

PRC 建设

Pacific Rim Construction

J. Roger Preston

scores 55 years of mechanical and electrical engineering excellence

澧信机电工程顾问
优越建设五十五年

Inside:

L&O's pedigree in hospitality design honed since the 1930s
HEAD Architecture sets the pace of Asian broadcast design
Benoy reimagining worn districts into vibrant destinations
Jerde placemaking inspires holistic hospitality experiences
LW Design luxury hotel portfolio evokes elite sophistication

Hong Kong / PRC \$50

ISSN 1688-9566



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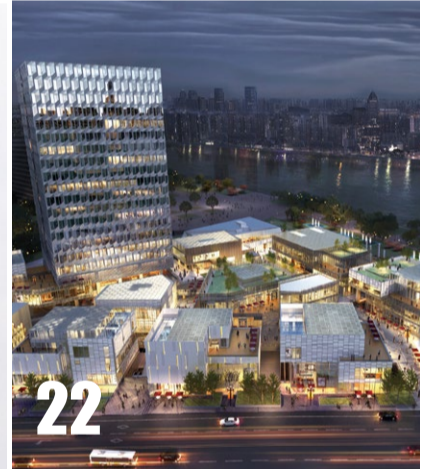
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Ping An Finance Centre, Shenzhen, China.
深圳平安金融中心
Photos by Brian Zhang



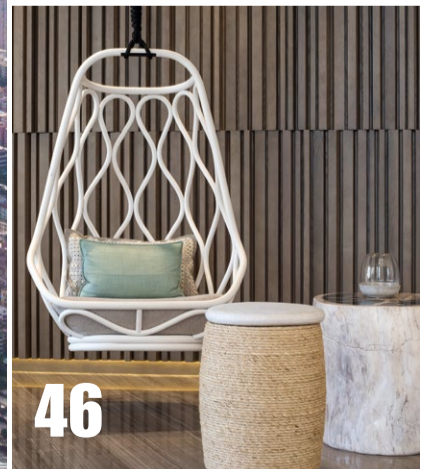
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J. ROGER PRESTON
celebrates
55
YEARS
of
**ENGINEERING
EXCELLENCE**



Ping An Finance Center, Shenzhen
深圳平安国际金融中心



Since 1962, mechanical and electrical consulting engineering giant J. Roger Preston Limited (JRP) has had a hand in the functioning of some of Hong Kong's most recognisable landmarks, among them Ocean Terminal, the Hong Kong Coliseum, Exchange Square, Jardine House and Hongkong Bank Headquarters.

Today, 55 years on, the company employs over 600 staff in offices across Asia, in Hong Kong, Beijing, Shenzhen, Shanghai, Macau, Kuala Lumpur, Singapore and Ho Chi Minh. The company is also involved in notable engineering works spanning the region, including projects in Nanjing, Shenyang, Wuxi, Foshan, Xiamen, Guangzhou, Dalian, Kunming, Harbin, Chongqing, Hainan, Jakarta, Phnom Penh and Mumbai.

As the company embarks on its 56th year, it continues with the same sense of purpose it was founded on and the old adage still rings true:

JRP – Your trusted engineering partner.

By the 1980s, JRP had become market leader in Asia's mechanical and electrical engineering industry, and the local Hong Kong office had claimed its independence from its UK parent.

"People were eager to work for JRP. We were the company everyone wanted to join to earn the reputation, the knowledge, and the experience for a career," notes director, Victor Cheung.

Few could deny that the world of engineering has seen drastic changes since JRP first opened its doors in Hong Kong, not least the gradual shift towards Building Information Modelling (BIM). However, since its work on Kai Tak Airport, JRP's first project in the city, Cheung acknowledges that some things remain strikingly similar: "The fundamental engineering principles of air conditioning, for example, haven't changed much in the past few decades. We're still moving air through sheet metal ducts and distributing it through air grilles. But today the way we do it is more efficient. Equipment are getting more compact and energy efficient, and control system are becoming more sophisticated and intelligent. Variable speed drives are widely used for fan, pumps and chillers nowadays," he adds. "Technology and innovation are driving these changes. We use tools such as Computational Fluid Dynamics (CFD) analysis and BIM to optimise the design in terms of cost effectiveness and buildability. The other major breakthrough is the chilled beam air-conditioning system which we have successfully implemented in a few projects in Hong Kong in recent years."

