GREEN BUILDING MARKET REPORT SOUTH EAST ASIA 2014

BCI ECONOMICS
A division of BCI Media Group

FUTURARC
The Voice of Green Architecture in Asia

WORLD GREEN BUILDING COUNCIL
Asia Pacific Regional Network

China Green Building Council - Hong Kong Chapter

GREEN BUILDING COUNCIL INDONESIA

HKGBC
Hong Kong Green Building Council

MGBC
Malaysia Green Building Confederation

Philippine Green Building Council

SINGAPORE GREEN BUILDING COUNCIL

TGBI

VGBC
Vietnam Green Building Council

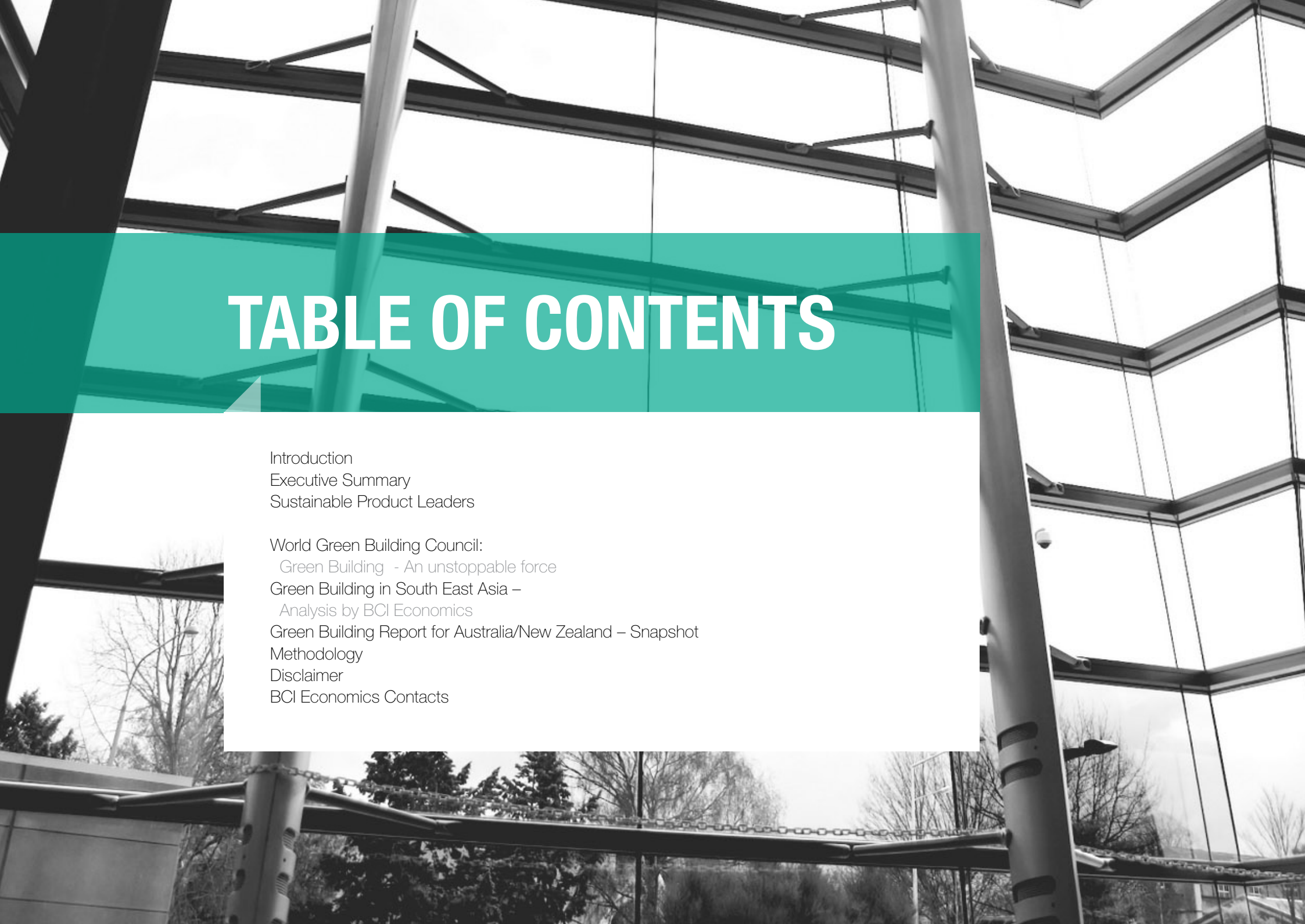


TABLE OF CONTENTS

INTRODUCTION

Green building continues to gain momentum and the SE Asian region is enthusiastically getting on board. Even though many of the countries in the region enjoy a wealth of energy resources both renewable and non-renewable, the concern for environmental degradation, national energy security and the world-wide need to "do more with less" have provided the motivation to adopt sustainability principles in their construction practices.

The evidence from the World Green Building Council is most compelling – in 2002, when the WGBC was founded it had eight member nations, none of them from Asia. Today, of the 100member nations, 18 of them are in the Asia Pacific region and they are reporting significant achievements.

The national Green Building Council of Indonesia (GBCI), for instance, recently reported that over 100 building managers had reached out to it in order to apply for green building certification. Also the Hong Kong Green Building Council BEAM Plus rating system, established in 2010, now has more than 550 building projects either rated or registered.

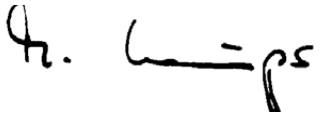
Furthermore, Singapore has committed to fostering the continuous evolution of green architecture with attractive incentives and a comprehensive rating system for buildings. The outcome has been the certification of 1,534 newly constructed and 215 existing buildings as "green" since 2005.

No wonder then that we at BCI Asia have a keen interest in the growing adoption of green building principles and practices by the building and construction industry especially as we also share the commitment of the Green Building Councils to promote the progress of the industry to even higher standards of sustainability. In 2014 we take great pride in celebrating seven years of our FuturArc Prize for Green Building Design and five years of the Green Leadership Awards!

Our last empirical study of attitudes toward and experiences with green building in the SE Asia region was in 2008 in conjunction with BCI Australia. It will be instructive to see how the industry has evolved over that time especially in view of the economic and commercial challenges presented by the Global Financial Crisis. I should like to add that this year we have extended our survey and the Green Building report for Australia (available separately) also includes New Zealand for the first time.

As has been the case with the previous surveys conducted by BCI Economics, our analysis encompasses owners, developers, architects and engineers, main contractors andsubcontractors across Hong Kong and 5 countries in South East Asia.

So without further hesitation, BCI Asia is delighted to present its 2014 Green Building Report on South East Asia. It adds a further dimension to our substantial complement of products and services providing our clients in the region a greater understanding of the local and regional construction markets.



Dr. Matthias Krups
Chairman & CEO
BCI Media Group PTY Ltd.

EXECUTIVE SUMMARY

During the period of March through May, 2014, BCI Asia received responses from 523 developers, architects, engineers, main- and subcontractors across South East Asia to a questionnaire about their views on and experiences with green building. The findings are summarized as follows:

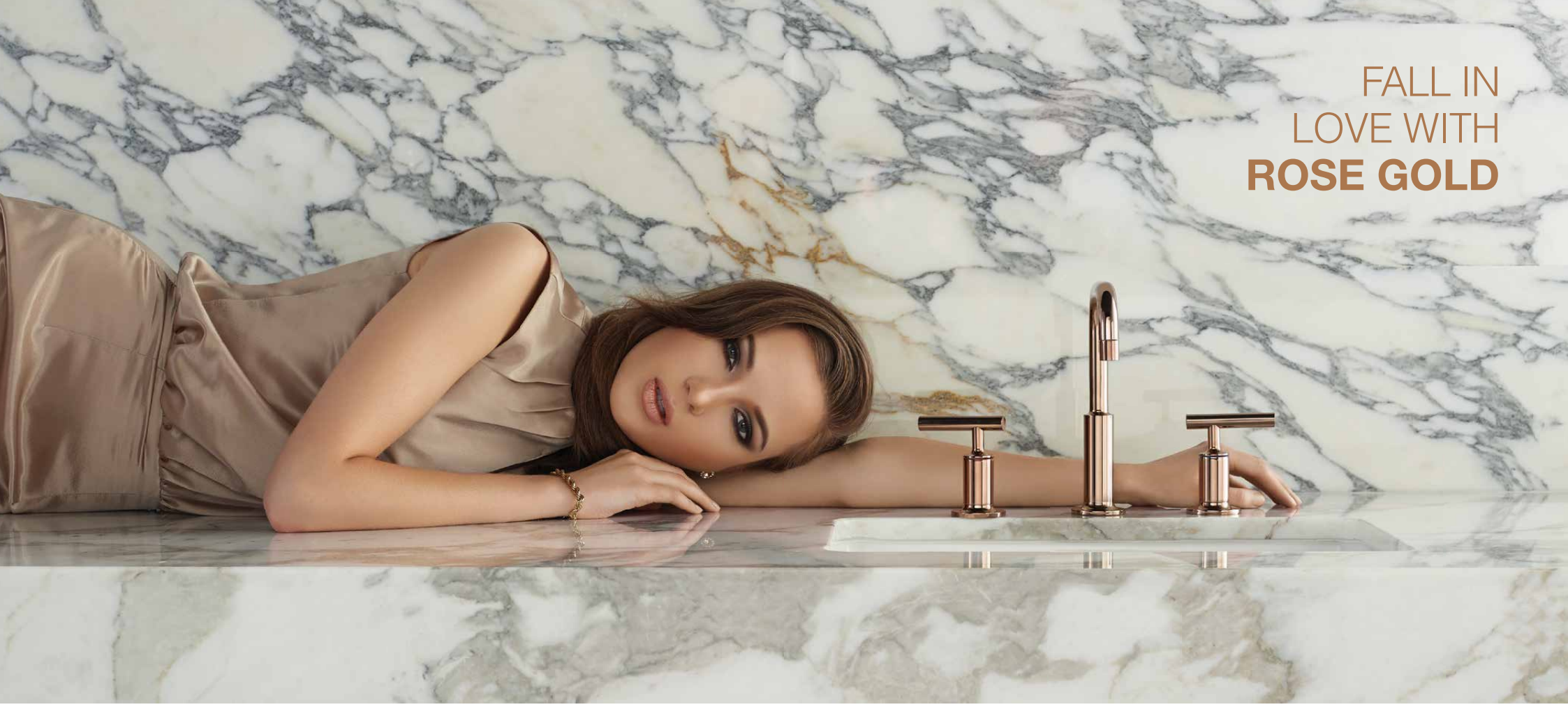
- Around 7 in 10 respondents across the region stated that they had been involved in some form of green building during the period of 2008-2014.
- 46% of respondents said they had received official green building certification for one or more of their construction projects. Of those, about a third stated that they had had their ventures registered with Singapore-based “Green Mark”.
- 79% of those participating in the survey indicated they would be “somewhat likely” or “very likely” to pursue certification from the beginning of their green building projects.
- Overall, our respondents were moderately optimistic that their enterprises would grow because of activity in the area of green building.

- The three major reasons encouraging companies in South East Asia to become engaged in green building were as follows:
  - to help protect the environment and strive to alleviate the consequences of global warming
  - to achieve lower lifecycle costs and
  - to enhance the value and marketability of their projects.
- In turn, the biggest hurdles to the adoption of green building in South East Asia were:
  - the additional costs of building materials
  - the extra time and expenditure required to investigate suitable materials and
  - the extra time and costs needed to undertake necessary training.
- Regarding their familiarity with certification systems, survey participants afforded the highest rating to the Singapore "Green Mark" followed by Malaysia's GBI.
- 79% of respondents indicated that they were "somewhat" or "very" likely to pursue certification in the future.
- The top three certification systems of choice were "Green Mark" (Singapore), "GBI" (Malaysia) and "LEED" (US)
- When asked which building categories were most likely to benefit from certification, our survey participants named the top 4 categories as commercial/office, healthcare, hospitality and education, although there was little to choose between them.
- The main obstacles to pursuing green building certification were considered to be:
  - the cost of the certification process,
  - the lack of information on certification requirements, and
  - the gap between 'design promises' made with the certification and the performance reality when the building operates.

EXECUTIVE SUMMARY

- 44% of all Asian respondents indicated that they had seen “some”, even “significant” growth in their annual sales because of green building.
- There is a premium to be paid for delivering a building according to green principles with only 4% of the Asian respondents claiming there was no cost impact. However, the spread of values for the extra costs (reflecting the different levels of certification) still compares favourably with the expectations reported in 2008.
- In turn, the actual savings in operational costs also compare favourably with the expectations reported in the 2008 survey, with only 5% of respondents reporting that green building had not had any impact, whereas over half claimed savings of 10% and more.
- Although 6% of our respondents claimed they had not observed an improvement in building value, 12% advised their buildings were worth at least 20% more because of their green credentials. In all, just under a half of the responses put the increase in building value at a minimum of 10%.
- Calculating the improvement attributable to green building of the Return on Investment (ROI) on their building projects proved difficult but the results from those respondents who managed it confirmed a positive outcome with over 40% of our respondents reporting improvements of at least 10%.
- We included a question regarding design software and our respondents advised they believed it had most relevance for:
    - prediction and evaluation of natural (solar) lighting
    - energy modelling/baseline analysis
    - evaluation and exploration of alternative building materials
- The technologies most frequently used in green building projects in South East Asia comprised:
    - energy efficient/intelligent lighting
    - water efficient fixtures and fittings and
    - insulation products.

GREEN PRODUCT LEADERS



Rose Gold
The charming allure of gold's splendor meets the subtle blush of a delicate pink rose. Our new Rose Gold faucet finish is a tease of timeless luxury with a touch of romantic elegance.

Kohlerasiapacific.com

KOHLER®

The Penang Second Bridge in Malaysia, the longest bridge in South East Asia, was officially opened on 1 March 2014. The Bridge named after the 14th Yang di-Pertuan Agong, Tuanku Abdul Halim Muadzam Shah of Kedah, was assigned with the route number E28.

Totalling 24km in length, it will take motorists around 20 minutes to cross the RM 4.5 billion bridge from Batu Kawan on the mainland and Batu Maung on the island.

Penang island already has another bridge linking it to the mainland. The first bridge opened in 1985 but the state's rising population, and popularity with visitors, meant that another bridge was needed to cope with the increasing traffic.

The Second Penang Bridge Plus Toll Plaza achieved CBI provisional rating gold and The Second Penang Bridge PB2X Toll Plaza achieved GBI provisional platinum.

THE SECOND PENANG BRIDGE PLUS TOLL PLAZA

GBI PROVISIONAL RATING	GOLD
CERTIFICATE NO.	GBI-NRNC-0099(P)
CERTIFICATION DATE	24 JANUARY 2014
BUILDING CATEGORY	Non-Residential New Construction (NRNC)

Click on thumbnails below to enlarge images

THE SECOND PENANG BRIDGE PB2X TOLL PLAZA

GBI PROVISIONAL RATING	PLATINUM
CERTIFICATE NO.	GBI-NRNC-0100(P)
CERTIFICATION DATE	24 JANUARY 2014
BUILDING CATEGORY	Non-Residential New Construction (NRNC)

Click on thumbnails below to enlarge images

AN UNSTOPPABLE FORCE

JANE HENLEY, CHIEF EXECUTIVE OFFICER WORLD GREEN BUILDING COUNCIL

Green building has become an unstoppable force.

The latest World Green Building Trends report, released by McGraw-Hill Construction in conjunction with the World Green Building Council (World GBC), surveyed professional services firms in more than 60 countries, revealing that green building is accelerating around the world as it is recognised as a long-term business opportunity.

Just over half of those firms surveyed - which include architects, engineers, contractors, owners and consultants - anticipate that more than 60 per cent of their work will be green by 2015. This is up from a quarter of firms in 2012.

The report finds that growth of green is not limited to one geographic region or economic state; green building is pervasive, rather than isolated to a particular region, economic condition or culture. Interestingly, when McGraw-Hill Construction published its 2008 study of the global green building

market, “doing the right thing” was the primary driver for green building.Today, green building is increasingly seen as a business opportunity, with client and market demand and brand recognition the dominant forces.

The potential for design, construction, consulting, auditing and manufacturing companies across the entire value chain is immense – which is why most countries across the Asia Pacific now have a national GBC affiliated with the World GBC. The green building council model, which demonstrates why collaboration between many can achieve greater results than leadership of a few, rests on the belief that effective solutions require a whole sector approach across the entire supply chain.

When the World GBC was established in 2002, it had eight member nations, none of them from Asia. Today, we have 100 member nations, 18 of them in the Asia Pacific region.

Established	Emerging	Prospective	Associated Group
Green building council with full membership status with World GBC	Green building council working towards full membership status with World GBC	A group that has been officially recognised by the World GBC as the entity establishing a GBC in their country, and is working towards emerging member status	Groups that the World GBC endorses and supports, as the organisations are in the process of forming councils in non-member countries or economic zones but which do not yet satisfy the membership criteria
Australia Hong Kong India Japan New Zealand Singapore Chinese Taipei	Indonesia Malaysia	Sri Lanka Korea Pakistan Philippines	Bangladesh Brunei China Kazakhstan Vietnam

Of course, opportunities and challenges vary from country to country, and vast disparities exist in terms of technology adoption, public awareness and government engagement. In some mature markets, GBCs have driven dramatic upticks in sustainability, have well-established relationships with governments and are boosting 'green collar' skills across their entire industry. They also have established rating systems which have stimulated market demand for buildings with improved environmental performance, provided a common language for green building and promoted an integrated, holistic approach to building design.

Many countries in the Asian region are rich in energy resources - both in terms of renewable and non-renewable energy. However, driven by a concern for environmental degradation and national energy security, many countries are developing comprehensive plans to progressively increase the use of renewable resources and enhance building energy performance.

These national plans are being supported by regulations, fiscal initiatives, market-based mechanisms and voluntary initiatives. Examples include building codes, energy audit requirements, funding schemes, tax exemptions, and energy labelling for appliances.

At the same time, green building rating tools are being developed and tailored to address the unique physical and socio-economic characteristics of each country. A number of countries have well-established rating systems – from Green Mark in Singapore to Green Star in Australia and New Zealand. The Hong Kong Green Building Council BEAM Plus rating system, established in 2010, now has more than 550 building projects either rated or registered. The Indian Green Building Council has 540 functioning and rated green buildings, and 2,770 green building projects on the go, across the nation's five climatic zones. In Australia, 22 per cent of the nation's office space is now Green Star certified.

