GREEN BUILDING AWARD 2010

green
building
award 2010
環保建築大獎

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Foreword:
Message from the Chairman of GBA 2010 Organising Committee
环保建筑大奖2010筹委会主席致辞

As the world is becoming increasingly aware of the environmental, social and economical impacts due to climate change, the society has a strong demand for green and sustainable buildings in recent years. Stakeholders in the property and construction industry in Hong Kong are responding to this challenge and taking an active role in promoting a wider adoption of sustainable planning, design, construction, operation, maintenance, renovation and revitalisation of buildings in moving towards a low carbon city. Since launching of the Green Building Award (GBA) four years ago, it has developed into a prominent biennial event of the industry, providing a platform to showcase building related projects with outstanding performance and contributions in environmental sustainability. With the view to promoting more holistic participation and encouraging even wider support both locally and throughout the Asia Pacific, the scope of GBA 2010 has been expanded to cover not only New Buildings, Facility Management, and Research & Planning Studies, but also Adaptive Reuse and Interiors, as well as projects in the Asia Pacific region.

GBA 2010 has received overwhelming response of nominations with a total of 56 entries from 18 cities in the Asia Pacific region. Standard of the nominated projects are exceedingly high. From the 45 finalists, 6 grand awards and 18 merits have been conferred. I sincerely congratulate the winners and finalists on their success. In addition to exhibiting their projects to the general public after the award presentation ceremony on 3 November, the winning teams will have the opportunity to present their projects at the Green Building Conference 2010 on 4 November. I thank them for sharing their invaluable experience.

We are honoured to have Mrs. Carrie Lam, Secretary for Development, and Mr. Edward Yau, Secretary for the Environment, to be Honourable Advisors of the event, and Guests of Honour at the award presentation ceremony. The strong support from the HKSAR Government is extremely encouraging to the green building movement in Hong Kong.

I would like to express my sincere gratitude to members of the Jury Panel for contributing their valuable time and efforts in the judging process. My heartfelt thanks go to our sponsors for their generous financial support, without which this meaningful event would not be possible. I also thank the supporting organisations for their endorsement of the event.

It is indeed my great honour and privilege to be Chairman of the GBA 2010 organising committee. I hope that this event will motivate wider participation from the community and the industry in the green building movement, and inspire innovation in the creation of a more sustainable built environment. In closing, I would like to thank members of the organising committee for their dedicated efforts in the past few months.

气候变化对环境、社会及经济所带来的影响备受全球关注，以致社会近年对绿色建筑的需求不断提升。香港的地产及建造业人士面对有关挑战，积极推广可持续建筑的规划、设计、建造、管理、维修以致活化方法之应用，为建立低碳城市的目标而努力。自四年前首次举办以来，环保建筑大奖已成为业界两年一度的瞩目盛事，旨在表扬在环境可持续发展范畴上表现出色的建筑项目，向外界展示其杰出成绩及贡献。为普及推广环保建筑，鼓励更多香港及亚太地区项目参与，环保建筑大奖2010的类别除了新建建筑、设施管理和研究及规划外，更新增了活化再利用及室内设计，以及亚太区项目。

环保建筑大奖2010自接受提名后，业界反应非常热烈，共接获来自18个城市56个本地及亚太区建筑项目提名。提名项目质素优越，在45个入围项目中，评审委员会共选出6个大奖及18个优异奖。本人在此向得奖者及入围项目致以至诚祝贺。得奖队伍除了可于11月3日的颁奖典礼后展出获奖项目，更可在11月4日举行的「绿色建筑研讨会」上介绍其得奖项目。本人非常感谢他们的创见及经验分享。大会很荣幸能邀请到香港特别行政区政府发展局局长林郑月娥太平绅士及环境局局长邱腾华太平绅士拨冗担任荣誉顾问及颁奖典礼的主礼嘉宾。获得香港政府的大力支持，对推动本地绿色建筑发展实在是极大的鼓舞。本人对评审委员会成员付出的宝贵时间及意见，致以衷心的谢意。同时感谢各赞助商的慷慨支持，没有您们的支持，这项别具意义的活动将无法成功举办。本人亦藉此机会向各协办机构致万分的谢意。

本人十分荣幸能担任环保建筑大奖2010筹备委员会主席，并衷心希望藉此活动推动社会及业界积极参与绿色建筑发展，启发可持续建筑及环境保护的创意。最后，本人谨藉此机会，感谢筹委会成员过去数月付出的努力并祝是次活动举办成功。

Ir Victor CHEUNG 张志刚工程师
Chairman, GBA 2010 Organising Committee
环保建筑大奖2010筹备委员会主席

Message from the Guest of Honour
主礼嘉宾贺辞

I offer my warmest congratulations to the Hong Kong Green Building Council and the Professional Green Building Council for jointly organising the biennial Green Building Award 2010.

In Hong Kong, buildings alone account for nearly 90% of the total electricity consumption. Optimising building designs with green elements and retrofitting existing buildings are therefore highly conducive to achieving energy savings. To have a sustainable built environment, we should consider not only the capital cost of buildings, but also the recurrent cost of daily management and maintenance. In essence, we should embrace the concept of whole-life value of buildings.

Maximising the whole-life value is to achieve financial, environmental and social sustainability over the lifespan of a building, through green and sustainable planning and design, efficient and effective construction, and smart and user-friendly property management, maintenance and renovation.

I am pleased to note that the Green Building Award 2010 has underscored the importance of whole-life value concept by providing recognition to buildings and research projects with outstanding performance and contribution to sustainability and the environment. Hopefully, this will encourage the industry to contribute to sustainable development of Hong Kong.

Last but not the least, I would like to congratulate all the award-winners for your continuous efforts and devotion to the construction industry for sustainable buildings, and wish this event a great success.

香港绿色建筑议会与环保建筑专业议会合办两年一届的环保建筑大奖2010，谨此致以衷心的祝贺。

在香港，单是楼宇的耗电量已占全港总用电量接近90%。因此，尽量透过楼宇设计加入环保元素及翻新现有楼宇都有助节省能源。为了缔造可持续的建筑环境，我们除了考虑楼宇的建筑成本外，还应顾及楼宇日常管理和维修保养所需的经常开支，故应重视楼宇整体寿命价值，秉持这个观念才是最重要的态度。

尽量提升楼宇整体寿命价值，就是让楼宇于整个使用期内在财政、环境和社会方面得以持续，我们可透过采用环保和有持续意义的规划及设计；具效率和有成效的建筑方式，以及精明和易于实行的物业管理、维修保养及装修模式来实践这个理念。

欣悉环保建筑大奖2010亦十分强调楼宇整体寿命价值这个重要理念，透过颁发奖项，表扬在持续性和环境方面表现杰出且贡献良多的建筑物和研究项目，藉以鼓励整个业界在推动香港的持续发展方面作出贡献。

最后，我向各得奖者道贺，他们笃志力行，尽心竭诚，为建造业打造可持续的建筑物，可谓实至名归。我亦谨此祝愿颁奖礼圆满成功。

Mrs. Carrie LAM 林郑月娥
Secretary for Development 发展局局长

Message from the Chairman of The Hong Kong Green Building Council (HKGBC)
香港绿色建筑议会会长贺辞

Globally, green buildings are playing an important role in combating climate change and in achieving a sustainable built environment.
In Hong Kong, we have our specific climate conditions and high density development characteristics which present fantastic opportunities.
The Green Building Award 2010 is organised to provide a platform for all stakeholders to contribute in advancing the state-of-the-art of green buildings and towards a sustainable quality living environment. Society demands that we do better, and indeed we can, as the enthusiasm and quality of the Award entries testify.

I would like to offer my heartiest congratulations to all the Award-winners. These exemplars will also be recognised and presented in the Green Building Conference on the 4th November 2010. I am sure the advance made this year will set fresh and higher standard for the Award in the coming years.

I would also like to record our gratitude to the jurors for their hard work and to our sponsors for their generous financial support.

A special acknowledgement is due to the Development Bureau, Hong Kong SAR Government, which has introduced important policy initiatives in promoting green buildings in Hong Kong and has given tremendous support to the HKGBC and to this Award and Conference event.
We celebrate the work by all involved and I wish the Award Ceremony and the Green Building Conference 2010 a great success!

绿色建筑在全球抗御气候变化及缔造可持续建筑环境的工作上担当重要角色。在香港，本地独特的气候条件及高密度发展模式，造就独特的机遇。2010年度『环保建筑大奖』正好提供一个平台让所有持份者齐心参与，促进绿色建筑及可持续优质生活环境。从参赛者的积极及作品的高质素，可见我们可以达到社会寄予我们的期望。

本人热烈祝贺所有得奖者！这些作品会在2010年11月4日的会议上有所介绍及表扬。深信本年度的成就，会为今后的大奖设下更新更高的标准。

在此亦感谢各位评审的努力及赞助公司的支持。同时亦向特区政府发展局特别致意。 局方制定的政策及对香港绿色建筑议会的多方支持，是香港发展绿色建筑不可或缺的。

我们庆祝这一次所有参与者作出的努力。本人祝愿『环保建筑大奖』颁奖礼及会议完满成功!

Ir Dr. Andrew K.C. CHAN, JP 陈嘉正 博士、工程师
Chairman, The Hong Kong Green Building Council 香港绿色建筑议会主席

Message from the Chairman of The Professional Green Building Council (PGBC)
环保建筑专业议会会长贺辞

PGBC initiated the biennale Green Building Award (GBA) in 2006, honouring outstanding green projects in the category of new buildings, existing buildings, renovation, research, and planning in Hong Kong. In the GBA 2008, PGBC extended the recognition to all projects in Hong Kong and beyond provided that Hong Kong professionals were involved. With the establishment of HKGBC since 2009, the GBA 2010 is co-organised by both HKGBC and PGBC.

In the inauguration conference of HKGBC, four "**As**" were highlighted as the core agenda of our green building movement. They are "**Assessment, Accreditation, Advocacy and Award**". HKGBC has launched the assessment scheme BEAM Plus, accreditation of BEAM Professionals and BEAM Assessors, and various advocacy initiatives since its inauguration in November 2009. The green building award is definitely a highlight to celebrate the first anniversary of HKGBC.

The GBA 2010 can be highlighted in four "**Cs**". Firstly, the "**Categories**" are expanded to embrace new buildings, existing buildings (facility management), research, planning, interiors, and adaptive reuse/revitalisation, i.e., 6 categories in total with a view to better addressing various aspects of green building practice throughout the building lifecycle. Secondly, the award opens to nomination from Hong Kong and Asia Pacific, resulting in having entries from a total of 18 "**Cities**" on top of the local submissions. Thirdly, in addition to the award presentation ceremony, the event dovetails with the annual "**Conference**" of HKGBC in which 12 Finalists of the GBA 2010 are invited to share the best practice across the six categories of nomination for wider appreciation. Last but not least, the jury process and associated conference connects the expertise of 8 "**Councils**" of green building – from Australia, Canada, China, Hong Kong, Japan, Singapore, Taiwan, and UK.

PGBC fully supports the movement of green building council which aspires to create a common platform of synergy and strategies for accelerating the market transformation towards quality and sustainable built environment – for a better common future.

环保建筑专业议会于2006年创办两年一度的环保建筑大奖，旨在表扬本港之新建建筑、现有建筑、翻新、研究及规划等5方面表现杰出的绿建项目。在2008环保建筑大奖时，环保建筑专业议会把这奖项推及至本港专业人士有所参与的香港及以外地域项目。随着香港绿色建筑议会于2009年成立，是届2010环保建筑大奖成为香港绿色建筑议会及环保建筑专业议会联合举办之绿建盛事。

在去年香港绿色建筑议会成立典礼暨会议上，确立了「认证绿建」(Assessment)、「认可专才」(Accreditation)、「推赏绿建」(Advocacy)及「奖赏绿建」(Award) 为绿色建筑运动的核心纲领。香港绿色建筑议会自成立近一年以来，已推出了 BEAM Plus 绿建认证升级版本，认可绿建专才(BEAM Pro) 及绿建评委 (BEAM Assessor) 的专业资格，并参与领导多项倡导社会迈向可持续发展之低碳生活之方案。而「环保建筑大奖」绝对是庆贺香港绿色建筑议会一周年的亮点。

2010年度环保建筑大奖的特质分为4方面：首先，「类别」（**Categories**）扩展至涵盖新建建筑、现有建筑（设施管理）、研究、规划、室内设计及活化项目，共6项类别，从而更明确地标示整个建筑生命周期内各方面的绿建常规；其次，拓展奖项的提名，公开予香港及亚太地区项目，是次大奖总共接获分别来自香港及其他18个「城市」（**Cities**）的作品踊跃提名；第三，除颁奖典礼外，是次大奖亦结合香港绿色建筑议会的周年「会议」（**Conference**），2010年度环保建筑大奖的12个精选入围参赛单位将于会议上分享绿建之六项类别的创意佳作；第四，来自澳洲、加拿大、中国、香港、日本、新加坡、台湾及英国8个地区的绿色建筑「议会」（**Councils**）代表，参与评审或于是次会议对这奖项作出支持及积极回应。

环保建筑专业议会全力支持这绿色建筑议会之运动，珍视这致力促进业界合作的平台，期许加速市场朝着优质和可持续发展城市转化的步伐——共建更美好的未来。

Mr. K S WONG 黄绵星先生
Chairman, The Professional Green Building Council 环保建筑专业议会主席

Message from CIC

I would like to extend my sincere congratulations to the success of the Green Building Award as well as to those awardees for their efforts and excellent performance in the competition.

Green Building Award is a meaningful and valuable event in promoting a sustainable built environment. It is also encouraging to see the remarkable performance in achieving sustainability within different aspects of buildings here in Hong Kong.

May I take this opportunity of wishing the Green Building Award continual success in the years ahead.

本人衷心祝贺「环保建筑大奖」的成功，以及得奖机构为比赛所付出的努力和展现的卓越表现。

「环保建筑大奖」是一项别具意义而值得举办的活动，旨在推动可持续建筑环境，而香港的有关建筑物在不同层面展现可持续发展能力，成效显著，令人深感鼓舞。

本人藉此机会祝愿「环保建筑大奖」续创佳绩。

Mr. LEE Shing-see, GBS, OBE, JP 李承仕，金紫荆星章，太平绅士
Chairman, Construction Industry Council 建造业议会主席

Message from BEC

BEC, being a founding member of the Hong Kong Green Building Council (HKGBC), is proud to congratulate the joint effort of HKGBC and the Professional Green Building Council (PGBC) in organising the Green Building Award 2010.

Hong Kong is an Asian World City. We have an important mission to extend beyond our own territory in promoting a quality and sustainable built environment. This award, striding into its third round, has been inspiring cutting edge green building designs, raising industry standards and encouraging a wider adoption of best practices in the Asia Pacific region.

We are delighted to be a partner in this journey and to witness these exemplary cases for sustainable development. I am impressed by the work product of all entrants this year. Each of them represents professional effort that pushes the built market forward by challenging the existing boundaries and taking initiatives in showcasing how sustainable planning, design, construction and maintenance of buildings benefit our environment.

I like to take this opportunity to congratulate the award winners on their remarkable achievements and I look much forward to seeing greater innovations in the years ahead.

Prof. John CHAI
Chairman, Business Environment Council

Message from BEAM Society

Since the international community raised the awareness of the importance of global environmental protection at the Earth Summit 1992, pursuing sustainable development has become a major factor for society's future worldwide. In response to the public concern, over the past 10 years, the industry has been putting greater effort in planning and designing buildings with a wider adoption of sustainable design, construction and operation, so that they can provide healthier, higher quality, more durable and efficient working and living environments for the building occupants.

We are glad that Green Building Award encourages the community and the industry for wider involvement in promoting and contributions in the sustainable planning, design, construction, management, operation, maintenance, renovation and decommissioning of buildings. We are looking forward to the success of the Green Building Award.

Mr. Michael ARNOLD
Chairman, BEAM Society

Message from HKIA

On behalf of the Hong Kong Institute of Architects, I would like to convey my deepest congratulation to the winners of Green Building Award 2010.

It is my great pleasure to be a member of the Jury Panel for the New Buildings Category - Hong Kong for the Green Building Award 2010. I am impressed by the efforts paid by our profession in achieving a greener and more sustainable environment.

I sincerely congratulate HKGBC and PGBC on the great success of GBA 2010 and look forward to having more green buildings with innovation in Hong Kong in the years to come.

Ms. Anna Sum-yee KWONG, MH, FHKIA
President, The Hong Kong Institute of Architects

Message from HKIE

On behalf of the Hong Kong Institution of Engineers, it is my pleasure to offer my warmest congratulations to the Green Building Award 2010 Organising Committee and all the awardees on the occasion of the Green Building Award 2010 Presentation Ceremony.

Since its launching in 2006, the Award has provided an excellent platform to promoting sustainable planning in the building industry. It is delighted to note that the Award continues to recognise the contributions of the building specialists made on building a greener Hong Kong and the overwhelming responses received.

May I wish the Presentation Ceremony a great success.

贺二零一零年度环保建筑大奖颁奖典礼
推动环保建设　共建绿色香港

Ir Prof. Reuben P.K. CHU 朱沛坤教授、工程师敬贺
President, The Hong Kong Institution of Engineers 香港工程师学会会长

Message from HKILA

On behalf of the Hong Kong Institute of Landscape Architects, I like to extend my heartful thanks to all participants and their entries to the Green Building Award who had done such great work in building a green and sustainable environment in Hong Kong, and elsewhere in the world. Your contribution has made the world a better place to live. I also like to send my warmest congratulation to the winning entries of the GBA which will help set new benchmarks for our green building design and construction.

Mr. Evans IU
President, The Hong Kong Institute of Landscape Architects

Message from HKIP

Half the world's population now live in cities, and in the buildings in the cities. The impact of global climate change not only affects us today but will also definitely have tremendous and irreversible impacts on many generations to come. The HKGBC and PGBC is highly complimented for its initiative and foresight in organising the Green Building Award 2010, which certainly has successfully inspired and motivated practitioners, scholars and all sectors of the community to strive for a better, more sustainable built environment for all.

全世界目前已有一半的人口居住于城市和其中的建筑物内，全球气候暖化现象不单只影响今时今日的我们，而且肯定将会对未来的下几代有深远和不可逆转的影响。香港绿色建筑议会及环保建筑专业议会主办的2010「环保建筑大奖」着实启发和鼓励了与建筑业有关的所有业界人员、学者及社会大众一同探求构建一个更美好和可持续发展的居住环境，此举实应获得全世界目前已有一半的人口居住于城市和其中的建筑物内，全球气候暖化现象不单只影响今时今日的我们，而且肯定将会对未来的下几代有深远和不可逆转的影响。香港绿色建筑议会主办的2010「环保建筑大奖」着实启发和鼓励了与建筑业有关的所有业界人员、学者及社会大众一同探求构建一个更美好和可持续发展的居住环境，此举实应获得崇高的致意和赞赏。

Mr. P.Y. TAM
President, The Hong Kong Institute of Planners

Message from HKIS

With improving living standards, there is rising concern on sustainable development by the community. The Green Building Award recognises outstanding projects teams with excellent contributions towards sustainability and the conservation of the environment. On behalf of the HKIS, I would like to congratulate all winners and nominees, and the Green Building Award 2010 every success.

随着生活质素的改善，社区对持续发展的议题越来越受关注。环保建筑大奖旨在表扬为推动环境保护及持续发展的业界代表。本人谨代表香港测量师学会，热烈恭贺各得奖机构，并各参赛团队致以衷心感谢。

Prof. K.W. CHAU 邹广荣
President, The Hong Kong Institute of Surveyors 香港测量师学会会长

GBA 2010 Honorary Advisors 环保建筑大奖2010荣誉顾问

Mrs. Carrie LAM, GBS, JP
Secretary for Development of the HKSAR Government
香港特别行政区政府发展局局长
林郑月娥, 金紫荆星章, 太平绅士

Mr. Edward YAU, JP
Secretary for the Environment of the HKSAR Government
香港特别行政区政府环境局局长
邱腾华太平绅士

Jury Panel

New Buildings - Hong Kong

Mr. NENG Kwei Sung, Jeffery 吴贵生先生先生
Assistant Technical Co-ordinator, Singapore Green Building Council
新加坡绿色建筑议会助理技术统筹

Hon SHEK Lai-him, Abraham 石礼谦太平绅士
Legislative Council Member, Functional Constituency, Real Estate and Construction
立法会议员 – 地产及建造界

Mr. LEUNG Cheuk Fai, Jimmy 梁焯辉太平绅士
Director, Planning Department
规划署署长

Prof. HO Puay Peng 何培斌教授
Director, School of Architecture, The Chinese University of Hong Kong
香港中文大学建筑学院教授兼院长

Prof. CHEUNG Moe M. S. 张慕圣教授
Chair Professor, Department of Civil and Environmental Engineering, The Hong Kong University of Science & Technology
香港科技大学土木及环境工程学系讲座教授

Mr. IU Po-lung, Evans 姚宝隆先生先生
President, The Hong Kong Institute of Landscape Architects
香港园境师学会会长

Prof. CHAU Kwong Wing 邹广荣教授
President, The Hong Kong Institute of Surveyors
香港测量师学会会长

Ms. KWONG Sum Yee, Anna 邝心怡女士
President, The Hong Kong Institute of Architects
香港建筑师学会会长

New Buildings - Asia Pacific

Dr. COLE, Raymond 博士
Professor, School of Architecture and Landscape Architecture, The University of British Columbia, Canada
加拿大卑诗大学建筑系教授

Prof. Hon LAU Sau-sing, Patrick 刘秀成太平绅士
Legislative Council Member, Functional Constituency – Architectural, Surveying and Planning 立法会议员 – 建筑、测量及都市规划界

Mr. CHAN Fan, Frank 陈帆太平绅士
Deputy Director/ Regulatory Services, Electrical & Mechanical Services Department
机电工程署副署长/规管服务

Prof. LERNER, Ralph 亮华飞教授
Dean and Chair Professor, Faculty of Architecture, The University of Hong Kong
香港大学建筑学院院长暨首席建筑教授

Prof. WANG Shengwei 王盛卫教授
Chair Professor, Department of Building Services Engineering, The Hong Kong Polytechnic University 香港理工大学建筑设备工程学讲座教授

Mr. TAM Po Yiu 谭宝尧先生
President, The Hong Kong Institute of Planners
香港规划师学会会长

Prof. WONG, K S 黄锦星教授
Chairman, The Professional Green Building Council
环保建筑专业议会主席

Existing Buildings
- Hong Kong & Asia Pacific
(includes Facility Management, Adaptive Reuse & Revitalisation and Interiors)

Mr. WANG You Wei 王有为先生
Chairman, China Green Building Council, China
中国绿色建筑委员会主任委员

Ir Dr. Hon HO Chung-tai, Raymond 何钟泰太平绅士
Legislative Council Member, Functional Constituency – Engineering 立法会议员 – 工程界

Prof. Hon LAU Sau-sing, Patrick 刘秀成太平绅士
Legislative Council Member, Functional Constituency – Architectural, Surveying and Planning
立法会议员 – 建筑、测量及都市规划界

Mr. AU Choi Kai 区载佳太平绅士
Director, Buildings Department
屋宇署署长

Prof. CHAN Chung Leung, Johnny 陈仲良教授
Dean, School of Energy and Environment, City University of Hong Kong
香港城市大学能源及环境学院院长

Ir Prof. CHU, Reuben 朱沛坤教授
President, The Hong Kong Institution of Engineers
香港工程师学会会长

Ir CHAN, Allan 陈修杰工程师
Immediate Past Chairman, Building Division of the Hong Kong Institution of Engineers
香港工程师学会建造分部前分部主席

Dr. CHENG Kam Wah, Edmond 郑锦华博士
President, The Hong Kong Association of Property Management Companies Limited
香港物业管理公司协会会长

Mr. PAN, Horace 潘鸿彬先生
Chairman, Hong Kong Interior Design Association
香港室内设计协会会长

Research & Planning
- Hong Kong & Asia Pacific

Prof. MURAKAMI, Shuzo 村上周三教授
Professor, Keio University, Japan 日本应庆大学教授及 Japan Sustainable Building Consortium 理事(董事长)

Hon LAU Wai-hing, Emily 刘慧卿太平绅士
Legislative Council Member, Geographical Constituency – New Territories East 立法会议员 – 新界东

Mrs. LAU LAI Siu Wan, Marigold 刘赖筱韫太平绅士
Director, Architectural Services Department
建筑署署长

Mr. WONG Yiu Kam, Benny 黄耀锦太平绅士
Deputy Director, Environmental Protection Department (1)
环境保护署副署长（1）

Prof. YEH, Anthony G.O. 叶嘉安教授
Head and Chair Professor, Department of Urban Planning and Design, The University of Hong Kong
香港大学城市规划及设计系系主任暨讲座教授

Mr. CHEUNG Hau Wai 张孝威先生
Director, The Hong Kong Green Building Council
香港绿色建筑议会董事会成员

Jury's Citation 评审意见

New Buildings – Hong Kong Category
新建建筑类别 – 香港

Institutional/Community Projects

Grand Award

Redevelopment of Lo Wu Correctional Institution

The jury panel recognises the enormous constraints this project is subjected to and appreciates many sustainable design strategies adopted which are imaginative and effective. Site planning for this Redevelopment maximises land-use and also has achieved a high level of greening despite the various tight design guidelines for a Correctional Institute. The panel is particularly impressed with the cool plenum and induced ventilation system through the cells that are not air-conditioned.
In addition, the panel commends the use of natural lighting in creating a habitable and energy efficient environment for the inmates. The project has demonstrated that consistent and innovative application of green strategy even in highly constrained projects can result in humane and comfortable environments. The panel will like to commend the consultant team in rising above the normal design brief by taking the environmental responsible approach to design.

Merit Awards

Dormitory and Facility Extension of United Christian College (Kowloon East)

The panel of jury is impressed with the light and airy design with many passive energy saving strategies in this project which is located at a very tight site. The careful planning of the building form to take advantage of the prevailing wind and minimise heat gain is commendable. This has resulted in many common facilities that are naturally ventilated. The use of recycled materials in construction and photo oxidation to clear the air are just some of the effective sustainable and environmentally friendly devices employed in this project to good effect.

Hong Kong Community College (West Kowloon Campus)

The vertical teaching facilities tackle a difficult problem of providing greening in a building with tight budgets and site condition. The panel of jury considers the provision of vertical sky gardens as effective means of controlling the micro-climate of the building while providing habitable and much-welcome open space for the students. The use of pre-cast panels in construction in a non-standard building is a good example of how sustainability can be achieved with careful detailed design.

Reprovisioning of Diamond Hill Crematorium

The panel of jury is delighted with the excellent landscape design of the project with a very high percentage of greening. The use of local materials and pre-fabrication construction contributes to the sustainable aspect of the project which was a major focus in the design process. The use of natural lighting not only lowered energy usage but also created a dignified ambience for the use of the facilities which is commendable.

Tseung Kwan O Sports Ground

The stadium is carefully oriented to take advantage of the breezeway and the avoidance of ill effect on the athletes through wind-tunnel testing is commendable. The sourcing of solar energy for water heating and the collection of rain water for watering the turf are two ways of sustainable design used which are appropriate for the project.

Residential Projects

Grand Award

Sau Mau Ping South Estate

Sau Mau Ping South Estate, located in an established urban setting, provides for 4,000 flats in 5 New Harmony blocks, was designed with sustainable and energy saving right from the start of the project. The jury panel is impressed with the comprehensive nature of the project from site planning to detailed block design in responding to the climatic condition of the site. The creation of wind scoop to encourage natural ventilation through the housing blocks that are less exposed to the prevailing wind is particularly innovative. Greening strategy has proven to be very sound with existing trees preserved and more than 43% site green coverage. The jury panel would like to encourage greater emphasis to be placed on greening and sustainable design in public housing projects which utilize standard block design and operate on a tight budget. This housing development has demonstrated that green project can also be successful with such severe constraints.

Merit Award

Redevelopment of Upper Ngau Tau Kok Estate Phases 2&3

Working under tight constraints on budget and design, this project focuses on passive design and community participation. Careful consideration had been given to the wind path and the potential of wind corridor through the estate. The use of tensile structure to deflect wind into the less ventilated areas is commendable. The choice of materials and life-cycle analysis of construction process is increasingly a necessary design consideration and has been very well handled in this project. Most interestingly, the project engaged the community at the planning stage in sustainable design efforts with broad survey, consultations and focus groups. This serves as a good model for community participation in sustainable design and the education effect is worthwhile.

Commercial Projects

Merit Award

HSBC New Data Centre at Tseung Kwan O Industrial Estate

The innovative design for this rather mundane function has added many exciting features to this Centre so much so that the energy cost has been consistently low and the pleasant environment bordering the land-filled industrial site has attracted office workers to move from Central to work here. Careful site planning and profuse natural lighting have given rise to an airy and bright interiors which add to the pleasantness of the interior while save on energy consumption. The jury panel is also impressed with the many passive measures in sustainable design and in recycling materials during construction.

社区设施

大奖

罗湖惩教所重建工程

对于项目在种种限制下，仍能采纳多个有效的可持续发展措施，评审团十分欣赏。惩教设施的限制甚多，重建工程充分运用土地，同时有大量绿化设施。评审团特别欣赏其通风系统，令没有空气调节的监仓空气流通。项目引进日光，为囚犯提供更佳及更节能的环境。项目展示了即使在多重限制之下，仍可建构创新的绿化设计，以提供人道及舒适的环境。评审团赞扬顾问团队的非一般设计，将环境考虑融入设计当中。

优异

汇基书院(东九龙)宿舍扩建工程

项目的面积虽小，但其日光及通风设计，以及多个节约能源的设备，令评审团十分欣赏。项目经精心设计，令自然风可吹进楼内，同时减少室温上升，室内通风良好。项目具备多个有效的可持续发展及环保设备，包括使用回收的建材及利用光反应过滤空气。

香港专上学院(西九龙校园)

香港专上学院解决了在有限预算及环境限制下进行绿化的难题。评审团认为平台花园有效控制室温，同时为学生提供休憩空间。采用预制式设计组件，展示了如何透过设计的细节去达至可持续发展。

钻石山火葬场重建工程

项目规划完善而且绿化比例相当高，评审团十分满意。使用来自本地的建材令项目的可持续性提高，亦是设计重点。使用日光不单可节约能源，更可为火葬场营造庄严的气氛。

将军澳运动场

运动场经精心设计令微风可吹进场内，并进行风洞测试以确保运动员不受影响。而利用太阳能加热水及收集雨水灌溉草皮，对于有关项目亦十分合适。

住宅

大奖

秀茂坪南邨

秀茂坪南邨历史久远，其5棟建筑物提供超过4,000个单位。项目一开始的设计已著重可持续发展及节约能源。项目规划及建筑物细节均针对该区而设计。风洞为较不通风的建筑物引进自然风，设计新颖。绿化设计亦非常出色，包括保留现有树木，及多达43%的绿化比例。评审团希望能鼓励预算及设计均有限制的公屋，推行更多绿化及可持续发展设计，这个项目是最佳示范。

优异

牛头角下邨重建计划第2及第3期

项目于预算及设计上均有多种限制，主要著重社区参与。项目于整个邨的通风设计上经过细心考虑，以特别设计将自然风引入空气流通较差的地方。建材的选用及使用寿命的研究，同时于规划设计的阶段，透过意见调查、咨询及小组讨论容许社区参与，是有关方面的模范。

商业

优异

汇丰银行数据中心

项目设计新颖，加添了大量节约能源的设计，其优美环境吸引了办公室人员由中环到这个工业区工作。精心规划及日光设计，令室内空气流通及日照充足，同时减少能源消耗。评审团十分欣赏其可持续发展设计及运用回收建材。

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

Grand Award 大奖

Redevelopment of Lo Wu Correctional Institution
罗湖惩教所重建工程

职员大楼外观 External View of Staff Block

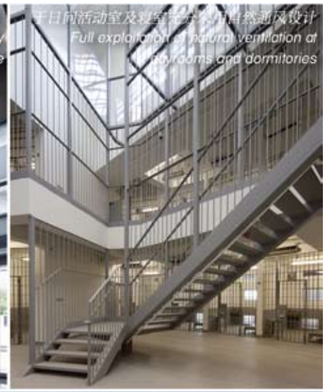
罗湖惩教所以农村为邻，设计上对于自然生态及植物的保育及与邻近环境的配合作出广泛的考虑，以提供一个与自然和谐的惩教环境。
Situated in a rural village area, the new Lo Wu Correctional Institution had widely taken into account preservation of natural habitat and vegetation, and was carefully designed to harmonize and to take full advantage of this natural soothing environment, ideal for rehabilitation.

Team or Organisation Name: **Architectural Services Department, HKSAR Government**
Location: **No. 163 Ho Sheung Heung Road, Hong Kong**
Completion Date: **2010**
Site Area: **52,752 m²**
Gross Floor Area: **68,663 m²**
Building Type: **Institutional / Habitable / Office**

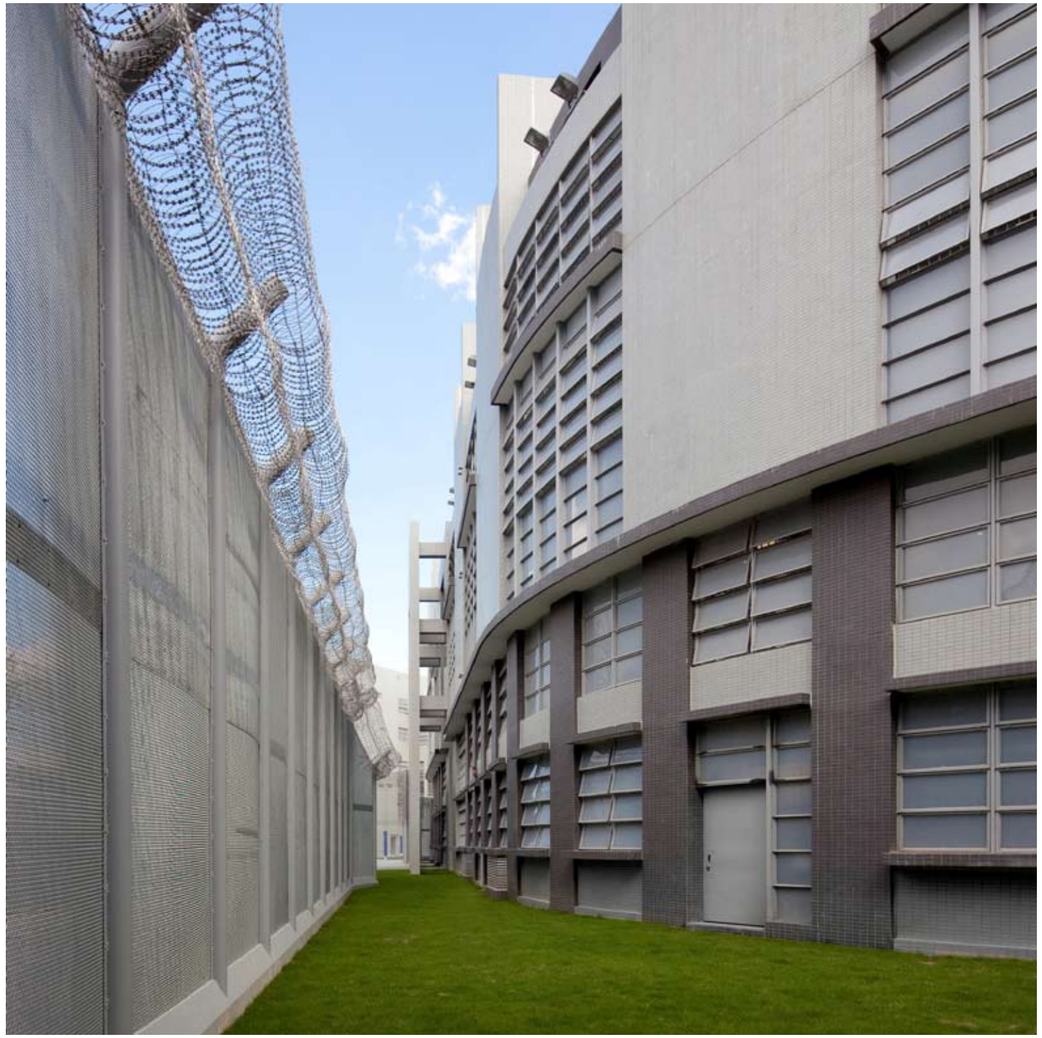
Key Team Members
Client: **Correctional Services Department, HKSAR Government**
Project Manager: **Architectural Services Department, HKSAR Government**
Supervising Officer: **Architectural Services Department, HKSAR Government**
Supervising Officer's Representative / Quantity Surveyor : **Rider Levett Bucknall Ltd.**
Design and Build Contractor: **Yau Lee Construction Co., Ltd.**
Architectural and Interior Designer: **Simon Kwan & Associates Ltd.**
Structural/Geotechnical and Environmental Designer: **Meinhardt (C&S) Ltd.**
Building Services Designer: **Parsons Brinckerhoff (Asia) Ltd.**
Landscape Designer : **axrdesign Hong Kong**

捕风塔以增进工场内的鲜风对流(后)
Wind towers to maximize cross ventilation for inmate-accessible areas (Back)
利用光伏板提供电力(前)
PV panels for electricity generation (Front)

探访登记中心大堂提供充足自然光线
Ample natural daylight to the Main Lobby in the Visitor Registration Centre


于日间活动室及宿舍充分利用自然通风设计
Full exploitation of natural ventilation at day rooms and dormitories

所有来临罗湖惩教所的访客均由内具尊严和权威性形象的探访登记中心接待，其设施包括探访单位内的访客登记处和展览室。
All visitors to Lo Wu Correctional Institution are welcomed by the dignified and authoritative image of the Visitor Registration Centre. Facilities therein include the Visitor Registration Counters of the Visit Unit and the Exhibition Room.



于保安范围内囚仓大楼的绿化天台，设于囚仓上方
Green Roof System within secured areas above inmates' sleeping accommodation at Dormitory Blocks.

鸟瞰图 -罗湖惩教所广泛运用绿化设计
Aerial View - Extensive Greening at Lo Wu Correctional Institution

座落于河上乡路的罗湖惩教所重建项目是本着『可持续发展方针』为设计与实践的依归，尽量善用土地资源，以最少的资源增加使用者。重建后的惩教所具有三个监区的院所，共提供一千四百个囚位及四百九十五个职员宿位，比原有供应增加逾十倍之多。

为配合原有地势，三个独立监区座落于不同的平台，并分别以地下通道和保安连结桥连接到中央共享设施，此设计能有效地运用资源。由于本惩教所大部份均为非空调空间，故为囚犯和职员提供舒适的环境为设计上一大挑战。为此本项目特别应用了不同的环保设计，包括提供高楼底，增加室内自然光，改善自然通风和空气对流(通过楼宇布局、使用通风槽和捕风塔等)，和提供绿化天台等。设计和工程上亦应用不同有关环保的意念，例如使用可再生和再用能源、大量绿化、减少能源耗用和废物管理等。

本项目的设计克服了原有地势和保安等限制，透过善用可再生和再用能源，有效地运用各物料，和提高室内环境质素等，实现环保及可持续发展的目标。

The redevelopment of Lo Wu Correctional Institution at Ho Sheung Heung Road was designed and executed using "Sustainable Approach" from the outset with clear objectives to maximize land use with increased nos. of occupants but minimize resources consumption. The redevelopment project comprised the design and construction of one new correctional complex with three independent security zones to accommodate either male or female inmates with a total capacity of 1,400 inmates and 495 staff. The increase in nos. of occupants was 10 times more than the original site.

Set on platforms formed according to the natural sloping valley, optimized site planning allowed for accommodation of centralized supporting facilities to be shared amongst the 3 independent security zones in a most resourceful and sustainable manner by means of underpass and link bridges. While the majority of functional spaces therein were non air-conditioned, the key challenge to provide inmates as well as working staff with a healthy and comfortable environment was mitigated by solutions including extra high-headroom spaces, full exploit of natural daylight, enhanced natural ventilation, adoption of green roof system and maximized cross ventilation (by means of building juxtaposition, vent shafts, wind towers and mechanically assisted cool air plenums & sterile corridors), etc. Various environmental-related design concepts and provisions such as recycling strategy, use of renewable energy source, extensive greening, energy conservation and waste management were also introduced throughout the planning, construction and operation stages of the project.

Designed with great emphasis on greening through re-use, re-cycle and re-new of energy source, efficient use of materials and maximization of indoor environment quality, the new complex concluded that in overcoming various constraints on site limitation and stringent security requirements, sustainability and greening design could still be extensively and successfully implemented in such a function-oriented building complex.

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

Merit Award 优异

Dormitory and Facility Extension of United Christian College (Kowloon East)

汇基书院(东九龙)学生宿舍及综合大楼

Team or Organisation Name:
Ronald Lu & Partners (Hong Kong) Ltd.
Location: **2 Lee On Lane, Kwun Tong, Hong Kong**
Completion Date: **2009**
Site Area: **0.236 hectares**
Gross Floor Area: **3,460 m²**
Green Rank:
Pre-assessments by LEED & CEPAS
- Target for LEED (for schools 2007)
Platinum & CEPAS (Platinum)
Building Type: **Dormitory and Ancillary Facilities including , Canteen, Chapel, Gym Room, Lecture Theatre, Activity Rooms, Basketball court, Indoor Swimming Pool and Roof Gardens**

Key Team Members
Client: **United Christian College (Kowloon East)**
Architect: **Ronald Lu & Partners (Hong Kong) Ltd.**
Structural Engineer: **Wai Kin (HK) Consultants Ltd.**
E&M Consultant:
WEC Engineering Consultants (International) Ltd.
Landscape Architect: **N/A**
Project Manager: **KCS Projects Ltd.**
ESD Consultant (Honorary):
Ove Arup & Partners HK Ltd.
Quantity Surveyor: **TLS & Associates Ltd.**
Main Contractor: **W.M. Construction Ltd.**

Lean and Green Studies

Ronald Lu & Partners worked with United Christian College on a dormitory extension for its Kowloon East campus. The project is located on the south annex of a secondary school, and encompasses three stepping components. The low block houses a gym and basketball court on the first floor and changing rooms with an indoor swimming pool below. The tall block consists of the warden's quarters on the topmost floor, dormitories on the third to fifth floors, activity rooms on the first and second floors and a canteen on the ground floor. An anchor block linking the two offers a green terrace classroom on the second floor, a lecture theatre on the first floor and a chapel and courtyard on the ground floor. The blocks are connected on three levels to foster greater interaction between the different users in the school.

