PRC 建设

Pacific Rim Construction

2011 | Issue 57

Aedas designed Express Rail Link West Kowloon Terminus to connect to China's National High Speed Rail Network

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Publisher's Note 编者的话

It's award season again, indicating another year has just about passed us by. We are delighted to welcome the International Tunnelling Awards to Hong Kong for the first time and proudly share with our readers a selection of the many and varied underground infrastructure projects currently in progress around the world. These fascinating projects also confirm just how important subterranean developments are as society devises complex solutions for the increasing challenges we face in this rapidly changing world. The Awards will be held at The Conrad Hong Kong Hotel on 1 December 2011. Those eager to attend will find booking details on page 3.

One of the most hotly discussed topics in Hong Kong in 2011 has been the surge in demand for grade-A retail spaces and the accompanying increase in rentals. LHT Tower and the much anticipated retail podium has just opened on one of the most prominent and historical sites in the Central CBD after a three year construction period. This is only the third building to ever occupy the site since the original Queen's Theatre was built in 1925 and the new tower provides an amazing snapshot of how our city has developed over the course of just three generations.

一年将尽，又是奖项的季节！我们非常欢迎「国际隧道工程奖」首次和香港的读者见面，与我们分享在世界各地的地下基建项目。这些令人大开眼界的工程，印证了地下发展的重要性，因为随著这个瞬息万变的世界，我们所面临的挑战越来越复杂，解决方案亦需不断创新。该奖项将于本年12月1日在香港港丽酒店举行。如欲参加盛会，请留意本刊内广告详情。

而于2011年在香港讨论得最激烈的主题之一，便是对甲级写字楼及零售空间的需求，和租金急遽的陪增。而万众期待的陆海通大厦即将开始启用，正好为这个市场加添一个最优势的选择；大厦位于中环前皇后戏院的显要地段，现在已成为了城中最现代化及环保商厦的新指标。

Mike Staley

Eco-savvy LHT Tower is new Central Gateway

Summoning images of the female form draped beneath an elegant flowing gown or a theatre curtain set to reveal what lies beyond, new LHT Tower sits on an historic site that has witnessed the history and evolution of Hong Kong's dynamic central business district.

Iconic theatre's legacy retained

Situated on the corner of Queen's Road Central and Theatre Lane, inspiration for the design of LHT Tower was drawn from the site and its unique cinematic history, with the new building providing a subtle reminder of iconic Queen's Theatre that previously occupied the site. As a historical reference, the architects designed a bold sculptural "folding" building facade that serves as a metaphor for a "theatre curtain", opening to reveal the office and retail spaces within, while at the same time framing a new artistic backdrop to Theatre Lane.

The original Queen's Theatre was built in 1925, a year prior to the 1926 establishment of The Luk Hoi Tong Co., Ltd. (LHT). And while the company acquired the site and the theatre building shortly thereafter, it did not begin start operating the theatre until after World War II. In 1961, the site was redeveloped into the former Luk Hoi Tong Building, a 12-storey office building incorporating an updated Queen's Theatre and retail shops at ground level.

The former Luk Hoi Tong Building was also important to the company's history, hence the new building retaining the same Chinese name, 陆海通大厦, while the new English name, LHT Tower, is a more subtle and updated reference to the company's identity.

The Luk Hoi Tong Co., Ltd. (LHT) is a privately owned development company that has developed various residential and commercial properties across Hong Kong over the years and currently holds a property portfolio that includes retail and commercial office properties.

A new landmark structure

In 2007, LHT initiated the redevelopment of Luk Hoi Tong Building into a new 29-storey, grade-A commercial building with 11,000 square metres of office space and a 3,000 square metre retail podium.

"Because the site is so prominent in Central, it was important to us that this new project made a special architectural statement to build a new history for this public part of the city," says The Luk Hoi Tong Co., Ltd. Executive Director, Darrell Chan. "We care very much about the principles of sustainability and good urban design, so it was important that the new building also enhanced its surrounding neighborhood and public spaces."

"We wanted a new building that reflected the current environment and the modern demands of today's commercial tenants, unique architecture that brings a new excitement to Theatre Lane and a new history to the immediate area. LHT is also currently working with Highways Department to repave and upgrade pedestrian Theatre Lane into a more pleasant and inviting space because it is noted as a special part of Central."