Many organisations across the value chain are embracing sustainability as a long-term business opportunity. The World GBC's inaugural Asia Pacific Regional Network Leadership Awards in Green Building received 55 nominations from companies across the region in 2014 (and a further 57 nominations of green building projects). From that pool of companies, Singapore's City Developments Limited and Keppel Land Limited, and India's ITC Limited – Hotels Division were acknowledged for 'walking the talk' when it comes to sustainability. They also underscore that designing and delivering a green building is just the first step on the road to sustainability – and that strong management engagement and commitment to embedding sustainability into organisational cultures reaps rewards.

Financial incentives, which are very effective in promoting energy efficiency, are not widely available in Asia – but this is beginning to change. Many countries are yet to establish financing frameworks for energy efficiency and conservation projects, and financial institutions are still hesitant to finance green projects. However, financial initiatives are emerging. Brunei, for example, has changed its tariff structure and introduced prepaid electricity meters to encourage users to monitor their electricity consumption. Thailand's Energy Efficiency Revolving Fund provides capital at no cost to Thai banks to fund energy efficiency projects, while the Ministry of Industry provides subsidies for the implementation of energy conservation measures.

Creative campaigns are helping to raise awareness of energy efficiency and green building across the region. In the last few years, Vietnam has held a song writing campaign to spread the word on the efficient use of resources. A TV program in the Philippines showcased the construction of eco-friendly homes, with tips provided by experts. The Hong Kong Green Building Council launched the "Hong Kong Green School Guide" to provide practical guidelines for principals and school administrators to better understand how to improve building energy efficiency and engage students.The Singapore GBC led 'Project Green Insights' which involved installing energy meters in schools and educating students on how to read the monitors and modify their behaviour. The enthusiasm of the students has led the Singaporean Government to invest more in green building.

So, where to from here? Certainly, the scale, speed and development, the increasing scarcity and cost of energy, and the growing need for the world to do 'more with less' – in Asia Pacific and the world over – is likely to continue to accelerate the adoption of green building practices. In the future, sustainability will be seen not as an 'add-on' but a 'must-have'. It will be self-evident that the upfront costs of green building will be worth the immense long-term benefits.

SuiRich

SUI RICH INNOVATIONS LIMITED

ABOUT US

Sui Rich is a Hong Kong based company with 15 years of experience in the LED industry. We believe the key to achieve excellence is innovation. As the inventors of the patented MagicFlex, the first flexible LED tiles in the world, Sui Rich was awarded the Technological Achievement Certificate of Merit of Hong Kong in 2011.

We also focus on effective communication. Communication is the cornerstone of strong business relationships. We believe in responding quickly and providing local support wherever and whenever possible. Along with innovation and communication, we pride ourselves on high quality standards and excellent customer support.

Hong Kong Headquarter
Room 8, 8/F, Block B, Merit Industrial Centre, 94
Tokwawan Road, Tokwawan, Kowloon, Hong Kong
香港九龍土瓜灣道94號美華工業中心B座8樓8室

Japan Distributor
Nisshin Toa Inc.
2-30-8,Nihonbashi-Ningyo-Cho,Chuo-ku,
Tokyo 103-0013,Japan

United States Technical Service Center
1 Frassetto Way Suite #1,Lincoln Park,New Jersey,
NJ07035,U.S.A.

Germany Distributor
Ocuris GmbH
Otto-Hahn-Str,28-30,85521 Riemerling,
Germany

China Factory
8-9/F, Building B, Set Up New Funing High-tech Industrial Park,
San Tin Road No. 71, Fuyong Town, Baoan District, Shenzhen, P.R.C.
深圳市宝安区福永镇新田大道71号立新湖福宁高新产业园B栋8-9楼

Japan Branch
220 Flexion, 17, Terashimacho, Nakaku,
Hamamatsu, Shizuoka, 430-0925, Japan

United States Showroom
MY 3D Group.Inc.
3475 W.Post Road.Suite105,Las Vegas,NV89118,U.S.A.

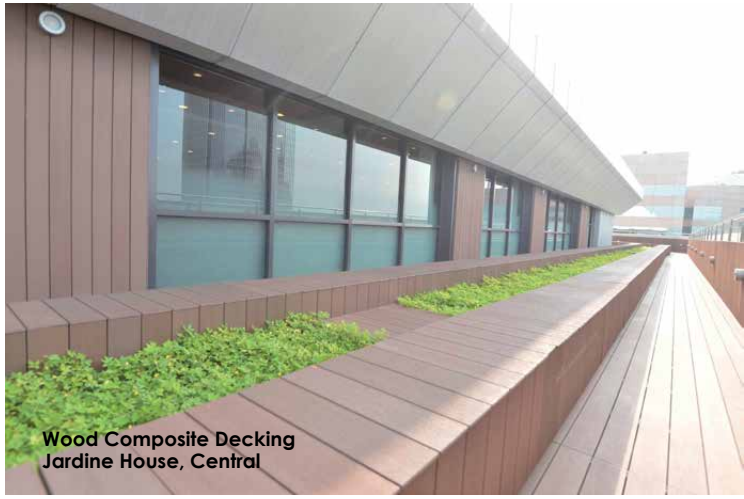
T:+852 2333 9732 F:+852 2333 9679 E:Inquiry@suirichlighting.com http://www.suirichlighting.com

Outdoor & indoor expert

GREENTINS 青庭

Greenwall
Hong Kong Exchanges and Clearing Limited

Wood Composite Decking
Hong Kong Science Park



Wood Composite Decking
Jardine House, Central

Rattan furniture
The Latitude

About Greentins

Greentins has years of experience in providing green, sustainable, unique and lifestyling building materials and services to architectural, design, building and construction professionals for residential, commercial, hotel, landscaping and infrastructure projects. Our products include:

- ★ Recycled Wood Plastic Composite
- ★ Green Wall/Green Roof/Green Podium
- ★ Rattan Furniture
- ★ Bamboo Flooring
- ★ Laminated Glass
- ★ Tatami
- ★ Illuminated signs and displays

and more...

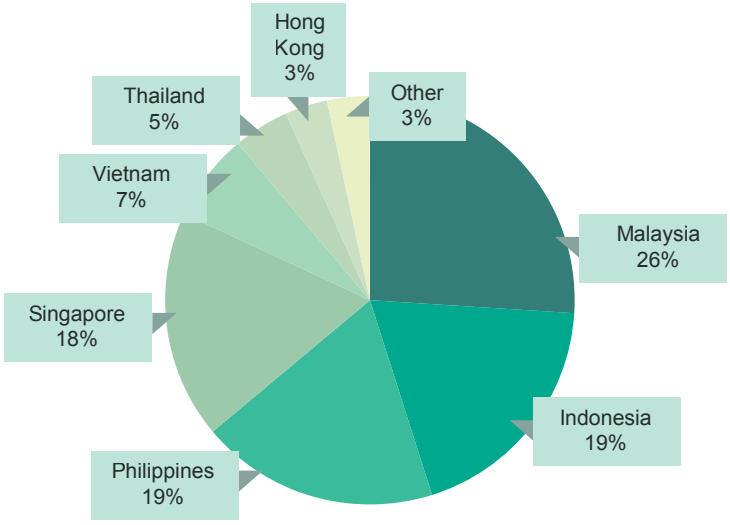
Greentins Technology Limited
Units A&B, 31/F, E-Trade Plaza, 24 Lee Chung Street, Chai Wan, Hong Kong
T: (852) 2866 2683 F: (852) 2528 9288 Email: info@greentins.com
www.greentins.com

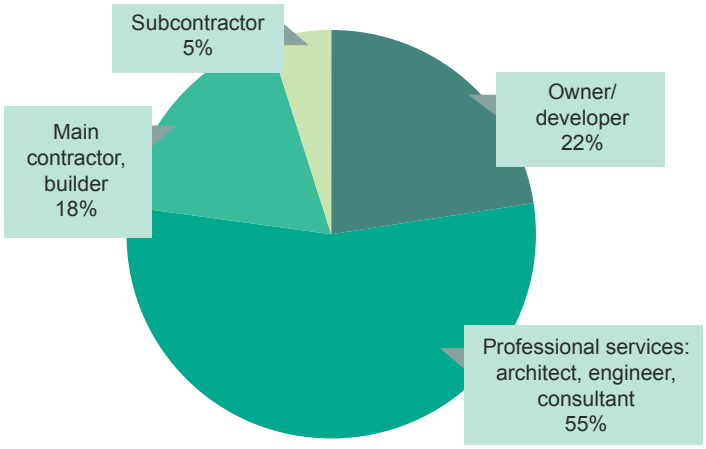
SILVER SME Green Purchaswise Award Hong Kong Green Awards 2012
BRONZE SME Green Purchaswise Award Hong Kong Green Awards 2011
HKGPC Associate Member of HKGPC
FSC
GMC
HONG KONG Green Label
HKGLS Code No. GL-008-009 Certification No. HK 02110
GreenLabel SINGAPORE
Certificate No.: 048 – 054 Made From Minimum 50% Recycled Content
floor score

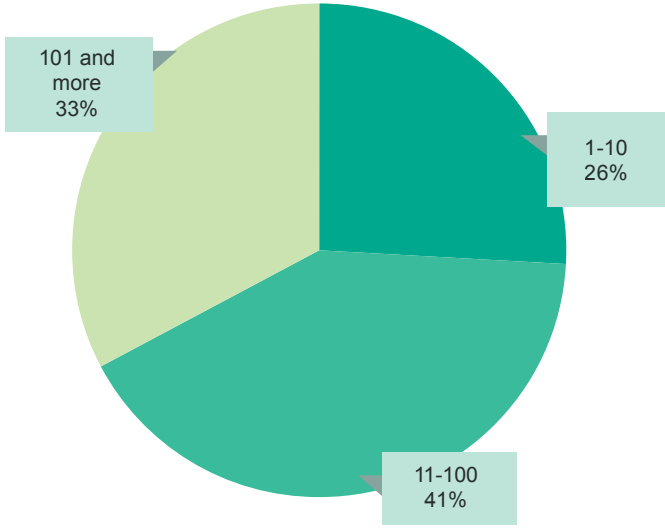
RESPONDENTS‘ PROFILE SOUTH EAST ASIA

The 2014 Green Building Report in the Asia-Pacific has been drawn from the answers to a detailed questionnaire from 523 respondents situated in Singapore, Malaysia, Indonesia, Thailand, Vietnam, the Philippines and Hong Kong. 55% of survey participants identified themselves as providers of professional services, namely architects, engineers or consultants.

Participants represented companies of various sizes but largely from enterprises employing between 11-100 people.



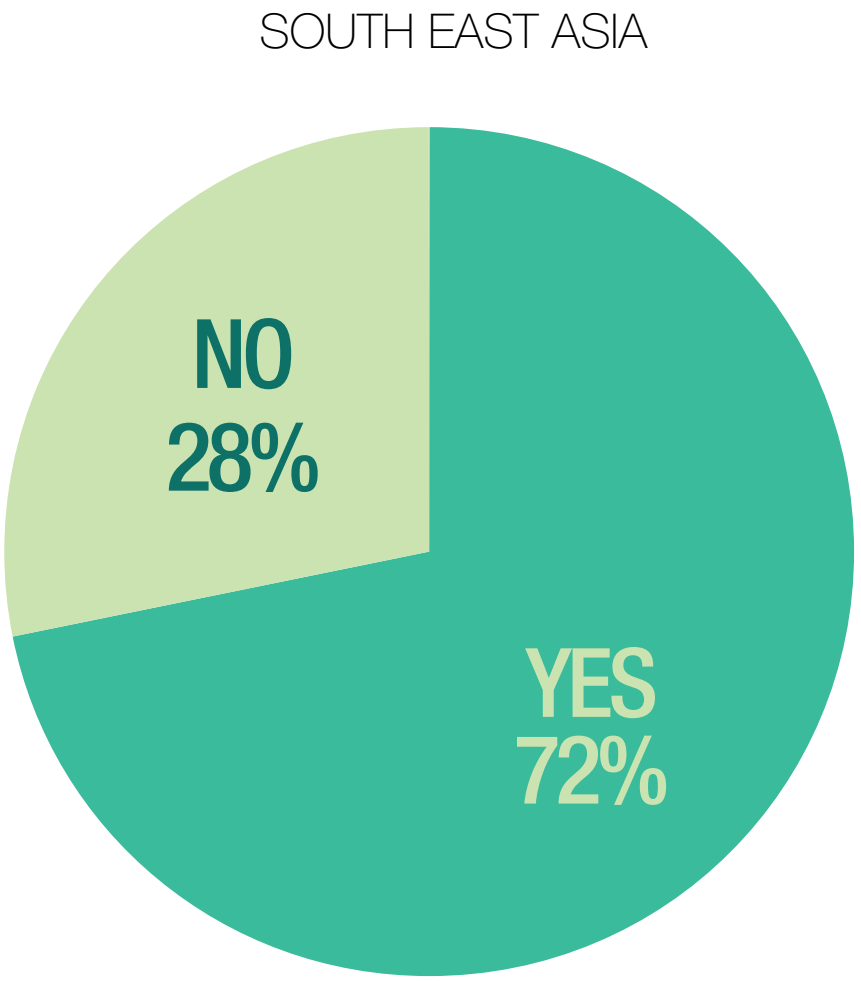




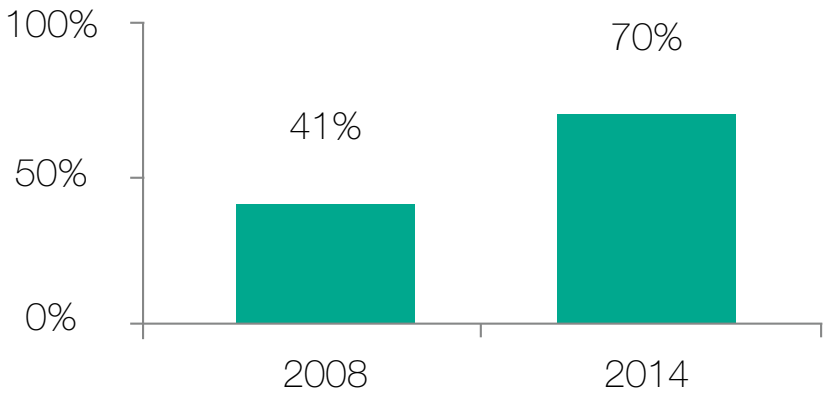
GREEN BUILDING IN SOUTH EAST ASIA

GREEN BUILDING ACTIVITY

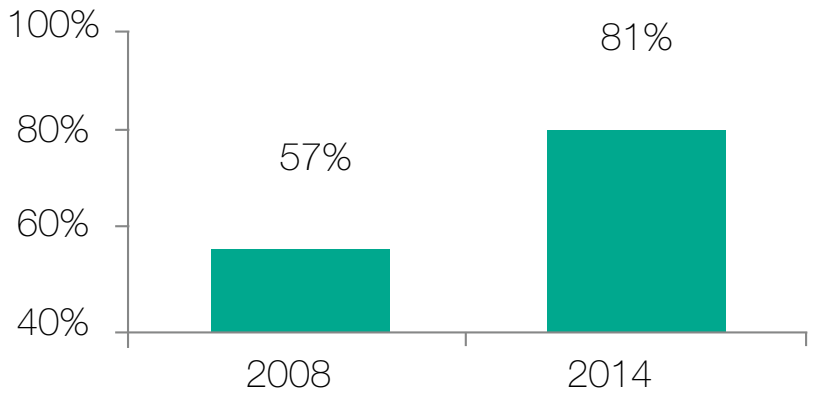
More than 70% of the industry professionals that completed our questionnaire confirmed that they had in some way been involved with green building in the time period from 2008 to 2014. As can be seen from the comparison between the 2008 and 2014 results according to respondent type, there has been a substantial increase in the level of activity over that period.



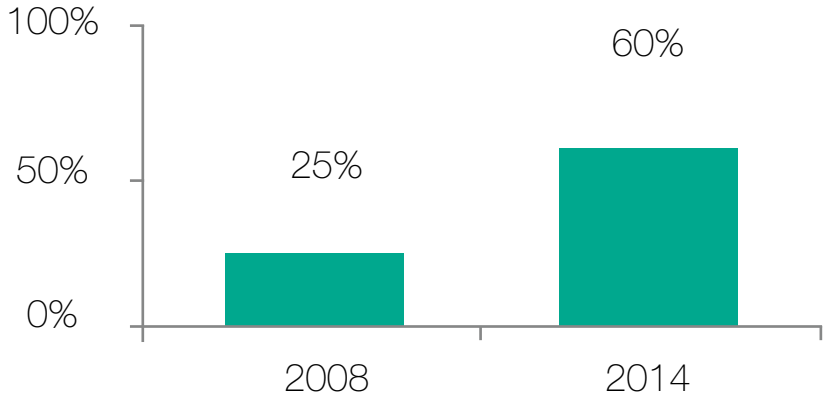
Owner/Developer



Professional Services



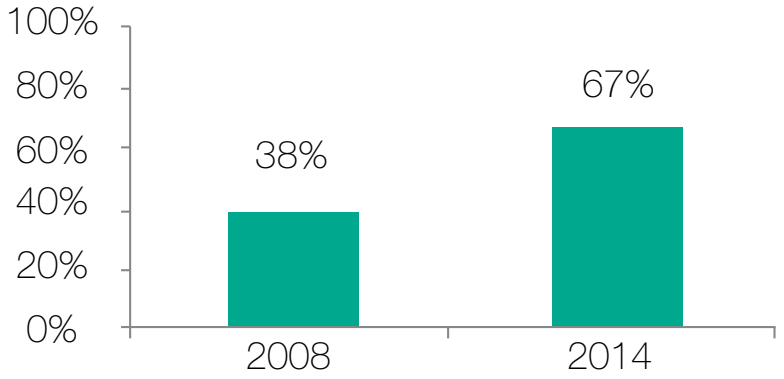
Contractors/Subcontractors



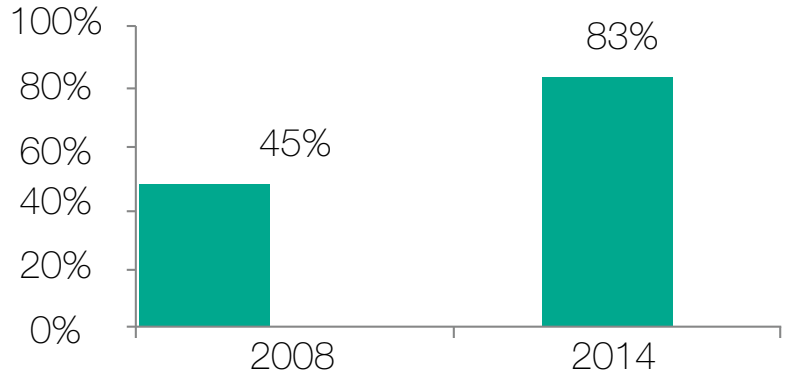
RESULTS BY COUNTRY

One can observe that in most countries the share of respondents engaging in green building has dramatically increased over the six years since 2008. This is especially evident for Singapore, Malaysia and Hong Kong. However, involvement in green building appears to have declined in the countries that previously headed this comparison, namely Thailand (dipping from 55% to 47%) and Vietnam (79% to 70%). No definitive explanations for these reversals have been confirmed but we surmise that political unrest may have contributed to the lower figure in Thailand.

