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Message from the President

The shortage of manpower in the construction industry continues to worry us as more and more mega projects commence. The government recently has revealed that the import of labour would be one of the options to be further investigated so to ease the short term labour shortage but, we have to be realistic, this is definitely an extremely controversial subject and would not be easy to achieve consensus in the society in short period. Thus we need to work hard in other areas with the input from all stakeholders in the industry.

The recent launching of the Training Subsidy Scheme (TSS) and the Contractor Cooperation Training Scheme (CCTS), though may still have lot of rooms for improvement in its implementation, at least symbolize the kick off of the substantial collective response from the industry to address the problem. Here I would also like to express my heartfelt thanks to all the ACRA members who have contributed and committed in these schemes. We are still quite far away to see the fruitful outcome of the schemes but at least we trust we are on the right track heading to the right goal.

But definitely that is not enough. On different occasions we have recently expressed our belief that a revamp and continuous enhancement of the project execution work flow and the site logistic in our construction projects should be focused. Besides the prefabrication works such have been widely adopted in ACMV industry for considerable period, we still get quite lot of areas we can go for to make a good use of our existing manpower. We have to admit the fact that an ACMV or E&M contractors have been spending a lot of time on site in the doubling work due to the design changes and inadequate coordination work caused by the extremely tight installation programme. We have been also spending considerable time unproductively waiting for the vertical transportation for our workers and materials, or moving the materials within the site due to the lack of the long-term storage areas. All such unnecessary site activities inevitably involve the consuming not only time and money, but also our limited manpower available nowadays. We always believe that a frozen architectural and E&M design at early stage, a well scheduled working programme without unreasonably squeezing the construction period, and a better site logistic together with well-off site facilities provision for the contractors would definitely help to release any manpower idling as well as improving the overall productivity of the whole construction team. Of course we fully understand that it is not a simple issue and can be settled shortly. This requires the collective input from various stakeholders in the industry and ACRA would have no hesitation to contribute whatever we can input.

While we are all anxious to look for good solutions to tackle the problem, we need to stay cautious so as not to turn an action with good intention eventually to a disaster. Regarding the BIM application, ACRA can be regarded as the first association in the industry to call for a prudent consideration for its instant implementation. We of course appreciate the benefit and convenience that BIM can incur to the industry, but we opine that the existing market still need considerable time to become mature for its full implementation. It is not as simple as just putting a clause in the contract then to obligate the contractors. A well frozen design, to allow adequate time for proceeding BIM before the commencement of site work, an effective interfacing between various service providers, the education and training offered not only to the engineering staff but also to the workers, or the convenience in converting a 3D BIM drawings to 2D and the like, all these are the critical prerequisites leading to the success of BIM application. Or otherwise we would not benefit the essence of the implementation of BIM, say clashes analysis before the installation, but just spending our valuable resources on another type of as fitted documents for record purpose only.



Ir Ringo Shea
President

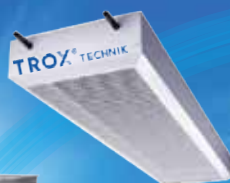


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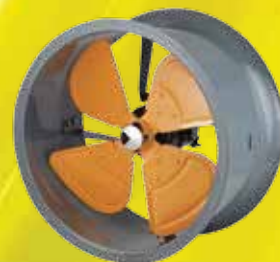
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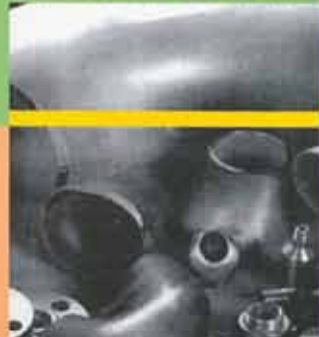
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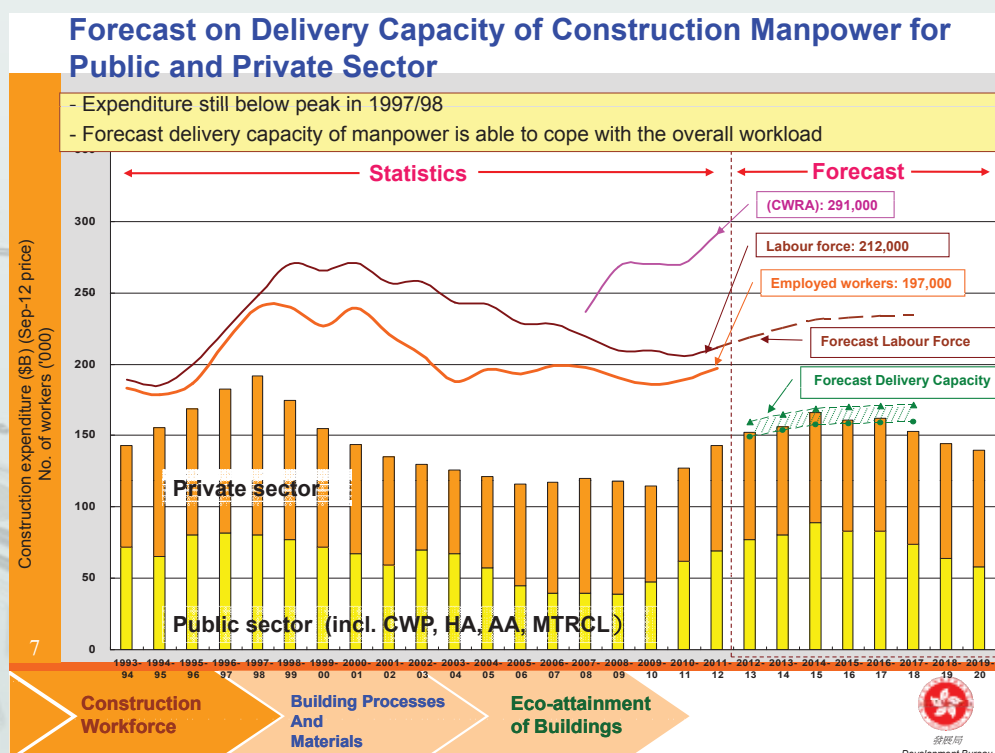
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Labour Wanted

By: Ir Dr. K.L. Chan

In recent years, there are a number of mega projects in Hong Kong commenced one after another, including the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link, the South Island Link (East), the Kwun Tong Line Extension, the West Island Line, the Shatin to Central Line, the Kai Tak Redevelopment, the Central-Wan Chai Bypass, the Hong Kong-Zhuhai-Macao Bridge, etc. There will be few more mega projects coming such as the West Kowloon Redevelopment and so on. The robust development in Hong Kong is presenting huge challenges on supply of labour.

