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- Provide data for system diagnostics



Balancing valves

- Handwheel equipped with a digital read-out
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- Convenient, reliable setup Fully configurable with over 200
- setup options



Combined balancing and control valves

- Adjustable Kvs
- Presetting tool for accurate and easy balancing



Balancing instruments

- Wireless communication
- Interactive software for measuring, balancing and trouble shooting



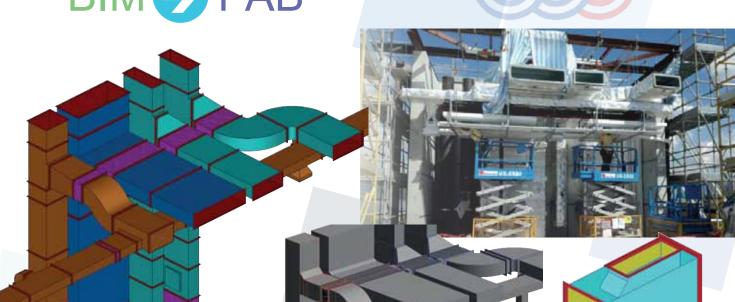
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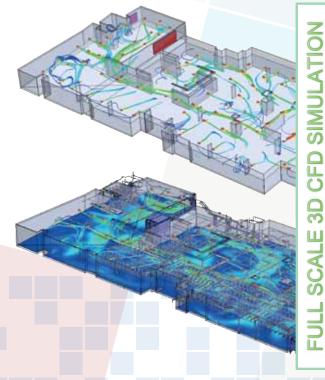
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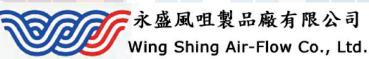


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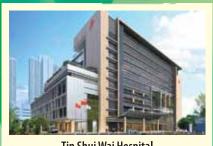
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MCOUAY AIR-CONDITIONING LTD.

Energy Saving Through EC Fan Technology

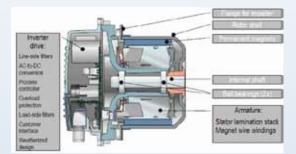
By: Daniel Yiu

Introduction

Accounting for up to 50% of the energy consumed in Hong Kong buildings, fans are the major contributor of energy used in air conditioning and ventilation systems (HVAC). Most of the energy efficiency improvements in HVAC systems involve upgrade in control strategies or the installation of variable speed drives (VSD) to existing motors. However, the actual fan which is the most energy-hungry part of the system is not replaced. Hence, these upgrades always miss an additional savings opportunity. High efficiency EC fans and EC Fans in the retrofit of existing HVAC equipment can drastically reduce energy consumption by providing better ability to speed control and high efficiency air movement systems.

What's so Special About an EC Fan?

EC fans are getting popular in energy efficient air movement technology. EC can be easily understand as a brushless DC motor - Permanent Magnet motors running on high voltage direct current (DC) electricity with built in AC to DC conversion allowing EC Motors to run direct from single phase or three phase mains supplies. EC stands for Electronically Commutated which basically means it is a fan with a brushless DC motor.



DC Motors

Basic DC motors rely on carbon brushes and a commutation ring to switch the current direction, and therefore the magnetic field polarity, in a rotating armature. The interaction between this internal rotor and fixed permanent magnets induces its rotation. In an EC motor, the mechanical commutation has been replaced by electronic circuitry, which supplies the right amount of armature current in the right direction at precisely the right time for accurate motor control. In addition to performing the commutation, the electronics convert AC to DC and control the fan speed by regulating the power to the motor. Matters are further simplified by using a compact external rotor design with stationary windings. The permanent magnets are mounted inside the rotor with the fan impeller attached. EC fan with integrated electronics which could be connected directly to an AC mains supply.

In general, EC motors are around 30% more efficient than AC motors because the secondary magnetic field comes from permanent magnets rather than copper windings. An AC motor consumes additional energy solely to create a magnetic field by inducing a current in the rotor. But this is only half the story. The use of modern electronics in controlling the motor has opened up many other possibilities which contribute to using less power. EC motors are significantly above efficiency class IE4 (standard IEC 4-pole, 50Hz).