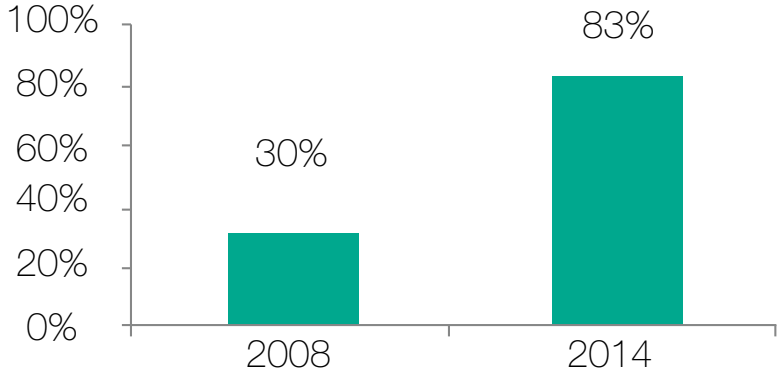
INDONESIA



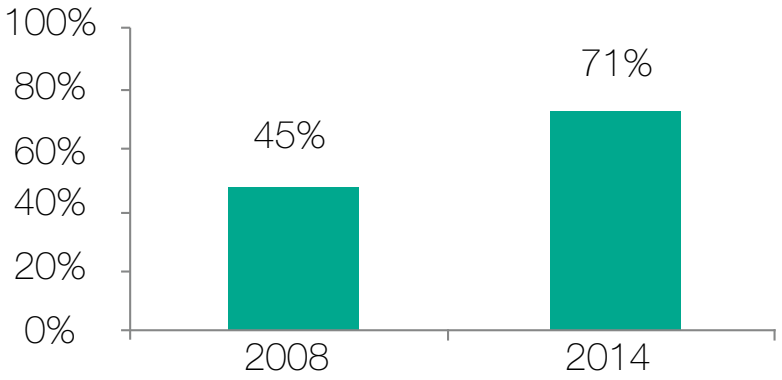
HONG KONG



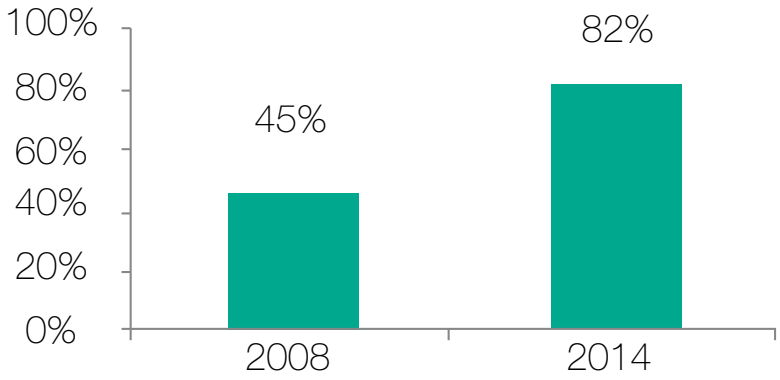
MALAYSIA



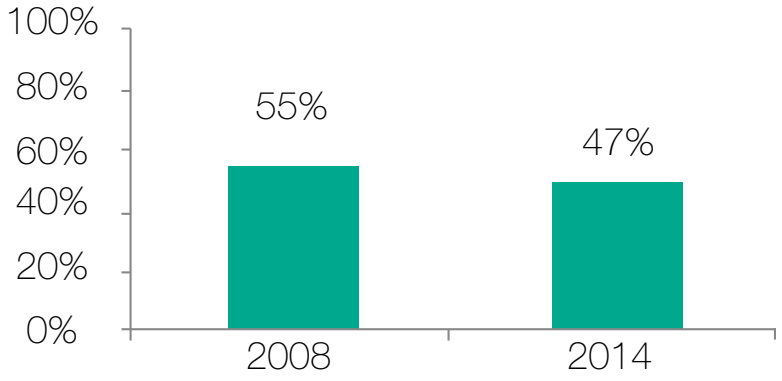
PHILIPPINES



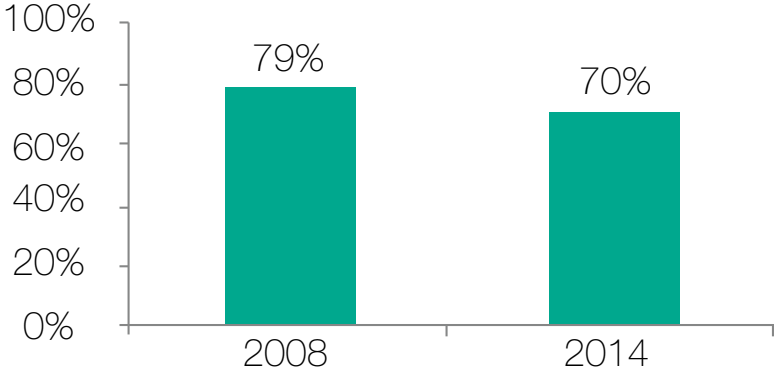
SINGAPORE



THAILAND

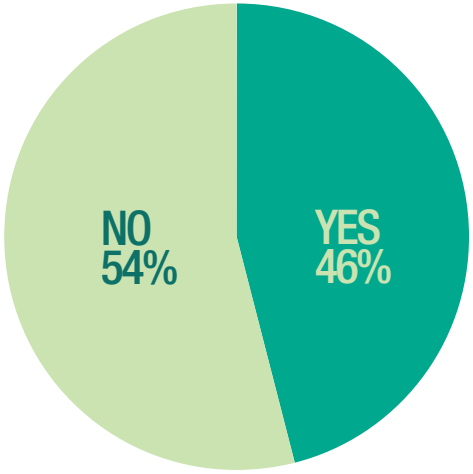


VIETNAM



GREEN BUILDING CERTIFICATION

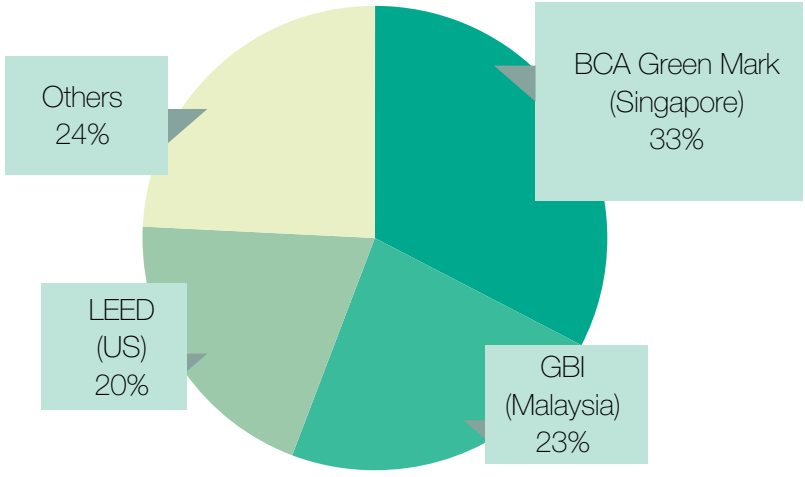
Although 72% of our respondents claimed an involvement with green building, only 46% followed through to pursue official green building certification.

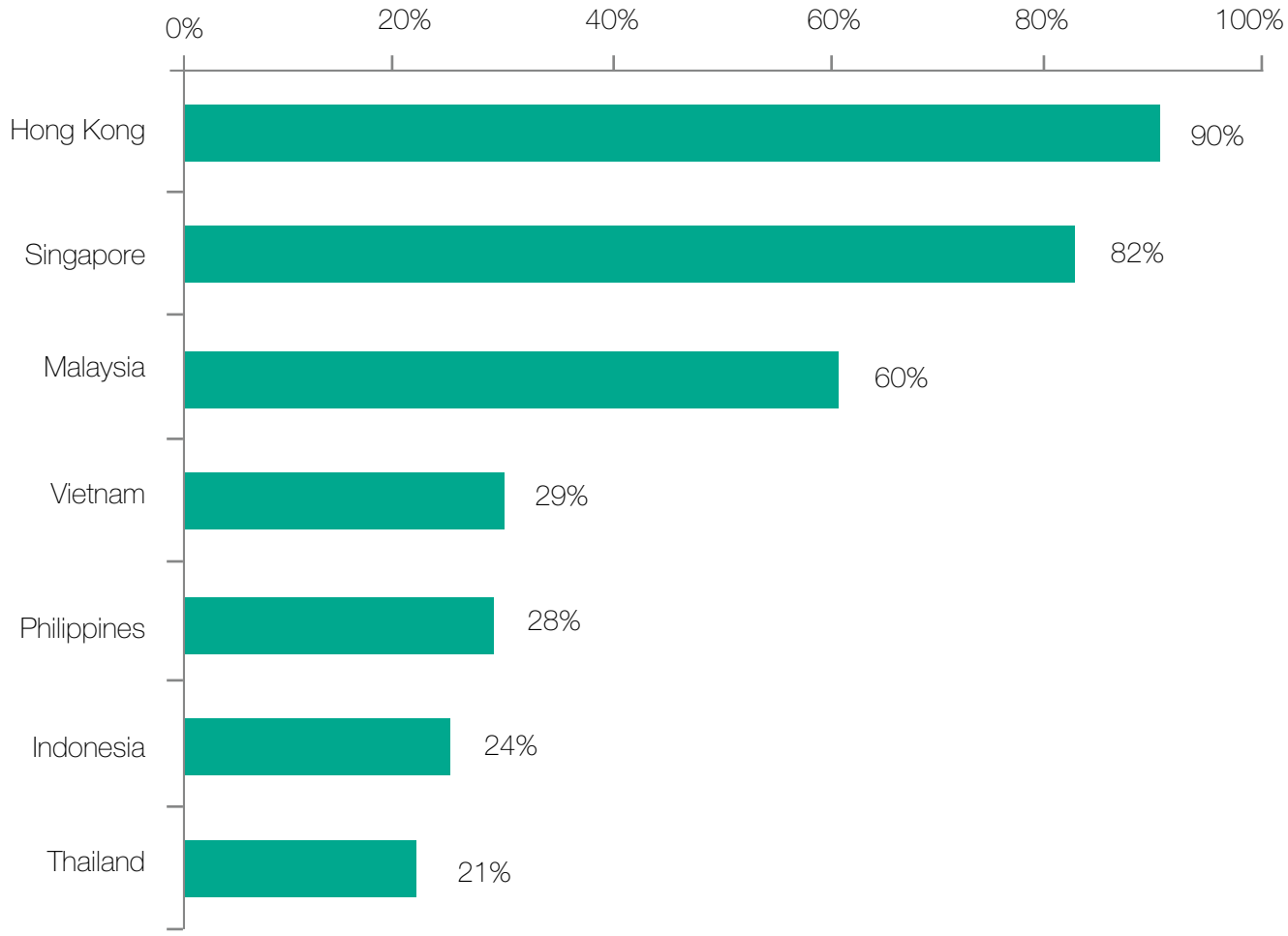


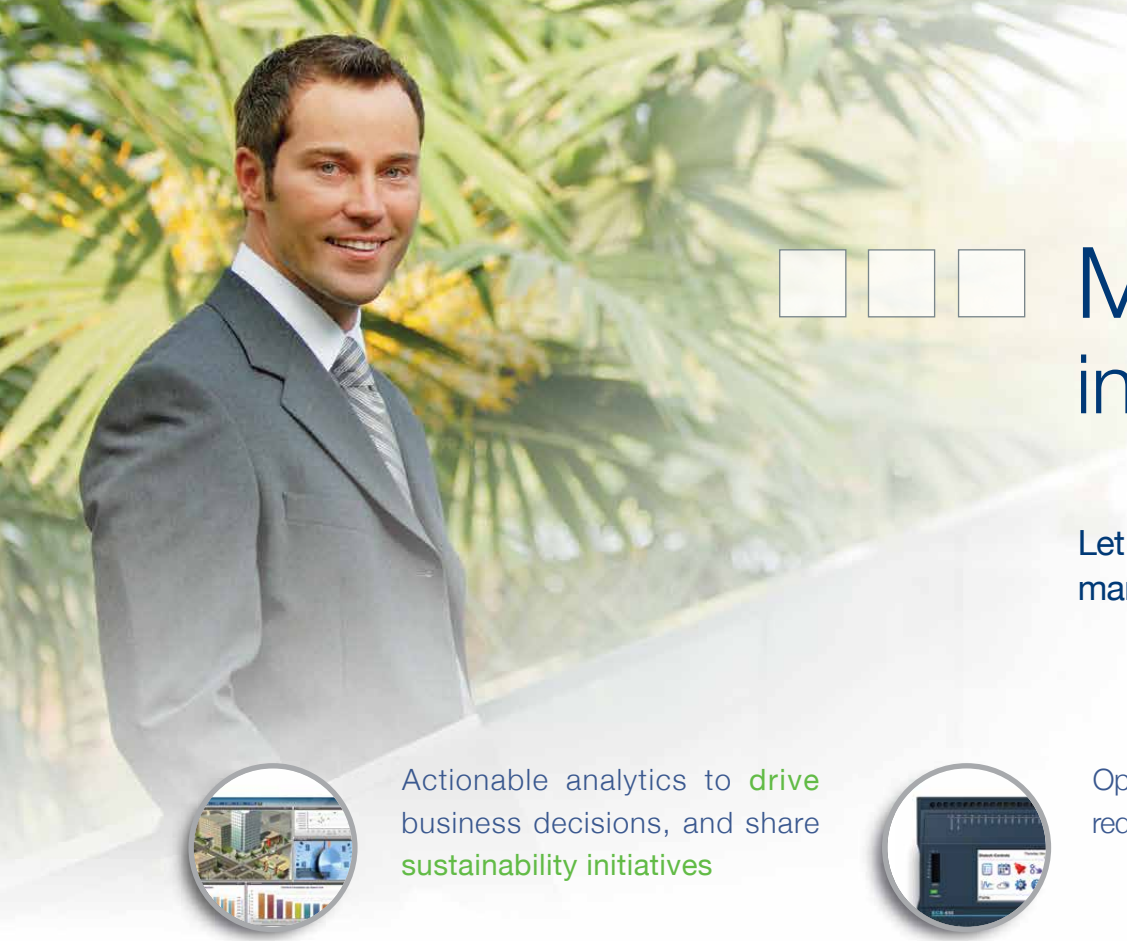
For those survey participants that confirmed receipt of certification, the Singapore-based "Green Mark" was the most widely used system, with 33% of all certificates obtained.

The Malaysian GBI and the United States LEED systems were also reasonably well represented across the South East Asia Region.

Comparison of the relative significance of green building certification reveals substantial differences across the national markets – from Thailand, where only 21% of respondents had pursued and achieved certification for their projects to Hong Kong with a figure of 90%. This may be taken to illustrate the divergent perceptions of the importance and merit attached to certification between the individual countries.




0%
20%
40%
60%
80%
100%
Hong Kong
90%
Singapore
82%
Malaysia
60%
Vietnam
29%
Philippines
28%
Indonesia
24%
Thailand
21%



Meet the New Standard in Sustainable Buildings

Let us show you how our innovative building automation and energy management solutions can help you to acheive greater results.