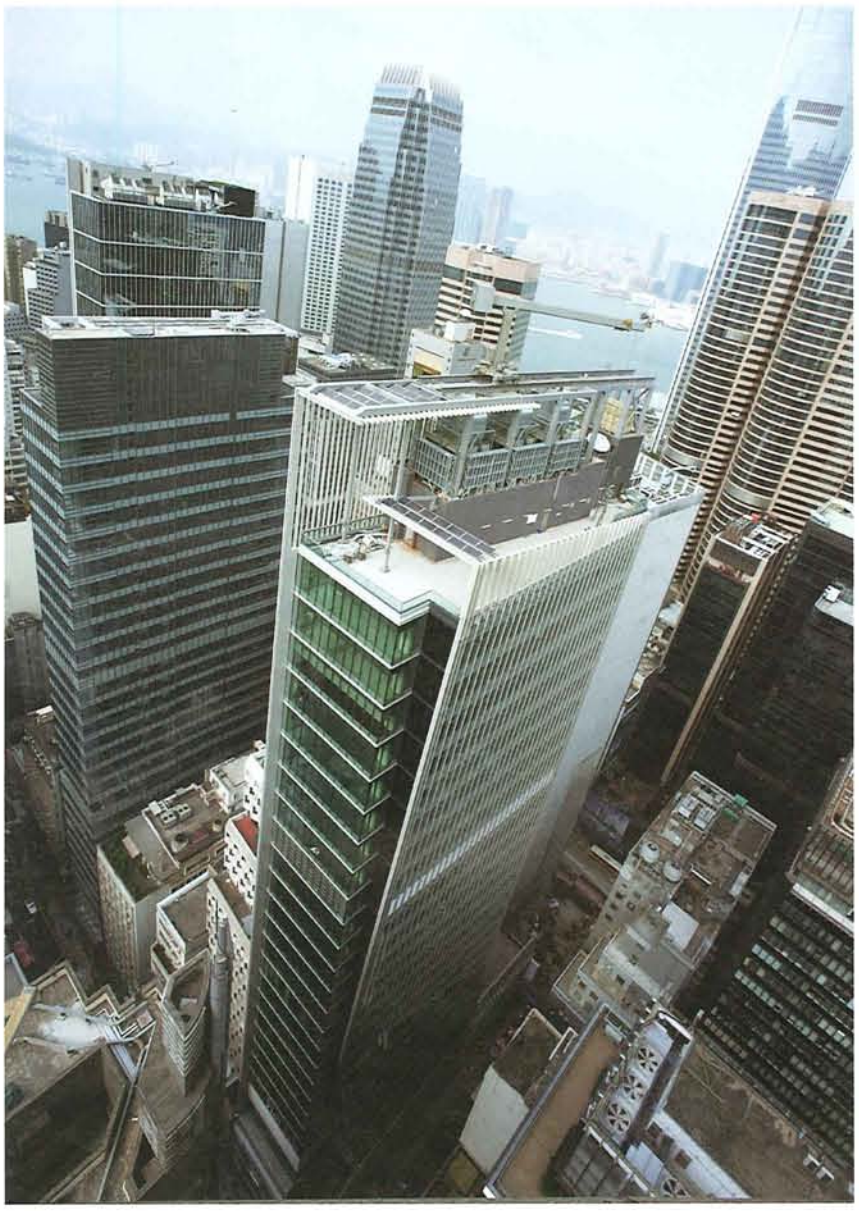
Inspired design

LHT Tower designers Rocco Design Architects challenged the standard tower-and-podium single building development approach without sacrificing the commercial value of the podium floor retail spaces.

"The lot demarcates the start of a series of old adjoining buildings with narrow street frontage down the Queen's Road Central to the west and the free standing contemporary office buildings to the east," states Rocco Design Architects Director, CM Chan on behalf of his team. "Owing to the function of the old cinema building, Theatre Lane unfortunately had a blank wall backdrop for over fifty years and one of our goals was to engage and capture the passing foot traffic."

