

25 January 2007

Dear Valued Customers & Business Associates,

**JEC Environmental Report 2006**

2006 was a year of change for everyone in this part of the world not because of the continuing economic boom in China or the recovery of the economies across South East Asia or the rise in the value of the stock indexes on a world wide basis. 2006 was a year of change because the world, especially in Asia, woke up to the fact that the activities of human beings are the cause of the deteriorating environment in which we are now living and sharing with the other living things around us.

People throughout the world are now asking questions about what can be done to improve the situation where we have polluted the air we breathe and water we consume, where we have used the earth's resources at a faster rate than ever before and have caused the sustainability of the planet to be a focal point for debate. More than ever people have been asking what the community, and in particular the business community, are doing about it.

Here at JEC we have tried to play our part by changing our behaviour and developing awareness programmes for our staff and our customers on the choices that can be made when considering how best to meet the continuously changing needs of people whilst minimising the impact on the environment that we all have to live in.

One small part of that is the publication of our first JEC Environmental Report which summarises the strategy we are following and the performance we have had against the targets set. Rather than give you some clichés and rhetoric that we are better than everyone else in our performance let me state that we are not but what we will say is that we are trying, wherever possible, to improve our environmental performance across the businesses we operate and with the help of our employees, customers and other stakeholders we fully intend to continue that journey.

In your consideration of this report please note that it is not the biggest or the best environmental report that you will read I am sure but it is an honest approach from a team of dedicated people who wish to educate and inform others of what we are doing at JEC.

Yours sincerely,

A handwritten signature in black ink that reads 'James R Graham'. The signature is written in a cursive, flowing style.

James R Graham  
Chief Executive

**JEC**



**Environmental Report 2006**



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This inaugural Jardine Engineering Corporation (JEC) 2006 corporate Environmental Report contains strategic and performance information relating to our operation in Hong Kong for the year 2006. It presents JEC's philosophy and initiatives in relation to our share of environmental responsibility. We also begin to examine our group-wide practices, management systems and performance indicators, including social and environmental performance.

JEC's inaugural Environmental Report does not include any major operational changes for the reporting year, and currently is not independently verified, with comprehensive examination provided at multiple levels internally. We intend to continue to review this process for improvement and transparency.

JEC is aware of the Global Reporting Initiative (GRI) requirements, and intends to incrementally build up our environmental reporting in future years, with the ultimate goal of producing a sustainability report in accordance with the GRI.

We welcome feedback and suggestions on our first corporate Environmental Report. If you would like to comment, please contact Raymond Fung at [raymond.fung@jec.com](mailto:raymond.fung@jec.com) or telephone +852 2807 1717.

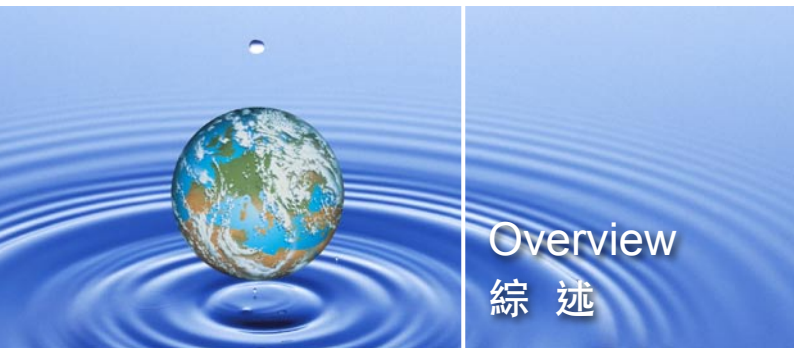
怡和機器有限公司 (JEC) 首份《2006環境報告》陳述了我司在2006年在香港營運的策略及成績資訊，體現了怡和機器的哲學，積極承擔環保責任的精神。怡和機器亦開始檢察整個集團的運作和管理系統，當中包括社會和環境工作的成績指標。

怡和機器首份環境報告並無包括報告年度裏任何主要的經營轉變，而目前是以內部所適用的多層次綜合檢察方法驗證報告的準確度。我們計畫繼續進行檢察過程以獲得進步和保持透明度。

怡和機器有限公司深知全球報告倡議組織 (GRI) 的要求，計畫在未來數年內逐步建立我們的環境報告體系，最終建立符合全球報告倡議組織的要求，可成功地發行一本持續發展的報告。

歡迎各界對有關怡和機器首份公司的《環境報告》的回饋和建議。如果您有任何意見，請以電郵或電話聯繫馮卓堅先生，電子郵箱：[raymond.fung@jec.com](mailto:raymond.fung@jec.com)，電話：+852 2807 1717。





This is the first Jardine Engineering Corporation ('JEC' or the 'Group') Environmental Report and we view its publication as the beginning of a series of detailed and open communication programmes on how our activities impact on the environment and the community. This report is aimed accordingly at JEC's stakeholders including employees and members of the local community. It aims to illustrate JEC's approach and commitment to the environment and the society in which it exists.

這是怡和機器有限公司（“JEC”或“集團”）之首份《環境報告》。我們以其發表作為一系列詳盡和開放之溝通項目的開始，且這些項目是關於怡和機器的營運對其環境及社區的影響。報告是以怡和機器的利益相關人為目標的，包括當地社區的僱員和成員，並旨在說明怡和機器對其所在之環境和社會的處理方法及承諾。



Jardine Engineering Corporation (JEC) delivers world-class innovative solutions, industry-leading products, and internationally benchmarked professional services that customers trust and rely on. The scope and depth of JEC's full offer and expertise make JEC a valued partner in almost every engineering, industrial, security, building, electrical, material handling, Original Equipment Manufacture (OEM) and infrastructure project imaginable.

Our talented team of employees around the Asia Pacific region work constantly and relentlessly to understand and exceed the needs of every customer in every market we serve, while our solutions, products and services work together to provide customers with lifetime value and reliability.

JEC also is the partner of choice for distinguished companies and well-known brands entering the most exciting high growth markets in the world. We take pride in providing partners with an unbeatable network of regional and local expertise, uniquely sourced manufacturing opportunities, as well as the benefits of our longstanding commercial, governmental and institutional relationships.

With headquarters in Hong Kong, JEC employs more than 3,000 experts and professionals across the Asia Pacific region. Through experience, market knowledge, and strategically positioned offices in Beijing, Shanghai, Guangzhou, Macau, Thailand, The Philippines and Singapore, JEC delivers world-class engineering solutions, products and services to the world.