Looking at some current statistical figures, the total workforce of Hong Kong is around 3.4M people. Referring Construction Workers Registration Authority (CWRA), there are about 305,000 registered workers which is 9.0% of the total workforce. Obviously, the construction industry is one of the major industries in Hong Kong. Out of these 305,000 registered workers, there are 245,000 active workers and the balance is inactive anymore. As per average of 7 working days per week, there are 190,000 workers who have already actively engaged in the daily construction and E&M activities. The average age of registered workers is 49. The latest overall unemployment rate in Hong Kong is 3.3%. Generally speaking, it is at record low level. It seems the chance of shifting manpower from other industries is low. Reflecting from various surveys regarding the labour shortage in construction and E&M industries in past few months, there is an average shortage of labour at over 15% for ongoing projects in Hong Kong. The manpower situation in Hong Kong has already reached a warning level. However, the situation may take time to be reckoned by the government and she claimed that the labour shortage was caused by the skills mismatching amongst general workers (60%) and skilled/semi-skilled workers (40%) in the industry. This would lower the expectation of importing foreign labour which will definitely attract opposition from unionists who want to protect jobs of local workers.





The labour shortage is expected to increase over the next three years. Based on the forecast, the manpower will reach a peak demand in 2016. Lack of competent engineers or site personnel will no doubt hinder the further development of the construction and E&M industries. With acute labour shortages and an aging workforce, it also means delay in completion of the city biggest ever infrastructure roll-out and some mega projects are unlikely to be completed on time. Exacerbating the labour shortage is the fact that the Government and MTRC have recruited experienced engineers from their partners and the private sector. The current blooming Macau Casino projects also required a lot of construction talents from Hong Kong. The clients, the consultants, the main contractors and the E&M contractors for ongoing projects in Hong Kong and Macau are trying to take people from each other. Construction professionals and workers are looking forward to a “golden period” with higher salaries and better fringe benefits.

Although the Government told the industry it would closely monitor the labour situation and Focus Group was formed on projected construction expenditure in 2012, plans to import some tradesmen who cannot be trained in the short term in Hong Kong are suggested by the stakeholders. Despite of this politically sensitive issue, many parties including the Government, Construction Industry Council (CIC) and the Trade Associations are working in all dimensions to tackle the construction manpower problem in coming years. They are categorized into five directions:

1. Attract New Entrants by Enriching Promotion and Publicity

- Set up E&M promotion fund
- An Open Day was held in March 2013 at the VTC Kwai Chung Campus. It was a form of a career expo where E&M associations were major participants along with utility companies and the unions related to the industry.
- A series of stories on film related to the various trades of the E&M industry will be produced. These stories will be aired on prime TV time with the intention to enhance the image of the industry and attract quality recruits.
- Job fairs
- Road shows
- Website, Apps, Facebook Games and JobsNet
- Construction Industry Resource Centre

2. Enhance Subsidies and Trainings

- Contractor Co-operative Training Scheme (CCTS)

With effect from April 2013, all E&M contractors of the public works contracts must join the CCTS and provide certain workplace posts for training purpose. CIC will provide HKD150 per day to each trainee for a period of 6 months. For those public works contracts commenced before April 2013, the Government will add the CCTS into the original contract as “Supplementary Agreement” so that the contractors would enjoy the subsidy and provide workplaces as required.

- Trainee Subsidy Scheme (TSS)

The trade associations and Vocational Training Council (VTC) have entered an agreement to launch the TSS for Year one students of Diploma in Vocational Education (DVE) programme so as to let the students have an early chance to participate and appreciate the practical work and operation of the E&M industry. Under the scheme in 2013, a maximum number of 595 Year one registered students are required to undergo Part one – a workplace attachment to various companies in the industry for one year. CIC will provide monthly subsidy of HKD1,400 for a period of 11 months (total HKD15,400). And then, they would start to join Part two – the 3 year Apprenticeship Scheme. CIC will also provide additional HKD15,400. to those who completed Part one and first 6 months of Apprenticeship Scheme.



3. Review Design and Adopt New Procurement Strategy

- Use more buildable designs and labour-efficient construction methods
- Reduce frequent changes in design of building and E&M facilities
- Encourage and consider alternative proposals at construction stage
- Apply 3S principles – Standardisation, Simplicity and Single Integrity Elements
- Simplify submission and approval processes
- Review contract terms and conditions
- Promote off site prefabrication

4. Introduce New Construction Model and Contract Arrangement

- Building Information Modelling (BIM)

The process allows generating and managing building data during the life cycle of any building. It is in three dimensions (3D), real time and dynamic with building modelling software to enhance productivity in building design and construction cycles. Comparing with the traditional building drawings, BIM allows the building owners and operators the ability to experience the new facility virtually and make critical decisions before the building is constructed. The BIM contains not just the information of the design and construction phases but also all of the final commissioning and facility turn-over information that becomes an asset to be utilized to operate the building efficiently. Thus BIM is becoming known as a building life cycle management solution from inception through design, construction and operation phases to decommissioning of the building.

- New Engineering Contract (NEC)

This new contract arrangement provides the type of simple, flexible document ideal for the employer which seeks to enter into co-operative joint ventures with contractors. NEC is a formalized system created for projects for the purpose of obtaining tenders, awarding and administering contracts. As such, they legally define the responsibilities and duties of employers and contractors in the Works Information. The NEC is a family of standard contracts, each of which has these characteristics:

- Its use stimulates good management of the relationship between the two partners to the contract and, hence, of the work included in the contract
- It can be used in a wide variety of commercial situations, for a wide variety of types of works and in any location
- It is a clear and simple document using language and a structure which are straightforward and easily understood

The NEC compiles fully with the Achieving Excellence in Construction (AEC) principle.

5. Improve Site Safety and Conditions

- Provision of site safety in public works contracts
- Provision of site uniform in public works contracts
- Organize Construction Safety Week and Best Safety Model Workers Awards
- Provide sheltered rest areas and tidy environment for workers
- Beautify site hoardings and environment
- Organize Caring Construction Site Award Scheme

Basically, the overall strategy of the Government is to closely monitor and forecast the supply and demand for workers. The Government and industry will cooperate to find ways to minimise the demand and increase the supply. Demand will largely be met by recruiting and training local workers and importation of foreign workers will only be considered if it is genuinely unable to recruit local workers.