"The design features a dynamic folding façade system on the elongated side of the building that wraps the podium and the tower in a formal continuum. The roof feature and ribbed wall projection form the extension of the adjoining wall and the programme functions are sandwiched by these two folding skins of opposite natures, delineating the two different urban characters beyond the building. Coupled with the public movement along Theatre Lane, the escalator zones at the retail levels are strategically placed next to the twisting glass skin to form an animated and engaging façade. The non-linear folding of the curtain wall gives an impression of a stage curtain, creating a subtle reference to the theatrical history of the site."

Text: Suzanne Dennis Photography: Samuel Lee 翻译: Bryan Chan



As a result, LHT Tower's curtain wall creates a very elegant flow to the design of the building, like a long, flowing gown that also leaves the impression that LHT Tower stands as the gateway to the Queen's Road fashion district.

DCM Studios were responsible for the design of the foyer spaces conscious of the fact that large areas of the interior would be highly visible through the main façade,

"This required us to not only create an interior with the appropriate quality and ambiance for a prime commercial building in central, but also for the interior to augment the architecture," says DCM Studios Director, Robert Gibson

"The main wall to the escalators is visible through the glazed façade from both Queen's Road Central and Theatre lane. A vertically proportioned limestone was selected and this in turn was detailed with bronze 'sticks' and backlit slots, echoing the external cladding above this area. Travelling up the escalator the frequency of detail increases until it forms a full height illuminated screen at the head of the escalator."

"During the design process we worked from hand sketches to 3D modelling to test our scheme and fine tune our material selection. In the main foyer we repeated the screen detail over the entire lift wall creating a giant lantern. The bronze vertical elements (containing accessible LED fittings) are carried onto the ceiling creating an internal canopy over the lift doors. The lift doors and surrounds were fabricated from hand brushed bronze cladding giving a high quality visual and tactile experience. The floor is finished in hand selected grey and white marble highlighted with bronze detailing."

Enhancing the environment

In terms of environmental benefits, LHT Tower has from the outset been designed to be energy efficient and has already received provisional Hong Kong BEAM Society Platinum Certification. Key sustainability features include provision of variable-control (VAV) energy-efficient building air-conditioning and mechanical systems; provision of Schindler's Miconic 10 Lift Control System for better-coordinated passenger vertical transportation, resulting in faster travel times and significant energy savings; water-saving devices and sanitary fitments installed throughout building for water conservation practices; exterior building facade design maximising natural lighting within the building; and a building recycling program.

Darrell Chan explains that major challenges faced during the construction of LHT Tower included the complexity of the exterior curtain wall system and the numerous site constraints imposed at this very public and busy part of Central.

"To confront these challenges, the building design team employed the use of BIM (Building Information Modelling with Autodesk Revit 3D design software) as integral to the design and construction processes. We encountered many construction challenges due to the fact that there were numerous physical site constraints in Central. Transportation of materials and construction staging was also difficult in such a busy and dense area, as well as many procedural and construction timing restrictions. BIM enabled our general contractor to better understand our design product at an earlier stage, thus allowing them to perform advanced preparation work earlier on to save time, plan better and improve overall construction sequencing."

The complexity of the design also made the construction process extra challenging. For example, the project had a big challenge to incorporate all the rooftop mechanical and building maintenance equipment into the roof design feature, so contractor Gammon used BIM to visualise and solve this problem, finding a way to support all the mechanical equipment, while maintaining the roof's featured aesthetics. Design problems and conflicts between mechanical and structural systems were also detected using BIM at an early stage and thus resolved.

In a city renowned for rapid development and the overnight disappearance of many iconic buildings, Central's new LHT Tower stands as only the third structure ever to have occupied this prominent location that is also a noted Central meeting point for diners and partygoers heading up the hill to Lan Kwai Fong and SoHo entertainment districts.

LHT Tower is a dramatic new landmark structure that draws on the history and a tradition long associated with this iconic Hong Kong site and introduces a new environmentally friendly retail and office gateway to the city's central business district.

