

樂訊 2018 Issue No.2

VOICE OF ATAL



XRL and HZMB: Gateway Projects to Greater Bay Area
飛躍大灣區：高鐵香港段與港珠澳大橋開通

Healthcare Segment Records Steady Growth
醫療工程業務穩健增長

Retrofitting HK Electric's Electric Tower for
Energy Saving
為港燈電燈大樓進行節能改進



ATAL Engineering Group
安樂工程集團

Chairman's Message 集團主席的話

As the year 2018 draws to a close, I am delighted to share with you some exciting news about ATAL and our people.

With the opening of the much-anticipated Guangzhou-Shenzhen-Hong Kong Express Rail Link and the Hong Kong-Zhuhai-Macao Bridge in September and October respectively, Hong Kong has entered a new era of closer economic integration with the Mainland, and with the Guangdong-Hong Kong-Macao Greater Bay Area in particular. ATAL is honoured to have played a role in both mega infrastructure projects, providing a wide range of building services, environmental engineering, ICT and lift solutions to our clients. With valuable experiences gained from these two highly visible and complex projects, we look forward to taking part in future large-scale transport infrastructure projects both in Hong Kong and the Greater Bay Area.

The past six months saw many exciting new business wins. Some examples included energy efficiency retrofit works for an electric tower, provision of advanced equipment for the Government's new vehicle examination centre, reprovisioning of a public mortuary, and a new data centre project for a leading telecommunication corporation.

Another exciting project is a Government contract to provide an inclined plate settler plant to pilot test the application of lamella technology, which could potentially expand the capacity of existing sewage treatment plants in Hong Kong. While on sewage treatment, we are delighted that our in-house developed AMSFS-II sedimentation system has been successfully adopted at several sewage treatment plants in the Mainland, opening the door to future growth in this area. Meanwhile, our healthcare engineering team has secured three hospital projects, including a three-year term contract with the Hospital Authority.

Our people take pride in receiving awards. Most notable was Anlev Elex winning the Excellence Award of the Hong Kong Management Association Quality Award 2018, a testimony to our commitment to total quality management. Anlev Elex also won a silver award in the 19th Construction Safety Promotional Campaign, and merit awards in the first Sustainable Construction Award organised by the Construction Industry Council. ATAL's work on a sewage treatment plant secured a gold award in one of the categories. Congratulations to all the winning teams!

In this festive season, I would like to thank everyone at ATAL for your hard work and contributions in the past year. Our best wishes for a healthy, happy and successful 2019!



2018 年即將結束，我很高興與您分享關於安樂工程及員工的一些令人興奮的事情。

隨著備受期待的廣深港高速鐵路和港珠澳大橋於 9 月及 10 月相繼開通，香港亦已進入與內地，尤其是粵港澳大灣區經濟融合的新時代。安樂工程很榮幸能夠參與這些大型基建項目，為我們的客戶提供多元化的屋宇裝備、環境工程、信息及通訊科技和自動梯解決方案。透過這兩個矚目而複雜的項目所獲得的寶貴經驗，我們期待未來參與更多香港和大灣區的大型基建項目。

在過去六個月，集團所獲得的新項目接踵而來，例如為港燈電燈大樓進行節能改進、為政府的新驗車中心引入先進驗車設施、公眾殮房的重置工程，以及為一家主要電訊公司負責新的數據中心工程項目。

另一項令人振奮的政府項目，則是利用 Lamella 技術於斜板沉降池試驗系統，如試驗計劃成功，將有助提升污水處理廠的污水處理量。除了污水處理外，我們自行研發的高效沉澱池系統 (AMSFS-II) 亦獲得國內多家污水處理廠採用，為這一領域的未來發展打開了大門。與此同時，我們的醫療設施工程團隊亦獲得三個醫院項目，其中包括與醫院管理局簽訂為期三年的合約。

我們的同事亦為集團取得多個獎項。最引人注目的是安力電梯榮獲 2018 年香港管理專業協會優質管理獎卓越獎，這證明了我們對全面優質管理的承諾。安力電梯還在第 19 屆建造業安全推廣活動中獲得銀獎，並在建造業議會的首屆可持續建築大獎中獲得優異獎。安樂工程在污水處理的項目也獲得了其中一個類別的金獎。在此恭喜所有獲獎團隊！

在這個佳節裡，我要感謝安樂工程的所有同事在過去的一年所付出的努力及貢獻，並預祝大家有一個健康、愉快及豐盛的 2019 年！

Ir Dr Otto Poon
潘樂陶博士工程師

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捷足先登 ICC

XRL and HZMB: Gateway Projects to Greater Bay Area 飛躍大灣區： 高鐵香港段與 港珠澳大橋開通

The year 2018 will go down in history for bringing Hong Kong and the Mainland closer via two much-anticipated mega transport infrastructure projects: the Hong Kong-Zhuhai-Macao Bridge (HZMB) and the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL).

萬眾期待的廣深港高鐵香港段和港珠澳大橋，已相繼於今年內開通。這兩個大型運輸基建項目，使香港與內地聯繫更緊密，也為 2018 年添上特殊的歷史意義。

With the opening of the HZMB in October, following the inauguration of the Hong Kong section of XRL in September, the dream of a Greater Bay Area to rival the world's most productive economic clusters is taking space. ATAL played a role in both projects.

Hong Kong-Zhuhai-Macao Bridge

The world's longest sea-crossing bridge-cum-tunnel, HZMB is a spectacular structure that links Hong Kong, Zhuhai and Macao. Comprising the 12-km Hong Kong Link Road, the 29.6-km Main Bridge and the 13.4-km Zhuhai Link Road, it puts major cities in the Pearl River Delta within a three-hour commute of Hong Kong.

To find out more about ATAL's involvement, Voice of ATAL spoke to senior executives heading the project team: Raymond Chan (Executive Director), Dave Chan (Director, Information, Communications and Building Technologies) and Andy Cheung (Director, Lift and Escalator). The make-up of the team reflects the multi-disciplines involved with this landmark project.

ATAL's HZMB contracts were awarded in 2015. They covered the provision of water supply facilities, sewage treatment facilities, integrated building services solutions, lifts, and e-channels for vehicle and passenger clearance. All works took place at the 130-hectare Hong Kong Boundary Crossing Facilities (HKBCF) — an impressive array of buildings and transport facilities on an artificial island to the northeast of the Hong Kong International Airport.

The Challenge of Quantity and Proximity

Raymond Chan notes that the biggest challenge of HZMB was not the Electrical and Mechanical (E&M) works themselves, but the sheer quantity of systems and facilities involved and the tight timeframe. Given the distance of the artificial island from urban centres, logistics was an issue. The project team had to set up a large storage area on-site, with over 100 containers at the peak of works in early 2017, to ensure timely E&M supplies.



廣深港高鐵香港段及港珠澳大橋相繼於 9 月和 10 月開通，而粵港澳大灣區要發展成媲美世界其他經濟密集核心區的理想，也隨之成形。安樂工程很榮幸能參與這兩項矚目工程。

港珠澳大橋

港珠澳大橋是全世界最長的橋隧組合跨海通道，連接香港、珠海、澳門三地，極為壯觀。大橋工程包含 12 公里長的香港接線、29.6 公里長的主橋、和 13.4 公里長的珠海接線。大橋開通後，將珠江三角洲各主要城市，納入香港三小時行車範圍內。

《樂訊》走訪了帶領安樂工程參與大橋項目的高層管理人員，包括陳海明（執行董事）、陳志雄（資訊、通訊及屋宇科技總監）和張夏明（升降機及自動梯總監），深入了解箇中情況。團隊的多元組合，反映了大橋項目工程的範疇廣泛。

安樂工程的港珠澳大橋項目合約於 2015 年批出，工程包括供水設施、污水處理設施、綜合屋宇裝備服務方案、升降機、及供車輛與旅客使用的 e-道自動出入境與通關設施，所有工程均於佔地 130 公頃的香港口岸進行。香港口岸位處香港國際機場東北的人工島上，有多幢建築物和大量運輸設施，規模十分龐大。

規模大路途遠

陳海明認為港珠澳大橋工程的最大挑戰，並非機電工程本身，而是涉及的系統與設施數量繁多，和非常緊湊的施工時間。由於人工島離市中心很遠，物流運輸



The tight programme also meant long hours for everyone in the team. "Despite these challenges, we are honoured to have participated in this high-profile, pioneering project," Raymond says. This is also the biggest building services contract for ATAL to date.

Smart Solutions for Boundary Crossing

Having introduced the automated e-channel passenger clearance system to Hong Kong in 2004 and become a leading supplier of e-channel systems ever since, ATAL was pleased to secure another milestone project to design, supply and install the Automatic Vehicle Clearance and Support System (AVCSS) for HKBCF according to Dave Chan. His team created a tailor-made system for the Hong Kong Customs and Excise Department to enable the automation of vehicle clearance process carried out at the vehicle kiosks. The work includes hardware and software development of the real-time control, surveillance and clearance system, Vehicle Tracking System (VTS) and Vehicle Information Display System (VIDS). New vehicular e-channels were also developed for the Immigration Department at the vehicle kiosks.

ATAL also provided the building management systems (BMS), for the control and monitoring of all electrical and mechanical systems of the buildings at HKBCF,



together with a Supervisory Control and Data Acquisition System (SCADA) that centralises the control and optimises energy consumption at all HKBCF buildings. In addition, our work also includes environmental features, such as rooftop photovoltaic systems and gardens sustained by treated wastewater.

