

sphere

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HUTCHISON WHAMPOA GROUP



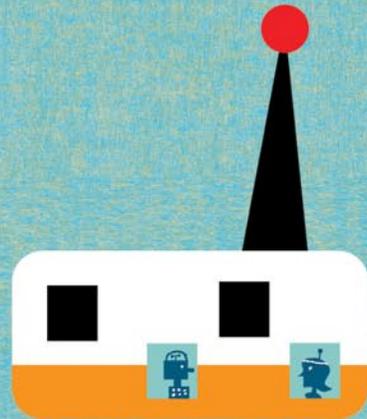
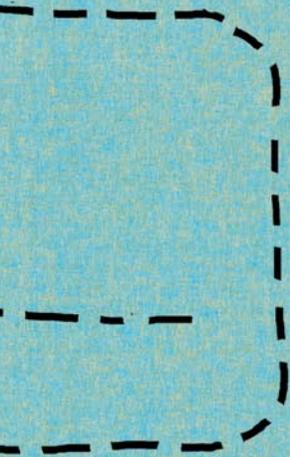
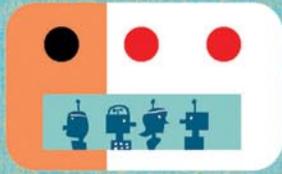
CITIES OF THE FUTURE

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Sphere Magazine #35
June 2014

Cover Illustration
James Yang

The cover displays the visionary creators of HWL standing tall in the midst of their communities, planning with one eye on the future and the other on community needs, represented here by conventional buildings. Engaging and colourful, you see blue ocean strategies and the clear blue sky optimism lending to the success of HWL's 260,000 staff around the world.



In creating the future, there are doers and thinkers. HWL needs them all. This issue looks at how the future-building happens through exploring, training and answering the needs of our partner communities we serve — Hutchison Whampoa style.

W E L C O M E

TAKING CARE OF THE FUTURE

Serving the needs of humanity means both serving them in the present and anticipating future desires. HWL's long history and endurance has been made possible by responding to the aspirations of citizens and communities in 52 countries around the world. This issue of *Sphere* will tell you how.

Technology plays a part. Whether deployed in the office or on the Pacific seabed, technology enables HWL and its customers to achieve an increasingly common desire – to live more in accordance with nature. The roll-out of Telepresence technology reduces our carbon footprint and makes executives more efficient. At the bottom of the sea, Husky Energy's Liwan Gas Project is extracting an energy source that burns cleaner to make our cities more liveable.

This is important, because cities are where the future lies for the vast majority of humanity. Architect Sir Terry Farrell, designer of the Hutchison

Whampoa Property's Lots Road Chelsea Waterfront project, believes this, and so incorporated all the major elements of sustainable urbiculture into this landmark development rising on the London riverside. Our work in cities, from New Zealand waste collection to Hong Kong's nascent smart grid development, answers the modern needs of modern citizens.

Targeted training across the Group plays an important role. We must all train, train, and train again to be ready for any eventuality. Read in this issue about how HWL's training regimens enable us to protect our clients from the impact of unexpected disaster and deliver on opportunities to answer their needs.

With a service mindset and an eye on the future, HWL will continue to play an important role in helping our customers achieve their goals and build happier futures for themselves, their families and their communities. □

Hutchison Whampoa Limited
和記黃埔有限公司



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22/F Hutchison House
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Available on
www.hutchison-whampoa.com

HWL In-house
Editorial Team

Laura Cheung
Jeremy Lau
Hans Leung
Erica Liu
Wendy Luk
Ada Chan

Feedback & Enquiries
SphereE@hwl.com.hk

Editor
Andrew Work

Writers
Calvin Lam
Cassy Chau

Printing
bigboXX.com Limited

Designed and
Produced by
HK Magazine
Media Group Ltd.
Tel: +852-2850 5500

Publisher
Greg Crandall

Creative Team
Pierre Pang
Mike Hung
Cecilia Cheng
Blackie Hui

Illustrations
James Yang

Production Team
Sun Leung
Sharon Cheung
Kelly Cheung

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NEWS BITES

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Property and Hotels
Retail
Telecommunications
Infrastructure
Energy

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MANAGEMENT FEATURE



BE PREPARED

When opportunity or disaster strikes, only the prepared can seize the day - or turn back the tide. Hutchison's firms explain how they sharpen the swords and feed the horses.

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TECHNOLOGY FOCUS

Telepresence: Face to Face

HWL's state-of-the-art Telepresence system is bringing people together, lowering costs and saving the planet. Your office may be next!



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VIEWS

Hong Kong's future energy options pit clean vs coal, certain vs questionable. Mr Canning Fok makes the case for local generation.

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ENTERPRISE FOCUS

Think Big: Liwan Gas Fields

Husky Energy's mega-project in the South China Sea is securing a green energy source for decades to come.





COVER STORY



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PHILANTHROPY FOCUS

Easing the Final Parting

Not all face our common end with the same support. The Li Ka Shing Foundation is bringing dignity and comfort to those suffering in Hong Kong.



CITIES OF THE FUTURE

As humanity urbanises, its demands on those who build, power, and clean our cities are becoming more complex. Discover how HWL is answering the needs of citizens, communities and governments around the world.





(Back, from left) Mr Victor Li, Deputy Chairman of HWL; Mr Siew Wah Fock, Member of the Temasek Advisory Panel; Mr Li Ka-shing, Chairman of HWL; Mr David Heng, Co-Head, Markets Group, Temasek International Pte Ltd.

(Front, from left) Mr Dominic Lai, Group Managing Director, A S Watson Group; Mr Song Hwee Chia, Head of Investment Group, Temasek International Pte Ltd; Mr Canning Fok, Group Managing Director of HWL.

RETAIL

EMBRACING CUSTOMER 360

In March, ASW hosted its biennial Global Suppliers Conference and Awards 2014 in Hong Kong. With the theme Embracing Customer 360, the event attracted over 100 senior executives from the world's largest health and beauty consumer product manufacturers, who discussed how to win the hearts and minds of customers.



CORPORATE

HWL and Temasek partnership

HWL has formed a strategic alliance with Temasek. The Singapore investment company has taken an indirect equity interest of 24.95 per cent in A S Watson Holdings for HKD44 billion. Following the completion of the transaction on 16 April 2014, HWL distributed a special dividend of HKD7 per share to its shareholders. The transaction allows HWL to partially unlock the value of A S Watson (ASW) as well as set an important valuation benchmark for the Group's remaining interests.

ASW has grown internationally in the past two decades with more than 10,500 stores worldwide. Together with its strategic partner Temasek, HWL will further maximise the value and future growth potential of ASW.

HAPPY 50TH ANNIVERSARY!

Year 2014 is a golden year for Superdrug as it celebrates its 50th anniversary. To mark this milestone, customers enjoy limited edition products from various brands across the UK. Special TV ad celebrates the birthday. In-store activities and a national bus tour are underway to break a Guinness World Record by asking Britons to sign a giant birthday card.





PROPERTY

Mayor gives Convoys Wharf a GO!

Mayor of London, Mr Boris Johnson, has approved Hutchison Whampoa Property's redevelopment of the 40-acre Convoys Wharf in Deptford. The redevelopment will create 3,500 new homes on a site that has been derelict for 14 years. A community hub, integrating a new primary school, shops, restaurants and a new riverside jetty park will also be built. The Group is delighted by the news and that the huge world-class development will support over 2,000 new jobs.

PORTS

NEW CRANES

In order to enhance Hong Kong's capability in handling barges from the Pearl River Delta, Hongkong International Terminals put into operation two new barge quay cranes in March. The new cranes are the first of their kind in Southern China and they have greater handling stability compared to traditional jib cranes.



OTHERS

ESDLIFE'S WEDDING UNION ANNUAL PARTY

Voted the number one wedding service portal in Hong Kong, ESDlife hosted a Wedding Union annual party in January to celebrate the second anniversary of the social platform. Wedding Union enables information sharing for those planning the 'big day', and 'alumni' of the site share their experiences and wisdom with newlyweds-to-be.

TELECOMS

3 IRELAND, GOING FREE

From 27 January to 31 July, 3 Ireland will offer free 4G services to their Bill Pay and Prepay customers. With over 60 per cent coverage in the cities of Galway, Limerick and Waterford, and 40 per cent in Dublin and Cork, 3 Ireland is expecting their total population coverage to grow with this free service.



CHAMPION TRI UNROLLS 3030 SHOW ACROSS INDONESIA

Hutchison 3 Indonesia (H3I), known locally as 'Tri', has been awarded "The Champion of WOW Service Excellence Award" from MarkPlus Insight, based on customer satisfaction surveys of mobile internet users of product, user experience and customer care. Continuing their champion ways, they are celebrating across 31 cities with their 3030 Show. This technological spectacular showcases H3I's internet services and innovative ecosystem through high-tech dance art and theatrical comedy.

INFRASTRUCTURE

New member on the list

HK Electric Investments (HKEI) was listed on the Hong Kong Stock Exchange and commenced trading on 29 January 2014. HKEI Chairman, Mr Canning Fok, said he is confident of the company's long-term prospects and believes HKEI is a good stock with a return of more than seven per cent.



PORTS

NEW PARTNERS

On 13 March, Hutchison Ports Holdings Trust entered into strategic partnerships with COSCO Pacific Ltd and China Shipping Terminal Development (Hong Kong) Company Ltd. Each invested 40 per cent and 20 per cent, respectively, of effective equity and loan interests in Asia Container Terminal Holdings Ltd and its group companies, for an aggregate consideration of USD319 million.

GREEN CRANES

Buenos Aires Container Terminal SA (BACTSSA) received two hybrid rubber-tired gantry cranes, making it the first company in South America to purchase hybrid yard equipment. The two new cranes have a lifting capacity of 40.6 tonnes, are environmentally friendly and fuel-efficient, reducing fuel consumption by 60 per cent.



CORPORATE

CARING, AS ALWAYS!

Forty companies of the HWL Group have been selected to receive the Caring Company award, a programme in Hong Kong that recognises a firm's commitment to the community, employees and the environment. HWL has achieved this designation 10 years in a row, and qualifies as a '10 years+ Caring Company'. Congratulations!

HWL's Euro Perpetual bond. The awards go to ...

Hutchison Whampoa's EUR1.75 billion perpetual subordinated capital security was selected as the Best Deal, Hong Kong, and the Best Bond in Asia in *The Asset's* Triple A Awards. HWL has been a leader in these awards since they started.



RETAIL

Congratulations, A S Watson Group!

At the end of 2013, the group's flagship retail brand Watsons opened its 4,000th store. From the first Canton Dispensary in 1828, A S Watson (ASW) has now spread across 25 Asian and European markets. Operating revenue topped USD19 billion in 2013. With three outlets opening every day, the group is currently the fastest-growing health and beauty retailer in Asia and Europe. ASW is expected to hit 13,000 outlets in 2015.



