

樂訊 2019 Issue No. 2

VOICE **OF** ATAL

**Making Hong Kong More
Sustainable with Technology**

**以科技優勢
使香港可持續發展**



ATAL Engineering Group
安樂工程集團

Chairman's Message

集團主席的話



The year 2019 is significant for us as Analogue Holdings Limited, the holding company of the ATAL Engineering Group of companies, was listed on the Main Board of the Hong Kong Stock Exchange in July. The listing marks our success in the past four decades in building the Group from a small trading office in 1977 to become the leading E&M engineering services provider in Hong Kong. Let me once again thank all our colleagues and clients for their unfailing support over the years.

Sustainability has always been one of ATAL's core beliefs ever since the early days when we began building our environmental engineering business. Indeed, through my years of public service in the Council for Sustainable Development, the Energy Advisory Committee and the Advisory Council on the Environment, I have come to appreciate the growing importance of sustainability not only to Hong Kong's continuous development but also to combating climate change and improving the quality of life for all our citizens.

It is with this spirit that we have deployed ATAL's technological capabilities and R&D strengths over the years to numerous major projects in water and sewage treatment, waste-to-energy initiatives, E&M systems enhancement and retro-commissioning works to help make our city cleaner and more energy efficient.

The past six months also saw many exciting new business wins. These include installation of E&M systems and pumping facilities at the Intermodal Transfer Terminal Building and Skypier project at the airport, installation of E&M systems for Grade A office and retail development at the heart of Kai Tak Area, providing E&M maintenance service for the Hong Kong Boundary Crossing Facilities at the Hong Kong-Zhuhai-Macao Bridge, and contracts for installing LED walls at various landmark buildings, and replacing aged lifts at public housing estate. Each contract win is significant in its own way and I congratulate all the teams for their excellent work!

Meanwhile our colleagues have won many awards and competitions, shared their experiences with fellow professionals at technical seminars, and participated in sports tournaments and community service to contribute to the society further. We shall continue to encourage and support these meaningful activities.

As a pioneer in environmental engineering and sustainability projects, we shall spare no efforts in further advancing our work via innovation and technology to make Hong Kong a green and smart city.

2019年對安樂工程集團有限公司（安樂工程集團之控股公司）是重要的一年，因為公司已於今年7月於香港交易所主板上市。今次上市，標誌著安樂工程四十多年來的成就備受肯定。集團由1977年創辦的一家小型貿易公司開始，至今已發展為全港首屈一指的機電工程服務供應商。我在此再次多謝全體同事和客戶多年來對公司的鼎力支持。

可持續發展一直是安樂工程的核心信念，公司由早期開始已率先發展環境工程業務。多年來，我透過參與政府的可持續發展委員會、能源諮詢委員會和環境諮詢委員會等公共服務工作，更體會到可持續發展的原則對香港未來的發展、應對氣候變化，以至改善全港市民生活質素方面，將會愈來愈重要。

集團也是本著這種目標，運用我們在科技知識和研發方面的優勢，參與多個重要工程項目，範疇涵蓋食水、污水處理、轉廢為能項目、機電系統提升工程與重新校驗項目等，務求令香港更清潔環保，能源效益更高。

在過去半年，我們也贏得多項大型工程的新合約，包括為機場「多式聯運中轉客運大樓和海天客運碼頭」項目安裝機電系統和抽水設施；為啟德發展區核心地段一幢甲級寫字樓及零售發展項目安裝機電系統；為港珠澳大橋香港口岸設施提供機電維修保養服務；為全港多幢名廈安裝LED顯示屏幕牆；及為一個公共屋邨更換老化的升降機等。每份合約都有其獨特的重要意義，各相關團隊也表現出色，我在此感謝大家的努力！

此外，同事也贏得不少獎項和比賽，更以講者身份在各種技術研討會上與其他專業人士分享經驗，以及參加各項運動賽事和社區服務以進一步回饋社會。我們將繼續鼓勵和支持這些饒富意義的活動。

安樂工程是環境工程和可持續發展的先鋒。我們未來會不遺餘力，以創新和科技進一步促使香港成為綠色的智慧城市。

Ir Dr Otto Poon
潘樂陶博士工程師

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Making Hong Kong More Sustainable with Technology

以科技優勢 使香港可持續發展

Long before “environmental protection” became the familiar concept it is today, ATAL was implementing sustainability projects in Hong Kong. Its successes in this field date back to the company’s founding over 40 years ago.

環保主義現在廣受推崇，惟安樂工程早於40多年前，當環保觀念尚未普及時，已在香港落實可持續發展項目。集團在可持續發展方面的佳績，可追溯自公司始創之時。

“Our first environmental engineering project was completed in the 1970s. Built for a low-rise private residential development in Tai Po, it was a secondary sewage treatment plant with a daily capacity of 3,000 cubic metres,” recalls Raymond Chan, ATAL Executive Director. “And it’s still in use today!”

Over the years, ATAL has maintained its pioneering edge and become a major player in environmental engineering in Hong Kong, Macau and the Mainland, riding on its technological capabilities and R&D strengths. It is not an exaggeration to say that the Group has contributed significantly to sustainable development in Hong Kong.

Over 40 Years of Sustainability Efforts

The Government announced “Hong Kong’s Climate Action Plan 2030+” in 2017, outlining strategies to achieve sustainable development and combat climate change for the longer term, such as applying renewable energy on a wider scale and making our infrastructure and buildings more energy efficient. ATAL’s sustainability efforts



Tai Po Hong Lok Yuen Sewage Treatment Works 大埔康樂園污水處理廠



Tai Po Sewage Treatment Works 大埔污水處理廠



「我們第一個環保項目，是在1970年代為大埔一個低密度私人屋苑建造一個二級污水處理廠，每天處理量達3,000立方米。」安樂工程執行董事陳海明憶述，「這污水廠更一直運作至今！」

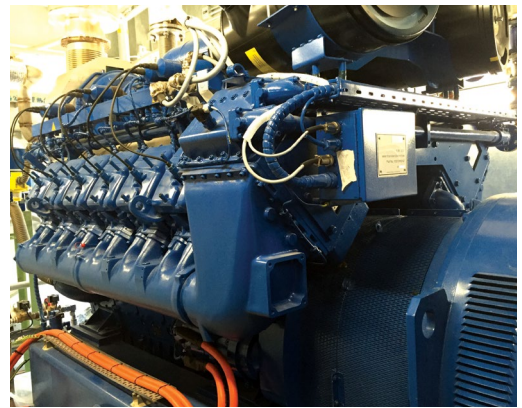
安樂工程多年來一直保持領先的工程技術優勢，並發展成為港澳和內地的環境工程界重要一員，以優越技術及科研開發實力見稱。安樂工程對本港的可持續發展，可說作出了重大貢獻。

致力可持續發展40多年

政府於2017年公布《香港氣候行動藍圖2030+》，概述應對氣候變化的中長期工作，例如更廣泛地採用可再生能源，和使本港基建及樓宇更具能源效益。安樂工程多年來的可持續發展工作也反映了這些策略的取向，並聚焦於環境工程項目，包括多個食水及污水處理、氣體處理、固體廢物處理、能源效益與節能、及可再生能源的「設計、興建、營運及維護」項目。



Alice Ho Miu Ling Nethersol Hospital 雅麗氏何妙齡那打素醫院



Combined Heat and Power Plant (CHP) 熱電聯供系統

over the years also echo these strategies, which have focused on environmental work covering numerous design-build-operate-maintain projects in water & sewage treatment, gas treatment, solid waste treatment, energy efficiency and conservation, and renewable energy.

From Water and Sewage Treatment to Hydroelectric Power Generation

ATAL has played a key role in many large-scale government water & sewage treatment projects, most notably the construction, upgrading and maintenance of the award-winning Stonecutters Island Sewage Treatment Works (SCISTW), one of the world's largest chemically enhanced primary treatment plants.

"With our rich wastewater treatment experience, we are now working on new methods to reduce the footprint of treatment plants so as to use less energy while ensuring that discharged wastewater is of very high quality in accordance with Hong Kong standards," says Raymond. As many of the city's secondary sewage treatment works (STW), including Tai Po STW, Yuen Long STW and Shek Wu Hui STW, are now ageing, ATAL will help the Government upgrade them and increase their flow. With improved treatment processes, the energy required can be reduced by up to 30%.

Similarly, potable water treatment plants commissioned in the 1980s, such as the Sha Tin Water Treatment Works (WTW), must now be upgraded and reprovisioned to meet an anticipated increase in fresh water demand. ATAL played a part in the in-situ upgrading works of the Sha Tin WTW (South Works), with the Advance Works already completed and the Main Works under design. "The next few years will be the peak for STW and WTW upgrading works, as ageing facilities make way for new ones with improved treatment processes," Raymond notes.