Energy-saving Lifts

The installation of Anlev lifts and escalators at HKBCF faced similar time pressure, with an additional challenge of humidity. Andy Cheung explains that the humid marine environment calls for the use of higher-grade, rust- and moisture-resistant steel in the production of the lifts.

Lift installation began in 2016 and took 18 months to complete. As the site location is too remote, lift workers had long daily commutes and no interest to work on this job, which exacerbated a tight labour supply. "Our solution was to achieve 'zero' tolerance on either equipment or material against contract specification through intimately liaising with manufacturers and suppliers, and to develop more prefabrication components for easier assembly and simplify our installation process. This helped us avoid unnecessary re-handling works and make installation more efficient," Andy notes.

亦是個難題。團隊於是在工地現場設置了大型儲物區，2017 年工程高峰時期，有百多個貨櫃儲存各種機電物料，確保施工所需物料都能適時供應。

由於工程時間緊迫，團隊上下都得加長工作時間。「挑戰雖然很多，但我們十分榮幸能參與這項國際矚目的工程。」陳海明說。大橋項目也是安樂工程歷來取得的最大屋宇裝備工程合約。

出入境智能方案

早於 2004 年，安樂工程已率先引進全港首套 e-道全自動旅客出入境設施，多年來為市場的主要供應商。陳志雄表示，集團很高興也能參與這標誌性項目，為香港口岸設計、供應和安裝車輛自動通關支援系統。他的團隊為香港海關特別設計了一套系統，讓車輛可於通關亭自動通關，相關工作包括提供實時控制、監測和通關系統、車輛追蹤和車輛資訊顯示系統的硬件和軟件開發等。團隊也為入境處於車輛出入境亭，開發了新的 e-道車輛自動出入境系統。

安樂工程也為香港口岸各幢建築物，提供建築物管理系統，以監控建築物內所有機電設施，又提供監控及數據收集系統，為香港口岸所有建築物提供中央監控服務，並提高能源效益。此外，工程項目也包括安裝各種環保綠化設施，例如天台太陽能板系統，和淨化污水以用作灌溉的系統等。



慳電升降機

安樂工程為香港口岸各大樓安裝集團旗下的升降機與自動梯。團隊不但要同樣面對時間緊迫問題，濕度高更是另一挑戰。張夏明解釋，由於香港口岸臨海，環境潮濕，升降機生產都須用上特別高質的防潮和防鏽鋼材。

升降機安裝工程於 2016 年展開，歷時 18 個月完成。由於地處偏遠，電梯工人須每天長途跋涉往返，很多都不願參與，人手更形緊絀。「我們的對策，是對升降機器材與物料採取『零容忍』措施，即是與製造商保持密切聯繫，務求所有器材和物料都完全符合規格，同時研發出可預先生產的組件式零部件，讓我們加快安裝過程。這些方案都幫我們避免無謂的『翻手』工作，大大提高裝置的效率。」他說。

張夏明也強調，香港口岸所有的升降機，都安裝了具電力再生功能的驅動器，能把升降機操作時產生的多餘能量，轉化為電力，輸往大樓的電網，供大樓其他系統使用，發揮綠色環保功能。

他更指出，在香港口岸多部升降機中，有一部無機房式升降機的秒速為 2.5 米，是同類系統中極佳的速度。

He also emphasised that all lifts were equipped with re-generative drives. These convert the excess energy generated by lift operation into electricity which feeds into the building's electrical network for use by other systems in the building to attain "green" purpose.

Among all the lifts installed at HKBCF, Andy pointed out that a machine-room-less lift can travel 2.5 metres per second, an excellent speed for such lift system.

Looking back, all three agree that logistics management, the sheer scale and quantity of the facilities, the far-off location and the race against time were the biggest challenges. "As a high-profile mega infrastructure project, the HZMB gives ATAL an excellent job reference. The company also gained valuable experience in handling a transport project on such a grand and complex scale," Dave says.

Guangzhou-Shenzhen-Hong Kong Express Rail Link

When Voice of ATAL spoke to Victor Law (Executive Director), he exuded satisfaction at the successful completion of ATAL's XRL contracts seven years after their award date in 2011.

The XRL Hong Kong Section is about 26-km long, running along a dedicated underground rail corridor from the West Kowloon Terminus to Futian Station in Shenzhen, where it connects with the Mainland's 25,000-km-long national high-speed rail network. With its opening, passengers can go directly to 44 Mainland stations/cities.



Major Scope of Work

Victor's team managed two XRL contracts. The first project involves the design and installation of all E&M in more than 10 buildings at the XRL Pat Heung Depot, including the Administrative Building; Running Maintenance Shed and XRL Central Control Centre. The second project involves the design and installation of all E&M for 10 ventilation buildings as well as tunnel emergency rescue and evacuation exit in the Hong Kong section.

Dave Chan's team was part of this project too, providing Information and Communications Technology (ICT) solutions for XRL, including an award-winning Tunnel Access Control System for construction workers and new-generation e-channels for passengers at the XRL West Kowloon Terminus.

The smooth automatic clearance of passengers at the XRL West Kowloon Terminus was also ATAL's responsibility. It depends to a large extent on the 51 e-channel kiosks that Dave's team designed and installed. "This generation of e-channels has a brand new design with a more cyber look," Dave says.

The Challenges of a Long Time and Demanding Project

When asked about key challenges, Victor names the long contract duration and underground water drainage issues. "Seven years is a long time, and we worked very hard to maintain a stable team, not to mention the need for careful cost control and risk assessment over such a long contract period," he says.



綜合而言，三位都認為物流運輸、工程設施的龐大規模和巨大數量、偏遠地點和緊迫時間，都是最大的挑戰。「不過，這國際矚目的大型基建項目，為安樂工程帶來了極佳的投標工程參考個案。我們也從中獲得寶貴經驗，掌握如何處理這樣龐大複雜的運輸項目。」陳志雄說。

廣深港高鐵香港段

安樂工程集團於 2011 年贏得廣深港高鐵香港段的工程。羅威德（執行董事）接受《樂訊》採訪時，對順利完成歷時七年的工程，感到相當滿意。

高鐵香港段約 26 公里長，沿一條地下專線隧道而建，由西九龍總站往深圳福田，在福田與內地 25,000 公里長的國家高鐵網連接。高鐵香港段開通後，乘客可由香港出發，直達內地 44 個車站 / 城市。

工程範圍

羅威德的團隊負責高鐵香港段兩份合約。第一份合約涵蓋八鄉高鐵車廠內十多幢大樓所有機電設施的設計及安裝工程，包括行政大樓、列車維修庫及高鐵香港段中央控制中心。另一份合約則包括高鐵香港段的十幢通風樓、及整個香港段所有隧道緊急救援處與疏散出口的所有機電系統設計及安裝工作。

陳志雄的團隊也有參與高鐵香港段項目，提供資訊及通訊科技方案，包括為高鐵西九龍總站提供一個施工期間隧道人流管理系統，以及新一代的 e-道旅客出入境自動通道。隧道人流管理系統更獲得獎項。

確保西九龍總站旅客出入境過程全自動化並暢順運作，也是陳志雄團隊的責任。安樂工程為站內 51 部 e-道旅客出入境亭，進行系統設計與安裝工程。「新一代的旅客 e-道是全新設計，有數碼世代風格。」他說。

施工期長 要求極高

談到工程的挑戰，羅威德指出主要是合約期長，及地下水問題較為棘手。「七年的時間相當長，我們既要努力維持一個穩定的團隊，同時必須小心控制成本和進行各種風險評估。」他說。

The ingress of underground water in the tunnel was a challenge too, but was resolved after improvement works were made to the drainage system. The system proved robust even in the face of super-typhoon Mangkhut in September this year.

Award-winning Tunnel Access Control System

Another innovative solution ATAL developed for XRL was a construction stage Tunnel Access Control System (TACS) to enhance worker safety in challenging tunnelling environments. Using helmet-mounted Radio Frequency Identification (RFID) tags, Wi-Fi and 3G technologies, the system monitored each worker's movements and exact location inside the 26-km tunnel in real-time – information that was vital to ensure worker safety especially in emergency situations. The innovative system won bronze award in the 2015 Hong Kong ICT Awards for "Best Smart Hong Kong (Internet of Things Application)".



Now that the Hong Kong section of XRL is up and running, Victor and Dave, and their teams, find the public's delight in the new rail link most rewarding. Not only that, but XRL is a milestone project for ATAL, marking its first foray into the transport infrastructure market.

The Greater Bay Area Horizons

Whilst HZBM and XRL are projects for Hong Kong clients, ATAL has been increasingly active in the Guangdong-Hong Kong-Macao Greater Bay Area too. A good example was our participation as general E&M engineering contractor in the Hong Kong Jockey Club Conghua Racecourse in Guangzhou, the first world-class racecourse and thoroughbred training centre in the Mainland. The project also won us two top construction industry awards in Guangzhou and national Luban Award.