INFRASTRUCTURE

CKI EXPANDS ITS MATERIALS BUSINESS IN CHINA

Cheung Kong Infrastructure (CKI) further extended its portfolio in Mainland China through the full operation of a new flagship cement plant in Yunfu, Guangdong Province. Green Island Cement, a subsidiary of CKI, occupies 700 acres of land and produces 4,500 tonnes of cement per day. CKI is now planning to invest over USD76 million in a second production line to expand its market share.

GRAND SLAM AWARDS

Northumbrian Water, a water company in the UK, won a brace of awards last December at the Utility Week Achievement Awards. Its five awards included: Utility of the Year, Community Initiative of the Year, Environment Award, Marketing Initiative of the Year, and Supply Chain Excellence.

RETAIL

HAPPINESS RELAY

In China, land of its birth, Watsons marked its 25th anniversary with a new Corporate Social Responsibility (CSR) campaign to raise funds for the NGO Sowers Action to provide educational support for impoverished children in China.

Staff from Watsons China visited students at Sowers Primary School in Yunnan and led a series of interactive activities themed "Positive Energy". Plenty of learning supplies and warm clothing were also donated to give students a winter full of warmth and love.



OTHERS

COMPASS VISA WINS SIX AWARDS IN 2013

Compass Visa, a rewards programme associated with consumers' Visa credit cards, won four awards in the 2013 Mobile Excellence Awards, including a Gold medal for Best App – Creative Design, and three Bronze medals for Best mCommerce Solution, Best CRM and Loyalty Programme, and Best Viral Marketing.

Added to the Bronze award for Excellence in Use of Apps presented by *Marketing Magazine's* Marketing Excellence Awards 2013, and Hong Kong's White Collar's Most Favourite Credit Card Brand Award 2013, Compass Visa has achieved no fewer than six awards recognising its outstanding efforts in consumer marketing in Hong Kong in 2013.



ENERGY

Deepwater Triumph

Husky Energy and China National Offshore Oil Corporation Limited have together staged an engineering marvel in the Liwan Gas Project, the first deepwater development in China. This March, the USD6.5 billion project commenced its first production in the South China Sea. Initial natural gas sales are expected to be approximately 250 million cubic feet per day (mmcf/day) gross, increasing to approximately 300 mmcf/day in the second half of 2014. Initial sales of condensates and natural gas liquids from the Liwan 3-1 gas field are expected to be approximately 10,000-14,000 barrels of oil equivalent per day gross. (See p22 for the full story.)



CORPORATE

HWL VOLUNTEER TEAM'S 10TH ANNIVERSARY

A party to celebrate the 10th anniversary of the HWL Volunteer Team in February saw volunteers, group coordinators and NGOs share the joy. Charity organisation Yan Oi Tong was one of the community groups that came to enjoy a celebratory feast, lucky draw and amazing performances.



OTHERS

GAMECO'S PHASE II IN ACTION

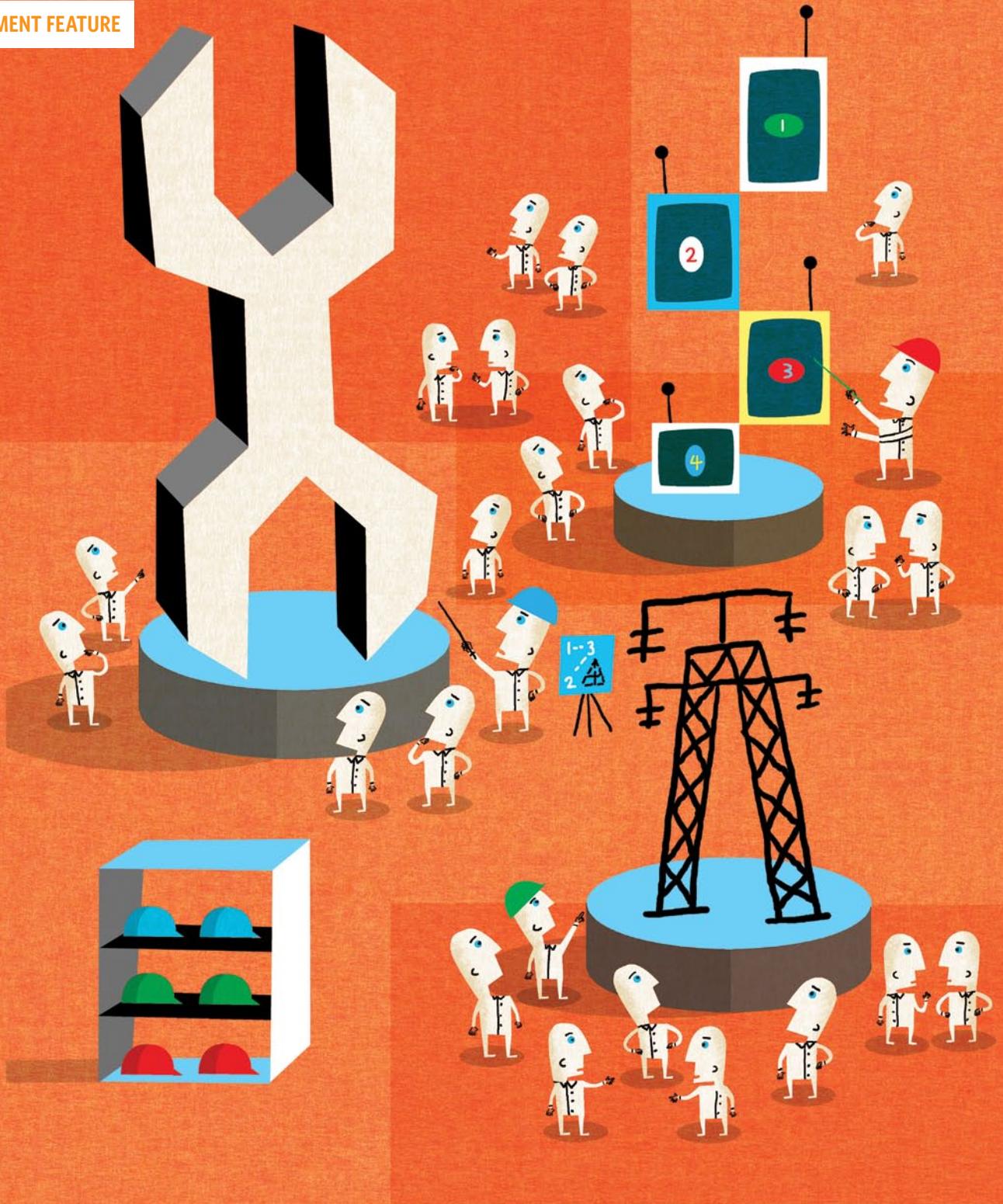
Guangzhou Aircraft Maintenance Engineering Co (GAMECO) opened its Phase II hangar last December. This was just in time to catch the busiest period in the company's 25 years of business – this year's spring holidays in China. The new hangar alone serviced six aircraft over the holidays, and in total, 12 production lines and one A380 wing modification line were housed by GAMECO's two hangars.



PROPERTY

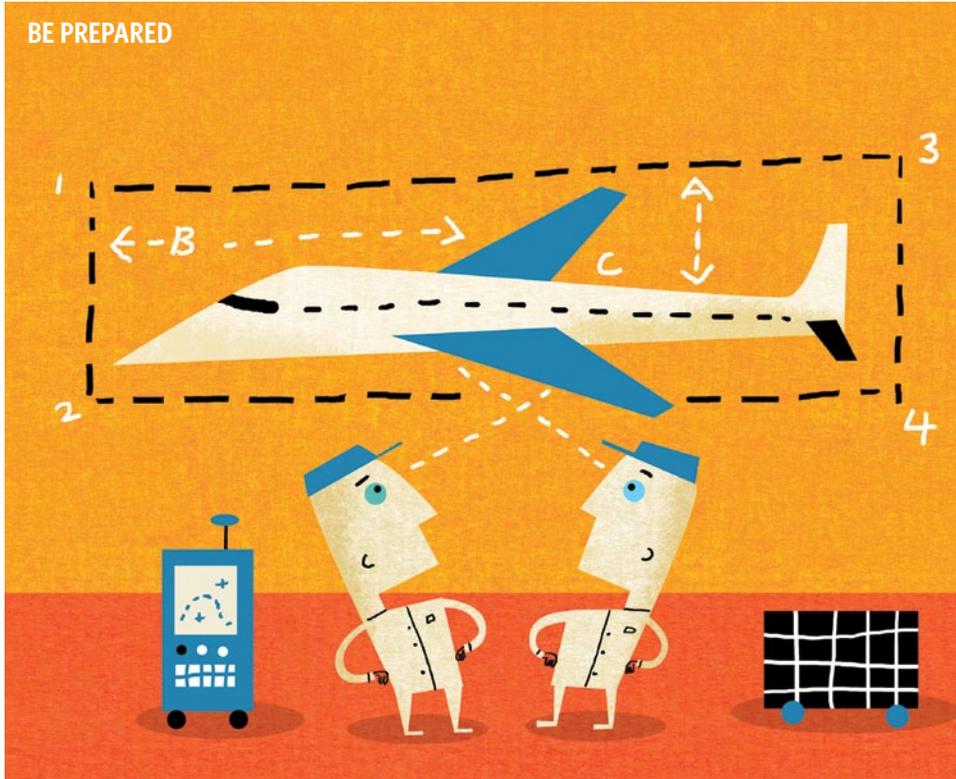
SHANGHAI REGENCY GARDEN BLOOMS!

The grand launch event of Shanghai Regency Garden in late March attracted unprecedented attention and Shanghai's glitterati came out en masse, resulting in record sales. The property project consists of a residential compound of approximately 334,000 square metres, 5,000 square metres of commercial facilities and a kindergarten.



EXCELLENCE

BE PREPARED: HUTCH'S TRAINING REGIMEN



厲兵秣馬

僖公三十三年
左傳

Sharpen the swords,
feed the horses.

The Chronicle of Zhou
(659-627 BC)

Sharpening one's wits, knowledge and experience is vital to be ready when the time for action comes. Hutchison Whampoa takes training very seriously. A successful group must be able to seize opportunity when it presents itself, blunt the effects of disaster and execute top-notch performance every day. This does not happen by accident, but only through relentless training of its employees.

Such training is a group-wide phenomenon. It enables planes to stay in the air where they belong, thousands of containers to criss-cross the globe, valuable oil to be made from raw muck, and staff and customers to be kept safe. From Canada's frozen north to the violent typhoons of The Philippines, Hutchison staff are ready for whatever the world can throw at them.

UNDER PRESSURE

Extreme conditions that HWL team members face are often external. Some are generated internally. Husky Energy Inc's team in Lloydminster, Canada deliberately works with otherworldly extremes that can be deadly if mishandled. Temperatures of up to 427°C and pressures of up to 20,000kPa are used daily, creating an environment as hot as the surface of Venus with more

than twice the atmospheric pressure.

It creates these conditions at the Lloydminster Heavy Oil Upgrader to transform viscous, thick, black, heavy oil and, using that massive heat and pressure, to upgrade it to the clear, free-flowing oil and diesel that the world runs on. Converting the heavy oil demands the highest standards of equipment, safety, knowledge, training and vigilance.