ATAL has also implemented several projects in line with Government efforts to promote renewable energy. These include a hydroelectric energy project at SCISTW, where hydropower generators installed in the effluent shaft generate electricity from energy captured when water is released from height. Another hydroelectric

由食水及污水處理至水力發電

安樂工程參與了不少大型政府污水處理項目，當中最矚目的是昂船洲污水處理廠。污水廠不僅獲得多個獎項，更是全球最大的化學強化一級處理廠之一。

「憑藉我們豐富的污水處理經驗，集團致力研發新方法，把污水處理廠的面積進一步縮小。這既可更節省能源，又能確保排放水經處理後，能符合香港極高的品質標準要求。」陳海明說。由於本港很多二級污水處理廠，包括大埔污水處理廠、元朗污水處理廠和石湖墟污水處理廠等都開始老化，安樂工程會協助政府為它們進行優化工程及增加流量。待優化工程完成後，污水處理廠的運作耗能量可減省多達三成。

此外，本港有多個食水濾水廠早於1980年代開始啟用，如沙田濾水廠等，它們亦需進行優化和重置工程，以應付預計增長的食水需求。安樂工程參與了沙田濾水廠(南廠)原地重置工程的工作，有關的前期工程已完成，主要工程則在設計中，「未來數年會是污水處理廠和濾水廠優化工程建造的高峰期，現有老化的設施將被取代，並採用更高效益的水質處理程序。」他說。

為配合政府推動採用可再生能源的方向，集團積極參與相關項目，例如在昂船洲污水處理廠的水力發電工程項目中，安樂工程把小型水力發電渦輪安裝於排放水豎井，將排放水從高往下流動而產生的能量轉化為電力。安樂工程亦參與位於沙田濾水廠的水力發電項目，將萬宜水庫往下流的原水所產生剩餘能量轉化為電力，供濾水廠內部使用。該項目已開始測試及準備投入運作。

project by ATAL is at the Sha Tin WTW, which recovers the residual energy of raw water falling from the High Island Reservoir to generate electricity for on-site use. The project has begun testing and commissioning work.

Turning Waste into Energy

“For most cities, waste treatment begins with sewage treatment and continues with sludge treatment before moving on to solid waste treatment,” Raymond explains. Hong Kong is no exception. The 2018 opening of O-PARK1, the city's first organic resources recovery centre which ATAL designed, built and operates, marks a new milestone on Hong Kong's journey to turn waste into energy.

Located in Siu Ho Wan, O-PARK1 uses advanced anaerobic digestion and composting technologies to convert food waste into biogas for power generation. It can treat up to 200 tonnes of food waste per day. Apart from generating heat and power for internal use, the facility can also generate about 14 million kWh of surplus electricity each year, equivalent to the annual energy consumption of about 3,000 households, while reducing some 25,000 tonnes of greenhouse gas emissions.

Landfill gas can also be turned into energy, as in the Combined Heat and Power plant (CHP) at the Alice Ho Miu Ling Nethersole Hospital in Tai Po. Implemented by ATAL, the CHP uses landfill gas from the North East New Territories Landfill to generate electricity on-site at the hospital. Waste heat from electricity generation is captured and converted into steam and hot water for hospital use, achieving much higher energy efficiency than conventional electricity generation systems. The plant commenced operations in 2016 and is the first public hospital project that uses landfill gas to generate electricity, providing a useful template for other hospitals near landfill gas pipelines.

Other projects being explored include treatment of toxic liquids extracted from solid waste prior to incineration at the Integrated Waste Management Facilities now under construction in Shek Kwu Chau and a feasibility study for a pilot floating photovoltaic system on Plover Cove Reservoir at Tai Mei Tuk.

轉廢為能

「大部份城市的廢物處理都是由污水開始，然後是污泥，再發展至固體廢物。」陳海明解釋說，香港也不例外。由安樂工程參與設計、建造及營運的小蠔灣有機資源回收中心(O·PARK1)，不僅是全港首個有機資源回收中心，更是本港轉廢為能發展途上的新里程碑。

O·PARK1採用厭氧分解技術將廚餘轉化成為生物氣來發電，每天最多處理200公噸廚餘。整個設施在厭氧分解過程中產生的熱能和電力，除了足夠內部使用外，每年可輸出約1,400萬度電力，相等於3,000個家庭一年的用電量，並每年減少2.5萬公噸溫室氣體排放。

除了廚餘外，堆填區沼氣亦可用來發電，位於大埔的雅麗氏何妙齡那打素醫院的「電熱聯供系統」就是一例。安樂工程負責設立「電熱聯供系統」，將新界東北堆填區垃圾分解過程中所產生的沼氣，輸送到醫院並就地發電。發電過程中產生的廢氣餘熱會被加以利用，用以加熱熱水或製造蒸汽供醫院使用，比一般發電系統的能源效益更高。「電熱聯供系統」已於2016年投入運作，是首個運用堆填區沼氣發電的公立醫院項目，對於其他毗鄰堆填區沼氣管道的醫院來說，亦是一個可取的參考例子。

安樂工程目前亦正探討其他污水處理及轉廢為能的項目，包括興建中的石鼓洲綜合廢物管理設施，研究如何將從固體廢物抽出有毒液體，在焚化之前加以處理；另外集團正研究於大美督船灣淡水湖安裝浮動太陽能光伏板系統。



Siu Ho Wan Organic Resources Recovery Centre | (O-PARK1) 小蠔灣有機資源回收中心第一期



Shing Mun Valley Swimming Pool 城門谷游泳池



Fanling Swimming Pool 粉嶺游泳池

New Frontier: Retro-commissioning

While environmental engineering is a key aspect of our sustainability work, our capabilities in mechanical and electrical systems enhancement to optimise energy efficiency are also impressive.

To enhance energy efficiency in existing buildings, the Government has been promoting Retro-commissioning (RCx) to both the public and private sectors. Dave Chan, ATAL Director of Information, Communications and Building Technologies, notes that ATAL recently won a few government contracts for RCx work at few government facilities, including office buildings and various recreational and cultures venues such as sports centres, swimming pools, town halls and public libraries.

“This is an excellent opportunity for us to get to know a variety of facilities and apply our technologies to help them save energy,” Dave says. RCx is a cost-effective way to improve the energy performance of an existing building to identify areas for operational improvements to save energy.

We follow the “Technical Guidelines on Retro-commissioning” issued by the Electrical and Mechanical Services Department (EMSD) issued in 2017 and the related Supplementary Guidelines issued in 2018 to make sure that all aspects of our RCx work, including data management, key performance indicators, energy saving measurement and verification methods are in line with EMSD’s requirements. Indeed, we have never limited ourselves to traditional RCx approaches but have also adopted big data analytics, one of our technological strengths, to automate and simplify the work processes for optimal results.

“There is ample room for innovation and creativity in RCx projects, and we look forward to more of them,” Dave reveals.

The Sustainability Mission

As to the Mainland, Raymond says that ATAL has implemented environmental engineering projects such as sewage treatment works in most provinces. “The Mainland has very high effluent discharge standards, and ATAL is good at coming up with technological solutions that yield the best treatment results in a compact space,” he explains. The Group is exploring environmental project opportunities in the Belt and Road countries, too.

ATAL has come a long way since the 1970s and contributed much to sustainable development in Hong Kong via its environmental engineering works and energy efficiency and renewable energy projects. Riding on its unique R&D and technology strengths, the Group will transfer its rich knowledge and experience to the next generation as it continues to support government initiatives and community aspirations for a greener, better environment.