Our environmental engineering team has been busy with Greater Bay Area projects such as upgrading works for the Shenzhen Yan Tian Wastewater Treatment Plant, and various wastewater treatment projects in Guangzhou as well as Buji and Maoming in Shenzhen. Meanwhile, our Nanjing Anlev Elevator Ltd has recently received a manufacturing licence for special equipment from the state authority, and it expects to receive a retrofit licence from the provincial authority soon. Both will enable Anlev lift and escalator business to enter the Mainland's domestic market including the Greater Bay Area.

With the next wave of major infrastructure works in Hong Kong, such as the Hong Kong International Airport expansion and new hospitals and road networks, and the enormous potential in the Greater Bay Area, ATAL is on the journey to a brighter future.



施工期間，隧道滲入地下水曾是一大挑戰，但經團隊改善排水系統後，問題已經解決，即使在今年 9 月超強颱風「山竹」襲港期間，系統也能有效運作。

隧道人流管理系統獲獎

安樂工程為高鐵香港段帶來的另一創新項目，是隧道人流管理系統，目的是於施工期間，為身處隧道的工作人員加強安全。項目把裝有無線射頻識別技術的標籤，放在工作人員頭盔上，同時運用 Wi-Fi 和 3G 技術，監察整條 26 公里隧道內每個工作人員的實時動向和準確位置，這些資訊對確保工作人員安全非常重要，尤其在發生緊急情況。這套系統更於 2015 年的「香港資訊及通訊科技」比賽中，榮獲「最佳智慧香港（物聯網應用）」銅獎。

高鐵香港段現已開通並暢順運作，羅威德和陳志雄喜見市民大眾對新鐵路十分雀躍，多年的努力也得到回報。此外，高鐵香港段對安樂工程也是一個里程碑，揭開了集團進軍運輸基建市場的新一頁。

放眼大灣區

港珠澳大橋與高鐵香港段，雖然都是香港客戶的項目，但安樂工程在大灣區也日趨活躍，例如廣州從化的香港賽馬會馬術運動訓練中心項目，我們便負責綜合機電系統專業分包工程。這是內地首個世界級的賽馬場和純種馬訓練中心，項目更為安樂工程贏得廣東省建築界兩個重要的獎項及全國性的魯班獎。

我們的環保工程團隊，也忙於進行大灣區多個項目，例如深圳鹽田污水處理廠、廣州幾個污水處理廠項目、和深圳布吉與茂名等地的污水處理廠項目。與此同時，我們的南京安諾電梯有限公司，最近更獲內地國家級機關發出特別設備生產許可證，並預期不久會獲省級機關發出升降機翻新工程許可證，兩者皆會為安樂工程的升降機與自動梯業務，打開包含大灣區在內的廣闊內地市場。

隨著香港展開新一輪大型基建項目，包括香港國際機場擴建工程、多家新醫院和新道路網絡，加上大灣區的鉅大市場潛力，將為安樂工程在基建發展方面帶來更多機遇。

Healthcare Segment Records Steady Growth 醫療工程業務穩健增長

Our Healthcare Engineering team has secured three hospital services projects in the second half of 2018. They are air handling units replacement and fan coil units in Castle Peak Hospital, mechanical ventilation and air conditioning (MVAC), fire services (FS) and medical gases for Our Lady of Maryknoll Hospital, and a three-year term contract with the Hospital Authority on E&M minor works for 11 public hospitals, health centres, clinics and donor centres across its two clusters of Kowloon Central and Kowloon East.

Meanwhile, we have also completed a number of projects for other public hospitals. An example was the United Christian Hospital where we completed projects including Isolation Ward (MVAC, electrical, FS upgrade); Operating Theatres (MVAC and electrical upgrade, including ductwork cleansing); New CT Scan Unit (MVAC, electrical, FS); and New Emergency Ward (MVAC, electrical, FS, bedhead system and medical gases).

Another public hospital served was the Haven of Hope Hospital, where we completed projects including periodic inspection, testing and certification (PITC) of fixed electrical installations; and a new 40-bed Ward (MVAC, electrical, FS, bedhead system and medical gases).

Also completed were a range of projects for the Hospital Authority's Kowloon Central and Kowloon East Clusters (MVAC, electrical, FS, bedhead system and medical gases upgrade for a number of multi-bed wards at their hospitals).

Applying our healthcare engineering expertise and experiences to public and private hospitals, we have made use of Building Information Modelling (BIM) to cover 2D and 3D isometrics, solid modelling, sectional views, walk-through, clash reports, equipment and materials take-off scheduling at a public hospital. We have also completed the mechical, electrical and plumbing (MEP) installation at a reputable private hospital in Hong Kong for its diagnostic and interventional radiology department. Effective engineering coordination and system testing and commissioning were required to ensure smooth permeation of the E&M and building services into the hospital design and its integrated matrix of the various areas including magnetic resonance imaging (MRI), mammography, X-ray rooms and doctor's offices.



安樂工程集團的醫療工程團隊在 2018 年下半年取得三個醫療工程項目，包括為青山醫院的暖通空調系統更換風櫃和風機盤管；為聖母醫院病房提供暖通空調、消防及醫療氣體；以及簽訂一個三年期合約，為醫院管理局九龍中及九龍東兩個聯網轄下 11 所公立醫院、健康中心、診所及捐血中心提供小型機電工程服務。

同時，我們也為其他公立醫院完成了多個項目。例如基督教聯合醫院，項目包括隔離病房（暖通空調、電氣、消防系統升級）、手術室（暖通空調及電氣系統升級，包括管道清潔）、新的電腦斷層掃描室（暖通空調、電氣及消防系統），以及新的急症病房（暖通空調、電氣、消防、床頭系統和醫療氣體）。

另外，我們也為靈實醫院完成了多個項目，包括固定電力裝置的定期檢查、測試和認證，和新的 40 個牀位病房工程（暖通空調、電氣、消防、牀頭系統和醫療氣體）。

我們更為醫院管理局轄下的九龍中及九龍東聯網，完成了多個項目（為聯網轄下醫院的普通病房提供暖通空調、電氣、消防、牀頭系統及醫療氣體升級）。

安樂工程運用集團在醫療工程服務方面的知識和經驗，為公立及私家醫院提供服務，比如為本港一家公立醫院，利用建築信息模型（BIM）涵蓋二維和三維等距離，進行實體建模、切面圖像、演練、故障報告、設備和物料啟用時序規劃。我們也為一家著名私家醫院的診斷和介入放射科完成安裝整套暖通、電氣和給排水系統，過程需要有效的工程協調和系統測試和調試，確保機電及屋宇裝備系統能夠融入醫院的設計及各項設施，包括磁力共振掃描、乳房 X 光造影、X 光檢查室和醫生辦公室。

Retrofitting HK Electric's Electric Tower for Energy Saving 為港燈電燈大樓 進行節能改進

Innovation and sustainability are two of the attributes that make ATAL stand out from the competition. Our proven track record in providing the full spectrum of energy optimisation services has recently won us an energy efficiency retrofit contract from The Hongkong Electric Co., Ltd. (HK Electric).

A leading public utility in Hong Kong and our long-time client, HK Electric has long recognised the importance of energy efficiency and environmental protection. In appreciation of our strengths and expertise in energy management, HK Electric commissioned ATAL to undertake the retrofit project for its Electric Tower in Ap Lei Chau with a view to enhancing the overall energy efficiency of the composite building.

ATAL's project team took a holistic approach to energy management, involving both hardware and software components in a range of energy saving systems. Considering that air-conditioning accounts for the lion's share of total energy consumption of a building, we have retrofitted the supply fan of the air-handling unit (AHU) with electronically commutated (EC) fans. The use of EC fan in air-conditioning is one of the latest energy saving technologies and can reduce energy use of the AHU by more than 30%.

Our team also installed a new building management system (BMS) to enable all AHU's direct digital control (DDC) controllers to be integrated into a single network, making centralised control possible to optimise operational efficiency. With this power management system, HK Electric is now able to obtain detailed, real-time energy utilisation reports for consumption analysis and cost management. The system also facilitates real-time power monitoring and alarm management, ensuring a stable operation and optimal equipment utilisation.



創新和可持續發展是安樂工程集團一向貫徹的原則，多年來為客戶提供全面的能源優化方案，往績彪炳。最近集團更贏得香港電燈有限公司（港燈）一項能源效益改進合約。

港燈是香港主要公用事業機構，一向重視能源效益及環保，亦是安樂工程集團的長期客戶。鑑於我們在能源管理方面的優勢和專業知識，港燈委託我們為其位於鴨脷洲的電燈大樓進行改進工程，以提升電燈大樓的整體能源效益。

安樂工程的項目團隊提供全面的能源管理方案，其中包括一系列節能軟件及硬件系統。由於空調往往是在一幢大廈內最為耗電的系統，在今次改進工程中，我們更換了風櫃的供氣扇，採用具備最新節能技術的電子整流風扇，可減少風櫃的耗電量達三成以上。

項目團隊還安裝了新的樓宇管理系統，使所有風櫃的直接數碼調控功能，集中在一個中央網絡，從而優化運作效率。該電力管理系統能讓港燈取得詳細、實時的數據和耗電報告，有助耗電分析和成本管理。系統還可提供實時電力監控和警報管理，確保設備運作穩定及達致最佳效益。

Advanced Vehicle Examination Equipment for New Tsing Yi Vehicle Examination Centre (VEC) 為新青衣驗車中心引入先進驗車設施



The Government will construct a new three-storey vehicle examination centre (VEC) in Tsing Yi to replace three existing centres, namely Kowloon Bay VEC, New Kowloon Bay VEC and To Kwa Wan VEC, in order to release the sites for the planned developments in Kowloon East.