Despite the scalene site configuration and intensive programmatic requirement on such a small site, the articulation of building masses offers a permeable and green campus environment. A spectrum of affordable low carbon measures were integrated into the building's design, with an emphasis on passive environmental strategies appropriate for the humid sub-tropical climate. Most importantly, natural cross ventilation enhanced by stack effects, wind catchers and wing walls reduce the need for artificial cooling and account for two-thirds of the total gross floor area. Secondly, green roofs, landscaping and a green façade further help to reduce interior temperatures, with green coverage totaling more than half of the site. On the other hand, with external solar shading on the southwest façade and large bay windows along the north, optimal light and air flow cut down the need for artificial lighting and air conditioning. The building's orientation and solar shading achieves a vertical daylight factor of more than 20 percent.

Building materials and finishes were also carefully considered to reduce, replace, reuse and recycle as many products as possible. Bamboo, a renewable and highly durable natural resource abundant in the Pearl River Delta region, was used as a flooring material to replace timber. Eco-glass blocks around the chapel area are made of local recyclables and contain titanium oxide to help absorb pollutants emitted by the constant stream of vehicles in the area. Some materials from the previous basketball court were reused in the new one to reduce waste and cost. Existing paving blocks were salvaged for new life along the existing slope. FSC certified timber were designed as solar shading fences and handrails. In addition, cement sand floor screeds and fair-faced circular columns within the gym and semi-outdoor spaces reduce the need for further finishes.

Holistic consideration of resource loops for energy, materials, water and land were taken into account for the long-term sustainability. Grey water from the swimming pool will be used to clean outdoor hard-paved areas. Organic waste from the canteen will be composted into fertilizer, to minimize municipal solid waste.

With the participation of students and staff, RLP's greening of United Christian College at Kowloon East fostered a sense of community spirit and pride in a job well done for both current and future users. The new campus echoes the school ethos: "a different sky of learning".

INTERACTIVE MIXING

Chemistry of **10** different indoor uses plus **10** different outdoor spaces for learning & interaction.

Site Area:	2,350m2
Floor Area Ratio:	2.1
Construction Floor Area:	5,000m2
Construction Cost:	Approx. HKD 56 Million

Floor	Indoor	Outdoor
3		outdoor classrooms
1&2	lecture theatre	
G	chapel	courtyard
R	wardens' quarters	sky terrace
5	girls' dormitory	balcony
4	boys' + girls' dormitory	balcony + girls' common area
3	boys' dormitory	balcony + boys' common area
2	activity rooms	activity deck
1		outdoor ball court
G	canteen	
1	gym	roof terrace
G	swimming pool + boys & girls changing rooms	annex block entrance court

吕元祥建筑师事务所与汇基书院合作，为其九龙东校舍的宿舍进行扩建工程。该项目位于中学南边的扩建部份，包括三个组成部分。低座一楼设有健身房、篮球场及更衣室，下面设有室内游泳池。高座六楼是舍监起居室、三至四楼是宿舍、一至二楼是活动室，而地面就是饭堂。接连高低座的平台在二楼，是学校的绿色教室。一楼有一个演讲厅，而地下则是小教堂和庭院。每座楼也有三层互相接连，增加了学校不同使用者之间的互动。

建筑加入了不少节能措施，设计尤其注重顺应自然的环境规划。透过利用东南流动的风向，自然风经过热压作用、风囱及翼墙而增强，从而减少使用人工冷却系统。绿化屋顶和景观，还有绿化外墙，有助进一步降低室内温度。校园的绿化覆盖率，占总面积的百分之四十五。西南面外墙的外部遮阳装置和北面的大窗台，令天然光和空气流动达至最佳效果，有效减少人工照明和空调。

我们也认真地考虑尽可能重新使用、减少、更换和回收建筑材料及末道漆。竹是一种高度耐用而且可再生的自然资源，在珠江三角洲地区的产量相当丰富。我们用竹代替木材作地板物料。在小教堂范围内，我们安装了含有钛氧化物的生态玻璃砖，以帮助吸收络绎不绝的车辆排放的污染物。为了减废，新的篮球场重用了一些以前的篮球场的物料。现有的行人路砖块也保留下来，并重新用于现时的斜坡。我们将FSC认证的木材设计成遮阳栅栏和扶手。此外，健身房和半室外空间的C / S地板及清水饰面混凝土圆柱也减少了对末道漆的进一步需求。

为了实现长远的可持续发展，我们在能源、物料、水和土地方面作了通盘的资源考虑。游泳池流出来的污水可用来清洗室外坚硬的地面。饭堂的有机废料变成肥料，可减少都市的固体废物。

随着学生和教职员的参与，吕元祥建筑师事务所绿化汇基书院位于东九龙的校舍，培养了对社区的归属感；而为现在和未来的用户把校舍建好，也是令我们感到自豪的工作。

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

Merit Award 优异

Hong Kong Community College (West Kowloon Campus)

香港专上学园(西九龙校园)

Team or Organisation Name: **AD+RG Architecture Design and Research Group Ltd. (in collaboration with AGC Design Ltd.)**
Location: **Junction of Hoi Wang Road and Hoi Ting Road, West Kowloon, Hong Kong**
Completion Date: **2008**
Site Area: **3,950 m²**
Gross Floor Area: **31,600 m²**
Green Rank: **BEAM (Tentative Gold)**

Key Team Members
Client: **Hong Kong Community College**
Architect: **AD+RG Architecture Design and Research Group Ltd.**
C&S Consultant: **Meinhardt (Hong Kong) Ltd.**
E&M Consultant: **Parsons Brinckerhoff (Asia) Ltd.**
Landscape Architect: **Team 73 Hong Kong Ltd.**
Main Contractor: **Chevalier (Construction) Co., Ltd.**
Others: **Westwood Hong & Associates Ltd.**

New Interpretation of Campus Life in a Vertical Dimension

The Hong Kong Community College (West Kowloon Campus) provides vertical campus life for pre-tertiary students. It is set back from the surrounding residential areas and with an orientation that maximize the sea view of the Victoria Harbour, at this prominent location that it becomes the landmark of West Kowloon. The spatial organisations match with the other campus of The Hong Kong Community College – the Hong Kong Polytechnic University. With the concept of "Vertical Campus", sky decks forming sky gardens are surrounded by various function rooms like classrooms, canteen and library. Students enjoy great accessibility in this interactive learning environment.

A "Twin-tower" design is adopted in the campus to enhance natural lighting and ventilation while at the same time minimise obstruction of views to the neighboring buildings and vice versa.

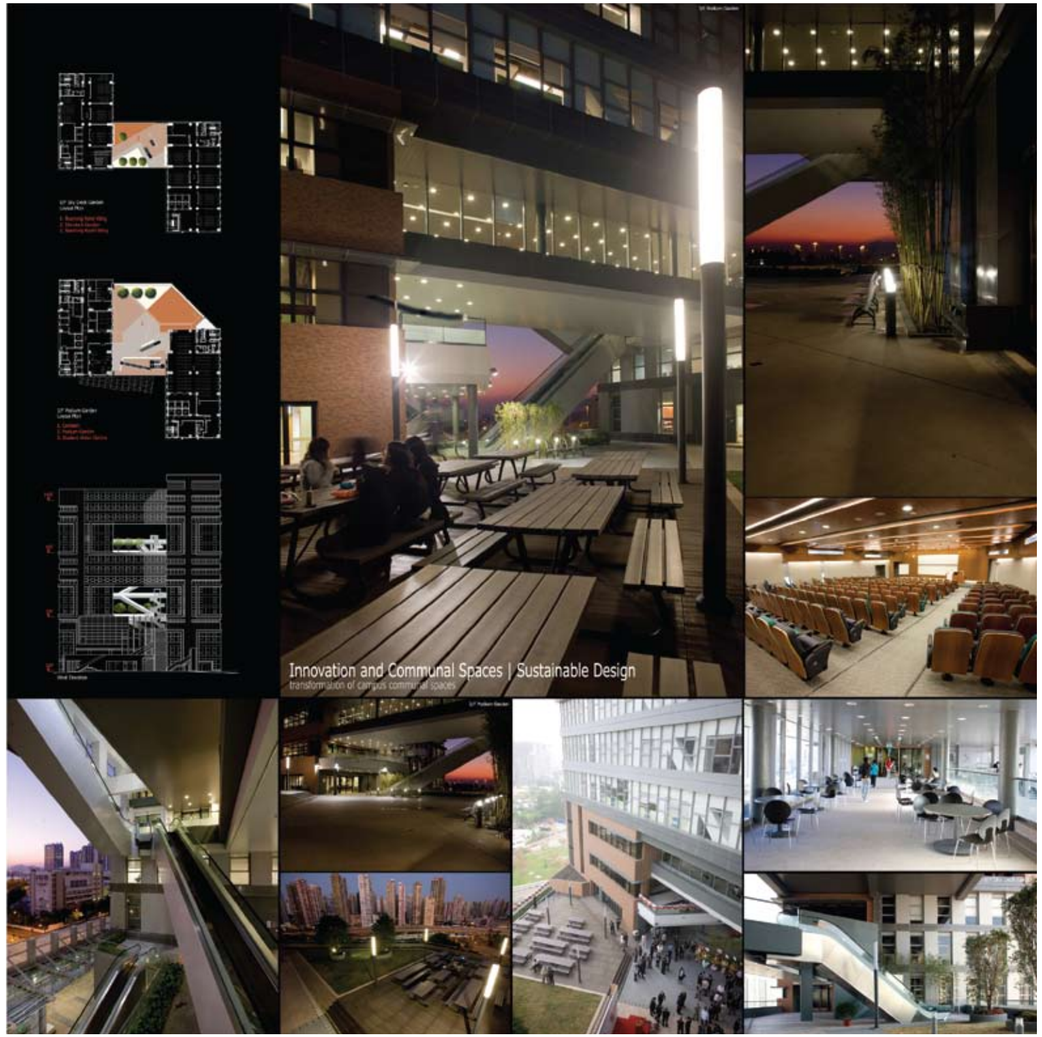
Pre-cast beam and semi-precast slab systems are adopted for the project which helps to minimise waste during construction and facilitate the construction progress. The building design embraces natural environment and use of environmentally friendly materials.

香港理工大学 - 香港专上学院 (西九龙校园)

香港专上学院(西九龙校园)是香港理工大学专为工商副学士课程而设的学院。位于海底道与海泓道交界。远离附近的住宅区，校园环抱维多利亚海港景色，为西九龙区的地标建筑。校园善用空间布局，以高层建筑作垂直发展，于课室、饭堂及图书馆等公用设施附近设置平台花园，为专上教育院校带来全新面貌。学院由两座相连的大楼组成，教学及学生发展配套设施完善，设有一座占地三层的图书馆、一个多用途礼堂、两间视听设备先进的「明日课室」、九个演讲厅、多间「马蹄型课室」、语言及信息科技学习室、以及逾五十个课室，不但为学生提供理想的学习环境，更促进学生的全人发展。

校园的大楼採用双塔拱形设计，有效减少大楼的深度，一方面可以使室内空间摄取足够天然光线，加强对流通风，另一方面又可以避免景观受到旁边建筑物的遮挡。

校舍建筑采用了最新型的技术，大楼采用了预制式结构组件，这样既可以减少建造期间产生的废料，保护环境，亦能加强建筑材料监控，加快工程的进度，成功地将校园环境塑造成符合能源效益又健康的工作空间。学校的建筑设计尊重自然环境，采用环保物料，符合可持续发展的建筑理念。


Innovation and Communal Spaces | Sustainable Design

香港專上學院
HONG KONG
COMMUNITY COLLEGE

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

Merit Award 优异

Reprovisioning of Diamond Hill Crematorium

钻石山火葬场重建工程

Team or Organisation Name: **Architectural Services Department HKSAR Government**
Location: **Po Kong Village Road, Diamond Hill, Kowloon , Hong Kong**
Completion Date: **2009**
Site Area: **21,000 m²**
Gross Floor Area: **5,740 m²**
Building Type: **Crematorium & Service Halls**

Key Team Members
Client: **Food and Environmental Hygiene Department, HKSAR Government**
Project Manager, Architect, Structural Engineer, Building Services Engineer, E&M Engineer, Landscape Architect and Quantity Surveyor:
Architectural Services Department HKSAR Government
Main Contractor:
China Resources Construction Co., Ltd.

The design of the crematorium is to provide a calm, soothing and dignified place for people of different cultures and backgrounds to assemble there for paying final respect to the deceased.

The Reprovisioning of the Diamond Hill Crematorium was carried out in two phases. Phase 1 consisted of the construction of six cremators, two service halls with a capacity of 100 persons each, two gardens of remembrance, two water-lily ponds, automatic coffin transportation system and other associated facilities. Phase 2 consisted of two service halls of same capacity, two gardens of remembrance, two water-lily ponds and carpark. The old crematorium was demolished to make way for Phase 2 development. Following the profile of the original sloping site, soil excavation works had been minimized. The mechanical plants are housed on ground floor leaving more podium area for gardens.

Through admission of natural lighting from skylights and slit windows,a calm, tranquil and warm environment is created inside the service halls and at the same time saving energy on lighting. The green roofs provide additional insulation to the halls, lowering down the roof surface temperature and air-conditioning load.

The podium is richly landscaped with trees and climbers. Coupled with the water-lily ponds, a peaceful ambience is thus achieved. Approximate 80% of the podium is covered by plants or water feature, which act as heat sink to minimize temperature variation and improves micro-climate of the area. The state-of-the-art cremators utilise advanced combustion and flue gas treatment technologies in order to ensure compliance with the relevant environmental standards. Heat recovery system has been applied at the cremators. Useful energy of the flue gas is regained for heating up the combustible air.

The automatic coffin transportation & cremation system provides higher operation efficiency and better services to the public, as well as a safe working environment for the staff.

钻石山火葬场重建工程的设计是希望能提供一个平静的环境，让不同文化或背景的市民可以平和的心境去送别离世的亲友。

工程项目共分两期进行。第一期工程包括重建六个焚化炉、两个可容纳一百人之灵堂、两个纪念花园、两个荷花池，以及安装灵柩输送系统及其他配套设施。第二期工程包括拆卸原有的焚化炉，并在腾出之地方兴建另外两个灵堂、两个纪念花园、两个荷花池及停车位。新的火葬场依山而建，以减少土地开挖所导致之环境破坏。而机房置于地下，平台上可以有更多地方作为花园之用。

灵堂设置有天窗和窗户，其引入之天然光予人和谐、宁静及温暖的感觉，同时亦可以节能。灵堂屋顶设有绿化天台，从而降低屋顶表面温度和灵堂的空调负荷。

平台花园广种树木及攀藤植物，配合四个荷花池，营造出祥和的气氛。平台花园约百分之八十的面积为植物和水体所覆盖，有助降低附近环境的温度和形成舒适的微气候。新火化炉采用了先进的火化及废气处理技术，以确保火化炉运作时符合相关的环保准则。火化炉装有热回收系统以善用废气中的热能。

自动化的灵柩输送及火化系统增加了火葬场的效率，为市民提供更好的服务之余，亦使员工的工作环境更安全。

Top: Circular courtyard
Bottom: Green roof on service halls

The 'Qing Yan' smokeless joss paper burners are adopted, which are capable to cool the smoke and remove fume & large smoke particles before dispersal.

Fair faced concrete walls are used extensively in the crematorium to reduce the need of further rendering and create a space of solemnity.

The path taken by the mourners is carefully designed. From the G/F drop-off area, the mourners pass through a tranquil circular courtyard, through the landscaped podium with water-lily ponds and natural materials, and a naturally-lit transitional colonnade before entering the service halls. Moreover, pedestrian access and various vehicular or hearse accesses are segregated to ensure safety for both public and operators.

The new crematorium is in harmony with the surrounding environment. To reduce the visual & psychological impacts to the neighborhoods, the six cremator chimneys are merged in the sculptural monument tower with vertical greenery growing on the tower surface.

火葬场内设有清烟冥镪炉，燃烧冥镪时所产生的烟雾在排放前会被冷却和静化。

外墙物料以简约的清水混凝土为主，省却了额外的表面修饰材料和营造一个庄严的环境。

送殡者从落客区，通过宁静的庭院，到达园景平台，经过荷花池和柱廊进入礼堂。礼堂的出入口经过精心设计，分开了入口和出口，使不同的送殡队伍能顺利进出。与此同时，设计顾及到人车分流，以确保使用者的安全。

新的火葬场与周边环境相配合，焚化炉的烟囱藏于建筑物内，改善了从前火葬场对附近居民所造成视觉上和心理上的滋扰。

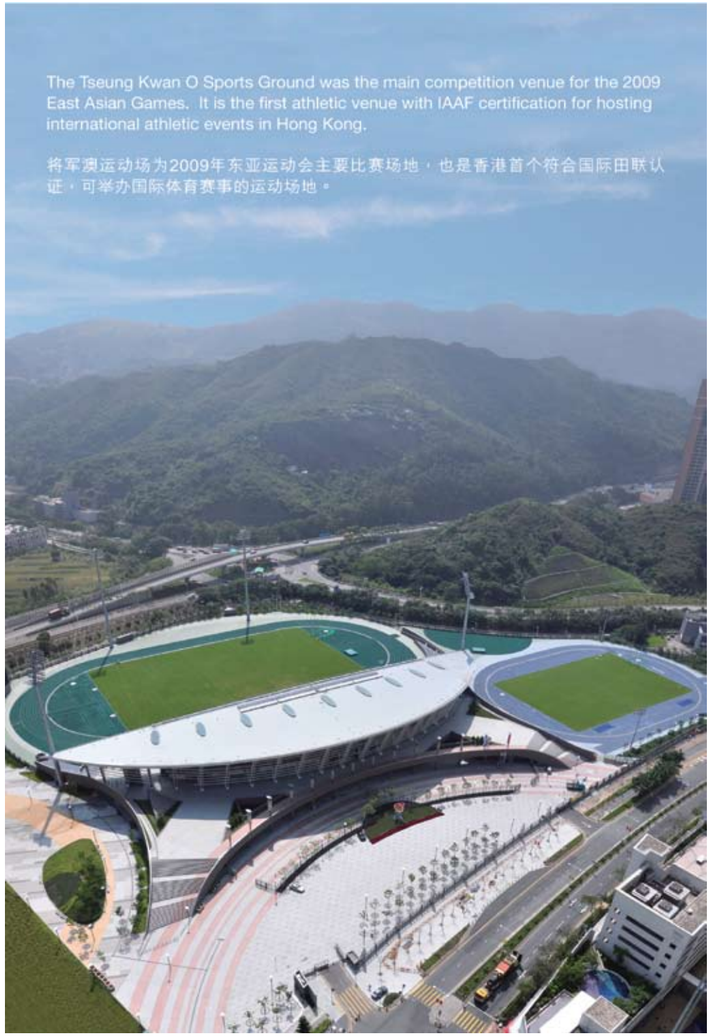
Top: Fair faced concrete finish
Bottom: Interior view of service hall
Right top: Overall view of the crematorium
Right bottom: Vertical greening at colonnade & chimney tower

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

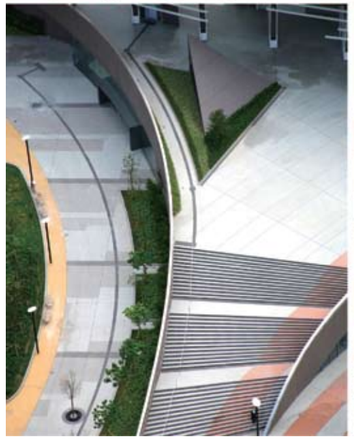
Merit Award 优异

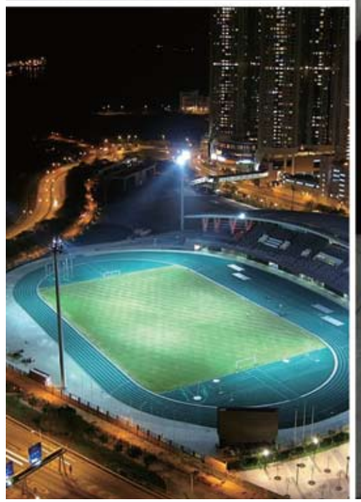
Tseung Kwan O Sports Ground
将军澳运动场



Team or Organisation Name: **Architectural Services Department, HKSAR Government**
Location: **109 Po Hong Road, Tseung Kwan O, Hong Kong**
Completion Date: **2009**
Site Area: **59,000 m²**
Gross Floor Area: **11,000 m²**
Green Rank: **IAQ, Excellent Class Certificate**
Building Type: **Sports Ground**

Key Team Members
Client: **Leisure and Cultural Services Department, HKSAR Government**
Project Manager: **Architectural Services Department, HKSAR Government**
Supervising Officer: **Architectural Services Department, HKSAR Government**
Supervising Officer's Representative/Quantity Surveyor: **Davis Langdon & Seah Hong Kong Ltd.**
Design and Build Contractor: **China State Construction Engineering (Hong Kong) Ltd.**
Architectural Designer: **P&T Architects and Engineers Ltd.**
Structural Designer: **Ove Arup & Partners HK Ltd.**
Building Services Designer: **P&T (M&E) Ltd.**
Landscape Designer: **ADI Ltd.**
Sport Consultant: **ArupSport**





The Sports Ground has demonstrated the joint effort of the project team and construction team in achieving a quality green building through design and build contract procurement method. Close team collaboration throughout the design and implementation stage contributed to the successful integration of sustainability in the new development in terms of site, materials, energy usage, water usage and indoor environmental quality.

The innovative, environmental responsive structure and green features of Tseung Kwan O Sports Ground sets a good example for future design of sports ground.

透过设计及建造合同的采购方式，运动场充分展现了项目团队和施工队伍共同合作达致环保建筑的成果。设计及施工过程中团队的紧密协作，促成了在工地、建筑材料、能源效益、水资源运用及室内环境各方面的可持续发展。

以创新、回应环境及绿化为题的将军澳运动场，为未来运动场设计定下了楷模。

New Buildings – Hong Kong
新建建筑类别 – 香港

Institutional/Community Projects 社区设施

Finalist 入围

HKYWCA Guesthouse Facilities
香港基督教女青年会营舍

Sustainable Recreation for All

Located on a scenic one-hectare site on Lantau Island, the project involves the redevelopment of a 30-year old camp site, to enhance the facilities in support of the organisation's expanded programme. The project has four components: outdoor activity areas, dormitories, function rooms/canteen; and staff/utility facilities.

Inspired by client's clear vision to expand the training programme and the natural topological feature of the site, the design capitalises to create multiple "playgrounds" for training and recreation. A linear approach ties each platform together into a series of distinctive yet interconnected activity areas with a climbing wall at one end providing a playful vertical link between various levels. Rather than dictating the use assigned to each area, the architecture takes its cue from the flow of the terrain to generate a universally accessible loop, at the same time minimising the amount of cut-and-fill needed during construction. Integral to the design is a green roof that creates an extra layer of activity space for the camp site, provides superior thermal insulation for the dormitories and captures the sea view, which is only visible at the higher level.

The buildings are orientated to maximise daylight penetration while minimising solar heat gain, with all windows facing east or south. Overall energy consumption is further minimised by lining up the structures to maintain a breezeway through the site and the use of full-length windows to encourage cross-ventilation. Corridors are covered but fully open so they can be naturally ventilated. Solar shading is provided by the buildings themselves, a variety of concrete canopies, aluminium trellis and extensive landscaping, which covers 65% of the site area.

The design's commitment to sustainability extends to the use of materials. Eco-friendly materials such as non-toxic paint and recycled timber are used throughout the project. A conscious attempt to minimise unnecessary use of finishes is demonstrated by the application of fair-face finish on external concrete walls. Creative reuse of old building materials is another signature of the design: part of the new structure is built with granite blocks retrieved from the original camp building while granite boulders excavated from the site are turned into landscape features.

Much more than an architectural assignment, the design's emphasis on sustainability has given the camp site a new dimension, by introducing environmental education to its programme.

Team or Organisation Name:
Ronald Lu & Partners (HK) Ltd.
Location: **San Shek Wan, Lantau Island, Hong Kong**
Completion Date: **2007**
Site Area: **10,800 m²**
Gross Floor Area: **2,525 m²**
Building Type: **Dormitory/Guestroom, Function Rooms, Staff Quarters, Ancillary Facilities, Roof Garden**

Key Team Members
Client: **Hong Kong Young Women's Christian Association**
Architect: **Ronald Lu & Partners (Hong Kong) Ltd.**
C&S Consultant: **Fugro (HK) Ltd.**
E&M Consultant: **GHD Ltd.**
Landscape Architect: **ACLA Ltd.**
Main Contractor: **Junic Construction Co., Ltd.**

寓教于乐与绿

吕元祥建筑师事务所为香港基督教女青年会设计的大屿山梁绍荣度假村，以实用及可持续发展为原则，结合弹性功能及实用的环保策略，满足用者的要求。

项目座落大屿山，占地约一公顷一幅已有三十年历史的营地，重新发展目的为提高设施效用，来支持女青年会与日俱增的各项计划。该项目共有四部份：户外活动范围、宿舍、宴会厅/食堂及员工/公用设施。

客户明确的目标是利用自然景观尽量配合发展营地的培训计划。设计以此为出发点，从而创作出多个作为培训及休憩并用的「游乐场」。借用线性建筑空间布局的处理手法将各层平台连接起来，成为一系列相连但各具特色的活动范围，使一端的攀石墙成为别致的视觉效果。设计并不规限各范围的功用，只按照地势起伏伸展成为方便行走的环路，尽量减少开掘山坡。绿色屋顶是整个设计的重要部份，不单为营地创造多一层活动空间，更为宿舍提供理想的隔热及观景平台。

各建物的座向以尽量增加室内日光及减少吸热为原则，因此全部窗户均面向东或南方。加上将每个结构顺应风向排列及利用落地窗户加强相互之间的通风，令整体空调耗能量减低。有上盖的开放式走廊，方便自然通风。各建筑物本身、不同形式的混凝土天篷、铝质格构及覆盖六成半面积的园林，为营地提供充足的荫蔽。总括而言，营造自然简朴且舒泰康健的室内外环境。

项目所采用的材料亦实践设计的可持续发展承诺，环保材料如不含毒性油漆及循环再造木料均在项目中广泛应用。外墙特别采用清水模，刻意减少非必要的表面处理。设计的另一特色是将旧的建筑材料巧妙地重用：部份新的结构以营地原建筑物的花岗石建造，而在挖掘地基时得到的大型花岗石块，则用作园林布置。

这个项目不单是建筑设计的代表作，同时亦是迈向可持续发展的范例，并为营地加添更深一层的环保意识。

New Buildings – Hong Kong
新建建筑类别 – 香港

Residential Projects 住宅

Grand Award 大奖

Sau Mau Ping South Estate
秀茂坪南邨

Sau Mau Ping South Estate is the last phase of the entire Sau Mau Ping Redevelopment programme which was first launched in 1987. The estate provides five Standard Harmony rental housing blocks with 3995 flats for about 11 000 residents. The construction was commenced in late 2006 and was completed in mid 2009. Other than providing functional and cost effective public rental flats, this estate signifies a strong expression of the Green Enhancement Practice in Housing Authority's developments.

秀茂坪南邨是秀茂坪重建计划的最后一期项目，整个重建计划早于 1987 年开始进行。秀茂坪南邨由五座标准和谐式租住公屋大厦组成，合共设有 3 995 个单位，供约 11 000 人居住。有关建筑工程于 2006 年年底展开，于 2009 年年中完成。该邨除了为居民提供实而不华的租住公屋单位外，更充分彰显香港房屋委员会在其辖下发展项目推行加强绿化措施的成效。

Team or Organisation Name:
Hong Kong Housing Authority
Location: **Sau Mau Ping, Kowloon, Hong Kong**
Completion Date: **May 2009**
Site Area: **49,000 m²**
Gross Floor Area: **175,150 m² (Domestic)**
550 m² (Non-domestic)
Building Type: **Residential**

Key Team Members
Client: **Housing Authority**
Project Manager, Architect, C&S Engineer, Building Services Engineer, Quantity Surveyor, Landscape Architect, Geotechnical Engineer, Town Planner: **Development and Construction Division, Housing Department, HKSAR Government**
Main Contractor: **Chatwin Engineering Ltd. Hanison Construction Co., Ltd.**
Environmental/Ecology Consultant: **Ecosystems Ltd.**
Wind/Air Ventilation Consultant: **Ove Arup & Partners HK Ltd.**

Standard Modular Flat Assembly Design

Prefabricated Elements

Overhang Depth Based on Daylight Performance

Standard Modular Flat Assembly Design

To ensure cost effectiveness, standard flat assembly approach was adopted. The standard flats were a result of continual improvement in response to the changes in users' requirements and feedbacks from all stake-holders on various aspects, including tenants on the functional requirements, as well as contractors on buildability. Many virtues have been embodied, such as high efficiency, rotational symmetry, prefabrication construction, etc. This approach not only reduces the design time but also the construction time. The construction time has been shortened by the buildable design as well as the construction experiences gained from past projects.

标准组合式单位设计

为确保符合成本效益，该邨的大厦均采用标准型单位组合设计。该设计是因应用家需求的转变，并采纳相关各方所提出的意见，包括住户对公屋单位的功能要求和承建商对建造效益的意见，经过不断改良而成，具有提升建造效率、发挥轴对称设计成效，以及利便以预制组件方式施工等多项优点，既可节省设计时间，亦可缩短施工期。事实上，通过采用符合建筑效益的设计，以及汲取过往工程项目所得的经验，令工程得以尽早完成。

Site-specific Design to Domestic Block

With the micro-climate studies, the standard blocks were disposed to make the best use of the site in respect to the solar heat gain, lighting and ventilation both for block occupiers and the external area users. The micro-climate studies also find solutions to improve the ventilation of the typical lift lobbies and corridors by setting the opening angles of the windows and introduction of a wind scoop at roof top. The depth of the window overhangs was adjusted based on their orientation to enhance daylight performance of the flats. Tinted glass was employed for west facing units to cut solar heat gain.

因地制宜设计住宅楼宇

我们利用微气候研究，在设计标准型大厦的位置时尽量善用地盘的优势，让大厦在太阳热能吸收、采光和通风方面都发挥最佳作用，使大厦住户和户外空间使用者同样受惠。微气候研究还有助改善一般电梯大堂和走廊的通风情况，方法是设定窗户开启的角度，并在屋顶装置斗形进风口。我们根据窗檐的朝向调校其深度，加强单位的日光照明效果，并为向西的单位装上茶色玻璃，以减少太阳热能吸收。

Rejuvenate Transplanted Tree

Scent Garden and Extensive Greening

Concrete Grillage and Preserved Trees

Estate Greening

Sau Mau Ping South Estate was planned to enhance greening in every aspect. It has a higher ratio of greenery than other estates due to the additional hectare of open space and extensive slopes. Enabling tree preservation, soil nails with concrete grillages were used for the first time in Housing Authority's new works projects. The process enables slope stabilisation without the need to remove existing loose soil and existing trees, resulting in a saving of 114 trees on the slopes of Sau Mau Ping. The stabilised slopes were then turfed and planted with over 4 100 indigenous trees and shrubs to create an ecological garden, attracting birds and butterflies, for instance. Emphasis has also been placed on vertical greening, as well as the extensive greening of rooftops of low-rise buildings and covered walkways. Apart from the green roof on the refuse chamber of the estate, Sau Mau Ping South Estate boasts the longest "green covered walkway" among all housing estates. Furthermore, landscaped areas include theme gardens such as "Fragrant Court" and "Rainbow Garden" , as well as a multi-purpose lawn, which provides an ideal leisure and play area for residents of every age and ability, and for parent-child activities.

绿化屋邨

秀茂坪南邨处处体现「绿色」规划。该邨拥有更广阔的休憩用地和大片山坡，使其绿化率较其它屋邨为高。为保育树木，我们首次在香港房屋委员会新工程项目中采用设有混凝土格排的泥钉，在无须移除现有松土和树木的情况下巩固斜坡，使秀茂坪山坡上的 114 棵树木得以保存。斜坡经巩固后铺上草皮，广植 4 100 多棵原生树木和灌木，形成一个生态花园，吸引鸟类和蝴蝶等生物到访。我们也着重垂直绿化的工作，在低矮楼宇和有盖行人道的顶部进行大规模绿化。秀茂坪南邨除垃圾房设有绿化天台外，其「绿色有盖行人道」的长度更是全港屋邨之冠。此外，园景美化地方包括「香花园」和「彩虹园」两个主题花园，以及一个多功能草地，既可供不同年龄和体能的居民消闲游乐，亦适宜进行亲子活动。

Ecological Garden on Newly Formed Slope

Wind corridor

Renewable Energy

Based on its micro-climate studies, the site's design achieved an average wind speed of 3 – 5 metres per second at the central pedestrian spine, which works well for the generation of wind power. Making use of this wind corridor, a vertical wind turbine and 6 solar cum wind hybrid lighting systems were installed at the estate to save non-renewable energy, generating the electricity for lighting to cover an outdoor area of about 850 square metres. This initiative not only saves energy but also raises the residents' awareness of the use of renewable energy.

可再生能源

根据微气候研究所得，地盘的设计可令屋邨中央行人干道的风速达到平均每秒三至五米，有利风能发电。我们利用这条通风廊，在屋邨安装一个垂直风力涡轮，以及六组太阳能和风力混合发电照明系统，为约 850 平方米的户外面积提供照明，节省非再生能源。这项措施不单可节约能源，又可提升住户对使用可再生能源的认识。

Wind Turbine and Hybrid Lights

Generate Renewable Energy for External Lighting

Community Participatory Art

Community Participation

Local community was engaged to paint boulders collected from nearby Choi Wan Quarry to form unique design feature for the estate. That enhanced the sense of belonging of the residents and contributed to an artistic ambience.

小区参与

我们邀请区内人士为从附近彩云道石矿场收集得的砾石涂彩，令屋邨的设计别具特色，从而加强居民的归属感，亦增添了不少艺术气息。

New Buildings – Hong Kong
新建建筑类别 – 香港

Residential Projects 住宅

Merit Award 优异

Redevelopment of Upper Ngau Tau Kok Estate Phases 2&3

牛头角上邨第二、三期重建计划

Interaction . Cohesion

Building a Sustainable Community

In this public rental housing project, we built new homes for the people who had been residing in Lower Ngau Tau Kok Estate (LNTK) for over 40 years. Our planning and design theme is to create a sustainable development for a community of around 12,000 people. Commitments from our integrated project team and community participation are vital to the success of this project. Our core values of Caring, Customer focused, Creative and Commitment underpin our work.

Bearing 'People-oriented Approach' in our mind, we addressed the aspiration of the residents for a better living environment and better community facilities after redevelopment right from the beginning of the project. We planned and designed their homes for healthy living. We engaged the community in the design process to enhance social cohesion. We pioneered to adopt microclimate studies to enhance the wind environment, natural ventilation, daylight, and mitigate solar heat gain, etc. We adopted a holistic approach to optimize the development potential and enhance the built environment with the neighbourhood.

Construction works went smoothly and met key performance indicators covering quality, safety, environmental management, time and cost. It is both the delivery process, as well as the end product, that become the community's pride in this project.

Partnering with all stakeholders, including the residents, consultants, contractors, academia, and various organizations is the major driver towards achieving excellence in quality of this project. Active participation of all parties at all levels enriches the project in all facets, including the intangible social value through preserving the old trees and nostalgic memories in the community. The implementation of quality management system throughout the supply chain assured a quality product despite the tight budget. The success of the project is well reflected from the high satisfaction rate from the resident survey carried out after occupation, with their needs and the community's expectations met. We have regenerated a harmonious community for happy families. In return, we gained un-measurable job satisfaction from the project.

Team or Organisation Name:
Hong Kong Housing Authority
Location: **Kowloon Bay, Kwun Tong, Kowloon, Hong Kong**
Completion Date: **2009**
Site Area: **About 3.2 hectares**
Gross Floor Area:
About 220,000 m² (Domestic GFA)
About 6,600 m² (Non-domestic GFA)
Green Rank: **Provisionally Rated Platinum by BEAM Version 2004**
Building Type: **Residential**

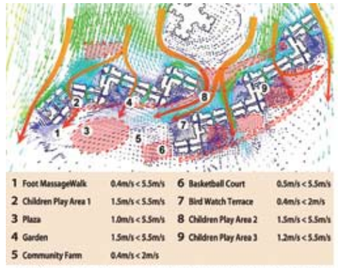
Key Team Members
Client: **Hong Kong Housing Authority**
Architect, Landscape Architect, Building Services Engineer, Civil Engineer, Geotechnical Engineer, Planner, Quantity Surveyor and Structural Engineer:
Development & Construction Division, Housing Department, HKSAR Government
Main Contractor: **Paul Y. General Contractors Ltd.**

建设可持续发展的社区

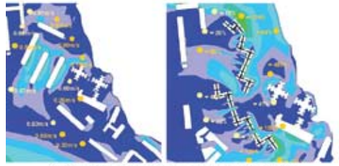
在这个公共房屋的重建计划中，我们为曾居于牛头角下邨超过 40 年的居民建造新的家园。项目的规划及设计的主题是为约12, 000名居民建设一个可持续发展的社区。此重建项目的成功，有赖于建筑团队的紧密合作与社区的积极参与。我们的机构信念“关怀为本、顾客为本、创新为本及尽心为本”同时巩固了团队的工作。

本着“以人为本”的信念，在项目发展初期，我们注重居民对重建后的优良居住环境和社区设施的期望，在规划和设计时致力为居民建设健康的生活环境，并让居民参与设计过程，增强社区凝聚力。我们率先利用微气候研究优化风环境、自然通风、采光及减低太阳热能吸收等等。我们采取全盘考虑的模式，力求因地制宜，增强与周边环境的协调。施工过程顺利，在各主要成效指标达到标准，包括质量、安全、环境管理、时间及成本控制。项目建造的杰出过程和成果，使整个社区引以为傲。

与各持份者衷诚合作，达致伙伴关系，乃成就这项目卓越质量的重要动力，持份者包括居民、顾问、承建商、学术团体及其他机构。各团体于不同层面的积极参与，在多方面丰富了此项目，包括透过保育古树和社区的集体回忆，体现无形的社会价值。虽然资源有限，但在品质管理系统的实施下，确保了各项物料和施工的质量。居民入住后均认为重建后的环境符合社区和个别居民的期望和需要，在收楼意见调查中，居民表示高度满意，充分反映了整个重建项目的成功。我们为那些快乐的家庭重新建设了一个和谐的社区，同时，社区的建设工作亦为我们带来了无限的满足感。

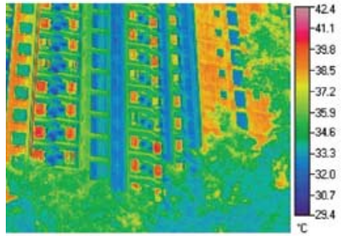


99% Satisfaction rate for outdoor thermal comfort



Permeable buildings to allow wind flow

Cross-ventilated re-entrants



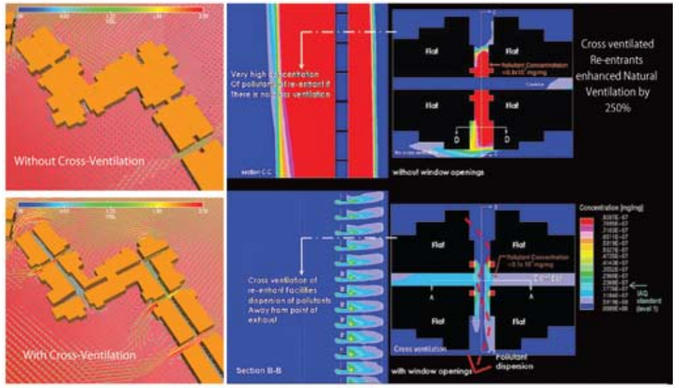
Mitigation of solar heat gain

Application of Microclimate Studies

The microclimate studies covered major topics including wind environment and natural ventilation, sun shading and daylight, solar heat gain and human comfort, etc. With disposition of the domestic blocks in two groups, they guided the easterly prevailing wind into the central wind corridor. They enhanced the wind environment of the site and its neighbourhood as well as natural ventilation of the domestic premises, as we also designed cross-ventilated windows at common corridors, re-entrant areas and lift lobbies at typical floors. Other areas of applications included improvements in daylight penetration into the flats and corridors, and solar heat gain, etc. As a result, the highly ventilated and well-lit domestic flats and corridors contributed significant savings in electricity consumption for air conditioning and lighting. In addition, we also planned the open spaces with due considerations to the wind environment and sunlight exposure for various outdoor activities. On-site measurement was carried out at post occupation stage, the results indicated that the computer simulations tallied with the on-site conditions.

微气候研究的应用

微气候研究涵盖多个重要范畴，包括风环境、自然通风、日照、采光、太阳热能吸收和热舒适度等等。住宅楼宇的布局以两组排列，以便引入主导东风往中央的通风廊；布局除了加强屋邨和周边环境的自然通风外，也促进住宅单位内的对流通风；我们在住宅楼层的公共走廊、升降机大堂和天井位置设计了对流窗。我们利用微气候研究结果优化住宅单位和走廊的采光和太阳热能吸收的设计。因此，住宅单位和公共空间均享有良好的自然通风和采光效果，大大节省了在空调和照明的电力消耗。此外，屋邨户外空间的设计也因应风环境、采光和遮荫的情况，配合适宜的各类户外活动。在居民迁入后进行了实地勘察量度，结果显示电脑模拟与实地情况吻合。



Study on ventilation performance of re-entrants with and without cross ventilation and building permeability

Extensive greening in estate

Our Action Seedling Programme

Building a 'Green' Home

To enhance environmental sustainability, we adopted an all-greening approach right from inception stage. We preserved a number of mature trees within the site and integrated them into our design. A 50-year heritage tree was transplanted from the highest platform to form a land-mark at the entrance plaza. With adoption of micro-climate studies, we planned the planting species in response to sunlight exposure and the central green lawn facilitates green wash for the prevailing wind from upstream of the wind corridor. The whole setting followed the site topography and created a pleasant green environment. We maximized the extent of greening and achieved a green ratio of over 30% site area, including the application of green roofs at all covered walkways and flat roofs of the refuse collection points and the Children and Youth centre. In addition, we engaged our tenants, contractor and local community to work towards greening of the environment through the Action Seedling Programme.