怡和機器提供優質創新策略方案、領導業界的產品及國際水準的專業服務，讓客戶完全安心信賴。怡和機器全方位的服務及專業技術覆蓋層面深入全面，在可想象得到的工程、工業、防盜、屋宇、電器、原料處理、原有設備產品及基建項目等專業範疇內，都是客戶的最佳商業伙伴。

我們在亞太區內的優秀的員工隊伍一直努力不懈，全心瞭解我們在各市場內各客戶的需要；而我們的策略方案、產品及服務則為客戶帶來長遠的利益，讓他們安心信賴。

在競爭激烈而發展迅速的國際市場內，很多國際品牌及著名機構均選擇怡和機器作為最佳合作伙伴。我們為合作伙伴提供的不單是本地以至區內無可比擬的專業網絡及特選的生產機會、還有我們與商業機構、政府及公營團體悠久及良好的合作關係。

總部設於香港的怡和機器在亞太區聘用超過三千名專業人才。透過經驗、市場知識及公司策略性地於北京、上海、廣州、澳門、泰國、菲律賓及新加坡設立的辦事處，怡和機器將優質的策略方案、設備及服務帶給世界。



# Objectives and Highlights

## 目標和重要事項

### Objectives

JEC's objective in producing this report is to demonstrate its performance against targets set last year and to cover a broad range of key environmental risks and issues relevant to its business. This report summarises the Group's management approach to environmental issues, and demonstrates, through analysis of performance, how these have become part of its business operations.

### 目標

發表此《環境報告》的主要目的就是公佈怡和機器在2006年的表現與去年所訂立的目標所作比較並且覆蓋一系列有關於環境危機和相關的重要事項。報告概括了怡和機器針對環境問題的管理方法，通過分析執行情況，並說明這些目標如何成為其營運事務的一部分。

### Highlights 重要事項



2005 September 九月	JEC signed the Clean Air Charter in Hong Kong, and undertook appropriate measures to implement our commitment.	怡和機器簽署香港的《清新空氣約章》，並採取合適的方法兌現承諾。
2006 January 一月	Established the JEC Clean Air Campaign Award in support of the implementation of the Clean Air Charter.	舉辦怡和機器清新空氣運動獎以支持清新空氣約章的執行。
March 三月	Published JEC Group Environmental Policy	頒佈怡和機器環保政策
September 九月	<p>Implemented JEC Environmental Management System, which sets out clear guidelines and criteria for meeting with the commitments of JEC Environmental Policy.</p> <p>Established an Environmental Corner in the JEC intranet to provide staff with easy access to environmental information</p> <p>Provided website references through JEC intranet, for staff to acquire necessary data on local Air Pollution Index and Pearl River Delta Regional Air Quality Index.</p> <p>Deployed staff to attend ISO 14001:2004 Environmental Management Systems – Understanding &amp; Application training course organised by Hong Kong Quality Assurance Agency (HKQAA).</p>	<p>開始執行怡和機器環境管理系統，清楚訂立環境管理系統執行的指引和標準，符合怡和機器環保政策的承諾。</p> <p>在怡和機器內聯網建立環保站，便於員工獲取環保資訊。</p> <p>透過怡和機器內聯網或其他合適網站，為公司員工提供關於本地空氣污染指數和珠三角地區空氣品質指數的必需資料。</p> <p>委派員工參加由香港品質保證局 (HKQAA) 的 ISO 14001:2004 環境管理系統 — 瞭解及應用培訓課程。</p>
October 十月	<p>Applied for ISO 14001 certification</p> <p>Trained all staff in environmental management system through in-house small group training.</p>	<p>申請ISO14001認證。</p> <p>所有員工接受內部小組環境管理系統培訓。</p>
December 十二月	Conducted a First Stage Assessment by the HKQAA of JEC Environmental Management System against international standard and carried out the internal environmental audit by our in-house auditors.	由香港品質保證局跟據國際標準對怡和機器環境管理系統作第一階段的績效評估，及由怡和機器內部審計師進行內部環境審計。



## Chief Executive's Statement 總裁致言



Since its formation over 80 years ago, JEC has remained mindful of its environmental and corporate responsibilities in the communities it serves. Environmental standards are constantly evolving and it has been our objective during the period under review, not only to keep up with such standards, but also to better them. The focus of this year's report lies in our efforts to improve the environment within the communities in which we operate.

We have supported environmental events including sponsoring and signing the Clean Air Charter in Hong Kong. The charter is part of "Project Clean Air" – a business sector initiative launched by the Hong Kong General Chamber of Commerce and the Business Coalition on the Environment – amidst growing concern for the deteriorating air quality. We have been keen supporters of the Charter from its launch and believe it will bring benefits to the communities in Hong Kong and the Pearl River Delta by reducing emissions and limiting power and transport use wherever possible.

We have launched, to enthusiastic response, the 2006 JEC Clean Air Campaign Awards programme for our staff and have a target in place to achieve ISO 14001 certification in 2007 in order to monitor our environmental performance and provide a benchmark for future environmental management across the JEC Group.

JEC considers the environmental targets we have set for ourselves are as important as the financial performance within the Group, and this report recognises our commitment to share with our customers, employees and stakeholders, as well as the communities in which we operate, the work that we are doing to improve the environment and reducing the environmental impact of our operations.

We do not consider ourselves as role models as we are a learning organisation and trust that we will learn much from others, as we seek to continuously improve our environmental performance. As always, JEC is committed to providing our customers with world-class products, services and solutions to improve your business. We believe feedback is a vital component to our success, therefore, please do not hesitate to communicate your suggestions and comments to me directly at [ceo@jec.com](mailto:ceo@jec.com).