The Rise of the Supertall

JRP has become the regional industry leader for mechanical and electrical engineering for its ability to bring solutions to commercial, hospitality, heritage, education, healthcare, retail, residential, cultural, recreation, infrastructure, institutional and industrial facilities. But if JRP has to claim a speciality it is perhaps in the supertall sector. That started in 1985 with the construction innovation of its time, Hongkong Bank Headquarters, designed by Norman Foster and just shy of 180 metres. "It was significant because of its location. It was in Central, and you couldn't have lorries blocking Queen's Road. It was the first instance of non-in situ construction. It was modular and pre-fabricated off site," explains JRP director Joseph Leung.

"Air-conditioning plant, toilets, air ducts and pipes modules were all pre-assembled in Japan and brought in to Hong Kong. The parts were then trucked in from the harbour at night and stacked up like legos. Another innovative design for the project was that the air conditioning was supplied from underfloor."

After that came tower after tower, including the city's first supertall, the 420 metre high Two International Finance Centre (Two IFC). The 108-storey International Commerce Centre (ICC) followed, checking in at 490 metres, then the 432 metre Guangzhou IFC and the 468 metre Tianjin R&F Guangdong Tower.

The latest addition to JRP's supertall portfolio is the Kohn Pedersen Fox-designed Ping An Finance Center in Shenzhen. At 599 metres and 115 storeys high, it is the tallest building in Shenzhen, the second tallest in China and the fourth tallest building in the world. "Designing a reliable, efficient and sustainable building services system for this world class, supertall building posed formidable challenges to all engineers. JRP deployed the same team of experienced engineers who worked on the ICC building in Hong Kong. In collaboration with the project team, reliable, efficient and sustainable engineering solutions have been brought about," notes director, HK Yung.

Like most supertalls, Ping An presented a host of engineering challenges. "The first thing any architect must think about is efficiency. Clients need to be able to benefit from a very efficient floor plate and get a good rental return from the height," explains Leung. Yung adds: "Our job is to design an effective core that accommodates lifts, lobbies, toilets, mechanical, electrical, fire services, plumbing and drainage."

Maximising gross floor area is key for investors looking for blue chip tenants, and central cores are an industry mainstay for that reason, offering tenants and landlords better views and better façades. Understanding usage also plays a part, particularly when finance occupiers and five-star hotels increasingly share supertall towers. Financial tenants and hotel guests have little interest in spending an inordinate amount for time waiting for lifts, making peak hour capacity one of the most complex systems for any mechanical and electrical engineer.

"Those same finance tenants may keep irregular hours due to trading times, but everyone gets hungry at about the same time and how do you handle that?" asks Leung. "With supertalls, hotel tenants present a specific set of requirements and demand a sense of exclusivity," he adds. Yung further explains: "It's a totally different approach. Basically, a high-rise building is a number of smaller buildings stacked together. Every single high-rise building shares the same challenges, and one must consider how you get people to each floor efficiently, how you distribute the power supply efficiently, how you ensure you're not putting too much pressure on the hydraulics, whether the air conditioning system is seawater cooled and whether there is room on the roof or on the mechanical floor for cooling towers. You need to break the building down into several zones, and think of every zone as one building"



PINGAN FINANCE CENTER E&M HIGHLIGHTS

The Ping An Finance Center achieved LEED Gold and 3-star rating for its environmentally friendly and energy efficient design.

Designing a reliable, efficient and sustainable building services system for this worldclass supertall building posed formidable challenges to all engineers. Using the same team who worked on the ICC in Hong Kong JRP worked to design and implement features that include the following engineering solutions:

A 55MVA transformer capacity is backed up by six 2MVA generators. A 4500kg cargo lift, backed up by four 10kV generators, transports power transformers to plantrooms at hundreds of metres above ground.

77 elevators, 45 of which are double decked passenger elevators, transport over 2000 people in five minutes, with travel from the ground floor to the 541m high Observation Deck minimised to around 60 seconds.

Double deck elevators trim down the core size and optimise the efficiency of building core to the maximum.

