ISSUES FOR
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INVESTORS

GREEN BUILDING IN ASIA

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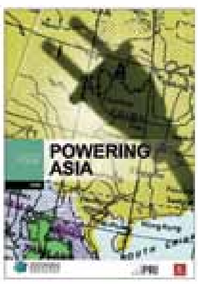
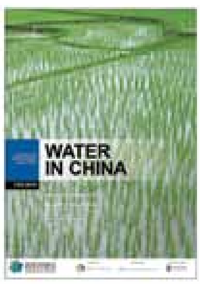
Responsible Research is an independent provider of sectoral and thematic Asian environment, social and governance (ESG) research, targeted at global institutional investors. Many of these fund managers and asset owners now find that traditional investment banking reports, financial models and public information sources can no longer be relied on to cover all risks to earnings and deliver superior returns. Companies who do not monitor and report on this 'non-financial' performance not only risk financial penalties for non-compliance with stricter regulatory environments but are also denied access to substantial pools of global capital which are managed according to sustainable principles.

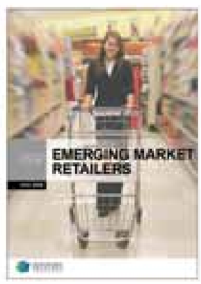
Our approach is based on analysis of material ESG factors, which change according to sector and market. We provide our clients with local market knowledge of important regulatory landscapes in Asia, along with a fresh perspective on local operational and sectoral issues. We offer an annual subscription model for our monthly sectoral or thematic reports and give our clients access to the underlying data. Reports can also be commissioned (by investors or foundations) and kept for internal use or be offered for general distribution, as part of an general effort to promote ESG integration into the Asian investment process. Our analysts conduct seminars and webinars to discuss findings, often with contributions from experts, companies and policy-makers.

Responsible Research was founded in 2008 by our Board who have been instrumental in promoting Corporate Social Responsibility (CSR) and SRI practices in Asia for over 10 years and have significant experience in the regions emerging investment markets. This team of five works in collaboration with our full time Asian-based responsible investment analysts and the Responsible Research Alliance, a group of consultants with subject matter expertise. Together they provide a valuable balance of market and ESG knowledge, academic rigour, process management, data management, customer relationship management and senior level contacts.

Many of our clients are signatories to the UN backed Principles of Responsible Investment (PRI), an investor initiative. As signatories they commit to incorporate ESG issues into their investment analysis and to support the development of ESG tools, metrics and methodologies. As a signatory to the PRI we voluntarily contribute time and resources to the Emerging Markets Disclosure Project and other collaborative initiatives. Responsible Research is also a strong supporter of independence in research, without which conflict and bias can deliver investment risk. The company is one of the founding members of the Asian Association of Independent Research Providers and also of the Asian Water Project.







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EXECUTIVE SUMMARY

Responsible investors in Asia today are faced with the challenge of mitigating systemic risks from climate change whilst negotiating destabilized economies striving to get back on their feet from the effects of the global recession. Real estate owners and investment managers in Asia are attempting to reduce potential financial risks in their portfolios from emissions and water impacts by assessing the energy and resource efficiency of building assets. Companies that recognise and monitor these impacts tend to have executive teams that understand and strategically manage other sustainability risks in their business models.

Asian green building leaders highlighted in this report include City Developments, Ayala Land, Swire Properties, Capitaland, Keppel Land and Hang Lung. These companies measure and disclose their energy and water impacts and efficiency initiatives. These are the best-placed publicly listed companies to lead their sector through the upcoming challenges. Our research also identifies a core of 'green building experts' in Asia, which include Lend Lease Property Investment Services and ING REIM (Korea). These integrated property services companies will, over time, quantify increased returns and reduced portfolio risks to add further weight to the case for green building, especially if results are made public. In the construction sector Ambuja, Grasim and ACC cement companies in India along with Siam Cement and Lafarge Malyan have also demonstrated best practice in their reporting of sustainability issues.

The term 'green' is given to buildings that have either been built or retrofitted to lessen their environmental impacts. Although there is no common definition of what constitutes a 'green building' there is no lack of global and country level standards; the Leadership in Energy and Environmental Design (LEED) from the arguably the most widespread certifier of sustainable real estate and is beginning to be seen as the 'gold standard' throughout Asia. There has also been a proliferation of 'local' standards in Asian economies, with the BCA Green Mark scheme in Singapore notable for its strong government, institutional and corporate support through both incentives and regulation.