怡和機器成立八十年以來，時刻緊記對服務社區內環境應有的責任，藉以提升環保水平。隨著環保指標不斷變遷，我們亦本著精益求精的態度，不斷努力，為求成績更上一層樓。此份報告中，彰顯我們為所在社區投放的每分努力、每分資源。

我們對支持環保一向不遺餘力，當中包括贊助和簽署香港的《清新空氣約章》。約章乃「清新空氣計劃」的一部份，計劃起源於香港空氣質素每況愈下，有見及此，香港總商會和香港商界環保大聯盟發起活動，希望情況得到改善。自約章頒佈日起，我們便確切執行，相信透過減少排放廢氣、限制使用電力和縮減交通使用量，可以為香港和珠江三角地區的環境問題帶來改善。

對內，我們舉辦比賽活動，設立2006年度怡和機器清新空氣運動獎。再者，我們訂下目標，要在2007年取得ISO 14001認證。與此同時，我們亦會嚴格監控在環保上的表現，為怡和機器的將來，提供一個環境管理的準則。

怡和機器深信，實踐已訂立的環保目標和公司內的財政營運表現同樣重要。我們的工作理念，是在提高環境質素的同時，減少業務對環境造成影響為大前題。在報告中，足見我們對客戶、員工、利益相關人仕和公司業務所在社區許下的承諾付諸實行。

我們不會自滿於目前的表現而駐足不前，相反，我們會力學不倦、努力向前。我們相信可以從別人身上學習，藉以提升自身的環保水準。一如以往，怡和機器提供世界級的產品、服務和解決方案予我們的客戶，以提升他們的業績。客戶的意見和迴響，更是我們成功不可或缺的要素。所以，如果您有任寶貴意見和建議，請不吝賜教，直接與我聯絡，我的電子郵箱為：[ceo@jec.com](mailto:ceo@jec.com)

James R. Graham  
關正仕

Chief Executive  
行政總裁



## Environmental Policy and Management System 環保政策和系統

### Environmental Policy

The Jardine Engineering Corporation Limited (JEC) delivers world-class innovative engineering solutions, industry-leading products and internationally benchmarked professional services to Asia's built environment.

We believe that a proactive approach towards conserving and enhancing natural resources is consistent with our business principles and values. We recognise that efficient resource use and environmental protection are vital for the continued success of our operations, and provide a valuable benefit to our customers and communities. JEC is committed to the effective stewardship and protection of the environment, and the promotion of these efforts through information sharing. It is our policy to protect and limit any impact our operations may have on the environment.

The ultimate responsibility for environmental protection within JEC rests with the Chief Executive. This responsibility shall be delegated, without abrogation, through the organisation. As part of our day-to-day management, every employee shall support and be fully committed to implementation of this policy.

To achieve the objectives of the JEC Group Environmental Policy, JEC's top management is committed to:

1. Full compliance with both applicable legal requirements and contractual requirements in all aspects as a minimum standard of performance;
2. Applying the principle of sustainable development in the planning, design and operation of our facilities and services, by seeking ways to reduce energy and material needs and practicing waste minimisation to prevent pollution in both project design and production operations to the extent practicable;
3. Developing and maintaining a method of evaluating environmental performance for continuous improvement in accordance with the requirement of ISO 14001;
4. Communicating and advancing the use of environmental best practice to the employees, sub-contractors and suppliers to secure their commitment to the policy and its implementation;
5. Promoting the awareness and training of employees to ensure that environmental actions are included in JEC's decision making process;

6. Fostering productive partnerships and be responsive to our environmental stakeholders; and
7. Playing an active role in the environmental community.

This policy, and JEC performance under the policy, will be reviewed annually to ensure continuous improvement of environmental standards in JEC. Any revision of the policy will be brought to the attention of all employees promptly.

### Environmental Management System

JEC began formalisation of our environmental systems and practices in late 2005, responding to the need for the Group to demonstrate improvement in environmental performance. We have now recognised that the breadth of environmental activities would be best encompassed by the adoption of a formal environmental management system, in line with the recognised standard, ISO 14001.

To this end, we have developed a system in accordance with the standard, which is now being implemented by JEC, starting with the Group's Hong Kong operations. This system has built on our published environmental policy, which is backed with objectives and targets to ensure that policy aims are achieved. Existing good environmental practice, policies and ideas from staff involved in environmental control have also led to the development of a set of new procedures that are specifically tailored to our business.

JEC employees currently take part in environmental awareness training to ensure that they have the required knowledge to help improve environmental performance. Auditing environmental management will be embedded into existing quality, health and safety auditing systems.

We have plans to achieve formal certification to the ISO 14001 standard by 2007 and our current focus is on raising awareness throughout the Group and improving the environmental and social quality of our operations.

## 環保政策

怡和機器有限公司（以下簡稱「怡和機器」）的業務是為亞太區客戶提供優質創新工程策略方案，領導業界的產品及國際水準的專業服務。

怡和機器堅信，積極保護和提高自然資源的方針與我們的業務原則和相關價值觀是一致的。我們肯定，有效的資源利用和保護環境對我們營運的持續成就十分重要，並且為我們的客戶和社會帶來寶貴的效益。怡和機器致力有效地促進管理和保護環境，並通過高效資訊全面宣傳。保護環境和確保公司營運業務不會對環境產生的影響正是我們的政策。

儘管怡和機器在環境保護的事宜上將最終責任承擔歸於行政總裁，這責任不可免除，並可在公司內部通過管理架構，委派授權在組織各層內。在日常管理當中，每位員工應該支持和貫徹執行本政策。

為達成怡和機器環境政策的目標，公司高層管理致力於：

1. 在各方面完全遵循適用的法例、法規和合約的規定，作為表現的最低標準；
2. 在規劃、設計和營運我們的建設和服務方面履行可持續發展的原則，包括尋求方法降低能源和物質的需求，及將項目設計和營運中產生的廢物減少至可行程度；
3. 根據ISO 14001的規定，建立和維持一套環保表現評審方法，達致持續改善的目的；
4. 與員工、分包商和供應商溝通和推行環保最佳做法，確保他們致力實行政策；
5. 提高員工的環保意識和推行培訓，確保環保行動在怡和機器的決策過程中得以貫徹；
6. 促進具生產力的夥伴關係，向環保相關人士作出積極回應；以及
7. 在環保活動方面擔當一個積極的角色。

我們遵從此政策的落實，並每年檢討怡和機器在此政策下的表現，以確保環保標準得持續改善。任何有關政策的修訂，將會立即通知所有員工。

## 環境管理系統

2005年底，怡和機器開始正式對環保系統和執行要求作出檢討，以回應公司對改善環保的要求。我們意識到，環保行動應採取正式的環境管理系統進行，並符合ISO 14001認證的標準。

因此我們根據標準建立了一個環保系統，以怡和機器香港辦事處開始運作，並正在執行，為確保達到政策的目的和目標，此系統是建基於怡和機器環保政策的基礎上。現行的優秀實踐，政策和意見來自參與環保控制的員工，並演變成我們業務度身定做的一系列針對環保的工作程序。

怡和機器的所有員工都參與環保意識培訓，確保他們獲取一定的知識來幫助執行改善環保的工作。環境管理的審核亦會加入現有的品質、健康和安全管理系統。

我們經已計畫在2007年正式通過ISO 14001的認證，而且現在我們側重於提升全集團上下的環保意識和提高我們營運中的環境和社會質素。



## Environmental Targets 環保目標

The targets reported below were the first targets adopted by JEC and were addressed during the period from January 2006 to December 2006.