Strategic hydraulic zoning provides a cost effective design solution and system reliability for installation, operation flexibility and efficient maintenance.

The largest indoor cooling tower plant in southern China minimises pump power requirements

Use of CO2 sensors to optimise fresh air control , ice storage plant , high efficiency luminaries and regenerative power as energy efficiency and environmental friendly features.

平安金融中心的机电系统亮点

首先，平安金融中心的环保节能设计，已获取得了 LEED Gold 和三星评级。

为这个世界级大楼建设一个可靠、高效和可持续的机电系统，给所有工程师带来了巨大的挑战。澧信安排了参与过香港环球贸易广场的同一批经验丰富的工程师团队，致力实施以下工程设计方案：

1. 55MVA 变压器容量由 6 台 2MVA 发电机支持。一部 4,500 公斤的载货电梯由四台 10KV 发电机组成，将电力变压器运输到离地面数百米高的机房。
2. 77 部电梯，当中 45 部是双层载客电梯，五分钟内可运送超过 2,000 人，从一楼行驶到 541 米高的观景台，少于 60 秒。
3. 双层电梯将大厦核心筒体范围缩小，提高可使用建筑面积效率。
4. 策略性分区水压设计，操作灵活及高效维护，提供了具有成本效益的设计方案及稳定系统。
5. 华南地区最大的室内冷却塔，减低了水泵功率的需求。
6. 使用二氧化碳感应器可优化新鲜空气的控制，灯具和再生能源具节能功效和环保效益的特点。



Agricultural Bank of China Headquarters and
China Construction Bank Headquarters, Shanghai
上海浦江雙輝大廈
(Image courtesy of Arquitectonica)



International Finance
Center, Guangzhou
廣州國際金融中心



Tianjin R&F Gu
天津富





Kai Tak Cruise Terminal Development 启德邮轮码头

The Future of Data

A pillar of Hong Kong's business competitiveness and a burgeoning property sub-sector set to grow in the coming few years is data centres. As the world becomes more and more digital and Big Data and the Internet of Things (IoT) becomes the norm, banks and financial institutions, schools, retailers, and social media will demand more and more storage and data processing power. Like supertall towers and hospitals, data centres have a unique set of hurdles to consider and overcome. "The government is keen to support this sector, and are releasing out land to attract tenants," explains Leung. "They are the most energy-hungry projects going, even more than hospitals, with the data racks needing to be constantly chilled to ensure they perform 24 hours a day throughout the year."

JRP has completed numerous data centres that are now storing data for Morgan Stanley, JP Morgan, American Express, Wochovia Bank, Citigroup, UBS and the Hong Kong Monetary Authority, Tamar Government Headquarters, as well as a series of Mega-iAdvantage Data Centres in Hong Kong, Singapore, Shanghai and Beijing. The HSBC secondary group data centre completed two years ago at Shatin can host up to 4,000 racks. The new China Unicom Global Centre in Tsueng Kwan O will host upwards of 4,000 racks. Unique as their demands may be, Leung argues there are three fundamentals that must be met in all data centre projects. "Data centres are highly specialised. In terms of design for a data centre there are three 'Rs' that must be adhered to which are also non-traditional," he explains. "The first is Reliability, because if your Visa card doesn't work on occasion, it's their fault. The second is Resiliency, meaning one mission-critical system can back up another without jeopardising its overall operation. The last is Redundancy. You have to build with enough space and capacity for future growth."

China Unicom's Global Centre will host Internet data, cloud services and cross-border network services, with distinct centres focused on servicing the Asia-Pacific region in the Global Solution Support Centre, as well as an international Innovative Service System Centre and Cloud Computing Centre, and an IoT Research and Development Centre.

Hong Kong is uniquely positioned to host data facilities due to its combination of power supply reliability - a global best - and security in relation to the network. Leung points out the sector has been booming for nearly a decade, and that land has already been earmarked by government in Tai Po and Tsueng Kwan O, complete with specially built infrastructure for power and other utility services support.