同建“绿”星级家园

为了促进公共房屋的环境可持续发展，我们在规划的最初阶段已采取全面绿化的方针。我们在地盘内保育了多棵大树，并把大树与新设计融合。此外我们把一棵树龄达 50 年的〝树王〞由高台迁移到入口广场，作为屋邨的地标。我们采用微气候研究的结果，因应阳光照射的程度而种植各类植物，并以中央斜坡草坪净化盛行风，由上游引导向下。屋邨的整体规划遵循地形，创造了一个宜人的绿色环境。我们尽量增加绿化，绿化比率达至屋邨面积的 30%以上，包括绿化所有有盖行人通道的顶部、垃圾收集站和青少年中心的屋顶，这样可同时减轻热岛效应。此外，通过育苗行动，我们与居民、承建商和当地社区共同努力，参与绿化环境。

Transplantation of Heritage Tree

New Buildings – Hong Kong
新建建筑类别 – 香港

Commercial Projects 商业

Merit Award 优异

HSBC New Data Centre at Tseung Kwan O Industrial Estate
汇丰银行数据中心

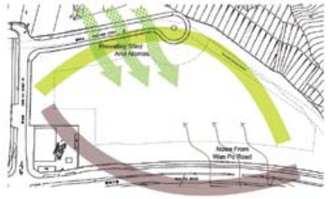
Team or Organisation Name:
Leigh & Orange Ltd. Hong Kong
Location: **Tseung Kwan O Industrial Estate Lot 39, Hong Kong**
Completion Date: **2008**
Site Area: **4.8 hectares**
Gross Floor Area: **56,500 m²**
Green Rank: **BEAM Gold**
Building Type: **Data Centre, office space and amenities & recreational facilities**

Key Team Members
Client: **Hong Kong and Shanghai Banking Corporation Ltd., Hong Kong**
Architect: **Leigh & Orange Ltd. Hong Kong**
C&S Consultant: **Meinhardt (C&S) Ltd.**
E&M Consultant: **Meinhardt (C&S) Ltd.**
Landscape Architect: **ADI Ltd.**
Main Contractor: **Hsin Chong Construction Co., Ltd.**
Occupant (Interiors): **HSBC Staff**
Project Manager: **Ove Arup & Partners Hong Kong Ltd.**
IT Consultant: **Arup Communications**
Environmental Consultant: **Maunsell Environmental Management Consultant Ltd.**
T&C Consultant: **Commtech (Asia) Ltd.**
Quantity Surveyor: **David Langdon & Seah Hong Kong Ltd.**

Response to context
- Site planning & building design responding to views, sun path, noise, wind directions and surrounding neighborhood.
- Site is a reclaimed Brownfield site with landfill gas hazard. A landfill gas hazard assessment was carried out & measures were implemented; installation of gas proof membranes for ground structures, and gas sensors (connected to BMS) to monitor gas concentration.
- Heat island effect is mitigated by selection of light-coloured finishes with high SRI values

Neighborhood amenities
- 5 mins walk to bus & mini-van terminals on Wan Po Road
- MTR station (Lohas park) is approx. 15 min by walk.
- HSBC provides shuttle to TKO (Po Lam), Kowloon, Hong Kong Island & New Territories.
- Staff amenities; staff Canteen, Gym, recreation room, jogging track, multi-propose court, pantry (1 per office floor) & clinic provided on site
- Staff planting beds are provided on site to promote staff's sense of environmental responsibility

IEQ
- Min 2% glazing factor and 0.5% average daylight factor is maintained in over 80% of occupied spaces
- More than 90% of occupied spaces enjoy direct line of view to outdoors
- A combination of user controlled blinds & sun shading device was installed for glare mitigation & reduction of direct heat gain.
- Atrium is naturally lit by carefully articulated clerestories to strike a balance between receiving natural light, while minimizing heat gain by conventional skylights



Bioclimatic & Landscape Qualities
- Approximately 75% of existing trees were retained. New trees & shrubs of native species were added to protect & enhance natural habitat, native flora & fauna
- Native wildlife; wild eagles, bats, birds & snakes have been preserved and are spotted onsite.
- Pervious material were used for more than 67% hard landscape

Life Cycle Perspective
- The completed building caters for 100% future expansion. Site disruptive works were completed with Phase 1 construction i.e. all core & shell, space allowance for Phase 2 plant & equipment; the capacity of major plant/equipment already caters for Phase 2 upon full load.
- 50% of major components are modular & standardized, thus reusable after expiry of original use..
- Spatial efficiency & flexibility: most efficient configuration for the Data rooms were derived from results of CFD simulation based on the layout of proposed E&M ductwork & cables,
- All systems are constantly monitored via BMS system with alarm signal connected to building management office which is manned 24 hours/day.
- T&C consultants were engaged since design initiation stage to ensure implementation of design intent.
- Post-occupancy feedback surveys are carried out at interim intervals. .

Health & Safety
- Carbon monoxide level <1.0ppm. (IAQ Excellent Class)
- Ozone level @ 20ppb. (IAQ Excellent Class)
- VOC level @ 36ppb. (IAQ Excellent Class)
- Formaldehyde level @ 20ppb. (IAQ Excellent Class)
- Radon level @ 39.1Bq/m3. (IAQ Excellent Class)
- Air diffusers with HEPA filters

Pollution Control
- Insulation: CFC Free Insulation.
- Inergen Gas Flooding System.
  Zero Global Warming Effect.
- R134a Refrigerant: Zero Ozone Depletion
  Global Warming Potential <1600

Energy Saving
- 11.5% annual Energy Saving
- 16.3% Peak Electricity Demand Reduction
- Energy Efficient Lift and Escalators
- Energy Efficient Lighting Installations
- Date Centre Infrastructure Efficiency Index 1.68, the Data Centre with the highest efficiency within HSBC group.
- General lighting in the offices are provided by T5 fluorescent. Perimeter zone lamps are dimmable with automatic photo sensors

Water Quality Conservation
- 15% annual Water Saving
- 11.5% saving through harvested rainwater for Irrigation.
- 27.5% annual sewage reduction
- Water efficient landscaping: rainwater collection tank under-ground recycles rainwater for irrigation. Species are mainly native thus highly water efficient & irrigation is kept minimal.

呼应地里环境的设计

- 整体规划融合现场环境，建筑设计呼应现场的太阳路径、噪音分隔、自然风向及附近邻里谐和。
- 现场属填海地带分类为“棕地”(受污染之土地“Brownfield Site”)，受沼气危害。实行了详细堆填区气体风险评估/分析及预防措施，包括在所有地面建筑物安装气体分隔膜，室内安土气体感应器(连接到楼宇管理系统以监测气体浓度等)。
- 所有屋面及外墙选用高太阳能反射指数的浅色物料，有效缓解热岛效应。

邻里设施

- 坐落在环保大道，5分钟步行至巴士及小巴站。
- 约15分钟步行至地铁站(日出康城站)
- 汇丰银行提供穿梭巴士到将军澳(宝琳)，九龙，港岛及新界。
- 现场置有员工食堂，健身房，娱乐室，缓跑径，多用途球场，诊所等。
- 各层办公楼亦自设茶水间及休憩间，设置齐全。
- 另特置员工种植区，以提高员工的环保意息。

室内环境品质

- 超过80%占用空间达平均0.5%采光系数及最少2%玻璃系数。
- 超过90%的空间享有直达室外的视线空间。
- 以建筑檐篷及用户控制的活动垂有效控制室内日照的品质：减少眩光及热量。
- 办公楼除可享有直达室外的视野，背面的中庭设计亦提供另外的景观。
- 中庭主要以天然日光照明，以谨慎设计的天窗及高层气窗在日照光量控制及日光的热量吸收中取得平衡。

生物气候及园林品质

改善现有生态：原有的杂草沙石泥地改善为布满各种本地品种的植物群。

- 把大约75%的原有树木在原地保留：另增添新的树木和灌木(本地品种)以保护和培育原动植物的自然栖息地。
- 因上述保育措施奏效，多种本地野生动物包括野生鹰、蝙蝠、鸟类和蛇类亦成功保存。
- 67%的地面用料选用透水材料。

生命周期成本的考虑

- 项目策划富前瞻性，在设计及施工阶段已为资料储存设施预置100%扩展空间供将来二期发展所用。
- 所有破坏性及影响连作的工序已预先与首期工作一并完成，包括所有的混凝土工程，将来机电设施的预留，主要机电设备(如冷却装置空间及大型预留洞口变压器等)亦已在设计阶段包含二期的荷载，所以已安装的主要设备亦能满足二期的需要。
- 50%的主要元件是模组化和标准化 — 可在原使用期届满后重复使用。
- 按机电线路风管及资料光缆的布置，透过压缩流体动力模拟及分析，测定出最高效送风静压层的高度及房间最高效的比例。
- 所有的系统都通过楼宇综合管理系统(BMS)自动监控各设备系统，此系统并连同报警信号连接到大厦管理办公室，由大厦管理人员24小时持续监测。
- 专业调试顾问自初步设计阶段已参与本项目，对机电设计意图有贯彻的了解，有助建后的调试校准及试运程式以确保各系统以最高效的模式运作。
- 竣工后，用家亦作多次的用后评估问卷，以确保各系统能应用户舒适度作出相关调节。

健康与安生

- 一氧化碳水准<1.0ppm。(室内空气品质卓越级)
- 臭氧水准@20ppb。(室内空气品质卓越级)
- 挥发性有机化合物水准@36ppb。(室内空气品质卓越级)
- 甲醛水准@20ppb。(室内空气品质卓越级)
- 含氧水准@39.1Bp/m3。(室内空气品质卓越级)
- 空气扩散器加上高效空气微粒滤芯。
- 室内采用气体感应监测沼气，氧等浓度。

污染控制

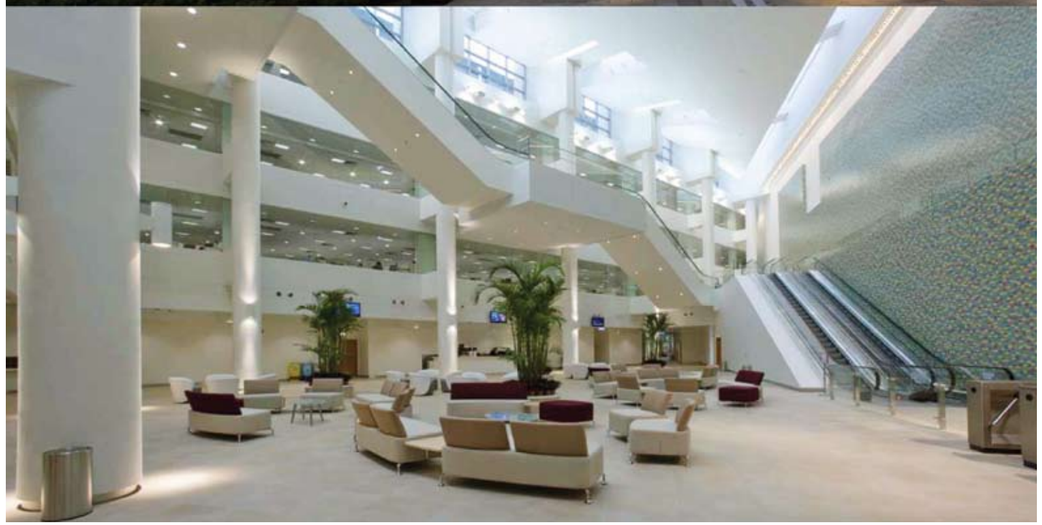
- 隔热，隔音用材不含CFC。
- 采用烟烙尽洁气体灭火系统(不危害臭气层气体) — 零全球变暖的影响。
- R134a的制冷剂：零臭氧损耗 — 全球变暖潜势<1600。

节能

- 每年节能11.5%。
- 高峰电力需求减少16.3%。
- 数据中心基础设施的效率指数为1.68，全球汇丰数据中心之最有效节能的典范。
- 所有办公室的一般照明采用分区操控T5萤光管，窗边地带采用光量感应的可调T5萤光管。各办公桌另置工作灯。

水质保护

- 每年节水15%。
- 集雨水灌溉省11.5%用水。
- 每年减少污水27.5%。
- 节水园林景观：雨水收集缸回收雨水用于园林灌溉。园林设计选用本地品种，确保灌溉用水量减至最低。



New Buildings – Hong Kong
新建建筑类别 – 香港

Commercial Projects 商业

Finalist 入围

Exchange Tower
国际交易中心

Team or Organisation Name:
Sino Estates Management Ltd.
Location: **33 Wang Chiu Road, Kowloon Bay, Kowloon**
Completion Date: **2008**
Gross Floor Area: **56,580 m²**
Building Type: **Retail & Office**

Key Team Members
Client: **Win Harvest (HK) Ltd.**
Architect: **Rocco Design Ltd.**
C&S Consultant: **Rocco Design Ltd.**
E&M Consultant:
Talent Mechanical & Electrical Engineers Ltd.
Landscape Architect: **Sino Group**
Main Contractor: **Hong Kong Construction Co., Ltd.**

As a pioneer of developing with a green vision, Sino Group has introduced a series of ecological innovations based on the needs of executives now and in the future. The result is Exchange Tower, a landmark building that sets a new trend for modern office design by integrating living green areas into every floor and bringing a balance to the place where we spend most of our time. It is a new era for Hong Kong – the start of a greener vision in office development. An address here is a great way for the progressive CEO to enhance to the company's environmental credentials.

A tranquil green balcony integrated into every office floor lift lobby, brings unprecedented green spaces into the working environment of Exchange Tower. When you want to meet with colleagues and business associates or brainstorm in a more relaxed environment, come to our unique and spectacular Sky Garden on the 15th floor. Here within a green oasis of serenity and fresh air, you can enhance your work and business relationships. It's a new mode of work and play based on the needs of the modern executive. The first to offer it, Exchange Tower sets the trend for the future.

The lobby of Exchange Tower creates a stunning effect the moment you enter. A soaring 13 metre high atrium and wide expanse of glass make an impressive sight. Adding to the serene green ambiance is a spectacular 11 metre high indoor vertical garden, one of the first of its kind in Hong Kong.

To further encourage the concept of the green office, we have launched a series of tenant activities and programmes, which include: Mission Green Top, Mission Green Thumb and Membership Rewards Scheme to encourage tenant participation in various green activities.

At Exchange Tower corporate social responsibility becomes a part of everyday life.

作为一个拥有绿色愿景的企业，信和集团为商厦发展写下新的一页，建成国际交易中心，并于大厦内每层融入生气央盎的绿化空间，缔造现代化商厦的绿色新指标。

国际交易中心内每层的升降机大堂皆融入绿化露台，令工作间呈现茵茵绿意；15楼的空中花园可供租户同事或商业伙伴于轻松的环境下洽谈公务，能令工作与合作更见效率；或繁忙过后稍事休息、呼吸清新空气，亦是一身心充电的好地方。这些全是为新一代行政人员打造工作与休闲的新模式，也是未来建筑趋势的新里程。

国际交易中心楼高13米的入口大堂，配合全港首创11米高室内直立花园，展示恬静及绿化浑为一体的艺术作品。

配合大厦的绿化设计理念，国际交易中心更积极与各租户将绿化生活实践于工作间，并推行多项环保活动及计划，包括：有机农庄、幼苗助养计划及鼓励租户举行各项环保活动之会员奖励计划

我们将继续致力推动环保，务求与各租户共同建设一个绿意盎然的空间。

Jury's Citation 评审意见

New Buildings – Asia Pacific Category
新建建筑类别 – 亚太地区

The 13 finalists in the 2010 Asian-Pacific Green Building Awards comprised of submissions from Australia, China, Japan, Korea and Singapore and spanned varying scales of residential, public and commercial projects. The jury was impressed by the invention and enterprise in the manner in which environmental considerations were embedded in all of the projects and green performance they achieved.

While not a decisive consideration in their deliberations, a host of distinct traits were evident in the number, type and extent of integration of green features and the energy and carbon reductions achieved many of the submissions. Some projects, for example, embodied strategies and technologies as a demonstration and showcase for promotion of possible solutions, while others had a less overt, but nonetheless successful, integration of environmental considerations. Moreover, whereas some projects were highly responsive to local culture, climate and place, others were more building-specific or generic in their approach to environmental performance. The jury was delighted to have selected a recipient of one Grand Award and acknowledge four meritorious projects.

Institutional/Community Projects

Grand Awards

- Maosi Ecological Demonstration Primary School
- MoHURD No.1 site: Post Earthquake Village Re-construction and Demonstration Project in Ma'anqiao Village

Two of the finalist projects – the Ma'anqiao village Maosi Ecological Demonstration Primary School and the MoHURD No.1 site: Post earthquake village re-construction, resulted from a unique and innovative collaboration between a University design and research team at the Chinese University of Hong Kong and local villagers in rural China. In its deliberation, the jury was unanimous that these two projects be considered as a common endeavour and the recipient of a single Grand Award in recognition of their combination of intellectual rigour and pragmatism, architectural elegance and enormous consequence.

Both projects are premised on the application "high science" from academic research to enhance traditional "low" technology" solutions that the members of the respective communities could both comprehend, engage and apply within their limited means and capabilities. The solutions and acquired experience could then subsequently be replicated on a broader scale. While the projects are seemingly modest and simple, they are rich in their response to place and circumstance and have created a profound and positive impact of the quality of life and empowerment of the communities in which they exist. The process and resulting designs demonstrate how architecture can be a catalyst for enhancing social and environmental conditions.

Merit Award

Kagoshima Museum of Environment: Planet Earth and its Future

With the mission to provide visitors with an awareness of global environment issues and engender a stronger sense of environmental responsibility and stewardship, the design of the Kagoshima museum itself is an elegant demonstration of how architecture can be an act of healing past damages. The project reverses previously held negative connotations of the site that resulted from an earlier flooding from the adjacent Kotsuki River, reestablishes of a "green presence" using an accessible green roof over the entire building, integrates a reconstructed school classroom and, where possible, uses locally available materials and resources.

Commercial Projects

Merit Awards

IBR Headquarters

The Shenzen IBR Headquarters represents a demonstration of green and building integrated renewable energy technologies that are expressive of the Institutes mandate for building environmental research, consultation and dissemination. The project uses a wide and impressive range of building environmental strategies and technologies integrated within a unique three-dimensionally stacking of the building's various functions. This organisation of the programmatic requirements into distinct blocks enabled the creation of a 12-story outdoor atrium that captures southeasterly breezes and permits daylight to enter deep into the building interior and interstitial spaces under the roof that provides opportunities for urban agriculture production.

Pixel

The ambition of being Australia's first carbon neutral building has resulted in a design that, in addition to achieving net zero carbon in operation, generates sufficient additional renewable energy that will offset the carbon embodied in its construction within 50 years. The building also claims a number of other impressive "firsts" and innovations that include the achievement of a perfect score using the Australian Green Star rating system, the importing and use of the Robur Ammonia Absorption chiller unit, vacuum toilets, the development and use of a special concrete mix that has extremely low embodied carbon, a unique small scale anaerobic digestion system, living edge wetlands and a unique vertical axis wind turbine.

Vanke Headquarters

The design of the Vanke Headquarters offers a creative and innovative rethinking of the notion of "skyscraper." By organising a mixed-use building horizontally and elevating it above the ground has permitted the introduction of a host of environmental and social benefits not attainable with the conventional "skyscraper." In addition to integrating a number of energy and water efficiency strategies into the project, a publically accessible tropical garden that runs under the building provides approximately 60% total green site coverage, enables sea and land breezes to traverse the garden and permits views over to the South China Sea beyond.

环保建筑大奖2010的13个入围项目，涵盖澳洲、中国、日本、韩国及新加坡，由住宅、公共设施以至私人项目均包括在内。对于各项目将环境考虑融入建筑，以及于绿化范畴的成绩，评审团十分欣赏。

我们收到的提名，展示了绿化设施及减少碳排放的数量、种类及程度。某些项目示范了如何将技术及发展策略结合，有些项目亦融和了环境考虑。某些项目更是针对地区文化、气候及位置建设，其他项目于环境考虑上则较以建筑物本身为重点。评审团非常高兴能选出一个大奖项目及四个优异项目。

社区设施

大奖

毛寺生态实验小学及马鞍桥村灾后重建

毛寺生态实验小学及马鞍桥村灾后重建示范项目这两个入围项目，是香港中文大学的设计及研究队伍，以及中国农村居民合作的结晶品。评审团一致认为这是双方共同努力的成果，并决定颁发一项大奖，以表扬其精确技术及实用主义的融和、优雅建筑及重要性。

这两个项目的大前提为，将学术研究的「科学」成果，应用于低技术的层面，让有关社区在有限的资源及能力之下，仍能有效地了解及应用。相关技术及所得的经验，将可作更广泛的应用。虽然项目看似简单，但却能有效地应对该区的问题，同时对社区的生活质素及活化带来重要的正面影响。项目的建设及设计，展示了建筑如何能催化社区环境改善。

优异

鹿儿岛环境未来馆

项目以提升访客对全球环境问题的意识及责任感为目标，同时展示了建筑如何能优雅地修复过去的损害。项目修复了因早年因邻近 Kotsuki River 泛滥造成的破坏，以贯穿整座建筑的绿化天台去重新建立绿化空间，重建课室及尽量使用本地的物料及资源。

商业

优异

建科大楼

深圳建科大厦是绿化及建筑物再生能源技术融合的示范，展示了建筑环境的研究、咨询及传播。项目运用了一系列建筑环境的技术及计划，融会于建筑物多重功能的三维建构中。设计令东南方的微风可吹进该12层高建筑物的天井，日光可射进建筑物的内部，屋顶下的空间更可进行种植。

Pixel

除了日常运作零碳排放外，项目产生的再生能源更足以抵消其建筑过程的碳排放量，足证其成为澳洲首棟碳中和建筑的决心。项目更有多个「第一」：使用 Australian Green Star rating system 、进口及使用 Robur Ammonia Absorption chiller unit 、真空坐厕、研发及使用低碳的混凝土、独特的小型无氧分解系统、湿地及直立式风力发电机

万科总部

万科总部的设计，为「摩天大厦」带来一个更具创意的构想。将多用途建筑升高及平放，比一般的摩天大厦有更多环境及社区好处。除了能源及用水效益设计外，项目更备有公共花园，覆盖的绿化面积约为60%，花园内空气流通，更可远眺南中国海。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Instituional/Community Projects 社区设施

Grand Award 大奖*

Maosi Ecological Demonstration Primary School
毛寺生态实验小学

*** Awarded together with "MoHURD No. 1 site: Post Earthquake Village Re-construction and Demonstration Project in Ma'anqiao Village" 此项目与「马鞍桥村灾后重建综合示范项目」一同获得大奖**

Team or Organisation Name: **School of Architecture, The Chinese University of Hong Kong**
Location: **Maosi village, Xifeng City, Gansu Province, P.R. China**
Completion Date: **2007**
Site Area: **0.76 hectares**
Gross Floor Area: **1,006 m²**
Green Rank: **Temperature field measurement has been conducted to ascertain and confirm the predicted performance.**
Building Type: **Classroom, office and library**

Key Team Members
Client: **Education Bureau of Xifeng, Xifeng City, Gansu Province, China**
Organiser: **School of Architecture, the Chinese University of Hong Kong**
Donor: **Kadoorie Farm and Botanic Garden, Chan Hungming**
Architect: **Prof. Edward Ng, Mu Jun**
E&M Consultant: **Building Design Institute of Qingyang City**
Main Contractor: **Mao Jiaxiong, Villagers of Maosi Village**
Local Governmental Support: **Feng Guangmin**

In the poor conditions of China's Loess Plateau region, the design possibility limited by budget and resources is the main challenge of design. The eco-school project in the Maosi village is a prototype. It emphasizes on a scientific and transferable methodology combining phases of investigation, condition analyses, computer simulation experiments, design and field construction. Condition analyses are in the areas of economy & resource for building, climate, and vernacular architecture. The study was further analysed by a series of thermal simulations with software TAS. By filtering and optimizing locally available materials and techniques, it was found that the basic technique, thermal mass of low embodied energy and insulation are the most effective and cost effective solution.

Follow the topography, 10 classrooms were planned at two levels for exposure to sunlight, daylight and natural ventilation. Landscaping further helps to create a desirable campus ambience for children. The classroom form is derived from local traditional houses with timber structure so as to be constructed easily by villagers. Thermal mass, roof insulation and double glazing are employed. The semi-buried form together with the direct-gain mode of passive solar system further upgrades the thermal performance. Construction is implemented by the villagers with simple tools. Most building materials, such as mud bricks, rubble, straw and reed, are sourced in or around the site. The new classrooms are cheaper than local conventional buildings, and they have a far better environmental performance lesser energy consumption and lesser environmental impact. The project illustrates to the locals a feasible way, in which by selectively employing their familiar techniques and materials they can easily build for themselves their most effective and affordable ecological buildings. Last but not least, quoting the school master, "from now on, not one piece of coal needs to be burned to keep warm. All our money can be spent on books."

毛寺生态实验小学坐落于甘肃省毛寺村。该项目在为孩子们创造一个舒适、愉悦的校园环境的同时，向当地村民诠释了一个科学且适合于当地发展现状的房屋建造方法。设计充分发掘和继承了当地传统建造技术。所使用的绝大部分建筑材料来源于基地附近以生土为主的自然材料，因此其具有低能耗、低污染、可降解的生态优势。新建教室的室内气温始终保持着相对稳定的状态，可谓冬暖夏凉，无需消耗任何能源。在热工性能、能源消耗与环境保护方面，新学校所具有的生态可持续效能远优于当地常规的学校建筑。由于施工建造大量地雇佣了当地的村民，作为慈善项目，除了学校本身绝大部分的社会捐助得以惠及这个村落。更重要的是，村民们得以重新认识他们自己的传统。这让他们明白了，在有限的经济基础下，村民们完全可以利用所熟知的传统技术和随地可得的自然材料，在改善自身生活条件的同时，最大限度地减少对环境的污染和破坏，并实现人与建筑、自然的和谐共生。

In conclusion, the followings are achieved:

Firstly, the new school creates a comfortable and desirable campus ambience for the children. Furthermore, compared to local conventional schools, during its whole life cycle it contributes a far better ecological performance in indoor comfort, energy consumption and environmental impact. Secondly, as a charity project, most of the donation was shared within the village community due to employing the local villagers and using their resources. The last and most important point, with the eco-school project the villagers can re-understand their own tradition. The school illustrates to the locals a feasible way towards an ecological architecture suited for the conditions of China's Loess Plateau region. In this way, by selectively employing their familiar techniques and materials the villagers can easily build themselves their most effective and affordable ecological buildings.

Last but not least, quoting the school master, "From now on, not one piece of coal needs to be burned to keep warm. All our money can be spent on books."

毛寺生态实验小学位于贫困的甘肃省毛寺村，该学校的设计目标不仅是为当地的孩子们创造一个舒适愉悦的学习环境，更关键的是要以此为契机，努力诠释一个适合于当地发展现状的生态建筑模式。项目强调一个科学化且可推广的设计与研究方法，其中包含三个基本阶段：现状调研与分析，模拟实验研究，设计与施工建造。经过研究发现最基本的建造技术——以当地传统生土建筑技术和自然材料为基础的技术改良策略，是提升建筑热特性、减少能耗和环境污染最为经济和有效的措施，因此应被充分地运用在学校教室的设计之中。设计充分发掘和继承了当地传统建造技术。所使用的绝大部分建筑材料来源于基地附近以生土为主的自然材料，因此其具有低能耗、低污染、可降解的生态优势。新建教室的室内气温始终保持着相对稳定的状态，可谓冬暖夏凉，无需消耗任何能源。在热工性能、能源消耗与环境保护方面，新学校所具有的生态可持续效能远优于当地常规的学校建筑。由于施工建造大量地雇佣了当地的村民，作为慈善项目，除了学校本身绝大部分的社会捐助得以惠及这个村落。更重要的是，村民们得以重新认识他们自己的传统。这让他们明白了，在有限的经济基础下，村民们完全可以利用所熟知的传统技术和随地可得的自然材料，在改善自身生活条件的同时，最大限度地减少对环境的污染和破坏，并实现人与建筑、自然的和谐共生。 最後，引用毛寺生態實驗小學校長的一句話："從現在開始，學校不再需要燒煤來取暖了，省下來的錢可以爲孩子們多買一些書了。"

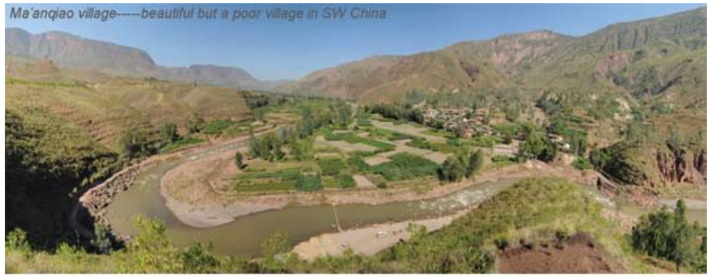
New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Instituional/Community Projects 社区设施

Grand Award 大奖*

MoHURD No.1 site: Post Earthquake Village Re-construction and Demonstration Project in Ma'anqiao Village
马鞍桥村灾后重建综合示范项目

* Awarded together with "Maosi Ecological Demonstration Primary School 此项目与「毛寺生态实验小学」一同获得大奖


Ma'anqiao village-----beautiful but a poor village in SW China

This project is being hailed as the No. 1 post earthquake village re-construction and demonstration base under the Ministry of Housing and Urban-Rural Development (MOHURD) of China.

马鞍桥村灾后重建示范项目是国家建设部直属的第一个农村地区灾后重建示范项目。

Team or Organisation Name: **School of Architecture, The Chinese University of Hong Kong**
Location: **Ma'anqiao Village, Huili County, Sichuan Province, China**
Completion Date: **2010**
Site Area: **5 hectares (village area)**
Gross Floor Area: **3,700 m²**
Green Rank: **The typical assessment method for urban project is not suitable for this project in rural area. We followed the key points of these assessment tools such as site, energy, material, water, IEQ, economy and health.**
Building Type: **Residence, Public**

Key Team Members
Client: **Ministry of Housing and Urban-Rural Development (MoHURD) of China**
Organiser: **Wu Zhi Qiao Bridge to China Charitable Foundation**
Donor: **Lee Hysan Foundation**
Architect: **Prof. Edward Ng, Mu Jun, Wan Li, Ma Jie**
C&S Consultant: **Prof. Zhou Tiegang, Yang Hua**
E&M, & Landscape Consultant: **Mu Jun, Wan Li, Hui Wingyan**
Main Contractor: **Local villagers and Volunteers from Hong Kong and the Mainland China**
Owners: **Villagers of Ma'anqiao Village**

Ma'anqiao village is a typical village located in the poverty mountainous area of China. It is isolated by a river without any permanent connection to the nearby town. All village houses are traditional rammed-earth courtyard with common living spaces for both human and livestock. After the earthquake in 2008, most of the village houses were severely damaged. Due to its remoteness, poor accessibility and resources limitations, it was not re-built. There were a lot of remote villages like this. The challenge was "how to make use of local materials to create an anti-seismic, comfortable and cheap house that is sustainable".

This project aims to demonstrate and convey an affordable, ecological, sustainable, healthy and humane way of post-quake village rebuild that local villagers could afford, own and pass on. The main contents are as follows:
-Bridge building and improve access.
-Organize villagers from each family to build the prototype house with anti-seismic and ecological methods for technical training. Then help them rebuild their own houses under the supervision of our technical staff.
-On-site anti-seismic rammed earth building technology experiment.
-Publish an illustrated and easily comprehensible anti-seismic rammed earth village house DIY construction manual in China.
-Build village center and anti-seismic rammed earth building demonstration base.
-Organize craftsmen training workshops.
-Organize public health education workshops to help villagers to improve their residential environment .

马鞍桥村位于四川南部山区，毗邻攀枝花市，是一个典型的西南贫困村落。村子被一条河流分隔开来，长期以来没有一座坚固的桥梁与外界相连。当地的农宅都是传统的人畜混居夯土宅院，生产生活条件相对落后。2008年8月30日，攀枝花地区发生了6.1级地震。位于主震区的马鞍桥村是受灾最严重的村落之一。全村大部分农宅都受到了不同程度的破坏和损毁，急需重建。然而，受偏远的地域和极少的媒体关注所限，外界对马鞍桥村的援助十分匮乏。如仅凭当地村民独立重建，重建之路实在既漫长又艰苦。在中国西部地区，仍有很多个与马鞍桥村情况相似的村落需要重建和发展。我们面临的挑战是，如何利用当地现有的废墟材料和自然材料，建造一个抗震，舒适，经济且生态可持续的家园。

马鞍桥村灾后重建示范项目旨在探求一条灾后重建的可持续发展之路。利用现有资源建造抗震房屋，同时经济、宜居、人性化，并且可以被村民学习及传承下去。该项目的主要内容有：
- 修建桥梁解决村组交通问题。
- 组织每家每户的村民修建两座示范农宅，学习抗震夯土建筑的技术和方法。然后在技术人员的指导下，利用所学的方法各自重建自己的家园。
- 在当地进行抗震夯土建筑性能测试及实验。
- 出版一本简单易懂的抗震夯土农宅建造图册，作为更多村民和农村建筑从业者的技术指导和参考依据。
- 建造一座村民活动中心暨抗震夯土建筑示范中心。
- 组织面向全国的村民和工匠培训。
- 在当地组织公共卫生方面的教育和培训，帮助村民改善生活卫生环境，推行人畜分离的居住方式。

Outcome and performance:
- Energy: No need to use heating equipment in winter and air condition in summer. Bio-gas has been used to turn wastes into fuel for lighting and cooking.
- Material: Most (about 90%) of the construction materials are post-quake recycled material or local available natural materials.
- Water: Water cellars are built to supply clean water from the nearby spring, instead of directly getting "dirty" water from river in the past. Storm water naturally channel back to the land.
- IEQ: The traditional rammed earth houses in this village were ill-ventilated and dark. We have improved it appropriated with properly sized windows and provision for cross ventilation.
- Anti-seismic: The structural system of local traditional houses is improved by seismic design with bamboo strips and timber. This new anti-seismic rammed earth building can satisfy the demand of seismic fortification in this area (7 intensity scope). It is also cheap and easy to build and repair thus creating a sustainable structure for the harsh environment.
- Economy: The construction cost of this new rammed earth building is only a quarter of the conventional brick-concrete building and the operation cost is also much lower.
- Community: A village center with clinic, kindergarten, library and shop has been built to provide better services to the community. It provides a focus for the community, especially useful during festive periods.
- Public facilities: A bridge was built so these villagers and children can across the river conveniently and safely. Main paths in the village were also rebuilt and widened.

项目成果：
- 能源：新建农宅冬暖夏凉，不需要运行额外的采暖和制冷系统。沼气可以提供厨房用火及室内照明系统。
- 材料：约90%的材料都是灾后废墟回收再利用的材料或者当地的自然材料。
- 水：修建了水窖以提供经过澄清及杀菌处理的清洁的生活用水。
- 室内环境：通过合理的开窗，增加了自然的采光通风，有效提高了室内光环境和热环境的舒适度。
- 抗震性：通过抗震设计，增加木构造柱、木圈梁、竹筋、木销等构建，以提高夯土建筑的抗震性能。此种方式保留了夯土建筑的有点，又使其能满足当地抗震七度设防的要求，并且造价相对低廉，简单易学，生态可持续，能很快被当地工匠和村民掌握。
- 经济性：抗震夯土农宅的每平米平均造价之后常规的砖混住宅的四分之一。这对于人均年收入只有一千元左右的当地村民来说无疑具有重要意义。
- 社区提升：建成的村民活动中心内有综合展示厅、阅览室、幼儿园、医疗室、小卖部、生态厕所等功能，是一个社区日常生活、公共活动的中心。
- 公共设施完善：一座坚固耐用的桥梁已经建成，村民再也不需要涉水过河，可以方便自由地进出村子，小学生也可以安全地去上学了。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Instituional/Community Projects 社区设施

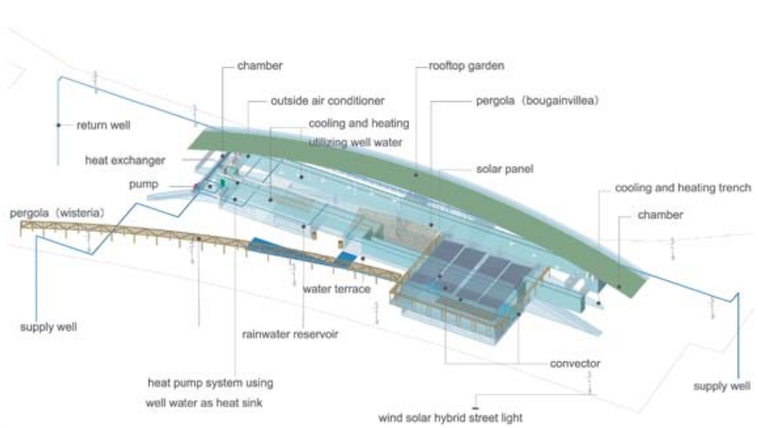
Merit Award 优异

Kagoshima Museum of Environment: Planet Earth and its Future

鹿儿岛环境未来馆

Team or Organisation Name: **Nikken Sekkei Ltd.**
Location: **Kagoshima city, Kagoshima prefecture, Japan**
Completion Date: **10 December 2008**
Site Area: **1 hectare**
Gross Floor Area: **3,000 m²**
Green Rank (if any): **CASBEE, Rank: S, BEE=3.5**
Building Type: **Museum**

Key Team Members
Client: **Kagoshima City**
Architect: **Nikken Sekkei Ltd.**
C&S Consultant: **Nikken Sekkei Ltd.**
E&M Consultant: **Nikken Sekkei Ltd.**
Landscape Architect: **Nikken Sekkei Ltd.**
Main Contractor: **Uemuragumi Co., Ltd.**
Occupant (Interiors): **Kagoshima City**
Research Investigator: **Kagoshima University**
Co-design Supervisor: **Shimomai Architect and Engineers, Inc.**
Display Design and Production: **Nomura Co., Ltd.**



Usage of nature as it is

- natural ventilation
- daylighting
- well-water for watering etc.
- dry mist
- cooling and heating trench

Usage of nature with devices

- solar panels
- well-water heat pump unit

Optimization control

- control of outdoor air supply rate
- highly efficient equipment
- automatic light regulation
- task light
- BEMS

front view

exhibition room

before the construction

greening the site

Kagoshima Museum of Environment is a public facility in Kagoshima where the local government takes an active interest in environmental issues.
The building is used as an Environmental Museum, so the purpose of the building is to make people think about the environment. The basic design concept was that the existence of the building itself should have a positive impact on the surrounding environment.

Re-green the site and create green hill

The first concept is greening of the site that was a barren land with sparse weeds for a long time.
By making a green path on the roof, the site is covered in greenery. The museum takes the shape of a gradual hill covered by a grass roof, which gently continues to the green landscape of the surroundings.
Visitors are able to approach the green roof freely and the roof has become a place of relaxation for the local residents.

Take advantage of location along the river

The econd concept is the usage of well water. There is abundant well-water around the site because it' s located along Koutsuki River. The well water temperature is around 20℃ all year round. After using geothermal energy for air conditioning, part of the well-water is used as flushing water and watering of the lawn and the rest is returned to the ground. In the summer, well-water is led into the convectors at the entrance as well, and visitors can touch them and see the air conditioning system.

Utilize local resources

To reduce energy use, a lot of ideas are introduced such as using the renewable energy which exists on the site, blocking the strong heat load of summer and using natural materials.

- Natural ventilation based on the prevailing wind of Kagoshima is adopted. Windows of east side and west side can be open for natural ventilation.
- Aegis and pergola are planned in various places to soften direct light. This pergola is wormed by vines such as Bougainvillea and Wisteria.
- Cooling and heating trenches are is set up for pre-cooling and pre-heating the outside air by geothermal energy. Outside air is cooled down about 10 ℃ through the trench in summer, and heated up about 15 ℃ in winter.
- A 40 kW solar panel is set up on part of the roof and it covers all the electricity need of the building in the spring and the autumn on a sunny day. It can be said that the building is a ZEB(Zero Energy Building) for several hours during a year.
- Most of the finish materials are done by natural materials, such as wood, stone, lime plaster, and soil plate (Tataki) which are mostly manufactured in Kagoshima area. Interlocking blocks and concrete panels including "Shirasu", which is the volcano ash in Kagoshima, are used to the roof base for green field.
- Wooden materials wasted by the Kagoshima Citizen Hall renovation are reused to the floor of the exhibition room, which is coated with beeswax. All of the outside concrete and sashes are coated with the highly durable resin paint of fluorine.

Operating the system is also one of the most important parts of energy consumption saving. To get an effective management and energy saving under operation, a manual of operation was made by the owner, designers, and constructors. The central monitor shows the optimal operational guidance according to the outside weather conditions. By using renewable energy and the development of operational manuals, primary energy consumption was 723.9 MJ / m2 /year. It is converted to CO2 emissions of 27.1 kg-CO2 / m2 /year.

A simple building made from a simple idea. But it' s strong, and we hope it will be used for many years.