以下報告乃怡和機器訂立的首目標，並於2006年1月至2006年12月期間實行。

Objective 目的	Target 目標	Status 執行情況	Action 行動
<b>Environmental Management</b> To develop environmental practices for JEC in line with international recognised standards.  <b>環境管理</b> 為怡和機器建立與國際認可標準一致的環保實踐。	To implement an ISO 14001:2004 compliant Environmental Management System (EMS) by December 2006 as tested by an internal and third party audit by Q1 2007.  在2006年12月前執行ISO14001：2004環境管理系統標準，並於2007年第一季前由內部和第三方審計驗證。	100%	JEC has implemented an Environmental Management System in the third quarter of 2006 with a time table aiming to achieve ISO certification by Q1 2007.  怡和機器已執行2006年第三季度落實的環境管理系統，並依據時間表計畫於2007年第一季取得ISO認證。
	To produce an external Environmental Report for the reporting period of the year 2006 by year end  在年底前向外頒佈2006年的環境報告。	100%	JEC's inaugural Environmental Report will be published in December 2006 and we intend to continue to review this process for improvement and transparency.  怡和機器的首份環境報告將在2006年12月內發表，並計畫繼續評估過程，以獲得改善和透明度。
<b>Resource Use (1)</b> To reduce energy consumption of lighting fixtures.  <b>資源使用 (一)</b> 減少照明系統的能源損耗。	To introduce eco T5 tube and electronic ballast for all renovated offices in Hong Kong by end of 2006.  在2006年底前，在香港所有進行裝修的辦公室，使用節能 T5光管和電子鎮流器。	100%	All newly renovated offices in Hong Kong has been installed with eco T5 tube and electronic ballast.  香港所有進行裝修的辦公室，裝置節能 T5光管和電子鎮流器。
<b>Resource Use (2)</b> To measure and reduce energy consumption in all office premises.  <b>資源使用 (二)</b> 量度和減少所有辦公室室內的資源損耗。	To undertake a review of office energy use with a view to setting meaningful reduction targets by end of 2006.  檢視辦公室的資源損耗情況，並在2006年底前確實相當的節能目標	100%	JEC has begun to evaluate energy use within its own offices, and has already set an energy saving target of 5% over a period of 3 years  怡和機器開始評估辦公室的能源損耗，及定下未來三年的節能目標為五個百分比。
<b>Workplace Management</b> To reduce environmental risk on site to a minimum.  <b>工作環境管理</b> 把現有的工地環境危害降至最低。	To develop a register of environmental aspects and its associated risk for site activities by end of 2006.  於2006年底前記錄工地現場的環境危害點。	100%	JEC's waste management plan and EMS documents have identified the aspects and the associated risks on JEC workplaces.  怡和機器廢物管理計畫和環境管理系統已識別怡和機器營運中可能產生的危害。
	To implement procedures for the prevention of spillage and ensure that all staff are trained accordingly by end 2006.  執行政序以防止溢漏污染環境，並確保所有員工在2006年底前獲得適當的程序培訓。	50%	Further spillage training is required to ensure that all staff are aware of appropriate actions to take in case of spillage.  需要進一步的培訓，確保萬一對環境產生影響時，所有員工都應知道採取正確行動。

Objective 目的	Target 目標	Status 執行情況	Action 行動
<p><b>Training</b> To develop and implement environmental training packages for all staff and relevant contractors.</p> <p><b>培訓</b> 為所有職員和相關合約分判商建立和提供環境培訓。</p>	<p>To undertake an environmental training needs analysis for staff and contractors by end of 2006.</p> <p>於2006年底前為職員和相關合約分判商進行環保培訓需求分析。</p>	50%	<p>The training needs analysis has now been produced and is in the process of being extended to contractors.</p> <p>培訓需求的分析已建立，且正擴展至合約分判商。</p>
<p><b>Communications</b> To increase the environmental awareness of staff and contractors.</p> <p><b>溝通</b> 提高員工和合約分判商的環保意識。</p>	<p>To develop a mechanism for internal communication with staff to provide information on environmental initiatives (intranet) by September 2006.</p> <p>To add addendum and stipulations for environmentally friendly practices to new contractors starting from early 2006.</p> <p>於2006年9月前，建立內部與員工溝通機制，（在公司的內聯網）提供關於環保的資訊。</p> <p>在2006年底開始，於分判商合約內增設環保附錄和條款。</p>	100%	<p>An Environmental Corner was established in the JEC intranet to provide staff with easy access to environmental information.</p> <p>A new sub-contract document with environmental requirements has been used for all sub-contractors in early 2006.</p> <p>在公司內聯網建立環保角，便於員工獲取環保資訊。</p> <p>於2006年初，所有分判商合約內均已加入有關環保的要求。</p>
<p>To establish a programme in support of the implementation of the Clean Air Charter in Hong Kong, to recognise and honor JEC staff for creative, innovative and effective efforts and activities that contribute to better quality of life and cleaner air.</p> <p>為支持香港的《清新空氣約章》舉辦活動，怡和機器員工提供創造更好生活質素和清新空氣的創造、創新和有效的方法，從而獲得認可和讚譽。</p>	<p>To launch the JEC Clean Air Campaign Awards by early 2006</p> <p>於2006年初舉辦怡和機器清新空氣運動獎。</p>	100%	<p>The Clean Air Charter was signed in September 2005 and JEC Clean Air Campaign Awards was launched in January 2006.</p> <p>《清新空氣約章》於2005年9月簽署，而怡和機器清新空氣運動已於2006年1月設立。</p>

The Group's objective in producing this first JEC corporate Environmental Report is to demonstrate performance against targets set previously, as well as to cover a range of environmental risks and issues relevant to its business. This corporate Environmental Report illustrates its management approach to environmental issues and demonstrates, through analysis of performance, how this has become integrated into business operations.