新領域：機電系統重新校驗

環境工程是我們可持續發展工作的重要一環，集團在優化機電系統以提升能源效益方面，也有深厚實力。

政府為鼓勵業主提高現有建築物的能源效益，近年向公營及私營界別都積極推動重新校驗。安樂工程資訊、通訊及屋宇科技總監陳志雄指出，公司最近贏得幾份政府合約，為10多個政府設施進行重新校驗，包括辦公大樓及各種康樂文化場地，如體育館、游泳池、地區會堂及公共圖書館等。

「這是讓我們了解各種設施、並運用技術為它們節省能源的大好機會。」陳志雄說。重新校驗是個具成本效益的方法，可改善樓宇的能效表現，並在操作上找出可改善之處以節省能源。

我們遵循機電工程署於2017年推出的《重新校驗技術指引》和2018年推出的相關增訂指引，確保我們重新校驗工作的每一方面，包括數據管理、關鍵表現指標、量度和驗證節能成效的方法等，都符合機電工程署的要求。我們不會被傳統的重新校驗方法局限，而是採用大數據分析法，把工作程序自動和精簡化，達致最大成效。大數據分析正是我們的優勢。

「重新校驗給我們很大空間去放膽創新和發揮創意，我們期待有更多同類項目。」他說。

可持續發展的使命

除了香港外，陳海明說安樂工程在國內大部份省份都參與了環境工程項目，例如污水處理廠。「內地對排放水標準的要求很高，而安樂工程的強項是為客戶提供技術方案，運用極少的空間達致最佳的污水處理效果。」他解釋說，集團目前也正探索一帶一路參與國的環保項目商機。

由1970年代起，安樂工程已着手開展環保工作，在各種環境工程、能源效益和可再生能源項目方面都有長足進展，亦為香港的可持續發展貢獻良多。集團運用其技術研發優勢和科技實力，以豐富的專業知識與經驗，培育新一代，繼續支持政府推動可持續發展，減少浪費及污染，並讓社會大眾享有優美的環境。

New Building Services Contract at the Heart of Kai Tak 啟德核心地段新屋宇裝備合約



ATAL has been awarded a sub-contract for a Grade A office and retail development at NKIL 6556 Kai Tak Area 1F Site 2, located at Muk Yuen Street which is at the heart of the former Kai Tak airport site. The site occupies about 1.7 hectares of land with a gross floor area of up to 177,670 square metres. The project is a comprehensive development comprising offices, shops, restaurants and public transport terminus, with a 43-storey office tower plus nine floors of podium and four floors of basement that will be used as retail area and car park. This project is expected to be completed in the first quarter of 2022.

We have been awarded the fire services installation sub-contracts and building management system (BMS) for the whole development, and the mechanical, ventilation, air-conditioning system and electrical installation sub-contracts for the podium and basement floors.

Advanced construction technology such as Building Information Modelling (BIM) will be deployed. A dedicated BIM team was formed comprising specialists from the client, the E&M consultant, the main contractor and sub-contractors, not only to adopt BIM for the construction process and visualisation of different systems but also to produce a well-coordinated Combined Services Model at LOD500 standards.

The client's vision of the project is to create a people-oriented environment and an inclusive social community with exemplar environmental performance. As such, it aims to achieve various green building certifications for the project to attain a high-level of environmental performance and eco-friendly management practices. The key targets will be BEAM-Plus Platinum Grade certifications, LEED and WELL certifications and the Three Stars Grade in CGBL certification.

ATAL's building services team will work closely with the main contractor on system design and coordination and ensure that proper construction practices will be used to comply with the client's environmental requirements.

安樂工程取得一份位於九龍內的新地段第6556號啟德發展區第1F區2號的甲級商廈及零售發展項目承判合約。該地段位於前啟德機場核心地段的沐元街，佔地約1.7公頃，總樓面面積達177,670平方米。項目集辦公室、商店、食肆及公共運輸交匯處於一身，包括一幢43層高辦公大樓，另有9層平台及4層地庫作零售及停車場用途，項目預計於2022年首季落成。

我們獲得整個綜合發展項目的消防安裝工程及安裝屋宇設備管理系統合約，更為平台與地庫樓層提供暖通空調與機電系統安裝工程的承判合約。

我們會採用先進的建築技術，例如建築信息模擬技術進行工程。客戶聯同項目的機電工程顧問、總承辦商和各個承判商的專家，已組成專責的建築信息模擬團隊，不單要在建造過程中採用建築信息模擬技術，將不同系統視像化，更要建立一套符合LOD500標準，並能和諧協調的「綜合服務模型」。

客戶的項目願景，是創建一個以人為本不損害環境的包容社區。因此，客戶希望該項目可以獲得各種綠色建築認證，以達致高水平的能源效益和採用環保管理方式，主要目標是取得「綠建環評」白金級認證、領先能源與環境設計LEED和WELL建築標準認證、及中國綠色建築評價標籤CGBL的三星級認證。

在系統設計和協調方面，安樂工程的屋宇裝備團隊會與總承辦商緊密合作，並確保採用合適的施工方法，符合客戶的環保要求。



HKBCF and HKLR Maintenance Triennial Term Contract Won

贏得香港口岸和香港連接路三年保養合約

Further to our completion of E&M works for the Hong Kong Boundary Crossing Facilities (HKBCF) at the Hong Kong-Zhuhai-Macao Bridge (HZMB), ATAL has been awarded four contracts for the maintenance of electrical & mechanical installations at HKBCF and the Hong Kong Link Road (HKLR) of HZMB. The term contracts cover: the heating, ventilation and air-conditioning water-side system; the main power supply and distribution system; the fire services system; and the mechanical system.

The scope of the term contract includes provision of maintenance services and implementing alteration, addition, replacement and improvement works on the E&M installations of HKBCF and HKLR at HZMB. We shall provide integrated maintenance and fault call attendance services by deploying a resident team on-site. The resident team will take on scheduled preventive maintenance, fault call attendance, corrective maintenance and overhaul works. It will also carry out acceptance tests, checking, inspections, operation and measurement duties as part of the ongoing maintenance service.

Staff at different levels, including supervisors and technicians will be assigned to both the shift duty and non-shift duty teams to provide adequate manpower for round-the-clock maintenance and fault call service. A safety officer will also be available to ensure a high level of site safety throughout the contract period.

We shall also assist the client, the Electrical and Mechanical Services Department (EMSD), in monitoring and handling emergency calls from HKBCF and other buildings operated by government departments and statutory bodies. Our team will liaise and coordinate closely with EMSD, related government departments' consultants and contractors and organisations involved in the operation and maintenance of HKBCF and HKLR.

安樂工程繼完成港珠澳大橋香港口岸設施的機電工程項目之後，再取得四份合約，負責為港珠澳大橋香港口岸和香港連接路的機電裝置提供保養服務。合約涵蓋供暖、通風及空調裝置的相關水系統、主電源供電和配電系統、消防系統及機械系統。

服務範圍包括為港珠澳大橋香港口岸和香港連接路的機電裝置提供維修保養以及進行改裝、加裝、更換及改善工程。我們將調派一支駐場團隊，提供綜合維修保養及機件故障處理服務。駐場團隊會進行定期的預防維修保養，並處理機件故障、事後維修及大型維修工程，也會負責日常維修保養，包括驗收、測試、檢查、操作和量度等工作。

駐場團隊的輪班和非輪班職工都會有不同級別人員，包括主管和技術員，確保有充足人手全日24小時隨時候命，提供維修保養及緊急故障修復服務。合約期內，我們更會安排安全主任當值，以確保工地高度安全。

工程項目客戶機電工程署會監察和處理香港口岸和政府部門及法定機構營運的其他大樓所發出的緊急事故通報，我們會協助機電工程署處理相關情況。至於香港口岸及香港連接路的操作及維修保養，我們團隊也會與機電工程署，以及相關政府部門的顧問和各個承辦商與機構，緊密聯繫和協調。



Anlev Wins First Public Housing Lift Project

安力電梯贏得首個公共屋邨升降機項目



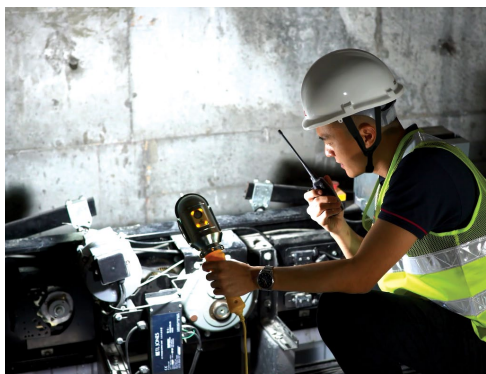
Anlev has won a contract to modernise lifts at the Fu Shan and Fu Yan Houses of Fu Shan Estate, a public housing estate in Wong Tai Sin under the Hong Kong Housing Authority (HKHA) in August 2019. It is our first lift installation contract for public housing estate, the project is a breakthrough for Anlev's business and opens up a new market sector in Hong Kong.

One of the historic public estates in Hong Kong, Fu Shan Estate began taking in residents in 1978. It comprises three residential blocks with a total of 1,600 rental flats for 4,000 population. The contract covers the lift replacement in the two blocks.

In 2017, Anlev began to foresee growing demand for lift installation in new public housing estates, the company also anticipated that demand for lift modernisation and replacement works in existing, ageing public housing estates were set to rise too. With solid experience and strong technical capabilities in making lifts safer, more comfortable and eco-friendly, Anlev decided to become a qualified contractor for HKHA in order to serve the city's public housing residents.