鹿儿岛环境未来馆地处日本的鹿儿岛市，是一处向外界发送环境信息的公共设施。
建筑物的目的是为了让人们对环境进行深层次的思考，因此考虑建筑物本身的建设能够给周边环境带来良好的效果。

绿色的再生・绿色山坡的创造

首先把大的主题定位为生长着稀疏杂草的耕地再生为绿色的大地。
大型圆弧状的剖面形状从地面隆起形成全体绿化屋顶，室外也都用绿色覆盖，使原为耕地的整个地块再生成为绿色大地。
屋顶可以任意攀爬，成了周边居民的休息场所。

活用沿岸地理条件

地块沿着河边，有丰富的地下水。不仅可以创造美妙的风景，而且可以利用丰富的地下水资源作为空调用水。井水温度全年都不均在 20 ℃前后。井水用于空调水热交换后的一部分还可以用于浇灌草地等之用，余下的井水将通过还水井还原到地下。夏季还将井水用于大厅的散热器，让来馆者感受到清凉感。

活用地域资源

这次环境设计最大限度地利用地块周围的自然资源来缓和鹿儿岛的炎热，尽量不使用自然资源以外的能源。同时大量利用了鹿儿岛的自然素材。

- 为了利用鹿儿岛的主导风，东西方向的门窗都能够开启和关闭，用于自然通风换气。
- 多处设置遮阳控制直射日光。让九重葛和紫藤等植物往遮阳上爬。
- 为了用地热将导入室内的新风进行预冷和预热，设置了地中风道。通过地中风道的空气在夏季大约会冷却 10℃左右，冬季会加热 15℃左右。
- 设置了 40kW 的太阳光发电设备。过渡期晴天建筑物的用电量都可以用太阳光发电来满足。全年有几个小时仅依靠太阳光发电就可以满足。
- 利用了木材，石材，灰泥，三合土等自然素材。木材和石材为鹿儿岛产。此外还采用了混入了鹿儿岛火山灰「白砂堆积层」的砖和水泥板。屋顶植被就是在上述水泥板的上面种植的草坪。
- 展示空间的木制地板是利用鹿儿岛市民馆的舞台改建时产生的废材。表面涂上蜂蜡进行抛光。外部的混凝土和窗框的涂料均采用高耐久性的氟素树脂涂料。

为了在使用时能够尽量有效的利用自然能源，在施工阶段制作了运行管理手册交给业主，设计者和施工者。同时，在中央监视画面上，作为运行指导，显示适合室外条件的运行方法。
通过利用自然能源，以及运行手册的制作，全年一次能源消费量为 723.9 MJ / m2 年，换算成 CO2 排放量为 27.1 kg-CO2 / m2 年。

虽然建筑物的设计理念简单明了，但却能够达到十分坚固，并被长期使用。

the pergola provides the soft shades

exhibition room

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Instituional/Community Projects 社区设施

Finalist 入围

ITE College West Campus
新加坡工艺教育(西区)学院

Team or Organisation Name: **Gammon Pte. Ltd.**
Location: **Choa Chu Kang Grove, Singapore**
Completion Date: **Obtain Temporary Occupation Permit - 2010**
Achieve Practical Completion - 2010
Site Area: **95,400 m²**
Gross Floor Area: **114,480 m²**
Green Rank: **1. Green Mark for Non-Residential Buildings (New Buildings, Ver 3.0), Singapore. 2. Rating of "Platinum" by Building & Construction Authority (BCA), Singapore**
Building Type: **Educational facility consisting of classrooms, laboratories, workshops and office areas together with commercial outlets. Facility also includes a convention centre, training hotel and restaurants.**

Key Team Members
Client: **Institute of Technical Education (ITE)**
Gammon Capital (West) Pte. Ltd.
Architect: **DP Architects Pte. Ltd.**
C&S Consultant: **Beca Carter Hollings & Ferner (SEA) Pte. Ltd.**
E&M Consultant: **Beca Carter Hollings & Ferner (SEA) Pte. Ltd.**
Landscape Architect: **Sitetectonix Pte. Ltd.**
Main Contractor: **Gammon Pte. Ltd.**
Occupant: **DP Design Pte. Ltd.**

Gammon's recently completed "ITE College West" project is a remarkable addition to Singapore's urban infrastructure and is set to strengthen the Institute of Technical Education's reputation as a leading provider of tertiary vocational education in Singapore. The second of three upcoming regional campuses under the "One ITE System, Three Colleges" model; the development is surrounded by lush greenery and encompasses a sprawling area of 114,480 square metres.

With facilities for over 8,000 students, training at this campus focuses on disciplines including automotive technology, hospitality training and precision engineering. For example, the development features an automotive showroom and associated training cells, a 22-room training hotel, a Visitor Reception Centre, fully operational training restaurants and kitchens, commercial outlets, laboratories and workshops all equipped with state-of-the art technology. To further enrich the teaching and learning experience, the college also has a theatre-styled 680-seat auditorium, a centre for music and the arts with production and dance studios and a sports village complete with gymnasium, running track, indoor sports hall and an Olympic-sized swimming pool.

金门建筑最近竣工的「新加坡工艺教育 (西区) 学院」(ITE College West) 项目为新加坡城市基建增添了华丽的一笔，它必将提升该院校作为新加坡高等职业教育领导者的声誉。根据「一个ITE体系、三家学院」模式开发的三个地区校园规划，这是其中的第二个校园区，到处是茂盛的绿化，开阔的园区共占地114,480平方米。

西区学院拥有可供8,000多名学生使用的教学设施，培训课程侧重于汽车技术、酒店餐饮以及精密工程等领域。例如，新校园包括汽车展示厅及相关培训室、一座22个房间的培训酒店、访客接待中心、全面运作的培训餐厅及厨房、多个商业网点，以及配备最新技术的实验室和工场等。为了进一步丰富教学体验，学院还包括一个680座位的戏院式礼堂、一个附有创作及舞蹈室的音乐美术中心，以及一个配备体操房、跑道、室内运动场和奥运会规格游泳池等完善设施的运动村。

A unique attribute of this college is its green campus concept. Led by the Gammon Consortium under the public-private partnership contract (PPP), the building architecture and landscape was meticulously reviewed and developed to emphasise on environmental sustainability. Through the careful selection and employment of innovative design, appropriate construction technologies, building materials and highly efficient electrical and mechanical service systems, the new ITE College West campus sets new standards for environmental performance.

Despite a tight 2-year construction programme, the campus successfully commenced operations in July 2010. The newly-built ITE College West has garnered much praise as a leading technical training institution with world-class facilities; providing a conducive learning environment in a green and energy efficient setting for ITE staff, students and the general public.

该学院的一个特色是，它运用了绿色校园的概念。根据「公私合营合约 (PPP)」，在金门联营公司的带领下，建筑设计和环境美化经过严格的审定，以突出环境的可持续性。通过仔细挑选并采用创新设计、相关建筑技术、建材、高效率电气及机械维护系统，新落成的新加坡工艺教育 (西区) 学院校园为环保绩效设立了新标准。

尽管建筑工期只有短短两年，学院已于2010年7月成功启用。作为拥有世界级设施的领先技术培训机构，新落成的新加坡工艺教育 (西区) 学院已受到广泛称赞；它为ITE教员、学生和大众提供了一种绿色、节能、有利教学的环境。

Gammon

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

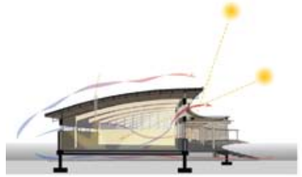
Instituional/Community Projects 社区设施

Finalist 入围

KPMG-CCTF Community Centre
毕马威安康社区中心

Team or Organisation Name:
The Ove Partnership Ltd.
Location: Cifeng Village, Sichuan Province of China
Completion Date: 2010
Site Area: 1,800 m²
Gross Floor Area: 450 m²
Building Type: Community Centre

Key Team Members
Client: KPMG China
China Children and Teenagers' Fund (CCTF)
Architect: The Oval Partnership Ltd.
C&S Consultant: China Southwest Architectural Design and Research Institute
Calder Latif Associates
YBkouki Yunnan Huang Hui Construction Co., Ltd.
E&M Consultant:: China Southwest Architectural Design and Research Institute
Energy Reduction Management Ltd.
Main Contractor: YBkouki Yunnan Huang Hui Construction Co., Ltd.
Sichuan Hongchen Construction Co., Ltd.
China Huaxi Engineering Design & Construction Co., Ltd.



KPMG China, in partnership with China Children and Teenagers' Fund (CCTF) and Chengdu Women's Federation, have built an exemplar green community centre in Cifeng Village Sichuan Province of China as part of efforts to renovate the earthquake-devastated poor region and promote the development of the local rural communities.

The architect has made full use of locally sourced innovative materials and passive system of environmental conditioning in building a people-oriented, energy-saving, and environmentally sustainable village. The building's post & beam structural material is reconstituted bamboo prefabricated and sourced from local factory and local sustainable forest. Pollution free straw fibre panel and laminated bamboo are used for the building envelop and floor finish.

This low budget philanthropy project has received pro bono manpower, resources and financial support from 30 international and domestic green enterprises, research institutions and government agencies through partnership.

The 450 square meter Community Centre was opened on 17 May 2010, and is used for local children's extracurricular activities and villagers' vocational training on rural eco lifestyle. The project has advanced sustainable rural community development by means of corporate sponsorship, public participation and public-private partnership, and will serve as a paragon for improving sustainable construction, educational, cultural and recreational facilities in rural communities.

为了支援四川地震灾区重建，促进当地社区建设和发展，毕马威中国携手中国儿童少年基金会和成都市妇女联合会在四川省彭州市磁峰镇乡村兴建了一座绿色建筑-毕马威-安康社区中心”

本案建筑师秉承以人为本、节能环保和可持续发展的绿色乡村建设理念，致力于采用被动式生态环境调节系统和本地区可更新素材之创新实践，包括应用预制的产自本地乡镇企业和永续林区的复合竹结构、竹外围护板和内外竹地板、零污染的农业秸秆材保温墙体等。

这个低预算的慈善项目得到了多方面志工、物质与资源的大力支持，来自约30个国际和国内的先进绿色企业、科研单位和政府机构，通过合作伙伴的方式提供广泛支持。

面积450平方米的社区中心于2010年5月17日正式落成并投入使用。现用于本地孩童的课余活动和村民假期的乡村生态生活方式培训。本项目以企业赞助、公众参与、公私合作的国际协作方式和可持续发展的绿色乡村建设理念，推动乡村社区的建设，具有促进乡村社区教育、文化和娱乐活动发展的研究示范意义。

the Oval partnership | 歐 華 爾 |
a global partnership for asian projects

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Instituional/Community Projects 社区设施

Finalist 入围

The National Portrait Gallery, Australia
澳洲国立肖像艺术馆

Since opening in December 2008, The National Portrait Gallery, Australia has become a prominent cultural feature in Canberra receiving 730,000 visitors and guests. This is well in excess of the annual forecast which was exceeded in the first four months of operation.

澳洲国立肖像艺术馆从2008年12月开幕至今已成为坎培拉一项卓越文化特色。首四个月入场参观人次已超越整年之预测，而首年入场参观人次更多达七十三万。

National Portrait Gallery, Entrance (© Brett Boardman)

National Portrait Gallery, Interior (© Steensen Varming)

National Portrait Gallery, Interior (© Steensen Varming)

Team or Organisation Name:
Steensen Varming (Australia) Pty Ltd.
Location: **Canberra, ACT, Australia**
Completion Date: **2008**
Site Area: **23,700 m²**
Gross Floor Area: **15,960 m²**
Green Rank: **As there was no "specific" recognised performance rating system for public building available during design, the design team used the Green Star Education Design Rating Tool as an objective guide to best practice.**
Building Type:
Gallery staff and visitors to the gallery

Key Team Members
Client: **National Portrait Gallery**
Architect: **Johnson Pilton Walker**
C&S Consultant: **Arup**
E&M Consultant: **Steensen Varming**
Landscape Architect: **Johnson Pilton Walker**
Main Contractor: **John Holland**
Occupant (Interiors): **John Holland**
ESD Consultant: **Steensen Varming**
Specialist Lighting Consultant: **Steensen Varming**
Hydraulic Consultant: **Warren Smith and Partners**

The new Gallery is situated in the iconic Parliamentary precinct and sits alongside other established institutional buildings; the National Gallery of Australia and High Court of Australia. The Gallery houses over 400 portraits of prominent Australians, who helped create Australia.

The design of the new building draws inspiration from Canberra's environment and natural landscape. The concept for the new gallery is grounded in the experience of looking at portraiture and in its emphasis on human scale the building favours intimacy and connection in lieu of reverence and the monumental.

Steensen Varming played an integral role in managing and coordinating the design of the mechanical, electrical, specialist lighting and ecological sustainable design services.

Innovative solutions balanced with sound engineering practices were required to provide a facility that successfully blends the strict conservation measures required for the art works in the most energy efficient and environmentally conscious manner.

Key to the success of this project was our teams collaborative design approach which began with identifying ESD solutions within the framework of the building function and conservation requirements, developed through rigorous tests of practical issues such as economics, buildability, reliability and long term maintenance/ operational needs.

This project exemplifies how a collaborative design process can deliver a low energy building without compromising the functionality of this Gallery building, as demonstrated through the reduction in energy consumption which in the first year of operation was 40% less than the national average for museum gallery buildings – a great success story for the building.

新肖像艺术馆坐立于著名的国会周园区内，邻近有历史悠久之澳洲国立艺术馆及国家高等法院，馆内珍藏超过四佰多件有关澳洲建国历史上著名人肖像艺术品。

此座艺术馆建筑之设计灵感来自坎市之周围环境及自然景观，概念建基于欣赏肖像艺术之感受，并着眼于对人性，亲切，和谐的体会。

维铭顾问工程公司于此项目上扮演着一非常重要之角色，包括负责及监管机械，电机，灯光效果及环保节能等设计工程。

新颖而稳妥的设计令这设施可以提供一个有效，节能而充份保育珍贵艺术品之环境。此项目其中一重要成功原素来自整个设计团队之合作精神，设计方案在于楼宇之功能及艺术保育范围内寻求节能及环保之设计，经济效益，可建程度，耐用程度以至艺术馆运作需求等，均经详细之考究及肯定。

此项目充份表现出团队精神能够将一节能环保之艺术馆建成而不需降低保育艺术水平的基本要求上妥协，首年之能源耗用量只为同类建筑物之百份之六十，诚然一非常成功之工程项目。

STEENSEN VARMING

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Merit Award 优异

IBR Headquarters
建科大楼

Team or Organisation Name: **Shenzhen Institute of Building Research Co,. Ltd.**
Location: **Futian District, Shenzhen**
Completion Date: **2009**
Site Area: **3,000 m²**
Gross Floor Area: **18,000 m²**
Green Rank: **Chinese National Green Building Standard 3 star**
Building Type: **Office**

Key Team Members
Client: **Shenzhen Institute of Building Research Co,. Ltd.**
Architect: **Qing Ye, Wei Zhang, Xiaoyi Yuan, Chi Shen, Xin Wang, Yongzheng Tang**
C&S Consultant: **Xingyuan Ma**
E&M Consultant: **Shijin Peng, Shiliang Guo, Junjie Zhou, Jianqiang Huang**
Landscape Architect: **Jiejian, Yu Jiang**
Main Contractor: **Shenzhen Futian Building Construction Co., Ltd.**
Occupant (Interiors): **Xiaolong Gong**
Others: **Tao Yan**

The Hanging Garden in Level 6

IBR Building is the R&D center of Shenzhen Institute of Building Research. The building is aimed to explore the green building realization focused by low cost and passive technology, and achieve the goal of maximizing the efficiency in resources utilization, environmental protection and pollution reduction throughout building's life cycle.

To better direct the design, IBR created a green philosophical view of "balanced, time-space considered, systematic" and green building technology of "local, low-energy consumptive and elaborated" guidelines and a green building of "policy, market and technology" integrated system.

The gross floor area of IBR headquarters is 18,000m² with 12-storey above ground and 2-storey basement functioning in experiments, R&D, office use, academic exchange, underground parking, recreation and lifestyle facilities. The architecture design adopts tri-dimensional function superposition to arrange different functional blocks into different vertical spaces by respective nature, space demand and streamline organization, and design different forms of building envelope to meet various needs.

Our approach is to obtain Chinese national green building accreditation 3-star with cost of 4300 RMB/m². After a year operation, the building annually reduces operation cost by 1.5 million RMB. It annually save coals by 610 tce and reduce CO_2 by 1600 tons.

建科大楼是深圳市建筑科学研究院的研发中心。项目目标是通过低成本的被动式技术实现绿色建筑能源使用合理化，并且在建筑物生命周期中实现环境保护和减少污染。

为了更好的实现项目设计，IBR创造了 “平衡、节地、系统化”的绿色建筑理念以及“本土化低资源消耗、可推广”的绿色建筑技术和“政策、市场、技术”的绿色建筑合成系统。

建科大楼位于深圳市福田区北部梅林片区，总建筑面积1.8万平方米，地上12层，地下两层，建筑功能包括实验、研发、办公、学术交流、休闲、生活辅助设施及地下停车等。建筑设计采用功能立体叠加的方式，将各功能块根据性质、空间需求和流线组织，分别安排在不同的竖向、空间体块中，附以针对不同需求的建筑外围护构造，从而形成由内而外自然生成的独特建筑形态。

大楼已实现了最初的建设目标，以约每平米四千余元的工程总造价，达到了国家绿色建筑评价标准三星级的要求，取得了较为突出的社会效益——经初步测算分析，1.8万平方米规模的整座大楼每年可减少运行费用约150万元，其中相对常规建筑节约电费145万元，节约水费5.4万元节约标煤610吨，每年可减排CO_2 1600吨。

Sharing design

From design to construction, IBR Building adopts over 40 technologies (the proportion of passive, low-cost and management technologies is 68%). Every technology is designed to act with multiple functions through integration with each other. The whole technology system therefore can realize energy, land, water, material saving, and fulfill peoples' needs for comfort and health as well.

1) Energy saving

The designed total energy consumption of IBR Building is 75.3% of the prescribed value in national energy saving standard. The contributors for energy saving are: energy-efficient envelope, air conditioning, low-power density lighting, fresh air heat recovery, CO_2 control, natural ventilation optimization and renewable energy use.

2) Water Use Saving

Storm water management practices, reclaimed water use and other measures are taken for water consumption reduction. Water-saving techniques are taken during water and sewer design, water-saving product selection, layout of sewer process on artificial wetland. Utilization rate of non-conventional water resources is 43.52%.

3) Material Saving

Premixed concrete has been fully used instead of decorative elements. The ratio between the proportions of recyclable materials to the total materials is 10.15%. All applied materials are function-oriented to minimize the consumption of unnecessary decorative materials. Building materials will be used considering both decorative and functional effects maximally.

共享设计：

从设计到建设，建科大楼采用了一系列适宜技术共40多项（其中被动、低成本和管理技术占68 %左右），每一项技术都是建科大楼这一整合运用平台上“血肉相连”的一部分。它们并非机械地对应于绿色建筑的某单项指标，而是在机理上响应绿色建筑的总体诉求，是在节能、节地、节水、节材诸环节进行整体考虑并能够满足人们舒适健康需求的综合性措施。

节能：

项目建筑设计总能耗为国家批准或备案的节能标准规定值的75.3%。主要节能贡献要素：节能围护结构，空调系统，低功率密度照明系统，新风热回收，CO_2控制，自然通风，和规模化可再生能源结 。合当地经济状况、气候条件、用水习惯和区域水专项规划等，统筹、综合利用各种水资源，采用雨水收集、中水处理回用等措施。

节水：

结合当地经济状况、气候条件、用水习惯和区域水专项规划等，统筹、综合利用各种水资源，采用雨水收集、中水处理回用等措施。给水排水系统设计、节水器具选用、人工湿地污水处理系统的布置等方面进行设计。非传统水源利用率为43.52%。

节材：

项目设计无装饰性构件，全部采用预拌混凝土，可再循环材料使用重量占所有建筑材料总重量的比例约10.15%。所有应用材料均以满足功能需要为目的，将不必要的装饰性材料消耗减到最低充分发挥各种材料自身的装饰和功能效果。如办公空间取消传统的吊顶设计，采用暴露式顶部处理，地面采用磨光水泥地面，设备管线水平、垂直布置均暴露安装，减少维护用材，同时方便更换检修，避免二次破坏的材料浪费。采用整体卫生间设计，利用产业化生产标准部件，提高制造环节的材料利用效率，节约用材。

4) Renewables

Solar water heating system within the building meets the full demand of hot water in canteen, shower, and expert's apartment. PV panels are installed on the rooftop. The West and South facades are installed with PV curtain wall system. Combination of polycrystalline silicon PV panels and shading modules are effective shading device and maximize the utilization of solar energy at the same time. Domestic hot water comes from solar hot water systems with utilization rate greater than 50%; photovoltaic power generation takes about 5%-7% of the building total electricity consumption.

Conclusion

Green building concept should permeate the whole life-cycle principle. We are in the new office building, experience it from working and living, evaluate the design, operate it and manage it. The running data of the building have been collected and the results have been faithfully recorded for further reference to explore first hand material.

It can be expected that in this effort cast building, we will pass the design and research generation after generation. Perhaps in the near future, the ever-changing technology makes it no longer bear the new green building "demonstration model", which will continue to become a "transformation of existing buildings to sustainable development" pioneer.

可再生能源利用：

每层残疾人卫生间兼淋浴房采用半集中式太阳能热水系统；食堂、专家公寓冲凉房采用集中式太阳能热水系统。大楼屋顶花架安装单晶硅光伏电池板，西立面和南立面采用光伏幕墙系统。同时与光伏遮阳棚结合的多晶硅光伏组件，将光伏板和遮阳构件结合最大限度的利用太阳能，同时起到遮阳的作用。生活热水基本利用太阳能热水系统，利用率＞50%；光伏发电量约为建筑用电总量的5%~7%。

总结：

绿色生活永不止步，设计也不会因大楼建成而停下来。遵循绿色理念应当贯穿建筑全寿命周期的原则，我们在新的大楼中，通过真实的工作、生活来体验、评估设计和运行管理；大楼的各项运行数据和实施效果被忠实地记录下来，成为进一步研究探索的第一手材料。

可以预期的是，在这座心血铸成的大楼里，一代代建科人将把设计和研究的接力棒传递下去。也许在不久的将来，技术的日新月异使得它不再承担新建绿色建筑的“示范”，它也会继续成为“既有建筑改造更新和可持续发展”的标兵。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Merit Award 优异

Pixel
像素

Grocon's Pixel Bulding

Grocon's carbon neutral Pixel in Melbourne building was completed in July 2010 on the old Carlton Brewery site, and has been awarded the highest ever Green Star rating in Australia, with a perfect score of 100 from the Green Building Council of Australia, plus five innovation points (being the maximum number of innovation points capable of being awarded.

This makes Pixel the greenest building in Australia and it is now being rated by the international rating tools of the US and UK, LEED and BREEAM.

Pixel is Grocon's "Future Office" – a prototype of the buildings that will emerge when a carbon constrained environment demands a greater focus on energy efficiency.

In anticipation of the worldwide move to carbon neutral buildings, Pixel has been designed to generate more energy on site than it uses, thus off-setting carbon generated to run the building.

But Pixel goes further by generating more energy in order to offset the carbon used to build it and so the building becomes carbon positive, giving the energy it generates back to the grid. We believe no other building in the world can claim that outcome on its own site.

In addition to tackling the carbon issue head on, Grocon has designed Pixel to be water balanced. That means that if Melbourne maintains the 10 year average rainfall levels from 1999-2009, then Pixel will be self-sustainable for water supply. The building could theoretically be disconnected from the grid and continue to safely operate. Through Grocon's work at Pixel, new technologies have been developed, new systems have been brought to Australia and there has been significant "green" up-skilling of both our workforce and our sub-contractors.

Target To Achieve a Perfect Greenstar Score

Pixel has been designed and has now achieved all the available rating credits under all categories of the Greenstar Version 3 rating system, and all five of the available innovation credits. This is an unprecedented outcome and Pixel is at the forefront of the Greenstar rating system in Australia.

LEED Environmental Rating — "Platinum"

LEED is the environmental rating tool of the United States Green Building Council. Pixel will achieve a Platinum score under the rating system and is targeted to achieve the highest score yet achieved anywhere in the world.

BREEAM Score — "Outstanding"

Pixel is to be rated under the UK-based BREEAM "Bespoke International" environmental rating tool. Grocon is funding the development of that tool specifically for the Australian market on behalf of UK authorities. Pixel is targeted to achieve the highest score yet of any of the registered BREEAM projects worldwide.

Team or Organisation Name: **Grocon**
Location: **205 Queensberry St., Carlton, VIC, Australia**
Completion Date: **2010**
Site Area: **276.6 m²**
Gross Floor Area: **1,190 m²**
Green Rank: **Greenstar (Australia), LEED (US) & BREEAM (UK)**
Building Type: **Commercial Office**

Key Team Members
Client: **Grocon Group Pty Ltd.**
Architect: **Studio505**
C&S Consultant: **VDM Consulting**
E&M Consultant: **Umow Lai Pty Ltd.**
Landscape Architect: **University of Melbourne**
Main Contractor: **Grocon Constructors**

Pixel from the North East

Pixel Green Roof

Pixel Living Roof

Pixel from the North

Owner, Developer & Builder

Grocon

Architects - Studio 505

Sustainability & Services - Umow Lai

Structure Consultant - VDM Consulting

小建筑，

大意境。

Grocon以十分先进的环保方式建造了PIXEL大厦，全球只此一座。PIXEL大厦被称为Grocon的“未来办公室”- 是一座可以满足未来碳约束环境对节能提出更高要求的建筑原型。现行环境评级工具尚未把碳污染问题摆在突出重要的位置。

Grocon的PIXEL大厦是对未来建筑设计、建造和管理方式的探索，以正面解决碳成本问题。

我们认为发展碳中和建筑是大势所趋，因此PIXEL大厦采用的设计可以使其自身产生的能源多于其消耗的能源，从而抵消大楼运行时产生的碳排放。

但是PIXEL大厦在这方面走的更远，其产生的能源甚至可以抵消建造大厦所产生的碳排放，并把多余的能源输回电网。我们自信在世界上没有第二座大楼可以做到这一点。

除了直面碳排放问题外，Grocon还把PIXEL打造成一座水平衡建筑。也就是说，如果墨尔本能保持1999-2009这十年间的平均降水量，PIXEL大厦就可以实现用水的自给自足。

在理论上整个大楼可以与供水管网断开，而不影响其安全运行。

Grocon在PIXEL项目上投入了大量精力，不仅开发了新技术，引进了新系统，而且建筑工人和分包商的技能也得到了“绿色”升级。

日光控制

通过运用独特设计，光线可以100%进入PIXEL大厦内的办公区域，同时采用先进的遮光技术而无需在窗户上安装窗帘。三维计算机辅助设计模型的大量运用以最大限度地发挥室外遮阳系统的作用，使得这一切成为可能。

100% 新鲜空气

PIXEL大厦内流通和使用的空气将十分新鲜。大厦安装了先进的能源捕捉系统，废气在排放前已经做过处理，去除多余的热量或冷气，这样可以节省能源耗费。

水的三重利用：冲洗、大厦用水、苇地灌溉

雨水落在PIXEL大厦屋顶后将首先浇灌屋顶植被，接着会被搜集起来储藏于水箱之中待净化以达到饮用水标准，然后这些处理过的水会被输送到大厦内的各个设施，最后对灰色污水进行过滤并导流到芦苇地。经过上述处理过程后，除了墨尔本每年最潮湿的月份，PIXEl大厦将几乎没有灰色污水排出，从而大大减少流入下水道的废水。

真空厕具技术

PIXSEL大厦是澳洲第一个应用小型真空厕具技术的项目。这项技术从北欧引入，主要为高级写字楼和住宅楼设计。真空厕具系统可以把耗水量减少到最低限度。Grocon已与该技术生产商达成合作协议，负责真空厕具系统在澳洲的推广与运用。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Merit Award 优异

Vanke Headquarters
万科总部

Photography by Shenzhen Vanke Limited

Team or Organisation Name: **Ove Arup & Partners Hong Kong Ltd.**
Location: **Dameisha, Shenzhen, China**
Completion Date: **2009**
Site Area: **6.17 hectares**
Gross Floor Area: **14,239 m²**
Green Rank: **By pursuiting LEED, Vanke Centre envisions to be the first commercial project achieving the highest LEED rating Platinum in China.**
Building Type: **Working staffs and visitors**

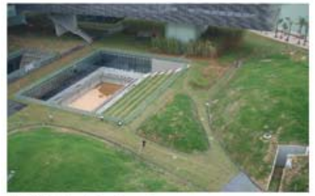
Key Team Members
Client: **Shenzhen Vanke Ltd.**
Architect: **Steven Holl Architects**
C&S Consultant: **China Construction (Shenzhen) Design International**
E&M Consultant: **China Construction (Shenzhen) Design International**
Landscape Architect: **Shenzhen Institute of Environmental Sciences**
Main Contractor: **The First Construction Engineering Limited Company of China Construction**
Sustainable Design Consultant: **Ove Arup & Partners HK Ltd.**

Vanke is rising to be one of the largest property developers in the world and currently most influenced player in Real Estate in China. By pursuiting LEED® platinum, Vanke's vision is to confront and promote sustainable, healthy, environmental and social responsive urban life.

Our vision is to confront and promote sustainable, healthy, environmental and social responsive urban life. Vanke Headquarters is a role model for other developers and designers to follow. It is an exemplar by itself. The potential benefits / impacts to the entire country is enormous. Vanke Headquarters became the first LEED® Platinum Commercial Development in China.

The project teams primarily focus on adaptation, low resource consumption, environmental friendly and social harmony aspects, to generate cost effective sustainable design solutions to Vanke Centre.

Various sustainability approaches are specified on different areas:
(i) Sustainable Development;
(ii) Water Management;
(iii) Energy & System;
(iv) Material & Recycling;
(v) Well Being;
(vi) Social Benefit & Community Development



Artificial wetland and greenery

Photovoltaic Panel

Task Lighting and Daylight

Energy and Carbon Reduction
Climate characteristic Compliance and site condition utilization are vital to achieve cost effective low energy building design. Vanke headquarter realizes substantial energy saving up to 46.8% and operating cost up to 60.5%. The projected annual operating energy consumption of Vanke Headquarters is 74kWh/m² which is equivalent to approximately 51kgCO_2 emission per year.

Water Management
- Implementation capacity of 1,200m³ rainwater harvesting system.
- Fully grey water recycling save water up to 150m³/day and waterless devices installed, equivalently reduce water usage up to 51%.
- Projected consumption of potable water is about 3,500L/person/year.

Material and Recycling
Vanke Centre promotes low embody energy material enables significantly reduce construction carbon footprint.
- 100% furnishing and decorations use Bamboo and FSC certificated Timber.
- High recycled content carpet.
- Total construction waste recycling up to 75%.

Green Coverage
The combination of elevated built form embraced by public access greenery delivers total green site coverage at 59%.
- Pleasant shaded, sea breezed microclimate greenery 36,741m².
- Ecological wetland area 830m², rainwater and grey water recycling integrated.

Well Being
Vanke Centre's physical and psychological well being approach achieved through high quality environment control and humanistic expressions. 96.6% space reach 270 lux natural full spectral daylighting requirement with lighting sensors interfaced. External auto control shading minimize visual noise. Extremely low VOC content paint and glue is used and R134a refrigerant is applied which has minimal GHG, GWP & ODP impact.

Motorized shading devices

Porous paving carpark

Lift lobby

Corridor

Open plan office

万科是一家在中国具有非常影响力的地产公司，亦正成为世界上最大的地产开发商之一。万科对于可持续发展，健康，环保以及社会有着重要的位置。

我们目标提高可持续发展，健康，环境与城市社会的生活。万科总部是作为其他开发商与设计师的模仿项目范例，也是万科公司自己的典范。对于国家的潜在的价值与影响是巨大的。万科总部已成为中国境内第一个商用建筑的铂金奖项目。

项目团队集中精力为万科总部设计一个低资源消耗，对环境有利，并且与环境和谐的可持续设计。

在不同的方向里面采用了以下多方面的可持续发展策略：
I. 可持续发展的建筑区域
II. 水管理
III. 能量与系统
IV. 材料与资源
V. 舒适感
VI. 绿地利用

能耗与碳减排

气象以及建筑场地对于达到高效能低能耗的建筑设计是必须的。基于气象分析以及对不同的系统认识，万科总部达到了46.8%的的节能以及60.5%的运营费用节省。项目的年运行能耗为74kWh/m^2，相当于51kg的CO_2的年排放量。

水管理

- 采用1,200m^{3}的雨水收集箱。
- 回水完全回收利用，达到150m^{3}每天；安装无水设施，相当于减少51%的用水。
- 项目的饮用水用水来那个为3,500L/人/年。

材料与资源

- 万科总部采用大量的低聚合能材料，以减少建筑的碳足迹。
- 100%的家具以及装饰物都是采用竹子以及FSC认证过的木材。
- 高循环材料的地毯。
- 整个建筑的废物回收率达到75%。

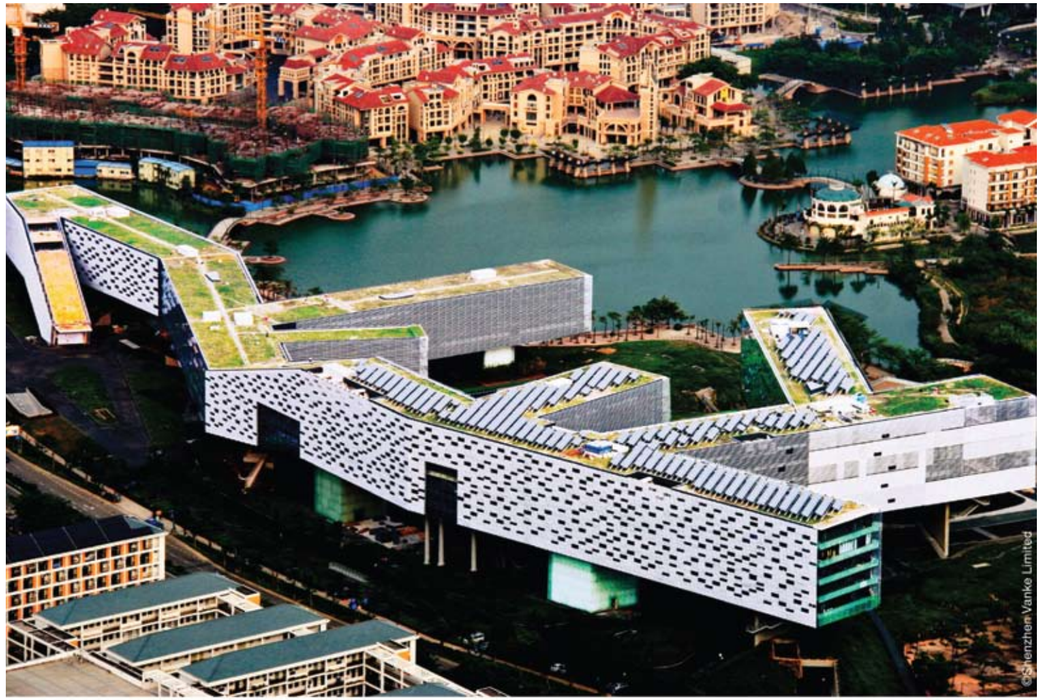
舒适感

通过高质量的环境控制，万科总部达到了较高的生理与心理的幸福感。应用光照传感器，96.6%的区域可以达到270勒克斯的自然照明。外部遮阳系统通过自动控制来最大化的隔绝外部噪声。采用极低的VOC释放率的绘制品与粘结剂，以及采用R134a制冷机，以降低GHG，GWP和ODP影响。

绿地利用

- 包括建筑的立面，以及公众区域，建筑的总体绿化率达到59%。
- 荫蔽以及海风吹拂到的绿色地带有36,741m^2。
- 生态绿地面积有830m^2，集中了雨水与灰水回收的功能。

Photography by Shenzhen Vanke Limited



万科

ARUP

STEVEN HOLL ARCHITECTS

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Finalist 入围

Korea Samsung GREEN TOMORROW
韩国三星“绿色未来”

Photography by Samsung C&T Co. Ltd/Samoo Architects & Engineers

GREEN TOMORROW is a sustainability design showroom in Korea. It is designed for a house with family of 4 which proposed to achieve zero energy consumption. The design process for low and zero carbon buildings begins by first assessing the local situation, design benchmark, and then proposing an appropriate target that is feasible for the local context (climate, materials, availability of renewable sources etc.).

The goal of the project is to provide a remarkable public awareness on energy saving and comfort lifestyle. GT may act as a catalyst to conform a sustainable building sample to the world in order to achieve the higher living standard of occupants, to fully utilize of natural resources and to keep a better environment to future generation.

The design of building envelope, mechanical and electrical system based on sustainability design framework of "Leadership in Energy and Environmental Design (LEED®)" system, via ASHRAE Standard 90.1. The project awarded for the highest rating - LEED® Platinum. Various sustainability concepts are adopted in the project including Sustainable Site, Water Efficient, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality and Innovation Design.

Team or Organisation Name: **Samsung Green Tomorrow Design and Construction Team**
Location: **1026-1, Jung-Dong, Giheung-Gu, Yongin, Gyeonggi-Do, Korea**
Completion Date: **2009**
Site Area: **0.245 hectares**
Gross Floor Area: **721 m²**
Green Rank: **The design of building envelope, mechanical and electrical system based on sustainability design framework of LEED, via ASHRAE Standard 90.1. The project awarded for the highest rating - LEED Platinum**
Building Type: **Visitors – Professionals and Future Generation (Students)**

Key Team Members
Client: **Samsung C&T Corporation**
Architect: **Samoo Architects & Engineers**
C&S Consultant: **Samsung C&T Corporation**
E&M Consultant: **Samoo Architects & Engineers**
Landscape Architect: **Samsung Everland INC.**
Main Contractor: **Samsung C&T Corporation**
Occupant (Interiors): **Samoo Architects & Engineers**
LEED and Sustainability Consultant: **Ove Arup & Partners HK Ltd.**

Membrane Bio Reactor

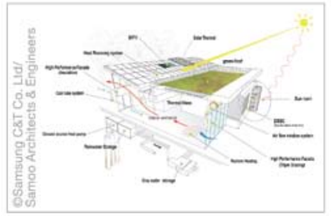
Triple Glazes with PVC Frame

“绿色未来”是韩国一间可持续发展设计的示范性房屋。这间房屋被设计成零碳排放，供四口之家居住使用。设计低碳和零碳建筑，首先需要评估当地设计基准，然后提出一个适合当地状况（包括气候，材料，可再生材料等）的设计为目标。这个项目的目标是树立一个在能源使用与生活舒适性方面的意义非凡的公共意识。"绿色未来"在为使用者提供更高的生活水平，更充分的利用自然资源以及为我们的下一代保持更好的环境的方面，为世界树立了可持续发展建筑物的榜样。

建筑物的维护结构，机械系统，电力系统等的设计是基于可持续发展的框架“能源和环保设计认证（LEED®）”中关于ASHRAE标准90.1要求的。这个项目最终获得了美国LEED®的最高奖项—铂金认证奖。

可持续发展的概念贯穿了整个项目，包括可持续发展的场地选用，用水效率，能源与大气，材料与资源，室内环境质量以及创新设计五大项。

Photovoltaic Panel



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Sustainable Design Strategies

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ARUP SAMOO SAMSUNG

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Finalist 入围

Mabuchi Motor Corporation Headquarters
万宝至马达公司总部办公楼

Team or Organisation Name:
Mabuchi Motor Co., Ltd.
Location: **Matsudo City, Chiba Prefecture, Japan**
Completion Date: **2004**
Site Area: **4.2 hectares**
Gross Floor Area: **19,419 m²**
Green Rank: **CASBEE-NC_2006(v.2.0) S(★★★★★)**
Building Type: **Headquarters Office**

Key Team Members
Client: **Mabuchi Motor Co., Ltd.**
Architect: **IBM Japan Ltd., Nihon Sekkei, Inc.**
C&S Consultant: **IBM Japan Ltd., Nihon Sekkei, Inc.**
E&M Consultant: **IBM Japan Ltd., Nihon Sekkei, Inc.**
Landscape Architect: **IBM Japan Ltd., Nihon Sekkei, Inc.**
Main Contractor: **Shimizu Corporation, Shinryo Corporation, Kandenko**
Occupant (Interiors): **Form International**

1 Building Overview
This building was designed to provide the high-quality working environments and services required of an office building with head office functions. At the same time, it adopted designs to improve the environmental efficiency in various aspects. It is a four storey building with typical floor plan consisting of two wing zones with an atrium in between. Each wing is a pillar-less, 38 m x 38 m / approximately 1500 m² space with a high ceiling.

2 Planning the High Quality Workplace
These winged workplaces are the working space called a “three-dimensional One-Office” provided with floor blower air-conditioning, task air-conditioning, ambient lighting and others facilities to facilitate a large, high quality indoor environment. They are also designed on the concept of universal layout to enable versatile layout for various organisational structure and the workplace for individuals are equipped with personal work environment control such as ITC and task air-conditioning.

3 Building as an Environmental Controller
The building aimed for long lifetime and thus was incorporated with a seismic-isolation and vibration-control structure.

The building project is characterised for its achievement in collaborative planning of architectural, structural and engineering represented by its unique room environment control, energy efficiency and long-lifetime design to realise the building function as a “environment controller” itself.

1 建筑物概要
作为公司总部，在要求提供高效率办公环境的同时，从考虑环境和节能的视点出发，还要求成为具有高环境效率的建筑。该建筑物共四层，其标准层部分是利用一个共享空间分成两大部分，38m × 38m的无柱空间，约1500平米。

2 高品质工作空间的设计
这种办公楼形式被称之为“立体的一体型办公楼”，楼里采用地面空调系统、局部空调系统、整个办公区照明等设备，及可提供高质量室内环境大空间。室内平面布局采用具有通用性的布置格局，并制定了一些格局变更规则，这样就实现了每个人的办公空间里具有 ITC 功能和局部空调，以保证一个好的工作环境。

3 作为环境调节装置的建筑
为了达到长寿建筑的目的，采用了免震基础及制震结构。该建筑所采用的室内环境的调节及促进节能、建筑长寿化的各种措施，是通过将建筑设计、结构设计及设备设计融为一体进行的设计。由此来实现建筑物整体的“环境调节装置”的作用，这是该建筑的最大特征。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Finalist 入围

Nissan Advanced Technology Center
日产先进技术开发中心

Nissan Advanced Technology Center was planned to be the base of fundamental research and to accelerate technological development that would lead to revolutionary products. The office/cafeteria building is 7 stories high with a basement and a gross floor area of approx. 70,000m^2.

We proposed a step work place to feel the surrounding nature and to balance with the surrounding terrain. The northern stepped floors were covered with glass roofing and a large office space was created. Large universal office areas are located next to the space, followed by an atrium of four stories high.

The following goals are aimed :
- To optimise the natural factors, natural light, natural ventilation, and the visual contact to the surrounding landscape.
- To allow spontaneous contact and communication between employees.
- To create a sense of unity and identity as a car manufacturer.

Various office environments were provided to stimulate employee senses and prompt communications to facilitate innovative work. The building involved an alternation of land use from a university campus to a R&D facility firm. The development plan included the recoveries of terrain, vegetation and water system. The recovery of the local vegetation was adopted for the greening of the southern terrace, green cube and green roof.

Nissan Advanced Technology Center was designed for the integration of creative space and sustainability at higher level. After completion, the actual user activity was investigated to feedback for optimum work environment and sustainability.