公司發佈怡和機器環保報告的目的是說明年內設立的目標的執行情況，以及覆蓋一系列與其業務有關的環境危機和問題。此環保報告闡明其對環境問題的管理方法，並通過分析執行情況，說明如何納入在公司營運事務內。



## Environmental Achievements 環保成就

### A Green Workplace

Our Green Representatives ensure adherence to our Group Environmental Policy in existing offices and in the design of renovated offices. A strict 'No Smoking' Policy within JEC's office premises has been implemented, to maintain a healthy and comfortable working environment for all staff. The improved office design, which has helped to reduce electricity consumption, included:

- **Zonal lighting** – where lighting at respective zones in the main offices has to be manually tuned on, whilst they are automatically switched off after 7:45pm;
- **Energy-saving T5 fluorescent tubes** – eco T5 tubes with electronic ballast are used, saving an estimated 38.6MWh of electricity per year;
- **Air temperature** – JEC have maintained relative humidity at optimum levels and indoor air temperature at 25.5°C, Hong Kong SAR Government's recommended levels, since August 2006;
- **Web-based service** – by encouraging the provision of web-based information and transaction services to reduce associated pollution emissions; and
- **Clear atmosphere** – Large leaf plants were placed at appropriate office areas making the office more pleasant and to help to absorb CO<sub>2</sub>.

### Green Sales

JEC encourages the sale of environmental friendly products, and as of July 2006, more than 39% of our clients purchased diesel generator sets which met the US's EPA Tier 1 Emission Standards<sup>1</sup>, while a further 6% required that Tier 2 standards were met.

The sales of renewable energy equipment such as Building Integrated Photovoltaic Panels (BIPV) and Hot Water Solar Panels provide limited opportunities from Government Departments, however, we have successfully sold BIPV with an output of 16.3 KW to our customers in 2006. We have also commenced the provision of energy audit services to customers to promote efficient use of energy in businesses. In addition, we have recently proposed the application of Wind Turbine Generator<sup>2</sup> and Hydro Turbine Generator<sup>3</sup> technology to the HKSAR Government. We have also commenced the provision of energy audit services to customers to promote efficient use of energy in businesses.

<sup>1</sup> EPA Emission Standards: The standards managed by the United States Environmental Protection Agency (EPA) generally regulate the emissions of NOx, particulate matter (PM) or soot, carbon monoxide (CO), or volatile hydrocarbons. The Tier 1-3 standards are met through advanced engine design, with no or only limited use of exhaust gas after-treatment (oxidation catalysts).

<sup>2</sup> Wind Turbine Generator: As a kind of feasible renewable energy in Hong Kong, wind turbines can be used as part of a power generation system for either charging DC batteries or connecting to an AC system. Many consultants are now starting to consider the schemes using micro-wind turbines. Micro wind turbines can also be installed as part of a scheme, which includes solar panels and other renewable energy sources. JEC is now representing Ampair, which is a renowned U.K. manufacturer producing micro-wind turbine generator. The turbine output will be of 100 watts, 300 watts, or 600 watts rated output and it is possible to install them in arrays to create a small wind farm.

<sup>3</sup> Hydro Turbine Generator: A hydro turbine is a rotary engine that generates power from moving water. They can ensure the operation of electric and electronic equipment for remote signalling, remote control and water purification. Specific hydro-generators can operate in parallel with the grid in order to reduce the electricity generated from the coal-fired power plant. Hydro turbines permit energy saving and provide renewable energy and they help avoid the burning of vast quantities of fossil fuel and hydrocarbons, which are held to be widely responsible for air pollution, acid rain, and the "greenhouse effect".

## 綠色的工作間

我們的綠色代表需確保公司的環保政策經已在現有和翻新的辦公室裏實行。在怡和機器辦公室內嚴格執行“無煙”政策，為所有員工提供一個健康和舒適的工作環境。改善辦公室設計有助減少用電量，當中包括：

- **區域照明** — 當公司照明系統於7:45pm自動關上後，公司各個照明區域需由人手開關；
- **環保T5光管** — 使用具備電子鎮流器的環保T5光管，估計每年節省38.6MWH用電；
- **室內溫度** — 自2006年8月起，怡和機器辦公室內相對濕度保持在最佳水平，室內溫度維持在香港特別行政區政府建議溫度25.5°C；
- **建立網站服務** — 鼓勵使用電腦網路的信息和交易服務，減少相關的污染排放；以及
- **清新的空氣** — 放置大葉植物在辦公室合適的地方，幫助吸收二氧化碳並使辦公室環境更舒適。

## 綠色的銷售

怡和機器一向鼓勵銷售環保產品，在2006年7月，多於39%的客戶購買符合美國環保署1級排放標準的柴油發電機<sup>1</sup>，此外再多6%的客戶要求符合2級標準的產品。

雖然銷售建築物一體化光伏電池系統（BIPV）和太陽能熱水電池板可再生能源設備供應政府部門是有限的商機，但是我們在2006年成功地給客戶提供總產量為16.3KW的建築物一體化光伏電池系統。加上，最近我們向香港特別行政區政府建議風力渦輪發電機<sup>2</sup>和水力渦輪發電機<sup>3</sup>的應用技術。我們更開始向客戶提供能源審計服務來提升商業中的高能源效益。



<sup>1</sup> 環保署的廢氣排放標準：由美國環保署管理的標準一般控制氮氧化物的排放，尤其是固體物質或煤煙，一氧化碳，或易揮發的碳氫化合物的排放。透過使用先進的機械設計，不用或限量使用處理後的廢氣（氧化催化劑），達到1-3級的標準。

<sup>2</sup> 風力渦輪發電機：作為香港的一種可再生能源，風力渦輪可作為發電系統的一部分，為DC直流電池充電或聯網到AC交流電系統。許多顧問開始考慮使用微風力渦輪的方案。微風力渦輪也可作為一部分的安裝，包括太陽能電池板和其他再生能源資源。怡和機器正代表英國著名製造商的Ampair公司生產微風力渦輪發電機。該渦輪輸出是額定輸出100 瓦特、300瓦特、或600 瓦特，並可以成組安裝建設小型風力發電廠。

<sup>3</sup> 水力渦輪發電機：水力渦輪是利用水流發電的旋轉發電機。他們能夠確保用於遠端指令、遙控和水淨化的電氣和電子設備的運行。特別的水力發電機能夠並網運作，以用來減少火柴油電廠發的電力使用。水力渦輪可以節能和提供再生能源，幫助減少礦物燃料和碳氫化合物的燃耗，而該類物質的大量燃耗將導致空氣污染、酸雨和“溫室效應”等廣泛問題。



## Environmental Achievements 環保成就

### Good Housekeeping, Management and Measures

JEC is committed to promoting green management. Our Environmental, Health and Safety Management Committee promote the efficient use of resources and adopt energy-saving measures to reduce consumption. The measures have been taken on continuously and we have made encouraging progress in promoting green management.