Guangdong Tower
富力广东大厦



International Commerce Centre (ICC), Nanjing
南京环球贸易广场

Hengqin New District Comprehensive Development, Zhuhai
横琴广场



Healthcare Excellence

Also among JRP's core competencies is health care. Indeed, the company is responsible for a vast number of Hong Kong's hospital engineering. Health care facilities are defined by a radically distinct set of mechanical and electrical needs from their supertall counterparts.

"There are different demands for air conditioning and infection control in a hospital environment," states Cheung. "You need to pump in good air, extract the old and never let them mix. Cross contamination can't happen; there's a pressure regime that needs to be maintained, and particulates need to be filtered out first. You also have to consider other mechanical services such as medical gases, pneumatic tube systems, IT systems, a high demand for hot water and power supply, back up generators and a high air conditioning load, as well as reliability and energy efficiency."

JRP's credits in the sector include the Queen Mary Hospital expansion, Canossa Hospital extension, Ruttonjee Hospital, Yan Chai Hospital, United Christian Hospital, Union Hospital extension, Nethersole Hospital, North Lantau Hospital and the forthcoming Hong Kong Children's Hospital (HKCH) at Kai Tak, which will host 468 beds and 13 operating theatres in a two-tower, podium-free building connected by three bridges.

HKCH is a point of pride for JRP, with space designed for research, training, integrated rehabilitation, clinical services, surgical theatres and the hospital's data centre. It is also the first facility of its kind in Hong Kong purpose-built with 900 square metres of solar and hot water panels on the roof - the largest renewable energy installation in the waterfront of Victoria Harbour. "Hospitals are the ideal application of solar hot water systems," says Cheung.

The design and engineering won the hospital the highest Platinum BEAM Plus rating from the Hong Kong Green Building Council (HKGBC) for environmental sustainability. HKCH is the first hospital project to achieve such high standard, making it the Greenest hospital in Hong Kong. Chilled water for

air-conditioning the hospital comes from the Kai Tak District Cooling System - a project successfully completed by JRP two years ago.

Government projects are mandated to build to BEAM Gold standards, and with JRP, HKCH exceeded that minimum. Yung defends the perception that Hong Kong isn't doing enough on the sustainability front. "If you want a platinum rating you have to do a little bit more," he adds.

The Hospitality Boom

With the hospitality sector in Asia witnessing the fastest growth in the world, the region is set to see biggest pipeline of new hotel stock in coming years. Hotel clients are as frequent at JRP as any other, and the number of engineering projects in the hospitality industry is unlikely to soften in the years ahead. A diverse portfolio that includes the Peninsula, Four Seasons, Ritz Carlton, Sheraton, Mandarin Oriental, MGM Grand and the City of Dreams in Macau, Hong Kong Polytechnic University's Hotel ICON - comprising a hotel, a teaching hotel, and a senior staff quarters - Swire's cutting edge design Hotel EAST, the W Guangzhou and the singular, tiered, Langham Hotel in Pazhou, has taught JRP that the key to efficient mechanical and electrical engineering for hotels comes down to meticulous design coordination for all guest contact areas suiting their brand identity.

"You need to know who your hotel operator is," Leung reasons. "If it's Four Seasons or St. Regis, you don't opt for the very fancy stuff. You go for the classic knob to dim or turn off the lights. If your client is the W Hotels & Resorts, you go for sophisticated design and touch screen technology. The market positioning of the hotel defines the engineering, just as the client sector drives the services."

It is a philosophy that comes into play with the new Ritz-Carlton Hotel in Harbin, part of a mixed-use development. One of three towers in the project, the Ritz-Carlton will stand 288 metres tall, and upon completion in 2019 will be Harbin's tallest building.





澧信为成功而建设 庆祝卓越成就 55 年

Hong Kong Children's Hospital
香港儿童医院

自 1962 年以来，香港著名的地标建设一直离不开机电咨询工程巨擎——澧信工程顾问 (JRP) 的参与：例如海运大厦、香港体育馆、交易广场、怡和大厦、汇丰总行等等。经历超过半世纪，澧信在亚洲的办事处，遍布香港、北京、深圳、上海、澳门、吉隆坡、新加坡及胡志明市，雇用了超过 600 名员工。曾参与过的项目遍及南京、沈阳、无锡、佛山、厦门、广州、大连、昆明、哈尔滨、重庆、海南、雅加达、金边、孟买等地方。