Actionable analytics to drive business decisions, and share sustainability initiatives

Optimised energy efficiency, and reduced energy wastage

Increase employee productivity by up to 20% with appropriate lighting, up to 50% with appropriate temperature settings, and up to 9% when provided control over environmental settings

Occupant comfort and productivity while achieving energy savings in excess of 30% on HVAC and up to 60% on lighting

Engage occupants for increased energy efficiency by up to 15%

Learn more at **www.distech-controls.com/GREEN**

DISTECH CONTROLS™

Innovative Solutions for Greener Buildings™

Improving Solid Wastes Management with Automated Refuse Collection System

envac
REMOVING WASTE – CREATING VALUE

Improvements

- suit architectural requirements of different projects
- eliminate negative impacts of traditional waste handling methods
- improve unfavourable working conditions for cleaners
- no need for temporary storage of waste in public areas
- improve hygienic environment
- reduce noise & odours

Technology of Automated Collection

- waste is disposed through refuse disposal inlets
- temporarily stored above the totally enclosed discharge valves (DV)
- level sensors monitor refuse storage volume and initiate the system to start collection process if full
- DV will be opened and stored refuses will drop into underground transport pipe net by gravity
- air stream transports refuses at a speed of about 70 kmh to the central refuse collection station
- after separation with air, refuses will finally settle inside refuse container
- air will be treated to remove odour and dust before discharging to the atomosphere
- complete collection process is monitored and controlled by electrical control centre and supervised by Supervisory Control and Date Acquisition System (SCADA)

Applications

- residential development
- office, shopping mall and commercial development
- restaurant, food court, flight kitchen and food manufacturing facilities
- hospital and laundry
- theme park and exhibition centre

Taipei Financial Centre, Taiwan

Science Park, Hong Kong

Tamar Government HQ Building, Hong Kong

301 Hospital, Beijing, China

Envac Far East Ltd. **Tel : 852-28698838** envac.hk@envac.com.hk www.envacgroup.com

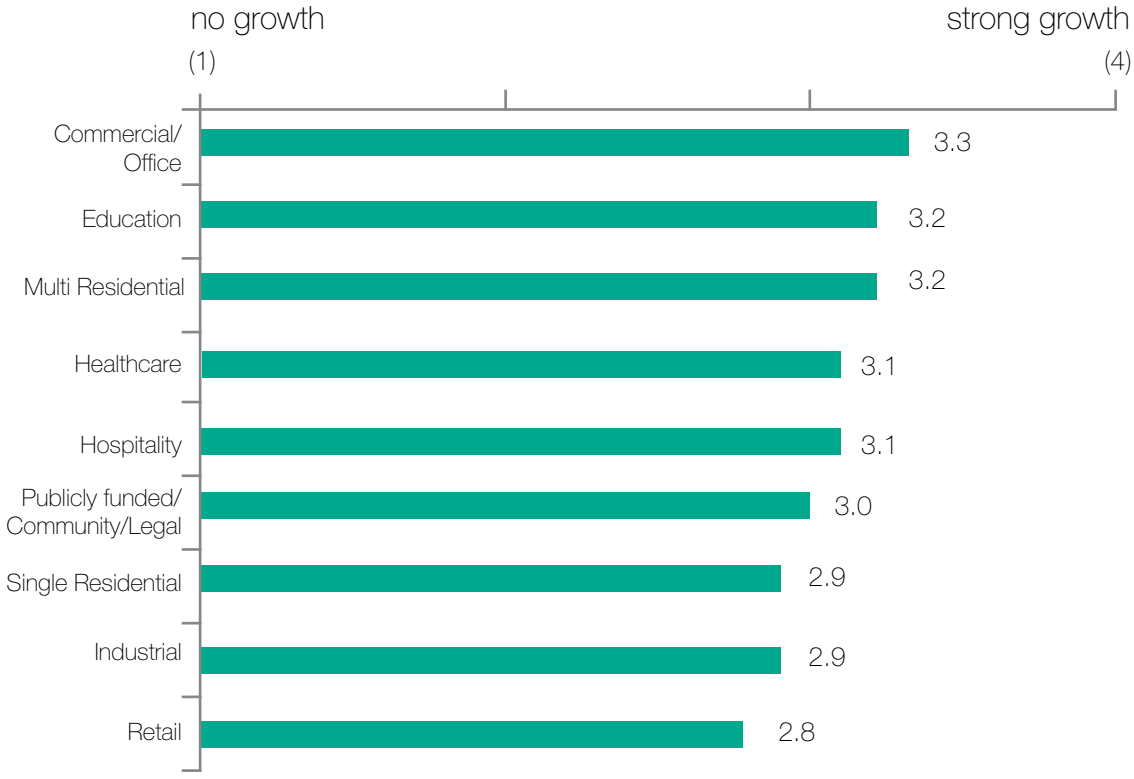
GROWTH EXPECTATIONS FOR GREEN BUILDING

- BY BUILDING CATEGORY -

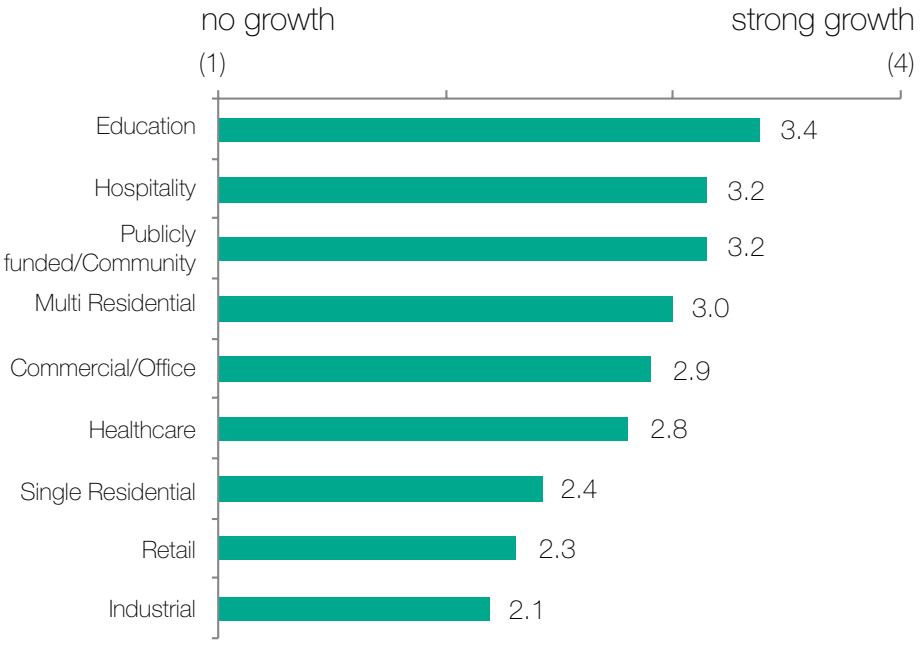
Overall, there are no categories that clearly offer greater opportunities for growth but on balance, commercial and office developments, education and multi-residential would appear to be the preferred categories. At the other end of the scale, single residential, industrial and retail projects were considered to have the least potential from a green building perspective.

Although on the overall chart the variations by category appear gradual, this is because they are averages of wider variations between the countries.

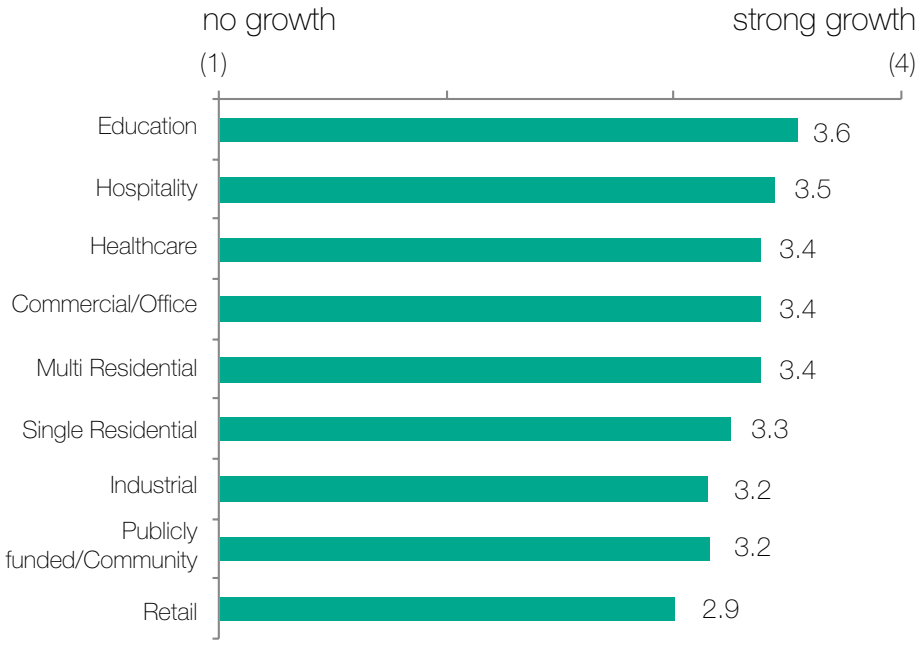
Whereas commercial and office developments lead the growth expectations for Singapore and Malaysia, it is the education category that is regarded as having the most potential in Hong Kong, Indonesia, Thailand and Vietnam. In contrast, the respondents from the Philippines rated residential (multi- and single-) as having the most potential.



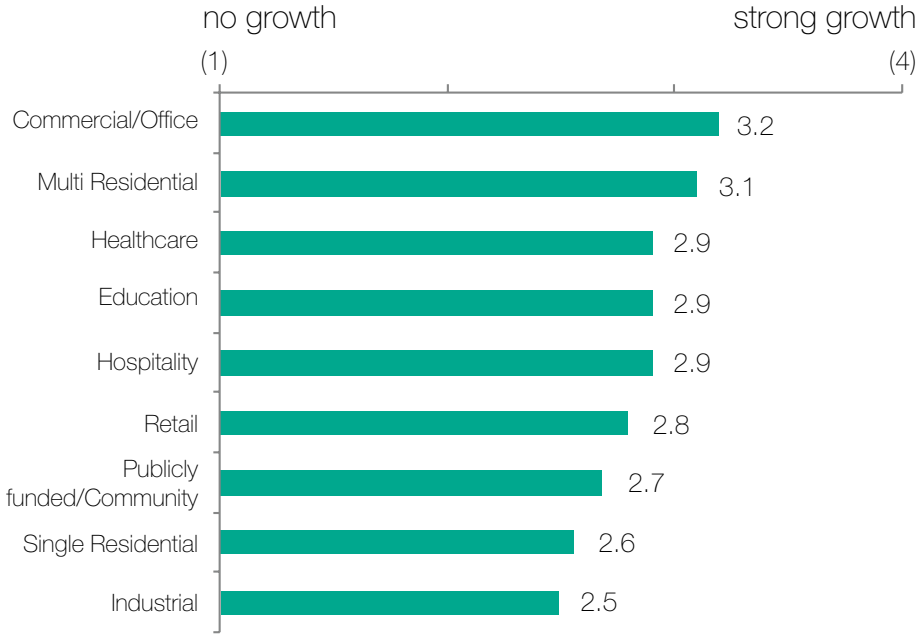
HONG KONG



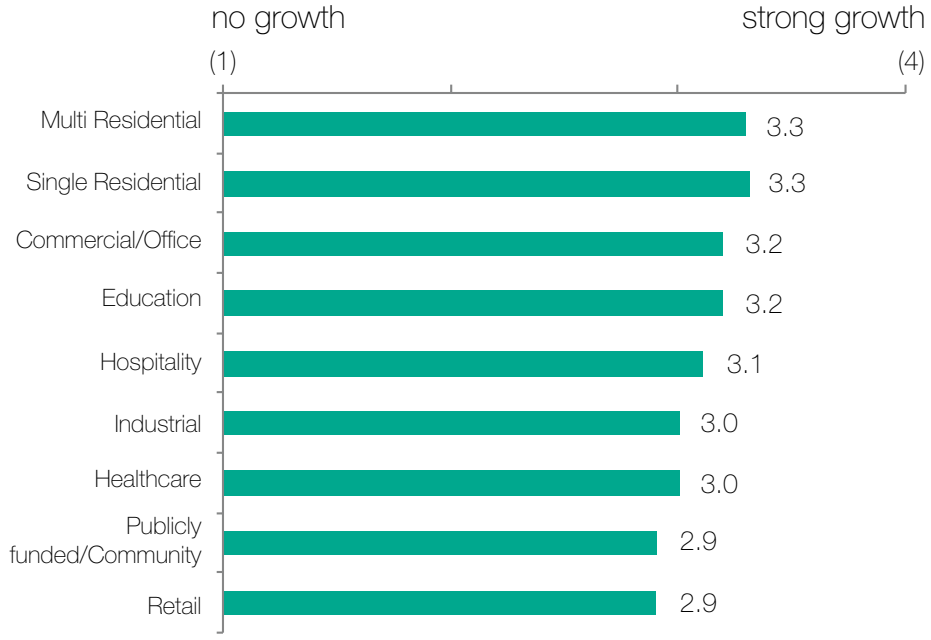
INDONESIA



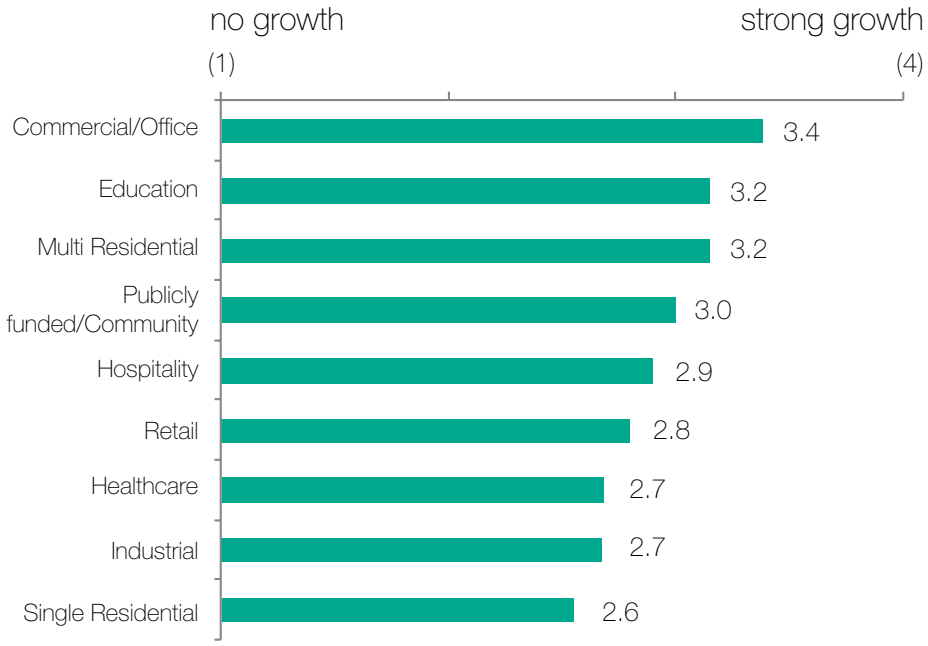
MALAYSIA



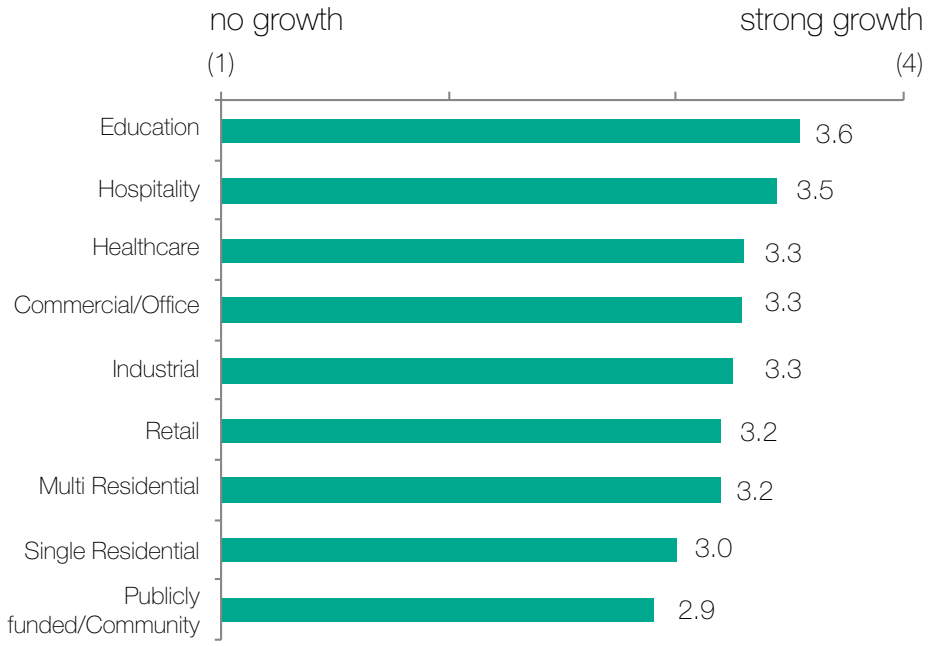
PHILIPPINES



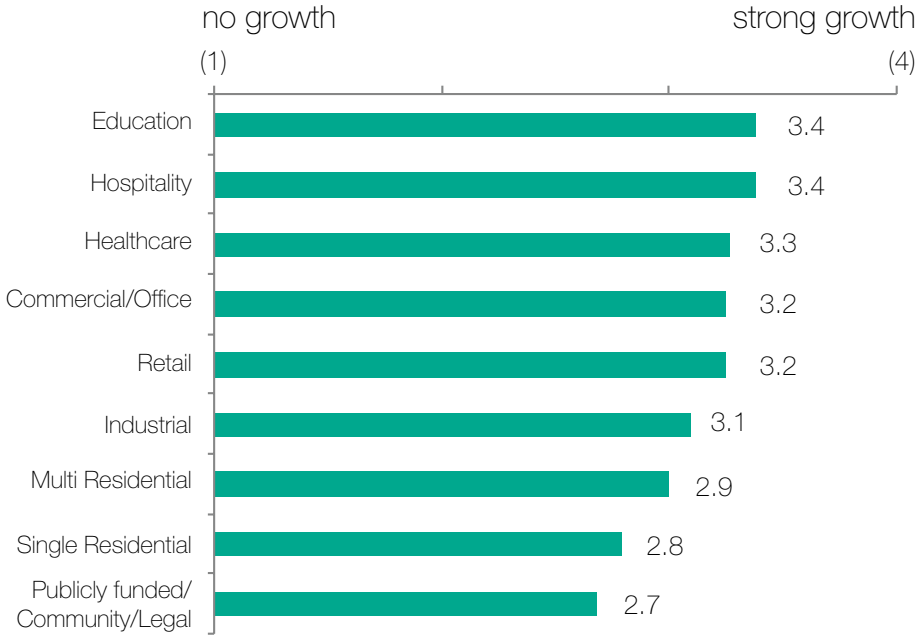
SINGAPORE



THAILAND



VIETNAM


no growth
(1)
strong growth
(4)
Education
3.4
Hospitality
3.4
Healthcare
3.3
Commercial/Office
3.2
Retail
3.2
Industrial
3.1
Multi Residential
2.9
Single Residential
2.8
Publicly funded/
Community/Legal
2.7