Key initiatives are:

1. Sending memorandum and circulars through our intranet and emailing system, decreasing the quantities of printed materials, and exercising economy in the use of paper so as to reduce consumption of paper.
2. Encouraging double side printing wherever possible, so as to reduce 50% of paper consumption.
3. Enforcing a strict non-smoking policy in the office premises.
4. Incorporating environmental procurement criteria into tenders and contracts.
5. Conducting environmental audits to ensure compliance with green guidelines and identify opportunities for improvement.
6. Secretaries are responsible to switch off Directors' room lighting if they are not in use and receptionists to switch off conference room lighting, whenever they are not in use
7. Enhancing the efficient use of air-conditioning and electrical appliances by maintaining relative humidity and

indoor air temperature at Hong Kong SAR Government recommended levels and conducting regular cleaning

8. Supporting the recycling of waste through methods including collecting and recycling over 2,670 kg of paper waste up to November 2006 compared to 2,050 kg in 2005 at JEC Hong Kong Headquarters, a 33% increase in paper recycling, compared to the previous year.

We support the Hong Kong SAR Government's initiative of setting indoor air temperatures at 25.5°C, and by using energy saving T5 fluorescent tubes and electronic ballasts in place of conventional tubes. Since JEC moved into our new headquarters in late 2004, the annual electricity consumption has reduced by, an estimated, 38.6 MWh of electricity per year compared to the use of conventional tubes and electromagnetic ballasts.

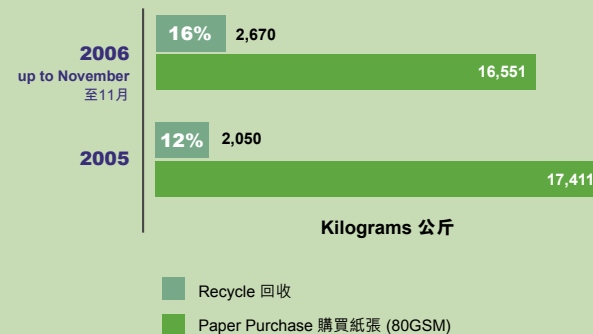
By using the benchmarking tools provided by the EMSD<sup>4</sup>, JEC energy consumption performance at offices is at the "good" level of our corresponding subgroup<sup>5</sup> in Year 2006 (until October).

JEC occupied an additional 400m<sup>2</sup> of office premises since March 2006 (i.e. an average increase of 267m<sup>2</sup> annually) and additional headcounts plus increasing activities in our workshops which contributed to the increase of energy consumption by 8% compared with the same period of the previous year.

### Paper Consumption 紙張耗用量

Year 年份	2005	2006 (up to November 至11月)
Recycle 回收 (Kg公斤)	2,050	2,670
Paper Purchase 購買紙張 (80GSM) (Kg公斤)	17,410.56	16,550.92
Percentage 百分比	12%	16%

### Paper Recycling at H/Q 總部紙張回收情況



## 優秀的內務處理、管理和方法

怡和機器承諾促進綠色管理。我們的環境、健康和安全管理委員會提倡能源使用效率，並採用節能方法減少損耗。在綠色管理方面，我們不斷採用新方法並取得很大的進步。主要的措施有：

1. 通過我們公司內聯網和電郵系統發送備忘錄和商業通函，減少列印材料數量，合適地使用紙張以減少消耗。
2. 盡可能雙面用紙，減少50%的用紙量。
3. 在辦公室內嚴格執行無煙政策。
4. 把環保採購標準立入招標書和合同。
5. 採取環境審計確保遵照綠色方針和制訂方案以作進步。
6. 秘書有責任在董事外出時關掉董事辦公室的燈，接待員也有責任關掉不使用的會議室照明。
7. 通過把相對濕度和室內溫度調至香港特區政府建議的水準，提高空調和電器的有效使用，並定期清理。

8. 支持廢物的循環使用。截至2006年11月，怡和機器香港總部收集和回收的廢紙超過2,670公斤，而在2005年，有2,050公斤，在2006年底前回收率對比往年，會有超過33%的增長。

我們支持香港特區政府帶頭響應室內空氣溫度調至25.5°C的規定，且使用環保T5光管取代普通光管，估計每年可減少能耗38.6MWh用電量。自怡和機器於2004下半年搬遷至新總部，跟傳統光管和電磁鎮流器的使用比較，電力耗用量已可為每年節省38.6MWh用電。

按香港機電工程署 (EMSD<sup>4</sup>) 提供的標準化工具，2006年度 (截至10月份) 怡和機器辦公室的能源消耗是我們所處分類小組<sup>5</sup>的“良好”水準。

從2006年3月，怡和機器增加了400平方米的辦公室面積 (即該年平均增加了267平方米)，及員工數目和業務數量的增加，導致與上年同期相比的能源耗用量上升了8%。

Annual Energy Consumption 每年能源耗用量	Nov 04 - Oct 05	Average of Nov 05 - Oct 06
	04年11月 — 05年10月	05年11月 — 06年10月平均數
Electricity Consumption 電力耗用量 (HK\$)	951,370	1,034,344
Electricity Consumption 電力耗用量 (kWh)	1,057,077.78	1,149,271.11
Floor Area 樓面面積 (sq m)	5,084.40	5,350.97
Operation Hours 營業時間		
Mon - Fri 星期一至五	10	10
Sat 星期六	5	5
Sun / Public Holiday 星期日/ 假日	0	0
Number of Full Time Office Staff 全職工作人員數目	421	482
Number of Personal Computer & Photocopiers 所有電腦及影印機數量	451	512
JEC Annual Energy Consumption 怡和機器年度能源耗用量 (MJ/m <sup>2</sup> /annum)	713.6	737.7
Benchmark 指標 <sup>6</sup>	5.34	5.15
Our Position 現時位置	at 30 <sup>th</sup> percentile of our subgroup 於同組別的第30個百分點內 (Figure 1 圖1)	at 20 <sup>th</sup> percentile of our subgroup 於同組別的第20個百分點內 (Figure 2 圖2)