陆海通大厦
揭开中区环保商厦新一页

尤如一位优雅女士的长袍，又像是舞台前的一幅帷幕，陆海通大厦（LHT Tower）座落于一个历史性的位置上，那里印证了香港中区充满传奇的历史和演变。

保留戏院的精神

位于中环皇后大道中和戏院里的交界，陆海通大厦的设计灵感来自该处的电影历史背景，新设计巧妙地提供了一个那里曾是皇后戏院的提示。参考过去，建筑师设计了一个大型如雕塑般的「折迭」建筑物外观，比喻为「戏院的帷幕」，从而打开当中的办公室和零售空间，为戏院里加添了一个富戏剧性的艺术背景。

皇后戏院始建于1925年，比成立于1926年的陆海通有限公司（LHT）早了一年。此后不久，公司收购了该地段及戏院，但直至二战结束后才开始启用。在1961年，该处重建并命名陆海通大厦，当时是一幢12层高的写字楼，也包括了在地下楼层的皇后剧院及零售店铺的重建。

由于前陆海通大厦是公司的重要历史，因此在新的建筑物上保留了相同的中文名字，但英文名称却简化为 LHT Tower，富现代感之馀亦不失公司的精神。

陆海通有限公司（LHT）是一家私营发展公司，多年来一直在香港开发各类住宅及商业物业，目前持有的物业组合包括零售及商用写字楼物业。

新里程的建立

2007年，LHT 锐意将陆海通大厦重建成一幢29层高的甲级商业大厦，当中可提供11,000平方米的办公空间，及一个位于低层 3,000平方米的零售商场。

LHT 执行董事陈先生 (Darrell Chan) 说:「由于该地段在中环是如此显要，所以这项目对我们是非常重要，希望在这个城市里以别出心裁的建筑设计来缔造一个新历史。也因为我们非常关心可持续性发展及良好的城市设计，所以新大厦也优化了其周边环境及公共场所。」

「我们需要一个新的建筑物，它能反映出当前环境，亦能满足今天租户的需求，而独特的外型结构更可为戏院里及邻近地方带来新刺激。LHT 目前正与路政署合作，重铺及提升道路舒适度，令行人可以享受及细味戏院里的空间，因为它在中环拥有著一个特殊地位。」

设计灵感

陆海通大厦的建筑师许李严建筑师楼，为不牺牲零售空间的商业价值，以挑战传统兴建大厦及平台的手法来建构大楼。

「该地段向西的是一列较旧的楼宇和不同的狭隘街道，而向东则是一众现代化的办公大楼。」许李严建筑师楼总监陈先生 (CM Chan) 代表团队说：「由于老电影院的建设方式，面向戏院里的一面墙壁在五十多年的时空里一直封闭，所以我们目标之一就是开放那里的视野，吸引和捕捉路过人潮的目光。」

「设计特色在于建筑物较狭长的一面外墙，兴建了一排看来很富动感的长条，由上而下包围著整座大厦。特色的顶部和一排毗连式的长条外墙是大厦内部的延伸，加上戏院里的公共活动空间，为通往零售区的自动扶手电梯增添视觉效果，形成一幅活泼动画。大厦外墙的非直线重迭长条纹，提供了一个舞台幕布的想像图案，从而引申出一段过去的历史。」

为此，陆海通大厦表现出一种非常优雅的建筑设计，它好像一条长长的飘逸长裙在风中摇曳生姿，也代表著站在皇后大道中时尚地区的最前线。

DCM 工作室负责大堂的设计，从大门入口已可以看见内部的宽敞偌大空间。DCM 总监 Robert Gibson 说：「这不仅是单单建立相应的质量设计便可，我们是需要创造一个在中区最首要商业大厦的水平，利用室内设计再提升建筑物的质素。」

「从皇后大道中或戏院里外可看见主要的自动扶手电梯，它垂直的一面是石灰岩墙，另一面是细长的青铜枝条及光槽，一一呼应著外部设计，而细节之处亦随著自动扶手电梯向上而不断出现，直到电梯尽处上方的发亮屏幕。」

「在设计过程中，我们的工作从手缋草图至三维模型也有，用来测试我们的设计和选择材料。在大堂，我们重覆地使用相关的细节在电梯的墙上，创作出如同巨型灯笼的效果。青铜直条和 LED 灯覆盖在电梯门上方。电梯门及其周边是人手打磨的青铜覆面，予人一种高质素的视觉和触觉体验，地板也是精挑细选的灰色和白色的大理石组合而成。」