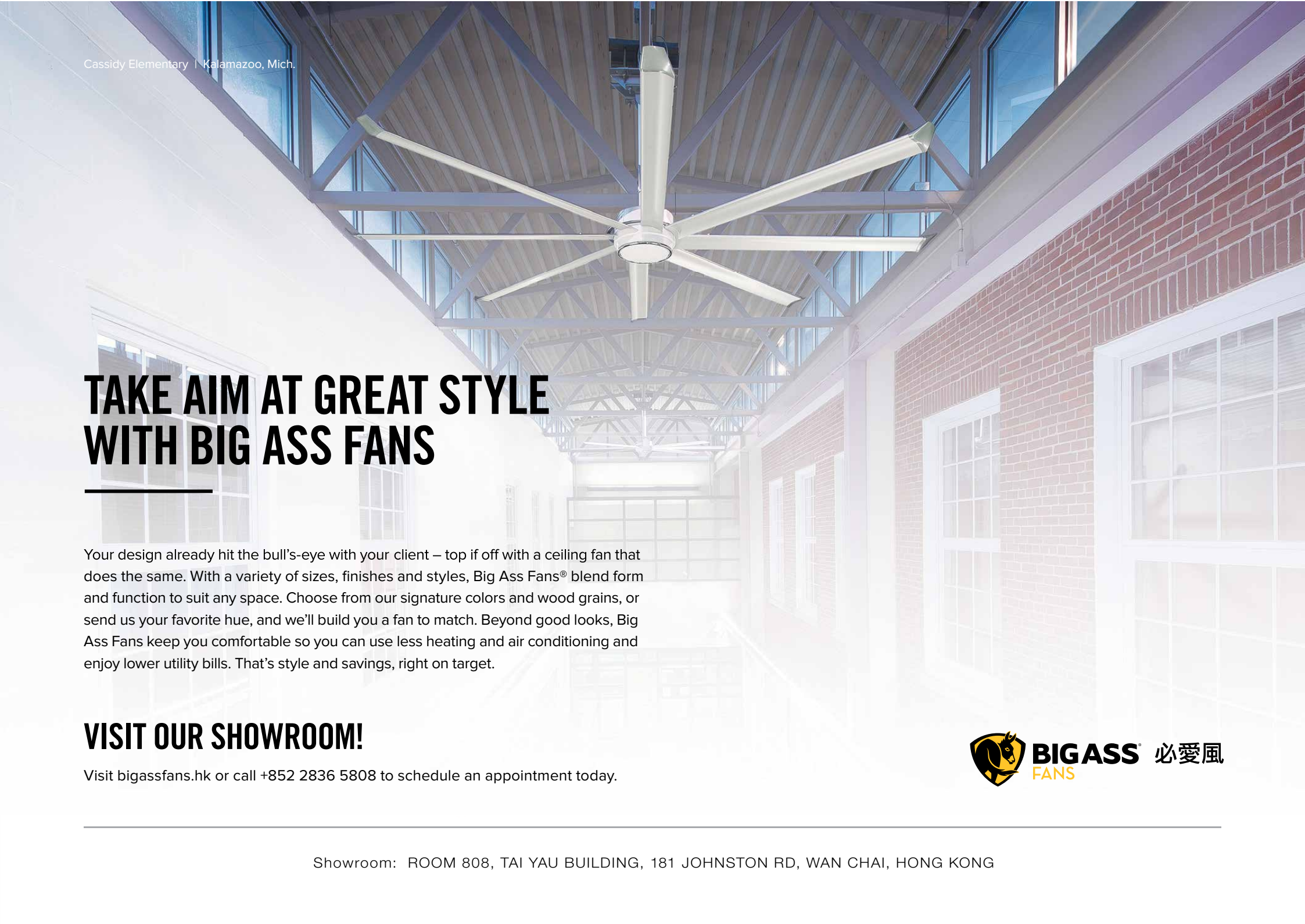
AUTOMATIC SLIDING DOOR ST FLEX GREEN

Energy efficiency in an elegant design

DORMA Far East Country Offices:

Singapore	Tel: 65 6268 7633
Indonesia	Tel: 62 21 293 0376-2
Korea	Tel: 82 31 776 0051
Malaysia/Brunei	Tel: 603 7665 1683
Philippines	Tel: 632 893 4077-8
Taiwan	Tel: 886 2 2709 6611
Vietnam	Tel: 84 8 62 888748
Thailand/Myanmar/ Laos/Cambodia/	Tel: 66 2236 4994-6

www.dorma.com.sg



TAKE AIM AT GREAT STYLE WITH BIG ASS FANS

Your design already hit the bull's-eye with your client – top if off with a ceiling fan that does the same. With a variety of sizes, finishes and styles, Big Ass Fans® blend form and function to suit any space. Choose from our signature colors and wood grains, or send us your favorite hue, and we'll build you a fan to match. Beyond good looks, Big Ass Fans keep you comfortable so you can use less heating and air conditioning and enjoy lower utility bills. That's style and savings, right on target.

VISIT OUR SHOWROOM!

Visit bigassfans.hk or call +852 2836 5808 to schedule an appointment today.

BIG ASS FANS 必愛風

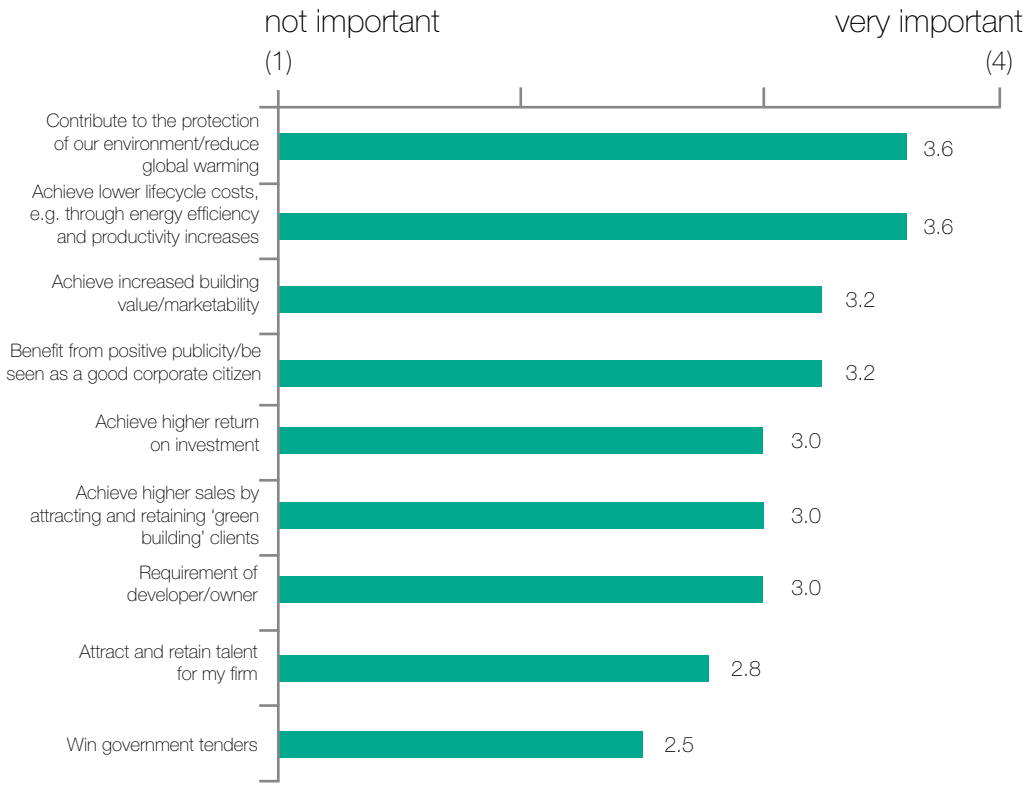
Showroom: ROOM 808, TAI YAU BUILDING, 181 JOHNSTON RD, WAN CHAI, HONG KONG

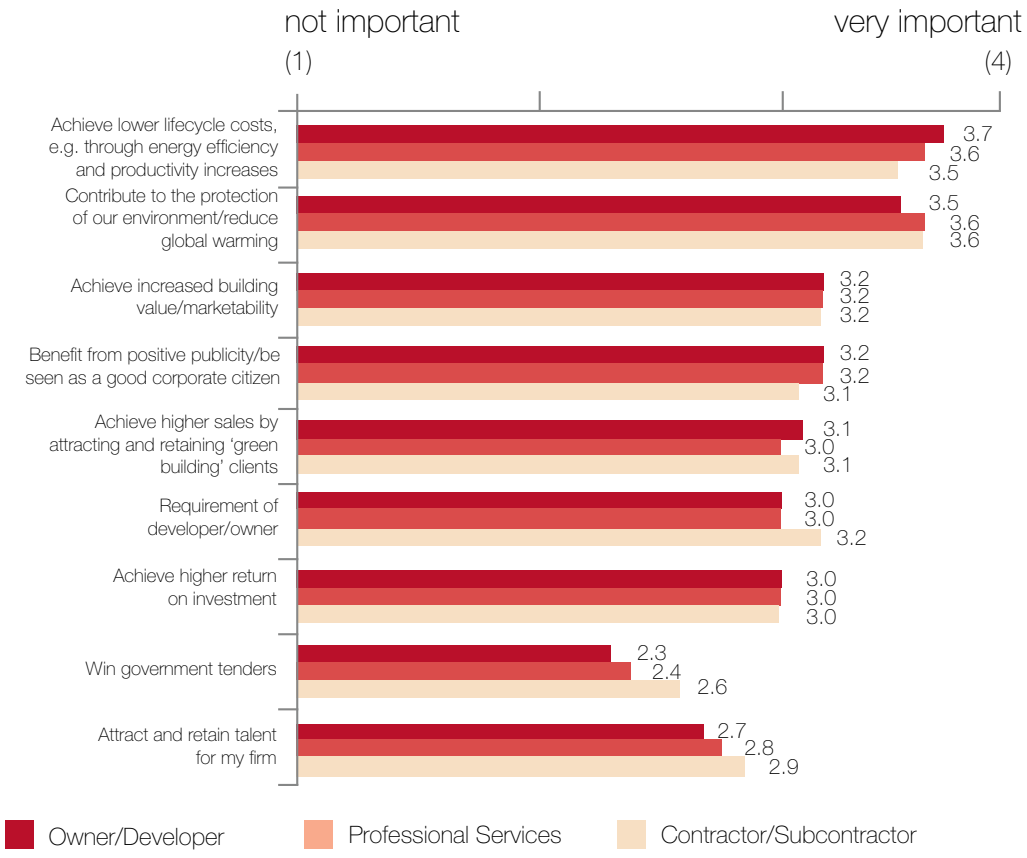
REASONS FOR INVOLVEMENT IN GREEN BUILDING

It is pleasing to observe that the leading motive for South East Asia construction professionals to engage in green building activity is out of regard for the environment – as it was in our previous survey in 2008. Reduction in the total lifecycle costs again rated the second most important reason but has narrowed the gap since the previous survey. However, the third ranked reason was an option not included in the 2008 survey – namely, the enhanced end value and marketability of the completed building.

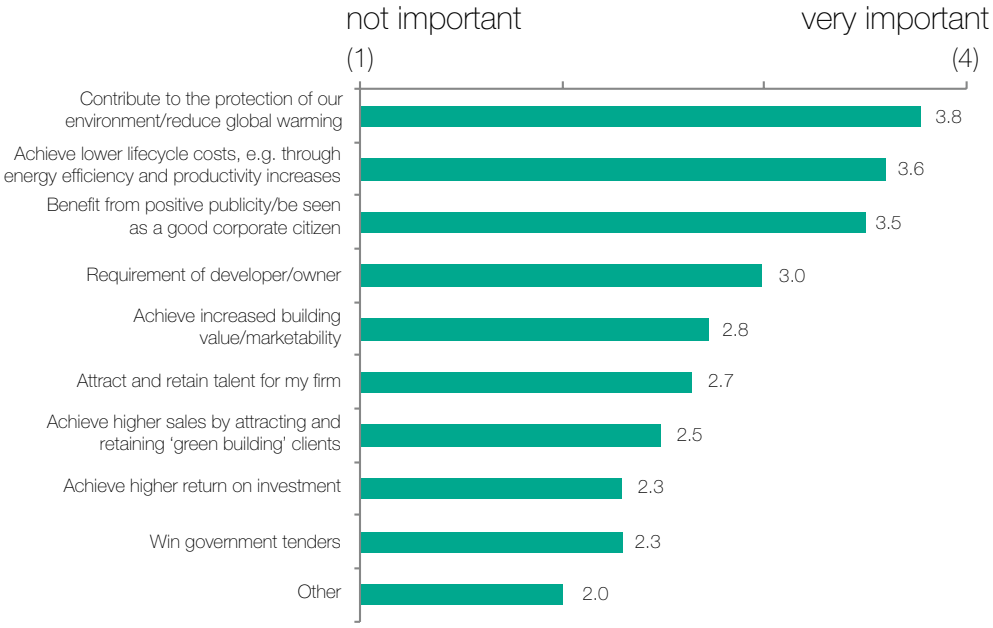
We are beginning to see that the "feel-good" factor is making way for the commercial incentives to deliver environmentally sensitive and sustainable premises. The industry is recognising the opportunity to profit from green building rather than in spite of it. These sentiments appear to be held fairly consistently across the respondent roles.

The ratings for the various reasons for getting involved in green building do show slight variations between countries but generally are reasonably consistent with the overall results.



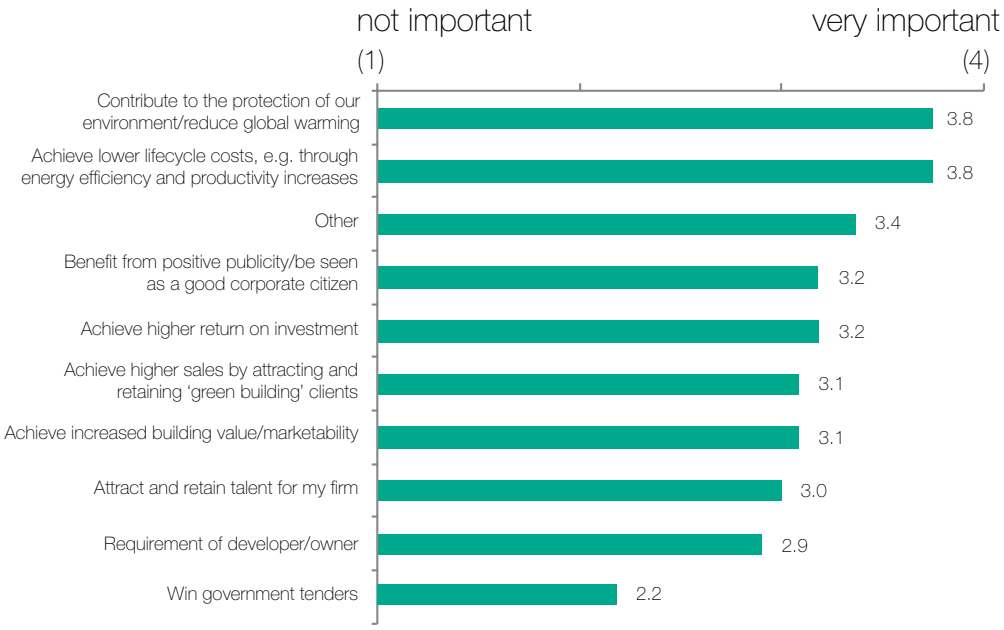

not important
(1)
very important
(4)
Achieve lower lifecycle costs, e.g. through energy efficiency and productivity increases
3.7
3.6
3.5
Contribute to the protection of our environment/reduce global warming
3.5
3.6
3.6
Achieve increased building value/marketability
3.2
3.2
3.2
Benefit from positive publicity/be seen as a good corporate citizen
3.2
3.2
3.1
Achieve higher sales by attracting and retaining 'green building' clients
3.1
3.0
3.1
Requirement of developer/owner
3.0
3.0
3.2
Achieve higher return on investment
3.0
3.0
3.0
Win government tenders
2.3
2.4
2.6
Attract and retain talent for my firm
2.7
2.8
2.9
Owner/Developer
Professional Services
Contractor/Subcontractor

HONG KONG

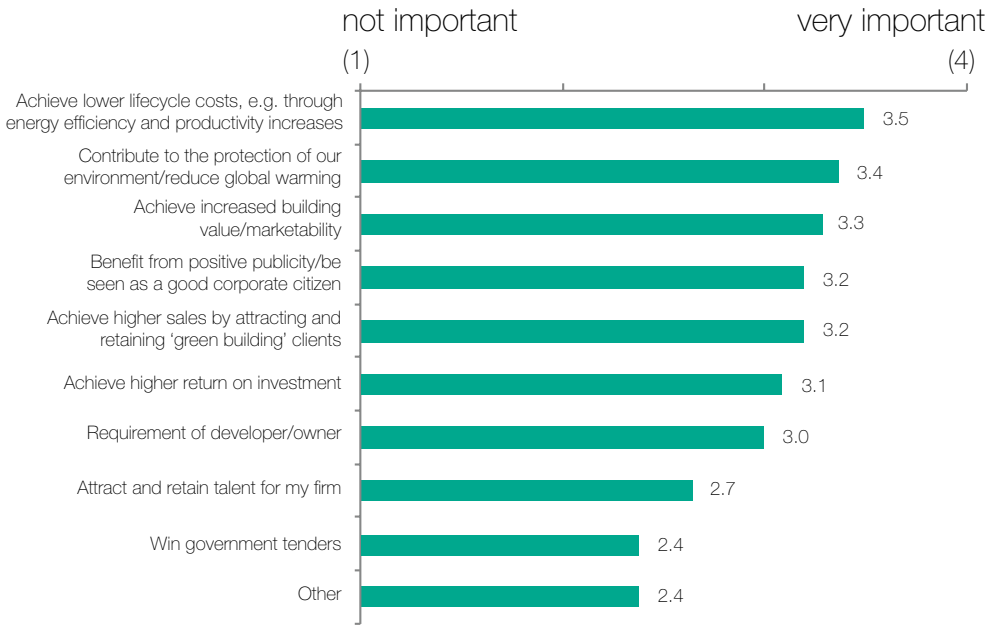

not important
(1)
very important
(4)
Contribute to the protection of our environment/reduce global warming
3.8
Achieve lower lifecycle costs, e.g. through energy efficiency and productivity increases
3.6
Benefit from positive publicity/be seen as a good corporate citizen
3.5
Requirement of developer/owner
3.0
Achieve increased building value/marketability
2.8
Attract and retain talent for my firm
2.7
Achieve higher sales by attracting and retaining 'green building' clients
2.5
Achieve higher return on investment
2.3
Win government tenders
2.3
Other
2.0