<sup>4</sup> EMSD: Energy Consumption Indicators and Benchmarks for Commercial Sectors <http://www.hkiol.org/energy2/main.html>  
香港機電工程署 (EMSD): 香港商業樓宇、商場及街舖的能源消耗指標及基準。 <http://www.hkiol.org/energy2/main.html>

<sup>5</sup> Subgroup: Tenant units in building (multiple tenants) with central Air-conditioning supply  
分類小組: 設有中央冷氣系統的分租式私人商業大廈的租戶。

<sup>6</sup> Benchmark =  $\ln [\text{Electricity Consumption (kWh)} / \text{Floor Area (sq m)}] - 0.0005 \times \text{Annual Operation Hours} + 0.0021 \times \text{Number of Full Time Staff} - 0.0041 \times \text{Number of Personal Computer \& Photocopiers} + 1.4457$   
指標 =  $\ln [\text{電力消耗 (kWh)} / \text{樓宇面積 (sq m)}] - 0.0005 \times \text{全年營業時數} + 0.0021 \times \text{全職員工數目} - 0.0041 \times \text{私人電腦及影印機數量} + 1.4457$



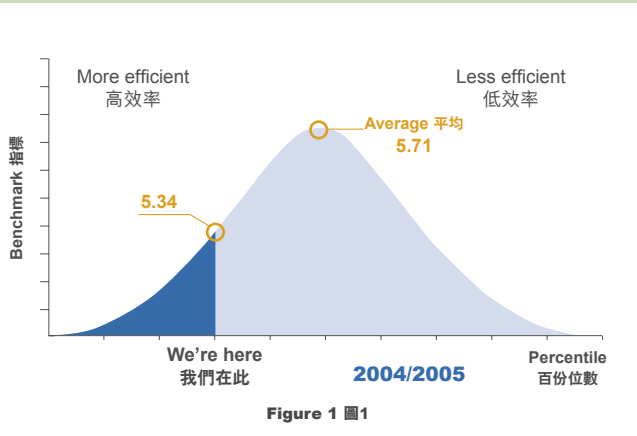
<b>Total electricity consumption during the report period (Nov 04 to Oct 05) and (Nov 05 to Oct 06)</b> 報告期內的總電力耗用量 (04年11月至05年10月) 和 (05年11月至06年10月)	
2004/2005 : 1,057,077 kWh	2005/2006 : 1,149,271 kWh
<b>Total internal floor area (in m<sup>2</sup>) of JEC office premises (Nov 04 to Oct 05) and (Nov 05 to Oct 06)</b> 怡和機器辦公室的總樓面面積 (平方米) (04年11月至05年10月) 和 (05年11月至06年10月)	
2004/2005 : 5,084 m <sup>2</sup>	2005/2006 : 5,351 m <sup>2</sup>

**Benchmark result compared with our sub group population:**  
Annual energy consumption per area is 713.6 MJ/m<sup>2</sup>/annum and 737.7 MJ/m<sup>2</sup>/annum for 2004/2005 and 2005/2006 respectively

**比較同組別的基準結果：**  
2004/2005及2005/2006每區年度能耗各分別為713.6 MJ/m<sup>2</sup>/annum和737.7 MJ/m<sup>2</sup>/annum

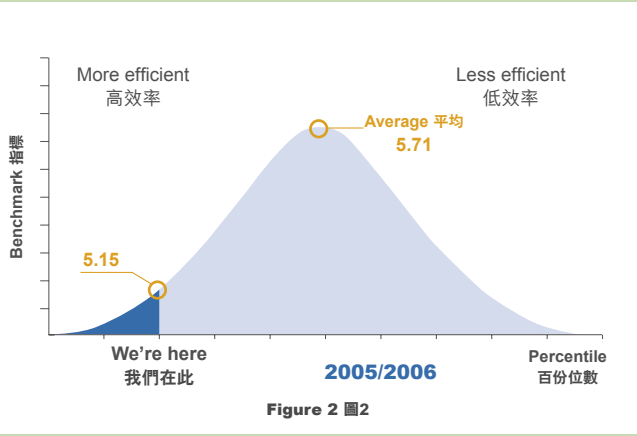
**Year 2004/2005:** JEC annual energy consumption/Area is lower than 70% premises of our subgroup (i.e. JEC is at 30th percentile of our subgroup). It shows that our energy consumption performance is at the “good” level of our corresponding subgroup.

**2004/2005年：** 怡和機器每區的全年能耗低於我們同組別70% (即，怡和機器在同組別的前30個百分點)。表明我們有關能耗相對於我們對應同組別的能耗是處於“良好”水準。



**Year 2005/2006:** JEC annual energy consumption/Area is lower than 80% premises of our subgroup (i.e. JEC is at 20th percentile of our subgroup). It shows that our energy consumption performance is at the “good” level of our corresponding subgroup.