EC Fan Variable Speed Control

In order to control the motor accurately and efficiently, the integrated electronics have to continuously monitor the motor speed and adjust the control input. In fact, simply connect a potentiometer and you have infinitely variable speed control. Dependent on the motor type, any sensor which can provide a 0-10V/PWM or 4-20mA input can be directly connected to provide closed loop control for temperature, pressure or other parameters that is chosen to be measured. The large EC motors have full programmable networking capability for integration with BMS. This allows to access fan status, operation parameters and even switching fans on and off. As a result, there are no frequency inverters and no whining noises! An EC motor under speed control is virtually silent.

How Common is EC Fan Technology?

EC fans are not new. Electronically commutated motors were developed in the early seventies and have found their way into the majority of fan applications globally. First introduced into computer room air conditioning units (CRAC) in 2005, EC technology can now be found in everywhere, especially in commercial air conditioning and air handling units, as standard option for many years. Even inline duct and cabinet ventilation are now available with high efficiency direct driven EC fans with backward curved impellers.













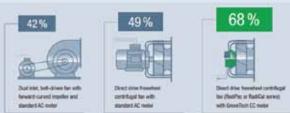
The available range of EC fans is expanding quickly. There are axial and centrifugal fans, forward curved and backward curved, single inlet and double inlet, single phase and three phase and they are often directly interchangeable with their AC equivalents.

Traditional AC Belt Driven Centrifugal Fan in HVAC

The existing problems with fans are the running and maintenance costs of them. Belt driven systems which are typical in HVAC applications require ongoing maintenance and frequent replacement of belts, pulleys, and bearings. Failure to do so ultimately leads to increased inefficiencies and failures of motor and bearing which increase cost even further. Indirect maintenance costs also increase due to belt dust and associated costs which will require more frequent filter replacements and cleaning.

In larger systems, the performance of this mix and match assembly of various components is estimated. Inefficiencies and performance inaccuracies in these systems are caused by the drive losses and the mismatch of components or simply by inefficient components like forward curved impellers or old and inefficient motors.

Having a single large fan installation in an AHU instead of multiple fans provides a single point of failure which poses a high risk, especially in critical systems like medical applications or data centres. These are also time consuming and expensive to fix. For example a bearing issue or a failed motor will cause the air conditioning unit to fail and repairing can take several days in a large application.



What is an Efficient Fan?

Fan Selection for New Equipment or Retrofit

The international standard for fan efficiency, ISO 12759:2010, defines what a fan is and how efficiencies are measured. It paves the way for best practice as it ensures that any information provided by a manufacturer that refers to the standard is comparable.

EC Fan Retrofits

All of the above mentioned problems can be avoided and efficiency can be improved by replacing the existing fan systems with high efficiency direct-driven EC fans. The upgrade of conventional belt driven fans in commercial air conditioning and air handling units (AHU) to direct drive EC fans have an average savings of 40%. Using multiple EC fans to replace one existing fan assembly has several benefits. Smaller EC fans are easier to handle and can usually be carried and installed by two people without special lifting equipment. When access is restricted, lightweight and smaller products definitely reduce installation cost and time. Using 2, 3, 4 or even more fans in one AHU significantly





After

increases the reliability, as a single fan failure will not cause the HVAC equipment to fail. With a typical replacement, it will take 30 to 45 minutes. It is relatively easy to accommodate room for further upgrades to the building by allowing space to add additional fans at a later stage, for example if demand for the required airflow increases. This approach also allows for the use of only one fan model across several AHUs in a building, hence reducing the number of spare part required. This can further increase the reliability and reduce downtime of HVAC equipment.

TECHNOLOGY UPDATE

Benefits

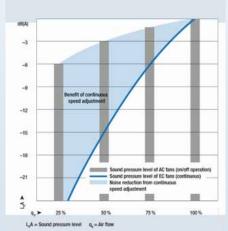
EC fan retrofits have additional benefits besides reducing power consumption.

