



INNOVATION

CITIES OF THE FUTURE

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

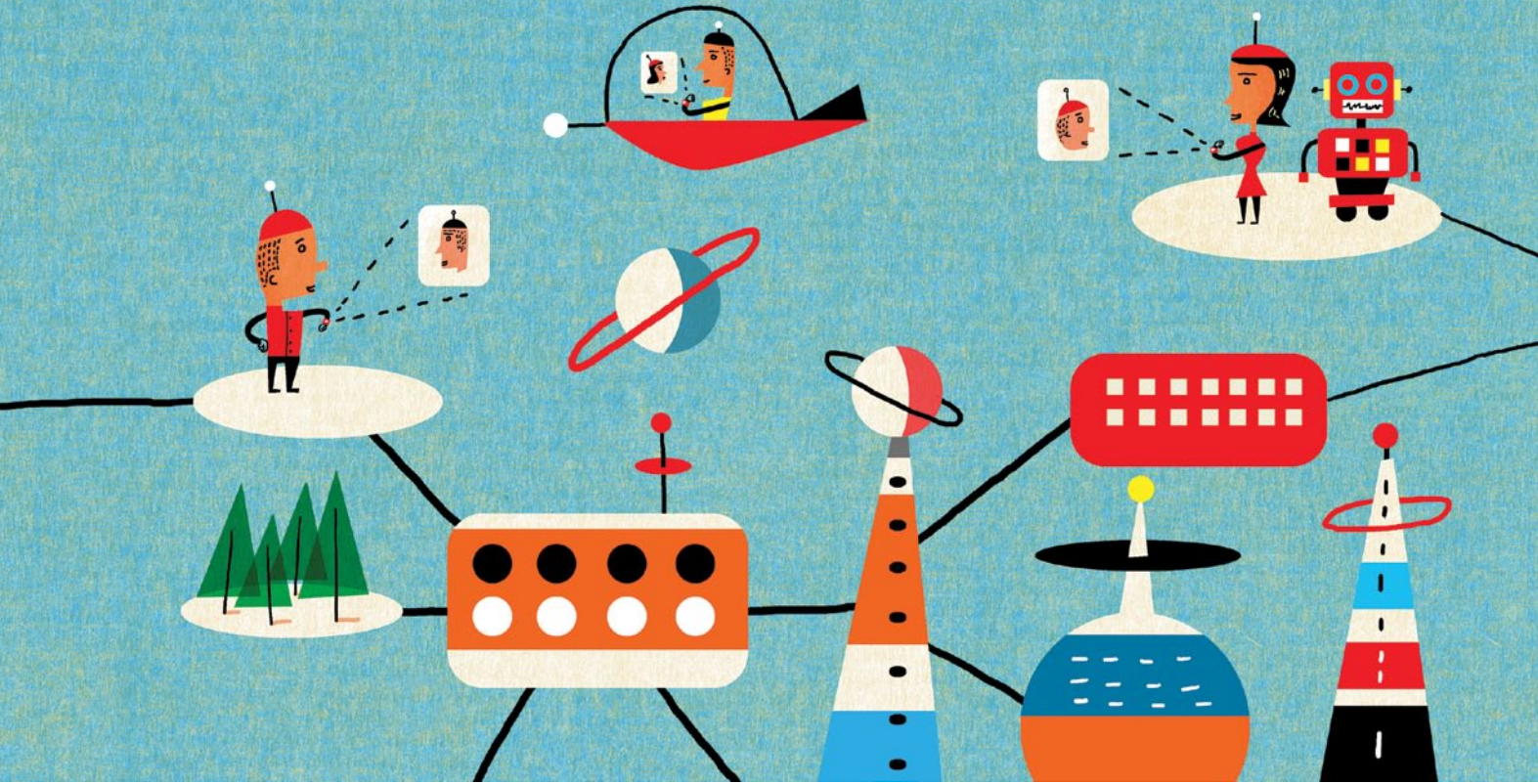
Ironically, heritage preservation is an increasingly common demand of modern communities. This iconic location, home to one of Britain's first steel frame structures and the longest serving power station's when it was decommissioned in 2000, contains potent symbols of Britain's industrial past. The Power 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 Gehrmann, 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.