随着公司踏入第 56 年，他们继续保持创办时的使命，恪守其格言：

澧信——是您值得信赖的工程合作夥伴。

澧信在 20 世纪 80 年代，已经发展成为亚洲工程行业的市场领导者，香港办事处已独立于英国的母公司。

「大家都渴望加入澧信，我们是求职者梦寐以求的公司，入职者希望能获得声誉、知识及经验，帮助日后在职场上发展。」董事张志刚先生说。

自澧信在港开业以来，不能否认工程界已产生了翻天覆地的变化，尤其是建筑信息模型 (BIM) 技术应用逐渐成为大趋势。然而，从澧信在香港的首个工程项目启德机场开始，张先生认为有些事情仍然有着相似地方，他举例说：「空调的基本原理在过去数十年没有改变过，仍然通过金属管道送风，并通过格栅风口出风。然而现时的方式更有效率，机组亦越趋小巧、节能，控制系统越来越细致及智能化。变频器现在广泛应用于风机、水泵和制冷机。」



The Chinese University of HK
- Medical Centre
香港中文大学医院



Union Hospital 仁安医院



East Kowloon Cultural Centre 东九文化中心



HSBC Project Symmetry Group Data Centre 汇丰银行沙田后备数据中心



China Unicom Global Centre 中国联通(香港)环球中心发展工程

他补充说：「技术和创新正在推动着这些变化，我们使用计算流体动力学（CFD）电脑模拟分析，以及 BIM 等工具来优化设计的成本效益和可建造性。另一个重大突破是我们在过去几年在香港的几个项目中，成功实行冷梁空调系统。」

超级摩天大楼的兴起

滙信已经成为区内机电工程领域中首屈一指的领导企业，为商业、旅游服务、餐饮、古迹、教育、零售、住宅、文化、娱乐、基础设施、专业学院和工业设施提供专业方案。而且，滙信特别专长于打造超级摩天大楼。1985年，由 Norman Foster 设计的汇丰银行总部，高 180 米的大楼乃当时的建筑创举。

「它对我们意义非凡。位处中环地段，在施工期间不能有货车阻塞皇后大道中，这个项目是非原地建造的先例，是以模块组合及预制组件兴建。」董事梁志明先生解释说。

「所有空调机房、卫生间、空调风管和水管都在日本预制作再送来香港。然后，这些组件在晚上从港口运来，像积木堆迭起来。而项目的另一项创新设计，空调采用地板送风。」

再者一幢又一幢的摩天大楼如雨后春笋般涌现，包括香港第一座超级摩天大楼——420 米高的国际金融中心二期、490 米 108 层的环球贸易广场紧随其后，还有 432 米高的广州国际金融中心、以及 468 米高的天津富力广东大厦。

滙信的最新超级摩天大楼作品是由 Kohn Pedersen Fox 设计的深圳平安金融中心，高 599 米、设 115 层，它是深圳区最高大楼、亦是中国第二高及世界第四高楼。

「为这个世界级大楼建设一个可靠、高效和可持续的机电系统，给所有工程师带来了巨大的挑战。滙信安排了参与过香港环球贸易广场的同一批经验丰富的工程师团队来应对挑战，并与项目团队合作，提供可靠、高效、可持续的工程设计方案。」董事容学球先生说。

如大多数超级摩天大楼一样，深圳平安金融中心带来大量的工程挑战。梁先生解释：「建筑师首先要考虑的是效率。为客户能够从有效的地块上，并以高空发展获得有效益的租金回报。」容先生说：「我们的职责是要与建筑师紧密配合在大厦的核心筒体内设计一个包括电梯厅、卫生间、空调房、电梯、电气、消防和给排水的机电系统以提高可使用建筑面积效率。」

投资者希望最有效利用建筑面积，并视作寻求重点租户的关键，故此节省空间的中央核心筒体是行业主流，且为租户和业主提供更好景观及更美外观。理解其用途亦发挥作用，尤其由金融及五星级酒店共用一座超级摩天大楼的情况越见普遍。金融租户和酒店客人都会期望高效的电梯服务，因此使高峰时段的电梯运载能力成为每个工程师必解决的问题。