Drawing on the latest research from sustainable building projects in Europe, Australia and the US, this report identifies the nascent market forces that are driving forward the green building agenda in Asia. Evidence for operational cost savings, which make up around 85% of total lifecycle costs,[1] is slowly being established, using individual case studies as well large-scale research projects. In addition, increased rental yields, occupancy levels and valuations are 'cementing' the business case for green building.

Financial benefits are, of course, the key driver for investment, however, there are additional benefits being observed and quantified, from employee issues such as health and safety to productivity in the workplace. Green buildings can therefore form an important part of the Corporate Social Responsibility (CSR) policies that are gradually becoming a prerequisite for multinational companies (MNCs) operating in Asia. These high profile companies are not only using their new, resource efficient headquarters to strengthen corporate communications, but they are playing a part in inspiring local companies in developing markets to also build green.

IPCC predictions state that future impacts from climate change could vary from 'disruptive to catastrophic', with the physical and economic impacts being most keenly felt in Asia, with its coastal and agriculture dependent populations. Due to this focus on the potential for future economic impact, governments are starting to plan their own emissions reduction strategies and, as buildings account for around 40% of energy use[2] and approximately one third of greenhouse gas emissions[3] they are, increasingly, a target for both new regulations and funding initiatives.

As climate change agreements continue to be negotiated, financing options for the promotion of sustainable development in Asian developing countries is gathering momentum. Clean Development Mechanism (CDM) building efficiency projects have the potential to support the greening of developing Asia's building stock. Projects have yet to make headway but could be encouraged if countries proceed with bundled NAMA (Nationally Appropriate Mitigation Actions) proposals which group together building efficiency projects by sector, under one mitigation proposal, making investor engagement more straightforward.

Governments globally have allocated a reputed US$430 billion[4] in 'green' fiscal stimulus packages, much of which is finding its way to building energy efficiency projects across Asia, where planning permission and public hearings are less onerous; 80% of the of recently announced fiscal stimulus package in South Korea was aimed at green developments.[5] The focus on energy efficiency additionally allows developing Asian economies to increase their energy security for future economic growth, relying less on imported fossil fuels.

Companies and investors must develop a full understanding of the associated risks and opportunities of climate change in the real estate and construction sectors, as well as in their own real estate portfolios. Mitigating actions taken to avoid the financial impacts of increased taxation, fines, energy costs and carbon pricing will potentially affect financial valuations as analysts start to account for environmental externalities. Real estate developers, construction materials suppliers and real estate managers who ignore these 'externalities', run the risk of being left behind as the building landscape changes and Asian regulators catch up with policies being already established in Europe and the US.

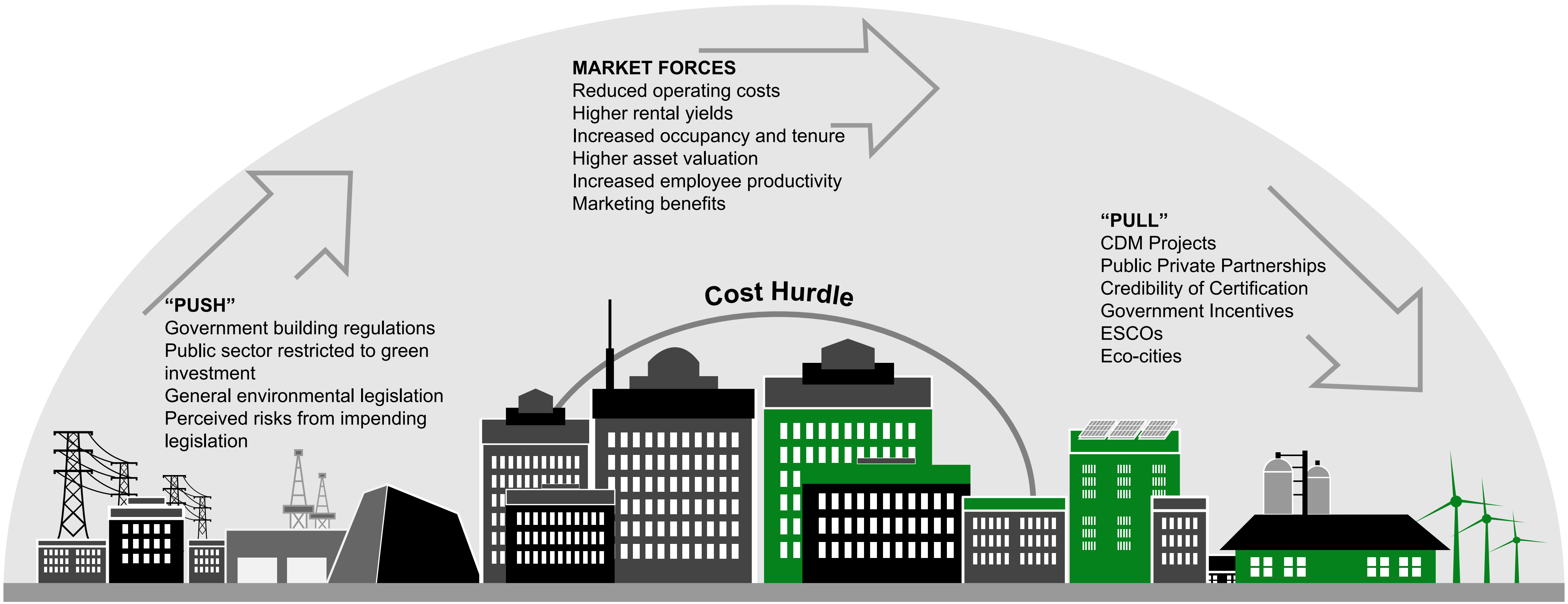
Research has shown that, for most real estate investors, performance on environmental management and policy outclasses that on measurement and implementation of policy.[6] Long-term decision-making in real estate requires greater 'clarity' and 'proof' of returns from operational cost reductions, yield enhancement and other performance indicators. Therefore the financial and reputational risks associated with inaction need to be better outlined and quantified.