ATAL recently secured a major contract for the design and installation of advanced vehicle examination equipment at the new Tsing Yi VEC, which is expected to come into operation in 2020 with better facilities and greater capacity. It will have 30 inspection lanes for different kinds of vehicles and a maximum handling capacity of 1,000 vehicles per day, which is 25% more than the existing daily capacity.

The project showcases our multi-disciplinary capabilities as we offer one-stop solution that exemplifies a perfect interplay of electrical, mechanical, and information technologies for optimal operational efficiency.

At the new VEC, the automated vehicle examination lanes will guide vehicles to be in position at the designated spots for inspection of faulty parts. All examination equipment will be controlled by a new computer system which enables all the examination results of the vehicles to be digitised and real-time displayed, allowing vehicle owners to view the results of the examined components. The built-in examination equipment sensors will also be able to differentiate vehicles of various sizes to streamline the inspection process.

As Hong Kong is developing into a smart city of the future, more information technology and communication solutions will be necessary to upgrade our transport infrastructure and related facilities such as VECs. ATAL is ready to seize the opportunity to showcase our multi-disciplinary capabilities in this area and, as always, to demonstrate our commitment to delivering high quality services to our customers and the public.

香港政府計劃發展九龍東為核心商業區，為配合規劃藍圖，決定重置三個位於區內的驗車中心：九龍灣驗車中心、新九龍灣驗車中心及土瓜灣驗車中心，以騰空區內用地，並在青衣西草灣興建一座全新三層高的驗車中心。

安樂工程集團獲批有關工程合約，負責設計及安裝青衣驗車中心內的先進儀器及設施。這所全新的驗車中心預計於 2020 年投入服務。中心設備先進，包括為不同類別車輛而設的 30 條驗車線，每日最多可以檢驗 1,000 部汽車，比現在增加 25%。

項目證明了集團具備全面跨界別的專業知識及實戰經驗，能夠巧妙糅合不同範疇的工程技術及資訊科技，為客戶提供一站式的高效能方案。

新的驗車中心配備精密的車輛辨別感應器，能夠辨別不同車輛的大小類型，方便將車輛引導到不同的驗車線道，提高流程及效率。自動化的驗車線道可以將車輛鎖定在固定位置上，以檢查故障部件。所有檢查儀器及設備均由電腦系統控制，將檢查結果數據化，並顯示在電腦屏幕上，讓車主可即時知道檢查結果。

香港致力發展成為一個智慧城市，需要善用資訊及通訊科技，以提升及優化運輸基建及驗車中心等相關設施。安樂工程透過這個項目，再次展示集團在不同工程領域的專業知識及技能，為我們的客戶和市民提供最優質的服務。

Business Wins: Yuen Long Treatment Works and Mainland Adoption of AMSFS-II 環境工程團隊勇奪香港和國內三項工程合約



Congratulations to our environmental engineering team for its new business wins, one in Hong Kong and two in the Mainland!

The first one is a contract from the Drainage Services Department (DSD) for a pilot test at the Yuen Long Sewage Treatment Works. The project involves the design and construction of an inclined plate settler plant for testing the performance and feasibility of applying the lamella technology to sedimentation process for primary sewage treatment.

Compared to traditional sedimentation tanks, the lamella separator is more compact and takes up a smaller footprint of at least 10%. The pilot plant will feature an inclined plate settler, chemical enhancing system, sewage transfer pump, pipework and associated E&M equipment, and will have an average treatment capacity of 1,000 cubic metres per day, with a maximum capacity of 2,600 cubic metres per day.

There will be a four-month post-commissioning test under varying operation scenarios. All testing data will be compiled for a comprehensive analysis covering the plate settler performance, its limitations, design parameters, operation and maintenance. Most of all, different cleaning methods and their effectiveness will be reviewed.

The success of the pilot test would lead to further application of the lamella technology, hence potential capacity expansion of DSD's existing sewage treatment plants.

Meantime, ATAL's in-house developed, highly-rated sedimentation system AMSFS-II has been adopted at several sewage treatment plants in the Mainland. This is testimony to the excellence and competitiveness of our environmental engineering technology.

Recent projects include the third phase of the sewage treatment plant of Taizhou Water Treatment Development Co Ltd and upgrading works of the sewage treatment plant of Ningbo Beilun Yandong Drainage Co Ltd, both adopting AMSFS-II. Both systems have been in operation recently.

我們的环境技術工程團隊最近分別在香港和國內勇奪三項工程合約，可喜可賀！

首份工程合約由渠務署批出，為元朗污水處理廠進行試驗計劃，安樂工程負責設計和建造一個斜板沉降池，用於測試 Lamella 斜板沉澱技術應用在初級污水處理過程的效果和可行性。

Lamella 斜板沉澱池佔地面積較小，相對傳統的沉澱池最少可減少一成用地。安樂工程將建造一個斜板沉澱池試驗系統，其中包括斜板沉澱池、化學物投注系統、污水泵等相關機電設備。試驗系統平均每日需要處理 1,000 立方米的污水，最高可達至 2,600 立方米。

建造完成後，安樂工程將負責為期四個月的測試，收集在不同操作情況下的測試數據，以進行全面分析，包括沉澱池性能表現、限制、設計參數、操作及維修等。最重要的是詳細分析不同的清潔方法及成效。

是次試驗計劃非常重要，假如成功的話，Lamella 沉澱技術將可應用在渠務署轄下的污水處理廠，有助提升污水處理量。

與此同時，安樂工程自行研發的高效沉澱池系統 (AMSFS-II) 亦獲得多家污水處理廠採用，再次證明集團在環保工程技術上的領導地位。

最近的兩個項目，台州市水處理發展有限公司污水處理廠第三期工程和寧波市北崙岩東污水處理廠的升級工程，均採用 AMSFS-II，並已投入服務。



Third phase of sewage treatment plant of Taizhou Water Treatment Development Co. Ltd.
台州市水處理發展有限公司污水處理廠第三期工程



Upgrading works of the sewage treatment plant of Ningbo Beilun Yandong Drainage Co. Ltd.
寧波市北崙岩東污水處理廠升級工程

Reprovisioning Fu Shan Public Mortuary 重置沙田富山公眾殮房



ATAL recently won its first successful bid with Nishimatsu Construction Co., Ltd. (NCCL) for reprovisioning Fu Shan Public Mortuary (FSPM) in Shatin. NCCL has been appointed by the Architectural Services Department as the main contractor for the Fu Shan project in which ATAL will provide comprehensive E&M support in lifts and escalators and building services, including air-conditioning, electrical system, fire services, plumbing and drainage. The project is scheduled to complete in 2021.

Commissioned in 1989, FSPM has been running for nearly three decades, and is operating beyond its planned capacity. The Government saw a need to relocate the mortuary to an adjacent site to cope with ever increasing demand.

The reprovisioned FSPM will be a seven-storey building with a total area of 14,800 square metres, and will provide equipment and facilities that meet infection control, occupational safety and health requirements. The equipment will include nine cold rooms and one deep freezer, eight autopsy suites, functional facilities including laboratories, X-ray and Computed Tomography Scan room. It will also serve as a training venue for law enforcement officers, especially the Police, in criminal investigations.

Furthermore, the reprovisioned FSPM will increase storage capacity from 216 to 830, and together with Kwai Chung Public Mortuary, will be able to cater for the caseload of Kowloon and New Territories up to year 2031.

The Government is planning to reprovision Victoria Public Mortuary in Kennedy Town to meet growing demand on Hong Kong Island. At the same time, deterioration of facilities at FSPM after three decades' of continuous operation may also generate major refurbishment works opportunities in due course.

安樂工程集團和西松建設株式會社贏得重置沙田富山公眾殮房工程項目。西松建設獲建築署委任為該項目的主要承包商，安樂工程則負責提供全面的機電工程方案，包括屋宇裝備工程如冷暖空調、電力、消防、排水系統，以及升降機及自動梯等，項目預計於 2021 年完成。

富山公眾殮房自 1989 年啟用至今，已運作近 30 年，需求早已超出原先設計的容量。為了應付未來需求，政府決定重置及擴充殮房，項目地點為現時富山殮房毗鄰的空置土地。

重置後的富山殮房樓高七層，佔地 14,800 平方公尺，提供符合傳染病控制、職業安全和衛生規定的設備和設施，包括九個冷藏室、一個冷凍庫、八個驗屍間，其他設施包括化驗室、X 光和電腦掃描室等。殮房亦會用作執法人員（尤其是警方）的培訓地點，供進行刑事偵查培訓之用。

此外，重置後的富山殮房將存放遺體容量由現時的 216 具增加至 830 具，連同葵涌公眾殮房計算，將可應付九龍和新界區至 2031 年的預計需求。

政府正在籌劃重置堅尼地城域多利亞公眾殮房，以應付港島區的需求。此外，現時富山殮房經長期使用，加快了設施的損耗，預計需要進行大型維修及改善工程。有着這次重置富山項目的經驗，相信上述項目將為集團帶來發展契機。

Data Centre Project Awarded on Expertise and Proven Record 集團再贏得數據中心項目



ATAL has recently secured a new data centre project from a leading telecommunication corporation. The project win can be attributed to our technical expertise in building services – data centre and our track record of beating the deadline.