**2005/2006年：** 怡和機器每區的全年能耗低於我們同組別80% (即，怡和機器在同組別的前20個百分點)。表明我們有關能耗相對於我們對應同組別的能耗是處於“良好”水準。



JEC premise's classification is: Private Offices: Tenant units in buildings with central A/C supply  
怡和機器室內的定義：私人辦公室：提供中央空調的樓宇租戶單位



## Environmental KPI<sup>6</sup> Improvement Plan 2007 環境KPI<sup>6</sup>改善方案2007

Environmental Improvement 環境改善	Responsibility 負責人	Completion 完成日期
<b>Gain EMS Accreditation to ISO 14001: 2004</b> 獲得EMS的ISO 14001: 2004認證	EMR 環境管理代表 <sup>7</sup> DEMR 環境管理副代表 <sup>8</sup>	March 2007 2007年3月
<b>Review of Environmental Improvement Plan</b> This plan will be reviewed on an ongoing basis and formally at the JEC Group EHSM Meetings every six months 環境改善計畫的評估 對該計畫進行持續評估，每六個月在怡和機器集團EHSM會議上進行正式評估。	EMR DEMR 環境管理代表 環境管理副代表	On-going 實施中
<b>Environmental KPIs and Improvement Programme</b> Measure the following Environmental Aspects and introduce an Improvement Programme to manage them: 環境關鍵績效指標及改善專案 就下列環保項目進行測量並引入改善方案來管理： <ul style="list-style-type: none"> <li>Electricity Consumption 耗電量</li> <li>Office / Workshop Water Use 辦公室 / 工作間用水</li> <li>Waste Collection 廢物回收</li> <li>Environmental Incidents 環境事故</li> <li>Communications 溝通</li> </ul>	EMR DEMR 環境管理代表 環境管理副代表	December 2007 2007年12月
<b>Electricity Consumption KPI</b> <ul style="list-style-type: none"> <li>Reduce 5% of electricity consumption in H/Q and branch offices by end of 2007</li> <li>Look at the feasibility of installing automatic switch off systems for lighting and air conditioning systems for renovated branch offices &amp; new site offices</li> <li>Continuing commitment with the objective of Clean Air Charter</li> </ul> 電力消耗指標 <ul style="list-style-type: none"> <li>在2007年底，總部和分區辦公室的電力耗用量要降低5%。</li> <li>檢查為所有翻新分區辦公室和新設地盤辦公室的照明系統及空調系統及安裝自動系統關閉功能的可行性。</li> <li>遵循《清新空氣約章》的目標。</li> </ul>	EMR DEMR 環境管理代表 環境管理副代表	December 2007 2007年12月
<b>Office/ Workshop Water Use KPI</b> <ul style="list-style-type: none"> <li>Fit push taps, flow restrictors or infrared controls on washbasins at site offices</li> </ul> 辦公室/工作間的用水指標 <ul style="list-style-type: none"> <li>在現有工地辦公室的洗手間安裝按壓式水龍頭、水流控制器或紅外線感應龍頭。</li> </ul>	EMR DEMR 環境管理代表 環境管理副代表	June 2007 2007年6月
<b>Waste Collection KPI</b> <ul style="list-style-type: none"> <li>Provide training on a range of environmental topics, including waste management and recycling, through Environmental Toolbox Talks to all field staff by end of 2007</li> <li>Ensure that double sided printing for all company documents where possible</li> <li>Increase the percentage of paper recycling by an additional 5%</li> </ul> 廢物回收關鍵績效指標 <ul style="list-style-type: none"> <li>在2007年底前，通過“環境工具箱交談”為所有部門的員工提供包括廢物管理和回收的環保主題培訓。</li> <li>確保如所有公司文件都是雙面列印。(如適用者)</li> <li>紙張回收百分比額外提高5%。</li> </ul>	EMR DEMR 環境管理代表 環境管理副代表	December 2007 2007年12月
<b>Environmental Incidents KPI</b> Ensure zero environmental incidents and to comply with relevant environmental legislations with zero prosecution 環境事故關鍵績效指標 確保無環境事故發生，符合相關環境法規和無法律訴訟。	EMR DEMR 環境管理代表 環境管理副代表	On-going 實施中
<b>Communications KPI</b> Develop environmental information packages (Dos and Don'ts handbook) for all staff and sub-contractors regarding environmental requirements of JEC Policy 傳訊績效指標 建立環境資訊套裝(完全手冊)分予所有員工及分判商，包括怡和機器環境保政策需知及需求。	EMR DEMR 環境管理代表 環境管理副代表	July 2007 2007年7月

<sup>6</sup> KPI: Key Performance Index

<sup>7</sup> EMR: Environmental Management Representative 環境管理代表

<sup>8</sup> DEMR: Deputy Environmental Management Representative 環境管理副代表



JEC is dedicated to improving our environmental performance. As a reminder, JEC has already established a centralised customer suggestion channel, which will be read and answered by a 24-hour fully manned customer support call centre. Please do not hesitate to communicate to us any comments regarding this inaugural issue of JEC's corporate Environmental Report and how JEC can continue to contribute to environmental improvement.

Thank you for reading our report.

JEC's Environmental Report 2006 is also available for viewing at our website [www.jec.com](http://www.jec.com)

For any suggestions, please write to us either by e-mail or post at the following address:

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979 King's Road, Hong Kong  
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怡和機器致力於改善環保政策的執行。怡和機器已執行中央處理客戶服務，由24小時客戶電話支援中心接聽顧客的意見和需要。如果您對此怡和機器有限公司首份環保報告和怡和機器該如何繼續增加對環保的貢獻有任何意見，歡迎聯繫我們。

感謝您閱讀此報告。

2006怡和機器環保報告可在公司網站[www.jec.com](http://www.jec.com)上閱讀。

如有任何建議，請電郵或寄至以下位址：

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## Jardine Engineering Corporation

## Principal Activities by Location

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- air-conditioning products & services
- building products
- e&m contracting
- e&m equipment
- lighting fittings
- maintenance & renovation
- security systems

### China

Beijing  
Room 517 China World Tower  
China World Trade Centre  
No.1 Jianguomenwai Ave  
Chaoyang District, Beijing 100004, PRC  
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- air-conditioning products & services
- building products
- contracting
- e&m equipment

### Shanghai

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899 Ling Ling Road  
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Tel: 86 21 6218-3888  
Fax: 86 21 6360-3928

- air-conditioning products & services
- building products
- contracting
- e&m equipment

### Guangzhou

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109-9 Liu Hua Road  
Guangzhou 510010, PRC  
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Fax: 86 20 8666-8855

- air-conditioning products & services
- building products
- contracting
- e&m equipment

### Shenzhen

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- air-conditioning products & services
- building products
- contracting
- e&m equipment

### Macau

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- air-conditioning products & services
- building products
- contracting
- e&m equipment

### Thailand

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- air-conditioning products & services
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- contracting
- e&m equipment

### The Philippines

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222 Sen. Gil Puyat Avenue 1200  
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- agricultural chemicals
- air-conditioning products & services
- building products
- contracting
- e&m equipment
- marketing & distribution

### Singapore

178 Paya Lebar Road  
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- air-conditioning products & services
- building products
- contracting
- e&m equipments