Team or Organisation Name:
Nissan Motor Co., Ltd.
Location: **Atsugi City, Kanagawa Prefecture, Japan**
Completion Date: **2007**
Site Area: **11.8 hectares**
Gross Floor Area: **69,472 m^2**
Green Rank: **CASBEE-NC_2006(v.1.1) S(★★★★★), IBEC certified 'S'**
Building Type: **Headquarters Office**

Key Team Members
Client: **Nissan Motor Co., Ltd.**
Architect: **Nihon Sekkei, Inc.**
C&S Consultant: **Nihon Sekkei, Inc.**
E&M Consultant: **Nihon Sekkei, Inc.**
Landscape Architect: **Nihon Sekkei, Inc.**
Main Contractor: **Shimizu Corporation**

日产汽车公司为加快新技术开发而新建的「日产先进技术开发中心」，是力图创造一个有利于研究人员进行新技术设想•开发的空间。厚生办公楼是一栋地上7层、地下1层总建筑面积约为70,000m^{2}的建筑。

我们提案了一个与周边地形相协调、可以感受自然的空间构成 — 阶梯式办公空间的方案。在北侧有连续感的7层阶梯状楼层被一个玻璃屋顶覆盖，构成一个具有大空间的办公空间。

并与南侧的4层高的共享空间相连。这个大空间具有以下的特征。
- 充满自然光的舒适空间
- 可以诱发相互沟通的场所
- 可感受到不同于其他汽车制造公司的独特的空间

为了有利于创造性的工作，设计了富有变化的空间。这种空间点缀在办公楼内，以刺激研究人员的想象，促进人与人的沟通。将大学校园的遗址变成企业的研究设施，在这用途变更的开发设计过程中，我们做了「地形修复」、「植被修复」、「水系修复」三个主题修复设计。「植被修复」积极采用当地生长树种进行绿化，并通过绿色平台、绿色竖管、屋顶绿化等与建筑物周边形成一体。

NATC 是知识创造型办公建筑与环境建筑在高元次的融合为目的进行的设计。竣工后受到了使用者的高度评价。

New Buildings – Asia Pacific
新建建筑类别 – 亚太地区

Commercial 商业

Finalist 入围

World Financial Centre - Beijing
环球金融中心。北京

Team or Organisation Name:
Henderson Land Group
Location: **No. 1, East 3rd Ring Middle Road, Chaoyang District, Beijing**
Completion Date: **2009**
Site Area: **21,480 m²**
Gross Floor Area: **252,000 m²**
Green Rank:
- **BEAM 4/04 (Platinum)**
- **LEED - C&S (Anticipate Rating to Achieve: "Platinum")**
- **AIIB (Intelligent Building Index Assessment) "Distinction"**
- **Intelligent Building of the year 2009**

Building Type: **International Financial Institutions, Banks and Fortune 500 companies (eg. Standard Chartered Bank, Mizuho Bank, International Air Travel Association (IATA) and Toyota**

Key Team Members
Client: **Henderson Land Group**
Design Architect: **Pelli Clarke Pelli Architects Inc.**
Project Architect: **P&T Group**
E&M Consultant: **P&T (M&E) Ltd.**
Structural Engineer: **Ove Arup & Partners (HK) Ltd.**
Quantity Surveyor: **Rider Levett Bucknall**
Landscape Architect: **ACLA Ltd.**
Façade Engineer:
Meinhardt Façade Technology (HK) Ltd
Interior Designer: **Hirsch Bedner & Associates Ltd.**
Façade Lighting Design: **Brandston Partnership Inc.**
Environmental Consultant: **AECOM**
Local Design Institute:
Beijing Institute of Architectural Design
Property Consultant: **Jones Lang LaSalle**
Property Management: **CB Richard Ellis**
Main Contractor: **China Construction First Group Ltd.**

Most Technologically Advanced, Energy Efficient and Sustainable Building in the Region, WFC is a two million square feet commercial development in the Central Business District of Beijing, created to meet the needs of the financial community. It is also Beijing's first international Grade A office building. Awards include Platinum BEAM, "Intelligent Building of the Year 2009" and soon Platinum LEED. A 'Proudly Made in China' project, built in less than three years — WFC was designed and built for China, using Chinese materials, products and expertise.

Environmental Qualities were paramount during construction and occupation. Indoor air quality measures ensured the comfort of workers and tenants, while WFC's orientation in the North-South axis delivers maximum daylight and views. Its 12,000 sqm of public open space, the largest in the CBD with 200 trees and 60,000 shrubs, provides the city with new green lungs.

Efficient Use of Resources reduces water consumption by 43% while a grey water recycling plant provides on-site flushing and landscape irrigation. Other 'green' features include use of environmentally friendly refrigerants and noise mitigation measures. Locally-made world class modular curtain wall system, standardised ducting, prefabricated structural steel and reinforced floor slabs enhanced buildability and minimised construction waste by 80%.

An Exemplar in Sustainability, WFC reduces operational environmental impacts by 42%. The water-cooled air conditioning system provided energy savings of some 30%, while the low-e argon filled glass for the curtain wall system further reduces energy consumption.

Innovation and "First in China" Design Features include trading floors with 3.3m headroom, 300mm raised floors and extremely reliable dual power supply. The multi-purpose 5-storey Winter Garden for public events is also a first for Beijing.

集先进技术、环保节能、永续发展特点一体，区内首屈一指，环球金融中心位于北京CBD，应金融界之需而生，面积二百万平方尺，是北京首个国际甲级办公楼项目，以"中国制造"引以为荣，善用本地建材、产品、技术，专为中国设计建造，荣获"BEAM"白金奖、"2009年度最佳智能建筑奖"，并即将领取"LEED"白金奖。

提供良好施工及租户环境，是项目首要目标。大楼设有空气净化措施，确保竣工前后户内环境宜人。其南北布局，可保大楼日照充足，景观开扬。项目同时提供北京最大型公众休憩空间，达一万二千平方米，种有树木两百余棵，花丛六万余株，为城内提供额外绿肺。

项目善用资源，减少用水达43%，并循环中水用以冲厕及灌溉园林，同时还使用环保冷媒，并装有消音设备等多种绿色设施。其模块式幕墙系统、标准化导管配件、预制钢结构及预制钢筋水泥楼板，均是国内生产，国际等级物料，增加建筑效益之余还减少80%建筑废料。

项目是永续发展典范，运作时环境影响可减轻42%，而水冷空调系统则可节能30%。幕墙采用低辐射充氩玻璃，额外环保节能。

"中国第一"创新特色包括提供净空三米三及装有三百毫米架高地板之交易楼层，以及极为之可靠的双电源供电系统。此外，楼高五层的冬季庭院可举行各庆典活动，同为北京前所未有。

恒基兆業地產集團 HENDERSON LAND GROUP

wfc world financial centre beijing

PLATINUM STANDARD

LEED

AIIB

1. *Argon filled low-e glass curtain wall system*
2. *The 5-storey Winter Garden*
3. *Use of low-emitting materials to ensure good indoor air quality for workers and tenants*
4. *The BMS control room*
5. *Typical floor with column free space*

Jury's Citation 评审意见

Existing Buildings
– Hong Kong & Asia Pacific Category
既有建筑类别 – 香港及亚太地区

Facility Management Projects

Grand Awards

Festival Walk - Continuous Low Carbon Operation

The systematic and continuing improvement in the use of new equipment with enhanced control has led to the achievement under a step by step yearly improvement programme 30% improvement in the efficiency of the air-conditioning system. Comprehensive energy saving, waste management, engagement with tenants, knowledge sharing with the wider community, collaboration with researchers, promulgation of technical guidelines for tenants / contractors, etc. cumulated as an overall sustainability strategy for continuing improvement and has set the Owner as a pioneer and innovator of sustainability in facility management. It was also encouraging to learn that the Owner has also set target for 20% improvement in the next 10 years. This could only have been possible through the commitment of senior management together with the hard and innovative output of the facility management professionals and the buying in of all stakeholders.

Skyline Tower

Apart from the continuing energy savings effort in the operation and maintenance of the buildings in energy saving, waste reduction and harvested rainwater for irrigation, etc. the property manager has demonstrated vividly how one of the triple bottom lines of sustainability – social sustainability could be achieved in an urban context. The Jury Panel was impressed by the effort the property manager put into practice in the Mission Green Top programme in availing the Green Roof for the enjoyment of tenants and for the creation of a place for organic farming implemented by tenants and people with disabilities from Fu Hong Society. It is an oasis in the city by utilising the roof garden in the building for vegetable planting with involvement of the mentally impaired group and sharing with tenants.

Merit Awards

BeneVille

BeneVille is a role model for green facility management in residential estate with the active involvement of owners/occupiers in the caring of the environment in achieving quality living and energy savings and reducing waste.

Metroplaza's Green Management Program

The management's commitment to continuous improvement of the shopping environment is demonstrated through greening, reduction in energy consumption and adoption of 6R environmental management for tenants and greener environment for the patrons of the shopping complex.

Adaptive Reuse & Revitalisation Projects

Merit Awards

The Hong Kong Polytechnic University - GH Podium Annexe

The provision of natural lighting and ventilation at roof for internal small office cells in the new Annex with the idea borrowed from the previously existed north light thereat, shading to west facing glazed wall to reduce glare and heat gain and careful siting and screening of the condensing units for this small development are commendable.

To Better Sustain Choi Hung Estate - A people oriented approach

Through enhancement of the environment with improved activity corners, vertical accessibility, green roofs and communal facilities gives new lease of life with added new amenities to this old residential estate. However, it is noted that the full potential of enhancement has not been fully explored.

Interiors Projects

Merit Awards

CB Richard Ellis Hong Kong Office Relocation – Three Exchange Square

The conscious choice of energy efficient lighting systems, environmental friendly finishing materials, such as carpet tiles, bamboo boards, etc. maintenance of maximum daylight to most part of the office, practical provision for separation of waste and recycling are all good measuring for internal environmental quality and reducing impact to the environment to demonstrate leadership in sustainability. Timed zonal control of office lighting grouping for after office hour office activities gives further opportunity to save energy. It is suggested that this new office could be a demonstration of sustainability by labeling of the various features for easy identification for education purpose.

Yau Residence

Perseverance of the Owners in getting professional help to renovate their residential flat in one of the densely populated area in Hong Kong to provide a green living environment and the willingness of sets as an exemplary practice for individual residential flat owners in pursuit of preserving the environment. Greening of the balcony, opening up of the interior with sliding doors to maintain privacy, installation of fans on top of air-conditioners and by allowing prevailing breeze to flow through the flat were just some of the features of the renovation. High efficient equipment was also installed to combat high humidity.

设施管理

大奖

又一城

在年度的逐步改善计划下，使用新器材带来有系统及持续环境改善，更令空调系统的效率有百分之三十的改善。透过节约能源、废物处理、租户沟通合作、与社区交流、与学者合作、为租户及承建商订立指引等，令又一城成为物业管理业内可持续发展及环境改善的先驱。对于又一城为未来十年订下百分之二十的改善目标，更是令人鼓舞。有赖管理层的承担、物业管理专业人员的努力及创意，以及各方的合作及支持，才能成事 。

宏天广场

除了大厦于运作及维修层面上节约能源、减少废物及利用污水灌溉外，物业管理人员更切实体现了如何实现社区可持续性发展。评审团非常欣赏宏天广场以「绿色楼宇先锋」作为目标的行动，包括建设空中花园予租户享用及与匡智会合作的有机苗圃。利用空中花园，让残障人士与租户一同种植，让这个地方变成城市绿洲。

优异

聚康山庄

聚康山庄业主及住客均积极参与环保保护，以改善生活质素及减排节能，是住宅设施绿化管理的模范。

新都会广场绿色环保计划

物业管理部门透过绿化、减少能源消耗及6R环境管理，为租户及客户提供更绿化的环境，显示其改善购物环境的决心。

活化项目

优异

香港理工大学 GH 平台附楼

设计意念来自原本的采光天窗，为办公室提供日光及通风设计；西面的窗涂上涂层，以遮挡刺眼的阳光及防止过热，以及空调机的安装位置的细心选择，是这小型项目可为赞赏之处。

彩虹村改善计划

通过改善及增建休憩空间、加建升降机、绿化及社区设施等，为这个老化住宅区注入了生命力。改善计划的所有潜能仍尚待充分发掘。

室内设计

优异

世邦魏理仕香港办事处 – 交易广场第三座

能源效益照明系统、环保建材（如方块地毯及竹地板等）、增加办公室日光照明及充分废物分类处理，均能反映内部环境质素及环境管理的可持续性。一般照明的分区时间控制更可进一步节约能源。建议新办公室明确标示环保设施，作为教育及推广可持续发展的示范。

邱宅

业主为香港最人口密集的住宅区之一，寻求专业协助以提供绿化居住环境，显示出其决心，也成为其他住宅的业主好榜样。绿化露台、以滑门增加空间感同时保存私隐、安装风扇及室内通风设计，都是翻新工程的一部份，同时亦安装了高效的设备应付潮湿的天气。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Facility Management Projects 设施管理

Grand Award 大奖

Festival Walk - Continuous Low Carbon Operation
又一城 – 持续低碳运营

Team or Organisation Name: **Swire Properties Ltd.**
Location: **80 Tat Chee Avenue, Kowloon Tong, Hong Kong**
Site Area: **2.1 hectares**
Gross Floor Area: **130,000 m²**
Green Rank: **BEAM Platinum**
Building Type: **Retail, office, cinema, ice rink, food court and public transport terminus**

Key Team Members
Client: **Swire Properties Ltd.**
Architect: **ARQ and Dennis Lau & Ng Chun Man Architects & Engineers (HK) Ltd.**
C&S Consultant: **Ove Arup & Partners**
E&M Consultant: **J. Roger Preston Ltd.**
Main Contractor: **Sanfield Building Contractors Ltd.**

Carrying out free energy audit for tenants
为租户提供免费能源审核

Introduction

Corporate social responsibility has long been a fundamental value practised by Swire Properties (SPL). Integral to this value are protecting the environment and its philosophy of 'Building Communities', creating quality developments and conducting its business in a sustainable manner. SPL recognises the long term impact of buildings on the environment. **We recognise that it is far from sufficient just to make our buildings and operation sustainable. We have set out our vision to proactively influence the industry and our stakeholders**.

All our developments are guided by our **Sustainable Development Policy** and **Environmental Policy**. We are adopting the **Global Reporting Initiative** (GRI) G3 framework, and all the environmental data, practices and performance are published in our annual **Sustainable Development Report**.

Festival Walk (FW) is used as a case in demonstrating our commitments in sustainability.

Achievements

- FW obtained **BEAM Platinum** rating in 2006 and **reassessment** has been registered
- The Company has adopted **knowledge-based** energy management approach since 2003
- **Energy**: EUI (Energy Utilisation Index) for FW has been reduced from 363 kilowatt-hours/(square metre·annum) in 2001 to 255 kilowatt-hours/(square metre·annum) in 2009 - **30% reduction**
- **Waste**: The waste to landfill was reduced from 4,511 tonnes in 2003 to 3,919 tonnes in 2009 by reusing, recovering and recycling – **13% reduction**
- **Water**: For reducing fresh water consumption used by the heat rejection equipment of the air conditioning system, FW installed an advanced water filtration system (cyclone separator and bleed-off control) in 2003
- **Working with universities**: Our joint effort with Tsinghua University has reduced electricity consumption by **9 million kilowatt-hours** within 2008 and 2009 compared with 2006

Influencing Stakeholders

- SPL is the first developer in Hong Kong to provide **free energy audits** for its office tenants. As of Sep 2010, energy saving opportunities of over **1.6 million kilowatt-hours** have been recommended to tenants of all SPL's portfolios including **150,000 kilowatt-hours** at FW
- SPL is supplying at its own cost to tenants in FW with over **3,000 pieces** T5 lamp fittings which are 25% more efficient than the previous T8 types for replacement

Influencing the Industry and Community

- SPL was one of the **BEAM** founders
- SPL has established **research funds** with Tsinghua University since 2008 to develop energy efficiency improvement technology and guidelines for sharing with industry
- SPL joined **the International Energy Agency (IEA) Annex 53** research project in 2008. IEA is an inter-government organisation which acts as energy policy advisor to 28 member countries. SPL shared its knowledge and building performance data (including FW) for investigating the effects of the main influencing factors on energy consumptions in buildings

FESTIVAL WALK
又一城

FESTIVAL WALK
glacier

Receiving "Client of the Year – Low Carbon Operation Award" of the Chartered Institution of Building Services Engineers (CIBSE) in London
荣获英国屋宇装备工程师学会在伦敦颁发之"低碳营运大奖"

- The building performance data of FW have been used by Tsinghua University as a showcase in compiling the ***Annual Report on Energy Efficiency of Buildings in China – 2010***, one of the China Engineering Council's consultation materials for influencing the building energy efficiency strategy in China
- SPL has published 13 technical papers in journals and engineering publications

Global Leadership

- SPL spearheaded a **best-in-class global benchmarking** with 21 peer companies across five regions including HK, the UK, the USA, Singapore and Australia with the purpose of sharing knowledge and establishing a platform for learning
- SPL has actively participated in local and international awards and competitions, and is sharing its knowledge with the industry. FW was the winner of the **Low Carbon Operation Award** of the Chartered Institution of Building Services Engineers in 2010

Long-term Target

- SPL has established a 10-year reduction plan to reduce **20% of energy consumption** in all its buildings including FW by 2020 (using 2008 as the base)

Festival Walk is used as a showcase in Annual Report on Energy Efficiency of Buildings in China 2010
又一城在《中国建筑节能2010年度发展研究报告》被引用为优良范例

简介

企业社会责任是太古地产向来奉行的基本价值观。贯彻其中有我们的保护环境及"齐建共融社区"理念，以可持续发展的方式创造优质物业及经营业务。太古地产深明建筑物对环境的长远影响。**我们认为，仅以可持续发展的方式建造物业及经营业务远不足够；我们的目标是积极带动整个业界及我们的利益持有方参与其中。**

太古地产所有的发展项目均奉行**可持续发展政策**与**环保政策**。我们已采用**全球报告倡议组织**（GRI）G3架构，将所有环境数据、措施及实效于**可持续发展年度报告**中发布。

以下以"又一城"为例，阐述我们对可持续发展的承诺。

成效

- 又一城于2006年获得**建筑环境评估法（BEAM）白金评级**，并已申请作**重新评估**。
- 自2003年起公司已采纳**知识型能源管理**。
- **能源效益**：又一城的EUI（能源使用指数）已由2001年的363千瓦小时/平方米/每年，下降至2009年的255千瓦小时/平方米/每年，**减量达30%**。
- **废物处理**：透过再利用、回收和循环使用，送往堆填区的废物由2003年的4,511吨，减少至2009年的3,919吨，**减量达13%**。
- **用水处理**：于2003年又一城安装了先进的水处理系统（旋风分离器及溢水控制方式）来减少冷气排热系统之用水量。
- **与大学合作**：自2008年起，透过与清华大学合作，于2008年及2009年共减少了**900万千瓦小时**的耗电量（与2006年相比）。

推动利益持有方参与

- 太古地产是香港首家为其办公楼租户提供**免费能源审核服务**之发展商。截至2010年9月，已为旗下所有物业的租户提供可节省逾**160万千瓦小时**能耗的建议，其中又一城占**15万千瓦小时**。
- 太古地产自资为又一城的租户提供逾**3,000件**T5光管灯具，较以前使用的T8照明灯节省25%能源消耗。

推动业界及小区参与

- 太古地产为**建筑环境评估法（BEAM）**的创办机构之一。
- 自2008年起，太古地产成立**研究基金**与清华大学合作，发展节能技术及指引，并与业界共享研究成果。
- 太古地产于2008年加入**国际能源署（IEA）Annex 53**研究计划。IEA是一个跨政府组织，为28个成员国家提供能源政策建议。太古地产提供其经验及建筑实效数据（包括又一城），以作研究影响能源消耗主要因素的效应。
- 清华大学引用又一城的能源实效数据，作为**《中国建筑节能2010年度发展研究报告》**中的优良范例，该报告为中国工程院咨询项目，用作中国建筑能源效益政策的参考文件。
- 太古地产已在各工程学术刊物发表了13篇技术论文。

国际领先地位

- 太古地产率先于香港、英国、美国、新加坡及澳洲，与共21间同业进行**最佳实务评核**，以分享知识并建立学习平台。
- 太古地产积极参与各项本地及国际比赛与奖项，并与业界分享知识。又一城于2010年荣获英国屋宇装备工程师学会颁发之**"低碳营运大奖"**（Low Carbon Operation Award of the Chartered Institution of Building Services Engineers）。

SWIRE PROPERTIES

长远目标

- 太古地产已制定10年节能计划，以2008年为基准，目标为于2020年减少所有旗下物业**20%的能源消耗**（包括又一城）。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Facility Management Projects 设施管理

Grand Award 大奖

Skyline Tower
宏天广场

Team or Organisation Name:
Sino Estates Management Ltd.
Location: **39 Wang Kwong Road, Kowloon Bay, Kowloon**
Completion Date: **2003**
Site Area: **0.62 hectares**
Gross Floor Area: **90,963 m²**
Building Type: **Office**

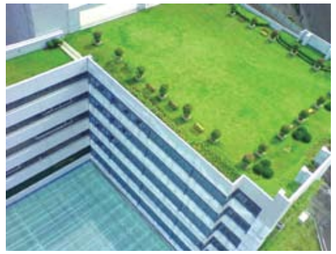
Key Team Members
Client: **Rich Century Investment Ltd.**
Architect:
Chau Ku & Leung Architects & Engineers Ltd.
C&S Consultant:
Chau Ku & Leung Architects & Engineers Ltd.
E&M Consultant:
Talent Mechanical & Electrical Energy Ltd.
Main Contractor:
China Overseas Building Construction Ltd.

Skyline Tower, a Grade A office building with a gross floor area exceeding 274,320 square metres, has become a landmark in Kowloon Bay since its completion in 2003. With a comprehensive environmental programme, Skyline Tower is widely recognised as a green building management pioneer.

In July 2008, Skyline Tower was invited by the Environment Bureau to become a pilot property in the newly launched carbon audit guidelines.

Skyline Tower includes the following green features:

- Building Design: The reflective curtain wall design and the 3,048 square metres. rooftop garden on 9/F both help reduce the building's temperature.
- Energy Saving: With the introduction of a BMS air-conditioning system in 2006, Skyline Tower saved 9.5% of electricity expenses. In the same year it was awarded the performance-based Building Energy Code by EMSD, the first office building in Hong Kong to achieve this milestone. Its water saving measures, such as re-using bleed-off water from the cooling system for flushing and the installation of shower-type taps, help reduce water consumption by 4.6%.
- Air Quality: Air treatment devices have been installed to eliminate dust and other harmful airborne substances from locations with relatively weak air circulation, such as car parks and printing rooms.
- Waste Recycling: Tri-colour recycle bins are provided on each floor for easy tenant access. Thirty-eight tons of paper were collected in 2008. Various recycling programmes are organised from time to time to enhance environmental awareness.
- Green Programme and Activities: Innovative green programmes and activities are being held continuously with the participation and support of tenants. These include "Mission Green Top", a pilot rooftop garden in partnership with the Hong Chi Association, a seedling adoption programme named "Mission Green Thumb" and a membership rewards scheme. Tenants and staff have together built and foster a green community.



In line with Sino Group policy, Skyline Tower has adopted the following green management principles:

- Total Involvement
  Staff and customers are encouraged to act green via newsletters, workshops and activities to maximise the effectiveness of the green initiatives.
- User Friendly
  Simple environmental policy guidelines are adopted to ensure easy implementation.
- Green As Second Nature
  Numerous environmental measures and activities launched over the years aim to make green awareness second nature to staff and customers.

The company's persistence in green management has been recognised by the public with major accreditation and awards over the past years:

- 2010 Hong Kong Award for Environmental Excellence - Sectoral Awards (Property Management) – Bronze Award
- Eco-Business Award (Industrial and Commercial Building) - Gold Award
- Hong Kong Awards for Environmental Excellence - "Class of Excellence" – Wastewi$e Label, EnergyWi$e Label and IAQwi$e Label
- Certificate of "Source Separation of Commercial & Industrial Waste"
- The Hong Kong Energy Efficiency Registration Scheme for Buildings: Good Energy Performance certificate
- The Hong Kong Energy Efficiency Registration Scheme for Building – Performance-based Building Energy Code
- The Hong Kong Energy Efficiency Registration Scheme for Building – Electrical Installations
- The Hong Kong Energy Efficiency Registration Scheme for Building – Air Conditioning Installation
- The Hong Kong Energy Efficiency Registration Scheme for Building – Lighting Installations
- The Hong Kong Energy Efficiency Registration Scheme for Building – Lift & Escalator Installations
- Certificate of "Power Smart Contest" of Friends of the earth (HK)
- Caring Environment Recognition Scheme - The Caring Environment Award (Commercial Building)
- Certification of ISO14001 for environmental management

We will continue our effort to build and sustain a greener community by joining hands with the tenants of Skyline Tower.

SKYLINE TOWER
宏 天 廣 場

2003年落成的宏天广场是信和集团于九龙湾首幢甲级写字楼，楼面面积逾27万平方米，为九龙湾地标。宏天广场过去成功推行多项全面的环保项目，有「绿色楼宇先锋」的美誉，2008年更获环境保护局邀请成为「碳审计」指引的试点，成为业界参考的楷模。

作为「绿色楼宇先锋」，宏天广场具备了以下的环保特点:

- 建筑设计
  大厦9楼平台兴建了占地超过3千平方米的空中花园，增加楼宇绿化面积；配合反光式玻璃幕墙设计，大大减低楼宇的温度，节约电源。
- 节省能源
  2006年引入BMS中央冷气智能控制系统，成功节省9.5%用电量。同年更获得机电工程署《成效为本建筑物能源效益守则》证书，成为首个获奖的商业楼宇。节约用水措施则包括:冷气排水重用作冲厕用途、改用花洒式悭水设计水龙头等，成功减少4.6%用水量。
- 空气质素
  于空气循环较差之位置如停车场及打印机房加设空气净化器，以净化空气中的尘埃及有害物质。
- 废物回收
  于各楼层增设三色回收箱，2008年成功回收多达38吨的废纸。又定期推出不同的回收计划，向业户提倡3R（减废、循环、再用)的精神。
- 环保活动
  持续推行各项崭新的环保活动，并积极推动各业户参与，当中包括与匡智会合作的有机苗圃、幼苗助养计划、会员奖励计划等，务求与各业户共同建设一个绿色社区。

此外，贯彻信和集团的环保理念，宏天广场采纳以下各项环保管理方针，并积极推行:

- 全民皆兵
  透过内部刊物、培训课程等提升员工环保意识。又鼓励旗下物业举办多项环保活动，将环保讯息传给业户，共倡环保。
- 以人为本，深入浅出
  环保政策及措施必须深入浅出，切合业户需要，以简单方便的配套确保措施易于实践。
- 养成良好习惯
  透过环保活动，使环保措施变成业户日常生活习惯，亦收教育下一代之效。

经过多年的努力，作为「绿色楼宇先锋」的宏天广场得到外界的认同，并获得多项环保殊荣，当中包括:

- 香港环保卓越计划的界别卓越奖(物业管理)铜奖
- 香港环保企业管理奖(商业及工业楼宇)金奖
- 香港环保卓越计划之环保标志卓越级别(包括减废、节能及清新室内空气)
- 工商业废物源头分类计划证书
- 香港建筑物能源效益注册计划良好能源表现证书
- 香港建筑物能源效益注册计划建筑物能源效益守则证书
- 香港建筑物能源效益注册计划建筑物能源效益守则 – 电力装置
- 香港建筑物能源效益注册计划建筑物能源效益守则 – 空调装置
- 香港建筑物能源效益注册计划建筑物能源效益守则 – 照明装置
- 香港建筑物能源效益注册计划建筑物能源效益守则 – 升降机装置
- 香港地球之友「知悭惜电」节能比赛证书
- 劳工及福利局「共融环境表扬计划」共融环境奖(商业楼宇)
- ISO14001环境管理体系证书

以上的成果，印证了宏天广场对推动环保的坚持和不遗余力。未来，我们将继续以环保作为宏天广场的管理方针，与业户共同缔造一个更绿色的社区。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Facility Management Projects 设施管理

Merit Award 优异

BeneVille
聚康山庄

Team or Organisation Name:
Hong Yip Service Company Ltd.
Location: **BeneVille, 18 Tuen Kwai Road, Tuen Mun, New Territories, Hong Kong**
Completion Date: **2004**
Site Area: **1.15 hectares**
Gross Floor Area: **34,523 m²**
Building Type: **Residential**

Key Team Members
Client: **Sun Hung Kai Properties Ltd.**
Architect: **Sun Hung Kai Engineering Co., Ltd.**
C&S Consultant: **Sun Hung Kai Engineering Co., Ltd.**
E&M Consultant: **Sun Hung Kai Engineering Co., Ltd.**
Landscape Architect:
Hong Chui Consultants Co., Ltd.
Main Contractor: **Chun Fai Construction Co., Ltd.**
Management Company: **Hong Yip Service Co., Ltd.**

Tai Chi Garden on the podium floor
平台太极园花园

Swimming pool side garden on the podium floor
平台泳池旁园林绿化

"Body, Mind, Soul" is the development theme of BeneVille, which is developed by Sun Hung Kai Properties Limited and is managed by Hong Yip Service Co., Ltd. Located in Fu Tei, BeneVille comprises 4 residential buildings, containing 684 units. It includes 7,000 meter square landscaped garden occupying about 60% site coverage with about 450 trees and nearly 100,000 different types of plants surrounding the site boundary and on the podium floor of BeneVille.

Environmental features are integrated into the building design of BeneVille, including natural ventilated semi-opened car park, glazing design in Clubhouse utilizing natural sunlight, environmental balcony, water saving dual-flush sanitary fittings, etc.

As an eco-friendly residential estate in Hong Kong, BeneVille has adopted many energy conservation design features and energy saving measures such as natural ventilated carpark, natural lighting at clubhouse, VVV-F type lift, soft starter of pump control system, timer switches, thermostat, electronic transformer for T8 tube and electronic ballasts, delamping, LightEco, LED light, etc. The annual electricity consumption in 2009 was reduced by 33.73% while compared to the figure of 2005. Through continuous reduction in energy consumption, our carbon footprint is also reduced and therefore minimized the urban heat island impact.
In terms of water conservation, water saving for plant irrigation and our Clubhouse is one of our key focus, automatic water spraying system has been installed to control water usage and irrigate the greening area evenly. "Water saving" signage have been posted at the water taps of clubhouse and common area to remind users to avoid wasting water. The annual water consumption was reduced by 33.17% in 2009 as compared to 2006.

To ensure our facilities are in good condition, work instructions and schedule of regular maintenance of our facility are developed, and are performed by our technical team. Daily visual inspection to identify any damages is carried out by security guards and technicians.

Trees planting along the boundary fence wall of BeneVille
沿着聚康山庄边界围栏种植树木

Semi-opened Carport utilizing natural ventilation and natural sunlight
半开放式停车场善用天然通风及太阳光

Apart from the hardware, Green Procurement guidelines with instructions on preferential purchasing on environmental-friendly materials (e.g. recycled content, low toxicity, sustainable source). Totally degradable plastics garbage bags and environmental-friendly cleaning agents are used.

To educate our next generation, different environmental workshops, education programmes, seminars and activities have been held to arouse their environmental awareness and participation.

With the aim to enhance our effort in waste reduction and recycling, source separation rubbish bags were placed at each floor. And also, we have placed 3-color recyclable collection bins, used cloth collection bin and other recycling collection boxes in the clubhouse and common area for providing convenient channels for our residents to participate in source separation.

Since the full support of residents is the key success factor, we maintain close communication with our residents through regular meetings with the Management Committee of BeneVille and ad-hoc meetings if necessary. We also communicate to our residents through email, green suggestion box, environmental corner, home interviews and customer service survey. Therefore, the excellent achievement of BeneVille is in virtue of the total involvement of the company, employees and residents.
In these few years, BeneVille has the honor to receive different awards in relation to environmental protection and landscaping, including Gold Award of the Hong Kong Eco-Business Awards – Green Property Management Award (Private Housing) in 2005 (programme organized by the Environmental Campaign Committee, HKSAR Government); Gold Award in the Best Landscape Award for Private Property Development in 2010 (programme organized by the Leisure and Cultural Services Department, HKSAR Government); the first private housing estate to be certified Hong Kong Green Mark Certification Scheme – Building and Facilities Management Services in 2007; Certificate of Merit of the Competition of the Source Separation of Domestic Waste 2008/2009 and 2009/2010.

Glazing design in the Clubhouse utilizing natural sunlight
会所落地玻璃设计善用太阳光

Source Separation Rubbish Bags at each floor
各楼层摆放废物源头分类垃圾袋

聚康山庄座落于屯门虎地，由发展商「新鸿基地产」兴建，并由「康业服务有限公司」管理。物业以〝身、心、灵〞为主要发展理念，由4座住宅楼宇组成，屋苑单位共684伙。屋苑在7,000平方米绿化区中栽种了450多棵树木及100,000多株不同种类植物，围绕整个屋苑的周边范围，绿化率高达60%。

聚康山庄于设计期间，已融入多项环保设施。包括半开放式自然通风停车场、会所自然采光设计、环保露台及双制式冲厕。同时，我们亦采用多种节能措施，包括VVV-F升降机、水泵软起动装置、时间掣、热能感应器、T8光管连电子火牛、智能环保光管节能器及发光二极管。经过历年来节能措施，大厦于2009年的用电量较2005年之用电量减少33.73%，二氧化碳排放亦得以减少。

节省用水方面，我们主要针对日常植物灌溉及会所用水。于园圃安装自动洒水系统以控制水量及平均灌溉于园圃内，并于会所及公众地方水龙头位置张贴节省用水提示。大厦于2009年的用水量较2006年之用水量减少33.17%。

另外，在屋苑日常管理上，由保养商及屋苑技术员对各项设施作保养，确保所有系统正常运作。而日常管理消耗品，包括垃圾胶袋及清洁剂使用上，均优先以可循环使用物料及低毒性为基本采购要求。

环保教育由小做起，屋苑定期举办不同环保工作坊、教育活动、讲座及环保活动以鼓励业户积极参与环保工作。另外，屋苑在每一楼层摆放垃圾分类袋，并于会所及公众地方摆放三色回收桶、旧衣回收桶及其它不同的回收箱以提供方便的渠道让业户支持及参与废物源头分类。

聚康山庄在环保工作上所得的成绩，全赖屋苑住户之通力支持。透过电子邮件、环保意见箱、家访及顾客服务调查与各住户保持紧密沟通；另外，定期与业主管理委员会召开会议，交流屋苑管理事务及一切环保讯息。

历年来，屋苑取得多个环保及园林绿化奖项，当中包括于2005年荣获〝环保物业管理(私营房屋)金奖〞、于2010年荣获〝最佳园林大奖(私人物业)金奖〞、于2008/2009及2009/2010年获〝家居废物源头分类比赛优异奖〞。于2007年更为香港首批私人住宅屋苑取得「香港Q嘵环保管理计划」认证。透过以上计划，屋苑于日常管理中能实践推行一套完善的环保机制。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Facility Management Projects 设施管理

Merit Award 优异

Metroplaza's Green Management Program
新都会广场绿色环保计画

Team or Organisation Name: **Metroplaza, Kai Shing Management Services Ltd.**
Location: **223 Hing Fong Road, Kwai Fong, N.T. Hong Kong**
Completion Date: **1991**
Site Area: **15,800 m²**
Gross Floor Area: **184,410 m²**
Building Type: **Commercial**

Key Team Members
Client: **Sun Hung Kai Real Estate Agency Ltd.**
Architect: **Wong Tung & Partners Ltd.**
Main Contractor: **Sanfield Building Contractors Ltd.**
Management Company:
Kai Shing Management Services Ltd.

METROPLAZA'S GREEN MANAGEMENT PROGRAM

Preface
Metroplaza is one of the flag-ship sites of Sun Hung Kai Properties and managed by Kai Shing Management Services Limited. Metroplaza has always been enthusiastic about green effort and introduces environment protection management. Instructed by the Environmental Policy Statement from our Managing Director, Metroplaza sets annual objectives and targets for pollution prevention and energy conservation through the reduction of wastes, electricity and water consumption.

Metroplaza's Green Management Program and resources
We self-design and implement a well-organized and scientific program called Metroplaza's Green Management Program, combining quality management approaches and tools, to increase green and environmental inputs into our services. MGMP consists of a few stages to be implemented such as leadership development, training deployment, project selection and delivery, and most importantly, culture change and innovation and sustainability.

In the Program, our management team takes full advantage of our resources, not only the technology but also human being, to add values in the environmental development. We continuously keep focus on carbon reduction and also encourage involvement of all property users to build a green premise together.

We use EMSD "Benchmarking tools" as our primary monitoring tools. With the aid of BMS system, diagnosis of electricity usage pattern is conducted monthly giving us insight to focus on MVAC system energy reduction. To better involve our tenants in the program, we provide free carbon audit service to them upon request.

We install reflective film coating to minimize the heat gain during daytime

Fojia grass fields are set up to lower the room temperature underneath and save the running cost on A/C system

Facility Maintenance and Improvement
- Cooling towers have been upgraded with 30% higher heat rejection rate to enhance cooling efficiency
- We adopt BMS control system to provide better control in operation time for A/C system
- We install reflective film coating at Crystal Atrium to minimize the heat gain during daytime and reduce solar heat gain from ambience by approximately 56%
- We install solar heater at Children's Playground, solar lights at Rooftop Garden
- We install Rain Water Collection System to collect rain water for irrigation
- Fojia grass fields at Rooftop Gardens and Open Piazza can help lowering the room temperature underneath and save the running cost on A/C system

Achievements

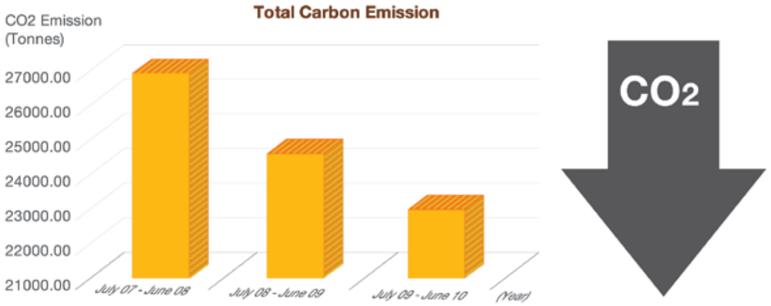
We continue to share the following achievements and recognition with our tenants:

- 11% Carbon Reduction Label awarded by HKQAA for 2007-2008;
- Certificate of Merit of HKAEE 2008 and 2009 Sector Awards;
- "Low Carbon Practice", "Innovative Technology Award" and "Behavioral Adaptation Award" in LOOP;
- The Hong Kong Carbon Reduction Campaign 2009-2010; and
- IAQ Certification Scheme with "Excellent Class" for Office Towers and "Good Class" for Shopping Arcade;

Total Involvement and Sustainability

As a social responsible property management corporation, we are aware of our vital duty to protect the environment with our stakeholders. As such, we are firmly committed to sustainable development and to create a cleaner and greener environment with our tenants, contractors, community and other stakeholders. For example, we have two-way communication with our tenants and contractors by regular "Meet and Greet", questionnaires and sharing info by site visits; we provide assistance to our tenants in EP programs e.g. delivering knowledge and technical help in encouraging them to replace T8 with T5; and we involve mutually with our stakeholders in many EP activities, e.g. Dim it Light out Event, Earth Hour, CNY Gift Collection Program, Conscientious E-waste recycling, ECOMOTO Takeback Program, Used Book Recycle, EMSD "Education Path" site visit and etc.

Continuous carbon reduction has been achieved mainly attributed to the excellent performance of energy conservation. More than 3,700 tonnes of CO_2 is recorded since the launch of MGMP. In the coming year, we aim to maintain a steady drop of five percent in our carbon emission.



新都会广场绿色环保计划

前言

新都会广场是新鸿基地产其中一个重点物业，由启胜管理服务有限公司负责管理。在管理层环保方针指引下，新都会广场一直热衷于绿色环保管理，并于每年订立减排、减废及节能的目标及方案。

新都会广场绿色环保计划及资源运用

新都会广场绿色环保计划是根据我们环保理念以及实际情况度身设计的一项长期环保计划。此计划包括领导才能发展、环保训练计划、建立创新及可持续发展的策略及培养绿色文化等重要阶段。我们充分地利用我们人力上和技术上的资源。我们专注于减碳的措施，并鼓励所有物业及设施使用者的参与，共同建设一个绿色建筑。

设施保养及改善

- 冷水塔升级工程以提升散热效率
- 智能化大厦管理系统能有效地控制冷气的供应时间
- 天幕玻璃贴上反光贴有效地降低所吸收的热能
- 安装太阳能热水器以及太阳能灯
- 安装雨水收集系统作灌溉之用
- 种植佛甲草以降低室内温度及冷气系统负荷

安装太阳能灯

安装太阳能热水器

环保成绩

我们乐意与所有的租户分享以下的环保成绩及肯定：

- 于2007-2008年获香港品质保证局颁与11%碳减排标签。
- 于2008及2009年获香港环保卓越计划-界别卓越奖-优异奖。
- 于低碳办公室计划中获低碳守则大奖、创意科技大奖及身体力行大奖。
- 参与香港减碳行动2009-2010
- 参选由环境保护署举办的室内空气质素检定计划，并于办公大楼获卓越级，商场获良好级。

全面参与及可持续发展方向

我们强调计划之全面参与性。与租户作定期会面，通过环保方面的问卷做调查及资讯分享是我们常用的互动方法。此外，我们更主动为租户提供单位内环保措施的协助以及分享绿色环保所取得的成果。

由计划实施至今，新都会广场一直在持续减炭方面取得优异的成绩。展望未来，能持续、稳定地减少碳排放是我们的长远目标。

新都會廣場
METRO·PLAZA

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

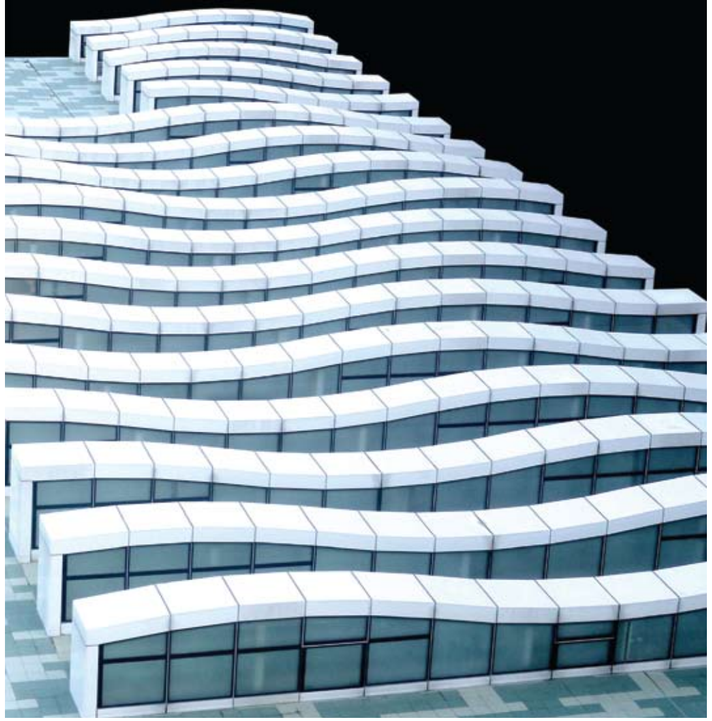
Adaptive Reuse & Revitalisation Projects 活化项目

Merit Award 优异

The Hong Kong Polytechnic University - GH Podium Annexe
香港理工大学 GH 平台附楼

A Cloister of Academic Offices on a Podium Deck

Core GH Extension - HK PolyU



Team or Organisation Name:
UrbanAge International Ltd., Architects
Location: **The Hong Kong Polytechnic University, Hung Hom, Hong Kong**
Completion Date: **2009**
Site Area: **1,591.70 m²**
Gross Floor Area: **1,467.80 m²**
Building Type: **University Department Office**

Key Team Members
Client: **The Hong Kong Polytechnic University**
Project Manager: **"Campus Development Office, The Hong Kong Polytechnic University"**
Architect: **UrbanAge International Ltd., Architects**
Structural Consultant: **Canwest Consultants Ltd.**
E&M Consultant: **YC M&E Consulting Engineers Ltd.**
Quantity Surveyor: **Beria Consultants Ltd.**
Main Contractor: **Chi Shing Construction Co.**

WAVES OF LIGHT
The Green Design for a Cloister of Academic Offices on the Podium Deck of Core GH, HK PolyU

The HK Polytechnic University is building an extension on top of the podium deck to accommodate 40 academic offices. The challenges of the project lay with the necessities to provide for sustainable and comfortable working environment for the "cell-like" units under one single big roof. The Architect has successfully turned the "prescribed windows" constraints into environmental features. Natural lighting and ventilation are provided through "WAVES" of skylights.