Our team will be working on an extremely tight schedule since the client requires the project to be completed within seven months. It entails the installation of MVAC, water cooled chillers, heat exchangers, chilled water pumps, condensing water pumps, cooling towers, AHU, electrical and BMS systems to expand the cooling facilities of the Tier-4 ready site.

A Tier-4 data centre is the most advanced and robust of its kind and requires redundant or backup components and infrastructure for power supply, data storage, network links and cooling system.

To ensure a secure, reliable and uninterrupted operation, data centres call for demanding E&M critical infrastructure. Over the years, ATAL has been accumulating a wealth of experience and expertise in the construction, upgrade and expansion of data centre operations. Our special team of professional and experienced engineers are commended for the seamless project management and testing and commissioning services, especially our heat load tests and integrated system tests that meet Tier-4 requirements. What makes ATAL stand out from the competition is our resilience, efficiency, trustworthiness and most of all, our end-to-end solutions that meet the client's highest standards and business needs.

安樂工程憑著其建設數據中心工程的往績、專業經驗及優良信譽，我們最近獲得一家主要電訊公司委託，負責新的數據中心工程項目。

由於客戶要求項目在七個月內完成，時間非常緊湊。我們的團隊需要安裝暖通空調、水冷式冷卻器、熱交換器、冷凍水泵、冷凝水泵、冷卻塔、風櫃、電氣和樓宇管理系統，以擴充數據中心的冷卻設施，確保符合 Tier-4 的規格要求。

Tier-4 數據中心是同類中最先進和最高級別的，數據中心的所有基礎設施及軟硬件件，均需配備後備設施及組件，包括電力供應、數據儲存、網絡連結、冷卻系統等。

數據中心需要非常精準及嚴格的機電工程基礎設施，確保數據中心安全、可靠和無間斷運作。多年來，安樂工程在建造、提升及擴充數據中心的工程項目方面，累積了豐富經驗和專業知識。我們的工程師團隊經驗豐富，其無縫項目管理和測試及調試服務深受認同，特別是我們進行的熱負荷測試和集成系統測試，能夠滿足 Tier-4 級別的規格要求。安樂工程集團素以靈活、效率、可靠見稱，尤其我們一站式的端對端解決方案，更能夠滿足客戶的高質素需求。

Anlev Elex Wins HKMA Quality Award 安力電梯榮獲優質管理獎卓越獎



Anlev Elex Elevator Ltd (Anlev Elex), a wholly owned subsidiary of ATAL Engineering Group, has won the Excellence Award of the Hong Kong Management Association (HKMA) Quality Award this year. Congratulations to our Anlev Elex team!

A wholly owned subsidiary of ATAL, Anlev Elex specialises in system design, supply, installation, modernisation and maintenance of lifts, escalators and moving walkways. This prestigious award is a testimony of Anlev's commitment to total quality management, and recognition of ATAL as an innovative and sustainable engineering provider of total solutions to enhance the quality of life in communities.



Among Anlev Elex's impressive portfolio of projects are the contract to refurbish the Central to Mid-Levels Escalator and Walkway System, design and provision of lifts and escalators to the Hong Kong-Zhuhai-Macao Bridge, the Central-Wanchai Bypass Tunnel Buildings and the West Kowloon Law Court Buildings. Anlev Elex is on the top range of the best performance of lift and escalator maintenance service providers in Hong Kong, with a 24-hour call centre, supported by six service depots, to handle emergency calls from clients anywhere in our city.

OSH Awards for Anlev Elex 安力電梯榮獲職安健銀獎

In the 19th Construction Safety Promotional Campaign jointly organised by the Occupational Safety and Health Council, Labour Department and the Construction Industry Council, Anlev Elex won a silver award in Best Refurbishment and Maintenance Contractor in Occupation Safety and Health (OSH). The award was for its triennial term contract for maintenance and repair of lifts and escalators at various premises of the HKSAR government. Anlev Elex's experienced mechanic was presented with a bronze award in Outstanding Escalator Mechanic in OSH and a merit award in Outstanding Lift Mechanic in OSH.

The campaign focuses to enhance work-site safety standards and reduce industrial injuries. It also aims to praise the good practice on site safety from the construction safety. At the safety forum and award presentation held at the Hong Kong Convention and Exhibition Centre on 6 July, Anlev Elex also won the Best Presentation Award for its outstanding drama performance on the topic.



由職業安全健康局、勞工處及建造業議會合辦的第十九屆建造業安全推廣活動，安力電梯在最佳職安健維修及保養承建商組別獲得銀獎。得獎項目為香港特別行政區政府各物業內之升降機全面保養及維修服務的三年期合約。此外，安力電梯一名經驗豐富的技術人員亦獲頒發職安健模範自動梯技工銅獎及職安健模範升降機技工優異獎。

建造業安全推廣活動旨在提高工地安全水平，減少工傷，同時表揚良好的安全管理。是次建造業安全分享會暨頒獎典禮已於7月6日假香港會議展覽中心舉行。當日安力電梯的團隊憑着創意十足的話劇表演，更贏得最佳演繹獎。

集團全資附屬機構安力電梯有限公司（安力電梯）榮獲2018年香港管理專業協會優質管理獎卓越獎，實力獲各界肯定，在此恭賀安力電梯團隊。

安力電梯專門從事升降機、自動梯和自動行人道的系統設計、生產、安裝、現代化和維修保養。今次獲頒卓越獎，證明安力電梯在推行全面優質管理上不遺餘力，亦同時表揚集團堅持以創新及持續發展為原則，提供全面的機電工程服務以提高社區的生活質素。

安力電梯的工程項目眾多，其中備受矚目的大型項目包括中環至半山自動扶梯系統更新工程，以及為港珠澳大橋、中環灣仔繞道隧道大樓、西九龍法院大樓設計及提供升降機及自動梯。安力電梯是機電工程署註冊升降機及自動梯承辦商評級計劃中，獲表現評級最高的公司之一。安力電梯並提供24小時服務中心，集監控、報告及信息平台於一身，加上設有六個服務站提供支援，可即時處理客戶在全港任何地點的緊急事故。



Sustainable Construction Award for Central-Mid-levels Escalator & Walkway System Refurbishment Project 中環至半山自動扶梯系統更新工程獲可持續建築獎

To promote sustainable construction, the Construction Industry Council has organised in 2018 its first Sustainable Construction Award to encourage the adoption of sustainability best practices among construction organisations and practitioners.

Anlev Elex has received merit award in all tiers of works, including repair, maintenance, alteration and addition, for its refurbishment contract of the Central-Mid-Levels Escalator and Walkway System, one of the longest of its kind in the world and a renowned tourist attraction. The Anlev Elex team received the award at a prize presentation ceremony on 26 October officiated by Michael Wong, Secretary for Development.

ATAL is also pleased to have been involved in the expansion of Tai Po Water Treatment Works for the Water Supplies Department. The project won a gold award in the Project Owner (Public Sector) category.



為了推動可持續建築，建造業議會於2018年推出第一屆可持續建築大獎，表揚業界於可持續發展方面推行良好作業的機構和從業員。

安樂工程集團旗下的安力電梯為中環半山自動扶梯系統進行更新工程，項目在維修、保養、改建及加建等各工程類別均獲得優異獎。團隊獲邀出席於10月26日由發展局局長黃偉綸主持的頒獎典禮，並上台接受獎項。中環半山自動扶梯是世界上最長的自動扶梯系統之一，為本港著名旅遊景點。

此外，集團有份參與的大埔濾水廠擴展工程項目，為水務署在項目業主（公營）類別上贏得金獎，可喜可賀。

DSD Construction Sites Housekeeping Awards 渠務署工地安全整潔優異獎

ATAL has been named a double winner in the Construction Sites Safety and Housekeeping Award Scheme 2018 – taking the half-yearly outstanding performance awards for two projects with the Drainage Services Department (DSD): pilot tests for sludge dewatering at Sha Tin Sewage Treatment Works and the provision of operation and maintenance services for various sewage treatment and stormwater facilities, under the categories of E&M Works Contracts and Maintenance Contracts of E&M Branch respectively.

Introduced in 2004, the DSD housekeeping award scheme aims to promote site safety and good housekeeping practices at its construction sites. It recognises contractors and consultants for raising the housekeeping standard on site safety, cleanliness, tidiness and hygiene, which in turn helps prevent accidents and improve work efficiency. Over the years, the award scheme has become a benchmark for site management and has contributed to a better, safer and more efficient work environment for site workers and supervisors.

ATAL gives the highest priority to work safety and our site staff are always provided with adequate information and technical support on site safety and housekeeping practices. We are grateful that our commitment to safety and our effort in this regard has been once again recognised by DSD. Congratulations to our winning project teams!