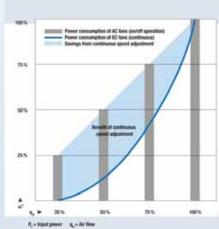
- 1) EC fans have built in speed controllability, which enables very easy and inaudible speed control. Most EC fans will accept standard signals from existing building management systems (BMS). Even a basic potentiometer can be used to modify air flows.
- 2) Backward curved fans allow for easy measurement of air volume via a differential pressure sensor. This is convenient considering fan applications do not ask for fan speed but air volume. This information can be made accessible to the BMS or via a digital display. It is therefore possible to not only monitor speed but also measure, monitor and control air volume.

Speed control and therefore air volume control should be implemented wherever possible for the following reasons:

- Power savings by reducing air flows to minimum requirements
- Noise reduction, again by reducing air flows
- Increase life time of the equipment due to the reduced demand
- Increase comfort level due to lower noise and air velocities
- Easy maintenance of desired conditions in air conditioned space due to more accurate control

But where are the savings coming from when speed controlling EC fans? A reduction in speed and therefore air flow of only 5% results in savings of 14%. A reduction by 50% reduces input power by 87% (cf. Figure 6)! This is possible because EC fans follow fan laws and maintain their high efficiency over a wider performance range than other fan motor technologies. It is important to remember that these savings through speed control are in addition to the reductions achieved by simply switching to EC technology. As shown above, savings of 40% to 70% in input power can be achieved without before speed control.





Benefits of speed control: noise reduction

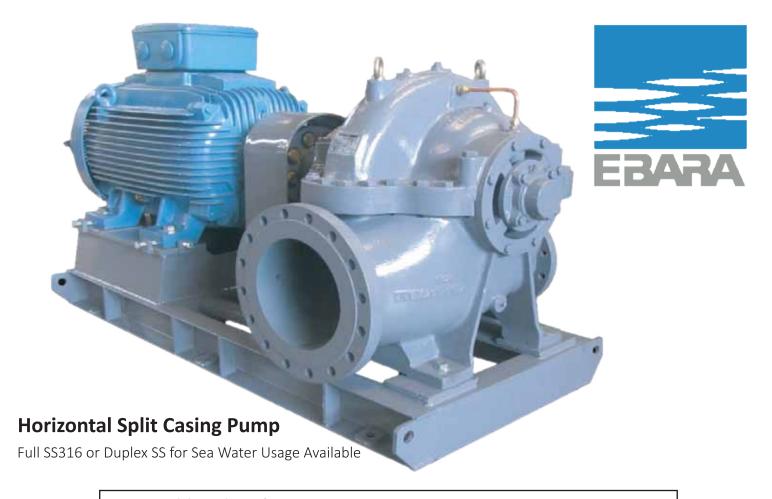
Power savings using EC technology

- 3) EC fans typically have a soft start function built in, significantly reducing in-rush current when the fans are switched on and ramping up in a defined time period.
- 4) EC fans generally offer a high level interface on larger fans. This allows for easy integration of EC fans into the existing or future BMS system. This allows to access fan status, operation parameters and even switching fans on and off.
- 5) Gone are the days of changing bearings and belts, greasing, and adjusting pulleys.

EC fans have maintenance-free bearings and do not require servicing.

Recommendations

Fans are a major contributor to energy consumption in buildings. Replacing existing low efficiency fan systems with new high efficiency EC direct driven products can reduce the fan power consumption by up to 50%. It is more efficient, quieter and more reliable than the conventional fan systems in the market giving better performance and a lower life cycle cost. Last but not least, in terms of environment protection, switching to EC technology will reduce carbon emissions. Furthermore, it was shown that EC fans are more versatile, increase reliability and reduce maintenance and service cost. Different design options for retrofits were given which are possible due to the modular design of EC fans.