Fulfilling environmental sustainability, the array of skylights provides not just an alleviating atmosphere but also a sense of comfort and brings physical and psychological comforts to the users. Operable top ventilators provide natural ventilation to the inner rooms during cooler days.

The new wavy roof also provides a buffer, diffusing the harsh building boundary and the mature tree growth beyond the campus. Metallic overhangs and vertical screens function as sun-shading devices providing efficient thermal and fenestration control to the annex. Ceramic-fritted patterns on glass panels provide glare-control and reduce thermal heat gain. Simplicity on metallic rhythmic variation mingles the modern façade of the annex smoothly into the kiln-stone main campus theme of the 1980s.

The existing main campus chillers loop is unable to provide the extra tonnage required by the new academic offices. Two newly developed environmentally-friendly and high efficiency air-cooled oil-free magnetic AC chillers are thus introduced to provide for the air conditioning. These chillers use frictionless magnetic bearing design without lubrication oil and featuring the following green characteristics:

- Meeting LEED requirements on refrigerant charge;
- Oil-free operation provides reduction on carbon footprint;
- High COP / IPLV figures
- achieving 35%+ energy savings in annual electricity cost comparing to conventional chillers.

The chillers and the podium plant room are carefully concealed behind greeneries and made "invisible" to both the users and the adjacent buildings. An inter-connecting pipe-work to the main AC loop also allows the maximization of residual AC tonnage in cooler days.

The daily operation of the building is aided by various environmental control devices, including energy saving lighting, controls, heat recovery units, and motion sensor controls, all grouped under a central BMS.

As the annex is a re-vitalization project located in the heart of the campus, environmental control through out the whole construction process has been carefully monitored in terms of air quality control, noise mitigation, construction waste management, waste water management and building bulk management. Careful choice of re-cycle material, inclusive the use of aluminium panels and curtain wall systems reduces significantly the carbon foot-print of the extension when put into further re-development in the coming decades.

The selection of the podium roof above a teaching studio to build the extension has taken into consideration a wide range of environmental and economical factors. The PolyU is one of the founding members signing the "Carbon Reduction Charter" launched by the Environmental Protection Department in 2008. It is with this principle that the re-vitalization project has been developed to meet social, cultural and environmental sustainability.

波澜壮阔似的光采
香港理工大学GH 平台附楼 之『新・绿意念』

一排一排像波浪般起伏的『光棚』是香港理工大学最新『GH平台附楼』的一大亮点。建筑师巧妙地把『建筑物条例』中有关采光与通风的要求转化成环保建筑的特色。新附楼建在现有平台之上，是40多间教职员室及办公室的所在，独特的『光棚』为每一个房间引入了柔和的反射自然光及通风；从上而下的自然光，不但为密封的斗室迎来了大自然的亮光及惊喜，更为它们营做了和谐有致的校园学术气氛。它柔然起伏的外形更成功地把路旁茂密的树木与校舍融成一体；整个附楼的立面设计以明快而简单的节奏为主，精致的「铝飞檐」、「陶料饰面玻璃幕」及「垂直遮阳板」有效地调控了附楼立面的挡阳、吸热及眩光数据，简洁的幕墙与大学本部80年代的泥砖主调不单融洽调和，更相映成趣。

附楼选用全港新引进的「高效环保磁控无油压缩独立空调冷冻系统」，有效地达至节能及减缩碳足迹的要求，庞大的机组经细心的规画安排，巧妙地隐敛在绿荫间，与本部大楼融成一体，可谓匠心独运；另外，整个附楼的节能机电设施皆由中央调控，确保效益。

加建的附楼位处大学本部中央，在规划及建筑各阶段，大学及建筑团队都充份考虑了整个过程对空气质素、噪音、废料弃置及建筑容积对周边环境的影响，并求达至一个低碳及环保的可持续更新建筑。

香港理工大学是『碳减排缔约』的联署机构，整个项目及团队都是跟随着这指导性思想，来达至一个在社会、文化及环保各方面都可持续更新的目标。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Adaptive Reuse & Revitalisation Projects 活化项目

Merit Award 优异

To Better Sustain Choi Hung Estate - A people oriented approach

绿化人为本　延续彩虹家

Choi Hung Estate is one of the oldest public rental housing estates in Hong Kong. Providing homes for over 19,000 residents, it is welcomed by tenants because of its convenient location and harmonious local community. After examining its structural integrity, the Hong Kong Housing Authority (HKHA) decided to preserve the estate and implement major improvement works to better sustain the estate.

彩虹邨是香港最老的公共屋邨之一。屋邨交通便捷，社区和谐，现正为一万九千多居民提供居所。香港房屋委员会为屋邨完成楼宇结构检验后，决定保留彩虹邨，并且进行屋邨改善计划，让屋邨可以更好地延续下去。

Team or Organisation Name:
Hong Kong Housing Department
Location: **Choi Hung Estate, Wong Tai Sin, Kowloon**
Completion Date: **2010**
Site Area: **7.6 hectares**
Gross Floor Area: **333,000 m²**
Building Type: **Domestic**

Key Team Members
Client: **Hong Kong Housing Authority**
Architect: **Housing Department**
C&S Consultant: **Housing Department**
E&M Consultant: **Housing Department**
Main Contractor: **Sun Fook Kong Construction Ltd.**
Hong Kong Macau (Asia) Engineering Co., Ltd.

Additional lift tower 加建升降机楼

High performance concrete in strengthening floors 创新应用高效能混凝土修葺地台

Air pollutant removal pavers 铺设环保地砖以分解空气中污染物

The improvement works aimed to provide a 'Green, Lively and Barrier Free' living environment to the residents. These mainly comprised of the following works –

(i) addition of lift towers to 3 blocks of 7-storey buildings
(ii) repair and weather protection to 171 multi-function empty bays
(iii) repaving with air pollutant removal pavers
(iv) green roofs and vertical greening
(v) rainbow garden and landscape improvements
(vi) pedestrian entrance upgrading
(vii) fitness equipment for the elderly
(viii) public toilet upgrading with improved ventilation and water saving devices
(ix) pro-active in-flat maintenance inspection for early attendance of repairs before defects have aggravated

屋邨改善计划的目的是为居民建设「绿化、活力化及无障碍化」的生活环境。改善计划主要包括以下工程 –

（一） 为三座七层高楼宇加建升降机楼
（二） 改善及修葺171个位于楼宇内的休憩空间
（三） 铺设环保地砖
（四） 绿化泵房天面及外墙
（五） 加设「彩虹花园」及改善园林
（六） 改善屋邨主要出入口通道
（七） 增设长者健体设施
（八） 改善公用厕所内的空气流转设计及使用惜水装置
（九） 主动入屋检查及修葺居住单位，及早维修以防损耗恶化

Vertical greening 墙身绿化

Green roof 天面绿化

Rainbow garden 园林绿化

The green initiatives introduced by HKHA include adopting light-weight pre-fabricated steel frame, aluminium claddings, machine-room-less lifts and buoyancy raft foundations for the lift towers to achieve fast track construction and minimize nuisance generated; innovative use of high performance concrete in strengthening floors in empty bays to minimize construction waste, nuisance and disturbance; use of pavers to accelerate the decomposition of air pollutants; adding green roofs and vertical greening to pump houses; and upgrading soft landscape and pedestrian entrance to give a fresh identity.

以上各项工程均具减废、减排及持续发展的意念。如采用较轻及预制的钢架结构、铝面板、无机房升降机及浮筏地基以加速建造时间及减少滋扰；创新应用高效能混凝土修葺地台以大量缩减工程幅度，减少噪音及对民生的滋扰；率先铺设环保地砖以分解空气中污染物；进行天面及墙身绿化；令人焕然一新的园林及屋邻出入口通道改善工程等。

Pedestrian entrance upgrading 屋邻出入口通道改善工程

Site visit with tenants 与居民及议员等实地考察

The Project Team believes that tenants' participation is pivotal in sustaining the estate. Therefore, the Project Team adopted a people oriented approach during all stages of the project. Frequent consultation, users' feedback, site visits and partnering workshops had been arranged to strengthen communication. Educational and re-cycling activities have also been arranged regularly to foster a green culture amongst residents.

项目队伍相信居民参与是持续发展的成功关键。因此，在整个过程中，项目队伍经常与居民及议员等举行会议、工作坊及实地考察，以保持紧密沟通。此外，亦透过多项教育及回收活动，加强居民的绿色生活文化。

Interiors Projects 室内设计

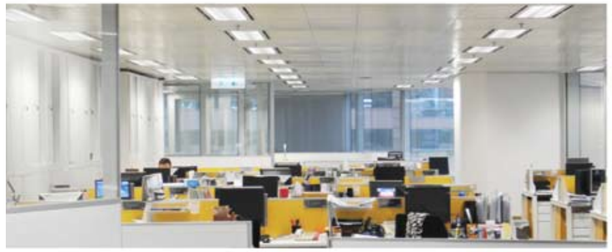
Merit Award 优异

CB Richard Ellis Hong Kong Office Relocation – Three Exchange Square

世邦魏理仕香港办事处办公室搬迁 – 交易广场第三座

Team or Organisation Name: **CB Richard Ellis Ltd.**
Location: **3/F & 4/F Three Exchange Square, 8 Connaught Place, Central, Hong Kong**
Completion Date: **2010**
Gross Floor Area: **1,895 m²**
Green Rank: **LEED for Commercial Interiors 2009**
Building Type: **Office**

Key Team Members
Client: **CB Richard Ellis Ltd.**
Architect: **TDA Interiors**
Main Contractor: **Sonik Interiors Ltd.**
Occupant (Interior): **CB Richard Ellis Ltd.**
Commissioning Authority: **Facilities Analysis & Control Ltd.**



Low desk partitions create a very open feel, allowing access to daylight and window views for all staff and reducing the requirement for additional lighting.

办公桌与桌之间采用矮间格板，给予人开扬的感觉，让员工能享受阳光及窗外景色，减少人工照明的需要。

Design

The brief for the new CBRE Hong Kong office was to meet the contemporary design expectations of a Fortune 500 company but demonstrate that environmentally sound choices could be made at every step and within a strictly defined budget to create a healthy and productive workplace.

The office is designed to be very open. Low height desk partitions provide a more enjoyable working environment by helping to maximize the amount of daylight that reaches each desk, reducing the need for artificial lighting, and promoting communication between colleagues to create a strong collegiate atmosphere. Full height glass partitions for meeting rooms also help to increase daylighting and promote the sense of openness.

Materials were selected for environmental performance with preference given to those materials that contained recycled, rapidly renewable or responsibly produced (e.g. Cradle-to-Cradle™ certified) content, reducing the demand for virgin natural resources and supporting the market for recycled materials.

All materials used in the project were specified to have low Volatile Organic Compound content where applicable (including paints, adhesives, sealants, fabrics and furniture) to protect the health and comfort of construction workers, other building occupants during the construction process and CBRE colleagues.

One major Triple Bottom Line win was the system furniture chairs. The previous chairs were ten years old and not suitable for redeployment in the new office. CBRE wanted to find a sustainable solution to procuring replacements. The answer came from a major financial client whose own green office move CBRE was project managing. The client wanted to replace their chairs without sending them to landfill. CBRE, noting their high quality and lack of wear and tear, purchased them within the project furniture budget to provide all staff with an excellent ergonomic chair and fulfill all of its environmental objectives.

设计

世邦魏理仕香港办事处的新办公室需要符合作为一间《财富》500强企业对当代设计的期望，但又同时展示出在特定的预算下环保意念仍可渗透在每一项细节内，最终打造一个健康及高产能的工作场所。

办公室采用开放式的设计，办公桌与桌之间采用矮间格板，不但能让最多的天然光带到每张办公桌上，减少人工照明的需要，而且更能促进同事之间的沟通，营造一个浓厚的议事气氛，提供了一个更愉快的工作环境。此外会议室全落地玻璃设计亦有助增加日光照明及空间感。

我们拣选优良的环保物料作为建材。其中以含可回收成份、能快速再生或具社会责任生

产（从摇篮到摇篮™认证）的物料为首选。减少对天然资源的需求，支持再生材料的市场。

我们具体列明项目中所用的物料（包括油漆、粘合剂、密封剂、织物和家具）在适当的情况下只可含有低挥发性的有机化合物，以保护建筑工人、施工过程中的其他占用者和世邦魏理仕同事的健康。

本项目其中一个三赢局面是发生在办公室的座椅上。旧办公室中已使用了10年的座椅，并不适合用于新的办公室。而世邦魏理仕希望找到可持续发展的采购替代品方案。碰巧世邦魏理仕正在协助一个金融界客户搬迁他们的绿色办公室。客户希望他们更换走的旧椅子能避免送到堆填区去。而我们则认为客户的椅子质量高、没磨损，于是在合乎财政预算的情况下内向客户购买了该批椅子，为员工提供符合人体工程学的座椅，还履行其环境保護的目标。

Whether natural or synthetic, environmental performance was primary to choosing materials
不论天然或合成，环保表现还是选择项目上所用材料的主要考虑。

Energy Efficiency

CBRE is committed to reducing its carbon footprint and becoming carbon neutral in 2010. The two main areas of energy usage in the office over which CBRE has direct control are lighting and equipment/appliances.

CBRE embarked on a comprehensive energy efficient lighting solution for the office. Rather than wasting the building's existing T8 fittings when wanting to install more energy efficient T5 lamps, CBRE installed special adapters from a Hong Kong based company which allowed the installation of T5 lamps into the T8 fittings.

A conscious decision was also made to exclude halogen lamps from the office. All down lights in the front of office and meeting rooms are highly efficient and long lasting LEDs. These two lighting solutions alone will save at least 35,000Kg of greenhouse gas emissions per year.

In addition all lights in meeting rooms and private offices are controlled by automatic occupancy sensors, and all other lights are connected to zoned timer circuits to minimize the instances of lights being on when they're not needed. A commissioning authority was appointed to ensure that all energy systems installed on the project performed according to design, further ensuring ongoing operational energy efficiency.

Equipment and appliances (including IT) are compliant with either the US Energy Star or Hong Kong's Energy Efficiency Labeling scheme where applicable.

能源效益

世邦魏理仕致力于减少其碳足迹，并在2010年达致碳中和。照明和设备／用具用电是世邦魏理仕能源管理中的两大主要管理范畴。

世邦魏理仕的办公室采用了全面节能的照明方案。为了安装更节能的T5光管而同时不浪费现有T8光管座配件，世邦魏理仕从香港本地公司购入并安装了特殊的转接器，容许T5光管安装到T8光管座内。另一个明智的决定是弃用卤素灯泡(石英灯)。办公室和会议室前所有下照灯全部使用高效和寿命持久的发光二极管。仅这两个照明方案每年将为世邦魏理仕减少最少三万五千公斤的温室气体排放。

此外，会议室和私人办公室内所有灯具都由自动感应器控制，其余的灯具都连接到分区时间控制器以减少非必要的灯光使用。我们委托专家去确保所有项目内已安装的能源系统能按照设计运作，进一步确保持续的营运能源效率。

相关的设备和用具（包括资讯科技）均符合美国能源之星或香港的能源效益标签计划。

Waste Management

During construction the general contractor committed as much waste as possible to be recycled. The office also features extensive provision for ongoing waste recycling, including paper & cardboard, plastic, metal, and even glass.

The main furniture supplier for the new office was contracted to remove furniture from the old office that wasn't going to be reused and ensure it was either reused elsewhere or was sent for recycling instead of landfill. In addition, old appliances that weren't reused in the new office were given away to staff in a lucky draw.

Waste recycling stations are located throughout the office, but in particular in the pantries, where even glass can be recycled
废物回收站遍布办公室，而茶水间更有废玻璃的回收点。

废物处理

在施工期间，承包商尽可能将最多的废物进行回收。办公室还设有多个废物回收的设施，包括纸和纸板、塑胶、金属，甚至玻璃分类。

新办公室的主要家具供应商同时协助将不能在新办公室重用的旧家具移走，确保它们能被再用或回收使用，而不是直接送到垃圾堆填区。此外，不能在新办公室重用的旧电器在员工抽奖中赠送给员工。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Interiors Projects 室内设计

Merit Award 优异

Yau Residence
邱宅

Project Architect: Leigh & Orange Ltd.

Gross area: 220 sq.m.

Project Manager: Leigh & Orange Ltd.

Commence / Completion: 2009 - 2010

'GREENOVATION' - a green-home in urban Hong Kong

Green projects are often seen at the corporate sector; office fit-outs, Greening a residential fit-out project in Hong Kong is rare. When a client with a passion for sustainability approached us, we considered this as a unique opportunity.

'time-less & age-less'

Responding to client's requirements and constraints in the existing structure, the concept was to create a 'timeless & ageless' design, facilitating the creation of 'sense of place' which resulted in designing 'systems' that will 'fold' and 'unfold' into different functional entities and configurations optimizing the passive design potential.

绿色创意 - 香港大都会里的绿化家居

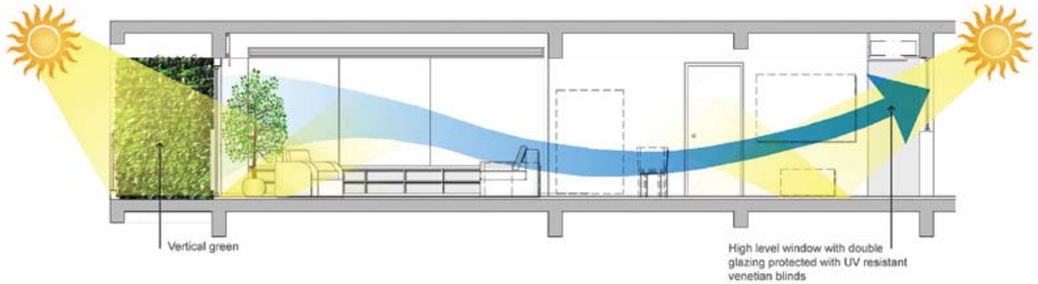
"绿化计划"经常会应用在各商业领域之中，如在办公室等。但在这密集的居住环境中引入环保处理则较为罕见。当我们向客户提出"可持续发展理念"时，客户接纳之馀亦充满着期待，我们感到这是一个机遇，期望可以藉此去探索"绿色家居装璜"将来的发展潜力。

永恒不老

在固有建筑结构的规限下，我们的理念希望能缔造一个"永恒不老"的设计，为客户建构一个饶有意义的空间。因此，核心构思就是一套"系统化"的设计理念，将之折迭及展开成一个兼具功能、装配及设计潜力的实体。

Team or Organisation Name: **Leigh & Orange Ltd.**
Location: **Hong Kong**
Completion Date: **2010**
Gross Floor Area: **220 m²**
Building Type: **Private Residence**

Key Team Members
Architect: **Leigh & Orange Ltd.**
Main Contractor: **Ocean Contracting Ltd.**



low energy

To blend with the design intent, the challenge was to minimize heat gain while inducing the potential for natural light and ventilation. The result was a progressive approach to space conditioning and energy efficiency: from natural light and ventilation through operable windows, to electric fans and turning on energy efficient (eco-label) air-conditioning as the last resort. Heat gain and glare is reduced considerably through double glazed windows protected with UV resistant blinds. General artificial lighting is provided entirely through LEDs.

Treasure the 'old'

We managed to retain a significant amount of existing internal partitions, door frames, doors, teak flooring and loose furniture and fixtures keeping the demolition to less than 50%.

低能源

基本概念是大幅度减少热量排放、自然采光及自然通风；即是以"渐进"的方式来调节温度及达致能源效益：如透过活动的窗户可采集自然光和加强通风；最后可采用附能源效益（能源标签）的电风扇及空调作最终的措施等。安装双层玻璃窗及防紫外线窗帘可大大降低热能增长和防止刺眼强光；全方位使用"发光二极体"灯具作照明。

古老的宝藏

我们在管理上保留了大量现成的室内间隔、门框、门、木地板、及家俱等可再用的固定装置、设备及材料，尽量保持屋内的固定装置拆除量不多于 50%。

3R- reduce, reuse, recycle

Material selection played a vital role in the process. We adopted '3R' principle: reduce, reuse, and recycle in our approach. A significant proportion of material was reused and rest was sourced locally; all timber used were from sustainable sources or with recycled and rapidly renewable content. Finishes are with low VOC content and appliances are with green labels.

All partitions and loose items are modular that were prefabricated which helped reducing construction waste while accelerating the construction process.

Green lifestyle

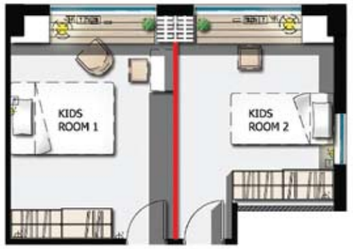
This 'greenovation' has influenced their lifestyle which is evident in their reduced utility bills and reduced quantity of domestic waste that are sorted at the source. It also has been able to convey the message to their friends and neighbours making a positive influence.

3R-减少使用、重复利用、循环再用

选材向来扮演着重要角色，我们以"3R"为原则：减少使用，重复利用和回圈再用方法。重复使用材料应占相当的比例及依靠本地资源，其馀木材来自可持续资源和快速成长等材料。材料用具绿色标签及低挥发性有机物含量的材料，所有间墙和组合式的墙体应是预制模组，这有助减少建筑废料，也可加快施工期。

绿色生活

绿色创意的家居设计影响了日常生活方式; 明显地减少水电费和家居废料的数量。这积极而正面的讯息已传达给周边的亲友和邻居。



Our message

This project is a classic example for everyone who endeavors to pursue sustainable approaches to living.

We consider this as entire approach as an innovation with regard to the strong message it sends out to the community, influencing their thinking. Our client considers this as an ideal setting to educate her children about sustainable living.

Our message to the community is that sustainability initiatives are not limited to large scale projects; no matter how small the projects are, there is still a range of green initiatives that can make a tremendous contribution. What is important is the understanding of the long term benefit in terms of healthy living, reduced operational costs, flexibility, adaptability and minimizing costly alterations and even more importantly 'the PASSION' for green living.

This is a beginning...a steady way forward for "green living" in compact urban Hong Kong. Sustainability is a mindset and a lifestyle...we all can embrace without negative consequences.

Living with 'nature'

We invited the nature into the flat converting the large balcony into a green corner with vertical green and potted plants. Plants are native species which are less water dependent and green throughout the year. This green balcony insulates the interior against the setting sun. Plants also filter pollutants and contribute to reducing heat island effect.

Less water

Although the opportunities are rate for water conservation strategies in a fit-out project, we worked within limitations to install water efficient fixtures such as low flow aerated taps, faucets, water efficient drinking water purifier system, dual flush closets and opting for shower cubicles and one low capacity bath tub.

自然绿色生活

我们可引入"绿色生活"到家居环境中：如将大阳台加设绿化角，植生墙与盆栽，品种是以吸收较少水份和常绿植物为主。这绿色阳台可隔离大部份夕阳光直接照进屋内，而植物也可以过滤一些污染物及有助于减少"热岛"效应。

节约用水

在专案中虽然有提到节约用水的策略，但我们的工作范围内只能规限在加设节水装置：如低流量蓄气龙头、防渗透过滤系统、双冲水式坐厕和在淋浴间或低容量浴缸中二择其一。

我们的资讯

这项目是一个范例给大家机会，去努力追求对家居环境作可持续发展的方向和方法。

我们认为这个创新的方向，强烈的讯息影响着社会大众的思想观念。我们的客户认为："这是个理想的环境去教育下一代应多些关注可持续的生活理念。"

我们的讯息是对社会可持续发展的不仅限于大型项目，无论专案的规模大小，总有一套环保创意措施可用并作出巨大贡献。最重要的是了解长期有益于健康生活：降低营运成本：具灵活性和适应性，及减少昂贵改动，更重要是拥有追求绿色生活的热忱。

这是一个新的开始 ... 在密集的香港都市里绿色生活模式能有效地朝未来前进。可持续发展亦是一种正面的态度和生活方式...在没有负面影响下我们应乐意接受此生活方式。

Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Interiors Projects 室内设计

Finalist 入围

Arc8X Design, Shanghai Office
上海圆创设计规划谘询有限公司

The Arc8X Design Office, located in Shanghai's Pudong District in the Zen Dai Cube Edifice, is 291 square meters of commercial office interiors space. It achieved the highest rating of LEED CI certification and is one of only three certified LEED Platinum projects in China. It is an excellent example that a commercial project can achieve a high level of design creativity and concept for designers, health and comfort for its end users and environmental and energy responsibility for the community and its owners with out sacrificing any one of the others.

Design: The space is divided into two levels with the main reception and meeting rooms on the 13/F, whilst the 12/F includes open work stations, a library, recreation area and utility room. The reception features a rammed earth wall, 100 year old salvaged wood from old shanghai housing, a bamboo strand reception desk and meeting tables and a self-guided tour noting and explaining the sustainable features.

Energy: Annual energy consumption was reduced by over 45%. Sub meters were installed to measure plug, light and HVAC loads. Insulated Panels were installed below the 750mm height to reduce heat loss/gain on the full height windows, whilst maintaining daylight and views. Operable windows are used during the spring and fall for both energy reduction and fresh air, with a mechanical ventilation system designed to supply over 30% fresh air above ASHRAE standards.

Lighting: The space was designed for an ambient 250 Lux level with day lighting and task lights by incorporating over 65% LED Light fixtures with the remaining 35% fluorescent T5 fixtures. This strategy combined to give a lighting power reduction of over 46%.

Water: Potable water use was reduced by 39% per LEED calculations for the Arc8X staff, but overall 49% for the 200 shared floor users, resulting in a total estimated water savings of 593,612 litres per year. This strategy was achieved by using new low flow touchless faucets and low efficiency 3.8 litre/flush urinals with 0.9 litre per flush urinals.

上海圆创设计规划咨询有限公司上海办公室位于上海浦东新区证大立方大厦，建筑面积约291平方的商业办公室。该办公室室内装修荣获了美国 LEED 的最高奖项，是中国到目前为止仅有的3个 LEED 室内铂金级奖项之一。

设计：办公空间分为2层，接待访客的主入口接待区和会议室在13楼，员工使用的开放式办公区、会议区、图书区、休闲区和茶水复印间在12楼。接待区有颇具特色的着色土墙、有100年历史的旧上海别墅屋梁再加工的原木墙、有竹木饰面的接待台和会议桌和一面介绍绿色可持续性设计原理的展示墙供访客自助浏览。

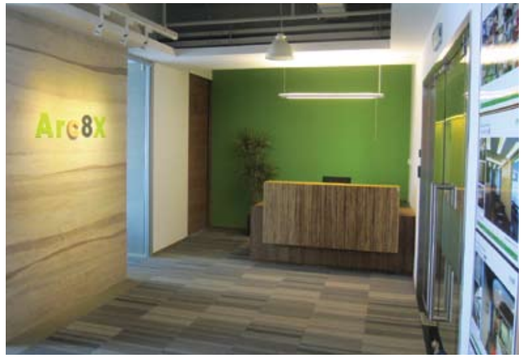
能源：每年耗能总量节约45%。室内独立安装插座、灯、空调电表分别计量便于控制。在全高的玻璃幕墙内75厘米高度以下安装了隔热保温层，即不阻挡光线又可减少冷热量流失。有大量可开启窗，即节能又有足够新风，并安装了超出 ASHRAE 标准30%的新风设备供使用。

灯：在办公区内设计了环境光源250 Lux 的标准和办公桌面上的台灯作为局部可控光源，在灯具和光源选择上使用了65%的 LED 光源和35%的T5日光灯源。设计原则在 ASHRAE 的标准下节能了46%。办公区域运用了日光感应和人体感应经一步控制能源损耗。

水：在大楼12、13楼按 LEED 要求计算可节约可饮用水39%，就所有200员工而言可节约49%的可饮用水，大概每年能节约593,612升。设计原理是保留大楼的3/6升节水型座便器，替换原有的笼头为感应笼头和原有的3.8升小便斗为0.9升的感应小便斗。

Team or Organisation Name: **Arc8X Design**
Location: **Pudong, Shanghai, China**
Completion Date: **2009**
Gross Floor Area: **291 m²**
Green Rank: **LEED CI Platinum**
Building Type: **Commercial Office**

Key Team Members
Client: **Arc8X**
Architect: **Arc8X Design, Stephen Protz, Principal**
Jane Wang, Connie Diao, Jeremy Zhou, Beta He
E&M Consultant: **Lin Yu Juan, M&E Engineer**
Main Contractor: **GBC Interiors & Kent Lam, Principal**



Existing Buildings - Hong Kong & Asia Pacific
既有建筑类别 – 香港及亚太地区

Interiors Projects 室内设计

Finalist 入围

Ronald Lu & Partners Hong Kong Office
吕元祥建筑师事务所香港办公室

Refresh and Beyond

Ronald Lu & Partners relocated to a higher floor in Wu Chung House when the firm outgrew its previous facilities.

The building's 25,000 square feet floor plate is efficient and rimmed with expansive windows on all sides. Design studios and workstations are programmed in the east, south and west areas to take advantage of the best natural daylight, reducing the need for artificial lighting. West facing windows are outfitted with solar reflecting roller blinds to prevent build up of heat from the sun's rays.

Throughout the studio, the removal of the false ceiling maximises the ceiling height while allowing more indirect lighting options. The higher ceiling means that reflections travel further, reducing each workstation module's electricity requirement. Finishes are thoughtfully chosen, with non-toxic, VOC-free paint and materials used in all areas. With regards to products, RLP is sensitive to new purchases. Instead of discarding furnishings from the previous office, RLP incorporated key pieces in imaginative ways into its new premises. Other pieces that did not fit into the design scheme found new homes with new owners.

A vertical garden - RLP Green Wall is also featured in the office lobby area. RLP Green Wall comprises 353 plants with more than 50 plant species, it does not only visually enlivens the office interior, but also environmentally helps enhance the indoor air quality, it is efficient in absorbing VOCs and other toxic organic molecules, providing a healthier working environment.

Team or Organisation Name:
Ronald Lu & Partners (Hong Kong) Ltd.
Location: **Wanchai, Hong Kong**
Completion Date: **2010**
Gross Floor Area: **2,500 m²**
Building Type: **Corporate Office**

Key Team Members
Client: **Ronald Lu & Partners (Hong Kong) Ltd.**
Main Contractor: **Alliance Engineering Co., Ltd.**
Green Wall Designer: **Patrick Blanc**

超越清新

吕元祥建筑师事务所为配合公司业务持续增长，于2007年年底将办公室迁到一全层的辨公楼单位。新址面积25000平方尺。楼面宽敞开扬，让公司有机会为员工创造一个既赏心悦目而又舒适怡人的工作环境。

新办公室的北面是接待处和会议室群，而东、南、西方是建筑师们的工作间。工作间三面环窗，室内采用开放式工作家具，让员工在无限接触着窗外的环回景观之余，亦同时享受自然光的渗透。其他办公支持设施如打印、存档、茶水、员工衣橱等则策略性环带布置在大楼核心简旁，不占整体工作空间，也给每一角落带来了直接方便。

电梯厅内装置了一大幅用了公司标志图腾设计的水晶玻璃，效果通透玲珑，让客人一睛出电梯就有着实时的归属感。接待大堂宽敞开放，有着白色主调；配上了暗亮相反条子的饰面墙体及半通透条子玻璃隔断，充份反影出室内设计上的奔放及创作力。会议室以颜色命名。每间会议室亦挂上与室名同系的艺术挂画，进一步点出白和颜色的和谐与激情。整体设计展示了吕元祥公司理念中的现代、细练、幽雅。

为积极提倡绿色环景，办公室装修选材亦作了多方面环保考虑，如选用可循环再造的方块地毯、复合重组石材以减低天然资原损耗、不含有毒挥发体的涂漆、节能反射灯以增加投光阔度、反射遮光卷帘以减低室内热量、等等。积极地为保护地球天然资源尽一分力。

Jury's Citation 评审意见

Research & Planning
– Hong Kong & Asia Pacific Category
研究及规划类别 – 香港及亚太地区

The 12 entries represent a diversified range of topics of research and planning studies covering studies on land use planning, building project and specified building systems, etc. undertaken in Mainland China and Hong Kong. The jurors were impressed by the efforts that were put into these studies, and were pleased to note that many of the latest ideas related to sustainable development and green building design have been incorporated in the studies.

Planning Study Projects

Grand Award

Zhengbian New District Regional Strategy Plan (City of Zhengzhou, China) - Developing a Carbon Audit Methodology for Regional Land Use Planning

In developing the regional plan, comprehensive planning strategies reflecting sustainable and low carbon targets covering energy demand and supply management, water resources, waste management, landscape ecology, green transport, etc. were adopted to tackle issues related to climate change and the rapid pace of urbanisation of the "Zhengbian New District" region. The Jurors were particularly impressed by the originality of the planning tool, using the Carbon Dioxide Emission Audit Framework to select land use options in order to manage urbanisation and steer the urban-rural development towards a low carbon future.

Merit Award

Beijing Changxindian Low Carbon Community Regulatory Zoning Plan (China) - Pioneering the Development of Low Carbon Zoning Codes in China

Apart from adopting sustainable development principles in further developing the concept to produce a low carbon zoning plan for a mixed-use development of a 500- hectare site, the study has also put forth innovative proposals, including the use of Low Carbon Zoning Codes with strong green concept and standards. The jurors were pleased to note that the Zoning Codes would be implemented as part of the statutory planning and development control system in Beijing.

Research Study Project

Merit Award

Consultancy Study on Building Design that Supports Sustainable Urban Living Space in HK

This study has provided a good starting point for addressing the critical issues of current high density built environment in Hong Kong. The jurors noted that the three core recommendations related to building permeability, building setback and site coverage of greenery are particularly relevant to the Hong Kong situation, and may provide a scientific basis for regulating building developments in future. The related key guidelines on sustainable building design for enhancing air ventilation and other environmental aspects to achieve better urban space are worthy of consideration by building professionals when handling urban design and building developments in Hong Kong.

这十二份参选项目概括了在中国和香港所进行的有关规划及研究的广泛议题，包括土地规划、楼房工程项目以及特别系统等。评审们均赞赏各参赛组别所作用的努力及其研究成果，并喜见这些报告内皆已引入许多有关可持续发展及绿色建筑设计的最新意念。

规划项目

大奖

中国郑州市郑汴新区空间发展战略方案

这区域规划广泛采用了有关可持续及低碳目标的规划策略，包括能源供求管理、水资源、废物管理、园林生态保育以及环保运输等，以应对气候转变以及郑汴新区的快速城市化发展。评审团特别欣赏方案中采取了创新的二氧化碳排放审计模型作为规划的工具，选用低碳土地用途，以调控城市化发展，及引领城鎮迈向低碳规划的未来方向。

优异

中国北京市长辛店低碳社区控制性详细规划

这研究是将概念进一步发展，为一个五百公顷的综合土地发展规划一个低碳的分区图。除了引用可持续发展的原则，报告亦提出了崭新的建议，包括使用以绿色概念和标准为基础的低碳分区代码。评审团欣悉这些分区代码将会在北京市的控制性规划和发展管制中实施。

研究项目

优异

对应香港可持续都市生活空间之建筑设计顾问研究

这研究提供了一个良好的起点以致力于现今香港高密度市区环境的主要问题。评审团认同报告内提及的有关楼房间距、楼房向后退入以及绿化覆盖率等三个关键指引均切合香港的状况、并可提供一个科学化基准用作监控未来楼房发展。有关可持续楼房设计的指引有助于优化空气流通和环境质素以改善都市生活空间，值得专业人士进行城市设计及楼房发展时作为参考之用。

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Grand Award 大奖

Zhengbian New District Regional Strategy Plan (City of Zhengzhou, China) - Developing a Carbon Audit Methodology for Regional Land Use Planning

中国郑州市郑汴新区空间发展战略方案 – 创新区域规划碳排放审计方法

Team or Organisation Name: **Arup**
Completion Date: **2009**

Key Team Members
Client: **Zhengzhou Urban Planning Bureau/Zhengzhou New District Management Commission**
Project Manager: **Arup**
Town Planner: **Arup**
Sustainable Design Consultant: **Arup**
Environmental/Ecology Consultant: **Arup**

Zhengbian New District Regional Strategy Plan (City of Zhengzhou, China) - Developing a Carbon Audit Methodology for Regional Land Use Planning

A number of initiatives and targets have been announced by China in response to climate change and rapid pace of urbanization, including the policy to reduce carbon emission intensity per unit of gross domestic product between 40% to 45% from their levels in 2005, by the year 2020. Other efforts include a goal that 15% of the nation's total power consumption will come from non-fossil fuel sources by the target date, together with other recently announced 'green' policies, incentives and subsidies.

Arup was commissioned by the Planning Bureau of Zhengzhou City on behalf of the Henan Provincial Government, to provide innovative planning solutions for the 2100square kilometer Zhengbian New District, including a Regional Strategy Plan (Urban-rural Systems Plan), Land Use Plans as well as CO2 Emissions Auditing Model to address all the issues and challenges related to climate change.

Arup proposed a regional urban-rural land use system that reflects sustainability and low carbon targets. It also aims at enhancing the sustainability and economic competitiveness of the Zhengbian New District. The project team also proposed three innovative planning methodologies and tools for the project, they are:

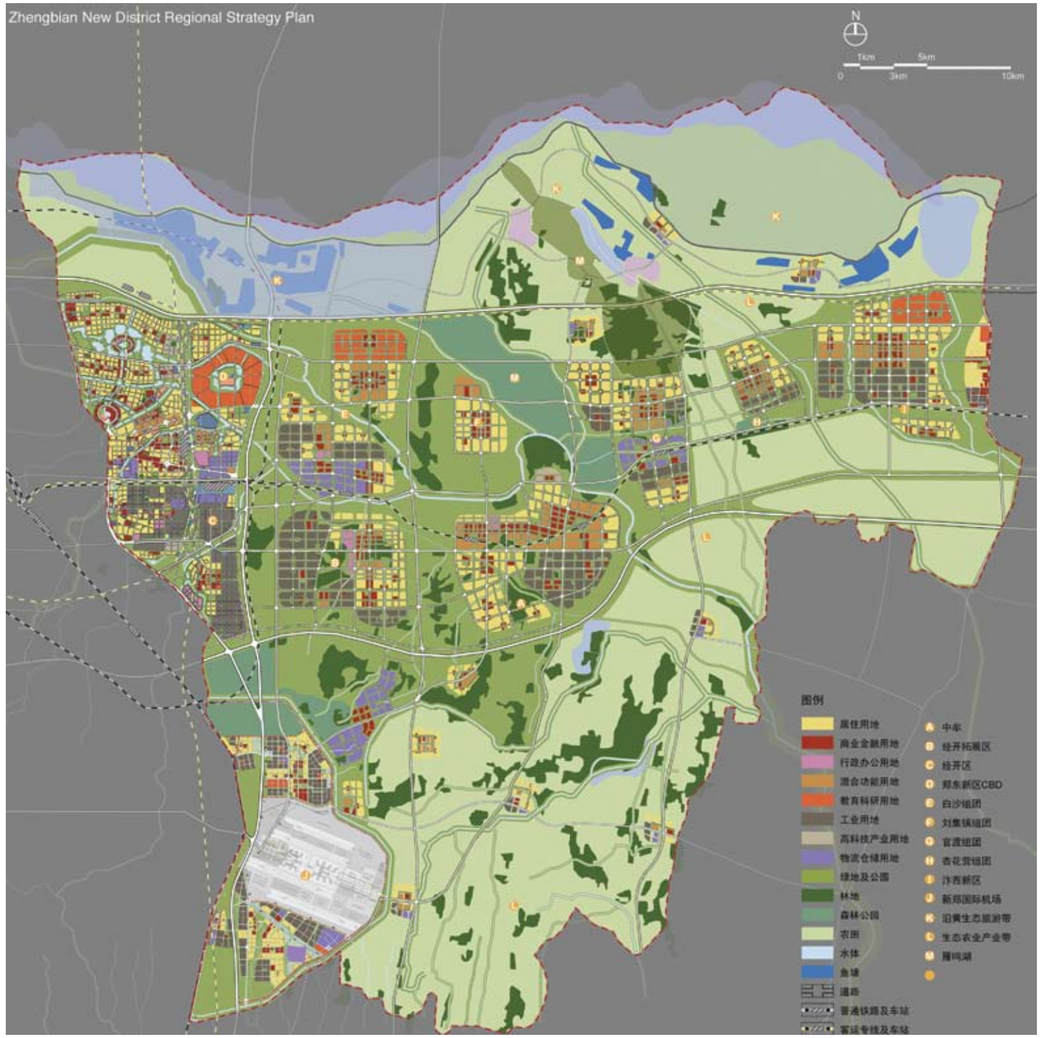
1) Carrying Capacity Assessment on regional carbon sink capacity assessment;
2) Basic Eco-spatial Units that encourage green transport and commuting modes; and
3) Regional CO2 Emission Audit Framework for comparing and assessing various land use options on regional GHG emission levels.