In less than 12 months, Anlev made all the required submissions, site inspections and demonstrations and satisfied HKHA's rigorous assessments of its financial, technical and manpower resources. We participated in HKHA tenders in mid-2018 and won Fu Shan project contract in August 2019.

Our engineering team will bring various green features to the Fu Shan Estate lift modernisation works. These include a gearless lift machine and an ACVVVF lift drive, both of which will reduce electricity consumption during lift operation. The latest, environment-friendly "scaffoldless" lift installation method will be also used as part of our "green" commitment to HKHA works.



安力電梯於2019年8月贏得香港房屋委員會(房委會)的一份升降機工程合約，為其轄下黃大仙富山邨富信樓和富仁樓的升降機進行優化工程。這是安力電梯首份房委會合約，為公司在本港開拓了新的市場。

富山邨於1978年入伙，由3座住宅樓宇組成，共有1,600戶，人口約4,000人。我們的工程合約涵蓋其中兩幢樓宇的升降機更換工程。

安力電梯預料隨着本港的新型公共屋邨先後落成，安裝升降機的需求將會不斷提高；同時，現有的公共屋邨也開始老化，升降機優化和更換工程的需求亦會隨之上升。安力電梯提倡令升降機更安全、更舒適和環保，並且具備豐富經驗和紮實技術，於是在2017年決定向房委會申請成為合資格承辦商，為香港的公營房屋住戶提供服務。

安力電梯在短短不足12個月的時間內，向房委會提交了全部所需文件，並進行了現場檢測和示範，以切合房委會就公司財務、技術及人力資源等各方面的嚴格審核和要求。我們於2018年年中參與房委會的招標，並於2019年8月贏得富山邨項目合約。

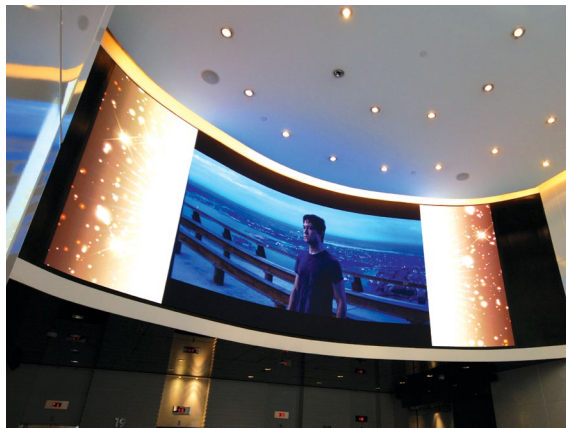
我們的工程團隊為富山邨升降機優化工程引進多項環保設施，包括無齒輪曳引機和變頻驅動器，兩者都可減少升降機操作過程的耗電量。我們更會採用最新的環保「無棚架」升降機安裝方法，兌現我們對房委會工程的「綠色」承諾。

Installing LED Walls at Landmark Buildings 為地標名廈安裝LED幕牆

LED displays are increasingly popular for advertising and related purposes. ATAL has actively participated in numerous LED display projects at landmark buildings and prominent locations on both sides of the harbour, such as the Peak Tower, One and Two Exchange Square in Central, China United Centre in North Point, China Hong Kong City and Star House in Tsimshatsui, SKYPARK in Mongkok and Citywalk I and II in Tsuen Wan.

LED display systems can be installed to fit in with any design and architectural style. There are three types of displays which are suitable for different projects. Indoor LED panels incorporate high-quality LED chips, offering ultra-high resolution with superior overall performance. Exterior LED panels provide a large viewing angle and can always withstand adverse weather while generating perfect pictures. Flexible LED panels can be bent to fit easily with any architectural style or varying curvatures, including concave, convex or twisting curvature in both vertical and horizontal directions.

As these installation works usually take place towards the end of the construction schedule, we provide all-around planning for all projects to avoid disturbing tenants and customers, and achieve customer satisfaction.



LED顯示屏獲廣泛應用在廣告展示，在公共場所都隨處可見。安樂工程積極參與維港兩岸黃金地段及著名建築的多項LED顯示屏項目，包括山頂凌霄閣、中環交易廣場一期與二期、北角華匯中心、尖沙咀的中港城和星光行、旺角的住宅SKYPARK、及荃灣的荃新天地一期與二期。

LED顯示系統的安裝靈活多變，可配合不同的室內設計和建築風格。LED顯示屏分三類，適合不同項目的需要。室內用的LED顯示屏採用高質素的LED芯片，可提供超高解像度和出色的整體性能。戶外用的LED顯示屏

可提供廣闊的視角幅度及完美的圖像，並可抵禦惡劣天氣，操作不受天氣影響。曲面LED顯示屏更可以拗曲，輕易配合不同的建築風格及弧度設計，包括垂直或橫向的凹、凸與扭轉的曲度。

由於LED顯示屏的安裝工程大多於施工尾段進行，因此我們必須預先為所有項目進行全面的周詳計劃，避免施工延誤及減低對租戶和顧客造成不便或滋擾，確保客戶稱心滿意。

Awarded Airport Intermodal Transfer Terminal Building 奪得機場聯運中轉客運大樓項目

ATAL has won a sub-contract of the Intermodal Transfer Terminal (ITT) Building and Skypier project at the airport. We shall provide comprehensive E&M installation services for the mechanical, ventilation and air-conditioning system, electrical system, plumbing and drainage system and seawater pumping system. The project is scheduled for completion in November 2021.

Constructed by the Hong Kong Airport Authority (HKAA), the five-storey ITT Building is an extension of the existing SkyPier. With a gross floor area of 22,000 square metres, it aims to transfer passengers between Pearl River Delta and the airport directly for connecting flights, in addition to the current option of taking cross-boundary ferry service.

Project highlights include a seawater pump house comprising six 530kW seawater pumps that will supply up to 500,000 cubic metres of seawater per day to the North Commercial District (NCD) of the airport to meet the cooling needs of air-conditioning systems in NCD. Screenings and chlorination disinfection will be conducted to purify the seawater quality.

Working closely with the main contractor and HKAA, we shall deploy BIM technology for various systems and ensure that this project will succeed.



安樂工程贏得香港國際機場「多式聯運中轉客運大樓（中轉客運大樓）和海天客運碼頭」項目的一份承判合約，為項目的機械、通風和空調系統、電氣系統和排水系統、及海水抽水系統提供全面的機電安裝服務，項目預計於2021年11月完工。

中轉客運大樓由香港機場管理局（機管局）興建，樓高5層，是現有海天客運碼頭的延伸項目。中轉客運大樓總樓面面積22,000平方米，主要為往來珠三角區和香港機場之間的旅客提供直接轉機設施，在現有跨境渡輪轉乘服務之外，旅客將有多一個選擇。

項目亮點包括一個海水泵房，由6個530千瓦的海水泵組成，全日無間斷每天向機場北商業區供應500,000立方米海水，以滿足北商業區空調系統的冷卻水需求。海水排出前更會先經過篩隔和氯化消毒，以淨化水質。

我們會與總承辦商和機管局緊密合作，在各個系統採用建築信息模擬技術，並確保項目順利完成。

Winning Three Considerate Contractors Site Awards 贏得三項公德地盤獎



Three ATAL contracts have won Merit Awards in the 25th Considerate Contractors Site Award Scheme jointly organised by the Development Bureau and the Construction Industry Council, showing once again our outstanding worksite management.

Our lifts and escalators in various premises of the Government of the HKSAR and Central to Mid-Levels Escalator and Walkway System won the Merit Award of the Considerate

Site Award for Public Works in the Repair, Maintenance, Alteration and Addition works category. Meanwhile, our environmental engineering in Tai Po Water Treatment Works also won the Merit Award for New Works contracts in the Outstanding Environmental Management and Performance Awards category.

The awards are an important recognition of our collective efforts in implementing

our Environmental, Health and Safety management system and promoting the best practices in worksite management with a considerate attitude. We are committed to boosting construction safety and cultivating a safety culture for all ATAL staff and contractors for continual improvement.