For HVAC&R stakeholders, what can they do to overcome manpower shortage in our industry? The employers need to know where the shortfall is and how serious the problem is. There are few categories that HVAC&R and associated workers are inadequate:

- Electrical Fitter
- Control Panel Assembler
- Electrical Wireman
- Refrigeration/Air-conditioning/Ventilation Mechanic (Electrical Control)
- Communication System Technicians
- Refrigeration/Air-conditioning/Ventilation Mechanic (Unitary System)
- Refrigeration/Air-conditioning/Ventilation Mechanic (Air System)
- Refrigeration/Air-conditioning/Ventilation Mechanic (Thermal Insulation)
- Refrigeration/Air-conditioning/Ventilation Mechanic (Water System)
- Plumber
- Site Supervisor / T&C Technicians
- General Welder
- Mechanical Fitter
- MVAC Mechanic (Maintenance)

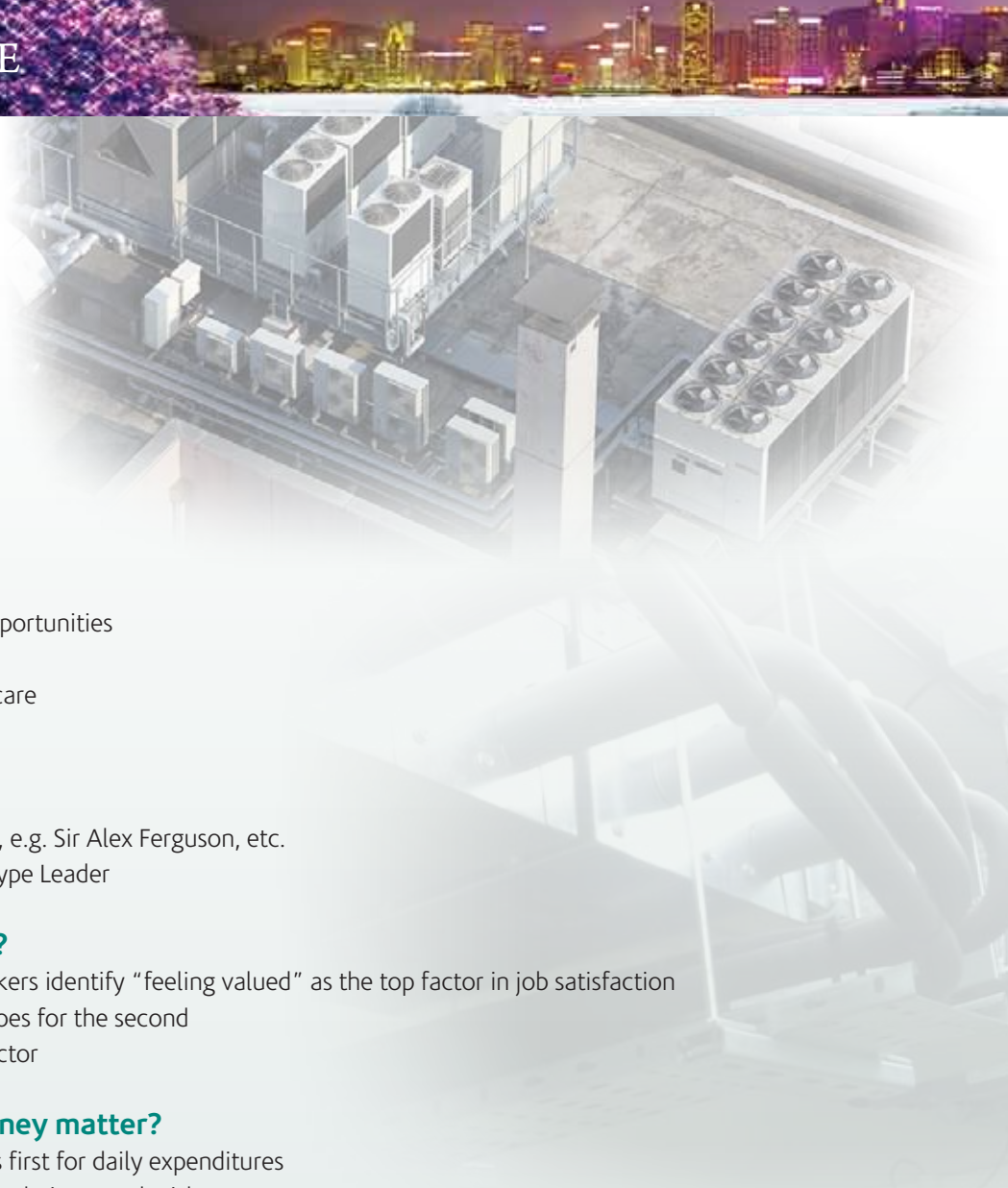
Some trades are likely to be tackled by re-activation of reserved inactive workers. Some trades are not likely sufficient even though re-activation is exercised. In some trades such as Refrigeration/Air-conditioning/Ventilation Mechanic (Air System / Thermal Insulation / Water System), they got the worst scenario with the projected manpower demand exceeding the total market supply already.

The attraction of new entrants especially from the young generation and keeping the young manpower working for our industry seem to be the sustainable way of solving the manpower shortage problem in Hong Kong. Assuming new blood is recruited, but how can the employers keep the young workers working for their companies? The employers need to know the characteristics, requirements and aspirations of young generation at work so as to manage them easily.

1. What are their characteristics?

- Children of the late baby boomers
- Period of affluence
- Helicopter parents
- Education emphasised
- Embrace diversity
- Encourage risk





2. What do they want?

- Fun & passion
- Collaboration/good relations
- Meaningful work
- Learning and development opportunities
- Work-life balance
- Encouragement, respect and care
- Fairness and directness

3. Who is their ideal boss?

- Most pine for a Coach/Mentor, e.g. Sir Alex Ferguson, etc.
- Some like a strong Thatcher-type Leader

4. How do they be satisfied?

- Almost half of the young workers identify “feeling valued” as the top factor in job satisfaction
- Varied and interesting work goes for the second
- Financial award is the third factor

5. What is their view on money matter?

- Reasonable base salary comes first for daily expenditures
- Possibility to work flexibly is in their second wish
- Potential to earn bonus and company pension are always in their mind

6. How to motivate young workers?

- DOs
 - Fair Pay
 - Be a relationship-oriented leader
 - Setting goals with them
 - Open dialogues
 - Praises and encouragement
 - Communication styles
 - Provide learning and development opportunities
- DON'Ts
 - Be a task-oriented leader
 - Preach or nag
 - Make wrong presumptions
 - Be biased or negative
 - Give up



Except the young workers, all other employees are the asset of the company. Managing workforces with different generations is an art in itself. Young workers want to make a quick impact, the middle generation needs to believe in the mission and older employees do not like ambivalence. The tips for managing multigenerational workforces are to:

1. Listen and understand the differences
2. Adapt your communication styles
3. Learn from each other
4. Emphasise on commonality

From newly released general web based survey done by the Hong Kong Baptist University (to 400 employers and 600 employees), it is quite surprise to learn that around 70% of employees would like to consider for a new job. Although this survey did not focus on the construction industry, it gave signal to the employers. Except paying higher salary to take people from your competitors or partners, the employers should pay attention to how to keep the existing staff. If your company can create the sense of belongings and ownerships of staff, with fair remuneration package and progressive human resource development, it can make a difference and will work like a warship with full power of moving forward under any difficult environment!