「金融租户由于交易时间作息非定时，但当大家也饿了，你该怎麽处理？」梁先生问。「就超级摩天楼的酒店租户亦有特定具体要求，同时也要求专用的电梯系统作出服务。」他续说。

容先生补充说：「这是一个不同的设计概念。基本上，高层建筑就像由几座较小的建筑物组合在一起。每座高层建筑都有同样的挑战，必须考虑如何有效地让访客到达每一层，如何有效地分配电力，如何确保不会对水管产生太大的压力，无论是空调系统采用海水冷却还是屋顶或机电层放置冷却塔。我们也需要将建筑物的水系统分为几个压力区域，并将每个区域视为一个独立建筑物。」

医疗卓越

澧信的另一核心竞争力是医疗建筑。事实上，公司负责为数不少的香港医院工程。医疗设施，在机电方面的需求与超级摩天大楼截然不同。「医院在空调及感染控制的要求有分别，须把好空气泵入，抽出旧空气，两者千万不能混和一起。不容发生交叉污染，各区域间须维持适当气压平衡，亦须通过过滤保持空气质量。另外亦要考虑其他机械服务，如医疗气体及气动输送系统、对热水和电力供应的高需求，备用发电机和高空调负荷，以及可靠性和能源效率。」张先生指出。

澧信在这领域的作品包括玛丽医院扩建工程、嘉诺撒医院、律敦治医院、仁济医院、联合医院、仁安医院扩建、大埔那打素医院、北大屿山医院，以及在启德区即将落成的香港儿童医院，该院为两座无裙楼式设计，由三条桥梁连接，提供 468 张床位及 13 个手术室。

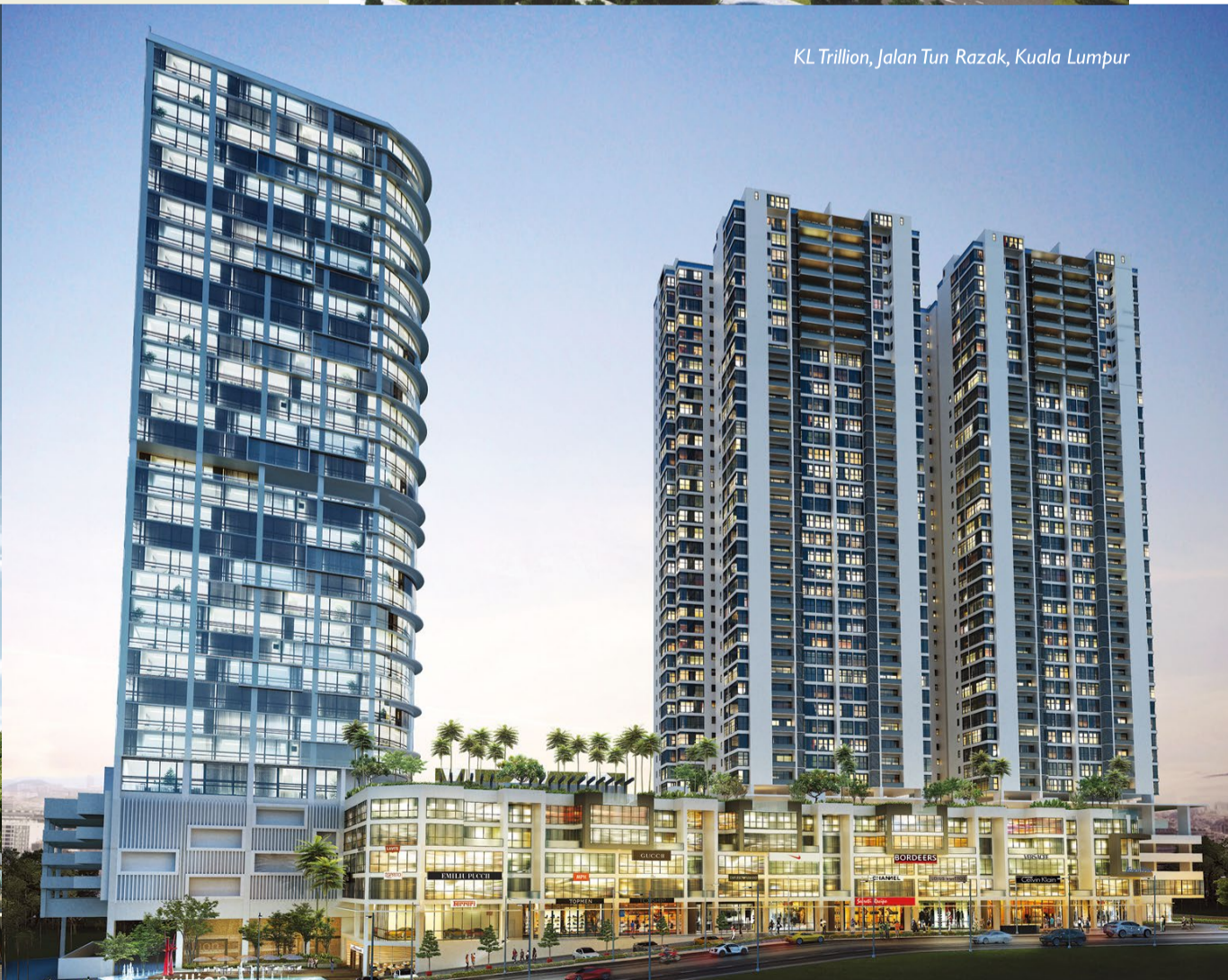
香港儿童医院是澧信的得意之作，为研究、培训、综合康复、诊所服务、手术室和医院数据中心规划足够空间，同时亦是首间专为儿童而设的专科医院。在天台设置大量太阳能热水及光伏板，面积达 900 平方米，是维港海滨最大型的再生能源装置。