Notable Job Reference

- MTR 816A,771,771B,856,965B,1064
- Hong Kong-Zhuhai-Macau Bridge
- New World Centre Remodelling
- Xiqu Centre, WKCD
- Yau Ma Tei Police Station

- Gleneagle Hospital
- Venetian Parisian
- iAdvantage Data Centre
- Tower 535, Causeway Bay
- 14-30 King Wah Road



End Suction pump



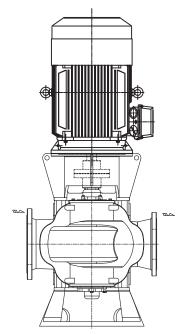
Pressurization Unit & Booster Unit



Vertical Inline pump



Fresh And Flush Water Pump



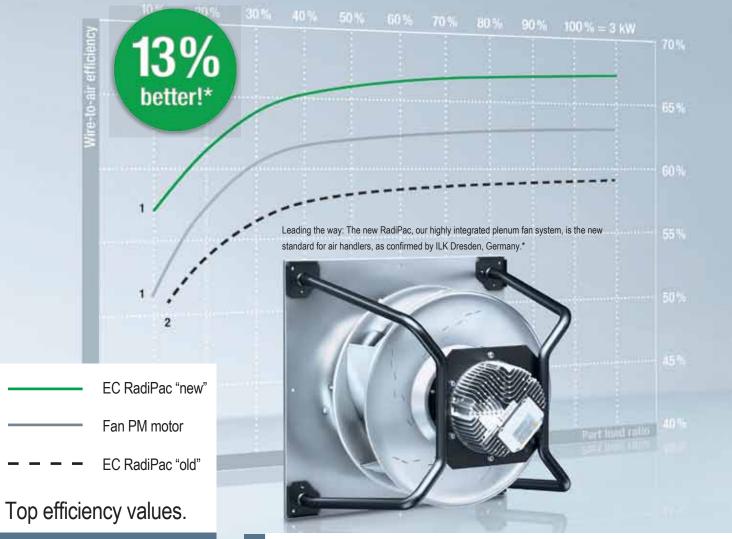
Vertical Split Casing Pump
Universal Joint Shaft Option Available



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A cut above: the new RadiPac.





Direct-drive Backward Curve centrifugal fan with high-performance airfoil impeller, GreenTech external rotor EC motor surpasses efficiency class IE4 , and integral variable speed drive and control electronics.

Measurements at the Institute of Air Handling and Refrigeration (ILK) Dresden show that the maximum efficiency of the entire system can only be achieved if the built-in componenets are combined in the best possible way. All told, the redesign of the flow machine resulted in an efficiency increase of more than 13% for the RadiPac fans. Based on results for size 400 fans.

ebm-papst Hong Kong Ltd. Flat E, 17/F., MG Tower, 133 Hoi Bun Road, Kwun Tong. KLN Tel: (852) 21458678 Email: Daniel.Yiu@cn.ebmpapst.com

Key benefits

- Up to 60% power savings
- · Direct drive, no belt dust
- · Save on maintenance costs
- Extremely quiet operation
- · Integrated intelligent drive electronics for easy speed control
- Plug & play retrofit design
- Communication & control via RS485/MODBUS available for most sizes
- Easy integration into BMS with MODBUS/BACnet gateway

More information at www.ebmpapst.com/radipac











S&P Coil Products Limited is a UK based specialist manufacturer and supplier of heating and cooling equipment to the public and private sector. Set up in 1979, the business now operates globally, manufacturing in Leicester, UK over 30 years and Middle East over 10 years. To fulfill the market needs in Asia Pacific Region.

SPC recently established a manufacturing plant in China to provide the professional and high performance product in the region.

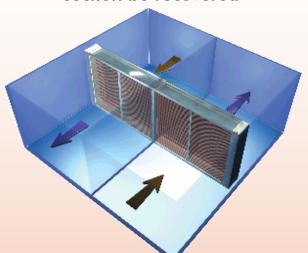
Improving IAQ and Energy Saving



Green and eco-Friendly Zero refrigerant Zero ODP and GWP Zero cross contamination More LEED or BEAM points Reduced running cost High latent heat of vaporisation High thermal conductivity High heat recovery rate Reduced depths and airside pressure drop

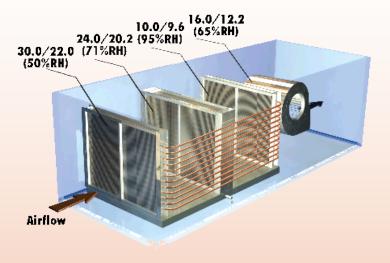
HEAT PIPES for Heat Recovery

Up to 70% heat energy in exhaust fan section be recovered



HEAT PIPES for Humidification

Raising 50 to 100% dehumidification



<u>Latest Job References</u>

- Chimelong Ocean Kingdom Penguin Exhibit
- Hong Kong Tsuen Wan Adventist Hospital (OT Block) Hung Hom Grand Hyatt Hotel
- Macau Kiang Wu Hospital
- Shanghai Disneyland
- Tin Shui Wai Hospital