加强环保意识

在环境效益方面，陆海通大厦从一开始就被设计成高效节能，并已获得了香港环保评估协会（BEAM）发出的白金级认证。其重点可持续性功能包括：可控制（VAV）的空气调节和机械系统；Schindler 供应的 Miconic 10 电梯，它可以更有效地协调垂直客运的控制系统，令行程时间缩短而发挥节能功效；卫生间的节约用水设备；建筑物外部设计使室内采光良好及设立回收计划。

陈先生解释说在陆海通大厦的建设挑战上，也包括了建筑复杂性的外墙和众多地理上的限制，因为这是中区最繁忙的位置。

他续说：「为了应付这些挑战，建筑设计团队和施工过程也使用上 BIM（建筑信息建模－Autodesk Revit 的三维设计软件）。事实上，我们遇到的许多挑战，例如运输材料和施工也很难在如此繁忙的地区上进行，同时有著许多时间限制。BIM 的运用可以帮助我们在较早阶段已了解设计概念，使大家有更好的准备，同时节省时间、方便周详计划、及改善整体建筑执行方法。」

设计的复杂性，也令施工过程中出现额外的挑战，例如如何于顶部纳入机械和建筑维修设备等，因此承建商金门也利用了 BIM 的预视图来解决这问题，令大厦可以一方面承载所有的设备，同时也保留著顶部的美学外型。由于 BIM 的运用，所有在设计上的问题、机械和结构系统之间的冲突也在早期阶段发现及解决。

在快速发展和许多建筑物不断替换而闻名的这个城市，陆海通大厦在中环经历了三次蜕变的这片地方上依然稳占著最有利的位置，这里同时也是前往兰桂坊或半山 Soho 区的聚脚点，提供一个绝佳的见面热点。

陆海通大厦是一幢引人注目的新型建筑物，它承载了香港的传统及和这个标志性地方的历史，与此同时，它也带出了环保建设赋予零售及写字楼空间的全新体验。

陆海通有限公司
THE LUK HOI TONG CO., LTD.


Prime Grade A
Office Building
GAP
TOWER

Nicedrape green products promote eco-friendly new Central landmark

Nicedrape 为中环新厦加添绿色力量

As Hong Kong's skyline continues to evolve, a new, recently completed Central landmark building - LHT Tower – has placed a major emphasis on the installation of eco-friendly fixtures and fittings, including intelligent shading systems as designed, manufactured and installed by Hong Kong company Nicedrape Solar Protection System Co. Limited.

Established 40 years ago, Nicedrape is an acknowledged pioneer in the provision of intelligent shading systems with a major emphasis on the use of environmentally friendly shading systems.

LHT Tower stands on the Central site previously occupied by the fondly remembered Queen's Theatre at the corner of Queen's Road and Theatre Lane. The current commercial structure is only the third building to have stood on this premier site owned by the same Chinese family for generations.

"New LHT Tower is the inspired design of renowned Hong Kong practice Rocco Design Architects and Nicedrape worked with the architects for three years to develop the high standard intelligent shading system now installed there," says Nicedrape Solar Protection System Co Limited Director, Michael Lai.

Nicedrape was challenged with designing an environmentally-friendly shading system for installation into all floors of the building above podium level occupied by offices. The irregular shape of many of the windows also presented challenges, however, Nicedrape's extensive history and notable record of experience in designing and manufacturing intelligent shading systems as installed into some of Hong Kong and China's most notable buildings confirmed that the architect had commissioned a company that also placed a major emphasis on environmentally-friendly products and hardware systems.

"We proposed the installation of a green fabric and hardware system for the curtain wall system," continues Lai. "In order to meet the architect's requirements, we conducted numerous tests and developed a new system especially for LHT Tower. We subsequently produced a prototype in a mutually agreed to colour that is displayed internally and a metalised surface facing the exterior to reduce glare. Nicedrape's green fabric has three main features that address the issues of light, heat and visual clarity for occupants."