V on Shenton, Singapore



Saigon Center- Phase 2 & 3, HCMC, Vietnam



KL Trillion, Jalan Tun Razak, Kuala Lumpur

The Ritz Carlton, Harbin
哈爾濱麗思卡爾頓酒店

张先生说：「医院是太阳能热水面板的理想应用场地。」这项设计及工程为医院取得由香港绿色建筑委员会（HKGBC）颁予的最高的 BEAM Plus 铂金评级，彰显其可持续发展、可再生能源和能源回收功能之卓越。

香港儿童医院是首个达到这样高标准的医院项目，成为本地最环保的医院。院内的空调冷冻水是来自启德区的区域供冷系统，该系统是两年前由澧信成功完成的项目。政府机构建筑必须符合 BEAM 的标准，而澧信的工作已远超出最低要求。梁先生回应外界认为香港在可持续发展方面做得不够：「若想获得铂金评级，必须多做一点。」

数据成就未来

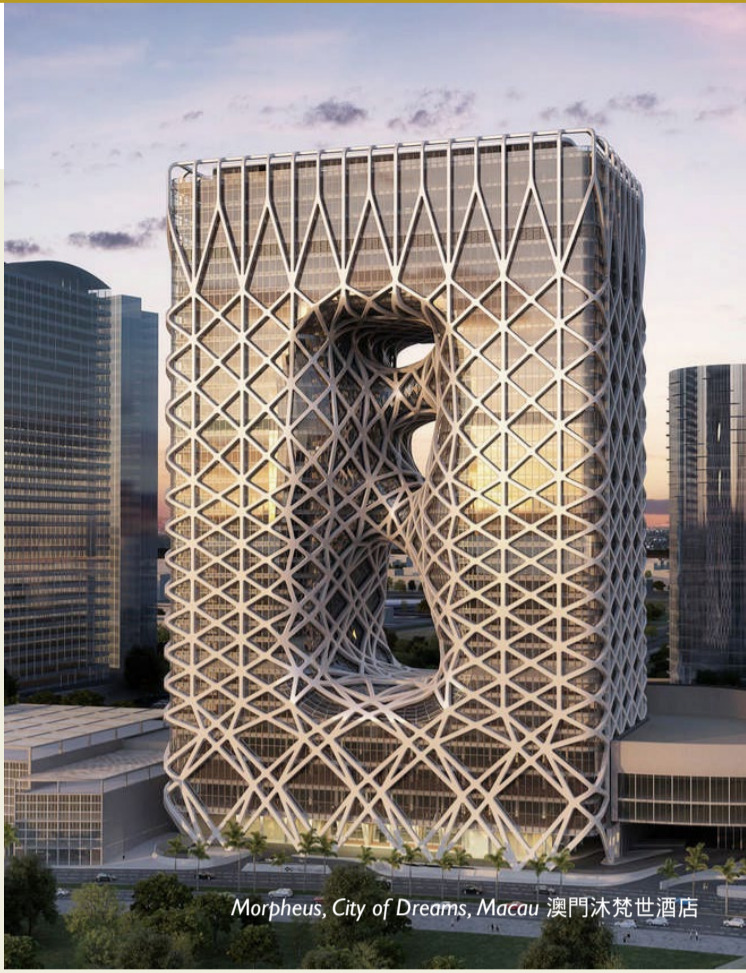
数据中心是香港商业竞争力支柱，及新兴的不动产类别，在未来五年将会继续增长。随着世界日益数字化和物联网（IoT）成为常态，银行和金融机构、学校、零售商和社交媒体将需要越来越多设备储存数据。如超级摩天大楼及医院，数据中心自有其一套须顾及和克服的障碍。梁先生解释道：「政府热衷于进军这个领域，并且拨出较便宜的土地以吸引租户。」数据中心最耗能源，尤其于医院之上。机架需要不断保持低温，确保它们年中无休地运作。」