Control room operators at Husky Energy's Upgrader are like pilots who spend hours in flight simulators before taking the controls of real aircraft. Before assuming responsibility for piloting the controls of the Upgrader, Husky Energy's operators spend hours training on all aspects of the facility on state-of-the-art simulators.

Husky Energy has been using simulators since the Upgrader was constructed in 1992 and, like the Upgrader itself, the simulator system has steadily improved. The current simulators give operators and trainees a realistic picture of the Upgrader controls. Every possible scenario and emergency that can happen in the facility can be programmed into the simulations. While dangerous situations may happen once, or even never, over the lifetime of the Upgrader, simulators ensure operators are ready for any eventuality. Husky Energy works with the simulator software

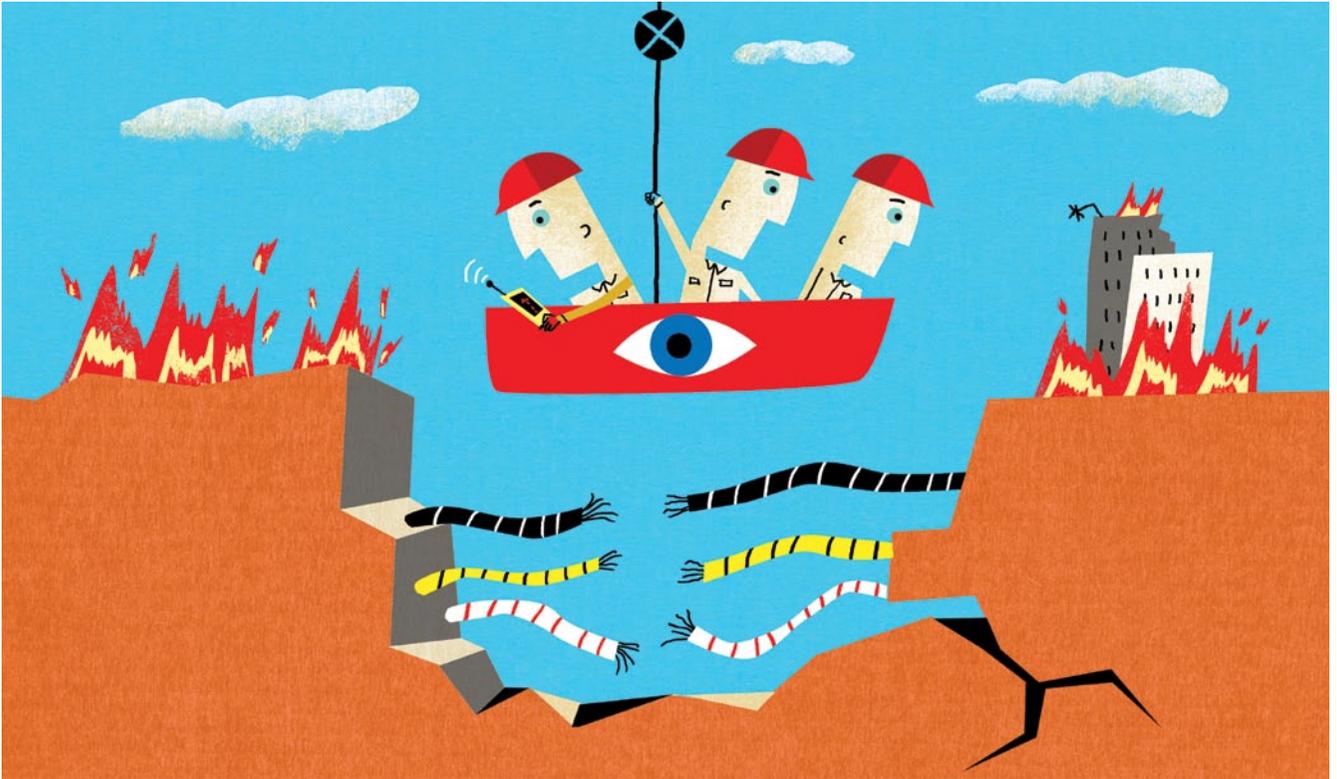
developers to ensure the simulator exactly replicates the Upgrader's systems.

Experienced operators and management regularly use the simulators for emergency response training exercises. Mr Miles Berry, Operations Superintendent at the Upgrader, oversees the training and retraining of operators. A 34-year Husky veteran, Miles knows what it takes to keep the facility producing efficiently and safely.

"Training new control room operators to use the simulators ensures new operators are thoroughly and consistently trained. On the simulator, operators will face every possible shutdown, start-up, and upset condition that could occur in the Upgrader before they ever take control of the plant," Miles said.

Sometimes this means moving quickly and efficiently through planned maintenance. "When we have a turnaround or scheduled maintenance that can involve shutting down major areas or even the entire plant, we can practise every aspect on the simulators before we go into the actual project," according to Miles.

Sometimes it means averting disaster. "Recently, a newly trained operator had a compressor shutdown show up on his panel. From his training, he knew exactly what to do and ran through the correct



procedure for taking the compressor offline and rerouting the oil flow.”

The Upgrader’s simulation room can train up to nine new operators a year, important in an industry where operators are in high demand. Husky Energy recently added a second, adjacent simulator room at the Upgrader, so both training and retraining can take place at the same time. Before simulation training, operators were trained by observing co-workers. “Training a new control room operator using conventional training methods could take up to nine months. It also limited the trainee operator’s exposure to both planned and unplanned events,” Miles said. Simulators mean more, better trained operators, faster.

3-11: EARTH AND SEA STRIKE

The Lloydminster Upgrader generates its own extremes to get the job done. Other Hutchison units are assaulted by Mother Nature at unexpected times. The very earth shakes, the seas rise and Nature cannot be denied.

The 3-11 earthquake in Japan rocked the world in 2011, leaving shock and grief in its wake. The earthquake disrupted four major systems which relied on submarine cables connecting Asia via Japan to the United States, South Korea and China. At a time when it needed communications the

most, Japan’s connectivity to the world was seriously impaired.

Within four hours, the Hutchison Global Communications Limited (HGC) cable service was fully restored. The swift recovery was delivered in the wake of the worst earthquake in Japanese history. Speaking to *Sphere*, Mr Andrew Kwok, President of International and Carrier Business, recalls that the earthquake struck at around noon. It was not until dusk that HGC received the full cable failure notifications. Preparation work, however, had been in full swing before the notifications came in.

Having to restore full service in just a few hours meant that prior training was key to the HGC team’s effectiveness. One way to meet a crisis is to meet it prepared, and HGC had plans in place for different cable failure scenarios. When a certain cable fails, staff are trained to react by making use of the redundant capacity of other cable systems to take up the traffic of the failed cable. However, multiple cable failures are much more complex than a single cable breakdown. Most often, HGC can only prioritise the services for restoration and outline the redundant resources for remedy beforehand. So, as soon as the earthquake ripped across the Pacific floor, HGC moved immediately to deploy its hard-won expertise to devise a

handful of contingency plans for different cable failure scenarios and the ensuing breakdowns they were anticipating.

On top of contingency planning, the quick response to the emergency and the short recovery owe much to HGC’s protocol of combining regular maintenance with practice drills which Andrew believes “prepares our engineers and facilitates recovery efforts among different teams”. These procedures were developed a few years ago and are practised every one to two months.

Disaster control is not limited to natural phenomena - cataclysm can also be caused by humans. During riots in Thailand, HGC asked Thai affiliates to set up cameras to oversee the surrounding environments of cable sites. This would allow both the Thai and Hong Kong staff to react immediately to any uprisings that might damage property and disrupt service.

In the world of business where prior planning is key, HGC has been successful not only in seizing opportunities, but also by being ready to avoid complete disaster when catastrophe strikes.

NATURAL DISASTERS, MAN-MADE SOLUTIONS

Not to be outdone, The Philippines may be one of the most regularly benighted places



on earth. Lying on a major fault line prone to earthquakes, they also have a front-row seat to every typhoon coming out of the deep Pacific.

Recent experience has provided no respite. The Philippines have been wrecked by severe natural calamities of late. The Manila flooding last summer, Typhoon Haiyan and a massive earthquake all happened last year. Controller of Internal Audit and Loss Prevention for Watsons in the Philippines, Ms Myracris Cordova, has seen a higher rate of natural disasters hitting the country in recent years, and the company reacted by establishing a programme of training early last year.

The training is new, developed by the company itself and based on their own experience of handling crises. They have had ample opportunity to put this training to use. "The impact of Haiyan on Watsons was very, very small," says Myracris and she credits this to their training. Haiyan inflicted approximately USD1.5 billion of financial loss on the nation, but only minimal damage to Watsons.

High-level managers and store supervisors attend a training workshop once a year

on crisis management policy, evacuation policy and more. Store supervisors brief their respective staff in stores about what they should do to prepare for an oncoming crisis. A bulletin board in every store is updated twice a month to provide the frontline staff with the latest details concerning emergency contacts and evacuation points. Weather alerts and trends are also on the board. With most of Watsons' stores located in malls, Myracris explains that drills are held by the malls in March and November every year.

Prior to Haiyan's savaging of The Philippines, Watsons set up a Crisis Management Committee and held conference calls with each controller who headed a response team across the nation. The priority was the safety of the employees and they were told to stay at home if commuting to work was too dangerous. Valuable goods and safes were relocated to higher shelves. A well-defined system was put in place for the ease of making insurance claims. And as it turned out, loss of inventory was reduced and recovery was speedy. For instance, the two Watsons stores submerged in the Manila flooding last August were back in operation within one month.

These procedures didn't arise from serendipitous epiphany. They were derived from hard-earned lessons that drove change. Myracris's team needed to up their game after the 2009 Manila flooding, when training procedures had yet to be designed. Lost and damaged product accounting, inventory control for insurance purposes and even employee contact procedures were implemented to instil confidence and get to the level of disaster readiness the team now enjoys.

A radical overhaul in procedures, well-established training programmes, and diligence in repetitive drilling mean the teams now know what to do in the event of almost any disaster. Having learned from the past, they are well prepared for the future.

HPH'S 27,000 DAILY REASONS TO TRAIN

Hutchison Port Holdings Limited (HPH) plays a key role in the continuing development of 52 ports around the world and Hong Kong is among the busiest. In Hong Kong, Hongkong International Terminals Limited (HIT) has a staggering daily average of 27,000 container movements. To maintain order over this



24/7 dance of ships, containers, cranes and trucks, continuous training is needed to ensure that everyone knows their steps.

Within the engineering department of HIT, more than 20 per cent of the staff have worked in the port industry for less than 18 months. "We have an imminent need to train more engineers and technicians to deal with regular repair and maintenance work as well as new port equipment projects," according to Mr Eric Su, General Manager of HIT's Engineering Department. The department regularly runs its PEA – the Port Engineering Academy. "It is a one-year in-house training programme aiming at accelerating the learning process of the new engineers and technicians," Mr Su explained.