Based on assessing and comparing alternative land use options, a preferred option was recommended by Arup and it reflects a low carbon approach for the management of rapid pace of urbanization. The key performance parameters include:

- The energy consumption per GDP was 1.48 tce (tonne of coal equivalent)/10,000 RMB (approx. USD1,465) in 2008, and would decrease to 0.73 tce/10,000 RMB in 2020.
- The carbon dioxide emission intensity reduction rate is 25% every five years based on the recommended land use strategy. This performance is better than the 20% reduction rate targeted in China's 11th five-year plan.
- The carbon emission per GDP was 4.76tCO2/10,000 RMB in 2008, and would decrease 2.34tCO2/10,000 RMB in 2020.

Arup's plan for an innovative integrated regional land use development strategy for Zhengbian New District's cities and rural areas adopted approaches to address the wider issues of climate change and urbanization. Based on the assessment of carbon emissions and recommendations for a low carbon option, the proposed regional land use plan's performance of carbon dioxide emission intensity will exceed the national target and serve as an example of managing urbanization through a low carbon development pathway.

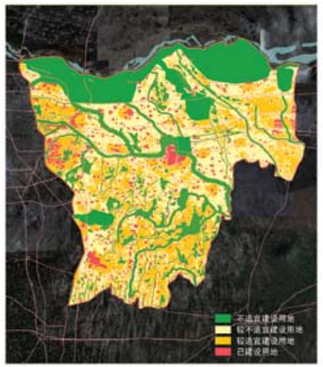
This is a pioneering approach for regional land use and urban/rural systems planning in China. For the first time in regional planning process in China that carbon emission audit was adopted as criterion in selecting the preferred land use option. This strives to be a best practice example for sustainable regional planning in China, and also for East Asian cities facing similar urbanisation challenges.



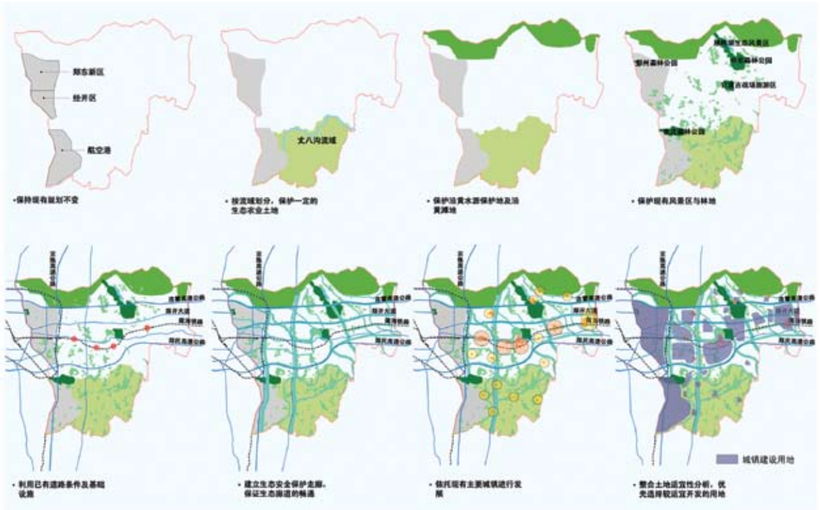
Carrying Capacity

ECOLOGICAL SECURITY NETWORK

SUITABILITY ANALYSIS

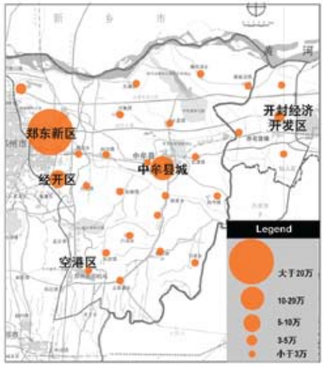


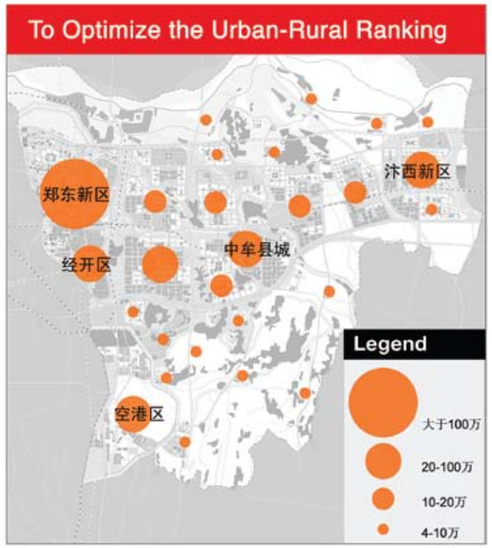
LAND DEVELOPMENT OPPORTUNITIES & CHALLENGES

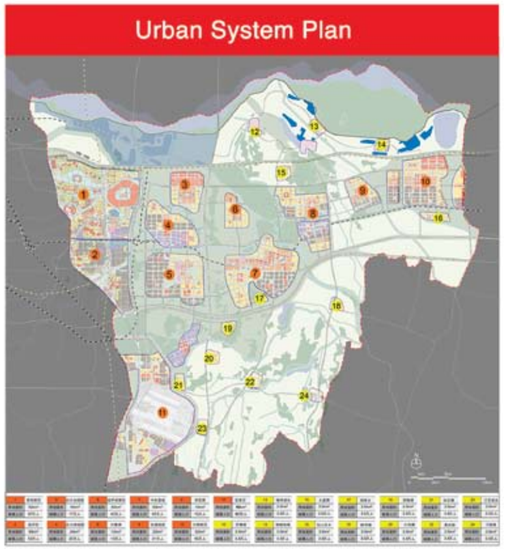


Urban-Rural System

URBAN-RURAL SYSTEM







中国郑州市郑汴新区空间发展战略方案 – 创新区域规划碳排放审计方法

中国近年就气候变化和快速城市化推出一系列措施及目标，包括到2020年我国单位国内生产总值碳排放比例比2005年下降40-45%。其他务求达到的目标还包括到2020年我国非化石能源占一次能源消费的比重达到15%，以至最近之绿色政策、鼓励和补贴。

郑州市规划局代表河南省政府委托奥雅纳为占地共2100平方公里之郑汴新区提供创新的规划方案，包括区域战略规划（城镇体系规划）、土地利用规划和碳排放审计模型以面对气候变化有关之问题与挑战。

奥雅纳建议的区域城镇土地利用体系充分反映出可持续发展和低碳发展目标，同时提升郑汴新区可持续发展能力和经济竞争力。规划团队为此项目建议了三个崭新的规划方法和工具，包括：

（一）针对区域性碳汇承载力评估为基础的承载力分析；

（二）鼓励绿色交通和优化出行模式之基本生态空间单元；及

（三）区域性碳排放审计框架用以比较和评估不同土地利用方案之温室气体排放程度。

通过技术评估和比较不同的土地利用方案，奥雅纳建议出一套反映出低碳理念并能有效管理快速城市化的规划方案。主要绩效参数有：

- 2008年人均能耗为1.48tce (吨标准煤)/10,000元 (约1,465美元)，并于2020年将降至0.73tce/10,000元。
- 建议方案之碳排放降低率为每五年25%，比中国十一五规划中的20%降低率更为理想。
- 2008年人均GDP碳排放为4.76 tCO2/10,000元，而在2020年将会降低至2.34 tCO2 /10,000。

奥雅纳为郑汴新区的城市和乡镇所提出的综合土地利用战略有助应付更广泛之气候变化和城市化问题。根据碳排放评估分析和低碳发展建议，我们提出之区域土地利用方案在碳排放上的表现将会超越国家所订目标，是为利用低碳发展途径管理城市化问题的理想案例。

我们于本项目所提出的区域土地利用和城镇体系规划方法属国内首创。这也是中国首次在区域规划过程中利用碳排放审计来协助选定理想之土地利用方案。本项目致力成为中国以及备受类似城市化问题困扰的东亚地区城市的一个可持续发展区域规划范例。

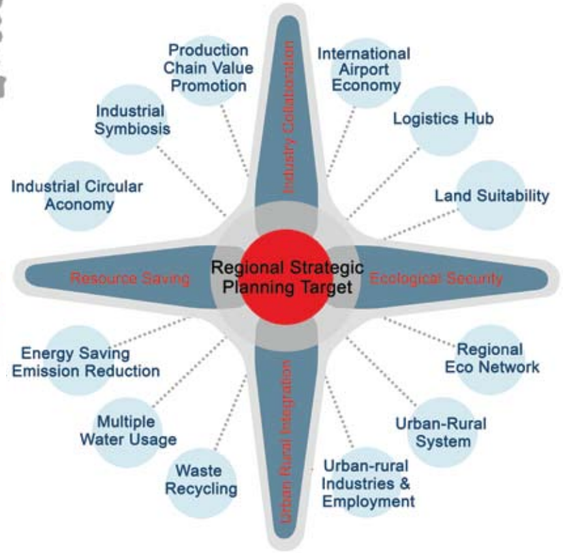
Mixed Use Live - Work Area

Residential Communities

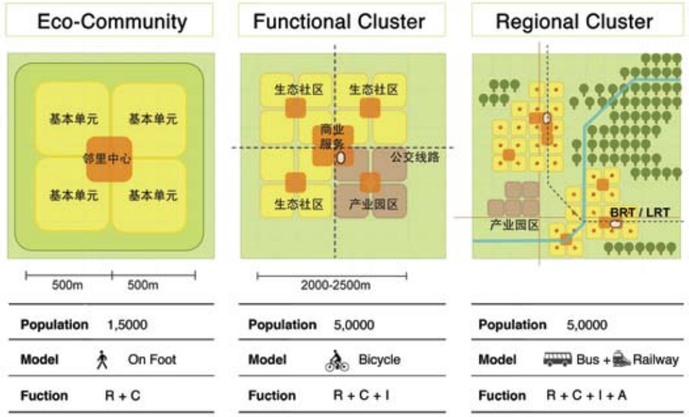
Eco - Industrial Park

Location

Integrated Strategy



Eco - Spatial Units



ARUP

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Merit Award 优异

Beijing Changxindian Low Carbon Community Regulatory Zoning Plan (China) - Pioneering the Development of Low Carbon Zoning Codes in China

中国北京长辛店低碳社区规划 – 引领中国低碳分区规划准则的发展

Team or Organisation Name: **Arup & Beijing Municipal Institute of City Planning & Design, PRC**
Completion Date: **2010**

Key Team Members
Client: **Beijing Wannian Flowercity Real Estate Development Co., Ltd.**
Project Manager: **Arup**
Co-Project Manager: **Beijng Municipal Institute of City Planning & Design, PRC**
Town Planner: **Arup**
Sustainable Design Consultant: **Arup**
Environmental/Ecology Consultant: **Arup**
Building Physics and Energy: **Arup**

Beijing Changxindian Low Carbon Community Regulatory Zoning Plan – Pioneering the Development of Low Carbon Zoning Codes in China

Climate change is a critical global issue and some studies indicate that China has since 2007 already overtaken the United States in terms of total carbon emissions. It is imperative that innovative methods and tools are developed and incorporated in the China urban planning system to create low carbon communities in the future.

Arup was commissioned to work with Beijing Municipal Institute of City Planning & Design to review the existing statutory District Plan, and to produce a "low carbon" concept master plan for a 500hectares site within the District, based on sustainable development principles.

Objectives of the Beijing Low Carbon Changxindian Community Regulatory Zoning Plan are to: (a) prepare a mixed-use community zoning plan (for a residential district, commercial and research industrial park served by a LRT station) that is guided by a sustainability framework and performance indicators; and (b) pioneer the preparation of a set of innovative "Low Carbon Zoning Codes" that incorporate these sustainability indicators, and are implementable as statutory zoning plans to manage climate change impact.

Arup prepared the implementation plan for the concept and developed a set of statutory regulatory zoning plans for the project. In the implementation stage, Integrated Resource Management Process was adopted in order to achieve the low carbon community objectives.

A set of low carbon zoning codes for the project as a whole and individual land parcels were prepared to guide design requirements such as site engineering, buildings, landscape ecology, water, energy systems, etc. The Southern portion of the project measuring 147hectares of residential, commercial and open space was selected to prepare a set of low carbon zoning codes for each individual site that would be used as planning conditions for development, as well as technical basis for development control.

All the performance targets and technical requirements were modeled at individual sites and street block level to ensure that the sustainability targets can be met through the implementation of enforceable low carbon zoning codes for each site.

The team formulated and incorporated new and non-conventional site specific low carbon zoning codes into the statutory Regulatory Plans. These codes include:

- Energy reduction levels
- Storm water infiltration levels
- Waste management
- Renewable energy utilization levels
- Roof top space for green roof and solar PV panels
- Grey water reuse
- Ecological and carbon sink capacity of landscape open space
- Building massing parameters

This project has integrated low carbon eco-community design and planning conditions into the statutory Zoning Plans. The proposed zoning codes can be adopted as official planning and land lease contract conditions, and enhance the statutory basis for eco-city planning implementation in China. This is the first project of this kind in China to demonstrate how the objective of managing climate change impacts will be materialized through local planning systems and zoning codes. The recommendations in the zoning codes have been endorsed by the Beijing Planning Commission in 2009 and will be officially implemented in future land use right tender documents for the respective sites.

北京长辛店低碳社区规划 – 引领中国低碳分区规划准则的发展

气候变化已经成为全球关注的重要议题，研究表明中国不断上升的碳及其它温室气体排放量将对本国乃至全球造成重大影响。中国正在迫切寻求可持续的发展模式，以减少城市发展及城市化带来的负面影响。“十一五”计划也明确提出，必须减少碳排放及能源使用。由此可见，在中国城市规划系统中运用创新的方法与工具创造低碳小区是势在必行的。

奥雅纳受一家本地开发商（代表丰台区政府，并作为其合作伙伴）委托，与北京市城市规划设计研究院共同审核现有的法定区域计划并在500公顷区域内（长辛店项目社区），根据可持续发展原则，提出“低碳”概念总体规划。

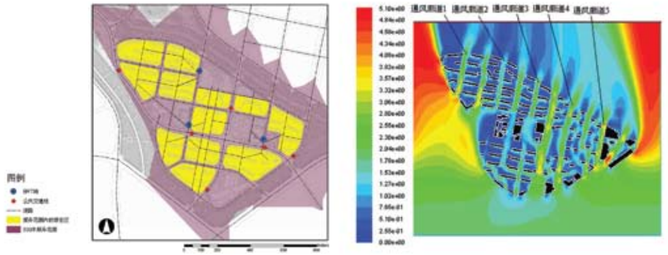
北京长辛店低碳社区概念规划的目标包括：（一） 在可持续发展架构及绩效指标下，制定多用途小区概念规划（住宅区、商业区、科技园区及轻轨站）；及（二）倡导一组创新的“低碳分区规范”，结合可持续发展指标及法定分区规范来处理气候变化的影响。

就此项目的发展概念，奥雅纳准备了一套实施计划及法定控制规划。而在项目实践过程中，规划团队使用综合资源管理系统（碳排放控制、水资源、可再生能源使用、绿色交通）以达到低碳社区之目标。

本项目整体至个别地块，都有一系列可持续发展的城市设计导则指明了如现场工程、建筑、生态、水资源和能源等设计要求。规划团队对项目南面部分（147公顷住宅区、商业区及露天场所）的地块及街区层面进行了更详细的可行性评估，旨在为整体与个别地块制定一系列的低碳分区规范，为发展控制奠定技术基础。这些规范包括：

- 减少能源需求；
- 再生能源使用；
- 暴雨管理方法；
- 屋顶面积提供作绿色屋顶和太阳能光板；
- 绿化开放空间之生态和碳汇能力；
- 废弃物处理；
- 中水回用； 及
- 建筑体量参数。

此项目把低碳生态设计和规划条件纳入至法定分区规划，对中国成功推行生态城市发展有莫大重要性。而建议之分区规范可用作为正式规划及土地出让条件，提高生态城市在国内推行发展之法律和法规上的依据。在国内类似的项目中，此乃首个能展现出如何通过本地规划系统和分区规范把管理气候变化之目标体现出来。 我们所建议之分区规范于2009年被北京市规划委员会认可，不久将会在各地块之土地使用权文件中正式推行使用。



ARUP

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Finalist 入围

Beidaihe New District Conceptual Master Plan

秦皇岛市北戴河新区概念性总体规划

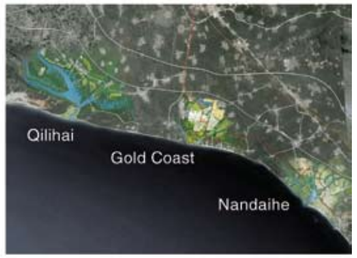
Team or Organisation Name: **Sasaki Associates, Inc.**
Location: **Qinhuangdao, China**
Completion Date: **2010 (master plan)**
Site Area: **478 km²**
Gross Floor Area: **Approximately 17 million m² (divided between 3 development sub-districts)**

Key Team Members
Client: **Qiahuangdao Gold Coast Construction and Management of Protected Areas Administration Committee**
Architect: **Sasaki Associates, Inc.**
C&S Consultant: **Sasaki Associates, Inc.**
Landscape Architect: **Sasaki Associates, Inc.**

BEIDAIHE NEW DISTRICT

Located approximately 280 kilometers east of Beijing, Beidaihe is often referred to as "Beijing's Oceanfront" because of its Boahai Bay setting and proximity to the capital. A popular summer retreat, tourists flock to Beidaihe for its beautiful beaches, pleasant climate, and bucolic landscape. Over the course of the past 30 years however, many of Beidaihe's diverse ecosystems have been severely degraded due to human influences. The biologically rich habitat of the region's tidal estuaries has been lost to aquaculture and other agriculture uses, and rivers and streams have been transformed into channelized drainage canals that discharge wastewater, pesticides, and fertilizer directly into the bay. These impacts have contributed to an alarming reduction in water quality that has led to the depletion of marine fisheries among a multitude of other environmental concerns.

An innovative master plan for the 478 square kilometer district, however, seeks to regenerate damaged ecosystems and promote strategically designed development which will finance land conservation and restoration efforts in the region. Focusing on ecological enhancement as the core principle of the plan, policies were established to ensure long-term protection of the region's natural resources. These included minimizing human impacts to sensitive coastal ecosystems, establishing wildlife corridors that link the districts diverse habitats, and restoring important environmental assets such as the Qiliahi Lagoon and Luan River Delta. Within this environmentally driven framework, three new sub-districts were located based on their proximity to existing infrastructure, and planned to accommodate growth while preventing unmitigated urban sprawl. This was accomplished by establishing clear development boundaries to restrict encroachment into sensitive areas, and creation of a land use policy that encourages program that compliments the environmental context of the region such as arts and cultural facilities, new universities for the study of oceanography and environmental science, and nature-based educational and recreational experiences.



北戴河新区

坐落在北京东部约280公里处，北戴河由于濒临渤海湾和与首都的咫尺距离，常常被誉为"北京的海景区"。每年人们为其美丽的海滩、宜人的气候和田园风光纷至沓来 到这个倍受欢迎的避暑胜地。然而在过去的30多年中，北戴河的许多丰富的生态系统受人类活动的影响而遭到了严重的坡坏。区域潮汐河口拥有丰富生物多样性的栖息地也由于水产业和其它农业用途而消失；河流和溪流已变成排水渠，将污水、农药和化肥残留物直接排放到海湾中。这些影响严重地降低了水质，导致海洋渔业消耗殆尽，成为众多其它环境忧患中的一个重大问题。

为该478平方公里的创新性的总体规划致力于恢复遭到破坏的生态系统，倡导有策略性的设计和开发，从而利用经济效果有效地保护土地并在区域中开展生态恢复工作。强调把改善生态作为规划的核心原则， 建立相关策略确保区域自然资源受到长期的保护。这些策略包括减少人类对敏感沿海生态系统的影响，建立连接区域各种栖息地的野生生物廊道，并恢复重要的环境资源，例如七里海泻湖和滦河三角洲。在这样的环境驱动框架下，总体规划根据与现有基础设施的毗邻性定位了三个新的次级组团，以适应未来的发展，并防止急剧的城市扩张。这是通过建立清晰的开发界限而实现的，限制了可能的开发项目对生态敏感地区的侵占，并建立土地管理策略来促进开发内容与区域的自然人文环境条件协调一致，例如艺术和文化设施、研究海洋学和环境科学的新大学以及以大自然为基础的教育和休闲体验。

Sasaki: Michael Grove, Dennis Pieprz, Mark Reaves, Hernan Schlosman, Stephen Gray, Tao Zhang, Ming-Jen Hseuh, Jianxing Huang, Dou Zhang, Vee Petchthevee, and Xuan Lu.

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Finalist 入围

Sustainability Master Planning and Study for Hong Kong Science Park Phase 3 Development (SP3)

香港科学园第三期可持续发展总体规划及研究

Team or Organisation Name:
Ove Arup & Partners Hong Kong Ltd.
Location: Pak Shek Kok, Shatin, Hong Kong
Completion Date: Estimated 2013 - 2015
Site Area: 6.24 hectares
Gross Floor Area: 105,000 m²
Building Type: Commercial (Office) Development

Key Team Members
Client: Hong Kong Science and Technology Parks Corporation
Architect: Ronald Lu & Partners (Hong Kong) Ltd.
Planner: Ronald Lu & Partners (Hong Kong) Ltd.
Land Consultant:
Ove Arup & Partners Hong Kong Ltd.
Quantity Surveyor:
Davis Langdon & Seah Hong Kong Ltd.
Sustainable Design Consultant:
Ove Arup & Partners Hong Kong Ltd.
Wind/Air Ventilation Consultant:
Ove Arup & Partners Hong Kong Ltd.

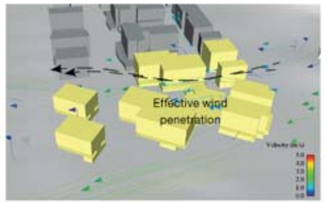
Sustainability Master Planning for the Hong Kong Science Park Phase 3 Development (SP3) adopts a holistic and integrated approach that strives to enhance sustainability performances through-out its life cycle – from master planning, building design, to operation with establishment of green lease and user's manual.

To accomplish its vision of being a role model for sustainable design and construction, SP3 is targeted to achieve net zero carbon in long run, which is the first large-scale development with this goal in Hong Kong.

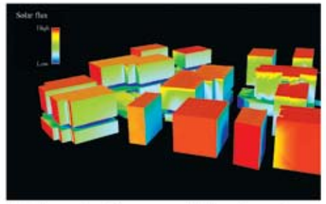
The development is located at Pak Shek Kok with a total site area of 6.24 hectares. Nine technology buildings, one energy building and amenity facilities are to be built, boasting a total gross floor area of around 105,000 square meters.

At master planning level, building separation are widened and opened towards summer prevailing wind / sea breeze to enhance air ventilation. Building permeability near pedestrian level is enhanced by having podium gardens on 1/F and setback on G/F of the buildings. Meanwhile, building orientations are optimized to face north-south for most buildings to reduce west-facing facades / solar heat gain. Underground carpark are opened up to landscaped areas which will be naturally ventilated to reduce energy use. The development will also achieve a green coverage of 30% or more to avoid urban heat island effect.

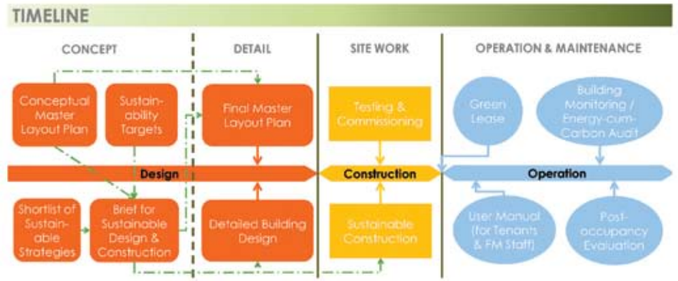
The low / zero carbon strategies comprise 1) passive strategies to reduce demand; 2) active design to enhance energy efficiency; and 3) promotion of effective energy usage by tenants. These strategies altogether offer 65% energy saving compared with the EMSD Building Energy Code and reduction of approximately 9,950 tonnes of carbon emissions, equivalent to planting of around 432,700 nos. of mature trees. By using renewable energy including solar, wind and bio-fuel, SP3 is targeted to achieve net zero carbon by 2020 – 2026.



Enhance air ventilation through widening of building separation and providing void decks on 1/F of the buildings
加阔楼宇之间的距离及利用平台花园加强空气流通



Building orientations are optimized to reduce west-facing façades for solar heat gain reduction
楼宇座向减少向西的外墙面积，降低太阳辐射



A holistic and integrated approach to enhance sustainability performances of SP3 through-out its life cycle
以全面及综合手法提高科学园第三期整个生命周期的可持续性表现

香港科学园第三期可持续发展总体规划及研究以全面及综合手法，致力提高项目由总体规划、建筑设计至楼宇运作整个生命周期的可持续性表现。

为实现成为可持续建筑典范的愿景，科学园第三期是香港第一个以零排放为长远目标的大型建筑群。

科学园第三期位于白石角，占地约6.24公顷，整体楼面总面积约为105,000平方米。发展项目包括9幢大楼、1幢能源大楼及辅助设施。

在总体规划上，建筑师加阔了楼宇之间的距离，而通风走廊的布局亦与盛行风及海风的方向相对应。项目亦利用平台花园及将地面建筑线后移使行人路的空气更加流通。另外，大部分楼宇以南北为主要座向，减少向西的外墙面积，因此亦降低了太阳辐射。地下停车场与地面的园景区连接，利用自然通风减少能耗。为避免热岛效应，项目的绿化率更会达到三成或以上。

在建筑设计上，项目采用了阶段式的低碳/零碳设计策略，包括：1)被动式设计减少建筑能源需求，2)主动式设计提高能源使用效率及 3)鼓励租户节约用电。与机电工程署的《建筑物能源效益守则》的基本要求比较，上述的节能/减碳策略令科学园第三期节能达65%及降低碳排放达9,950吨，相当于432,700棵成年树木1年的碳吸收量。利用可再生能源包括太阳能、风能及生物燃料，科学园第三期将有条件于2020至2026年达致零排放。

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Finalist 入围

Sustainable Master-planning for Wuhan Tiandi Mixed Use Development
武汉天地可持续总体规划

Wuhan Tiandi Mixed Use Development (WHTD) is a mixed use development with site area of 48 hectares, embracing high quality retails, restaurants, hotels, class A offices, live-work residence and public amenities. The total GFA of about 1,500,000 square meter is planned to accommodate a population of 20,000. WHTD has been designed to be a socially vibrant, ecologically restorative, economically sound community. The success of realizing a Sustainable Community from concept master-planning to building design and operation stage will serve as a role model for Sustainable Community Development in China and a crucial process and lesson for the industry. It's a joint effort by collaboration of Developer, Government, design consultants, local industry, suppliers and local academic experts.

WHTD is the First Commercial Development with district scale in East Asia certified by International Green Neighborhood Design Standard, Leadership in Energy & Environmental Design (LEED®) - Neighborhood Development (ND) Pilot Gold rating. It's the first project in China successfully adopted holistic Sustainability Approach based on Smart Growth, New Urbanism, Green Building Design principles to achieve Sustainability vision and objectives.

武汉天地综合开发（武汉天地）是一个融合高品质零售、餐厅、酒店、甲级写字楼、住宅和公共休憩设施的混合型发展项目。项目占地48公顷，总楼面面积约1,500,000平方米，预计能容纳2万人口。实施全面的可持续发展策略后，武汉天地将打造成一个有朝气的、生态复兴的、经济活跃和多元化的可持续社区。此项目成功地将总体规划中的可持续设计概念实现于可持续社区，包括实施至建筑设计及运行阶段，将成为中国可持续社区设计的楷模。此设计方法将成为中国实现可持续社区设计的重要过程及参考。此外，发展商、政府、设计顾问、本地业界、供应商和本地学术专家的共同努力亦是此项目的成功关键。

武汉天地是东亚地区第一个商业开发的社区获得国际绿色社区设计认证 — 美国能源及环境设计先锋奖（小区规划）（LEED®ND）金奖评级的项目。此设计奖项是由美国绿色建筑委员会、自然资源保护理事会和新城市主义协会颁授。此项目是中国第一个成功采用全面的可持续设计方法 — 基于精明增长、新城市主义及绿色建筑设计原则来实现可持续发展愿景及目标。

Team or Organisation Name:
Ove Arup & Partners Hong Kong Ltd.
Completion Date: 2009

Key Team Members
Client: Shui On Land
Project Manager: Shui On Land
Planner: Skidmore, Owings & Merrill LLP
Sustainability and LEED Consultant: Arup

ARUP SOM

Sustainability framework, site-specific strategies and implementation guidelines for each of following key focus areas have been developed to address the Global and local Sustainability issues. More than 50 sustainable strategies and key performance indicators have been developed and implemented.

- Sustainable Site Planning and Landscaping
- Transportation and Circulation
- Energy Management
- Water and Wastewater
- Material and Solid Waste Management
- Air & Indoor Environmental Quality
- Social Benefits and Community Development
- Preservation and Adaptive Reuse of Historic Building
- Design Innovation

Technical and Economic viability of proposed sustainable concepts and different design options have been evaluated by tangible and intangible environmental and economic benefits. Cost-benefit Analysis with Life-cycling Costing (LCC) methodology has been deployed to prioritize the identified key sustainable strategies that are technically viable.

Green Guideline has been developed to be part of legal obligations to ensure the consistent implementation of strategies and design quality at master-planning, building design, construction and operation stages. This project has been started construction and all completed buildings have been designed and constructed according to Green Guideline.

此项目制定可持续发展框架、为以下每个主要范畴制定可持续策略和实施指引来解决全球和本地的可持续发展问题。制订并实施的可持续策略和主要设计表现指标超过50个。

- 可持续场址规划及园林生态
- 运输与连接
- 能源管理
- 水与废水管理
- 物料及固体废物管理
- 空气及室内环境质素
- 社区福利和发展
- 保护及活化再利用历史建筑
- 创新设计技术

所有建议的可持续概念及设计方案均进行了技术和经济可行性分析，包括其环境和经济利益的评估。整个生命周期的成本效益分析能优先建议的可持续发展策略，提供一个综合的、实用可行的、符合成本效益的可持续社区设计方案。

绿色导则是一份具约束力的指引，确保在总体规划、建筑设计、建造和操作阶段时可持续策略实施的一致性。此项目已进行施工，所有已完成的建筑已根据绿色导则设计和建造。

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Planning Study Projects 规划类别

Finalist 入围

Wetland Park Road – Integrated Elderly Community Project

湿地公园路 –「长者综合社区项目」

Team or Organisation Name:
Hong Kong Housing Society
Location: **Tin Shui Wai, Hong Kong**
Completion Date: **2014 (Phase 1) & 2018 (Phase 2)**
Site Area: **64,400 m²**
Gross Floor Area: **96,600 m²**
Building Type: **Living accommodation for the elderly with supporting facilities**

Key Team Members
Client: **Hong Kong Housing Society**
Architect: **AGC Design Ltd.**
C&S Engineer: **Siu Yin Wai Associates Ltd.**
Building Services Engineer: **Meinhardt (M&E) Ltd.**
Quantity Surveyor: **Rider Levett Bucknall Ltd.**
Town Planner: **Townland Consultants Ltd.**
Environmental/Ecology Consultant:
Environ Hong Kong Ltd.
Wind/Air Ventilation Consultant:
Environ Hong Kong Ltd.

Ecological Concerns and Considerations 融合周边生态环境

Being the pioneer in providing quality elderly housing, the Hong Kong Housing Society is planning an innovative and sustainable elderly housing solution in the form of an "Integrated Elderly Community" on a site next to the Hong Kong Wetland Park. This project will provide barrier-free and safe accommodation for the elderly with comprehensive supporting facilities ensuring them with a happy and healthy ageing.

With a "Green Park" concept, the design team will create an elevated landscaped deck on site to enhance traffic safety and tranquility in its living environment, with well-planned articulations to create pockets of area for pleasant views and vistas.

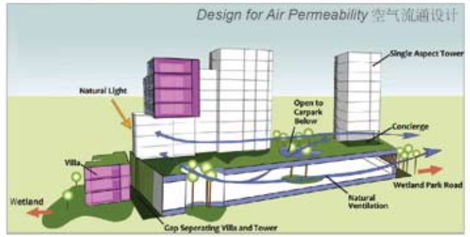
香港房屋协会是发展优质长者住屋的先驱，现于香港湿地公园侧筹建一个创新及可持续发展的综合长者社区，提供安全及无障碍设计的长者居所，并附设配套设施确保长者享有健康快乐的黄金岁月。

为配合周边环境，设计采用「翠绿花园」为主题，住宅建设在一个园境平台上，以改善交通安全及为住客提供宁静舒适及景致怡人的生活环境。

Maximize Greening 提高绿化

Stepping of Buildings 建筑物高度以梯级式递减

Breezeway 通风廊



A 30-metre non-building area as a buffer will be reserved at the north of the site with additional green courtyards to minimize disturbance to the natural habitats in the adjacent wetland. Also, lower-density development will be along this buffer, stepping up to the south to address it being a transition between the ecologically-rich wetland and the dense Tin Shui Wai urban area.

A 35-metre corridor will be maintained as a major north-south breezeway through the site. A lake built therein will help reduce the heat-island effect and act as a reservoir for grey water recycling. Ample spaces will be allowed between building blocks as secondary breezeways to enhance comfortable natural ventilation within the development and in the neighbourhood as proven by environmental studies.

Well-planned openings at the sides and on the elevated deck will reinforce natural ventilation and lighting underneath. Together with planting and vertical greening, the energy consumption will be substantially reduced and thus a low-carbon emission design will be achieved.

Special building façade designs and construction methods will be carefully studied and selected to minimize impact to the rare habitats found in the neighbourhood.

The project will echo well with the surrounding natural green to achieve sustainability and environmental friendliness, and meanwhile to enable co-existence of diversified land uses for human and natural habitats, both being happy and healthy.

地盘北方接连湿地公园的边缘，将预留一片30米阔的缓冲区，连接绿化庭园以减少影响附近湿地的生态环境。楼宇高度亦从湿地以梯级式向天水围市镇逐渐增加，将建筑群和湾地融汇于翠绿宁静的大自然环境之中。

项目将保留一道35米阔的南北方向通风廊，其中建设人工湖以减低热岛效应和储水作洗盥污水循环再用，建筑物的分布座向，将依据环境评估分析设计，保留足够空间作通风廊，以增加项目内及附近地区的空气流通，并减低交通噪音。

位处园境平台侧面及上方的通风口，可加强自然通风及日照，连同园境植物及垂直绿化，可大幅减低能源消耗，达至低碳排放设计的目的。

建筑物的外墙设计及建筑方法亦会小心筛选，以减少影响周边的生态环境。

项目将融合四周的自然翠绿景致，维持长者们与自然生态可健康、快乐及和谐共存的环境，达至可持续的多元化土地发展。

Architect 建筑师	AGC Design Limited
Environmental Consultant 环境顾问	ENVIRON Hong Kong Limited
Town Planning Consultant 城市规划顾问	Townland Consultants Limited

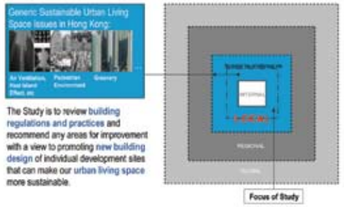
Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Research Study Projects 研究类别

Merit Award 优异

Consultancy Study on Building Design that Supports Sustainable Urban Living Space in HK

对应香港可持续都市生活空间之建筑设计顾问研究



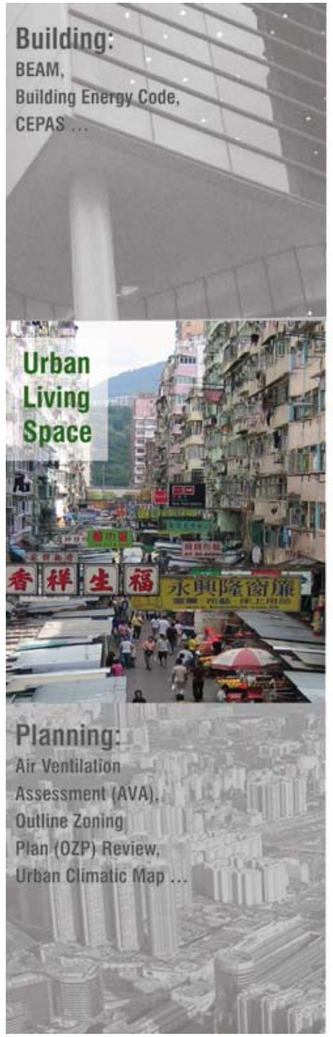
Towards a Greener Future

Ronald Lu & Partners was commissioned by the Buildings Department Hong Kong Special Administrative Region Government to conduct a research-propelled study on how architectural design can support sustainable living. In a sub-tropical city dominated by skyscrapers, numerous critical environmental challenges are prevalent. These include the wall effect, where high-rise developments adversely affect natural ventilation, and the canyon effect, with its negative impact on pedestrians' environment. In addition, global warming is further encouraging the heat island effect, initially aggravated by the humid subtropical climate.

Though the government is aware that further synchronization is required at the planning and building levels, RLP's research indicates that strategies affecting new building design can enhance the quality of Hong Kong's hyper-dense urban landscape. The comprehensive study includes scientific evaluation of state-of-the-art know how pertaining to urban climatology, expert reviews on local and overseas legislative practices, parametric studies on benchmarking air ventilation performance specifically within the local context, selected case studies, and stakeholder consultations on prioritization of approaches to tackle the challenges on hand. The study determined a number of recommendations. Highlights include three aspects of simple to use design guidelines: building permeability, site coverage of greenery and building setback facing a deep street canyon. To encourage innovation, performance-based alternative design approaches are welcome to demonstrate comparable environmental improvements.

Team or Organisation Name:
Ronald Lu & Partners (Hong Kong) Ltd.
Completion Date: **2009**

Key Team Members
Client: **Buildings Department, HKSAR Government**
Architect: **Ronald Lu & Partners (Hong Kong) Ltd.**
Research Investigator:
Ove Arup & Partners Hong Kong Ltd.
PlanArch Consultants Ltd.
The Hong Kong Polytechnic University, Dept. of Building & Real Estate
The Chinese University of Hong Kong, School of Architecture

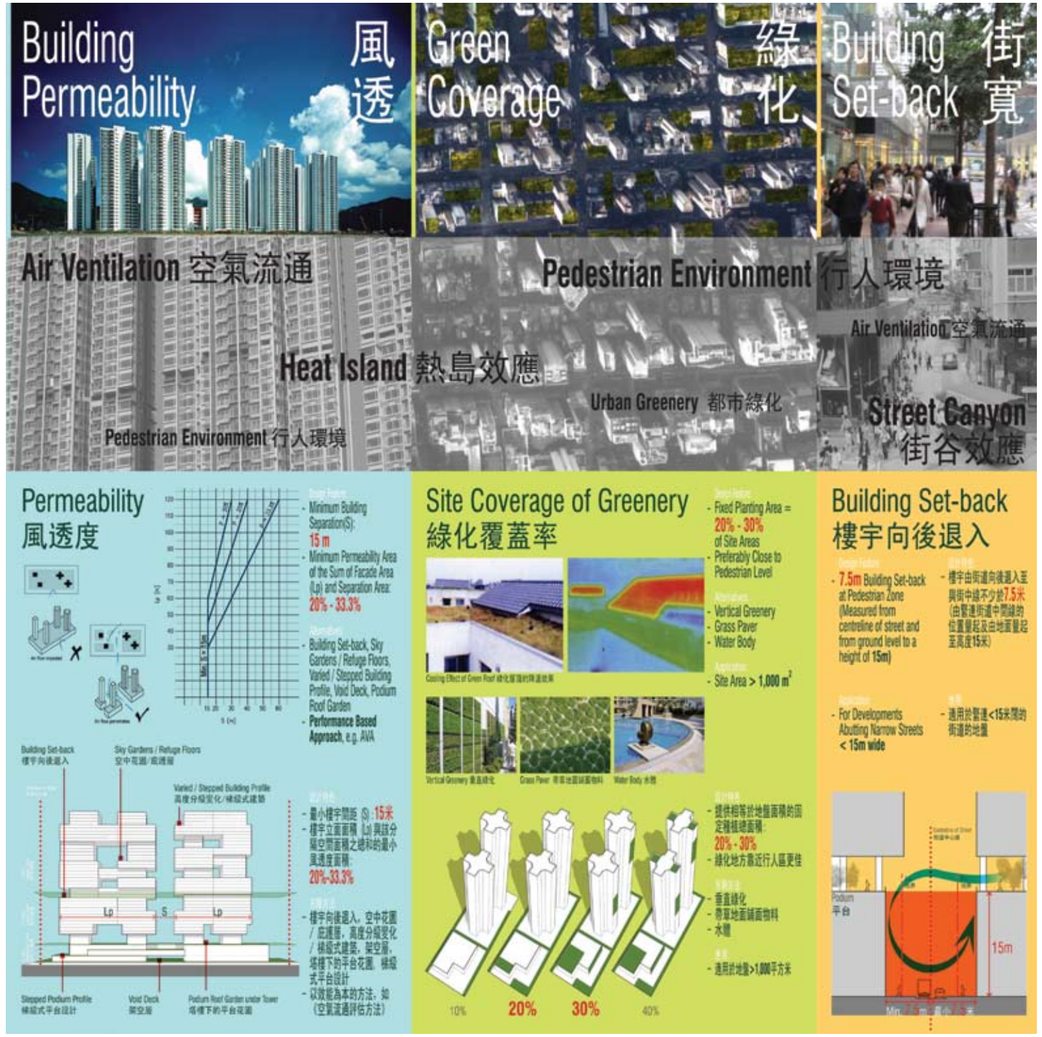


建立一个绿色的未来

吕元祥建筑师事务所获香港特区政府屋宇署的委聘，负责研究建筑设计如何能支持可持续的生活模式。香港是一个布满高楼大厦的亚热带城市，因而要面对很多重要的环境挑战。这包括屏风效应（密集的高楼大厦影响自然通风）和街谷效应（为行人环境带来负面影响）。此外，全球暖化和潮湿的亚热带气候，也令香港的热岛效应进一步加剧。

政府也认识到规划和建筑层面需要更同步协调，而吕元祥建筑师事务所的研究显示了新的建筑设计可参与改善香港密集的都市生活空间。科学之研究过程，包含都市气候评估、本地及境外环保建筑专家论证、模拟空气流通效能参数研究、个案分析及与持分者磋商以什么方法来处理手头上的挑战。

研究总结出若干建议，重点包括三个具实效而简易之设计指引：建筑的「风透度」、「绿化率」和窄街「楼宇向后退入」。为了鼓励创意，我们欢迎以「成效为本」的另类创意设计理念，并期望它能展示出对环境的兼容。



Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Research Study Projects 研究类别

Finalist 入围

Hybrid Ventilation
复合通风系统

The research study of hybrid ventilation attempts to use wind, one of the natural resources, to ventilate shopping centres. This in turn contributes to creating a sustainable environment by saving energy and reducing carbon footprint.