今年安樂工程共有三份工程合約，在發展局和建造業議會合辦的第25屆「公德地盤嘉許計劃」中贏得優異獎，再次顯示我們出色的工地管理工作。

我們為香港特別行政區政府多個物業的升降機和自動梯，以及中環至半山自動扶梯系統進行的更新工程，在「工務工程維修、保養、改建及加建工程」類別中均獲得「公德地盤獎」優異獎。同時，我們在大埔濾水廠的環境工程也在「新建工程」類別中獲得「傑出環境管理獎」優異獎。

這些獎項反映了我們群策群力實踐「環保、健康和安全管理」的方向，以及注重地盤公德的態度及推廣良好的工地管理方式。我們承諾會致力提高施工安全水平，並為安樂工程所有員工及承辦商培養安全文化，精益求精。

“Pointing and Calling” Video Wins Safety Award 「指差呼稱」短片獲安全獎

ATAL has won another award related to worksite safety in the Safety Video Competition 2019 jointly organised by the Development Bureau and the Construction Industry Council. The short video, titled “Safe Work Procedure for Lockout-Tagout System”, received the Bronze Award in the Electrical Installation Works category of the competition.

The 2-minute video highlights the importance of the “pointing and calling” system in electrical maintenance works for avoiding human errors by pointing at important indicators and calling out the status in order to enhance workers’ attention and concentration at work. Improper electrical work can cause electric shock resulting in serious accidents, hence proper lockout/tagout practices can safeguard workers from hazardous energy



release and “pointing and calling” can help avoid human errors.

We are delighted that the video has gained recognition and hope it can contribute to the safety of fellow industry workers.

安樂工程在發展局和建造業議會合辦的「2019年安全短片比賽」中，贏得工地安全獎項。我們製作之短片名為「電源掣上鎖掛牌安全工作流程」，在「電力裝置工作」類別比賽中獲頒銅獎。

短片用兩分鐘帶出「指差呼稱」系統在電力維修保養工作中的重要。「指差呼稱」系統透過指出重要指標及呼稱指標狀態，以提高工人的注意和工作集中力，避免人為錯誤。不當的電力工作程序可引致觸電，甚至嚴重意外事故。因此，正確的電源掣上鎖及掛牌流程，有助減少人為錯誤，減低意外的風險。

短片獲得嘉許認同，我們希望它為業界朋友的工作安全作出貢獻。

HKQAA “Outstanding Organisation” Recognition 獲香港品質保證局嘉許為「傑出機構」

ATAL Engineering Group received recognition by the Hong Kong Quality Assurance Agency (HKQAA) as one of the “Outstanding Organisations” at the HKQAA 30th anniversary cocktail reception in October.

In appreciation of the efforts by many organisations over the past 30 years to improve their business operations by adopting different management systems, HKQAA gave recognition trophies to these outstanding organisations at the anniversary ceremony for their remarkable performance. The rating mechanism was based on various criteria including the starting year of the first certificate, the quantity, diversity, overall planning and advocated adoption of certifications.



ATAL was acclaimed as an outstanding organisation for its holistic management systems and outstanding performance over the past few decades.

安樂工程集團於香港品質保證局10月舉辦的三十周年慶祝酒會上，獲嘉許為「傑出機構」之一。

為表揚本港機構三十年來積極透過各種管理系統、在營運方面不斷求進的多個，香港品質管理局特別於酒會上向這些機構頒發紀念座，以嘉許其出色表現。評選機制是根據機構取得認證的年資、數量、多樣性、整體規劃性、先行性等為準則。

安樂工程憑藉其全面管理系統及數十年來的出色表現，而獲評選為傑出機構。

Construction Safety Performance Recognised in Safety Campaign 施工安全表現獲安全活動嘉許

Our exemplary construction safety performance was recognised in the Construction Safety Promotional Campaign 2019 organised by the Occupational Safety and Health Council in collaboration with government departments and industry stakeholders. ATAL's “Term Contract for Mechanical and Electrical Works of Water Supplies Department” won the Bronze Award in the Best Refurbishment and Maintenance Contractor category and the Silver Award in the Best Presentation Competition.

As our contract involves considerable outdoor works at water treatment plants, the team came up with many innovative cooling gadgets such as a Cold Wind Supply Fan to prevent heat strokes among workers. The team also developed new initiatives to minimise the risks of electrical work, work-above-ground and handling of chemicals. A sound safety management system is also in place and high safety standards are maintained via daily talks and training, inspections, weekly joint safety walks and monthly safety meetings.

The team's lively, interesting drama presentation at the Best Presentation Competition depicted the hazards faced by workers, how our precautionary measures and creative safety practices had minimised the risks. The award-winning performance was well received by the audience.

憑我們出色的施工安全表現，集團在職業安全健康局與多個政府部門及業界持份者合辦的「2019年建造業安全推廣活動」中獲得嘉許。安樂工程的水務署機電工程合約，在「最佳職安健維修及保養承建商」類別中獲得銅獎，並在「最佳演繹比賽」中得銀獎。

在濾水廠工程項目中，員工難免要長時間在戶外工作，我們的團隊特別研發了一個創新的降溫裝置，例如冷風凝吹風機，避免工人中暑。團隊還製訂了一系列新措施，以盡量

減低涉及電力工作、高處工作及處理化學品的危害風險。此外我們建立了一套完善的安全管理系統，透過每日早會、培訓、檢查，以及每週聯合安全巡查及每月安全例會，維持高度安全標準。

在「最佳演繹」比賽中，我們團隊以生動有趣的話劇表演，描繪工人面對的危險，以及講解我們各種預防措施與創新的安全作業方式如何減低風險。團隊的出色表現，不單贏得獎項，更獲觀眾讚賞。



Showcasing Patented Technologies at IWA Conference 於國際水協會會議展示專利技術

ATAL participated in the 8th IWA-ASPIRE Conference and Exhibition held at the Hong Kong Convention and Exhibition Centre from 31 October to 2 November. Organised by the International Water Association (IWA), this year's conference focused on the theme of "Smart Solutions for Water Resilience".

At the ATAL booth, we showcased a range of our professional, patented sewage and sludge treatment technologies and solutions, and made live demonstrations of ultrasound treatment technology. We also set up an exhibition area dedicated to Augmented Reality (AR) technology where we showcased a new technology using Building Information Modelling (BIM) to remotely monitor the design and progress of projects. Visitors could also use AR to view our BIM model of the Tai Po Water Treatment Works facilities.

During the gala dinner, ATAL Group Chairman Dr. Otto Poon was invited to deliver a speech on behalf of the organiser, in which he shared the history and development of sewage treatment in Hong Kong over the last 40 years. He also thanked the speakers and delegates from overseas, as the event would not have been so successful without their support, particularly under the current difficult situation in Hong Kong.



安樂工程參加了由10月31日至11月2日在香港會議展覽中心舉行的第8屆國際水協會亞太地區會議及展覽。會議由國際水協會主辦，今年主題為「以智慧擴建穩健的水資源，以科技創造韌性的水環境」。

集團攤位展示了一系列專業污水和污泥處理方案與專利技術，並現場示範超聲波污泥處理技術。此外，我們特設一個擴增實景(AR)技術專區，以展示運用建築信息模擬技術(BIM)來遙距監控項目設計和進度的新科技，訪客還可用AR瀏覽我們為大埔濾水廠設施建造的建築信息模擬技術模型。

在會議晚宴上，安樂工程集團主席潘樂陶博士代表大會發表演講，簡述了過去40年香港污水處理的歷史和發展情況。最後，他特別感謝來自海外的講者及嘉賓，在目前香港困難時刻仍出席支持成功舉辦這個會議。

Group Chairman Appointed Honorary President of Macau Fire Engineering Science and Safety Association 澳門消防安全協會成立 集團主席任名譽會長

ATAL Group Chairman Dr. Otto Poon was appointed Honorary President of the newly established Macau Fire Engineering Science and Fire Safety Association at its inauguration ceremony in Macau in June.

The Association aims to further raise the standards of fire engineering technology and facilities in Macau. Another objective is to promote the liaison and R&D work in fire services among cities in the Guangdong-Hong Kong-Macao Greater Bay Area and

Portuguese-speaking countries, and to strengthen the links among fire services professional bodies and laboratories.

Dr. Poon, with his expertise and rich experience in engineering, business and public service, has been invited by the Association to join and help steer its development.

安樂工程集團主席潘樂陶博士獲澳門新成立的消防工程科學及防火安全協會委任為名譽

會長。該會成立及委任儀式於6月在澳門舉行。

協會成立目的是為了提高澳門的消防工程技術及防火設施水平。協會也將致力推廣粵港澳大灣區的城市及葡語國家在消防服務方面的聯繫及研發工作，並加強消防專業團體及科研實驗室之間的連繫。

潘博士以其在工程、商界和公共服務的專業知識和豐富經驗，獲邀加入協會，匡助帶領協會發展。



Israel Executive Tour to “Start-up Nation” 「初創企業之國」以色列創科考察之旅



Our Group Chairman Dr. Otto Poon and Senior R&D Engineer Pan Lee participated in an Executive Tour to Israel in April, jointly organised by the Hong Kong General Chamber of Commerce and the HKU SPACE Executive Academy.