安樂工程集團在2018年渠務署舉辦的工地安全及整潔獎勵計劃，勇奪兩個獎項。有關的兩項工程包括為沙田污水處理廠污泥脫水處理工藝測試，及為各區污水處理及防洪設施提供操作及維修保養服務，項目分別在機電工程合約組別和維修合約機電工程科組別，獲頒中期優異表現獎。

工地安全及整潔獎勵計劃於2004年推出，旨在提高渠務署工地的安全及整潔水平，表揚承包商及顧問在工地管理上的良好作業守則。良好的工地管理不但有助提升工地安全、整潔及衛生水平，更可提高工作效率及減少工地意外。獎勵計劃自推以來，已經成為工地管理的指標，為在工地工作的員工及管工提供一個更優秀、安全及高效的工作環境。

安樂工程集團非常重視工作安全，確保為工地員工提供充足安全資料、作業守則及技術支援。集團很高興在這方面的努力再次獲得嘉許，在此恭喜我們的得獎團隊。

Conghua Project Wins Construction Awards 從化項目獲建設工程獎

After the successful completion of the 16th Asian Games in 2010 in Guangzhou, the site of the former equestrian centre has been re-commissioned and put to good use. It has become the new The Hong Kong Jockey Club Conghua Race course.

The project was recently presented with two awards by the China Construction Industry Association (Gold Award and Excellent Award) at the 2018 Guangdong Construction Awards, the greatest honour for the construction industry in Guangdong Province. ATAL is proud to have been involved in the project, providing general E&M engineering contracting and sub-contracting services.



2010 年在廣州成功舉辦第 16 屆亞運會後，前馬術中心已經發展重建，成為全新的香港賽馬會從化馬場。該項目最近喜獲中國建築業協會頒發兩個獎項 – 2018 年廣東省建設工程優質獎金獎和優秀獎，為廣東省建築界最高榮譽。安樂工程有幸參與項目，負責綜合機電系統專業分包工程。



Community Chest Award for Our Contributions 公益嘉許獎表揚集團熱心公益

The Community Chest presented ATAL with the Certificate of Merit in appreciation of our support of the Chest's various events during the year. ATAL has always been supportive of charitable activities to help the less privileged in our community. Many of our colleagues participated in the 2017/18 Community Chest activities and projects, including the Hong Kong and Kowloon Walk for Millions, the Community Chest Corporate Challenge, the SHKP Vertical Run for Charity, Greening for the Chest and Mooncakes for Charity.

The Chest has raised over \$278 million in year 2017/18, with donations going to 162 member agencies to help more than two million people every year. We are pleased to have contributed to the good cause.

安樂工程集團獲公益金頒發公益嘉許獎，表揚集團去年積極支持公益金的各項活動。集團上下熱心公益，致力幫助弱勢社群。在過去一年，同事積極參與公益金舉辦的慈善活動，其中包括港島及九龍區百萬行、公益慈善馬拉松、新地公益垂直跑、公益綠識日和公益月餅等。

公益金於 2017/2018 年度共籌得逾 2 億 7,800 萬元，善款全數撥捐 162 間會員社福機構，讓全港逾 200 萬名有需要人士受惠。集團非常高興能夠為慈善出一分力。

Social Capital Builder Award for Group's CSR Work 集團獲社會資本動力獎

ATAL is delighted to receive the Social Capital Builder (SCB) Logo Award in recognition of the Group's achievements in building social capital. We believe strongly in Corporate Social Responsibility (CSR) and our CSR initiatives focus on the five areas of Compliance, the Environment, Ethics, Health and Safety, Innovation and Training, all conducive to social capital building.

Organised by the Labour and Welfare Bureau's Community Investment & Inclusion Fund, the biennial SCB Awards serve to recognise individuals, corporates and organisations who have contributed to the development of social capital in Hong Kong.

Social capital is essential for the economic prosperity and sustainable development of a society. It helps build a caring society of mutual trust and solidarity, and enhances mutual support among individuals, families and organisations so that our community can go from strengthen to strength.

安樂工程集團很高興榮獲「社會資本動力標誌獎」，表揚我們為香港社會資本發展作出的貢獻。集團在履行企業社會責任方面一向不遺餘力，其強調遵守法規、環境政策、商業道德、健康及安全、創新及人才培訓等五項重點，有利發展社會資本。

兩年一度的「社會資本動力獎」嘉許計劃由勞工及福利局轄下的社區投資共享基金舉辦，旨在表揚為香港社會資本發展作出貢獻的個人、企業及機構。

社會資本有助建立一個互信互助、團結及關愛的社會，讓個人、家庭及組織互相支持，令社區能力得以提升，對社會的經濟繁榮和持續發展帶來重要的影響。

Embracing Sustainability and Nurturing Talent 支持可持續發展及培育人才

Energy efficiency and sustainability have always been ATAL's priorities as we develop eco-friendly engineering solutions for clients. We are particularly proud of our R&D team's development of the dynamic Chiller Plant Control Optimisation System (CPCOS) which proved successful at various client buildings in Hong Kong. We have recently taken part in two events to showcase the experience.



ATAL was invited to showcase the successful experience at CLP's Smart Energy Symposium held on 12 June, attended by more than 300 participants from both the private and public sectors. The CPCOS together with another ATAL-developed Fault Detection and Diagnosis System (CPCOS) which proved successful at various client buildings in Hong Kong. We have recently taken part in two events to showcase the experience.

In July, ATAL's representative was invited by EMSD as a key note speaker at its Energy Saving Championship Scheme 2018. He highlighted the unique benefits of the system as an advanced energy saving solution for buildings, using real-time big data to reflect the actual performance of HVAC equipment and determine its optimal operation point. We also showcased other energy management technologies in the day's exhibition.

To support talent development, we were delighted to take part in an exhibition titled "Construction Industry 2.0 – Transformation" which was part of the grand opening ceremony of the Hong Kong Institute of Construction held in Tai Po on 3 October. Officiating the ceremony was Financial Secretary Paul Chan, with senior officials from the Development Bureau, dignitaries and more than 200 construction practitioners attending.



安樂工程集團一直非常重視能源效益及可持續發展，經常為客戶設計及研發節能工程方案。「製冷機組控制優化系統」可說是其中成功典範，該系統已安裝在我們客戶不同的建築物上，成功提升能源效益。集團近日獲邀出席兩項活動，分享成功經驗。

中華電力於 6 月 12 日舉辦創新節能企業研討會，超過 300 名公營機構及工商界代表出席活動，安樂工程集團應邀分享智能科技提升能源效益的成功個案 — 「製冷機組控制優化系統」。研討會現場設有展覽攤位，展出多款嶄新的節能技術，我們的攤位展示「製冷機組控制優化系統」和另一自行研發的「故障偵測及診斷系統」，利用物聯網技術及智能樓宇管理系統應用程式，可以即時偵測故障及通知維修人員。

此外，集團的代表獲邀出席機電工程署於 7 月舉辦的「慳神創科大比拼」活動，並為主講嘉賓之一。他指出「製冷機組控制優化系統」的特點是利用實時大數據，準確反映製冷機組的真實表現，從而找出系統的最大營運效益，為建築物提供最佳的節能方案。同場集團亦展示其他節能方案。

香港建造學院大埔訓練場於 10 月 3 日正式開幕，財政司司長陳茂波應邀主持開幕儀式，發展局高級官員、建造業議會代表以及 200 多位業界人士，一同見證香港建造業發展一項重要的里程碑。當日大會特別設置「建造業 2.0 — 蛻變」大型展覽，展示業界持份者對建造業發展的貢獻，安樂工程集團亦有參與展出，積極支持培育建造業人才。

Taking on the Climate Challenge 應對氣候變化

Climate change and renewable energy have become universal issues calling for a concerted effort around the world. Ir Dr Otto Poon has long taken the environmental issues to heart and is an ardent advocate to raise the industry awareness of the global challenges, calling on multi-disciplinary collaboration to address them.

In September, Dr Poon was invited to speak at the 6th International Conference in Hong Kong, organised jointly by the Energy Institute Hong Kong and the School of Energy & Environment at the City University of Hong Kong. He shared his views on the latest development of the global climate efforts in the post-Paris Agreement era, and his insights on the leading role that Mainland China can play in reducing carbon emissions.



氣候變化、再生能源等已經成為國際關注的重大議題，面對全球性的環境挑戰，需要世界各國同心協力，一起探討解決方案及採取應對行動。潘樂陶博士一直十分關注環境議題，經常出席不同的論壇交流及分享己見，藉此引起業界的關注，呼籲及推動他們一同努力，合力解決這全球性的環境挑戰。

今年 9 月，潘博士應邀出席由香港能源學會和香港城市大學能源與環境學院聯合舉辦的「第六屆國際能源會議」，並擔任客席主講嘉賓，與一眾與會者分享巴黎協議後應變氣候變化問題的發展，以及內地如何於減碳排放事宜上擔當領導角色。



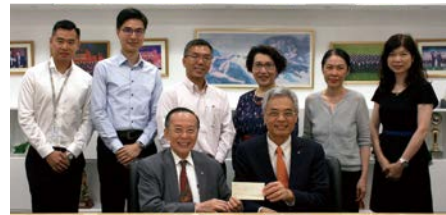
Donations to Nurture a "Smart" Generation 肩負社會責任 培育「智慧」新一代

Talent development has long been a priority at ATAL. We are particularly keen on nurturing the young and have introduced graduate training and apprenticeship programmes since 1994. Group Chairman Ir Dr Otto Poon has always been supportive of the local tertiary institutions in their research and education programmes.

Recently Dr Poon made donations to his alma mater Hong Kong Polytechnic University and the Hong Kong University of Science and Technology, to support their technological research and development. Given the Government's recent efforts to make Hong Kong a world-class smart city, he hoped the donations would be of help for the universities to enhance their research studies on smart technologies and sustainable energy.