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Harvard Business School "Working Knowledge" Newsletter, 17 April 2006

Investing in a Progressive Construction Industry, power point presentation by Ir Wai Chi-Sing on 28 September 2012

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People Interview with Edmund Leung

從參與地鐵第一期工程到現在任職九鐵總裁，梁廣灝工程師（Ir Edmund Leung）跟鐵路結下不解之緣，投身工程界四十六年！在此，就跟大家一起分享他的光輝歲月

《事業起步 源於工程世家》

Edmund家中兩代均是工程界，父親是電機工程師。可能受父親影響，Edmund自小對機械深感興趣。1967年，Edmund未足二十一歲於香港大學機械工程學系畢業，當年雖然只有十一位畢業生，但適逢暴動，尋找工作並不容易。數月後有幸到中電當工程師見習生，工作地點是紅磡發電廠，協助研究減少廢氣排放，可說是環保先鋒！但工作要在約36°C的爐頂抽取樣本然後送到只有18°C的化驗所作分析。在這溫差大的環境工作，容易患上感冒。後來同事提議Edmund多喝啤酒作強身健體，雖然沒有科學根據，但Edmund自始愛上喝青島啤酒。在中電工作的時候職位雖然不高，但管轄的範圍卻很廣。Edmund最喜歡上司放長假期間，可以學習處理上司的職務和做一些新嘗試。有一年夏天上司在休假，Edmund要處理搬運重型的燃氣機輪在不平地上的困難環境，在大家無計可施下，Edmund提出用最原始方法，以木枋來作底部承托以便搬運，最後能成功完成使命。年青時的Edmund常常認為自己較別人優勝，有時會高估了自己的能力。當時中電工程師分為外籍、高級及初級三個級別，Edmund當時是初級工程師，因職位關係未被邀請出席公司的聖誕酒會，覺得在中電難有出頭日子。雖然在中電工作了只有五年，也有機會參與不同項目，但Edmund決毅然辭職，並為自己立下要當總工程師為奮鬥目標。年少氣盛的他在父親資助下創業，在觀塘經營塑膠廠。但好景不常，在1973年石油危機的影響下，公司經營了三年便結業，Edmund明白到做生意與打工是截然不同。

Edmund於1975年加入通用電器（GEC），負責港鐵第一期投標工作。當年香港政府找英國Freeman Fox作顧問設計第一期地下鐵路。GEC當年投得大部份地鐵第一期的車卡、供電及車站機電系統工程，部門員工一下子由三名擴展至三百名。踏入八十年代，公司雖然仍有盈利，但在沒有新鐵路工程出現下，前景堪危。Edmund留意到新樓宇數目漸多，於是向公司提出發展屋宇裝備業務來擴大業務範圍。在1981年，中國要興建大亞灣核電廠，邀請港英政府與GEC進行可行性研究，Edmund當時就是這考察團的團長，可謂任重道遠。當時GEC開始發展國內市場，Edmund並幫助引進了柴油機到福州製造，創生意機會，為公司奠下良好基礎。及後，公司由新上任行政總裁接手，因管治理念不同，在GEC工作了五年後轉到HUD Engineering青衣聯合船塢附屬工程公司當總經理。Edmund每次轉職都是擔任「開荒牛」的角色，在HUD Engineering也不例外，開始發展多元化的岸上工程業務。做了三年，因GEC剛投得地鐵港島線第三期工程，Edmund重返GEC當了兩年的工程承包組經理，負責管理工程合約業務，其中包括電器安裝、機械安裝及大型工程部。

《顧問工程的歲月》

1987年，Edmund轉到柏誠顧問（PB）擔任基建項目的發展工作，主要項目是隧道抽風的設計。當年柏誠有一套SES通風系統方程式用於隧道抽風設計，是業界的先驅者。另外，在柏誠參與地鐵公司的項目中，面對天花高度不夠，於是一起發展合併圖則（Combined Service Drawing），大大方便工程進行。Edmund的大膽及創新風格，令很多過往遇上的工程難題都能迎刃而解！Edmund在柏誠工作了七年，離職時職位是高級副總裁，已遠遠超越他為自己定下當總工程師的目標。1994年，他受聘於Acer Consultants當董事，Acer於2001年歸納於安誠顧問



(Hyder Consulting)，Edmund成為安誠的中國區主席，後來更加入了集團總公司董事局，為極少華人在英國工程顧問公司的創舉。在1997來臨時，Edmund獲授勳為OBE JP。2002年，他在五十六歲壯年時選擇提早退休。其後，Edmund返回柏誠出任非全職顧問。

《擔任公職》

Edmund認為公務與工作是分不開的，有相輔相成的作用。他多年來擔任多個公職，包括1995至1996年度香港工程師學會會長、1997至2000年度機械工程師學會香港分部主席、水務學會香港分會主席、特區政府能源諮詢委員會主席、機場管理局董事會成員及城市規劃委員會等。他還活躍參與香港董事學會工作，為公營及私營機構推動良好的企業管治。



本欲離開工程行業，轉到公司管理工作，被委任為新昌建築的非執行董事。到2008年10月，Edmund更被委任為董事總經理。但不知是否天降大任於斯人也，必先勞其筋骨，Edmund一上班便遇上金融巨災引致澳門威尼斯人工程停工的打擊，但沉着應付，困難被他一一化解。在短短四年間，新昌的業務持續增長三倍多，包括一些土木基建項目及多個大學工程。Edmund在新昌工作了四年至2012年，離職時已屆六十七歲。他於去年11月，獲政府邀請出任九廣鐵路公司總裁，職務是為九廣鐵路其下物業的資產管理，為期三年。

《經驗分享》

Edmund認為遇到問題必親自解決，事事親力親為。當年試過每個月到各工地視察最少一次，他的汽車四年來每年都跑了30,000公里。他認為作為管理層，同事們有出錯時不要只顧責罵，應心平氣和尋找解決方法，與下屬保持良好關係。他多年來習慣做好準備工夫，才應付客戶。早在GEC負責港鐵其中一工程項目時，Edmund在一次工地會議開會前知悉客戶會有投訴，預先到工地了解情況。到開會當日，客戶提出投訴時Edmund已早將所有缺點妥善處理，客戶雖準備資料投訴，但發覺問題已全部解決，在會上也語塞，憤怒全消。

《給年青一輩的話》

Edmund認為工程師是一個專業，他十分注重儀容，如非到工地必定穿上整齊西服及結好領帶，時刻保持工程師應有的專業形象。年青一輩應不怕挫敗、虛心及勤力做事，環境會改造性格。做生意必須要主動出擊，多出外接觸人脈；積極參與學會事務，從而擴闊人際網絡。待人要真誠、做事專注、負責任及訓練自己的觀察力，必定終身受用。