- Hong Kong Baptist Hospital

 - New World Centre
 - Singapore Ng Teng Fong Hospital

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香港青年技能大賽2016

選拔精英 承傳技能

「香港青年技能大賽」旨在為21歲或以下的年輕人,提供觀摩和切磋專業技能的平台,透過公開比賽挑戰專業水平,提升年青技術人員的技術水平及社會地位,並鼓勵他們發展所長,貢獻社會。

青年技能比賽常務委員會由職業訓練局、建造業議會、製衣業訓練局及業界精英組成,每兩年舉辦一次「香港青年技能大賽」,於不同比賽項目中挑選選手,並加以培訓,讓選手可以代表香港參加兩年一度的「穗港澳蓉青年技能競賽」及「世界技能大賽」。香港代表隊於去年8月在巴西聖保羅舉行的「第43屆世界技能大賽」,在7項賽事項目奪得優異獎章佳績。而自1997年首次參加世界技能大賽至今,香港隊共獲得兩金、一銀、四銅及三十九個優異獎,成績非凡。



每一屆香港青年技能大賽的比賽項目都會有所不同,而「香港青年技能大賽2016」比賽當中,大會舉辦六個組別 合共25個比賽項目。比賽已於6月7日至7月3日舉行,近340名參賽者,挑戰六大競技範疇。優勝者將有機會競逐 代表香港於明年10月在阿拉伯聯合酋長國阿布札比舉行,被譽為技能界奧林匹克的「世界技能大賽2017」,與國 際選手同場比拼技藝,一較高下。

空調製冷屬建築工程科技組別中的一個項目。比賽已於6月23及24日在職業訓練局薄扶林大樓舉行,ACRA首次獲邀參與評審工作,共派出六位代表作評判。比賽分為風煤焊接及製冷系統組裝兩部份,參賽者需在九小時比賽內完成。第一部份需在一小時內焊接銅製組件並通過壓力測試,而第二部份需組裝製冷系統並進行調試,使銅喉部份結霜(見附圖),對未滿21歲的年青人確是一個挑戰。當日共有9位年青人參賽,在焊接部份,其中一位取得滿分,但在系統組裝部份,所有參賽者都未能在限時內完成。評判根據大會的評分標準,最後評定三位得獎者,他們是林思叡、劉至正及余豐源,分別來自機電工程署及怡和機器有限公司。

最後,ACRA恭賀各得獎者,並鼓勵各會員公司能在下屆青年技能大賽,撥出資源令更多的年青人能參賽,共創佳績。





NEW MEMBER (from May - October 2016)

1	May	Associate Membership	Airstar Air Conditioning Technology Group (Hong Kong) Limited
2	Jun	Associate Membership	Auto Integrated Limited
3	Jun	Associate Membership	GRUNDFOS Pumps (Hong Kong) Limited
4	Jul	Associate Membership	Compass Engineering Limited
5	Aug	Associate Membership	Trusty Environmental Co. Limited
6	Sep	Associate Membership	Fortune Links Hong Kong Limited
7	Sep	Associate Membership	Hofmann Construction Material Limited
8	Oct	Corporate Membership	EMR (ASIA) Limited



泰國技術探訪團

除了參加中國制冷展,香港空調及冷凍商會已有多年沒有舉辦技術探訪團到其他東南亞國家,今年大家興致勃勃都想出外走動及見識一下,所以在6月底新一屆委員改選後正好利用回歸假期的空檔,組織了一個四日三夜的技術探訪團到泰國曼谷取經,行程非常豐富。