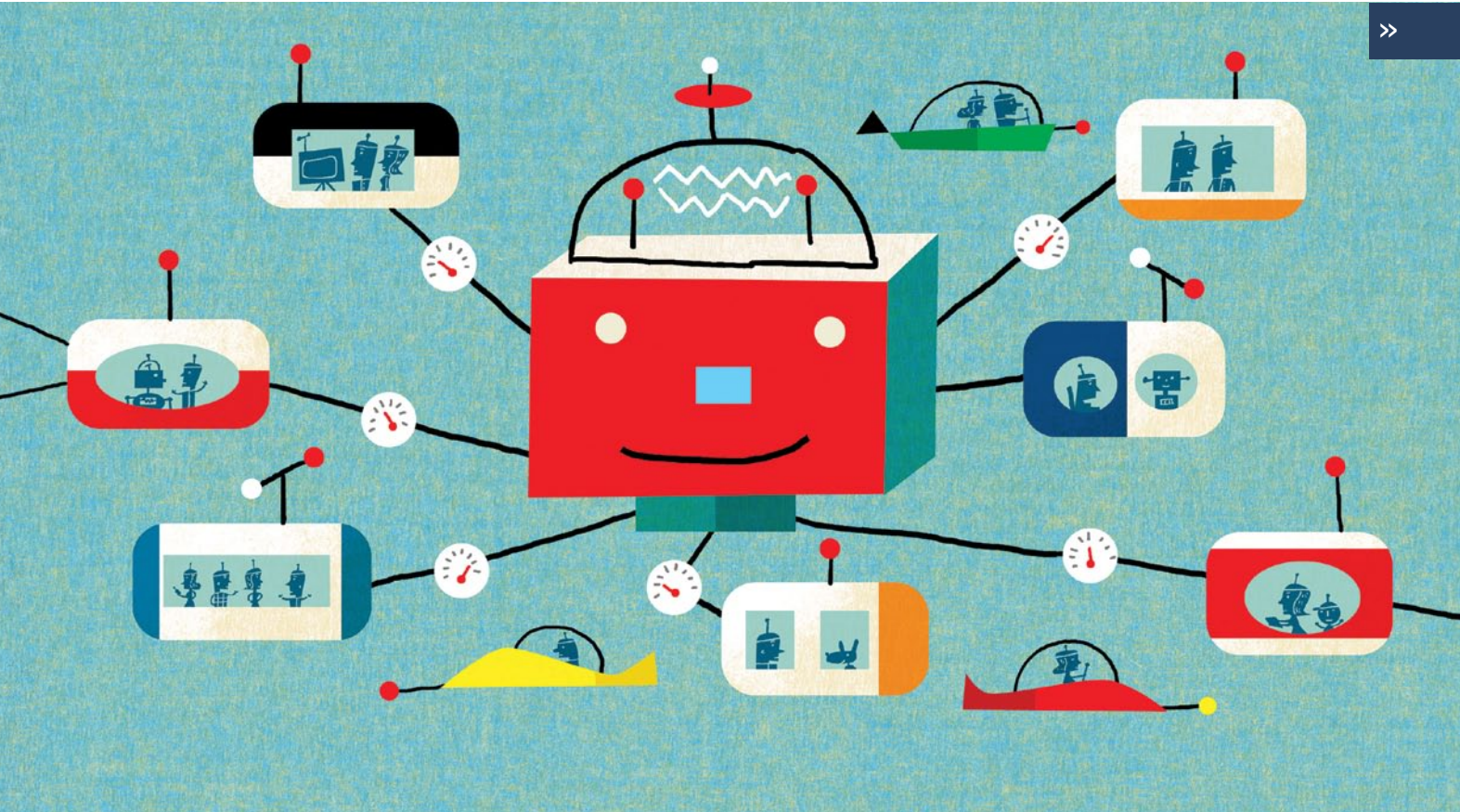
Hutchison Global Communications (HGC) is bringing ubiquitous net connection to a world considerably brighter than that envisaged by Gibson. In late 2013, HGC announced plans to increase the number of Wi-Fi hotspots in Hong Kong to almost

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.

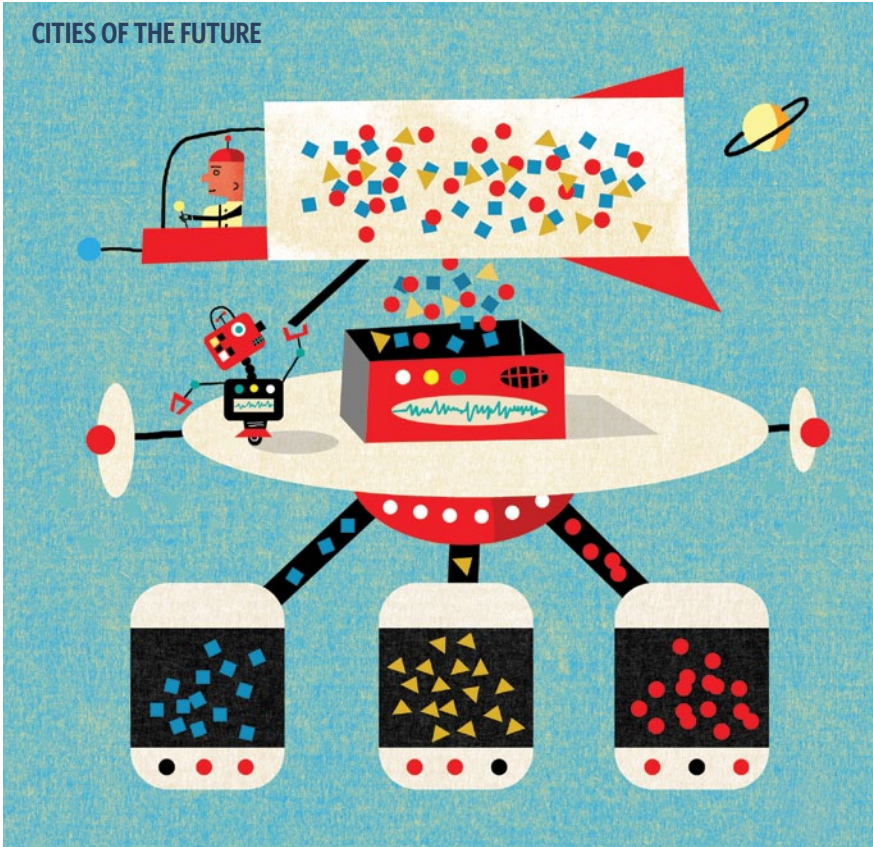
A smart grid can use data about the flow of power through a system to reroute, store and direct energy where needed. This benefits the system by reducing waste and directing energy where it is needed, when it is needed.

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. □