《後記》

Edmund年輕時喜歡駕駛跑車及玩相機，現在因環境關係，假日只可駕駛八人車接載四名孫兒。Edmund認為每天總不夠時間用，但他會儘量欣賞及享受工作



SAIVER Integrated AHU

Caritas Medical Centre



North Lantau Hospital



Zero Carbon Building



Tamar Government Office

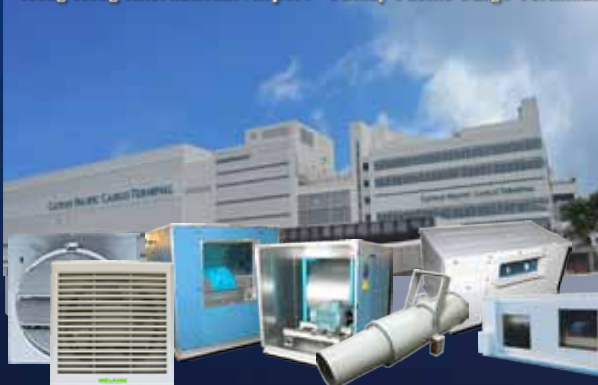


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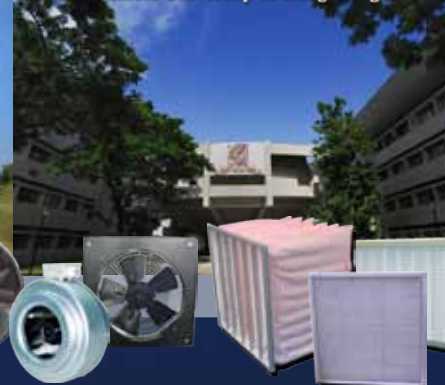
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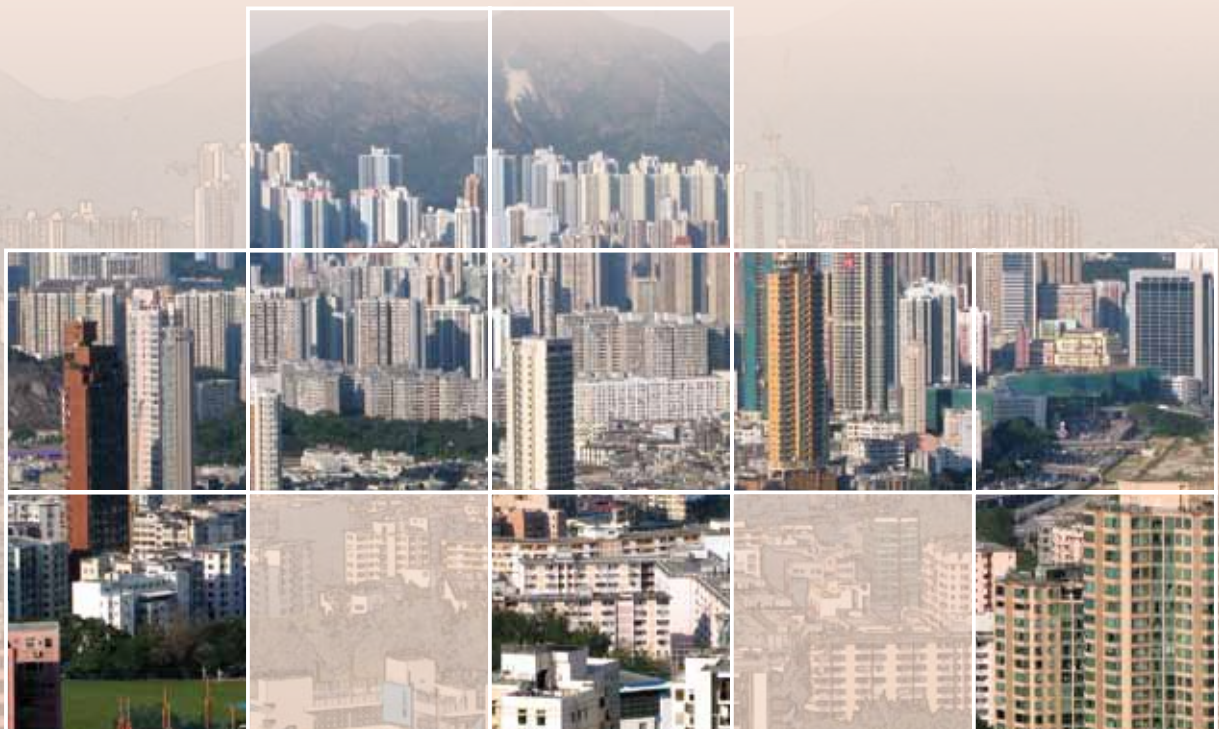
Fire Damper Inspection For Occupation Permit (OP) Application

By: Daniel Chong

In the past, upon the completion of building works for either A&A works or new building, a certificate of completion to be submitted in accordance with regulation 25 of the Building (Administration) regulations together with the amended building plans, record plans and the schedule of building materials and products for Building Department to process the OP application. The conditions of the fire dampers, both on installation and functioning, is undertaking by the AP and is not necessary to be inspected until the 1st issue of the Annual Inspection Certificate (AIC) by the Registered Specialist Contractor in the Ventilation Works Category, RSC(V), 12 months later.

Further to the 12 months trail-run and a series of reviews on the selected projects for having the fire dampers inspected at time of the OP application during the past two years plus the collective consensus of the B.S. industry on the subject, Building Department has issued an revision recently on PNAP APP-13 that all fire dampers shall be inspected and certified by RSC(V) on buildings or building works which are being carried out or consent to which is given after 9 September 2013. This marks a new dimension on the requirement of OP Application that all fire dampers in a building has to be certified by RSC(V) that they are in safe and efficient working order in accordance with the Code of Practice for Fire Safety.

ACRA would like extend our appreciations to the effort of all fellow members of the FSD liaison committee, fellow associations and professional bodies, FSD and Building Department on their unfailing efforts in making the above possible.



BASIC CONTROLS
柏誠智能

超聲波冷熱量表

ULTRASONIC HEAT METER
DN20-DN200口徑

成功案例：廣州電視塔



EN1434
M-BUS/MODBUS/BACNET
IP 65 PROTECTION

柏誠智能成立於1998年，是一家專業從事智能樓宇計量產品和節能控制系統研發、生產、銷售及服務為一體的高新技術企業。擁有近10個產品專利、CMC和CE認證。

參與了一個國家計量檢定規程和兩個建設部行業標準的編制：國家計量檢定規程《熱能表》JJG225-2001、城鎮建設行業標準《戶用計量儀表數據傳輸技術條件》CJ/T188-2004和《熱量表》CJ128-2007。