6月29日,技術探訪團由劉志威主席,陳志雄上屆會長,陳紫鳴副會長、梁栢泉副會長、連金水永遠名譽會長、陳家龍前會長、莊國明前會長、羅滿棠司庫、莫達成秘書及勞燦傑理事的帶領下,在香港國際機場出發直飛泰國曼谷,下午到達酒店稍事休息後,大家一起共進晚餐。第一晚晚宴,得到和利鋼鐵有限公司贊助,大家品嚐到泰國著名紅燒鍋仔潮州翅及其他美食,一飽口腹之慾。



6月30日上午,探訪團安排了參觀I.T.C. (1933) Co., Ltd. 的寫字樓和訓練中心,該大廈是使用冰蓄冷系統來滿足日間空調需要,而該冰蓄冷系統在大廈建築初期已同步興建,並成為大廈的一部分。在訓練中心內更可以看到融冰過程和顯示冷水温度,作為教材之用、I.T.C.的創辦人林道德博士(Dr. Apichit L. pongpana) 是ASHRAE 泰國分會

的前會長及傑出講師,對冷凍技術非常有研究和心得,曾獲得泰國 2008 National Outstanding Achievement Awardee — For Science and Technology Research Development 及ASHRAE 2008 Technology Award。林博士更為探訪團上了一課冷凍技術及冰蓄冷系統的應用,大家借機會温故知新,獲益良多。





下午探訪團馬不停啼地參觀了 Thai Metal Co., Ltd. 和 Kitz (Thailand) Ltd., 大家對於鋁金屬 制品和閥門的制造過程有了加深 認識,是日晚宴亦得到Kitz的贊 助,大家享受了一席地道的泰國 美食,並特別對那椰汁芒果糯米 飯甜品,讚口不絕。



ACRA Technical Visit to Thelland

2 July 2015



7月1日早上,經怡和機器泰國分公司的安排下,探訪團參觀了Energy Complex Co., Ltd.,此大廈是泰國第一座拿美國LEED白金獎的建築物。經介紹下,大家對它臨廊滿目的節能設施讚嘆不已,難怪泰國政府的能源部亦選址於此。

泰國技術探訪團

午飯後,探訪團趕去大金空調座落在CHONBURI的工廠,全面自動化的設備令生產更暢順和減

少人手,這也是值得我們學習的地方。大金也借此機會,一盡地主之誼,設宴招待探訪團。

大家看看二十多人喝了多少瓶酒,就知道當晚的氣氛是何等高漲和開心。



7月2日午飯後,探訪團就出發到泰國曼 谷機場坐航班回香港,大家對這次的泰 國技術探訪團十分滿意和回味,約定一 個月後的聯歡晚宴共叙一堂。





8月5日,冷凍商會再組織了一次聚會多謝各贊助商和參加者的支持,席間大家已經開始商討明年二至三月間去日本 作技術探訪事宜,今年沒有參加的你,記得留意詳情。



Bowling Competition 2016 – Hilti Cup

Sponsored by our member, Hilti (Hong Kong) Limited, the Bowling Competition was successfully held on 20th May 2016. Here are the results and congratulations to the winning teams!



Team Awards

Champion	: Gate Way Valve & Fitting Limited (1,812 pins)	
1st Runner-up	: ATAL Engineering Limited (1,711 pins)	
2nd Runner-up	: Newland Engineering Limited – Team A (1,633 pins)	

Special Awards

The highest single game: Gate Way Valve & Fitting Limited – Alan Lo (268 pins)

The highest 3 games: Gate Way Valve & Fitting Limited – Miras Lau (634 pins)





Team Awards - Champion- Gate Way



1st Runner-Up - ATAL



2nd Runner-up - Newland



The highest sigle game - Gate Way



The highest 3 games - Gate Way

Annual General Meeting

ACRA's President, Mr Dave Chan, and Chairman, Mr Antonio Chan, gave their reports of activities in 2015-16 and direction of the association in the coming year at the Annual General Meeting on 12th June 2016.

The new two-year term of ACRA council has commenced in June 2016. Mr CF Wu and Mr Franklin Lau are elected as the new President and Chairman in the coming two years respectively. Thanks Dave and the Council for their excellent efforts as a bridge between our members, government and related parties in our industry and Dave's exceptional leadership and significant achievements for year 2014-16.