REASONS FOR INVOLVEMENT IN GREEN BUILDING

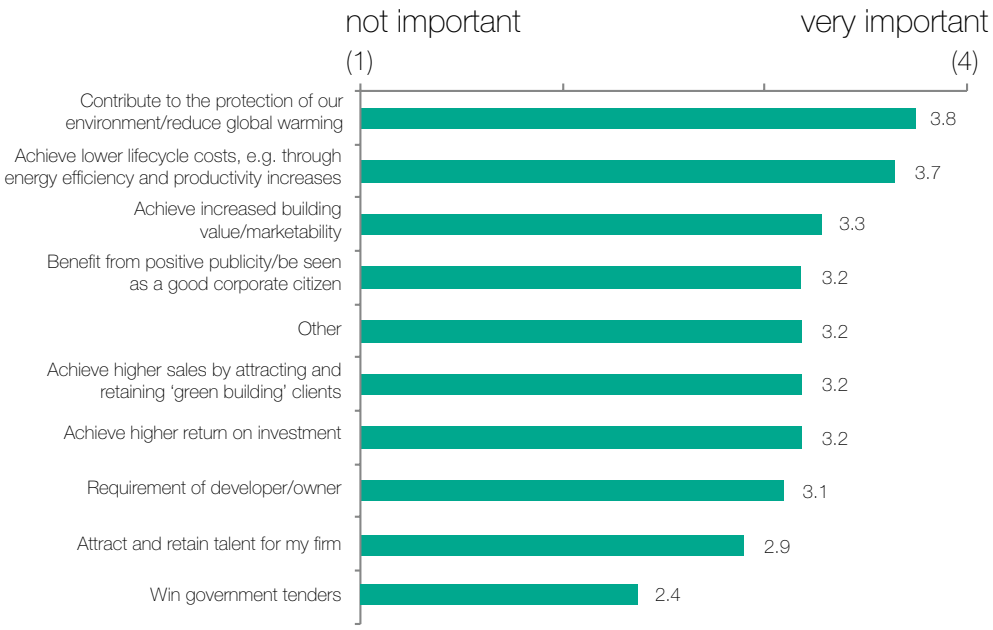
INDONESIA



MALAYSIA

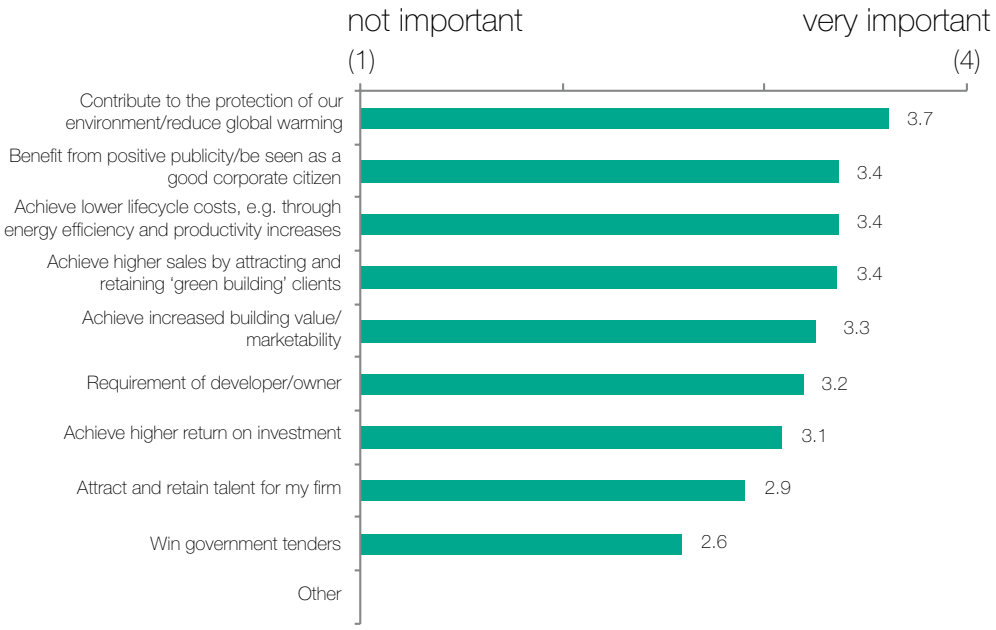


PHILIPPINES

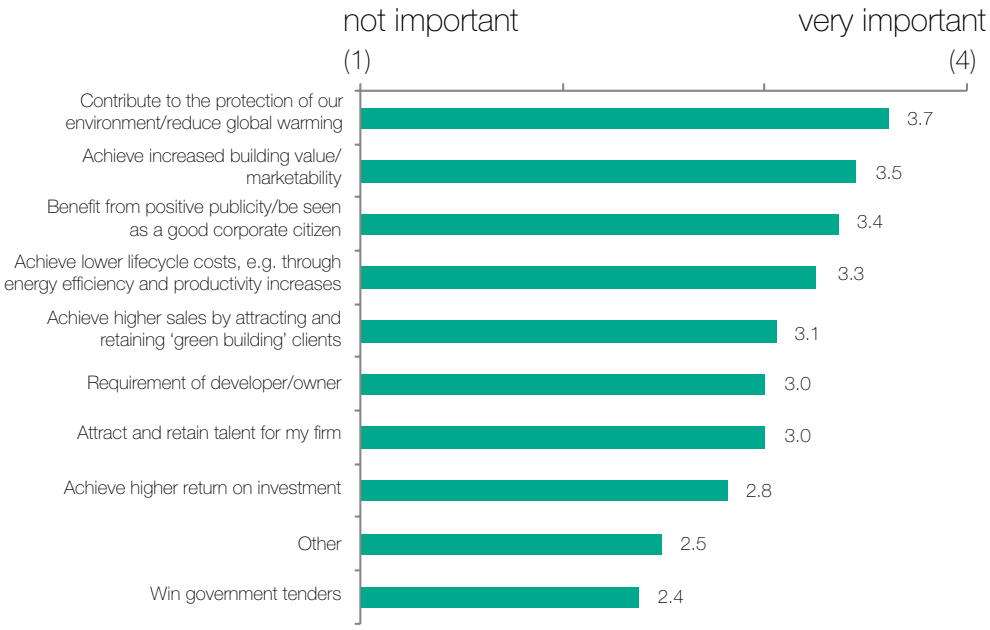


SINGAPORE

THAILAND



VIETNAM

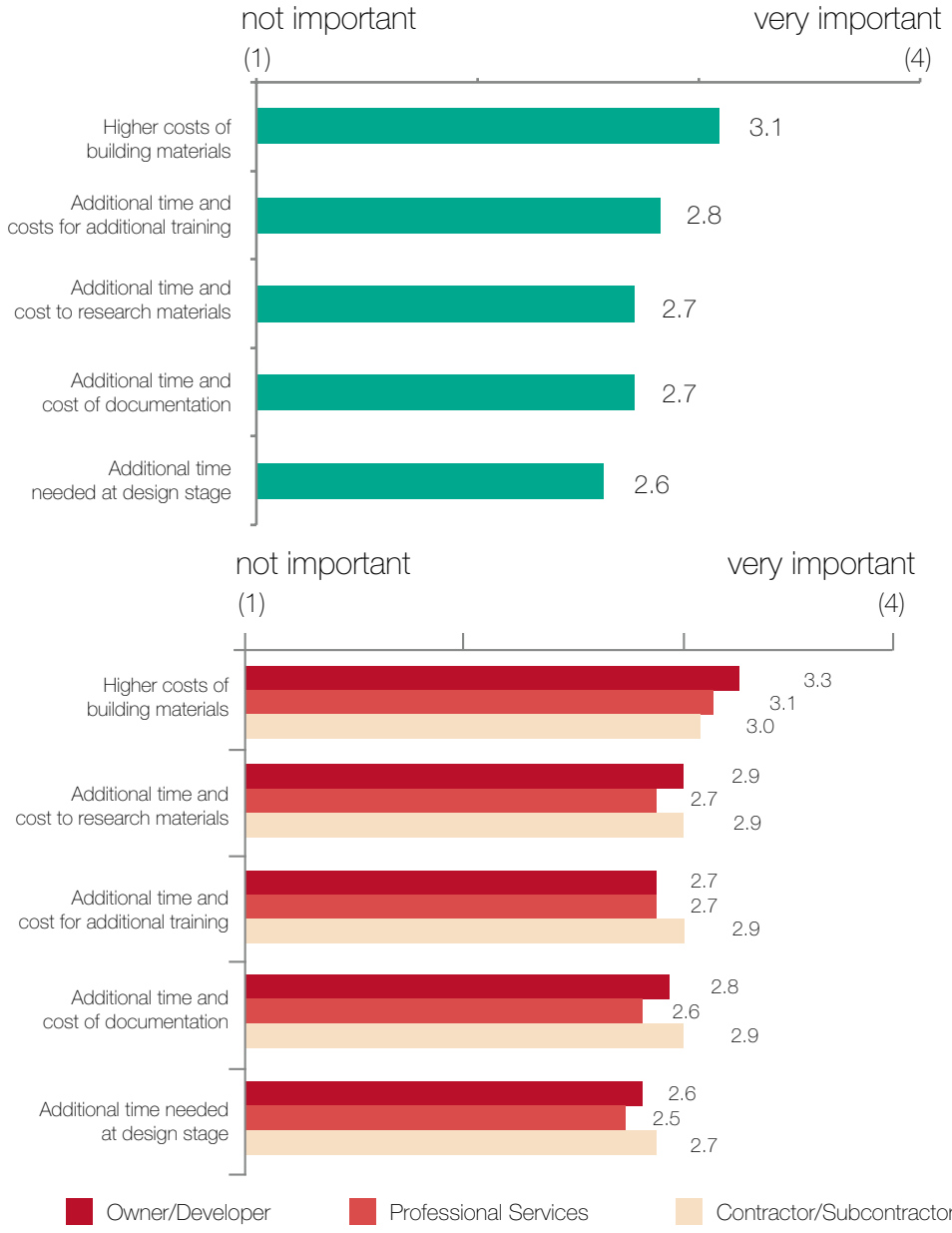


REASONS AGAINST INVOLVEMENT IN GREEN BUILDING

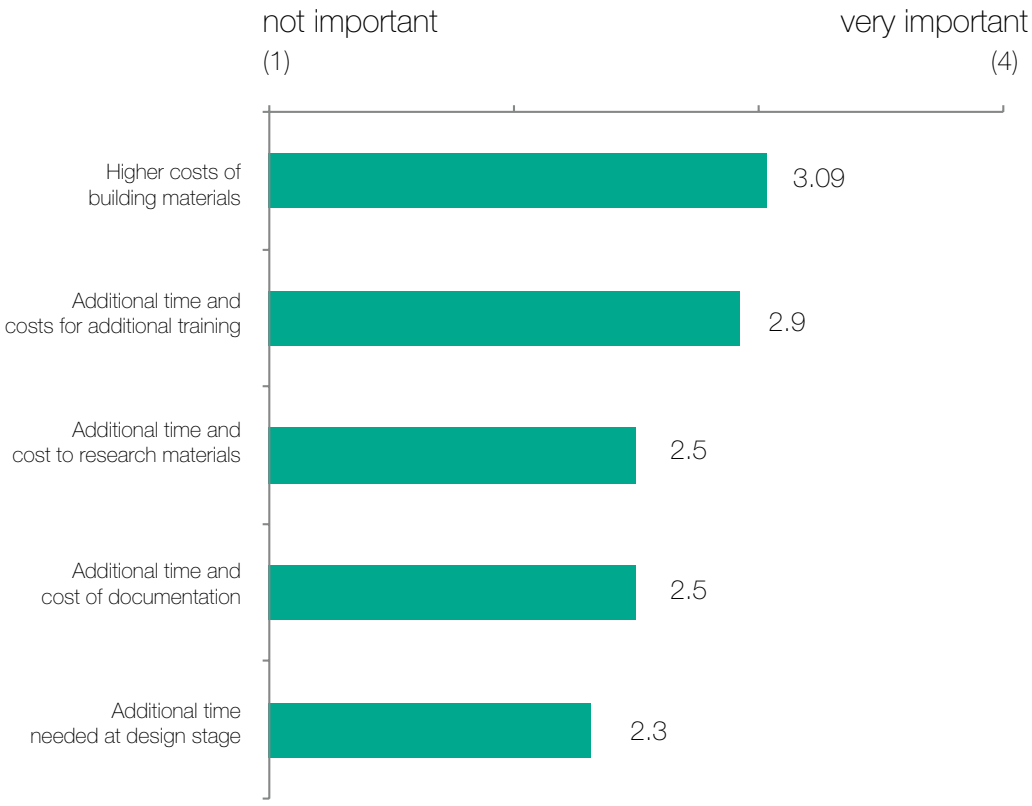
Having surveyed the reasons for becoming involved in green building, we next turned our attention to the obstacles getting in the way. We found the "higher costs of building materials" cited as the primary reason, followed by the "additional time and cost to research materials" and the "time and costs for additional training" in second and third place, respectively.

This overall pattern was largely reflected in the responses by respondent role although owners and developers were particularly sensitive to the extra materials costs and contractors showed concern for the costs attributable to training in green building techniques.

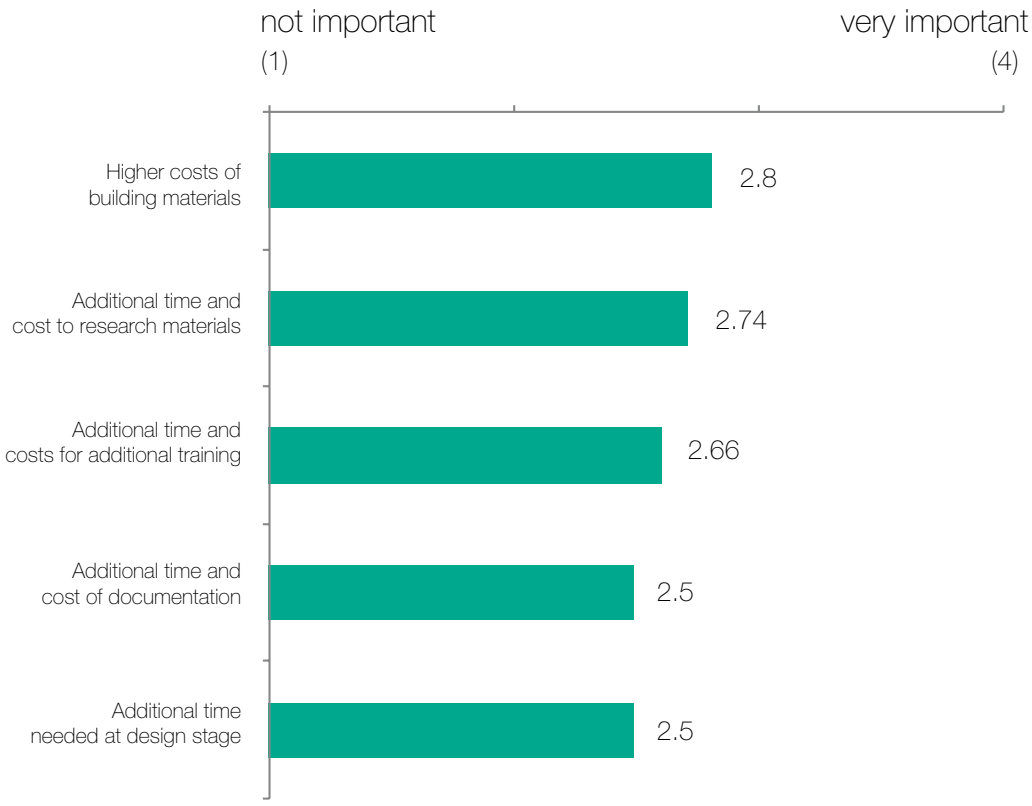
Consistent with our summary findings, the "higher costs of building materials" were also found to be the major obstacle to green building implementation across most national markets. The "additional time and cost to research materials" also ranked second in numerous countries while the "additional time and costs for additional training" came in third for several markets as well.