The tour comprised two parts which were attending a series of lectures at the Hebrew University of Jerusalem and visited several innovative companies and organisations in Jerusalem and Tel Aviv. The visits to successful start-up companies, such as Mobileye which is famous for its autonomous driving technology and OrCam which is best known for its artificial vision devices, were of great interest to the delegates. The group was also invited to the Centre for

Israeli Innovation to know more about the various types of technologies adopted in the country's agriculture and transportation sectors.

集團主席潘樂陶博士和高級研發工程師李彬，於4月參加了由香港總商會和香港大學專業進修學院企業研究院合辦的以色列創科考察團。

考察行程包括在耶路撒冷希伯來大學參加一系列講座及前往耶路撒冷和特拉維夫參觀兩地的創科公司和機構。考察團對當地成功的初創企業極感興趣，例如以研發自動駕駛技術聞名的Mobileye及以人工視覺設備見稱的OrCam。考察團還訪問了以色列创新中心，了解當地農業和運輸部門採用的各種技術。

Trip to Suzhou Industrial Park 參觀蘇州工業園區

Our Group Chairman Dr. Otto Poon and Executive Director Raymond Chan visited the Food Waste and Green Refuse Treatment Plant and the Sewage Treatment Plant in the Suzhou Industrial Park in June as part of a delegation.

The visit gave delegates a deeper understanding of the two plants and toured the Sewage Treatment Plant and discussed the treatment for industrial sewage from enterprises in the Park. Delegates also had an opportunity to explore technical issues with their engineering staff about plant operation and the related technologies. Technical topics on BIM-based modular integrated construction and installation were also discussed.

我們的集團主席潘樂陶博士和執行董事陳海明，於6月參觀了蘇州工業園區的餐廚及綠化垃圾處理廠及污水處理廠。



代表團不但深入了解這兩家廠房的運作，也參觀了負責處理園區內的污水處理廠，探討如何處理園區內企業產生的工業污水。此外，代表團亦有機會與兩廠的工程人員交流討論有關廠房操作及相關的技術問題，雙方也有就以建築信息模擬技術為本的模組化建築和安裝等技術議題進行討論。

HKIE Former Presidents Visit Greater Bay Area 工程師學會前會長 組團出訪大灣區

A high-level delegation of former presidents of the Hong Kong Institution of Engineers comprising ATAL Group Chairman Dr. Otto Poon visited the Greater Bay Area (GBA) in July.

The delegation went to two GBA cities, Foshan and Jiangmen, and visited local enterprises. It also toured the Guangdong-Hong Kong Youth Innovation Entrepreneurship Base, the Wuyi University and the Inno Valley in Jiangmen to better understand the state of technology development in the GBA and explore opportunities for future cooperation and potential projects.



With years of experience and a strong track record of successful building services and environmental engineering projects in many Mainland cities, ATAL is keen to explore new opportunities in GBA cities especially in environmental engineering work.

安樂工程集團主席潘樂陶博士與幾位香港工程師學會前會長組成高層代表團，於7月前往粵港澳大灣區進行考察。

考察團造訪了佛山和江門兩個大灣區城市，並往當地企業考察；此外又參觀了粵港青年創新創業基地、五邑大學及江門的珠西創谷科技園，深入了解大灣區內創科發展的情況，並探索日後合作機會與各種潛在發展項目。

安樂工程多年來在國內多個城市發展，在屋宇裝備及環境工程項目方面都累積了豐富經驗和成功往績，我們未來在大灣區城市會積極尋求新的商機，特別是環境工程項目。

Sharing at HKIE Symposium: Optimise Peak Demand Charge with Machine Learning Algorithms

工程師學會分享研討會：機器學習演算法提升用電效能

Dave Chan, ATAL Director of Information, Communications and Building Technologies, was invited by the Hong Kong Institution of Engineers to speak at its Electrical Division annual seminar in October on the topic of “Dynamic Optimisation of Peak Demand Charge Using Machine Learning Algorithms”. Peak demand management is an important topic as it can reduce the cost of electricity supply.



Dave outlined a new approach, comprising three major stages, to optimise peak demand charges using machine learning algorithms. Stage one is using an advanced data logging method to monitor and analyse the occurrence and causes of peak demand in buildings. The second stage is to develop a machine-learning-based cooling load model, based on historical load data and weather conditions, to predict the required cooling load and formulate chiller start-up sequencing strategies. The third

stage is to adjust the air-side equipment start-up sequencing, which will fully optimise the peak demand charge under various load conditions.

We were delighted to share our experience in big data analytics with fellow engineering professionals.

安樂工程資訊、通訊及屋宇科技總監陳志雄10月應香港工程師學會邀請，在電機分部年

度研討會演講，分享「如何運用機器學習演算法提升樓宇於耗電高峰期效能」。恰當的耗電高峰管理有助減低用電成本，對樓宇管理甚為重要。

陳志雄提出採用嶄新方法，運用機器學習演算法，把樓宇於耗電高峰期的效能提升至最高水平。方案分三個階段進行，第一階段是利用先進的數據記錄方式作整理，並分析樓宇導致耗電高峰的情況和成因。第二階段按樓

宇過往的負荷數據及天氣狀況，研發一套採用機器學習的冷凍負荷模型，預測冷凍負荷需求及製訂啟動空調系統的指令序列策略。第三階段是調校空調系統的送風設備啟動指令序列，讓空調系統在各種負荷情況下，都能全面提升耗電高峰期的效能，達致最佳表現。

我們很高興能與工程界專業人士，分享集團在大數據分析方面的經驗。

Speak at Government Energy Consumption Briefing

政府能源消耗簡介會演說

In June, our Assistant Energy Services Manager Franco Mok spoke at a briefing session titled “Government Energy Consumption and Monitoring 2019” hosted by the Electrical and Mechanical Services Department at the Hong Kong Central Library. Energy saving is a Government priority and our solid experience in using advanced technologies to help many landmark buildings in Hong Kong save energy is highly relevant.



He presented on the topic of “Utilising Big Data to Perform Retro-commissioning at Chiller Plant” and focused on how to use big data from building management systems (BMS) in buildings to optimise the performance of chiller plants in air-conditioning systems. In addition, he outlined the general approach to big data analytics for central chiller plants, and how to tackle common operational issues such

as identifying sensor faults and inefficient chiller plant performance.

Franco's presentation also explained the fundamentals of how to use actual BMS data to develop a chiller plant model, which can be ultimately used for retro-commissioning, real-time chiller plant optimisation and data visualisation.

我們的資訊、通訊及屋宇科技部助理能源服務經理莫錦培，於6月代表安樂工程出席一個由機電工程署主辦的「2019年政府能源消耗及監察」簡介會，擔任講者。節約能源是政府的優先政策，而我們在運用先進技術進行節能方面擁有豐富經驗，曾為本港多個著名建築物節省能源，與大會主題非常脛合。

當天以「應用大數據分析於冷凍機組作重新校驗」為題，重點介紹如何使用從大廈建築物管理系統取得的大數據，以優化空調系統冷凍機組的表現。此外，他也介紹了中央冷凍機組大數據分析的一般做法，以及如何解決常見的操作問題，例如找出傳感器故障和冷凍機組表現效率偏低的情況。

莫錦培還解釋如何運用建築物管理系統的實際數據，去製作冷凍機組模型的基礎知識。模型最終可用於重新校驗，並可實時優化冷凍機組和將數據視像化。

Sharing Big Data Analytics Experience in Retro-commissioning 研討會分享 應用大數據作重新校驗

ATAL's Senior R&D Engineer Pan Lee, specialising in smart and green building services systems, gave a presentation at a seminar in September organised by the Hong Kong Green Building Council (HKGBC). His presentation, titled "Experience in Using Big Data to Conduct Retro-commissioning (RCx)", outlined how ATAL leverages big data analytics to conduct RCx in buildings and enhance their energy performance.

ATAL is known for its edge in big data analytics and the capability to apply data analytics to RCx to optimise the energy saving performance of building services systems. He highlighted that big data analytics allows building owners and management companies to examine data quality, identify unnoticed faults, evaluate energy performance and investigate control stability – which combine and lead to automated control optimisation.



We are grateful to the HKGBC invitation and look forward to contributing to Hong Kong's smart city development through our expertise in new technologies.