Forward thinking investors are, however, starting to take heed of the financial benefits of green building and are beginning to 'benchmark' their own property and other asset portfolios for energy efficiency in order to reduce wastage in highest impact developments.

Estimates suggest that 60% of the buildings that will exist in 2050 have already been built.[7] The importance of retrofitting existing building stock to improve energy efficiency and reduce emissions cannot be overstated. Energy Service Companys (ESCOs) are increasingly using structured project financing in order to absorb some of the risks and share in the rewards of successful energy saving practice implementation. Many energy efficiency projects are relatively low risk and high return compared to other developing Asia projects. Investors, therefore, will look towards underwriting deals with ESCOs to deliver returns from green building projects. The slow development of these energy efficiency funds in Asia is disappointing for many, but can be explained by the post-crisis reluctance for financial product innovation.

We believe that much of Asia has reached a tipping point for action to occur. There is a greater understanding of the role that green building can play in financial and reputational risk reduction that appeals to deepening environmental concerns amongst employees and consumers in the region. Systems and technology solutions to the various environmental challenges are being developed for all the challenges presented to the development of this industry.

There has been a deepening perception that green building is an expensive choice for developers, These additional costs, however, seem insignificant when developers synchronise energy efficiency improvements with scheduled capital improvement projects such as new cladding, flooring and HVAC systems. Another winning strategy is to ensure appropriate paybacks for repayment of the upfront costs of green building. This means that the owner or developer shares the financial benefits with tenants. So called 'green leases' have been developed to structure these relationships. They incentivise tenants to develop environmentally responsible behaviours whilst allowing the developer to recoup any up front investments.


MARKET FORCES
Reduced operating costs
Higher rental yields
Increased occupancy and tenure
Higher asset valuation
Increased employee productivity
Marketing benefits
"PUSH"
Government building regulations
Public sector restricted to green investment
General environmental legislation
Perceived risks from impending legislation
Cost Hurdle
"PULL"
CDM Projects
Public Private Partnerships
Credibility of Certification
Government Incentives
ESCOs
Eco-cities

Despite the wide range of green ‘certification standards’ in Asia which are beginning to encourage best practices, there is still a concern that these will become self-serving marketing schemes, particularly in countries with small numbers of powerful developers close to the government, or those countries with low levels of transparency and high levels of corruption. Claims of ‘green washing’ by consumer groups or civil society may reduce the credibility of the green building industry as a result, which could threaten to undermine the advances already made.

Recent turmoil and the resulting reconsideration of financial market regulation has highlighted the importance of effective disclosure to inform investment decisions. We anticipate that this will lead to better understanding of the benefits and opportunities in the Asian green building market over the next few years and, over the longer term, will allow investors who incorporate sustainability issues into their valuation methodologies to outperform their less informed peers.

CONTENTS
GREEN BUILDING IN ASIA

Authors Notes:

Market capitalisations:
Based on the market close of 17 March 2010, unless otherwise stated.

Coverage:
This report is focused on 10 countries in MSCI (All Country) - Asia ex Japan Index but includes reference to global research and analysis.

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