The training programme was designed for all new technicians and engineers with less than two years experience in the ports industry. Led by one of the managers in the engineering department, all PEA trainees have to attend a three-day classroom training within the first two months of the programme. The main purpose is to teach trainees the basic principles of the equipment used in HIT terminals and the

general safety precaution measures.

After that, the trainees are given classroom lectures and/or on-site tutorials once a week from month 3 to month 12, with a final examination at the end of the programme.

FULLY EQUIPPED

The introduction of new technology is a constant in this heavily competitive industry. Yard cranes are a vital part of the machinery mix. At HIT, two types of yard cranes can be commonly found: Rail Mounted Gantry Cranes (RMGC), powered by electricity, and Rubber Tyred Gantry Cranes (RTGC). RMGCs are giant, highly automated container handling cranes with auto-stacking capability. Recently, HIT has introduced crane remote control technology, allowing the crane operators to work in an indoor environment and control yard cranes from their desk to improve working conditions as well as safety and efficiency levels.

To gain authorisation to control the RMGCs is a rigorous process. First, an operator needs to attend an 18-day practical and theoretical training course on RTGC. An RTGC licence will be issued after the operator has passed a technical assessment. This is followed by two weeks of supervised on-the-job training, where an experienced operator oversees and monitors the new operator's performance. The operator must have a minimum of six months' experience operating an RTGC and a good performance record before he or she can apply to operate an RMGC. A further eight-day training course is required for the candidate, followed by an examination in order to obtain an RMGC licence. Operators are expected to work in the remote control centre and they need a good performance record and to undergo in-depth training covering the workflow and job allocation of the equipment.

Training is designed to ensure safety, efficiency and speed at the ports, keeping workers safe and HPH competitive. In China, making sure passengers arrive first – alive – and second – on time – falls to the continuously training team at GAMECO.

SECURING CHINA'S FRIENDLY SKIES

The National Safety Council in the United States calculates the odds of dying in a car accident to be one in 98 in a lifetime, compared to one in 7,178 for an aviation accident. You may argue about the figures but the fact is that airplane accidents seldom happen and meticulous flight maintenance is the reason why. Speaking to *Sphere*, Mr Sam Cai, Manager of the Training Centre in Guangzhou Aircraft Maintenance Engineering Co Ltd (GAMECO), explained that their training programmes are rigorously designed and reviewed.

GAMECO works closely with China Southern Airlines to ensure training is constantly up to date. When there are purchases of new airplane models, GAMECO sends their maintenance professionals to attend training courses provided by the airplane manufacturers. Bringing the maintenance training experience back home, maintenance professionals open in-house training courses in GAMECO. However, opening new 'type training' courses on new models needs approval from the Civil Aviation Administration of China (CAAC). The authority evaluates the type training courses against the international standard developed by the Air Transport Association. Once a type training course is approved by CAAC, other aviation organisations in China can adopt the training. This establishes a uniform standard of maintenance throughout the country. Other training courses which require CAAC's approval are component repair, basic maintenance and fundamental skills. GAMECO provides these courses in-house and their staff can only sign off or perform maintenance if they survive these CAAC-approved training courses.

In addition to the CAAC-approved courses, maintenance staff from GAMECO are required to attend other professional training courses within the GAMECO quality system. There are 50 to 70 courses available for staff to take every month in order to handle higher level maintenance tasks. For example, maintenance staff in GAMECO have attended at least 200 hours of lessons and 10-day hands-on practical training dedicated to the new Boeing Dreamliner, followed by various types of engine related training. GAMECO staff also receive model type information updates in recurring training and retraining activities. On top of the training, representatives from airplane manufacturers attend at least two meetings a day with GAMECO to discuss the challenges encountered in daily maintenance operations and the latest updates on aviation technology.

GAMECO understands that even a tiny problem discovered in a flight inspection can have huge repercussions or even result in a fatal accident, and that these outcomes have to be avoided at all costs. Rigorous training ensures that the worst eventualities won't happen on their watch.

Sharpening the sword, from the ancient Chinese idiom, doesn't just refer to your equipment. It means sharpening your mind. Across the Group, training, learning and reviewing have made dramatic leaps in operations possible, improving efficiency and even saving lives. □

COMMUNICATIONS

TELEPRESENCE: FACE TO FACE

HWL has rolled out its state-of-the-art Telepresence system around the world. Facilities are booked solid by executives across the globe. Your office may be next!

So real you could reach out and shake hands. Some people even try.

Traditional video-conferencing has not yet surmounted its core challenge – making it feel real. Fans of free online services will be familiar with blurry, jerky videos with terrible sound quality. Conversations seem unreal and feel unsatisfactory. They don't deliver the essential and ineffable – the real human connection, the main driver behind key face-to-face meetings. The 'Star Trek' experience – the Holy Grail of video-conferencing – seemed to be far off science fiction. Until now.

Mr David Nicholls, Head of Group Information Systems, explained the genesis behind the project. "The idea for step changing our existing video-conferencing facilities into a true, lifelike experience came straight from our Group Managing Director [Mr Canning Fok] who was extremely clear about the levels of quality that were expected and the priority locations in the first wave."

Strategic global offices of the Hutchison Whampoa Group now house a cutting-edge video-conference suite called 'Telepresence'. Milan, Calgary, Amsterdam, London and Hong Kong all host the wildly popular new technology and service. The reality of the experience is allowing managers to replace time-consuming international travel with a Telepresence session. Executives save time and working effort by keeping their feet on

Executives save time and working effort by keeping their feet on the ground and have the experience that a genuine face-to-face meeting delivers.

the ground and have the experience that a genuine face-to-face meeting delivers.

Of course, it doesn't hurt that a stroll to the custom-designed Telepresence suites is easy on the travel budget and our environmental footprint compared to international jet travel. It is estimated that 516 flights have been saved since the new Telepresence system was launched in 2012.

HWL, Hutchison Global Communications (HGC) and Cisco Systems have teamed up to make this service possible, and HWL IT professionals enable the hosting of Cisco System's teleconference and telesuite technology. An online booking portal launched by HGC is dedicated to providing the concierge services for this new technology. In Hong Kong, "the systems are always fully booked after 2pm (HK time)," says Mr Michael Ho, Senior Manager of the Group Information Services Department, reflecting

the demand for ultra-high-quality communications between Hong Kong and European colleagues.

DETAIL, DETAIL, DETAIL

This new technology shows all participants life-size on the screen and eliminates delay in audio and video that can lead to an unreal experience. To provide lively, high-quality video-conferences, the Telepresence rooms have been renovated to meet standards set by Cisco.

"The distances between the screens and the conference desks are carefully adjusted. The rooms have integrated lighting which eliminates shadows to produce high-quality, natural-looking video," said Michael.

All Telepresence conference rooms have soundproofed, identical walls, and some even use the same chairs. This was a project of some complexity. David explains, "We quickly realised that this was not solely a technology project as it involved major building works incorporating important details like room furnishing, acoustics, lighting and room administration. The first thing we did was bring together a cross-functional team across the key regions comprising experts from the Group HR, property management and secretarial support to work alongside our technical partners and the internal IT team."

This was not only a challenge for the IT team, but also for HGC, which offers the concierge service for the Group.



516

flights saved

4,275t

CO₂ reduction

Ms Jennifer Tan, HGC's Managing Director, told *Sphere*, "At first glance, people may simply think that the concierge service acts just like a receptionist, helping callers put through video calls. But it is more than that. Many video-conferences have to be arranged at short notice and scheduling is quite challenging work."

The cross-functional team completed the first phase, from room refurbishment to hardware installations for Hong Kong and London, in only three months. For other companies, it normally takes six to nine months. "Unlike any other project, quality is literally in your face; it either works amazingly or you are hugely disappointed. Of course we were delighted to come online and deliver a truly amazing experience. I am told that we did all this in record time, so everyone involved should feel extremely proud," David added.

GOOD BUSINESS, GREEN PLANET

In the old days, executives spent days traveling globally to take part in meetings and conferences. Even though teleconferencing existed for some years, quality varied. The high-quality Telepresence system has become a vital communication tool for executives in the HWL Group. Telepresence saves travel time and cost, and maintains the benefits of face-to-face meetings. David said the new technology is especially important for those business cases where the distances are long, interactions are frequent and many people are involved.

Earlier generation systems also contribute. Ms Ann-Christin Larsson, Executive Assistant to 3 Sweden's CEO, has benefited from the convenience brought by the systems. "Using the HWL concierge service to schedule multiple partner meetings is an easy task due to the booking portal. For meetings between 3 Sweden and 3 Denmark we have a pre-set, making setting up a meeting as simple as pressing three buttons," she said.

Mr Nicholas Högberg, CEO of 3 Sweden, says the system not only saves time and money, but also elevates the efficiency of its business. "With our Telepresence room, we have increased our productivity. It also gives us the opportunity to schedule board meetings at short notice without having to first check the availability of flights."

He stressed that Telepresence promotes one of the HWL Group's objectives - to be environmentally friendly. "Our customers are evaluating us more and more on our environmental initiatives." He is a huge advocate of the carbon footprint reduction benefits. The estimated carbon emission reduction through Telepresence for the Group in 2013 was 4,275 tonnes.

COMING SOON, TO A THEATRE NEAR YOU

"We hope the system will spread among the business units, especially our retail business in Asia Pacific, whose buyers and suppliers are scattered around Europe," said Michael Ho. In the near future, Michael expects there will be one or two more locations installing the immersive Telepresence systems. He

welcomes enquiries from HWL business units considering how the technology can benefit them. The upfront cost is more than made up by the efficiency and environmental gains. Nicholas says it best - "Using Telepresence simply makes sense." □

HGC, AT YOUR SERVICE

Providing the new concierge service to executives around the globe is no easy task, but HGC has a handle on it after one year of operation. Jennifer finds the service has benefited the Group as a whole. "We keep running costs down. Instead of paying a third party, we provide it ourselves. I believe the payback period of this will be short, and it will continue to benefit the Group in terms of travel time and cost saving."

Having gained experience within its own family, HGC plans to offer the concierge service to outside parties. "We started with the HWL Group, and this was a very good learning experience. The Group has operations in different countries, sophisticated demand and high expectations of this service. Being able to serve the Group well means that we are well-prepared and equipped to extend our services to other corporate customers."

Some dream of a world where 70 per cent of the global population live in cities. Hutchison Whampoa and its companies are building what Sir Terry Farrell calls the urbiculture.

Sir Terry has articulated the challenge of the 21st century as mankind moves rapidly to put more than 70 per cent of humanity into urban environments. Just building roads, ditches and buildings is not enough anymore. Citizens, communities and governments now demand heritage preservation, unlimited connectivity, sustainability and integrated living.

Companies serving modern cities are expected to adopt sustainable building practices, promote 'green space' and clean air quality, preserve history, produce renewable energy, implement energy-efficient public transportation and develop well-organised mixed-use neighbourhoods.

Whether supplying electricity, waste removal services or housing, companies must be responsive to the needs of their 'clients'. Local governments and citizens alike expect more and HWL is meeting the aspirations of communities around the world.