我們十分重視人才培育，尤其是為工程界培育年青一代，集團早於 1994 年已開始設立畢業見習生培訓計劃和學徒培訓計劃。除了於公司設立有關培訓計劃外，集團主席潘樂陶博士多年來一直支持本港各大專院校的教育及研究課程，致力為業界人才培訓作出貢獻。

早前，潘博士分別捐款予其母校香港理工大學和香港科技大學，積極推動各院校持續發展及研發新科技，回饋社會。政府近年致力將香港發展成世界級智慧城市，潘博士希望透過捐款予院校，協助他們於智能科技及可持續能源的研究工作，配合社會發展的需要。



Celebrating Completion of Express Rail Link 慶祝高鐵香港段竣工

The Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL), which took more than eight years of construction, was officially opened on 23 September. As one of the key E&M contractors of the mega project, ATAL was invited to the project completion party held by MTR Corporation Limited at the XRL West Kowloon Station on 17 August. Our Group Chairman Ir Dr Otto Poon, and Executive Director Ir Victor Law, were among the over 200 attendees at the celebrations.



XRL Project is one of Hong Kong's largest and most important infrastructure projects since 1997. The project forms part of the Mainland's High-speed Railway Network, and its opening marked the closer economic integration between Hong Kong and the Mainland. ATAL is proud to have been involved in this mega project which has opened a new chapter for Hong Kong. Our two XRL contracts included the design, supply, installation, testing and commissioning of environment control system, power system, fire services system, plumbing and drainage system; and the building services control system for Shek Kong stabling sidings, tunnel ventilation facilities and emergency rescue siding.

歷時八年多的矚目工程項目 – 廣深港高速鐵路香港段已於 9 月 23 日正式投入服務。安樂工程集團作為高鐵的主要機電工程承包商之一，集團主席潘樂陶博士和執行董事羅威德先生應邀出席香港鐵路有限公司於 8 月 17 日在西九龍站舉行的盛大派對，與 200 多名嘉賓一同慶祝項目順利完工，見證這項重大成就。

高鐵項目是香港自 1997 年以來最重要的基建項目之一。該項目是中國高速鐵路網的一部分，香港段的開通標誌著香港與中國大陸的緊密融合。集團對能夠參與這項重大工程感到榮幸，可為香港發展新一頁作出貢獻。我們參與的兩個項目分別為石崗列車停放處，以及隧道通風設施及緊急救援處，提供環境控制、電力、消防、管道及排水、以及樓宇設備控制系統的設計、供應、安裝及調試。

Nanjing Anlev Signs Distributorship Agreement with Italian Gruppo Millepiani 南京安諾電梯與意大利 Gruppo Millepiani 簽署經銷協議

Nanjing Anlev Elevator Ltd, a subsidiary of ATAL Engineering Group, has signed a distributor agreement with Gruppo Millepiani spa to secure the order of escalators for Fiera and Federico metro stations in Italy. With its own dedicated manufacturing plant and Research and Development (R&D) facilities in Nanjing, Nanjing Anlev specialises in manufacturing custom-made lifts, escalators and moving walkways that meet international safety standards. We are delighted to have secured a long-term cooperation relationship with the Italian firm.

集團附屬公司南京安諾電梯有限公司（南京安諾電梯）與意大利公司 Gruppo Millepiani spa 簽訂經銷協議，負責承包 Fiera 和 Federico 地鐵站的自動扶梯訂單。南京安諾電梯自設研發設施及生產線，專門設計及生產符合國際安全標準的升降機、自動梯及自動行人道。我們很高興與這家意大利公司簽訂經銷協議，建立長期的合作關係。



ATAL Secures Wireless IoT Licence 安樂工程獲發無線物聯網牌照

ATAL has secured the Wireless Internet of Things (IoT) licence, as we have finally received confirmation from the Office of the Communications Authority (OFCA) for our application of the licence.

IoT is an emerging technology that enables the provision of communications platforms and services for interconnected devices to generate, exchange and consume data with minimal human intervention. This technology is the key to building a smart city.

After years of preparation, ATAL is well positioned to provide IoT services as we can drive digital transformation with end-to-end IoT solutions – from data collection, architecture design to data analytics and visualisation.

As big data collection is the first step of IoT implementation, we provide a wide range of IoT sensors that record different kinds of equipment and environment-related data, which can be stored and accessed in a timely manner through an IoT network. Our scalable network ensures stable and reliable connectivity with multiple devices and servers, enabling seamless communication, information sharing and operational efficiency. Our solutions not only feature dashboard displays for real-time monitoring and equipment alerts, but also allow for customised reports and AI modelling to generate business insights and performance optimisation.

As one of the pioneers in IoT market in Hong Kong, ATAL has been working with some clients to apply IoT to building services management contracts. The new wireless IoT licence will help broaden our IoT service offerings for clients.

集團剛獲通訊事務管理局確認我們的申請許可，安樂工程將獲發無線物聯網 (IoT) 牌照。物聯網是一項新興技術，可以為互連設備提供通信平台和服務，在最少的人為干預下發出、交換和使用數據，這項技術對建設智慧城市最為關鍵。

安樂工程經過多年的準備及累積經驗，能夠提供全面的物聯網服務，從數據收集、架構設計到數據分析和視像化，致力提供端對端的物聯網服務方案。

由於收集大數據是實施物聯網的第一步，我們提供各種物聯網傳感器，記錄不同類型的設備和環境相關數據，可以通過物聯網網絡即時儲存及取用。我們的網絡可擴充升級，確保與多個設備和服務器的連接穩定可靠，實現通信無間、信息共享和高效運作。我們的方案不僅具有儀表板顯示，能夠實時監控和提供設備警報，還可以透過人工智能模擬及度身設計的分析報告，有助高階商業分析判斷和性能優化。

安樂工程為香港物聯網市場的先鋒，我們為客戶提供的屋宇裝備工程管理合約上，早已包括物聯網方案。獲發無線物聯網牌照，有助我們進一步拓展物聯網服務。



New Kwun Tong and Macau Offices as Business Expands 觀塘及澳門辦事處啟用 配合業務發展

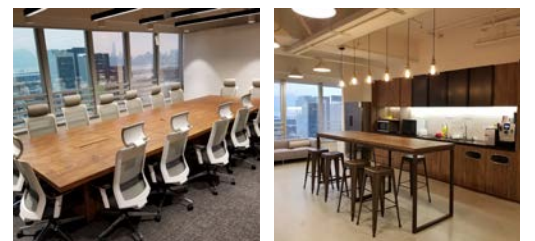


ATAL has opened a new office in Kwun Tong in booming Kowloon East, in view of the rapid expansion of our Information, Communications and Building Technologies (ICBT) business. The 15,000-square-foot office comes with an energetic interior design and reflects ATAL's commitment to be an innovative force in the industry. The new, larger premises not only accommodate our growing number of staff, but also enable us to better serve our customers and stakeholders. We believe the ICBT expansion will strengthen our leading position in providing comprehensive E&M engineering and technology solutions to our clients.

Another expansion has come from our Building Services team in Macau, which has opened a new office in Taipa to meet the needs of recent business growth in that market.

為配合集團資訊、通訊及屋宇科技業務的迅速發展，我們已在觀塘增設辦公室。新辦公室座落九龍東核心地帶，佔地 15,000 平方呎，室內設計新穎，充分反映集團勇於創新的企業文化。新辦事處可容納不斷增加的員工，並提升我們為客戶及持份者提供的服務質素。我們深信資訊、通訊及屋宇科技業務的擴展有助鞏固集團的領導地位，為客戶提供更全面、一站式的機電工程及科技服務方案。

此外，集團在澳門的發展也同樣理想，並剛於氹仔增設辦公室，配合屋宇裝備工程在當地市場的業務發展。



Sports and Beer Make Good Networking 與客戶互動 比賽暢飲兩皆宜



Work-life balance is important at ATAL. That's why we organise sports and social activities for our clients and staff from time to time, both for fun and networking.

First was badminton. Following on the success of the first ATAL badminton tournament last year, we have continued the event this year with our long-time partners: CLP, Electrical and Mechanical Department (EMSD), HK Electric, Towngas and the Water Supplies Department (WSD). The tournament took place at the South China Athletic Association on 24 June. ATAL was the first runner-up with CLP as the champion, while Towngas came third.

Then came basketball. Held on 11 November at the HKU, this was ATAL's first-ever basketball tournament. Joining the competition were the Airport Authority, AECOM and the Environmental Protection Department (EPD). The winner was AECOM, with EPD taking second place. Sports are good for health and fitness, and help foster teamwork and strengthen relationship with our clients too.

Held in the same month was a Craft Beer Night on 1 November for our clients and staff. Craft beer is in vogue these days and has captured the hearts of many beer lovers. ATAL was quick to spot the trend and organised this themed event for all to enjoy. Innovation is the hallmark of our engineering work, and that is reflected in our choice of beverage too!

The Craft Beer Night was part of ATAL's annual gathering with clients. It was an evening of fun and a great occasion for relationship building with customers in a relaxed environment. We look forward to organising more events to engage with clients in future.