Horse Racing Night

A fun night out on 22nd June 2016 at Happy Valley Racecourse! In addition to the on-track thrills, the evening's excitement also included delicious cuisines, good wine and 賽馬大亨計獎金比賽!

Champion	: Andy Tsang, guest
1st Runner-up	: Kenneth Wong, Bun Kee (International) Limited
2nd Runner-up	: WC Fung, guest
3rd Runner-up	: YK Ng, Fook Loong (HK) Limited



Mr C F Wu, President of ACRA, presented the Champion award to Mr Andy Tsang.



Mr. C F Wu, President of ACRA, presented the 1st Runner-up award to Mr. Kenneth Wong.



Mr Daniel Mok, Secretary of ACRA, presented the $2^{\rm nd}$ Runner-up award to Mr W C Fung.



Mr C F Wu, President of ACRA, presented the 3rd Runner-up award to Mr Y K Ng.

Training for Pre-insulation Duct System

ACRA and VTC Pro-Act Training and Development Centre (Mechanical) co-organized the 'Elementary for Pre-insulation Duct (PID) System Training' on 23rd and 24th June 2016. The training helped attendees build a good foundation to quality related courses organized by Construction Workers Registration Authority and become registered worker.







Caring Events Fun Day with Children



Jointly organized by ACRA Caring Committee and Open Door Ministries (開心社區服務), 'Fun Day with Children' was held successfully on 30th July 2016 to render warm and care to children from low-income households.

Over 18 volunteers from the 2 organizations brought 25 children to 3D 奇幻世界 & Space Museum at Tsim Sha Tsui. They also completed a special task 'presenting pictures to foreigners' which helped the children build confidence on communicating with people in different age and nationality.



We would like to thank the following members for the sponsorship and great support to the event:-

ATAL Building Services Engineering Ltd.

BYME Engineering (HK) Ltd.

Daikin Airconditioning (Hong Kong) Ltd.

Eaxon International Company Limited

Fook Loong (HK) Limited

GELEC (HK) Limited

Krueger Engineering (Asia) Limited

Raising Engineering Limited

Southa Company Limited

Super Mark (H.K.) Engineering Co., Ltd.

Welcome Air Tech Limited





Technical Visit to City of Dreams

Technical Committee of The Hong Kong Federation of Electrical and Mechanical Contractors invited ACRA members to join the technical visit to City of Dream on 8th October 2016. More than 20 of our members attended the event and visited the backstage and other E&M facilities of Macau's must-see spectacular, The House of Dancing Water.

It is housed in a purpose-built theater designed with many breakthroughs including a stage pool that holds a record-breaking 3.7 million gallons of water, equivalent to 5 Olympic-sized swimming pools. After the visit,

ACRA members group then met with Macau Air-conditioning & Refrigeration Chamber of Commerce to exchange views on the development E&M field in Macau.





Caring Events Happy Rice Delivery

粒粒開心贈長者,柔柔光明惠社群



It was great to work with Open Door Ministries (開心社區服務) again for Happy Rice Delivery 〔粒粒開心贈表者,柔柔光明惠社群〕on 29th October 2016 to care for the elderly living alone or those in need in Lam Tin.

ACRA mobilized 100+ volunteers to present the elderly with 100 packs of rice and help them replace LED lamps for electricity bill savings. "I am glad to come back again and serve the community." said Mr Raymond Synn,

Chairman of ACRA Caring Committee. "Thanks for the sponsorship of 500 LED lamps from

GELEC (HK) Limited, we were able to help the households improve their living environment and electricity bill savings in addition to giving out the rice. We hope our continuous efforts on community service can arouse more concern from our industry towards the senior citizens."



We would like to thank the following members for the sponsorship and great support to the event:-

GELEC (HK) Limited

ATAL Engineering Limited

Bun Kee (International) Limited

C.J. Wishing International Ltd.

Cold Magic Efatar (Hong Kong) Company Limited

Eaxon International Co. Ltd.

Fook Loong (HK) Ltd.

Gate Way Valve & Fitting Limited

Hilti (HK) Limited

Jinchat Climaveneta Hong Kong Limited

Krueger Engineering (Asia) Ltd.