A CENTURY'S WAIT FOR THE FUTURE CITY

The broader the project, the more demands are made. The Chelsea Waterfront is London's biggest waterfront development in over 100 years. Its historic buildings, central location and huge scale mean the Hutchison Whampoa Properties Group (HWPG) team has to answer a broad range of community needs to make the project happen.

The eight-acre site of the iconic former Lots Road Power Station will, when complete, deliver 706 new homes in 10 buildings with a master plan designed by world renowned architect Sir Terry Farrell.

The site is challenging and many physical and technical constraints needed to be addressed in the master plan. Heritage conservation, requirements for affordable housing, lifetime homes, local infrastructure improvements and community involvement were all taken into consideration.

THE FUTURE THROUGH THE PAST

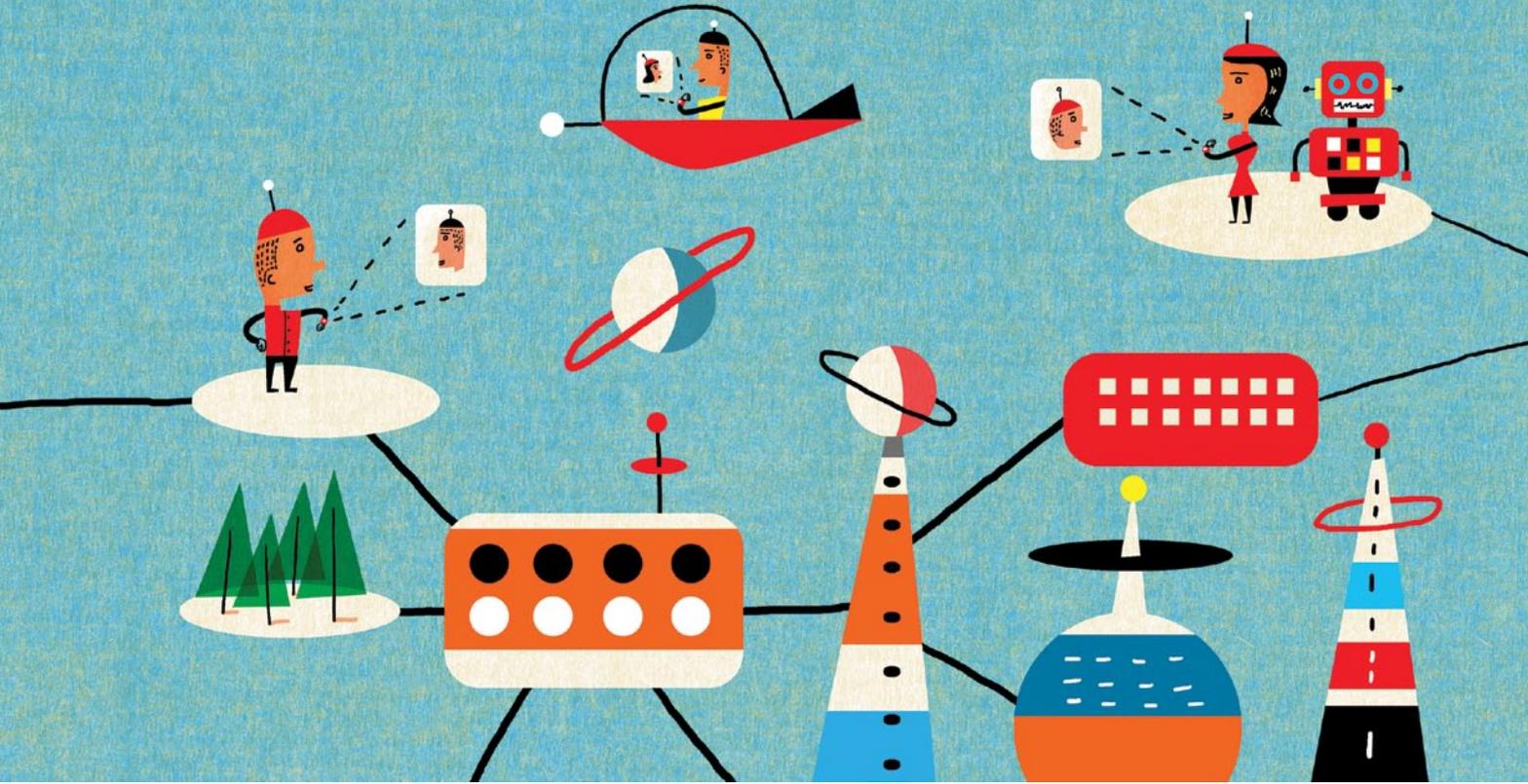
Ironically, heritage preservation is an increasingly common demand of modern communities. This iconic location, home to one of Britain's first steel frame structures and the longest serving power station's when it was decommissioned in 2000, contains potent symbols of Britain's industrial past. The Power Station's facades and chimneys must be retained, as mandated by English Heritage, as part of the regeneration of the site. They will be framed by two glass towers of 37- and 25-storeys high designed by Sir Terry. Hong Kong natives and visitors know his work from 'The Peak', one of the city's most popular attractions. He also designed the M16 headquarters, famously blown up in the James Bond film *Skyfall*.

Sir Terry and HWPG were also sensitive to requests for affordable housing, to create healthy, socially balanced communities. HWPG stepped up and The Lots Road Chelsea Waterfront project will include 275 affordable homes among its 706 residences.

LIFETIME HOMES

New government requirements are part of the construction process for any property developer. Mr Gilbert Gehrman, Chief Project Manager of Hutchison Whampoa Properties (Europe) Limited, notes, "regulations have changed enormously in the past 15 years, from building regulations to environmental standards and community involvement."

Regulatory compliance presented an opportunity for HWPG to improve the quality of accommodation through the 'Lifetime Homes' design requirements to provide accessible and adaptable homes for disabled and elderly people. The Lifetime Homes standard is a set of 16 design criteria that provides a model for building accessible and adaptable homes for lifetime use. Examples include entrance-level living space, making homes more easily accessible to the mobility impaired and the elderly, with the potential to be fitted with electric hoists and lifts. These measures will enable more disabled and elderly people to live in high-quality environments best suited to their needs.



GOING THE EXTRA WATERFRONT MILE

Another government requirement illustrated by Gilbert is 'the Section 106 agreement'. Originally articulated in the UK's Town and Country Planning Act of 1990, Section 106 agreements are legal requirements for property developers to provide public infrastructure improvements and community involvement directly linked to new developments. Gilbert explains that this can take numerous forms such as "providing funding to upgrade the nearby Chelsea Harbour pier, providing a new bus service or contributing towards a new train station".

Breathing new life into an area of Chelsea that has not been accessible for decades, the scheme will open up 600 metres of Thames waterfront to the community, creating a recreational walkway in an area inaccessible to the public for over 100 years.

Three bridges and two major public piazzas are incorporated into the comprehensive master plan that includes retail, residential and work spaces, leading to a sustainable, community friendly urbiculture.

HWPG's sensitivity to community needs in urban planning in London was recognised with the recent decision to give a green light to the building of another

3,500 London homes at Convoys Wharf, Lewisham and offices, stores, a hotel and restaurants in Deptford.

The demands of modern communities in the age of global interconnection have become remarkably similar as design elements in one area become popular in another. Much of the world shares the values of modern London and makes the same demands.

THE WORLD OF NEUROMANCER

London's modern aspirations include preserving its history. Hong Kong is rushing to embrace a future once only imagined in science fiction. William Gibson singlehandedly launched the cyberpunk literary genre with his seminal novel *Neuromancer*. The novel coined the term 'cyberspace' and described a world where people were connected to a global information system 24/7. Gibson's 1984 novel's world predated the Internet, but doesn't sound too far from our own connected world now.

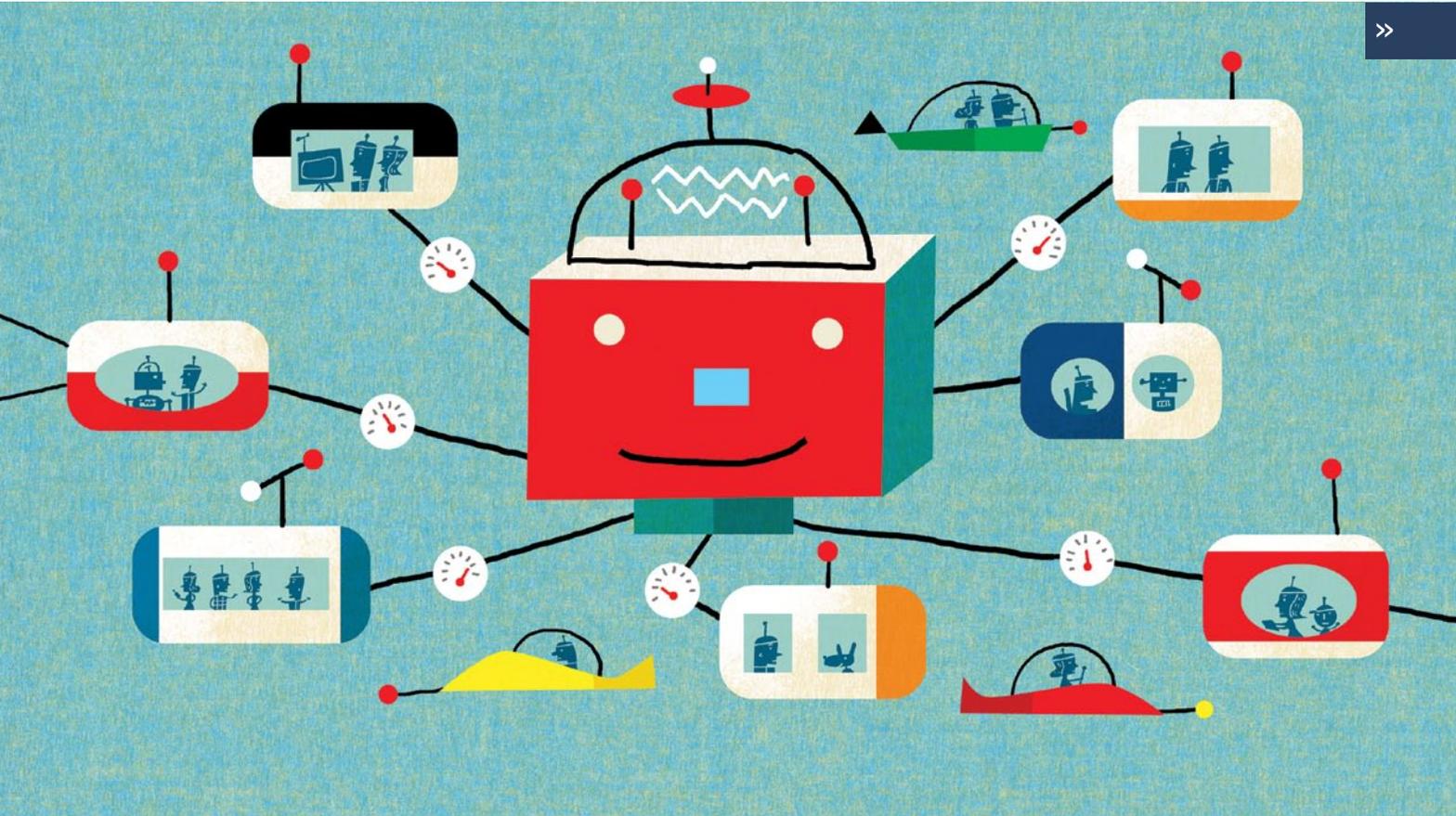
Hutchison Global Communications (HGC) is bringing ubiquitous net connection to a world considerably brighter than that envisaged by Gibson. In late 2013, HGC announced plans to increase the number of Wi-Fi hotspots in Hong Kong to almost

16,000 by the end of 2014. This will dramatically expand Wi-Fi connections and change people's relationship with technology.