我們的高級研發工程師李彬代表安樂工程於9月出席由香港綠色建築議會舉辦的研討會。集團致力發展及研究智能和綠色屋宇裝備系統，當日簡報以「應用大數據進行重新校驗的經驗」為題，概述安樂工程如何運用大數據分析，為建築物進行重新校驗，提高能源效益表現。

安樂工程素以大數據分析技術優勢見稱，擅於運用數據分析以進行重新校驗，從而優化屋宇裝備系統的節能表現。李彬指出，大數據分析可讓大廈業主及管業公司檢視數據質素、找出未發現的故障、評估能源效益表現及研究各種系統操控的穩定性，並能將以上各種功能整合以達致自動化操控，讓各個系統發揮最高效率。

我們感謝綠色建築議會的邀請，並希望能以我們在新科技方面的專業知識，為香港的智慧城市發展作出貢獻。

IoT Hub Enables Monitoring of All Systems on One Platform 物聯網中樞：單一平台可監察全部系統

To capture new opportunities arising from Internet-of-Things (IoT) technology, ATAL is building a holistic "IoT Hub - Smart Building Platform" which will enable clients to monitor all the E&M devices in a building and analyse all related data on one single platform. Our goal is to become the market leader in IoT services and help the Government transform Hong Kong into a world-class smart city.

With a highly scalable architecture, it can collect real-time data from all systems in a building. The platform provides automated fault detection and alarm functions for immediate action. It also generates user-friendly data visualisation of historical statistics to track and predict a building's performance to optimise operational efficiency.

Using mobile apps, the platform is accessible through mobile phones, tablets, desktop computers and other devices, which will help clients

manage their facilities and maintenance activities anywhere, anytime. IoT technology is set to make the monitoring, operation and maintenance of building services systems a truly integrated and smart activity for the benefit of all.

為了把握物聯網技術帶來的商機，安樂工程



現正籌建一個全面的「物聯網中樞—智能樓宇平台」，讓客戶能在個單一綜合平台上監察樓宇內所有機電設施，並分析所有相關數據。我們的目標，是成為物聯網服務的市場領導者，和協助政府把香港打造成世界級的智慧城市。

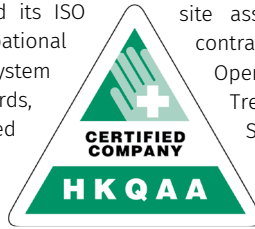
該平台能從樓宇所有系統獲取實時的數據，而其結構也有助於平台的未來拓展。功能方面，平台能自動偵測故障並發出警號，提示客戶馬上進行修復工作。平台更可將各系統的歷史數據視象化，以簡易的表達方式，方便客戶追蹤和預測樓宇系統的表現，務求將樓宇的運作效率調校至最高。

平台會應用流動應用程式，讓客戶透過流動電話、平板電腦、桌面電腦及其他通訊器材進行操作，隨時隨地就樓宇的系統進行調校和維修保養工作。物聯網技術勢將把各種樓宇裝備設施的監察、操作和維修保養活動，變為真正的智慧型綜合功能，為各方都帶來裨益。

Group's ISO 45001 Upgrades to New International Standards 集團之ISO 45001已獲升級至新國際標準

ATAL has successfully migrated its ISO 45001 certification for its Occupational Health and Safety Management System to new international standards, and at the same time renewed its ISO 9001 certification for its Quality Management System and ISO 14001 certification for its Environment Management System. The migration audit and the two renewal audits were conducted by the Hong Kong Quality Assurance Agency.

The audit team was satisfied with both the documentation audit and the physical



site assessments of several sizeable contracts including the Design-Build-Operate contracts of San Wai Sewage Treatment Works Phase 1 and Shek Mun Equinix Data Centre. The auditors identified a few areas for improvement to strengthen the systems, including more participation by and consultation of workers and consideration of risks and opportunities in project implementation.

The successful migration of our ISO 45001 certification to the latest international

standards underscores once again our commitment to continuously improving the Group's health and safety performance via preventing injury and illness and providing a safe and healthy environment for both our employees and workers.

安樂工程已成功將其ISO 45001職業健康與安全管理系統認證升級至最新的國際標準，同時也已分別將其ISO 9001品質管理系統及ISO 14001環境管理系統的認證更新。有關認證升級及更新的審核，均由香港品質保證局進行。

審計小組對集團幾份大型合約的文件審核和實地現場評估都感到滿意，包括新圍污水處理廠第一期和石門Equinix數據中心的「設計、建造及營運」合約。審計員也指出了可作改善之處，以加強系統，例如提高工人的參與和諮詢，和加強考量項目實施的風險與機會。

我們成功把ISO 45001認證升級至最新的國際標準，再次突顯我們對持續改善集團在健康及安全方面表現的承諾，致力為員工及工人提供一個安全健康的環境。



Site Safety and Health Talks 工地安全與健康講座

The safety and health of workers are our top priority. During June and July 2019 we organised 10 toolbox talks on "Heat Stroke Prevention" and "Safety in Electrical Work" in collaboration with The Federation of Hong Kong Electrical and Mechanical Industries Trade Unions to promote knowledge about electrical work safety and prevent heat strokes.

We also visited 10 work sites to promote heat stroke prevention measures, and distributed healthy pack with water bottles, "sweat drink" powder and chill towels to frontline workers and reminded them of the importance of replenishing water and ions and reducing body temperature.

Moreover, two lunch talks were held jointly with the Hong Kong Construction Industry Employees General Union for workers of the San Wai Sewage Treatment Works Phase 1 and Equinix HKE-II Data Centre. Two guest speakers were invited. One was a family member of an industrial accident victim who shared with our frontline workers precautionary measures to prevent the



recurrence of similar accidents. Another from the Pneumoconiosis Compensation Fund Board highlighted various safety and health measures to prevent occupational lung diseases.

工人的安全 and 健康是我們的首要考慮。在今年6月至7月期間，我們與香港機電業工會聯合會合辦了10場關於「預防中暑」和「電氣工作安全」的講座，推廣有關電氣工作安全和預防中暑的知識。

我們又走訪了十個工地，向前線工人推廣預

防中暑的措施，並派發健康包，內有水瓶、健康飲料沖劑及降溫汗巾，提醒工人補充水份和電解質及降低體溫的重要性。

此外，我們與香港建造業總工會合作，為新圍污水處理廠第一期及Equinix HKE-II數據中心的工人舉行了兩次午餐講座。我們邀請了兩位嘉賓講者，一位是工業意外受害者的家屬，她與前線工人分享了相關的預防措施，避免日後再發生同類事故，另一位講者則來自肺塵埃沉着病補償基金委員會，介紹預防職業性肺病的各種安全和衛生措施。

Volunteer Activities for Local School and Mainland Community 義工活動 貢獻本港學校及內地社區



This year, ATAL volunteers worked for the first time with Habitat for Humanity on its "Colourful Campus Project" and "Global Village Programme" to serve Hong Kong and the Mainland respectively.

A pleasant school environment is important to students' learning and growth. About 30 volunteers from ATAL co-organised with Habitat for Humanity the "Colourful Campus Project" for the S.K.H. Kei Lok Primary School in June. Our colleagues, together with their families and friends, formed several teams with the students to paint a total of 26 classroom doors on the day. The newly painted doors are adorned with lovely animal images, giving the school a delightful touch of Nature.

In a separate activity, 18 ATAL volunteers took part in the "Global Village Programme" in the Mainland in October, also organised by Habitat for Humanity. During the three-day stay in Nanxiong, Shaoguan, our colleagues helped re-build the home for a rural family, including mixing cement, and moving and laying the bricks to build the walls. Thanks to their hard work, the family now has a safe and comfortable home.

ATAL is committed to volunteer service and giving back to society. We shall continue to help build the community.

安樂工程今年首次與仁人家園合作，舉辦「繽紛校園計劃」及「地球村計劃」兩個活動，貢獻本地學校及內地社區。

良好的校園環境對學生的學習及成長相當重要，我們約30位義工同事，於6月參與仁人家園的「繽紛校園計劃」活動，到聖公會基樂小學美化校園。同事連同親友與數十名基樂小學學生組成多支小隊，合力粉飾共26道課室大門，繪上各式可愛的動物，把大自然的歡樂氣氛帶進校園。

我們於10月更參加了「地球村計劃」，18位同事到韶關南雄市，一連三日為一農村家庭重建居所。義工隊伍由攪拌水泥、搬磚以至砌建磚牆均親力親為，為受助家庭重建一個安全舒適的家。

安樂集團一向積極參與義工活動，回饋社會，未來會繼續協助建設社區。

Volunteers Visit Shelters of Dogs and Cats 義工關懷庇護所貓狗

To promote awareness of animal welfare among staff, ATAL worked with the Kelly Animals Shelter to organise in November a

volunteers' visit to abandoned dogs and cats at the shelter. Nearly 30 volunteers from ATAL took part. They fed and played with the dogs

and cats and helped clean their homes at the shelter.