集團一向重視員工的工作和生活平衡，經常為客戶和員工籌辦不同類型的體育及社交活動。這些活動除了有益身心外，亦有助加強溝通和鞏固與客戶的關係。

繼去年首辦安樂工程羽毛球邀請賽得到各方支持，今年我們再接再厲，再度邀請中電、機電工程署、港燈、煤氣公司及水務署這些長期客戶及夥伴競逐錦標。賽事於6月24日於南華體育會舉行，氣氛熱烈，最後由中電奪得冠軍，安樂工程獲亞軍，煤氣公司得季軍。

今年我們更首次舉辦籃球邀請賽，並邀得機場管理局、AECOM 和環保署參與。比賽於11月11日於香港大學舉行，戰況激烈，最後AECOM勇奪桂冠，亞軍是環保署。體育不但強健身心，讓一眾同儕大展球技外，更可建立團隊精神，有利與客戶的聯繫。

除了球類比賽外，集團的周年聚會亦以手工啤酒為活動主題。手工啤酒是近年流行事物，正好配合集團勇於創新的風格。這個名為「Craft Beer Night」的活動於11月1日舉行，邀請多家合作夥伴和客戶出席，與同事共度愉快的晚上。

「Craft Beer Night」是集團與客戶的周年聚會，讓客戶與同事在輕鬆氣氛下溝通交流，有助鞏固客戶網絡。我們期望日後有更多與客戶聯繫交流的活動。

Engaging Students to Enjoy Orienteering at Noah's Ark 帶領學生參與挪亞方舟定向挑戰

More than 20 ATAL colleagues joined 45 primary students and teachers on a one-day visit to Noah's Ark in Ma Wan on 3 November. The outdoor adventure cum orienteering programme was our joint effort with the Rainbow Foundation, a Hong Kong charity dedicated to caring for the less privileged.

Apart from enjoying the wonderful facilities of Noah's Ark Expo and Nature Garden, the students also revelled in a Treasure Hunt fun game. The day's highlight was the orienteering activity that took them around the tranquil and beautiful Ma Wan. We are pleased to have participated in this meaningful activity that helps broaden the students' horizons and better prepare them for the challenges ahead.



11月3日，超過20名安樂集團員工與45名小學生和教師一同前往馬灣挪亞方舟，參加為期一天的戶外歷奇及野外定向活動－「熱愛挑戰」。活動由Rainbow Foundation及安樂集團舉辦，Rainbow Foundation是一家致力照顧弱勢社群的香港慈善機構。學生除了參觀及體驗方舟博覽館和方舟花園的精彩設施外，更參加了尋寶遊戲。當日亮點是野外定向活動，一眾參加者更可在過程中欣賞寧靜美麗的馬灣景色。

這次活動別具意義，既可擴闊學生視野，並鼓勵他們勇於面對困難，提高解難能力，建立互助互信，發揮團隊精神，為未來挑戰作好準備。

ARWA Club Cares about the Elderly and Low Carbon Living ARWA Club 關心長者和倡議低碳生活



The ARWA Club, ATAL's staff welfare committee comprising colleagues from different departments, continues to promote volunteering work as part of the Group's work-life balance initiative including serving the elderly. In June, our staff and families joined senior citizens in visiting the Tao Heung Museum of Food Culture. Another group of volunteers joined hands with the elderly to take part in a Mooncake Making Class in September to celebrate Mid-Autumn Festival.

Sustainability is another area of interest for ARWA Club. In August, it arranged for members a visit to ZCB, the first Zero Carbon Building in Hong Kong. Participants learnt about low carbon living and the latest eco-building design and technologies at ZCB's exhibition-cum-education centre.

由集團不同部門同事組成的安樂康體會 ARWA Club，積極推動員工身心發展，經常舉辦義工服務，包括探訪長者及參與長者活動。我們的員工和親友連同一眾長者朋友，於6月參觀「稻鄉飲食文化博物館」，一起渡過一個愉快的下午。另一組義工隊則與長者一同參加「愛心月餅製作班」，共慶中秋。

可持續發展是 ARWA Club 的另一關注議題，成員於8月安排參觀香港首座零碳建築——零碳天地。零碳天地集展覽及教育資訊中心於一身，讓參觀者了解低碳生活和最新的生態建築設計與技術。



Four Medals from CIC Sports Day 勇奪建造業運動會四面獎牌



Three cheers for our ATAL athletes! Together they have scooped three gold and one silver medals at the Construction Industry Sports Day cum Charity Fun Day. Organised by the Construction Industry Council, the annual event day took place at the Shing Mun Valley Sports Ground on 21 October. ATAL took gold in women's shot put for two years in a row and two track events of men's 1,500m and 800m race, as well as a silver in men's 1,500m race.

Congratulations to our winning athletes and thanks to all ATAL participants. We look forward to seeing more colleagues join the action next year.

今年 10 月 21 日在荃灣城門谷運動場舉行了「2018 建造業運動會暨慈善同樂日」，安樂工程有多名運動健將出戰，並取得三金一銀的佳績。三面金牌分別來自男子徑賽項目 1,500 米及 800 米，及女子田賽推鉛球項目，銀牌則來自男子徑賽 1,500 米項目。

恭喜幾位得獎健兒及感謝所有參賽同事積極參與。希望明年有更多同事一展身手，享受運動的樂趣。

Bowling Champions 保齡賽摘冠

The ATAL bowling team emerged as champions of the CCG Bowling Cup 2018, beating strong competition from EMSD and Majestic. ATAL took the first runner-up in the men's individual event. Organised by the Hong Kong Electrical Contractors' Association and sponsored by CCG Cable Terminations Far East Ltd, the bowling competition took place in Tsuen Wan on 21 June.

安樂工程的保齡球隊於 6 月 21 日在荃灣舉行的「CCG 保齡球盃賽 2018」，經奮戰後擊敗來自機電工程署及 Majestic 的強勁對手，贏得團體賽冠軍，並在男子個人賽中贏得銀牌。賽事由香港電器工程商會主辦，並獲得 CCG Cable Terminations Far East Ltd 贊助。



Winning Darts 飛鏢賽奪錦

It definitely took more than a few "throws" to take home the championship of ASHRAE RP Darts Tournament held in Kwun Tong on 22 June. Congratulations to ATAL's team on their winning performance!

安樂工程的員工在運動方面的確多才多藝，於 6 月 22 日在觀塘舉行的 ASHRAE RP 飛鏢比賽，同事憑着精湛的飛鏢技術，勇奪錦標，值得鼓掌。



Running Up ICC 捷足先登 ICC

Four athletes of ATAL joined runners of the other 41 teams on 2 December on their way up to sky100 Hong Kong Observation Deck situated on the 100th floor of International Commerce Centre.

In the Corporate Relay of the SHKP Vertical Run for Charity, our runners finished climbing the 2,120 steps over 82 floors in just 14 minutes and 14 seconds, taking home a second runner-up in the race.

The Race to Hong Kong ICC is the grand finale of the 2018 Vertical World Circuit.

四位代表安樂工程的健將，與其他 41 支企業隊伍的跑手參加一年一度的「新地公益垂直跑」，於 12 月 2 日一口氣登上環球貿易廣場 100 樓的「天際 100 香港觀景台」。

於今年的賽事中，我們的跑手以 14 分 14 秒完成 2,120 級樓梯，跨越 82 樓層，勇奪企業接力組第三名，成績令人鼓舞。

「新地公益垂直跑 — 勇闖香港 ICC」也是 2018 年垂直馬拉松世界巡迴賽的終極挑戰站。



Star League Champions Star League 建造盃奪冠

Formally established last year, the ATAL basketball team already showed their great skills and team work. Crowned the champions of the Star League Construction Basketball League 2018, the team beat its rival in the final contest on 10 September.

安樂工程的籃球隊於去年正式成立，經常參加籃球比賽以鍛練技巧及提高團隊精神。球隊於 9 月 10 日舉行的「Star League 建造盃 2018」決賽，憑着熟練的技巧和默契，勇奪冠軍。



Corporate Games in Basketball 工商機構運動會籃球賽

Good news again from the basketball team. In the Corporate Games 2018, the ATAL team became second runner-up in men's team event of the Basketball Competition Group A. The semi-finals took place on 8 July with ATAL up against three other competent teams from MTR, CITIC Bank and Sundart Holdings.

籃球隊的好消息接踵而來。於 7 月 8 日舉行的「工商機構運動會 2018」男子隊際甲組籃球比賽準決賽，晉身四強的隊伍旗鼓相當，分別是安樂工程、港鐵公司、中信銀行及承達集團有限公司。我們經奮戰後獲得季軍，成績驕人。



Analogue Holdings Ltd
(Incorporated in Bermuda with limited liability)
安樂工程集團有限公司
(於百慕達註冊成立之有限公司)

Analogue Technical Agencies Ltd
安樂工程貿易有限公司

Anlev Elex Elevator Ltd
安力電梯有限公司

Anlev (HK) Ltd
安諾電梯有限公司

ATAL Building Services Engineering Ltd
安樂機電設備工程有限公司

ATAL Data Centre Infrastructure Ltd
安樂數據中心基建有限公司

ATAL Engineering Ltd
安樂工程有限公司

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南京佳力圖機房環境技術股份有限公司

ATAL Engineering Group **安樂工程集團**

Group Headquarters 集團總部
13/F, Island Place Tower, 510 King's Road,
North Point, Hong Kong
香港北角英皇道510號港運大廈13樓

Tel : (852) 2561 8278
Fax : (852) 2565 7638
Email : info@atal.com
Website : www.atal.com