The speed will make a difference. Ms Jennifer Tan, Managing Director of HGC, explained, "Users can enjoy higher speed Internet access such as 100Mbps to 1Gbps. Users enjoy bandwidth-demanding applications such as watching videos and TV programmes with a better user experience."

The genesis of the decision to increase the distribution of hotspots comes from the rapid proliferation of tablets and smartphones. However, increasing loads on mobile networks mean users are, by necessity, moving to Wi-Fi. Pyramid Research, a telecommunications research specialist, believes 22 per cent of mobile data traffic will be offloaded to fixed or Wi-Fi networks by 2016.

Explaining the expansion of Wi-Fi hotspots, Jennifer said, "Wi-Fi service complements mobile service as users subscribing to mobile data plans can offload mobile data from a mobile network to a Wi-Fi network. This eases the traffic burden of network operators, particularly in congested and highly populated areas, enhancing the user



experience on mobile service.” HGC will support the development of these new hotspots with an extended optical-fibre network – supported by 1G broadband backhaul – to more shopping arcades and public areas.

Other cities and countries are following a similar strategy including Singapore, Seoul, Tokyo, the UK and the United States where telecom operators and governments are expanding their Wi-Fi coverage. Hong Kong will not be left behind. The Hong Kong government announced they would double the number of free hotspots from 10,000 to 20,000.

Jennifer notes, “While the government is increasing Wi-Fi hotspots in public areas such as government buildings, hospitals, parks and community centres, HGC is focusing on commercial districts and areas with heavy traffic such as shopping malls, streets and clubhouses in private residential areas. Together, we are enhancing the overall Wi-Fi coverage in Hong Kong.”

Interconnectivity is incredibly important for any city (and country) as it enables citizens to better interact with their world. HGC’s increased Wi-Fi coverage will allow Hong Kong to take the next step

into the future by ensuring all customers have the fastest possible connection at their fingertips.

SMART GRID, SMART CITY

Hong Kong connectivity isn’t just for people however. Hongkong Electric Co Ltd (HK Electric) is finding a path to a future where intelligent electrical devices can talk to one another and the energy provider through an ‘energy Internet’ — the Smart Grid.

Since the first alternating current power grid was installed in 1886 in Great Barrington, Massachusetts, the pursuit of a more efficient grid has never ceased. For much of history, reliability was the main aim of improving grid efficiency. However, modern consumers demand more: their energy must not only be reliable, but ideally clean and cheap as well. Enter the Smart Grid.

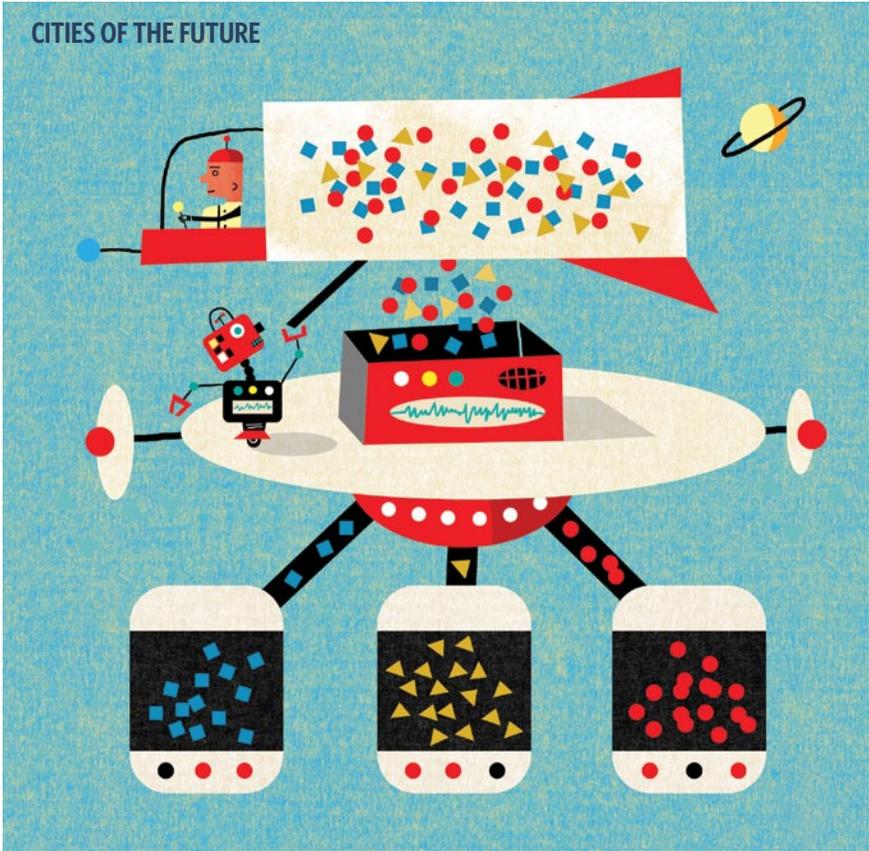
A smart grid can use data about the flow of power through a system to reroute, store and direct energy where needed. This benefits the system by reducing waste and directing energy where it is needed, when it is needed.

The term is new — the concept isn’t. Twenty-year veteran of HK Electric, Mr Alex Lee, Senior Meter Engineer, explained that efforts to improve the grid have

resulted in waves of ‘smartening’. In the 1970s and 1980s, ‘smartening’ was used to improve the reliability of Hong Kong’s power supply. This reliability is vital in a city that has more buildings over 100 metres tall than the next four ‘tall’ cities (New York, Tokyo, Dubai and Shanghai) combined. When over 50 per cent of the population lives above the 15th floor, the reliability of energy to power lifts and provide light must be rock solid.

Gathering beneficial data is the challenge now. High usage consumers, such as hospitals, major commercial users and shopping malls currently have access to their consumption data on a daily basis, allowing them to plot and analyse usage. For these users, there are two main benefits. First, they can manage their energy use to reduce costs, as knowledge allows them to plan energy use more efficiently.

Second, they can determine if their current capital stock (infrastructure, machinery, and software) could be economically replaced by more efficient machinery or systems. By replacing capital stock at the right time, they can cut costs, reduce their carbon footprint, and burnish their green credentials in the community. Without data, they are in the dark.



Domestic users will need more complex solutions to enable information to be gathered and analysed to decide how to alter energy distribution and delivery. HK Electric has a number of infrastructure proof-of-concept evaluations that seek to overcome the challenge of collecting masses of data.

EFFICIENCY: ENERGISE!

Mr TC Yee, General Manager (Corporate Development) of HK Electric, explained, "With the ability to increase energy efficiency and savings, the ability to manage commercial customer loading, the ability to integrate alternative energy sources and an increased ability to manage consumption. The future is smart grid technology — 100 per cent."

Smart grid technology can be built into a new development from the beginning. Challenges lie in improving old systems to incorporate modern smart grid technology. In the words of TC, "Unless you build from scratch, you need to make a seamless migration to a more modern system, which takes time." More specifically, it will be the IT hardware, software and applications solutions behind the primary equipment which will pose the greatest obstacle to migration. His colleague, Alex, called it 'a long journey' — but one that HK Electric has started.

CLEANING UP AFTER YOURSELF

A cleaner environment is one of the biggest aspirations of modern communities. Energy efficiency is an important part of the puzzle. So is managing the mountains of waste that threaten to engulf modern cities without 21st century plans and waste management providers. EnviroWaste Services Limited in New Zealand is one of those modern providers.

Proper waste management is now considered a sign of an enlightened society. It is a growing global issue and rightfully so. Due to rapid urbanisation, many cities are facing an uphill battle in determining where to put all their rubbish.

ENVIROWASTE TO THE RESCUE

Enter EnviroWaste of New Zealand. EnviroWaste is currently leading the charge by providing practical waste management solutions to everyday life by making it easy - and cost-effective - for customers to live a 'green' lifestyle. EnviroWaste works in partnership with its customers to implement cost-effective, sustainable waste management solutions that relieve pressure on our landfills and move us closer to a greener tomorrow.

WHAT IT TAKES

Sphere caught up with Mr Gary Saunders,

Hong Kong's energy supply — vital in a city that has more buildings over a height of 100 metres than the next four 'tall' cities (New York, Tokyo, Dubai and Shanghai) combined.

Managing Director of EnviroWaste to get his take on the future of waste management. Despite the negative press the lack of proper waste management has garnered in many jurisdictions around the world, he believes there are numerous positives to look forward to in the immediate future. Gary said, "The biggest short-term advances on the household level will come by increased waste diversion, a reduction in raw materials, and most importantly, by getting as much reuse and recycling as possible."

Gary also explained the ideal conditions for a city to implement forward waste management solutions, "The real change in waste management will come with critical mass economies of scale ... shifting towards industrial waste programmes while being able to extract energy from the waste management process."

Households are one sector EnviroWaste is targeting. Listening to customer demands, the company has devised a new system of waste sorting. Customers are now provided with four disposal bins — one for general waste, a green waste bin, an organics bin and an 80 litre refuse collector. The sorting system allows customers to easily sort waste into appropriate bins which in turn allows EnviroWaste to dispose of it in the most efficient and practical manner while helping to reduce the amount of waste sent to landfills.

There are many futures that could come to pass. Ideally we will get the best one as long as Hutchison Whampoa works in, and with, the communities they are a part of to answer their needs. From Gibson's always-on connectivity to heritage preservation, to clean, green infrastructure, HWL's business units are answering the needs of people as they seek to improve their local uriculture in the cities of the future. □

ENERGY POLICY

Hong Kong's future energy options pit clean vs coal, certain vs questionable. Mr Canning Fok makes the case for local generation.

Like many countries around the world, Hong Kong is considering what fuel mix meets its energy needs and community aspirations. Price, reliability, air quality, autonomy, carbon footprint and much more bear on the complex considerations involved in committing countries, provinces, states and cities to long-term fuel solutions.

The Hong Kong government is consulting public opinion. In May, Mr Canning Fok, Chairman of Power Assets, made his views known.

CHOICES

Members of the public have been presented with two options:

Option 1: Purchase 30 per cent electricity from neighbouring China Southern Power Grid (CSG); or

Option 2: Generate 60 per cent electricity from natural gas in Hong Kong.

At the Power Assets shareholder meeting, Mr Fok presented a case for strongly supporting Option 2. Hong Kong's biggest concerns – reliability, price and air quality – formed the centrepiece of his logic.