Mesan Fiberglass Engineering (Int'l) Ltd.

Raising Engineering Limited

REC Engineering Company Limited

Shinryo (Hong Kong) Limited

Smartech HVAC & Engineering Ltd.

Southa Company Limited

The Jardine Engineering Corporation Limited

Welcome Air-Tech Ltd

White Hippo Limited



	Company Name		Contact Number Website / Email	Trade
ACRA Fellow Members	ATAL Engineering Limited Carrier Hong Kong Limited Krueger Engineering (Asia) Limited Newland Engineering Limited REC Engineering Company Limited Shinryo (Hong Kong) Limited Shun Hing Engineering Contracting Company Limited The Jardine Engineering Corporation Limited Trane Hong Kong Winston Air Conditioning & Engineering (Hong Kong) Company Limited York International (Northern Asia) Limited Young's Engineering Company Limited	安樂工程有限公司 開利(香港)有限公司 高雅華工程有限限 新陸工工程程公司 新陸工工程程公司 新獎與機器有限股公司 特選數 特選數 大 大 大 大 大 大 大 大 大 大 大 大 大 大 大 大 大 大 大	2565 3399 www.atal.com.hk 2694 5618 www.carrier.com.hk 2860 7333 www.krueger.com.hk 2967 8620 moshiu@newland.com.h 2019 8888 www.rec-eng.com 2237 8624 www.shinryo.com 2419 8282 www.shecon.com 2807 4511 www.jec.com 3128 4756 www.tranehk.com 2764 1200 www.winston-hk.com 2590 0012 www.johnsoncontrols.co 2235 0900 www.youngs.com.hk	
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	Link The Best Company Limited	必發 (香港) 有限公司 聯明坪山冷氣製品廠有限公司	2568 4092 2797 2168	sales@linkthebest.com.hk				•
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	Tom's Equipment Company Limited	義隆設備有限公司	2757 5539	tom@toms-equipment.com				•
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	United Controls Limited	統一儀器有限公司	2556 1001	www.ucl668.com				•
	Union (Luen Hop) Refrigeration Co., Ltd.	聯合冷氣工程有限公司	2627 4600	unionIh@bizentvigator.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. Wai Luen Air Conditioning Limited	偉保工程有限公司 偉聯空調設備有限公司	2543 0610 2890 9321	engineering@viewco.com.hk 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				
	Wing Shing Air-Flow Company Limited	永盛風咀製品廠有限公司	2792 6331	contact@wingshing-hvac.com				•
	Wo Lee Steel Company Wolter Asia Limited	和利鋼鐵有限公司 華德亞洲有限公司	2393 0131 2456 0198	www.wolee.com info@wolter.com.hk				
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Y	Yin On Trading Limited	賢安建材貿易有限公司	2572 7110	office@yinon.com.hk				•
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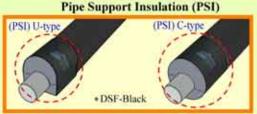






Insulation Slab for Raised-floor











Phenother™ Rigid Phenolic Foam Insulation is the PROFESSIONAL'S CHOICE for Pipework & Ductwork in HVAC/R System

*Rigid insulation ensure the final performance, NO COMPROMISE ON WALL THICKNESS as other flexible insulation materials.

★Pipe insulation wall thickness in SINGLE LAYER from 15 – 150mm.

★ NO AIR-GAP after proper installation, insulation ID cut to top-fit pipe OD.

*PERFECT HARMONY with pipe support in same materials.

*EASY & FAST INSTALLATION (As Easy As ABC)

A. Apply adhesive.

B. Snap-on Pipe Support/Pipe Insulation. EASY JOB

C. Seal with Aluminium Tape.

Labour saving + Time saving

2016 onward...







Fire and Ambulance Services Academy Tseung Kwan O, KLN. Year of Completion: 2015



General Cancer Centre, Prince of Wales Hospital Shatin, N.T. Year of Completion: 1994



Nina Tower Tsuen Wan, N.T. Year of Completion: 2007

International Financial Centre Phase I (IFC-I) South West Tower at Hong Kong Station, H.K. Year of Completion: 1998

SOLE AGENT :



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