In relation to light, Lai explains that a reduction of the excess light penetration was required, as annoying light reflections from computer screens and glass frames are a major distraction to workers. Nicedrape's green fabric allows some natural light to penetrate an office, but negates the reflection from computers and other equipment, thus promoting a light and airy, yet calming and productive work environment.

The second notable feature relates to heat reduction. Lai explains that many buildings pay large power bills for cooling systems. Nicedrape's green fabric blocks out significant heat penetration to the room side and reduces the necessity for air-conditioners to run at maximum strength all day, thus reducing electricity costs and savings are subsequently passed on to tenants. The environmental bonus associated with the installation of Nicedrape's fabrics and systems is also the notable reduction in CO^2 emissions into the atmosphere, so it is a win-win situation for tenants and Hong Kong's air quality.

The third element associated relates to occupants seeing the outside world. Lai explains that a blackout feature is often considered the ideal solution when also addressing the issues of light and heat penetrating into a building, however, in the case of LHT Tower there was a desire for occupants to be able to see outside beyond the workplace, especially given the stunning harbour views from higher floors.

"The advantage of the Nicedrape system is that it controls the amount of heat and light penetrating an area, while also allowing occupants clear and unimpeded views outside," explains Lai.

"Most blinds are also manually operated, however, due to the irregular shape of LHT Tower's dramatic external curtain wall and the unique shape of some windows manual operation was not possible, so we designed an automatic system to be installed for use in about ten per cent of the installed blinds. As the curtain wall area of about four square metres was also regarded as too heavy for ladies, we installed the manual blind with concealed spring system that allows for the easy raising."

"Because this system is extremely easy to operate and very durable, waste has been reduced, repairs are minimal, quality is guaranteed and costs are reduced... a win-win situation for everyone."

"Environmentally-friendly LHT Tower has obtained BEAM Platinum certification," says Lai. "Installed Nicedrape products have greatly contributed to this ranking and we are proud of Nicedrape's contribution to one of Hong Kong's newest and most environmentally-friendly buildings and anticipate continued emphasis on the use of green products and systems in Hong Kong buildings well into the future."

随著香港的天际线不断演变，一幢全新位于中环的建筑物陆海通大厦亦终告落成。大厦主张加强使用环保用料及配件，当中包括了新型的智能遮阳系统。而作为设计、制造和安装以上系统的是一间本地公司 – Nicedrape Solar Protection System Co Limited；管理层拥有40年的丰富经验，并一直走在市场的最前线，主要提供一系列环保式的智能遮阳系统。

矗立在中环皇后大道中和戏院里交界上的陆海通大厦，那里曾经是许多人留下深刻印记的皇后戏院。这幢新型的商厦，属于世代相传的家族集团所拥有，时移世易，今天我们看见的已是第三代的建设。

Nicedrape 执行董事黎先生 (Michael Lai) 说：「陆海通大厦的设计概念是来自香港著名的许李严建筑师楼，Nicedrape 与建筑师团队合作了三年才发展出最高标准的智能遮阳系统，亦已完成安装。」

Nicedrape 为大厦平台以上的办公室楼层安装了环保遮阳系统，其挑战在于许多窗口是不规则形状的，但是 Nicedrape 亦不负建筑师所托，凭藉其丰富的设计及制造经验，令系统全面实现及运作。其实公司亦曾为不少中港注名的建筑物设计及安装同类装置，并以有利于环境作产品的重点。

黎先生说：「我们提出了一个 Verosol Silverscreen 的环保面料和幕墙系统的安装设计。而为了满足建筑师的要求，我们也进行了无数次的测试，并开创了一种新方法，那是特别为陆海通大厦所研发的。其后，我们制作了一个雏型，在室内可选择不同颜色布面而布底镀铝涂层则向室外，从以可减少眩光感。Nicedrape 的环保面料有三个主要特点，那就是有关光、热和清晰的视野。」

在光方面，黎先生说减少多馀的光线穿透是必须的，因为从电脑屏幕和玻璃框架的反射会令工作者分心。而 Verosol Silverscreen的环保面料，可使一部份自然光渗透到办公室，但不足以令电脑和其他设备发生反光效果，从而推动了一个明亮、通风、轻松而富有成效的工作环境。