經過上千個工程項目的運用，系統運行準確、穩定、安全。詳情請參閱我司網站。

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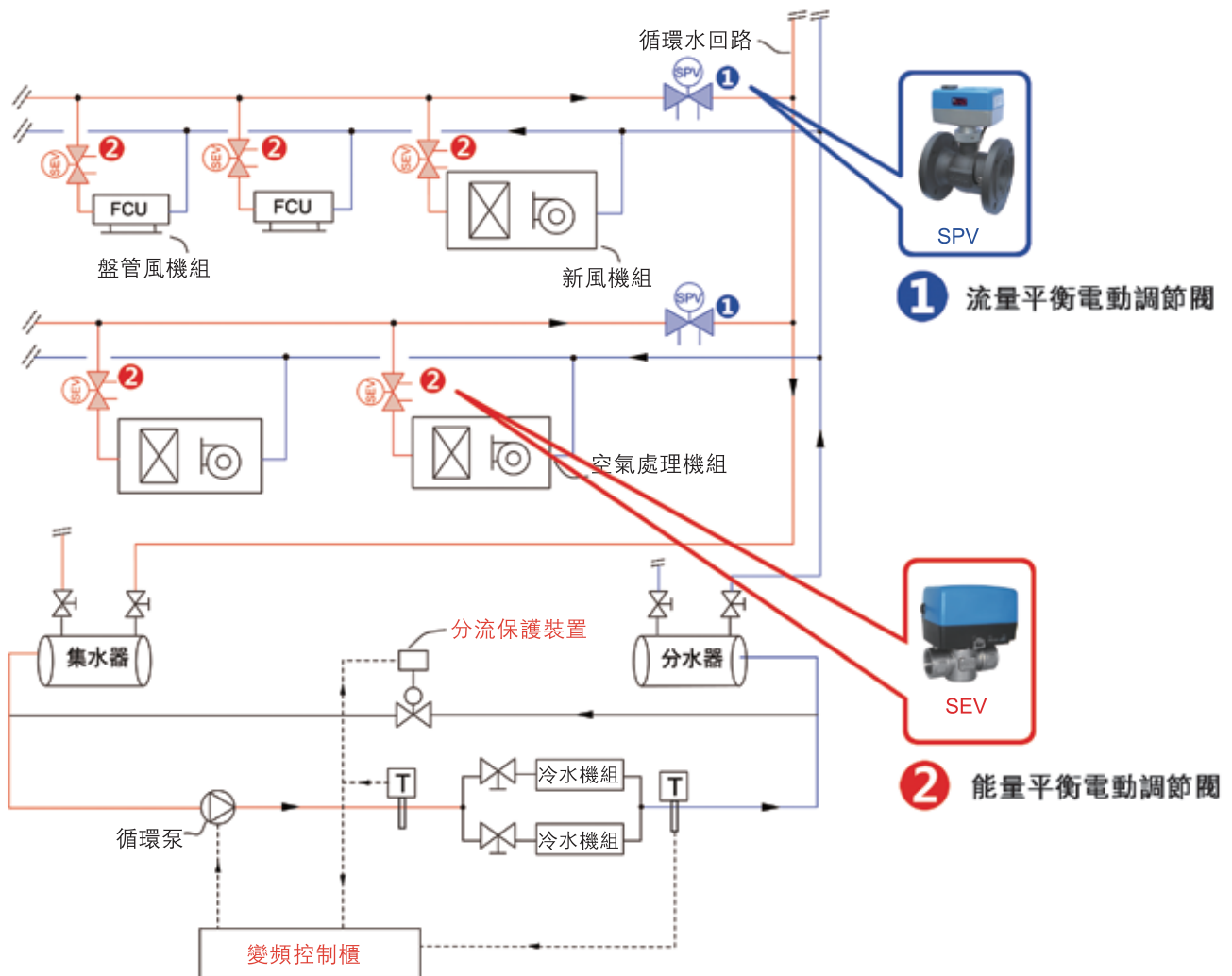
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Cutting the Cord to elevate Construction Safety & Productivity

By: Hilti Hong Kong



The use of Cordless tools enhances safety & productivity by eliminating wires from construction sites.

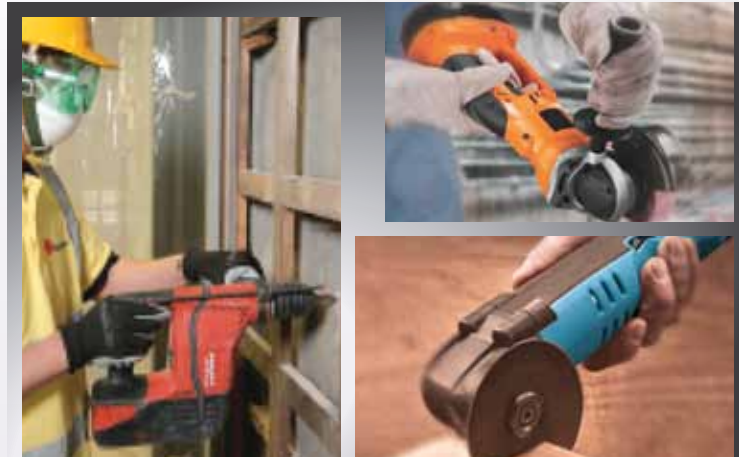
The construction industry is experiencing a major boom, led by ten major infrastructure projects and the recent government policy to increase housing supply. However, it has also exposed two critical industry issues: An ageing workforce and a severe shortage of manpower.

According to a survey conducted by the Hong Kong Construction Association and Hong Kong Electrical & Mechanical Contractors' Association in November 2012, construction firms are facing a 15% shortage on average in site workers. The same survey also showed in that shortage can be as high 60% for certain job types.

One of the major reasons for this shortage is the commonly-held view that construction is dangerous, especially in the use of electrical tools. According to Labour Department's Occupational Safety Health Statistics 2012, up to 33% of the industrial accidents are related to the use of corded power tools. These include tripping over cords, falling from height, and electricity contact in the rain. Another 30% of the fatal accidents are due to electrical works.

So tackling safety and improving comfort offers a longer-term answer to addressing these issues. The Development Bureau has already released a guideline for using 110V or lower voltage power tools onsite. Using cordless tools and implementing the Cordless Jobsite Practice reinforces this initiative.





Cordless power tools are as powerful as corded ones, with better mobility.

Cordless for Safety

Going cordless has already begun. Key construction firms are already using cordless power tools onsite to reduce safety accidents and improve protection of their workers. Besides eliminating accidental electrocution and exposure to electricity, it can also prevent delays due to electrical jumps.

No wires means no tripping. This allows workers to efficiently and comfortably move around the worksite without worrying about hidden or unseen wires. This is especially important when workers in Hong Kong tend to often work at great heights, as taller buildings are constructed. Tripping and falling as a result of wires is becoming a great worry for many construction firms, and the use of cordless tools eliminates this totally.

Designed for productivity

Going cordless enhances efficiency and productivity. For example, the power supply for recharging can now be grouped together at centralised locations for better management. In addition, workers no longer need to work at a height to connect to power suppliers, increasing work mobility, improving safety further, and speeding up construction.

Thanks to advancements in battery design, power remains uncompromised. In fact, today's cordless power tools, which feature short battery charging times of less than 30 minutes, can even boost productivity. They allow workers to spend more time carrying out their duties rather than waste time charging the tools.