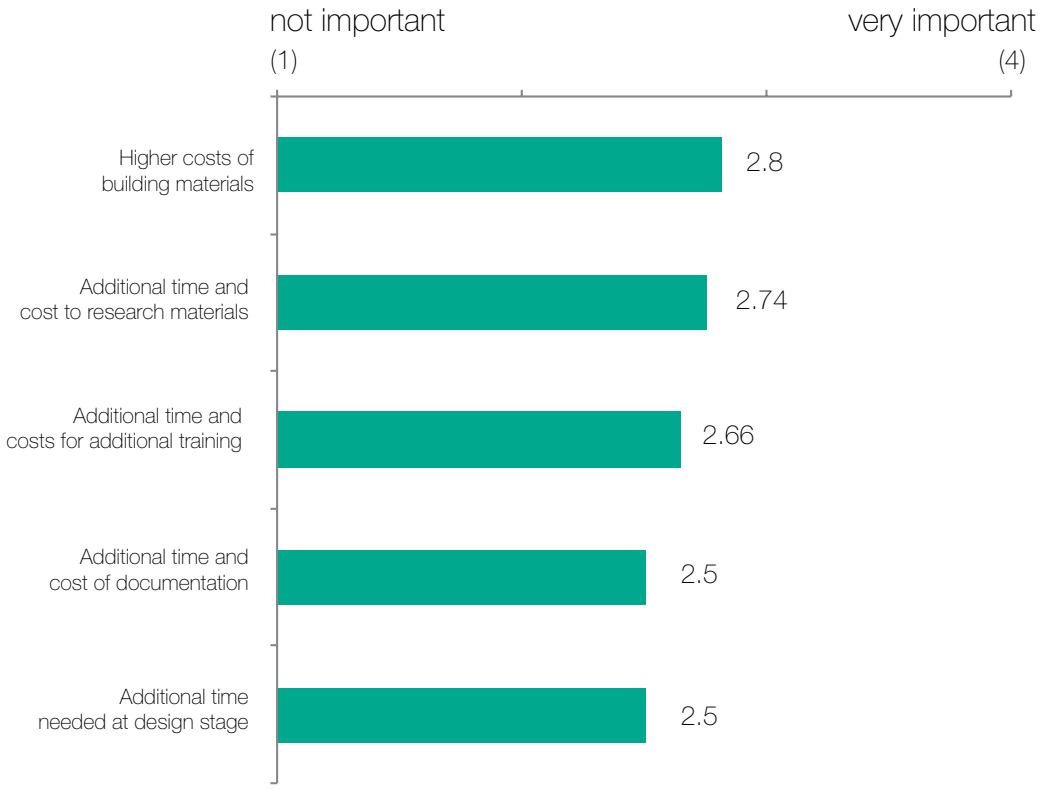
HONG KONG



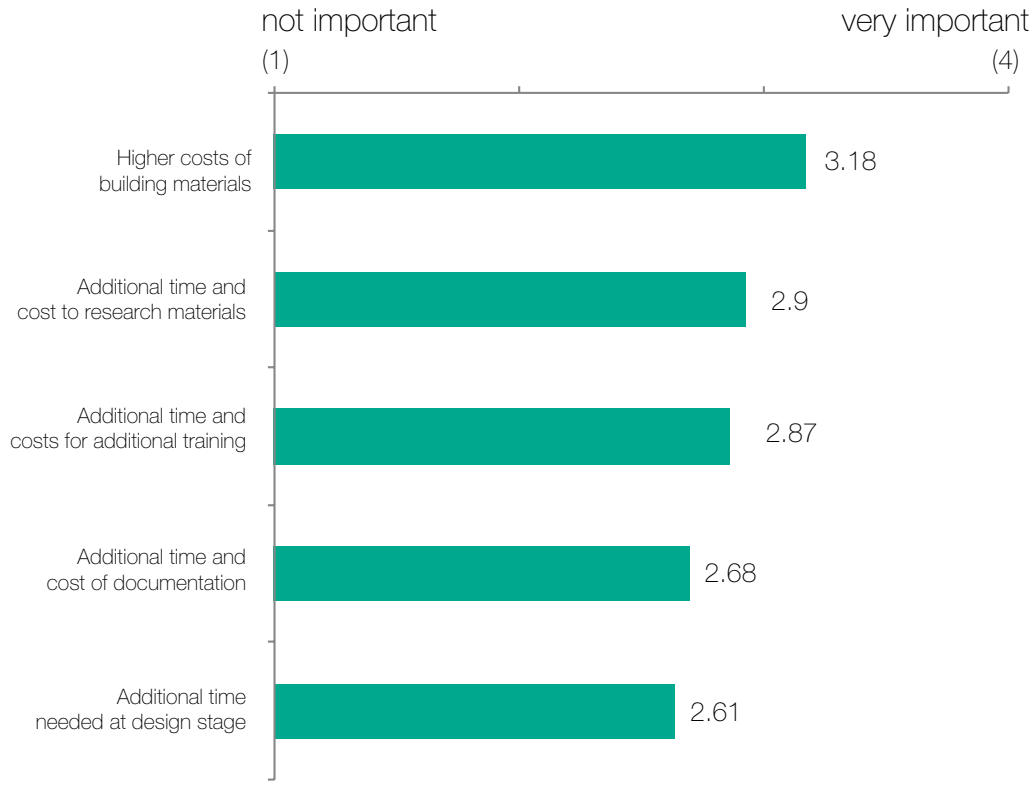
INDONESIA



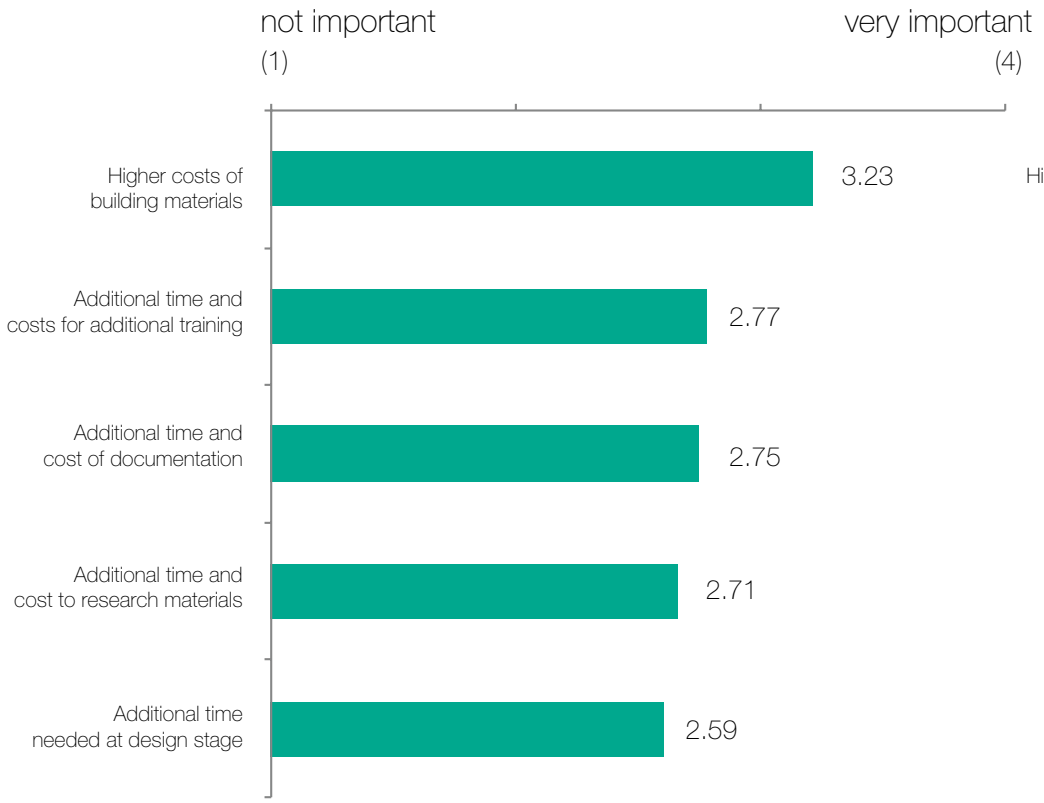
MALAYSIA



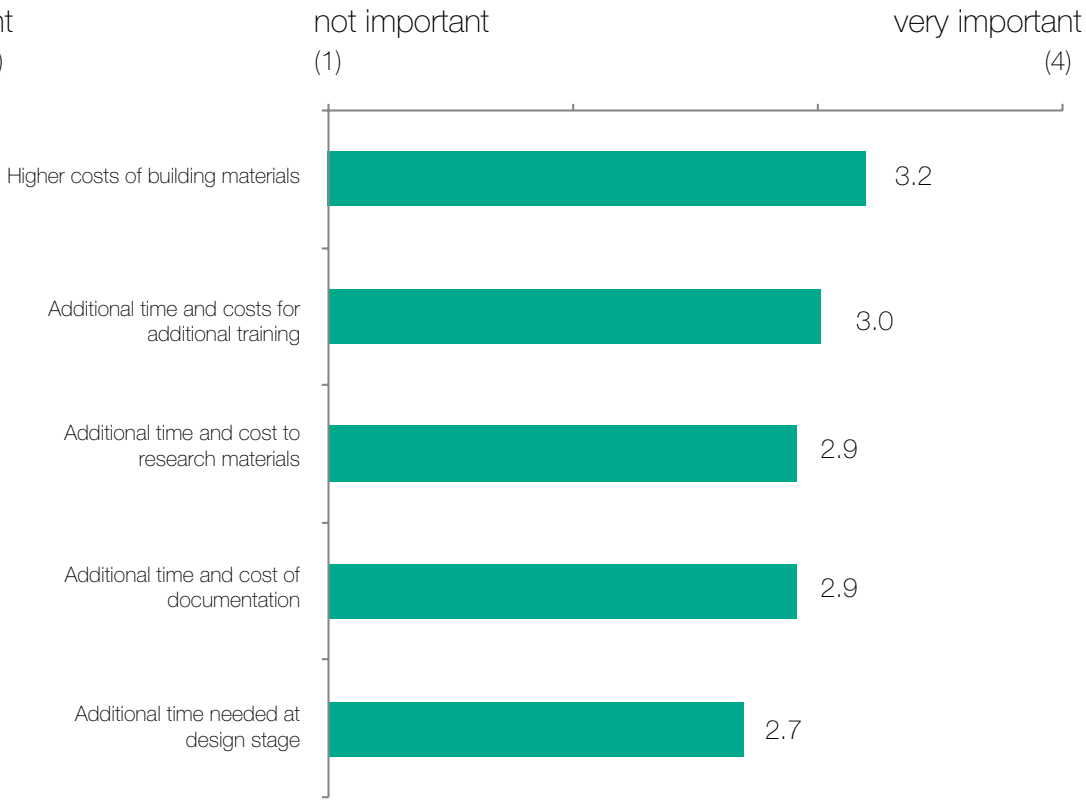
PHILIPPINES



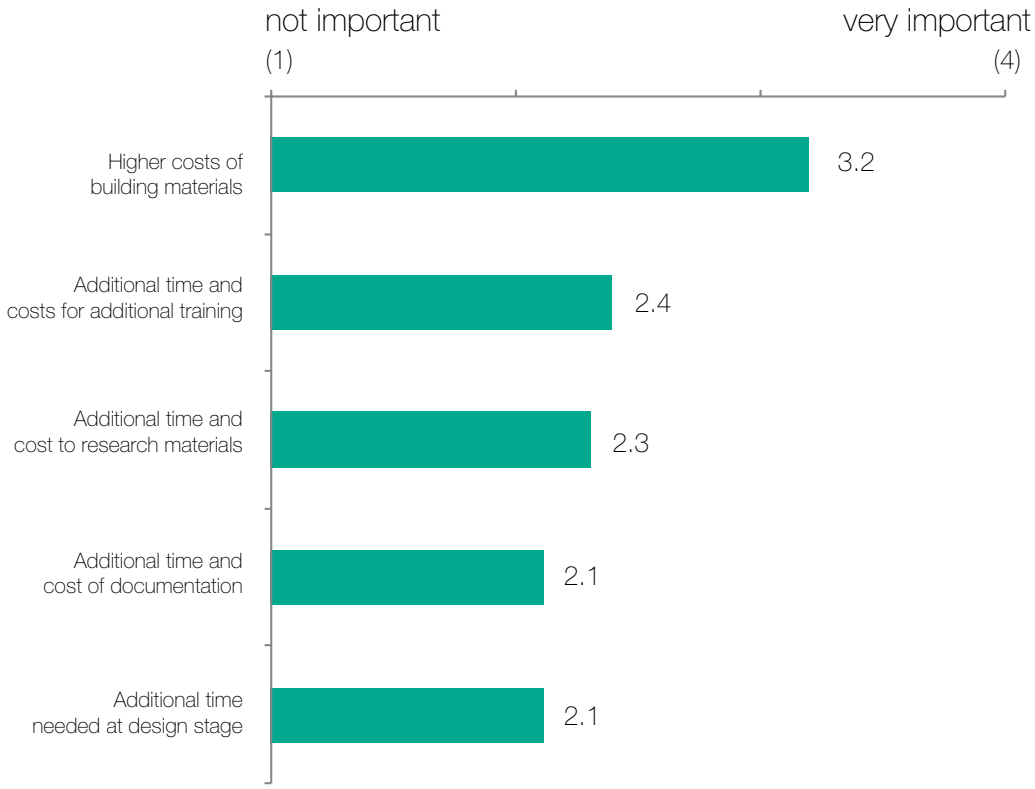
SINGAPORE



THAILAND



VIETNAM


not important
(1)
very important
(4)
Higher costs of building materials
3.2
Additional time and costs for additional training
2.4
Additional time and cost to research materials
2.3
Additional time and cost of documentation
2.1
Additional time needed at design stage
2.1

Inspiring Great Spaces™

Armstrong®

COMMERCIAL FLOORING

Armstrong Flooring is proud of our heritage and the growing portfolio of flooring products and programs designed to support sustainable building. It's our goal in all areas of our business to continually reduce our environmental footprint.

Armstrong's headquarters was the first building to be USGBC LEED Platinum certified in Pennsylvania.

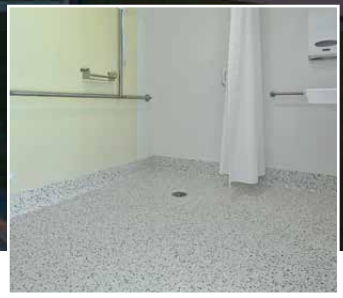
Accolade Plus/Accolade Safe, HOM

Imperial Texture, VCT

Marmorette, LINO

Natural Creations, LVT

Timberline, HET



Wallflex, WALL COVERING

Armstrong is a proud member of these green building councils:

For more information, email **asia_flooring@armstrong.com** or visit **www.armstrong-asia.com**

ENVIRONMENTAL SUSTAINABILITY CONSULTING

www.greenaconsultants.com GreenA Consultants

Green building certification - LEED, Green Mark , Green Building Index, Green Reporting Initiative-GRI & Green Globe

Environmental studies CFD, Daylight Reflectance , Energy Modelling

Development of green building councils and Green Certification

Green Knowledge Management Centre for Research and Corporate Sustain-ability Training

Green Material Advisory

Green Branding

GreenA Consultants

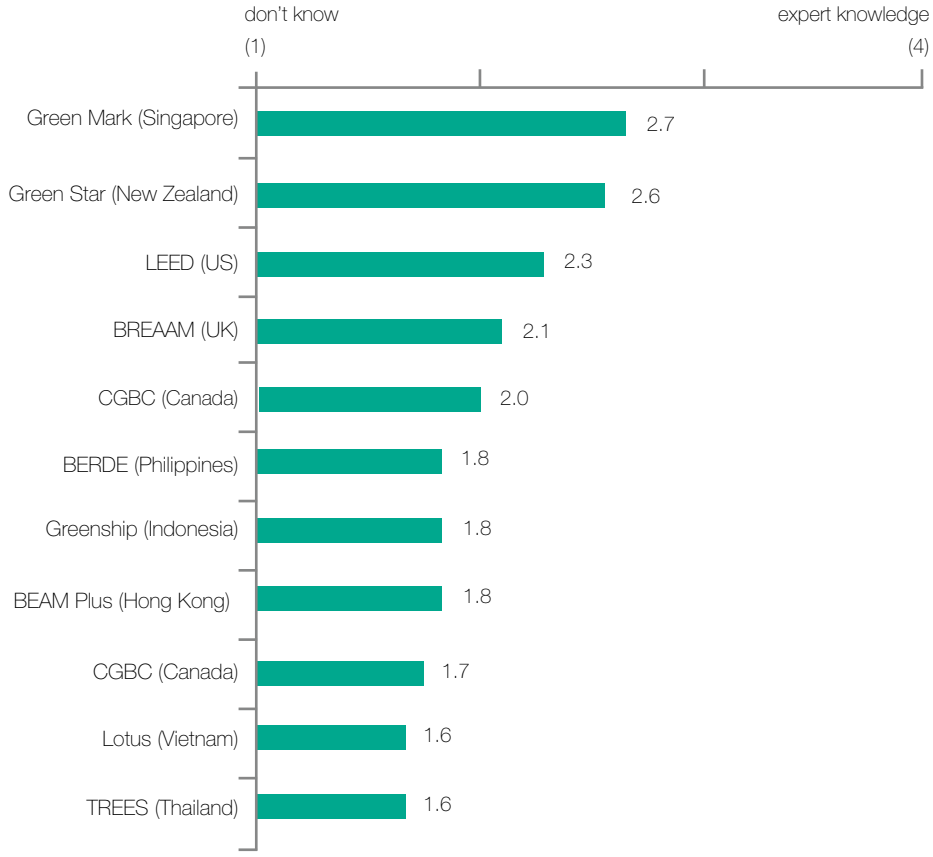
BCA GREEN MARK U.S. GREEN BUILDING COUNCIL MEMBER green building index ASHRAE 2013 SINGAPORE EXCELLENCE AWARD ISO 9001 ISO 14001 OHSAS 18001 BUREAU VERITAS Certification

FAMILIARITY WITH CERTIFICATION SYSTEMS

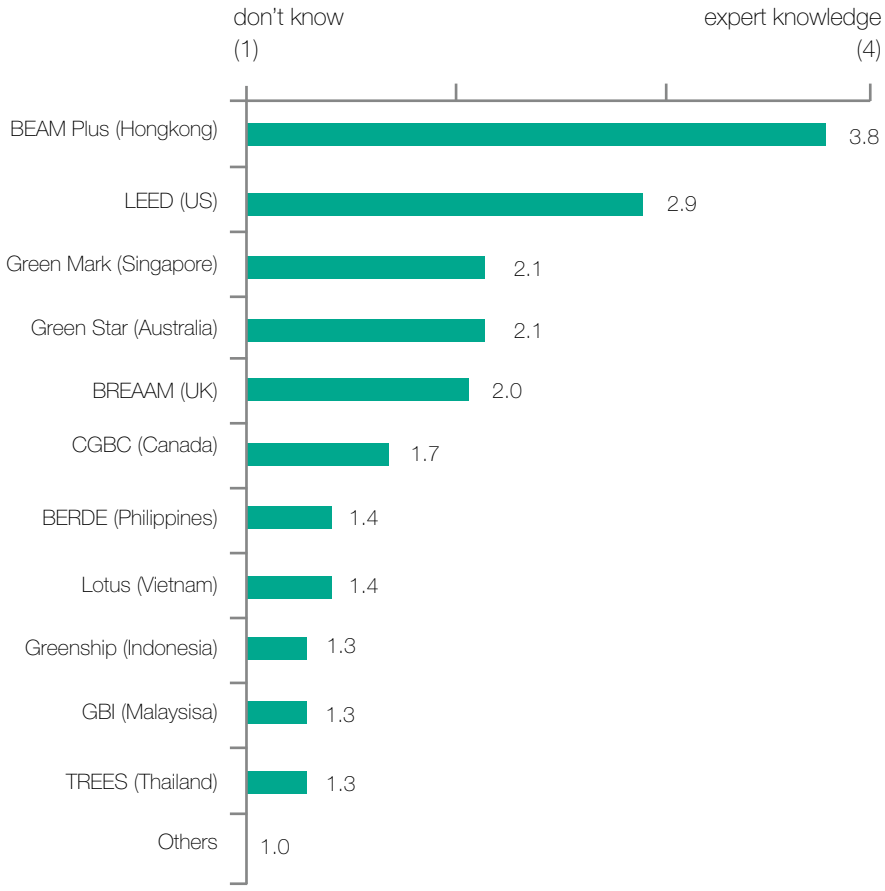
The responses to the question "how familiar are you with the following certification systems" (relevant to the South East Asia region) were naturally consistent with the answers to the earlier question "which certification systems have you used". Across the region, the Singapore "Green Mark" had the highest rating with Malaysia's GBI just a little further back. Their high ratings are not surprising given their countries' level of involvement with green building although we might have expected that Hong Kong's BEAM system would have rated more highly.

Mention should also be made of the "international" systems, the US LEED, the UK BREEAM and the Australian "Green Star" which all had high levels of awareness across the region.