第二个特点是减热，黎先生说许多建筑物支付著庞大的冷却系统电费。Verosol Silverscreen 的环保面料却可显著减少热力渗透至室内，并可降低使用冷气至最大强度的必要性，从而减少电力成本亦即是用户的支出。无疑地，Nicedrape 提供的面料和系统安装令大厦减少二氧化碳的排放，因此它亦是有利于用户和香港空气质素的双赢设计。

第三个元素就是用户能看到外面的景致。黎氏解释说当有关渗透到建筑物的光与热问题时，完全遮蔽可以是其中一个解决方案，然而，在陆海通大厦的情况下，那是一个用户希望能看户外的工作场所，尤其是位于较高的楼层可一睹无价的海港景色，绝对不可浪费。

「另外 Nicedrape 推荐的 TOSO 卷帘系统优点是能轻巧操控，由于我们特别安装了内置弹簧，就算卷帘面积是大概4平方米，一般女士也能容易操控。由于该系统操作非常简便及耐用，从而减少维修而产生的零件损耗。此产品质量保证从而减少维修成本，对每位用家实在拥有著不少的好处。」黎先生说。

「大多数窗帘是手动操作，但由于陆海通大厦的独特外墙形态，引致一些不规则形状的窗帘是不能以人手操作，所以我们需要特别设计约10%的电动窗帘以便配合建筑师对此独特的设计。」

黎先生总结道：「对环境友好的陆海通大厦已获得了绿色建筑认证。安装了Nicedrape 的产品相信有一定程度有助于取到这个级别，同时公司为香港最新及最环保的建筑物之一作出贡献而感到非常骄傲，并预期未来会在香港楼宇中更广泛地使用。」

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Logistics key to efficient LHT Tower construction site

Gracing the premier Central site previously occupied by Queen's Theatre and constructed by Gammon Construction Limited, the new landmark building, LHT Tower, presented some unique challenges.

Renowned for both gridlock traffic and the crowds that flock to the area to work, shop and be entertained, Queen's Road Central must rank as one of the most challenging places in Hong Kong to construct a new building. However, under the direction of senior project manager, Lawrence Pun, a unique GPS communications system and other initiatives guaranteed the efficient delivery of materials, safety for pedestrians, workplace safety and efficient construction.

LHT Tower (Luk Hoi Tong Building) comprises a 29-storey mixed office and retail tower with a gross floor area of 21,000 square metres, spreading over 21 floors of office, two levels of mechanical floor, a three-level podium retail area, a basement and two dining floors on the site previously occupied by the old Queen's Road Theatre which in 1961 was developed into an office cum cinema building. The new building was constructed under a very tight programme of just 493 days and has subsequently been awarded a Site Innovation Award as a result of the many construction challenges that the site presented.

"The LHT Tower site presented us with some unique challenges over the two year construction period 2009-2011," says Gammon Construction Limited senior project manager, Lawrence Pun. "Firstly, the site is relatively small when compared to other major development sites and is bordered on three sides by roads, one pedestrian only, so this presented challenges for trucks and the delivery of materials such as concrete. Secondly, the site is located right in the centre of Hong Kong's central business district with a very high volume of pedestrian traffic, especially during working hours and both workplace safety and the safety of the general public is always out top priority."

Pun explains that the site required the uninterrupted delivery of materials all day every day, including 200 cubic metres of concrete. The average lorry carries 7 cubic metres, meaning that 30 trucks needed to access the site on any given day.

"The delivery of materials also had to be completed during working hours with trucks making deliveries via Queen's Road Central," continues Pun." It was imperative that trucks waiting to make their deliveries did not queue on Queen's Road, so we devised a unique GPS system and communicated directly with drivers temporarily queued outside IFC when we were ready for the next truck to head over to the site."

"In order to guarantee public safety, we also widened the entrance to the site from 6-metres to 8-metres with a dual-purpose swinging barrier gate, that closed site access and allowed for the free flow of pedestrian traffic, then when opened provided a double barrier that was the width of the footpath and shields pedestrians from close proximity to trucks entering or exiting the site and also prevents any daring individual from the temptation to try and make it across the entrance without being hit by a truck."