RELIABILITY

The quality of electricity supply in Hong Kong trumps the world with reliability at over 99.999 per cent. Hongkong Electric (HK Electric) customers in particular experience less than one minute of outage each year. At first glance, some may not think that CSG's 99.96 per cent reliability is that much of a difference, but those few decimal points translate to 3.2 hours a year, or 16 minutes a month! If even a recent eight-minute breakdown of the local metro caused chaos throughout the city, it's not too difficult for one to imagine how disastrous 16 minutes would be to a city of soaring high-rises and a financial centre. Not only would the banks and stock exchange be affected, lifts, water pumps and even emergency services would be severely crippled. Option 1 would be a big step backwards for Hong Kong.

PRICE

HK Electric customers currently pay about HKD1 per kWh. This compares favourably to HKD1.31 per kWh in Macau, which purchases over 90 per cent of its electricity from CSG, and to other major cities worldwide. If Hong Kong was to connect to CSG's network, it would require HKD20-30 billion of new infrastructure which translates

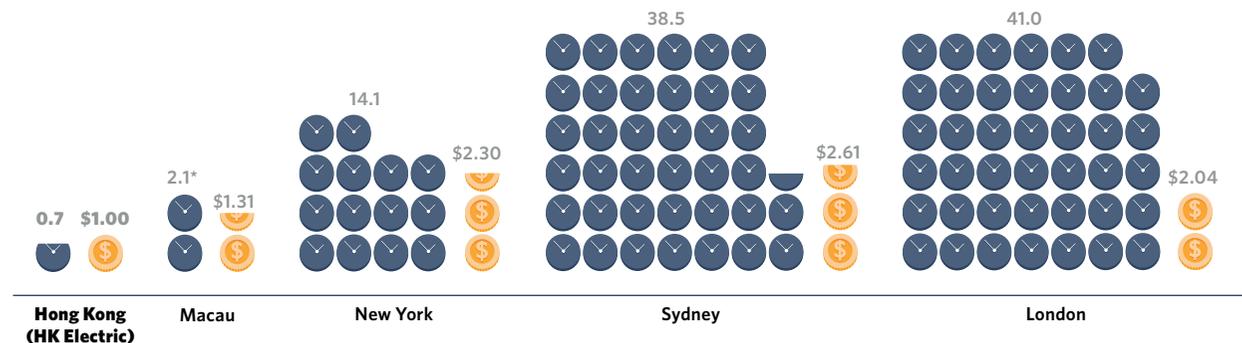
to HKD0.30 per kWh. Add that to the wholesale price of HKD0.80 per kWh that Macau pays and Hong Kong's own network costs, buying electricity across the border would undoubtedly be more expensive than local generation.

AIR QUALITY

The electricity supplied to CSG's Guangdong grid is primarily generated from coal, so more coal will have to be burnt to meet new demand from Hong Kong. While some may think out of sight, out of mind, monsoon winds put paid to that notion. The winter winds regularly blow polluted air south to Hong Kong. Not only would Hong Kong's cousins to the north suffer from coal burning, the air would eventually blow south to Hong Kong and the rest of the Pearl River Delta. Cleaner burning gas would benefit people in Hong Kong and China alike and help China's efforts to reduce its overall carbon footprint.

Mr Fok's strong views come from decades of experience of working in the power sector and a great love of Hong Kong, HK Electric's headquarters. The call to duty to make his views known has been answered in convincing fashion. □

HK LEADS ON PRICE AND STABILITY



🕒 Average yearly outage (minute) 💰 Tariff comparison per kWh (HKD)

*Excluding outage due to stoppage and power supply limits by the Mainland

ENGINEERING

LIWAN GAS FIELDS:

THINK BIG

Husky Energy and China's CNOOC coordinated the biggest deepwater gas extraction project in the history of Asia. Mankind's energy future depends on projects like this.

Man's thirst for energy knows no limits. As Asia rises, its demand for energy is quickly matching the per capita consumption of developed regions. Even plumbing the depths of the deep South China Sea is an option when engineering genius is deployed by one of the world's most sophisticated integrated energy and energy-related companies, Husky Energy.

"Liwan is Husky Energy's largest project to date and places us inside the door of one of the fastest growing energy markets in the world," said Asim Ghosh, CEO of Husky Energy. "It was a massive undertaking and is a great achievement for deepwater gas production in the Asia Pacific Region."

Husky Energy didn't do it alone. The Liwan Gas Project is China's first deepwater gas field development project, jointly developed

by Husky Energy and China National Offshore Oil Corporation Ltd. (CNOOC). There was a clear division of labour in the project. Husky Energy was in charge of the deepwater part of the project, which included drilling and installing the subsea production facilities and deepwater pipeline. CNOOC was in charge of the shallow part, including building and transporting the central platform, laying the shallow water pipeline, and constructing and managing the onshore gas processing plant.

CHALLENGES, INCOMING!

It took over a year to construct the upper part - or topside - of the central platform in Qingdao, a seaside city and part of China's heavy industrial heartland. The topside of the central platform is the heart of the whole project. All oil and gas extracted from the five surrounding undersea oil/gas fields is pressurised and processed here before transportation through undersea





pipes to the onshore processing plant in Zhuhai. Engineers claim this is economic as a single platform can process the output from several nearby oil/gas fields, reducing the amount of deep-sea piping needed to transport output to the onshore gas processing plant.

The construction site, Qingdao, is located about halfway between Shanghai and Beijing and is parallel with Seoul - nowhere near the South China Sea. The massive topside construction therefore needed to be transported by CNOOC from

the factory to the middle of the ocean, thousands of kilometres to the south.

MEGA-MOVE

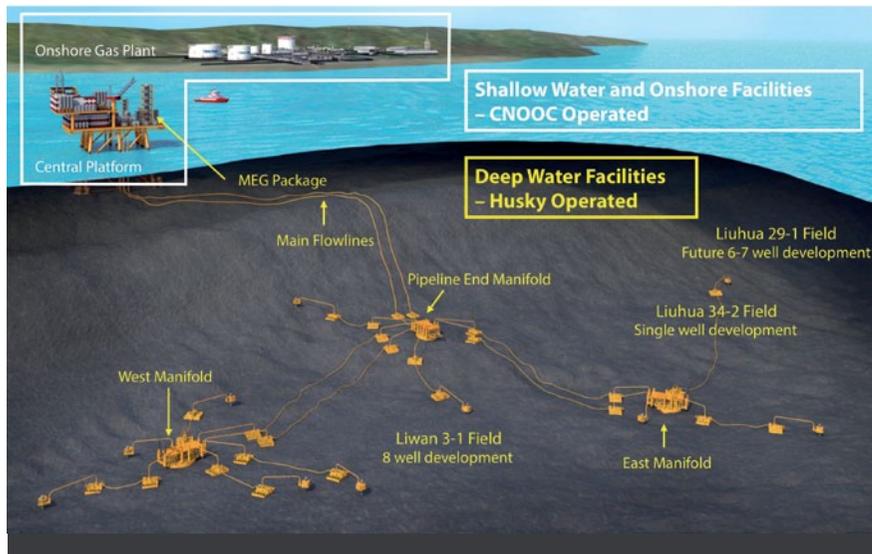
The topside megastructure is larger than a football field (110m x 77m), 95m tall and weighs over 30,000 tons. It is the biggest structure of its kind in Asia and presented a transportation challenge. Engineers were scratching their heads to find a way to transport this megastructure from Qingdao to the installation site. If too big a barge was used, it wouldn't fit at the installation site. If too small a barge was used, it would

be unable to carry the giant structure. No suitable barge was available in China to perform this monumental task. The mission was essentially moving an entire factory from land to the water.

Failing to find a suitable barge, engineers decided to build one themselves. The reengineering of a new barge to fit with the megastructure took another six months of effort.

When it was done, engineers faced another challenge - a 25mm difference





in height between the dock and the barge deck. Small compared to the height of the structure (95m), but any mismatch could cause it to topple and collapse when being pulled onto the barge. The whole mission would have been compromised if the tides floated the barge higher or lower than the dock by more than 25mm. With the help of electronic sensors and a senior controller with over six years experience to adjust the water flow and the subsequent weight of the barge, the megastructure was successfully loaded aboard and set off to the South China Sea.

SHALLOW WATER DANGER

In August 2012, the lower supporting part of the central platform was placed in the sea. The difficulties in locating a 190m tall and 32,000 ton megastructure at a specific spot in the water appeared tough, but compared to the ensuing challenges, this operation was a mere warm-up.

Once the topside megastructure arrived, a new challenge presented itself - how would engineers load it onto the lower part of the central platform? The upper structure was equivalent to the combined weight of five Eiffel Towers and there was no single floating crane in the world able to lift such a heavy object.

One alternative would have been to break the structure into smaller components and to then assemble it piece by piece.

The depth of the sea and the extreme weather presented Husky Energy engineers with challenges never before faced in the South China Sea.

While this sounded feasible, it would have required a much longer time to finish the construction of the central platform and meant risking a delay to the project. The whole project cost over HKD3 billion. Delaying it would have resulted in an astronomical rise in costs, ranging from several hundred thousand dollars to several million dollars a day in extra expenses.

UNDER PRESSURE

While engineers were struggling with problems on the surface of the ocean, the conditions deep under the sea presented Husky Energy with huge challenges. The company was responsible for the underwater operations, but with the immense pressures and temperatures close to freezing, the sea was a hazardous place to work. At 1,500m deep, equivalent

to 30 Olympic-size swimming pools (50m) laid end to end, an area equivalent to a standard credit card experienced six tons of force. This was no place for man to thrive - or even survive.

"Principally, our golden rule is safety first," says Mr Malcolm Paisley, Manager of Deepwater Production, Husky Energy China. To live by this principal, Husky Energy deployed robotic devices called remote operative vehicles (ROVs) to work in the depths of the sea. They had to install all the machinery on the seabed, and were operated by Husky Energy engineers working at a control panel 1,500m above. "In a marine environment, the ROV is often the eyes, the hands and even the ears of the people that are designed to do the work," says Mr Tracy Mosness, Vice President of Production and Development, Husky Energy China.

Monitoring well-top conditions is vital. Husky Energy built devices right on top of the drilling wells to monitor and control the production of the wells. These devices, each weighing 60,000 tons, were attached to the wells on the seabed by the ROVs.

These devices ensured that the gas continued to flow and could begin its journey from wellhead to the central platform. That journey of 79km takes the natural gas a day, owing to the low temperature and extremely high water pressure. At that depth, temperature and pressure, chemicals can materialise that physically block the pipes. Husky Energy uses not only engineering expertise, but also chemical engineering to ensure that doesn't happen.

INNOVATION ...

Back on the surface, engineers were grappling with the challenge of installing the central platform that would connect the deep-sea world to the surface. The engineers decided to make use of a natural force - tides. They used a technique known as 'float-over deck installation'. This was precision work with no room for error.