This research project used Hybrid Ventilation to reduce the carbon footprints of low rise shopping centres. It is a system of ventilation installations that uses a mixed mode of centralized air-conditioning, free cooling and natural ventilation. Either one of the three modes would come into operation when temperature, humidity, wind and rain data captured by the sensors installed around the centres have reached the preset parameters. The suitably placed openings of assessed dimensions would be opened either automatically or manually to allow natural ventilation to take place by means of stack effect. We apply Hybrid Ventilation in 3 pilot projects in collaboration with stakeholders at various stages of the building cycle; the suitability of the installations were initially verified by means of desk top design studies, e.g. dynamic thermal analysis and computer fluid dynamics analysis etc., followed by comparisons of layout, opening locations, different dimensions of openings and air flow pattern etc. in order to achieve the optimum natural ventilation rate. A two year performance validation will generate result captured from real life operation pattern and utility rate of the 3 modes of operation. This will be compared against the outdoor conditions at the time and the result will provide solid information for updating the Performance Parameters. The operation mechanism is simple to install, manage and maintain, and the principle of this sustainable design can easily be adopted at other suitable sites.

When using Hybrid Ventilation in a small size shopping centre under 4,500 m^2 internal floor area, the anticipated average annual reduction of electricity usage would be around 8.65%, equals to a reduction of CO_2 emission by 22,000 kg/yr, or the annual planting of 956 number of mature trees to remove the CO_2 otherwise generated. So the use of Hybrid Ventilation is indeed a very sustainable way to contribute to the environment.

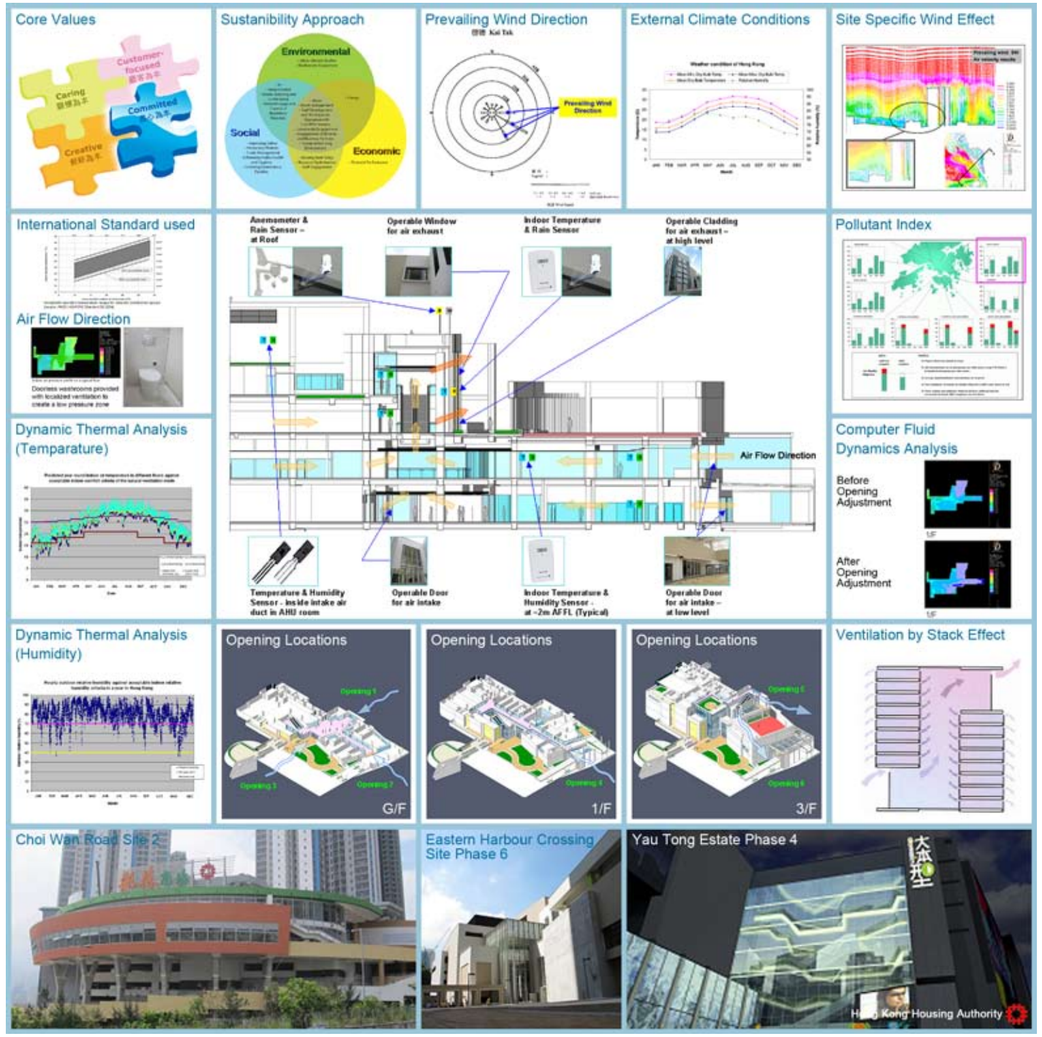
复合通风系统应用的研究尝试运用了自然风：一个天然的资源，到商场的空调系统内，以帮助缔造可持续发展的环境，减少建筑物用于空气调节的耗电量以及减低商场的碳足迹。

本科研项目使用复合通风系统作为减低商场碳足迹的设施之一。复合通风是一个包含中央空调模式，外气空调模式及自然通风模式的通风系统。当安装于商场内及外的感应器于空气温度、湿度、风速及雨量数据达到预设的数值时，三个通风模式中的其中一个便会自动运作。当自然通风模式运作时，有关通风口便开启，自然通风便可因烟囱效应而产生。复合通风经过研究后，已经在香港房屋委员会辖下的三个先导项目中，于不同建筑周期阶段试验应用。为证明安置于商场之复合通风系统的效能，首先采用电脑模拟方法如动态热模拟及计算流体力学；再按不同的平面布置、通风口位置、通风口尺寸及气流模式等作不同比较，从而找出一个最有效的自然通风流量。并且采用一个为期两年的核实计划，记录真实的运作模式，及比较在不同的室外气候环境下三个通风模式的实际使用率。所得的资料及结果将会用作优化日后操作之参考。此俱备持续发展功能的通风系统是易于安装，管理及维修；其设计原理也可采用于其他合适的项目。

在一个 4,500 平方米以下的商场，采用复合通风系统，每年平均可减低约百分之八点六五(8.65%)的总商场空调之耗电量，这是相等于每年 22,000 公斤二氧化碳排放量，或者是 956 棵成熟树木一年所能减除的二氧化碳量。由此可见，应用复合通风系统的确能够大力促进可持续发展，提升环境质素。

Team or Organisation Name:
Hong Kong Housing Authority
Completion Date: **2010**

Key Team Members
Client: **Hong Kong Housing Authority**
Project Manager: **Hong Kong Housing Authority**
Architect: **Hong Kong Housing Authority**
Building Services Engineer:
Hong Kong Housing Authority
Quantity Surveyor: **Hong Kong Housing Authority**
Environmental/Ecology Consultant:
Ove Arup & Partners Hong Kong Ltd.



Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Research Study Projects 研究类别

Finalist 入围

Hysan Place
希慎广场

Photography by Hysan Development Co. Ltd

Redeveloped on the site of the former Hennessy Centre at 500 Hennessy Road, Hysan Place is facing several environmental and social challenges due to its location. Causeway Bay is one of the most vibrant commercial districts in Hong Kong. Residents enjoy exceptional transport connection and other conveniences in daily life, but also suffer from air pollution, heat island effect and a lack of open space. The redevelopment of Hysan Place provides the opportunity to implement the Building Sustainability Concept tailor-made for high density urban areas.

To find the solutions to various local environmental problems, comprehensive researches and mock-ups were conducted during the planning stage for this 40-storey mixed-use office and retail building. This process led to an unusual design and many unprecedented practices in its construction and in its future leasing, operations and management.

希慎广场位处铜锣湾轩尼诗道500号的兴利中心旧址，其地理位置使重建项目将面对各种环境及社会问题的挑战。铜锣湾是香港其中一个全港最繁华热闹的商业区，居民可享受生活及交通上的方便，但同时却要面对空气污染、热岛效应及缺乏公众活动空间等问题。希慎广场重建项目提供机遇以实践为高密度社区专门设计的可持续建筑概念。

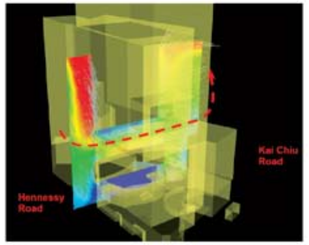
为了寻找缓和该区不同环境问题的方法，项目团队于设计阶段针对该40层高的写字楼及商铺综合建筑项目进行了全面的研究及模型实验，使希慎广场将拥有独特的建筑设计及革新的建造、租赁、营运和管理方法。

Team or Organisation Name:
Hysan Development Co., Ltd.
Completion Date: Grand Opening 2012

Key Team Members
Client: Gearup Investments Ltd.
Architect: Dennis Lau & Ng Chun Man Architects & Engineers (H.K.) Ltd.
Design Architect: Kohn Pedersen Fox Associates
C&S Engineer: Meinhardt (C&S) Ltd.
E&M Engineer: Parsons Brinckerhoff (Asia) Ltd.
Quantity Surveyor: Davis Langdon & Seah Hong Kong Ltd.
Landscape Architect: Urbis Ltd.
Main Contractor: Gammon Construction Ltd.
Sustainable Design Consultant: Ove Arup & Partners Hong Kong Ltd.
Wind/Air Ventilation Consultant: Ove Arup & Partners Hong Kong Ltd.

Prevailing wind blows from South-east and South-west (down the hill) in summer and from North-east (through the Harbour) in other seasons

Average Air Velocity Ratio (VR) at Prevailing Wind Direction of North-east



Permeable Architectural Design to create a wind path between Hennessy Road and Kai Chiu Road

Sustainable Design

Amongst the most visible sustainable features of Hysan Place are the Urban Windows – large openings at lower levels in the building – allowing efficient air flow through the area, reducing wall effect and retaining a high level of permeability. They provide the perfect setting for sky gardens, which help to reduce the heat island effect with their lush greenery. Hysan Place will consume less energy and provide a healthy and productive indoor environment that emphasizes the use of natural light and ventilation. Light shelf, solar shading and low emissivity glazing help to encourage daylight and prevent heat gain depending on outdoor conditions. Vents allowing choice of natural ventilation will be built into the curtain wall, while free cooling is also available on office floors by bringing outside air to directly lower indoor temperature.

As drivers of change in the building industry:

- it is a green initiative driven by a private company
- Although a single building, it goes beyond its site boundary, taking its neighbourhood into full consideration, aiming to benefit the environment of the entire district
- It aims to answer some of the environmental problems associated with high density and high rise development
- It is tailored to answer the climatic and geological conditions of Hong Kong
- More importantly, it helps to drive the market and community approach towards sustainability

可持续发展设计

建筑设计最大的持色，在于引入环保的考虑，在广场的低层部份，留出了多个大面积的「城市绿窗」，一方面使周边的空气更加流通，改善地区的空气污染问题，另一方面使建筑看起来更加通透，减低视觉上的屏风效应。最低层的「绿窗」，将广植树木，成为真正的「空中花园」，为市民提供市区中难得的绿州，花园内的树木，更有助减低城市的热岛效应。

希慎广场的环保设计，不单减低耗用的能源，更通过引入自然光线及通风，缔造更健康的室内环境，提高员工的生产力。大厦的玻璃幕墙采用了低辐射玻璃，并按各方向的环境问题，设计遮阳板或反光板，既节能又为室内提供适当的自然光；幕墙更结合了通风口设计，解决一般商厦不能自然通风的问题；设备方面，设计可于适当的季节，直接引入室外空气，减低空调的耗能。

作为推动绿色建筑的引擎：

- 这是由私人企业主动倡议的绿色建筑改革。
- 虽然希慎广场为单栋式建筑，但其设计考虑却远超项目范围，并以帮助社区为目标。
- 建筑研究旨在解决因高密度建筑而产生的各种环境问题。
- 这是因应香港气候及地理环境的专门解决方案。
- 更重要的是希慎广场带领市场及公众趋向可持续发展。

ARUP Hysan希慎 DLN KPF

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Research Study Projects 研究类别

Finalist 入围

Research Study on Holistic Environmental Approach for Residential Design
居者环境为本设计住宅研究

Research Study on Holistic Environmental Approach for Residential Design

Hong Kong is well-known for its densely-built cityscape. Tall buildings, narrow streets and severe pollution from vehicles lead to unfavorable living environment for the residents. The purpose of the research is to improve the living environment of Hong Kong people, by improving residential design with staggering blocks which considers Lighting, Ventilation, Acoustic and Community Relationship, at the same time conform to the conscientious requirements of Building Department (BD) and Environmental Protection Department (EPD). A site in Sham Shui Po, a typical old district of Hong Kong, is selected among numerous redevelopment projects proposed by Hong Kong Urban Renewal Authority (URA) for the research. The research/design demonstrates a functional, effective and sustainable prototype for future urban residential development in high dense urban settings in Hong Kong or other cities.

香港是一个高密度居住环境的城市，污染问题严重。为了改善香港居民的生活环境，这研究分析梯阶式环保设计，并考虑到日光、空气流通、噪音问题及小区关系，而同时达到屋宇署及环境保护署的标准。深水埗作为香港其中一个最早发展的地区，市区重建局提出以区内的一位置作重建设计研究。研究结果表示设计可成为香港未来住宅设计发展的方向。

Team or Organisation Name: **AD+RG Architecture Design and Research Group Ltd.**
Completion Date: **2009**

Key Team Members
Architect: **AD+RG Architecture Design and Research Group Ltd.**
Landscape Consultant: **ACLA Ltd.**
Traffic Consultant: **Atkins China Ltd.**
Environment Consultant: **Cinotech Consultants Ltd.**
Research Supporting Organisation: **Urban Renewal Authority**

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

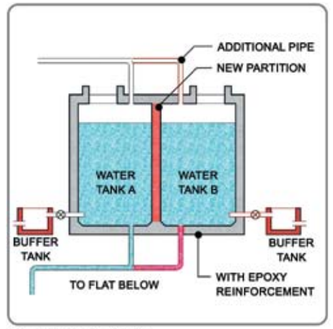
Research Study Projects 研究类别

Finalist 入围

Twin Tank System
- Environmental-friendly and Uninterrupted Water Supply
环保及供水无间断双水缸系统

Team or Organisation Name:
Hong Kong Housing Authority
Completion Date: **September 2009**

Key Team Members
Client: **Hong Kong Housing Authority**
Project Manager: **Hong Kong Housing Authority**
Architect: **Hong Kong Housing Authority**
C&S Engineer: **Hong Kong Housing Authority**
Building Services Engineer:
Hong Kong Housing Authority



New twin tanks design

Gate valves

Hopper / Buffer tanks

Twin Tank System – Environment-friendly and Uninterrupted Water Supply

The green building research study on Twin Tank System brings benefits to the environment by saving water and convenience to public rental housing tenants by providing uninterrupted water supply during cleansing of water tanks in domestic blocks. The system so derived meets the Hong Kong Housing Authority's corporate objectives and core values of 4C's, namely Caring, Customer focused, Creative and Committed. It meets present social, economic and environmental needs but NOT at the expense of future generations.

Water Authority requires regular cleansing to fresh and flush water tanks in every three months. Interruption of water supply is inevitable. Water will be wasted when tenants store up water before stoppage, wash away muddy water after resumption of water supply and use fresh water for flushing. Large amount of water will also be discharged from the wash out across the roof top to the drain point before cleansing. It causes possible damages to the roof slab in case of sea water is used in flushing. 30% of existing water tanks in 40 years old buildings require immediate replacement or extensive repairs. With the clear objectives on "Saving water", "Providing uninterrupted water supply" and "Reducing maintenance and repairs", Hong Kong Housing Authority initiated the concept of Twin Tank System in January 2007. It was estimated that with the capacity of the twin tanks at the roof only would be sufficient to maintain uninterrupted water supply to tenants during the cleansing works. Water Supplies Department accepts this novel system for promulgation under their Amendments to "Hong Kong Water Works Standard Requirements". All new Public Rental Housing projects at design stage has incorporated the system since May 2008 onwards. Shek Mun Estate completed in May 2009 was the first estate using the system and has no interruption to the water supply during cleansing. The system can save up to 2.8 million litres of water per year and can bring convenience to75000 flats in the next 5 years. The other associated enhancements include direct discharge of waste water to waste stack and the use of epoxy coated reinforcement and higher grade concrete for better durability and sustainability structure of roof slab and roof tanks. We estimate cost saving of $2 millions for each domestic block for replacement of water tanks of each block in 30 to 40 years.

We have displayed an innovative system that meets the 3 dimensions of sustainability: Economics, Environmental and Social Sustainability. We set good example to raise public awareness in saving water, a natural resource: water which is becoming more scarce in the

双水缸系统 - 支持环保和无间断供水

环保建筑研究- 双水缸系统引证了系统在清洗水缸时，如何以节约用水达到环保效益，和利用无间断供水方便公屋居民。系统是根据香港房屋委员会机构方针和4C 的基本信念，即关怀为本、顾客为本、创新为本、尽心为本，在没有增加将来负担的情况下，切合了目前社会、经济和环境的需要。

按照水务监督的规定，物业拥有人必须每隔3个月定期清洗食水水缸和冲厕水缸，却无可避免在过程中令供水中断。居民往往需要在停水前储起食水，在恢复供水后冲走黄水和用食水冲厕，过程中浪费大量食水。而且在清洗水缸之前，大量用水亦会经天台流走到去水口损坏楼面。若果冲厕水是咸水的话，损害天台楼面的情况尤为严重。接近三成的约40年楼龄楼宇需要即时更换水缸或维修工程。根据节约用水、无间断供水和减少维修工程为清晰方针，香港房屋委员会在2007年开始研发双水缸系统的概念。我们估计在天台半个水缸的储水已经足够提供居民在清洗另一半水缸时使用，所以双水缸系统只在天台水缸采用。水务署亦乐意接纳这项新设计，并公布《香港水务标准规定》的修订。

从2008年5月开始，所有在设计中的公屋项目都采用双水缸系统。在2009年5月落成的第一个设有此系统的公共屋邨，在清洗水缸时，居民享受到无间断供水的服务。系统预计节约用水达每年280万公升，在五年内将会有7万5千个公共租户受惠无间断供水。此外其他相关改善的工程包括把剩余的废水直接由水缸排放到废水管，以及在天台楼面及双水缸使用环氧树脂涂层钢筋和较高等级混凝土强化结构设计。估计在未来30至40年间每座节省200万元用作更换水缸的费用。

我们展示了一个在经济、环境和社会三方面已达到三维可持续的新概念系统。我们亦为社会作出好模范，以引起社会对地球一个愈来愈缺乏的资源 - 节约用水的关注。

Hong Kong Housing Authority

Research & Planning – Hong Kong & Asia Pacific
研究及规划类别 – 香港及亚太地区

Research Study Projects 研究类别

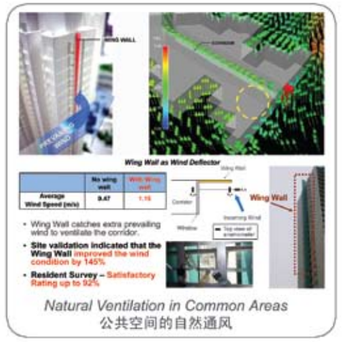
Finalist 入围

Validation of Micro-climate Studies for Sustainable Public Housing Development

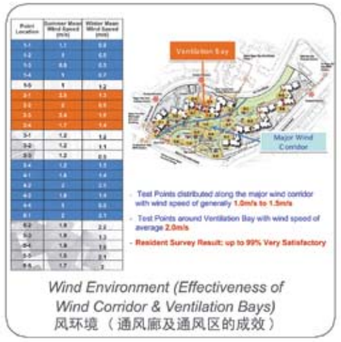
可持续发展公屋微气候研究的验证

Team or Organisation Name:
Hong Kong Housing Authority
Completion Date: 2010 to 2011

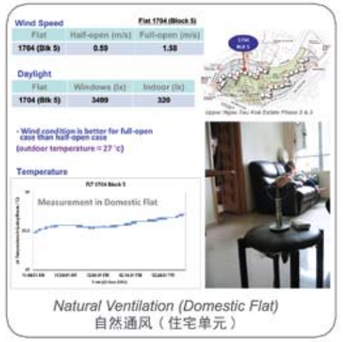
Key Team Members
Client: Hong Kong Housing Authority
Architect: Development & Construction Division, Housing Department, HKSAR Government
Project Manager & Planner: Development & Construction Division, Housing Department, HKSAR Government
Environmental/Ecology Consultant: Ove Arup & Partners Hong Kong Ltd.



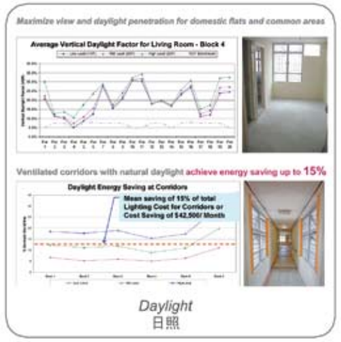
Natural Ventilation in Common Areas
公共空间的自然通风



Wind Environment (Effectiveness of Wind Corridor & Ventilation Bays)
风环境（通风廊及通风区的成效）

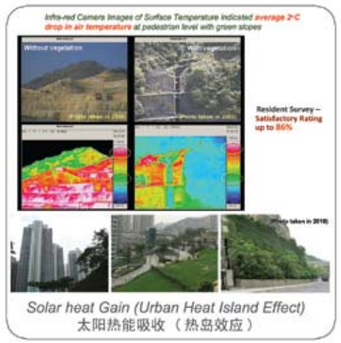


Natural Ventilation (Domestic Flat)
自然通风（住宅单元）

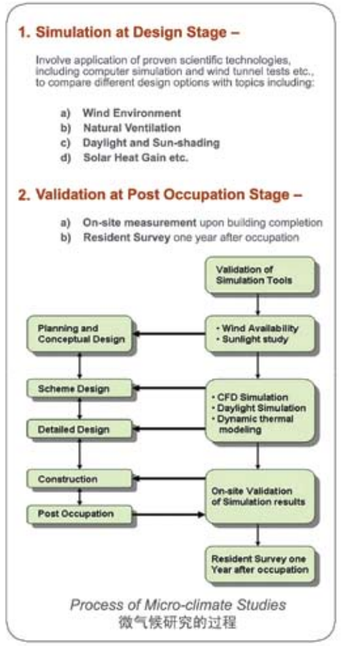


Daylight
日照

Sun-Shading (External Open Spaces)
挡阳（户外休憩用地）



Solar heat Gain (Urban Heat Island Effect)
太阳热能吸收（热岛效应）



Process of Micro-climate Studies
微气候研究的过程

Measurement Equipment
测量工具

Validation of Micro-climate Studies for Sustainable Public Housing Development

Planning and design play important role in creating a healthy living environment. Hong Kong Housing Authority initiated in 2001 the application of Micro-climate Research Studies in the planning and design of housing development using latest proven technologies, including computational fluid dynamics simulations, wind tunnel tests and daylight simulation tools, etc. These studies enable holistic consideration to optimize the development potential and enhance the built environment of the neighbourhood. From 2004 onwards, Micro-climate Research Studies have been applied to all new public housing developments covering core topics of wind environment, natural ventilation, daylight and solar heat gain, as well as other special topics such as urban heat island effect, pollutant dispersion, etc. Over 35 projects have now adopted the studies so as to provide cleaner and greener environment for our tenants, and for a healthy community.

After occupation of the above projects, we have conducted on-site measurement and resident survey at post occupation stage since 2008 to validate the simulation assumptions of the Micro-climate Studies at planning and design stages. We can also identify areas for local refinement based on site measurement results. Up to date, validation for two pilot projects was completed with on-site measurement results being compatible to simulation ones and 10 other projects are in progress. Relevant results can be applied for formulating benchmark for environmental planning and design in public housing.

According to validation results, the micro-climate studies are instrumental to improve the environmental performance for each new public housing development, which have long-term benefits to enhancing the built environment and quality of living of the community as a whole. The application of the micro-climate studies in urban planning increases the practitioners' and public awareness of the importance of sustainable development in the society.

可持续发展公屋微气候研究的验证

在缔造健康生活环境的过程中，规划与设计担当举足轻重的角色。香港房屋委员会在 2001 年创先进行微气候研究，应用在规划和设计公共房屋发展项目。所应用最新的科技，包括电脑流体动力模拟测试、风洞测试和采光模拟程式等。微气候研究有助全面考虑如何善用发展潜力，以及优化毗邻已建社区的环境。由 2004 年起，所有新的公共房屋发展项目均使用微气候研究，当中的核心研究计有风环境、自然通风、采光和太阳热能吸收，与及其他特别的研究，例如城市热岛效应、空气污染扩散等。至目前为止，应用微气候研究的工程项目已超过 35 个，为住户提供更清洁、更绿化的环境，建设健康的社区。

自 2008 年起，我们在居民入住后，均进行实地测量和住户调查，旨在验证电脑的模拟数据，我们也根据实地测量结果在个别位置作微调优化。至目前为止，两个首轮发展项目已完成验证工作，结果与模拟数据相乎；另外十个项目现正进行验证，有关结果可作日后公共房屋环境规划及设计的指标。

根据验证结果，微气候研究对每一个公共房屋发展项目的环境表现，无论在已建环境及整体社区生活素质方面都起了长远的优化作用。微气候研究的应用提升了业界及市民认知可持续发展社会的重要性。

List of Participating Projects

Project Name	Applicant
New Buildings Category - Hong Kong & Asia Pacific / 新建建筑类别 – 香港及亚太地区	
GE China Technology Park, Shanghai, China / 通用电气（中国）科技园区	*AECOM Asia Co., Ltd.*
HKSAR's participation in the World Exposition 2010 Shanghai China - The Hong Kong Pavilion, Shanghai, China / 香港特别行政区参与中国2010年上海世界博览会– 香港馆	*Architectural Services Department, HKSAR Government*
IBR Headquarters, Futian District, Shenzhen, China / 建科大楼	*Shenzhen Institute of Building Research Co., Ltd.*
ITE College West Campus, Choa Chu Kang Grove, Singapore / 新加坡工艺教育(西区)学院	*Gammon Pte Ltd.*
Kagoshima Museum of Environment: Planet Earth and its Future, Kagoshima City, Kagoshima Prefecture, Japan / 鹿儿岛环境未来馆	*Nikken Sekkei Ltd.*
Korea Samsung GREEN TOMORROW, Korea / 韩国三星 "绿色未来"	*Ove Arup & Partners Hong Kong Ltd.*
KPMG-CCTF Community Centre, Penzhou, Sichuan Province, China / 毕马威安康社区中心	*The Oval Partnership Ltd.*
Mabuchi Motor Corporation Headquarters, Japan / 万宝至马达公司总部办公楼	*Nihon Sekkei, Inc.*
Maosi Ecological Demonstration Primary School, Xifeng City, Gansu Province, China 毛寺生态实验小学	*School of Architecture, The Chinese University of Hong Kong*
MoHURD No.1 site: Post Earthquake Village Re-construction and Demonstration Project in Ma'anqiao Village, Sichuan, China / 马鞍桥村灾后重建综合示范项目	*School of Architecture, The Chinese University of Hong Kong*
The National Portrait Gallery, Canberra, ACT, Australia / 澳洲国立肖像艺术馆	*Steensen Varming (Australia) Pty Ltd.*
Nissan Advanced Technology Center, Japan / 日产先进技术开发中心	*Nihon Sekkei, Inc.*
Palace 66, Shenyang, China / 恒隆皇城广场	*Ove Arup & Partners Hong Kong Ltd.*
Pixel, Australia / 像素	*Grocon Group*
Santos Place, Australia / 桑托斯地	*Donovan Hill*
Surry Hills Library and Community Centre, Sydney, NSW, Australia / 萨里山图书馆及社区中心	*Steensen Varming (Australia) Pty Ltd.*
Vanke Headquarters, Dameisha, Shenzhen, China / 万科总部	*Ove Arup & Partners Hong Kong Ltd.*
World Financial Centre - Beijing, China / 环球金融中心。北京	*Henderson Land Group*
Redevelopment of Lo Wu Correctional Institution, Hong Kong / 罗湖惩教所重建工程	*Architectural Services Department, HKSAR Government*
Dormitory and Facility Extension of United Christian College (Kowloon East), Hong Kong 汇基书院(东九龙)学生宿舍及综合大楼	*Ronald Lu & Partners (HK) Ltd.*
EcoPark Administration Building, Hong Kong / 香港环保园行政大楼	*Aedas Ltd.*
Exchange Tower, Hong Kong / 国际交易中心	*Sino Estates Management Ltd.*
HKYWCA Guesthouse Facilities, Hong Kong / 香港基督教女青年会营舍	*Ronald Lu & Partners (HK) Ltd.*
Hong Kong Community College (West Kowloon Campus), Hong Kong / 香港专上学园(西九龙校园) *(in collaboration with AGC Design Ltd.)*	*AD+RG Architecture Design and Research Group Ltd.*
HSBC New Data Centre at Tseung Kwan O Industrial Estate, Hong Kong / 汇丰银行数据中心	*Leigh & Orange Ltd.*
Main Clinical Block & Trauma Centre, Prince of Wales Hospital, Hong Kong 威尔斯亲王医院住院主楼暨创伤中心	*Architectural Services Department, HKSAR Government*
Primary School at Site 10, West Kowloon Reclamation, Sham Shui Po (Mary Knoll Fathers School (Primary Section)), Hong Kong / 玛利诺神父学校	*Architectural Services Department, HKSAR Government*
Redevelopment of Upper Ngau Tau Kok Estate Phases 2&3, Hong Kong / 牛头角上邨第二、三期重建计划	*Hong Kong Housing Authority*
Reprovisioning of Diamond Hill Crematorium, Hong Kong / 钻石山火葬场重建工程	*Architectural Services Department, HKSAR Government*
Sau Mau Ping South Estate, Hong Kong / 秀茂坪南邨	*Hong Kong Housing Authority*
Tseung Kwan O Sports Ground, Hong Kong / 将军澳运动场	*Architectural Services Department, HKSAR Government*

Project Name	Applicant
Existing Buildings - Hong Kong & Asia Pacific / 既有建筑类别 – 香港及亚太地区 (includes Facility Management, Adaptive Reuse & Revitalisation and Interiors) / 设施管理及活化项目及室内设计	
Arc8X Design, Shanghai Office, Pudong, Shanghai, China / 上海圆创设计规划谘询有限公司	*Arc8X Design*
BeneVille, Hong Kong / 聚康山庄	*Hong Yip Service Company Ltd.*
CB Richard Ellis Hong Kong Office Relocation – Three Exchange Square, Hong Kong 世邦魏理仕香港办事处办公室搬迁 – 交易广场第三座	*CB Richard Ellis Ltd.*
Festival Walk - Continuous Low Carbon Operation, Hong Kong / 又一城 – 持续低碳运营	*Swire Properties Ltd.*
Metroplaza's Green Management Program, Hong Kong / 新都会广场绿色环保计画	*Kai Shing Management Services Ltd.*
Millennium City – One City, One Decade, One Future (A Decade Project of Substantial Development), Hong Kong / 创纪之城: 一个城市、一个十年、一个未来	*Kai Shing Management Services Ltd. (Millennium City 1)*
Ronald Lu & Partners Hong Kong Office, Hong Kong / 吕元祥建筑师事务所香港办公室	*Ronald Lu & Partners (HK) Ltd.*
Shui On Centre, Hong Kong / 瑞安中心	*Shui On Centre Property Management Ltd.*
Skyline Tower, Hong Kong / 宏天广场	*Sino Estates Management Ltd.*
The Hong Kong Polytechnic University - GH Podium Annexe, Hong Kong / 香港理工大学GH平台附楼	*Urbanage International Ltd.*
To Better Sustain Choi Hung Estate - A people oriented approach, Hong Kong / 绿化人为本　延续彩虹家	*Hong Kong Housing Department*
Yau Residence, Hong Kong / 邱宅	*Leigh & Orange Ltd.*
Research & Planning - Asia Pacific & Hong Kong / 研究及规划类别 – 香港及亚太地区	
Beidaihe New District Conceptual Master Plan, Qinhuangdao, China / 秦皇岛市北戴河新区概念性总体规划	*Sasaki Associates, Inc.*
Beijing Changxindian Low Carbon Community Regulatory Zoning Plan (China) - Pioneering the Development of Low Carbon Zoning Codes in China. / 中国北京长辛店低碳社区规划 – 引领中国低碳分区规划准则的发展	*Arup, Beijing Municipal Institute of City Planning & Design, PRC*
Consultancy Study on Building Design that Supports Sustainable Urban Living Space in HK, Hong Kong 对应香港可持续都市生活空间之建筑设计顾问研究	*Ronald Lu & Partners (HK) Ltd.*
Hybrid Ventilation, Hong Kong / 复合通风系统	*Hong Kong Housing Authority*
Hysan Place, Hong Kong / 希慎广场	*Ove Arup & Partners Hong Kong Ltd.*
Research Study on Holistic Environmental Approach for Residential Design, Hong Kong 居者环境为本设计住宅研究	*AD+RG Architecture Design and Reseach Group Ltd.*
Sustainability Master Planning and Study for Hong Kong Science Park Phase 3 Development (SP3), Hong Kong / 香港科学园第三期可持续发展总体规划及研究	*Ove Arup & Partners Hong Kong Ltd.*
Sustainable Master-planning for Wuhan Tiandi Mixed Use Development, Wuhan, China 武汉天地可持续总体规划	*Ove Arup & Partners Hong Kong Ltd.*
Twin Tank System - Environmental-friendly and Uninterrupted Water Supply, Hong Kong 环保及供水无间断双水缸系统	*Hong Kong Housing Authority*
Two-level Lighting Design, Hong Kong / 两段式照明设计	*Hong Kong Housing Authority*
Validation of Micro-climate Studies for Sustainable Public Housing Development, Hong Kong 可持续发展公屋微气候研究的验证	*Hong Kong Housing Authority*
Wetland Park Road – Integrated Elderly Community Project, Hong Kong / 湿地公园路 –「长者综合社区项目」	*Hong Kong Housing Society*
Zhengbian New District Regional Strategy Plan (City of Zhengzhou, China) - Developing a Carbon Audit Methodology for Regional Land Use Planning, China / 中国郑州市郑汴新区空间发展战略方案 – 创新区域规划碳排放审计方法	*Arup*

About HKGBC

The Hong Kong Green Building Council (HKGBC) is the leading body driving the promotion and creation of sustainable buildings and standards throughout the Hong Kong SAR, engaging community, industry and government to create a greener, more sustainable environment.

Our vision: To aspire for quality and sustainability at every stage of the building life cycle and embrace these principles as a mark of excellence.

Our mission: To lead the market transformation to a sustainable built environment in Hong Kong by guiding the development of industry standards, best practices, education, and research in green buildings

In 2009, four industry leaders united to establish the HKGBC - the **Construction Industry Council (CIC), the Business Environment Council (BEC), the BEAM Society (BEAM)** and the **Professional Green Building Council (PGBC)**.

The founding members represent every stage of the building life cycle and green building value chain – **CIC drives sustainable construction** among various sections of the construction industry; **BEC unites business sector users and supporters** of sustainable buildings; **BEAM Society helps measure, improve and label green buildings**; and **PGBC promotes sustainable planning, design construction, management maintenance of built environment**. With their expertise as the foundation, HKGBC seeks to lead the market transformation to a sustainable built environment in Hong Kong by guiding the development of industry standards, best practices, education, and research in green buildings.

HKGBC is an independent and member-based charitable organisation, incorporated as a non-profit company limited by guarantee.

Website: **http://www.hkgbc.org.hk**

About Green Building Award 2010

Green Building Award 2010 (GBA 2010) is jointly-organised by the Hong Kong Green Building Council (HKGBC) and Professional Green Building Council (PGBC) to provide recognition to building-related projects with outstanding performance and contributions in sustainability and the built environment and also to transform the mainstream market towards wider adoption of sustainable planning, design, construction, management, operation, maintenance, renovation and decommissioning of buildings.

GBA 2010 builds on the past experience and continues with the following objectives:

- To provide recognition to building-related projects with outstanding contributions in sustainability; and
- To encourage adoption of sustainable planning, design, construction, management, operation, maintenance,renovation and decommissioning of buildings.

Categories

As a major biennale event in Hong Kong and the region, GBA recognises projects that demonstrate elegantly, durably and/or innovatively the principles for sustainable built environment. In GBA 2010, the award is open to all relevant projects in Hong Kong as well as the Asia Pacific region, embracing the following six categories:

- New Buildings
- Existing Buildings (Facility Management)
- Adaptive Reuse & Revitalisation
- Interiors
- Research
- Planning

Timeline

15 May	Announcement of GBA 2010 and open for nomination
2 August	Deadline for submission of nomination forms and documents
3-27 August	First screening on all nominations by professional institutes' representatives
27 August	Confirmed short-listed projects for second screening in the form of site visits
4 or 5 September	Site visits to short-listed projects
11 or 18 September	Finalists' Presentations to Jury Panel
3 November	GBA 2010 Award Presentation Ceremony
4 November	Green Building Conference 2010

Jury Panel

For each category, the organiser has invited a jury panel to grant projects with Grand Award or Merit. The composition of each jury panel is to include eminent persons from the following sectors:

- International experts
- Legislative councilors
- Government officials
- Academia
- Leaders of professional institutions

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Supporting Organisations

Government

Buildings Department 屋宇署
Civil Engineering and Development Department 土木工程拓展署
Electrical and Mechanical Services Department 机电工程署
Environmental Protection Department 环境保护署
Hong Kong Housing Authority 香港房屋委员会
Hong Kong Housing Society 香港房屋协会
Hong Kong Observatory 香港天文台
Leisure and Cultural Services Department 康乐及文化事务署

Educational Groups

School of Architecture, The Chinese University of Hong Kong 香港中文大学建筑学院
The University of Hong Kong Faculty of Architecture 香港大学建筑学院

Green Groups

Green Council 环保促进会

Professional Organisations

Building Services Operation and Maintenance Executives Society 屋宇设备运行及维修行政人员学会
The Hong Kong Institute of Construction Managers 香港营造师学会
The Hong Kong Institute of Facility Management 香港设施管理学会
The Hong Kong Institute of Housing 香港房屋经理学会
The Hong Kong Institute of Project Management 香港项目管理学会
The Real Estate Developers Association of Hong Kong 香港地产建设商会
The Royal Institution of Chartered Surveyors 英国皇家特许测量师学会

Organisations

Civic Exchange 思汇
Council for Sustainable Development 可持续发展委员会
Hong Kong Interior Design Association 香港室内设计协会
The Hong Kong Construction Association Limited 香港建造商会
The Professional Commons 公共专业联盟
West Kowloon Cultural District Authority 西九文化区管理局

GBA 2010 Organising Committee

HKIE Victor Cheung, *Organising Committee Chairman*

Jury Sub-Committee

HKIE	Victor Cheung, *Chair of Jury Sub-committee*
HKGBC	Kenneth Chan
HKGBC	Kevin Edmunds
HKGBC	Jonathan Lee
HKIA	Bernard Hui
HKIA	Yvonne Ieong
HKIA	Florence Kan
HKIA	John Ng
HKIA	K S Wong
HKIE	Vincent Cheng
HKILA	Simon Ng
HKIS	Dick Kwok

PR Sub-Committee

HKIA	Franky Choi, *Chair of PR Sub-committee*
HKGBC	Joes Lau
HKGBC	Lillian Ma
HKIA	Edwin Chan
HKIS	Ben W H Chong

Sponsorship - Sub-Committee

HKIE	Allan Chan, *Chair of Sponsorship Sub-committee*
HKIA	Tom Ip
HKIA	Julia Lau
HKIP	Serena Tong
HKIS	Sam Cheng

Co-Organised by:

HKGBC was co-founded by four major construction industry and environmental organisations:
Construction Industry Council (CIC)
Business Environment Council (BEC)
BEAM Society (BEAM)
Professional Green Building Council (PGBC)

PGBC was co-founded by five building related professional institutions:
The Hong Kong Institute of Architects (HKIA)
The Hong Kong Institution of Engineers (HKIE)
The Hong Kong Institute of Landscape Architects (HKILA)
The Hong Kong Institute of Planners (HKIP)
The Hong Kong Institute of Surveyors (HKIS)

The GBA 2010 Logo

The spherical GBA logo embraces multiple overlapping spheres depicting global sustainability elements. They interlock and evolve harmoniously to form an infinite cycle of dynamic forces for future generations. Central to the GBA globe is the integration of green with Mother Nature - water, earth and sky.

Publisher: **ROF Media**
Cover Design: **Edge Media**
Printer: **Regal Printing**
Exclusive Media Partner: **PRC Magazine**
Event Organiser: **Creative Consulting Group Inc.**

HKGBC
香港綠色建築議會

PGBC
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GREEN BUILDING AWARD 2010

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