There are also other benefits. Current cordless power tool models weigh less, and eliminate the need to spend time retracting power wires. Both elevate worker convenience and productivity at constructions sites.

These are some of the reasons why the use of cordless power tools is gaining traction. In the end, the main benefactors will be industry. With improved safety and comfort at work sites, going cordless can help the industry can alleviate the immense labour-related pressures it is currently facing.

References:

Survey conducted by the Hong Kong Construction Association and Hong Kong Electrical & Mechanical Contractors' Association in November 2012
Labour Department: Occupational Safety Health Statistics 2012 "Industrial Accidents in Construction Industry" (2012)

North Lantau Hospital Project

By: Ir Sunny Ho



Project Name :
North Lantau Hospital

Member's Role in the Project :
**Design and Build AVMC
Installation**

Completion Month / Year :
December 2013

Contact Information :
Member / Company Name:
Southa Technical Limited

The new North Lantau Hospital consisted 7-storey hospital building comprising offices, conference rooms, operating theatres, isolation ward, general ward, x-ray room, outpatient clinic, laboratory, emergency services, canteen, kitchen, car park and other facilities. The total gross area exceeds 45,000m² while 38,000m² are air-conditioned. The central chiller plant equipped with 2 air-cooled chillers with oil free magnetic bearing compressors (each 1450 kW), 1 air-cooled screw type chiller (1450 kW), 2 air-cooled heat recovery chillers (each 680 kW) and 3 air to air reverse cycle heat pump at east wing and west wing. VAV system with terminal reheating is applied and each floor is served by two AHU's. Air flow tracking method with precise fast response air supply and exhaust valve provided for the room pressurization areas. Two independent chilled water risers provided for cooling and heating water at east wing and west wing. The risers are connected by a header at roof level, which allows any of the roof top chilling plant east or west to supply the building through either of the risers. The distribution pipes from headers to downstream distribution pipe works are designed so that on discovery of water leak, the offending riser can be isolated and changed over automatically by CCMS to the other pipe to maintain full operation. Electrostatic filter and hydro-vent exhaust air system complied with EPD requirement is provided to remove the odour, particulate and oil mist from kitchen exhaust air. A central control and monitoring system, with 4 workstations at various control/plant rooms, controls and monitors various sub-systems within the ACMV other E & M services.

Ultra-clean ventilation with laminar flow outlet devices which were provided for the operating theaters. The treated air enter the room in distributed evenly layers through a laminarizer, air is then blown out into the clean zone of operating table to prevent any airborne infection risk for the patients and surgical team. Positive pressure maintained prevents any bacteria contamination from ingress of surrounding.

For the safety requirement and environmental pollution control. The exhaust systems operating theatres, isolation wards and infection disease areas were fitted with high efficiency particulate air (HEPA) filter housings before entering the exhaust air fan discharged to the atmosphere.

Individual CO₂ sensor was equipped for the high density of population area such as auditorium, conference room, teaching room, library and general offices to monitor the CO₂ level and modulate the fresh air take damper in order to provide



sufficient amount of fresh air supply. The fresh air supply based on a “demand control concept”. Sufficient fresh air provided to each area for each user. With the aim of complying the excellent class of indoor air quality high efficiency filter, bio-oxygen generator and UV lamp provided for all handling unit thus reduce surfaces molds, bacteria contamination on coils and drain pans and enhance the indoor air quality.

A vehicle exhaust extraction system provided to exhaust engine fumes emitted from vehicle engine parked inside garage. The system comprised individual centrifugal extraction fan with explosion proof motor, exhaust transit ductwork, crushproof & automatically recoiled hose, and control panel and necessary accessories to complete the efficient operation of the system. Dedicated exhaust system provided for the printing area and other area where production of contaminant is anticipated.

The CFD model of semi-open car park has been utilized for the air ventilation study which takes account the usual fluid dispersion calculation method under low wind speed and high wind speed condition. Under normal ventilation mode, the ventilation rates of car park comply with the latest requirement of ASHRAE standard. CO sensor also provided to monitor the CO concentration as each zone of car park and energized the additional mechanical ventilation at low wind speed condition. The 2-speed fan mechanical ventilation system operated according to the demand control with monitoring the CO level sensor in order to achieve the balance of energy saving and good indoor air environment.

100% full backup computer A/C unit provided for hospital data centre. Automatic changeover devices to start the standby unit once the duty unit failed. Year round room temperature and humidify monitoring system provided through CCMS. Audio alarm provided to alert the occupant if undesired conditions occurred.

Most of the chilled water pipework and ductwork of ACMV system were pre-fabricated and pre-insulated off-site before delivery to site. The exact dimension and quantities were coordinated to suit in time of site program and provided well protection for the pre-fabricated ductwork to avoid damage and reduce wastage.

Total energy recovery wheel was adopted for all primary air handling unit to recover either the heating and cooling capacity from exhaust air to pre-treat and dehumidify all fresh air supplied and no increase the risk on cross contamination to the air handling unit.

An occupancy sensor installed in the office area and connected to the CCMS system to indicated when the zone is occupied and enable the VAV/lighting to operate. When the sensor detected the room to be unoccupied, the room temperature automatically be set at desire temperature and the VAV box automatically set to close position when detected the zone to be unoccupied for a period of time.

Refrigerant and thermal insulation used will contain no ozone depleting substance that meet the requirement of low ozone depleting potential and global warming potential

Solar hot water system equipped evacuated-tube solar collectors at main roof of the building. 50kW solar heating capacity for pre-heat and direct heat-up cold feed water in conjunction with heat recovery and heat pump chillers to reduce the hot water generated by the gas fired boilers.

Basketball Tournament 2013

The final of Basketball Competition was held on 19th July 2013. There were lots of fireworks with final. The spirit of all players showed the team unwilling to let any change slip away.



Mr Pachu Leung (middle), Secretary of ACRA, presents the award to Champion team: The Jardine Engineering Corporation Limited



1st Runner-up team: ATAL Engineering Limited

2nd Runner-up team: Trane Hong Kong

Friendship always matters more than victory!



Champion:
The Jardine Engineering Corporation Limited

1st Runner-up:
ATAL Engineering Limited

2nd Runner-up:
Trane Hong Kong



Noah's Park One Day Visit

Going to the park, 'yum cha' or shopping may be something we do every week with our families. But to the low-income families, it's not a 'regular'. On 21st July 2013, ACRA invited kids from some low-income families to Noah's Park. That day, we saw volunteers of all ages – 23 volunteers from 10 ACRA member companies and their families. They all had fun with the kids to visit Noah's Ark Treasure House, Solar Park, Nature Garden etc.



'Tinwood Cup' Bowling Competition 2013

Seems our members are big fans of bowling! Sponsored by Tinwood Pacific Limited, ACRA held the second bowling competition on 11th October 2013 at Ho Man Tin Bowling Sports Centre. We had 14 teams to compete for the champion!

