Supplier |
| Sun Yu Chau Engineering Company Limited | 新宇宙工程有限公司 | 2345 9355 | www.sycengg.com.hk | Contracting |
| Sunny Fire Engineering Ltd. | | 2395 6766 | sunnyfireengltd@gmail.com | Contracting |
| Superpower Pumping Engineering Company Limited | 力霸水泵機械工程有限公司 | 2745 3562 | www.sppump.com | Supplier |
| Sustainable Energy Limited | 恆澤節能有限公司 | 2332 3077 | www.sustaine.com.hk | Manufacturing, Servicing |
| Target Energy Solutions Limited | 達標能源管理有限公司 | 2345 0298 | www.targetensol.com | Servicing |
| Teembase Development Limited | 天基發展有限公司 | 2554 6263 | www.teembase.com | Supplier |
| Tesa Tape (Hong Kong) Limited | 德莎膠帶 (香港) 有限公司 | 2583 9980 | www.tesa.com | Manufacturing |
| Thermtech Building Products Limited | 泛達建築材料有限公司 | 2756 3837 | thermbpl@netvigator.com | Contracting, Supplier |
| Tinwood Pacific Limited | 天匯太平洋有限公司 | 3956 9751 | www.sinro.com | Manufacturing |
| Tomi Fuji EMC Limited | 富勝能源管理有限公司 | 2432 0170 | www.tomifuji.com.hk | Servicing |
| Tom's Equipment Company Limited | 義隆設備有限公司 | 2757 5539 | tom@toms-equipment.com | Supplier |
| Tin Sing Chemical Engineers Ltd. | 大成化工有限公司 | 2619 8858 | www.rec-tsc.com | Servicing, Supplier |
| Trisun Air Conditioning System Limited | 三陽系統有限公司 | 2377 1618 | enquiry@trisun.com.hk | Contracting, Servicing, Supplier |
| TROX Hong Kong Limited | 妥思香港有限公司 | 2861 2261 | www.troxapo.com | Supplier |
| Tung Shing Hardware Co., Ltd. | 東成五金有限公司 | 2626 9983 | www.tungshinghardware.com.hk | Supplier |
| Union (Luen Hop) Refrigeration Co., Ltd. | 聯合冷氣工程有限公司 | 2627 4600 | unionlh@bizentvigator.com | Contracting |
| United Controls (Hong Kong) Limited | 統一儀器 (香港) 有限公司 | 2556 1001 | www.ucl668.com | Servicing, Supplier |
| Victaulic Hong Kong Ltd. | | 6898 6823 | www.victaulic.com | Manufacturing, Servicing, Supplier |
| Victory Engineering Service Company Limited | 維陞工程有限公司 | 2979 4068 | pamela@ves.hk | Supplier |
| Viewco Building Services & Engineering Co., Ltd. | 偉保工程有限公司 | 2543 0610 | engineering@viewco.com.hk | Contracting |
| Wai Luen Air Conditioning Limited | 偉聯空調設備有限公司 | 2890 9321 | garychan@wailuenhk.com | Contracting |
| Wardson Engineering Limited | 華順工程有限公司 | 2329 8268 | wsengltd@yahoo.com.hk | Contracting |
| White Hippo Limited | 白河馬企業有限公司 | 2303 1318 | www.kshop310.hk | Supplier |
| Wing Shing Air-Flow Company Limited | 永盛風咀製品廠有限公司 | 2792 6331 | accounting@wingshing-hvac.com | Manufacturing, Supplier |
| Wo Lee Steel Company | 和利鋼鐵有限公司 | 2393 0131 | www.wolee.com | Supplier |
| Wolter Asia Limited | 華德亞洲有限公司 | 2456 0198 | info@wolter.com.hk | Manufacturing, Supplier |
| Wysermann Company Limited | 威士文有限公司 | 2614 2213 | wysermann@wysermann.com.hk | Manufacturing, Supplier |
| Yin On Trading Limited | 賢安建材貿易有限公司 | 2572 7110 | office@yinon.com.hk | Supplier |
| Yordland Engineering Limited | 日島工程有限公司 | 2362 2186 | www.yordland.com | Contracting, Servicing, Supplier |
| York Choi Industrial Limited | 旭彩實業有限公司 | 2795 8286 | www.yorkchoi.com | Manufacturing |
| 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 | Supplier |
| Zenith International Enterprise Ltd. | 盛豐國際企業有限公司 | 2815 5852 | www.ebara.com.hk | Supplier |

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2020 onward...

☆ Major Job Reference

MTR Express Rail Link,
West Kowloon Terminus
Year of Completion : 2017

Passenger Clearance Building, Hong Kong Boundary Crossing Facilities,
Hong Kong-Zhuhai-Macao Bridge.
Year of Completion : 2018

Liantang / Heung Yuen Wai Boundary Control Point
Year of Completion : 2019

Fire and Ambulance
Services Academy
Year of Completion : 2015

Central Mail Centre
Year of Completion : 2013

Nina Tower
Year of Completion : 2007

International Financial Centre
Phase I (IFC-I)
Year of Completion : 1998

Court of Final Appeal, Central
Year of Completion : 1996

General Cancer Centre,
Prince of Wales Hospital
Year of Completion : 1994

SOLE AGENT/STOCKIST :

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