Kelly Animals Shelter is committed to providing temporary shelter for abandoned dogs and cats and finding families to adopt them. We fully support the cause and shall organise more volunteer activities on animal care and welfare.

我們與香港關愛動物庇護之家於11月合辦了一個義工探訪日，讓同事能夠更深入了解及認識動物福利。當天接近30位安樂工程義工到底護所探訪被遺棄的貓狗，他們不但餵飼貓狗，更與牠們玩耍，亦為貓舍狗舍打掃。

香港關愛動物庇護之家為被遺棄的貓狗提供臨時居所，並致力為牠們物色領養家庭。我們全力支持該會的工作，並將舉辦更多關懷動物權益與福利的義工活動。



Visiting Xiqu Centre with the Elderly 偕長者參觀戲曲中心



Our volunteers accompanied more than 20 elderly from the Caritas Integrated Home Care Service Centre – Diamond Hill on a visit to the West Kowloon Cultural District Xiqu Centre and the Cantonese Opera Education and Information Centre in September, just prior to the Mid-Autumn Festival. Participants learnt much about Cantonese opera and its culture during the tour, had lunch together and enjoyed a wonderful weekend.

ATAL Group has worked with the Diamond Hill Centre for many years to organise various volunteer activities, and is honoured to receive the "Caritas Outstanding Corporate Volunteers Team Certificate" bronze award in September. We shall continue to promote volunteer services for the elderly and give back to the community.

9月中秋前夕，我們的義工隊陪同20多位來自明愛鑽石山綜合家居照顧服務中心的長

者，一起參觀西九文化區戲曲中心及粵劇教育及資訊中心。我們除了與長者一同深入認識粵劇及粵劇文化，並共晉午餐，歡度愉快的周末。

安樂工程與鑽石山綜合家居照顧服務中心合作多年，曾合辦不少義工活動，我們很榮幸於9月獲頒發「明愛出色企業義工證書」銅獎。我們將繼續努力，推廣長者義工服務，回饋社會。

Champions at Badminton Tournament 羽毛球賽勇奪錦標



The ATAL badminton team achieved outstanding results in the 2019 Badminton Competition – The Life President Martin Fong Cup organised by the Hong Kong Electrical Contractors' Association, winning the Men's Singles champion, the Women's Singles champion, the Mixed Doubles second runner-up and the Women's Doubles second runner-up. Congratulations!

The Group is fully supportive of staff participation in sports events and has organised many sports teams and training

classes over the years. Chief Executive Officer Kevin Cheng was also presented at the competition to show support for the team.

安樂工程羽毛球隊在香港電器工程商會舉辦的2019年「永遠會長方宏浩盃羽毛球賽」中喜獲佳績，囊括男、女子單打冠軍、混合雙打季軍及女子雙打季軍四個獎項，可喜可賀！

集團一向鼓勵員工參與體育活動，多年來經常舉辦運動訓練班，並成立了多個運動隊伍。羽毛球賽當日，集團行政總裁鄭小藝亦親自到場支持，為球隊打氣。

Partners Support Annual Badminton and Basketball Tournaments 年度球賽 夥伴鼎力支持

True to our belief in work-life balance, the Group organises a variety of sports events every year, inviting clients and business partners to compete and enjoy a day of sports and fun.

At the annual ATAL badminton tournament held in June, Executive Director Raymond Chan gave support to contestants while Chief Executive Officer Kevin Cheng participated in the tournament. Senior management of the guest teams were also present, including the Director of Electrical and Mechanical Services Alfred Sit Wing-hang, JP and senior executives from Schneider Electric and Hong Kong and China Gas.

After several rounds of intense competition, CLP Power Hong Kong was the cup champion, CLP Power Hong Kong was the plate champion while ATAL was the shield champion. Hong Kong Electric was the cup first runner-up, the Electrical and Mechanical Services Department was the plate first runner-up and Hong Kong and China Gas was the shield first runner-up.



The ATAL basketball tournament was held in September, which our Deputy Chairman Dr. Kim Mak and Executive Director Victor Law attended to support the athletes. Chief Executive of Building Services Engineering Brian Cheng led the ATAL team and participated in the games in person – and we won the championship! The first runner-up was the Airport Authority, the second runner-up was ARUP and the third runner-up was J. Roger Preston.

安樂工程集團堅守工作與生活平衡的信念，每年舉辦各式體育活動，廣邀客戶和業務夥伴進行比賽，加強聯繫並一同享受運動樂趣。

一年一度的安樂工程羽毛球邀請賽在6月舉行，執行董事陳海明到場為參賽團隊打氣，行政總裁鄭小藝更親身作賽。客隊的高級管理層亦有到場支持，包括機電工程署署長薛永恒太平紳士、施耐德電氣與香港中華煤氣的管理層等。

經過多輪激烈賽事，施耐德電氣勇奪盃賽冠軍，港燈獲亞軍；中電則贏得碟賽冠軍，機電署獲亞軍；安樂工程贏得盾賽冠軍，中華煤氣獲亞軍。

另一方面，安樂工程籃球邀請賽亦於9月舉行。集團副主席麥建華博士和執行董事羅威德到場為團隊打氣，首席屋宇裝備工程總監鄭偉能則親自帶領團隊作賽，更奪冠而歸！機場管理局獲亞軍、季軍及殿軍則分別為奧雅納及滙信工程。



ATAL Excels in CIC Football League 建造業議會足球聯賽勇奪金碟

The Construction Industry Council Football League 2019 kicked off in July! After five matches, the ATAL team made it to the finals and became the champion of the gold plate category. The League matches fall into six categories, with a total of 24 teams

participating this year. The competition aims to promote friendship and interaction in the construction industry.

2019年建造業議會足球聯賽已於7月正式開鑼！經過一連五場比賽，安樂工程足球隊成

功打入金碟組決賽，最後勇奪冠軍。

聯賽分六個組別，今年共有24支公司球隊參加。比賽旨在促進建造業界同業交流，並增進友誼。



Crazy Halloween Fun 十月狂歡哈囉喂

In October, the ARWA Club brought us the "Crazy Halloween" event where staff and their families and friends were invited to a day of fun at Ocean Park. Our colleagues enjoyed it to the full, getting close to the animals at the various park attractions and enjoying the exciting amusement rides. When night fell, our colleague took part in the Park's

annual Halloween Fest. Quite a few visited the haunted houses for ghostly encounters and scares. The evening ended on a high and "terrifying" note, and all looked forward to coming back next year!

今年10月，安樂康體會為同事舉辦「狂歡哈囉喂」活動，邀請同事及親友一同到海洋公

園遊玩一天。當天同事不但到了動物展館親親大自然，亦體驗不同的機動遊戲。

大家在晚上更參與了一年一度的哈囉喂之夜，前往鬼屋探險及挑戰一眾嘩鬼！最後大家都樂而忘返，期望下年再次參與。



Learning the Craft at Leather Workshop 皮革手工班



In August, the ARWA Club organised a leather workshop and invited experienced instructors to show participants how to make by hand a variety of leather items.

Our colleagues enjoyed learning the craft, and made various items such as watch bands, bracelets and identity document holders, all



unique and highly personalised. They enjoyed this kind of workshop which they can make a unique gift for others.

安樂康體會也於8月舉辦皮革工作坊，邀請了經驗豐富的導師教授製作各種皮革品的技巧。

同事不但享受手工製作的樂趣，當晚更親自縫製出極有個人風格、獨一無二的皮革製品，如手錶帶、手鉤和證件套等。他們表示十分喜歡這類工作坊，可藉此為他人製作一份別出心裁的獨特禮物。

Summer Movie Days 夏日電影觀賞

Recreational activities are important for work-life balance and our ARWA Club organises fun events from time to time for staff and their friends and families.

Recent activities included two movie shows at Festival Walk in the summer holiday season. More than 300 ATAL colleagues and their families and friends were invited to enjoy two blockbuster movies, "Spider Man: Far From Home" and "Toy Story 4".

有益身心的康樂活動對平衡工作與生活非常重要，我們的安樂康體會也不時為員工及其親友舉辦多姿多采的活動。

集團在暑假期間於又一城舉辦了兩場電影觀賞，300多名安樂工程的員工及親友在大銀幕下共聚，一同欣賞《蜘蛛俠：決戰千里》和《反斗奇兵4》兩部大熱電影。



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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