This complex process required the upper part of the structure on the barge to be placed on top of the lower part of the structure when the tide rose. When the tide fell, the lower water level allowed the upper part of the structure to attach to



the lower part. The technique was first used in China in 2005. Even with years of experience, the float-over deck installation was no easy job. The South China Sea is known for notoriously bad weather, and in addition, compared to Bohai where the technique was first used in China, the South China Sea is much deeper and the climate is much more treacherous. Liwan is located in the typhoon corridor and in an open ocean area. The region is swept by strong gales for over 200 days a year, making the installation task a trying ordeal.

... AND BOLDNESS

By the spring of 2013, engineers were waiting for a fine weather window to commence the final stage of the construction – but the weather didn't cooperate. A sudden deterioration saw the cancellation of the operation which was scheduled for 18 May 2013. On 22 May, a 30-hour window for operation opened. It was not optimal weather for work but pitting their experience against the heavy cost of delay, the engineers decided to take a gamble. They were first challenged by the malfunction of a windlass. Then a sudden heavy rain pushed the operation back two hours, further narrowing the window

of operation. The Husky-CNOOC team would not give up. Persistence carried the day. After over 30 hours of work, the final construction was successful and years of effort paid off.

BUILT AND PRODUCING!

This March, to great fanfare, Husky Energy and CNOOC launched the production of the Liwan 3-1 field with initial natural gas sales expected to be approximately 250 million cubic feet per day gross, rising to 300 million cubic feet.

The Liwan Gas Project currently consists of three fields: Liwan 3-1, Liuhua 34-2 and Liuhua 29-1. Pending final approval, the Liuhua 34-2 field will be tied into the Liwan infrastructure in the second half of this year. Liuhua 29-1 gas production could top 500 million cubic feet per day gross by 2016-17.

ENGINEERING LEGACY

The Liwan Gas Project is an engineering marvel and it serves an environmentally friendly purpose. Compared to the calorific value generated from coal combustion, the amount of gas produced in the gas field could reduce the emission of carbon dioxide burned from coal by 5.4 million tons,

“Liwan is Husky Energy's largest project to date”

Mr Asim Ghosh, CEO, Husky Energy

equivalent to a plantation of 19 million adult trees in an area of 48 million acres of forest.

“The Liwan project has truly been a watershed project in the evolution of Husky Energy, from being a purely Canadian company to being a truly global company in the oil and gas business,” according to a proud Mr Robert Hinkel, Asia Pacific Chief Operating Officer of Husky Energy. Working with CNOOC and partners from around the globe has resulted in a pioneering effort to secure energy supplies for southern China for decades to come. It takes two hands to clap and the synergy between the two energy giants has made a thunderous sound. □

COMMUNITY CARE

EASING THE FINAL PARTING

All humanity faces the same end; not all face it with the same compassionate support. The Li Ka Shing Foundation is taking steps to dignify and ease the passing of those suffering in Hong Kong, and is doing so through concepts and services it has successfully introduced in Mainland China.

Donations have seen hospice centres built in 10 public hospitals in Hong Kong, with more than 100 healthcare professionals and 2,700 volunteers providing holistic services to terminal cancer patients. Medical consultations, bereavement counselling for patient families, home visits and volunteering services in hospice care are all provided. Total donations to the programme in Hong Kong so far amount to HKD120 million. The Li Ka Shing Foundation (LKSF) is helping families when they need it most.

“Dignity in death is priceless. Care and respect for those with a terminal illness are key indicators of our social values and the mark of any civilised society,” Mr Li Ka-shing said. He made his first donation to hospice care in Mainland China in 1998 and extended this philanthropic work to Hong Kong in 2007. This has benefited over 163,000 terminally ill cancer patients.

BEYOND PHYSICAL CARE

The physical existence of a hospice centre is as important as the services

it provides. Dr Leung To-wai, Chief of Service of the Department of Clinical Oncology in Queen Mary Hospital, sees the extraordinary benefits the centre brings. Multidisciplinary experts, such as doctors, social workers, nutritionists, physiotherapists and more, are present in most hospitals but are rarely concentrated to cater specifically for terminally ill cancer patients.

“Without the hospice centre, services are fragmented,” says Dr Leung. Now the centre gathers talent across the hospital and offers opportunities for all the relevant healthcare professionals to discuss the proper treatments for physical, social, psychological and spiritual care for the patients.

Dr Leung stresses the warm and cosy design of the hospice centre that has received positive feedback from the patients, “For terminal cancer patients, they face more miserable days than happy days. We want to minimise the pressure on them from seeing doctors in follow-up consultations.”

Ms Joe Huang Kang-pan, Assistant

Social Work Officer of the Department of Clinical Oncology in Queen Elizabeth Hospital, adds that the centre can be used for different activities including life celebrations, family gatherings, photo shoots and more. She recalls how depressed patients were cheered up after joining the centre’s activities. “What we do may be little, but it may have a big impact. We hope patients can continue to be happy even as their health deteriorates.”

Ms Ng Cheuk-wah, Advanced Practice Nurse working with Dr Leung, shared one touching story. A female patient in her 50s hoped to witness her son’s wedding, but her health deteriorated quickly. Both families gathered beside the surgery room – with modest decorations and bright clothes for the patient – to celebrate the part of the wedding that included the exchange of wedding rings and the patient drinking the tea presented by the bride, her future daughter-in-law, signifying the bride’s acceptance into the husband’s family. The patient passed away peacefully the following day and the families were able to move on, free from the regret that the mother had missed this landmark family event.





Mr Li Ka-shing shares his views with Professor John C Y Leong, Chairman of the Hospital Authority, and the healthcare professionals on the 'Heart of Gold' hospice service programme.

Palliative care is a humane endeavour that requires noble hearts, professional skills and years of experience to master the job. The requirements may be tough but when they are fulfilled, Mr Li's vision will come true: "Hope transcends and connects, and you bring peace, comfort and dignity."

FUNDS FOR MORE

Apart from funding for the construction of the centres, LKSF contributes to the annual hospice conference held by the Hospital Authority (HA) of Hong Kong. The conference gathers hospice staff from Hong Kong and the Mainland to share their experiences in palliative care.

LKSF also funds the HA's training of volunteers in hospice care. It is a nine-hour comprehensive training covering basic knowledge in palliative and cancer treatments, basic rules to engage with patients, communication skills and attitudes on life and death issues. After completing the training, volunteers are certified and screened before they are allowed to look after patients. Assistant Social Work Officer

"Hospice care gives comfort and hope where only anguish and sorrow are apparent. We must encourage such meaningful work and offer help where it is needed."

Mr Li Ka-shing

Ms Ho Mei-ling of Queen Mary Hospital says the selection criteria include the volunteering experience of the applicants, their readiness to undertake this challenging job and their enthusiasm for caring for patients.

'HEART OF GOLD'

The healthcare team in the hospice centre is very grateful to LKSF's funding,

which has allowed the realisation of the centre and the assembly of a group of dedicated professionals. "It doesn't matter how hard we work. The best return is a smile shown on the patient's face," says Dr Leung.

Mr Li is also grateful to the professionals, saying, "Hospice care gives comfort and hope where only anguish and sorrow are apparent. We must encourage such meaningful work and offer help where it is needed."

Over the next three years, the Foundation will seek to involve more participants and will bolster community outreach programmes in an effort to strengthen and create greater awareness for palliative care services.

The philanthropic LKSF and the healthcare heroes have together served terminally ill cancer patients. In Neil Young's 'Heart of Gold', he sings "... I'm getting old, keeps me searching for a heart of gold." In the seventh year of the hospice programme in Hong Kong, the gold has been given and the heart of gold has been found. □


230,000
Specialists clinics & centres service sessions


77,000
hours of volunteer service

Website and mobile app accessed 450,000 times


2,700
volunteers

YOUR LOVE BRIGHTENS UP LIFE

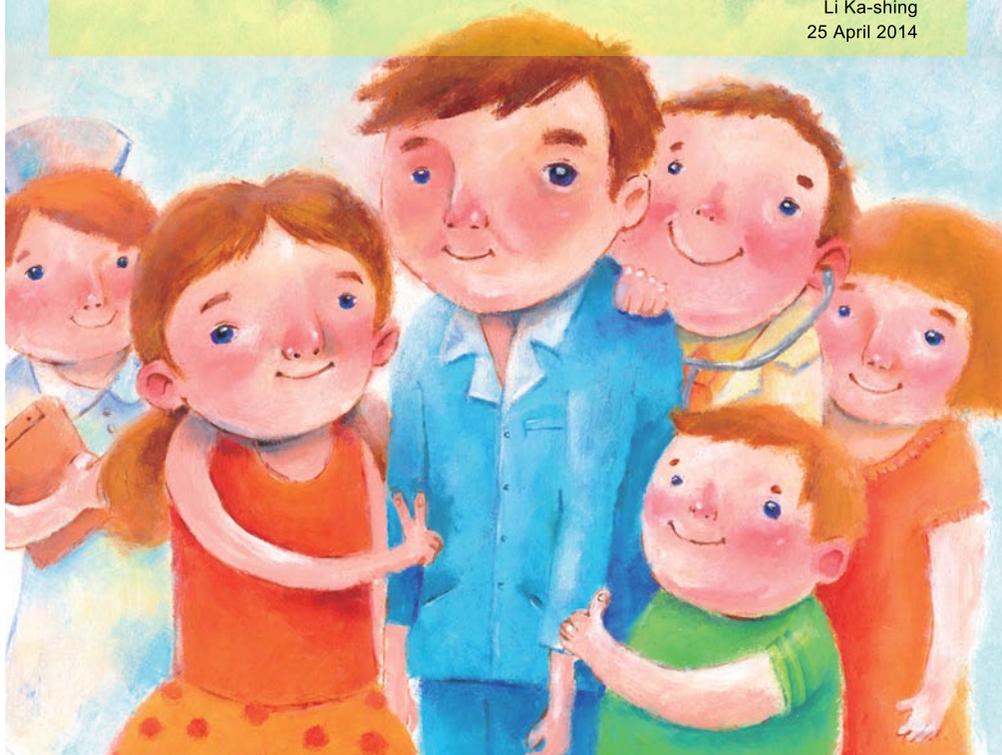
To all the wonderful men and women serving in the “Heart of Gold” palliative care programme,

Thank you for your unfailing compassion, love and commitment. Your work is imbued with sadness but each of you took the time to bring hope and improve the lives of others. Dignity in death is priceless, your care brought peace and comfort to the suffering and made a positive difference to their families.

With respect,

李嘉誠

Li Ka-shing
25 April 2014



Since 1980, the Li Ka Shing Foundation has granted over **HK\$14.5 billion** to support healthcare and education initiatives - about 90% for projects in the Greater China area.

Served **27,000** terminally ill cancer patients with 88% pain control rate

Psychological counselling **55,000** sessions

Website and mobile app accessed **450,000** times

2,700 volunteers

Home care **82,000** sessions

77,000 hours of volunteer service

Accumulated Donation **\$120** million

Specialists clinics & centres service sessions **230,000**



Mr Li Ka-shing, Chairman of the Li Ka Shing Foundation, publicly thanks the professionals whose dedication makes the hospice service possible. Originally published in Hong Kong newspapers, this letter acknowledges their selfless commitment.