BEAM Platinum category LHT Tower also incorporates a number of state-of-the-art green elements, including the unique curtain wall that graces the side of the building, the BIM-designed roof incorporating a BMU supplemented cooling tower and advanced sunshade features.

Gammon also worked in conjunction with the Drainage Services Department, undertaking excavation works required for drainage and water pipes and the laying of cables by Hong Kong Electric.

"This co-operation between Gammon and the Drainage Services Department was mutually beneficial and eliminated the need for us to apply for a special permit in relation to undertaking drainage excavation works," says Pun. "They helped us and we assisted them, so it was a win-win situation."

LHT Tower introduces into Central a unique new structure destined to become the retail and office gateway to Hong Kong's thriving central business district and one of the first in the city to adopt new green 21st century design and technologies.

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Opening November 2011

LHT TOWER

高效物流是陆海通大厦的建筑关键

享负盛名的前中环皇后戏院，该处现已被 LHT Tower（陆海通大厦）所取代，这幢由金门建筑所兴建的标志性大厦，在建筑上引发了不少挑战及难度甚高，相信只有是业界的精英才可将难题克服，把大厦如期建成。

出名交通繁忙的皇后大道中，每天也有成千上万的人群涌向该区工作、购物和娱乐，若然要兴建一座新的建筑物，必然为工程带来巨大的挑战。然而，在金门建筑的高级项目经理潘伟鸿的带领，及独特的 GPS 通讯系统和其他措施协助之下，便足以保证有效地运送建筑材料、顾及行人及工地安全和有效地进行施工。

1961年的皇后戏院是一办公室兼营影院的大厦，而新建的陆海通大厦则是一幢楼高29层，总楼面面积21,000平方米的多用途办公及零售大厦，当中超过21层是办公室、两层的机楼、三层的零售楼层、地下层及占地两层的餐饮区。新的大厦的建筑期十分紧迫，只有493天，因为建筑上的多重难度，随后获颁发一个创新建筑的奖项。

「陆海通大厦在2009至2011年的为期两年建筑期中，带引出不少独有的挑战。」金门建筑高级项目经理潘伟鸿说。「首先，相比其他主要的发展用地，该地盘面积较小。而由于三面接壤的道路，及只有一条行人道，所以运送建筑材料如混凝土等均充满限制。其次，该地段落在香港的商业中心区，行人及交通流量也非常高，所以我们十分重视工地的安全性，尤其是在繁忙的工作时段，广大市民的安全一直是我们最优先考虑的事情。」

潘氏解释说，工地需要每天及整天不间断地运送建筑材料，包括200立方米的混凝土；而一辆货车平均只可载7立方米，这意味著每天有30辆货车到达地盘。

「建筑材料也会在上班时间到达，通过皇后大道中进出交收。」他说：「我们要确保等待运送的货车没有在皇后大道中上列队，所以我们设计了一个独特的全球定位系统与司机直接沟通，通知他们暂时在国际金融中心外等候，当我们准备好时便通知他们驶往地盘。」

「为了保证市民的安全，我们把6米的入口增宽至8米，并使用双用途摆动关闸，即关闭地盘进入时可允许行人在行人道上横过，而打开时则可提供双重屏障，在货车进入或离开时闸门会成为了屏障，避免行人被货车撞倒，而加长的宽度更有效防止一些鲁莽的行人强行通过。」

取得了 BEAM 白金级别的陆海通大厦还采用了一些最先进的绿色元素，包括独特的外墙设计，呈现出优雅的线条包围著大厦，并采用了一个利用 BIM 设计的屋顶，当中包括了外墙清洁装置、冷却塔及获奖的遮阳设备。

金门建筑亦联同渠务署进行了一次排水及水管的铺设，及让香港电灯加设电缆的挖掘工程。

「金门和渠务署之间的合作是互利的，同时消除了我们申请进行排水开挖工程的需要。」潘氏说。「他们帮助我们，我们也促进工程达成，所以这是一次双赢的局面。」

陆海通大厦在中环矗立了一个独特的新焦点，其率先采用的绿色新世代设计及技术，在香港的繁荣商业区引领风潮。

Gammon