Team Awards

Champion: **Young's Engineering Company Limited (team 1)**
 1st Runner-up: **Newland Engineering Limited (team 1)**
 2nd Runner-up: **ATAL Engineering Limited**

Special Awards

Highest 3 Games Series: **Cindy Lee, Newland Engineering Limited (team 1)**
 Highest Single Game: **Au Kam Pui, Young's Engineering Company Limited (team 1)**



Ms Annie Tan of Tinwood Pacific Limited presents award to Champion team: Young's Engineering Company Limited (team 1)



1st Runner-up: Newland Engineering Limited (team 1))



2nd Runner-up: ATAL Engineering Limited



'Highest 3 Games Series' award: Cindy Lee, Newland Engineering Limited (team 1)



'Highest Single Game' award: Au Kam Pui, Young's Engineering Company Limited (team 1)



Happy Rice Delivery

粒粒開心贈街坊

It was great to work with Open Door Ministries (開心社區服務) again for Happy Rice Delivery (粒粒開心贈街坊) on 26th October 2013 to render warm and care to the elderly households who are singletons or those in need.

ACRA mobilized 107 volunteers to visit 150 households residing in Lam Tin. Apart from bringing the elderly love and concern, our volunteers also presented them with rice. "It is a meaningful event not only due to the provision of material assistance to the elderly, more importantly our volunteers live out humanity by sharing our care with the elderly. Through the activity, we also aim to arouse the concern of the community towards our senior citizens," said Mr Raymond Synn, Chairman of ACRA Caring Committee.

The elderly being visited were cheerful in receiving the warmth and rice brought by volunteers.



Our big team of volunteers from different member companies!

ACRA's volunteers attended the pre-event briefing



Representative of Open Door Ministries presented souvenir to Mr Ringo Shea, President of ACRA, and Mr Raymond Synn, Chairman of ACRA Caring Committee.



Our volunteers visited the elderly and presented them with rice.

Workplace of Trainee Subsidy Scheme

To encourage more youngsters to join the industry is one of the important missions in ACRA and ACRA always seeks for any opportunity to promote training to students. With the collaboration of VTC and FEMC, ACRA has recently participated in a Workplace Attachment of the Trainee Subsidy Scheme (TSS).

The scheme is to offer workplace allocation to students studying Diploma in VTC so as to give them an early participation chance in the industry.

There are totally 217 students joining this scheme, which 69 students in our streams. With overwhelming support from our ACRA members, the scheme has commenced on 4th November 2013 in which students will be allocated to participated companies in a weekly basis. The performance of the students during the training will be recorded which will form part of their year end assessment.



There are totally 18 ACRA members supporting this scheme and they are

ATAL Engineering Limited

Cold Magic Efatar (Hong Kong) Company Limited

Johnson Controls Hong Kong Limited

McQuay Air-conditioning Limited

REC Engineering Company Limited

Shun Hing Engineering Contracting Company Limited

The Jardine Engineering Corporation Limited

Welcome Oncho Denki Limited

Winston Air Conditioning & Engineering (Hong Kong) Company Limited

BYME Engineering (Hong Kong) Limited

Hsin Chong Aster Building Services Limited

Lucky Engineering Company Limited

Raising Engineering Limited

Shinryo (Hong Kong) Limited

Southa Company Limited

Trane Hong Kong

Westco Airconditioning Limited

Young's Engineering Company Limited

ACRA would like to express our sincere thanks to members who support the scheme wholeheartedly and wish all the students can have a fruitful knowledge at the end of their Workplace Attachment in members' companies.

Association News

A talented young lady, Aris Chiu, just joined ACRA as Administration Officer in August this year. Aris has extensive administration experiences at the field of trade union / association, and has been working with different level of professionals from wide spectrum of sectors, including government organizations, public utilities, manufacturing, construction, service and many others. With Aris' support, we are sure ACRA will continue to thrive and contribute to the industry. Welcome Aris joining ACRA's big family!

And good things yet to come! Not only a new challenge in career, Aris has also just got married in October and started a new page of her life.

Wishing Aris a wonderful beginning, and love to last a lifetime!

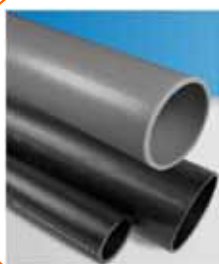


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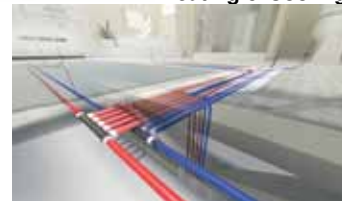


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	York International (Northern Asia) Limited	約克國際 (北亞) 有限公司	2590 0012	www.johnsoncontrols.com	●	●	●
	Young's Engineering Company Limited	景福工程有限公司	2235 0900	www.youngs.com.hk	●		
ACRA Corporate Members	Alliance Contracting Company Limited	聯和承造有限公司	2891 9083	enquiry@alcc.com.hk	●		
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	Chun Wo E & M Engineering Limited	俊和機電工程有限公司	3758 8007	bs@chunwo.com	●		
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	Daikin Airconditioning (Hong Kong) Limited	大金冷氣 (香港) 有限公司	2570 2786	miky@daikin.com.hk			●
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	Technicon Engineering Limited	得力確工程有限公司	3193 1300	technic@technicon.com.hk	●		
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	Evergreen Environmental Technology Co., Ltd.	嘉毅冷凍空調設備有限公司	2356 8598	info@evercoolhk.com		●	●
	Extensive Trading Company Limited						
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		精基貿易有限公司	2889 1681	med@extensive.com.hk			●

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Gotop Engineering (HK) Limited	高陞工程 (香港) 有限公司	2459 3038	gotopco@yahoo.com.hk
Great Top Engineering Limited	宏鋒工程有限公司	2345 2219	general@greattop.com.hk
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Intelligent Technologies Limited	毅智科技發展有限公司	2301 4868	info@intelligent-net.com
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Kembla (Hong Kong) Limited	金特霸 (香港) 有限公司	2528 0999	dennis.sheung@kemble.com.hk
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Southa Engineering Limited	南龍工程有限公司	2963 7241	www.southa.com
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Target Energy Solutions Limited	達標能源管理有限公司	2155 9882	carrie@targetensol.com
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Viewco Building Services & Engineering Company Limited	偉保工程有限公司	2543 0610	engineering@viewco.com.hk
Wai Luen Air Conditioning Limited	偉聯空調設備有限公司	2890 9321	garychan@wailuenhk.com
Wardson Engineering Limited	華順工程有限公司	2329 8268	wsengltd@yahoo.com.hk
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Yordland Engineering Limited	日島工程有限公司	2362 2186	info@yordland.com
York Choi Industrial Limited	旭彩實業有限公司	2795 8286	www.yorkchoi.com
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