澧信已经完成了不少数据中心，目前正为摩根士丹利、摩根大通、美国运通、Wochovia 银行、花旗集团、瑞士银行、香港金融管理局及添马舰政府总部存储数据，并在香港、新加坡、上海和北京完成一系列 Mega-iAdvantage 数据中心。

将军澳的中国联通全球中心将设有四千多个机架。梁先生认为，所有数据中心项目中都必须符合三项基本要素：「数据中心的设计方面，有三个『R』必须遵守，这也是打破常规。第一个是 Reliability，若你的 Visa 信用卡偶尔失效，那是他们的问题而非你。第二个是 Resiliency，每个系统可互相支援而不危及自身。最后是 Redundancy，必须建有足够空间供未来扩充。中国联通的全球中心将寄存互联网数据、云端服务及跨境网络服务，主力为亚太地区服务，同时兼作国际创新服务系统中心、云端运算中心以及物联网研发中心。而汇丰银行的二级数据中心于两年前在沙田完成，亦可容纳 4,000 机架。

由于电力供应可靠度全球最佳，配合隐私控制相关的安全度，香港是数据储存设施首选之地。梁先生指出，过去十年，此行业已经蓬勃发展，并获政府在大埔及将军澳预留土地，提供专门的水电及消防服务基础设施与支援。





Morpheus, City of Dreams, Macau 澳門沐梵世酒店



Four Seasons Hotel Hong Kong 香港四季酒店

酒店热方兴未艾

随着亚洲的酒店业增长为全球之冠，未来新落成酒店量将破纪录。酒店业是澧信素来重视的客户，相关工程项目数量未来几年保持乐观。

过往项目包括半岛、四季、丽思卡尔顿、喜来登、文华东方、澳门的美高梅金殿及新濠天地、集酒店教学酒店及学生宿舍于一身的香港唯港荟、太古的型格东隅酒店、W 广州及积木块形状的琶州南丰朗豪酒店。

以上的项目令澧信深深理解，酒店内高效机电工程的关键，在于精心设计所有客户接触区域以符合酒店品牌形象。

「你要先清楚谁是酒店经营者，若是瑞吉酒店 St. Regis，勿选择太花巧的尖端东西，该用复古式旋钮去关灯。若客户是 W 酒店，复杂的设计及触屏技术则派上用场。酒店的市场定位决定工程，就如客户部门推动服务一样。」

这理念将在快落成的哈尔滨丽思卡尔顿酒店得到体现，作为综合体项目的三座塔楼之一，酒店高达 288 米，2019 年建成后将成为哈尔滨市最高的建筑物。



Hotel East 東隅酒店



Hongkong Bank Headquarters
香港匯豐銀行總部大樓



From left to right: HK Yung, Albert To, Joseph Leung, CM Chung, Victor Cheung
由左至右：容學球，杜宏金，梁志明，鍾志明，張志剛