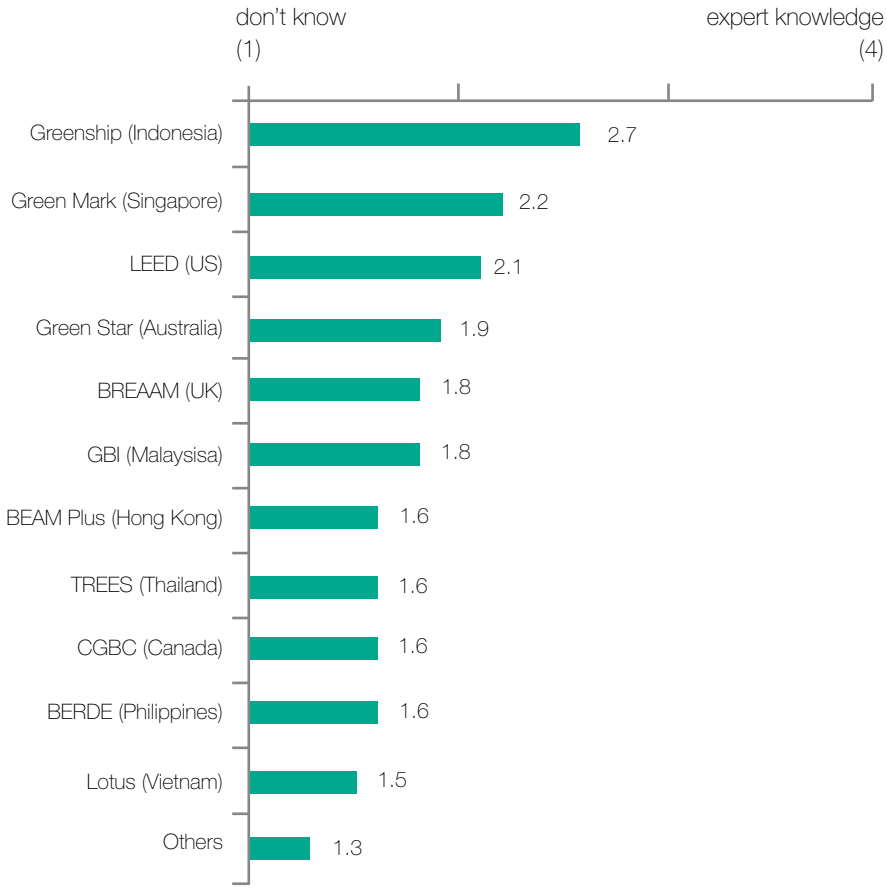
Naturally, each country favoured their locally based agency. However, the US LEED system and Singapore's Green Mark frequently took the second and third places behind them suggesting that they may be the "benchmarks" in the region for good green building practice.



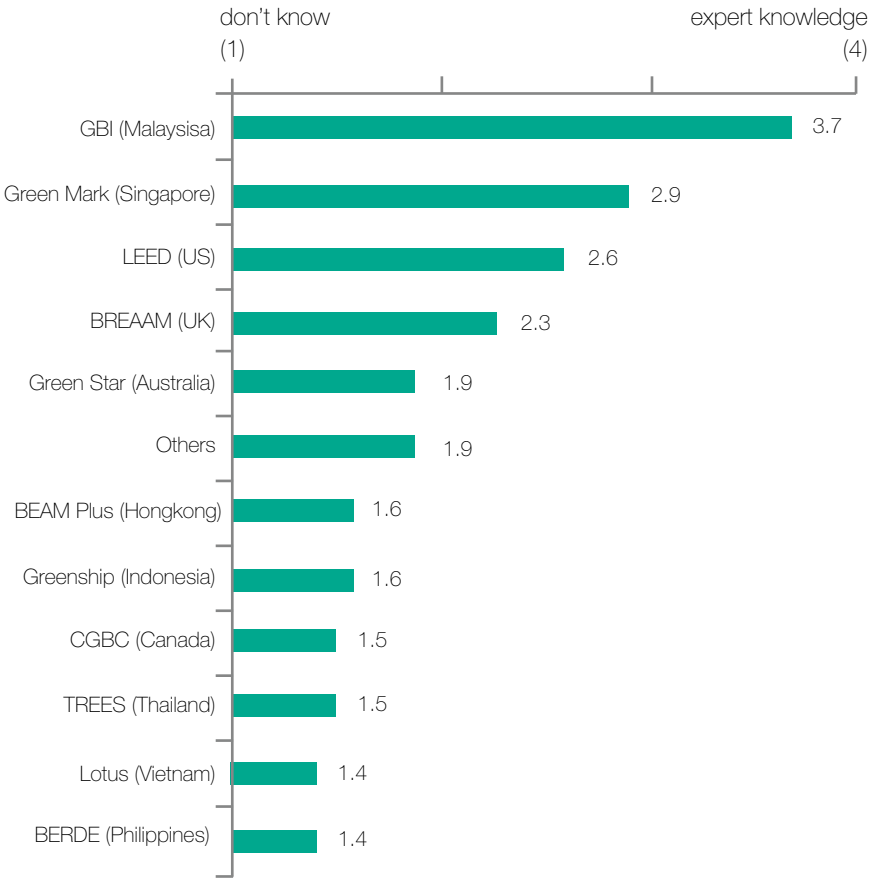
HONG KONG



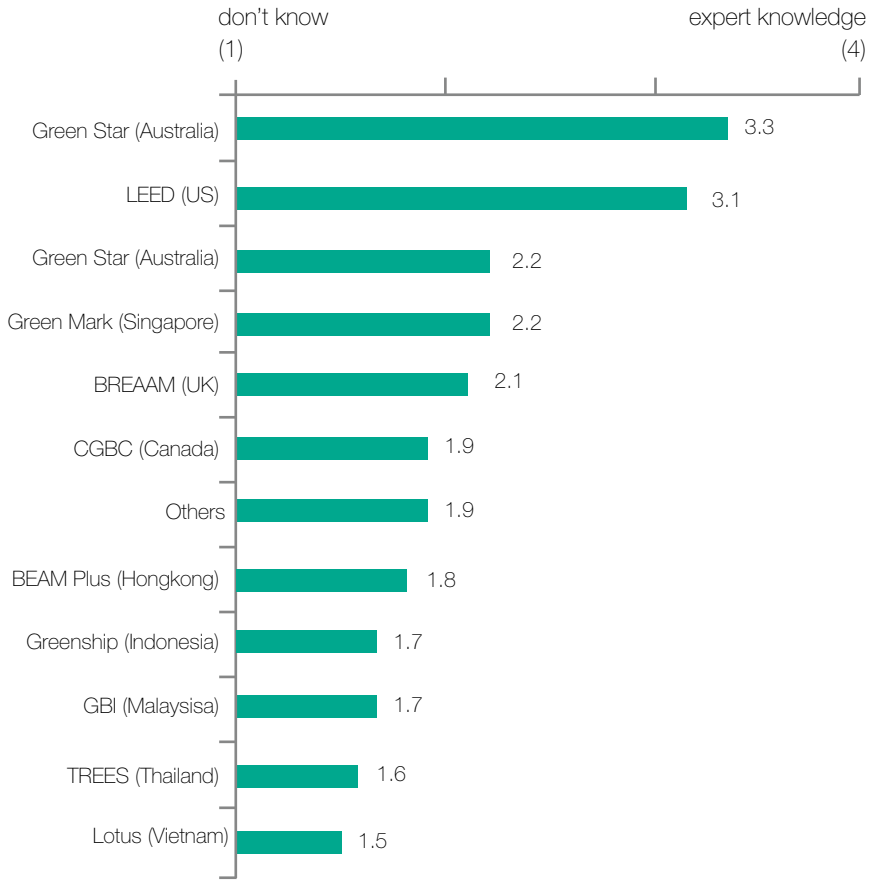
INDONESIA



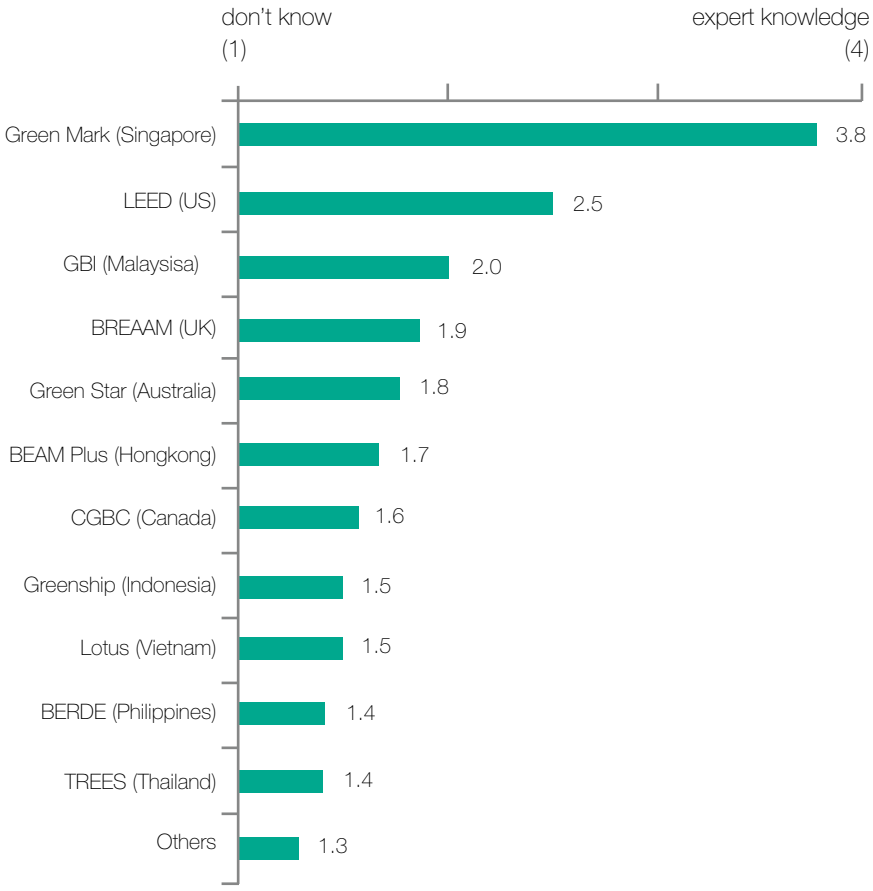
MALAYSIA



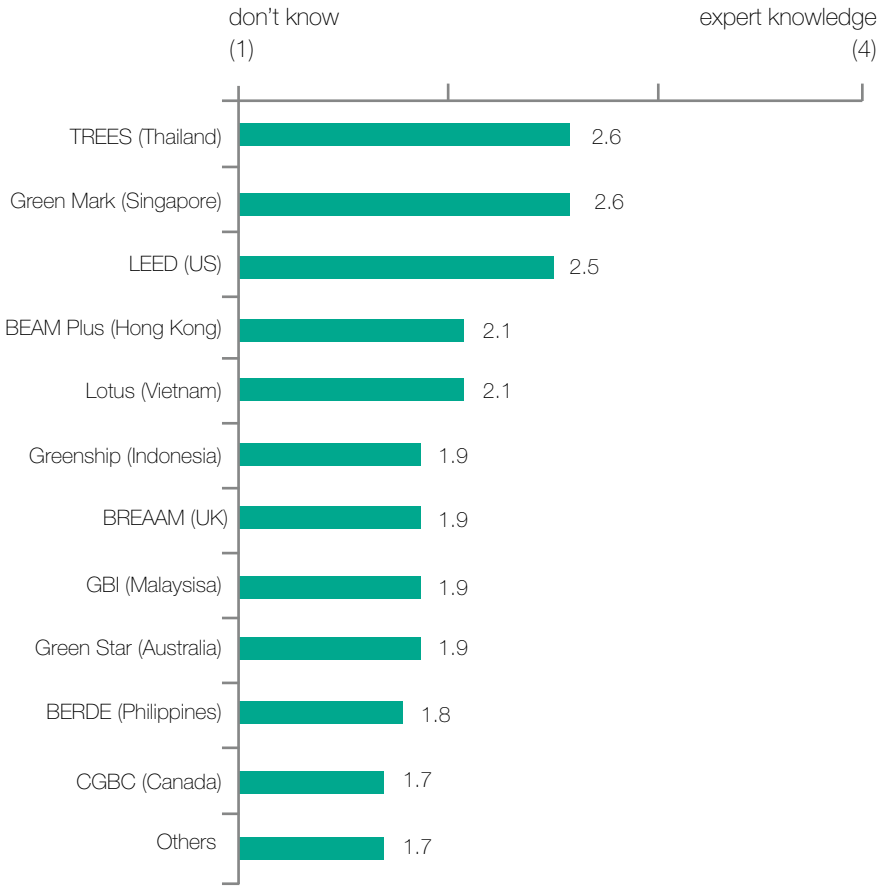
PHILIPPINES



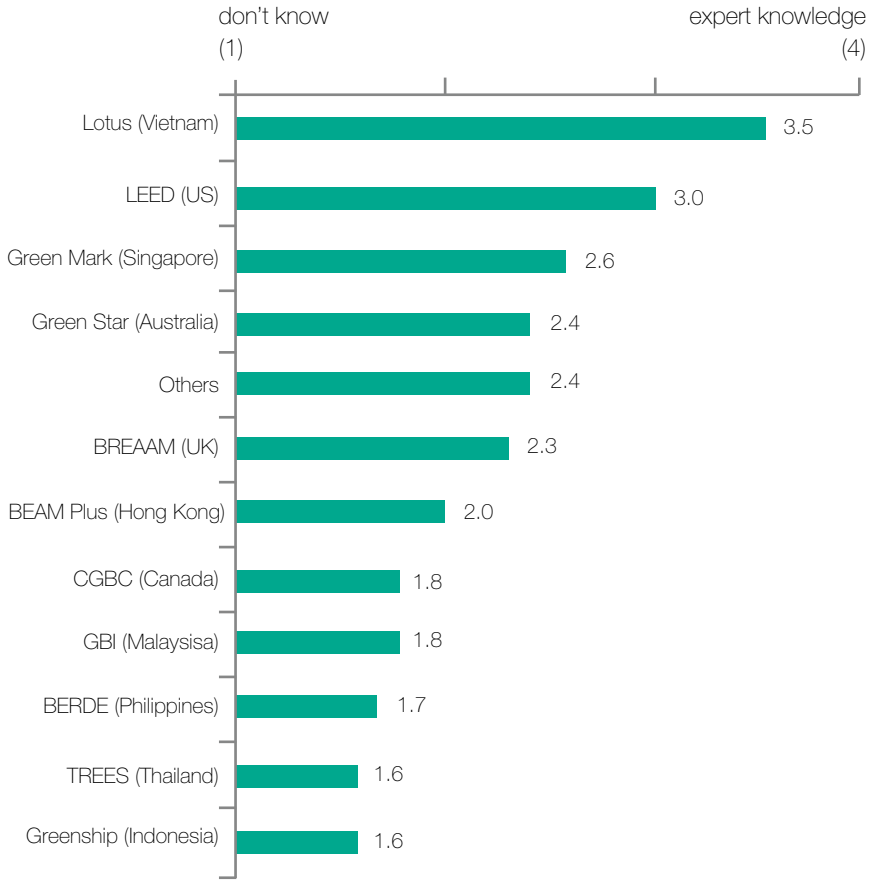
SINGAPORE



THAILAND

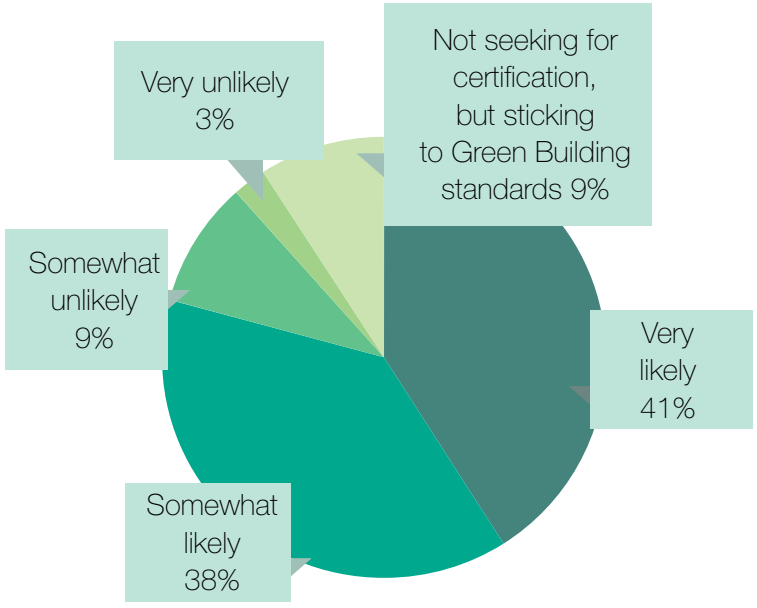


VIETNAM

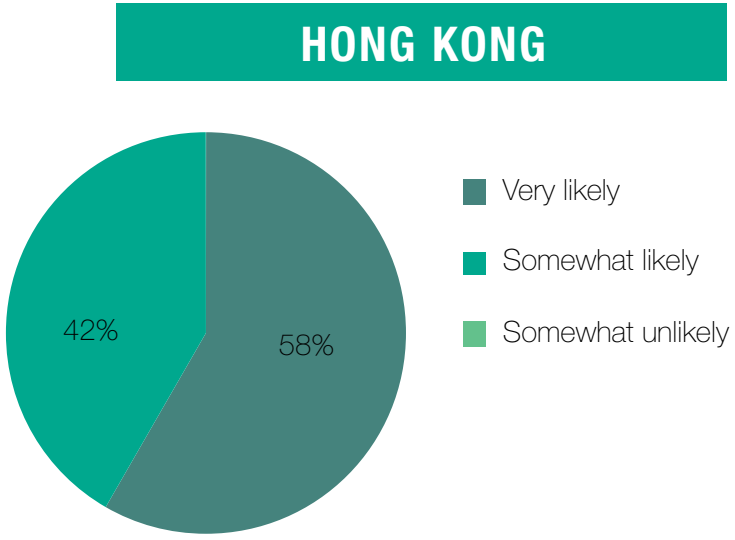

don't know
(1)
expert knowledge
(4)
Lotus (Vietnam)
3.5
LEED (US)
3.0
Green Mark (Singapore)
2.6
Green Star (Australia)
2.4
Others
2.4
BREAAM (UK)
2.3
BEAM Plus (Hong Kong)
2.0
CGBC (Canada)
1.8
GBI (Malaysisa)
1.8
BERDE (Philippines)
1.7
TREES (Thailand)
1.6
Greenship (Indonesia)
1.6

THE INTENTION OF SEEKING GREEN BUILDING CERTIFICATION

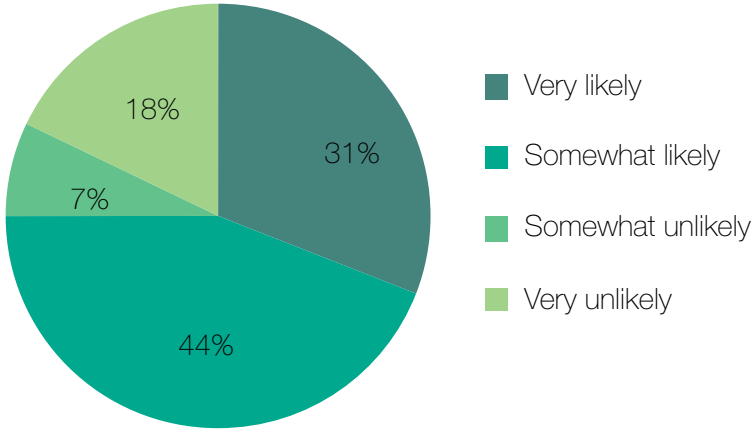
Although less than half the respondents had indicated that they had pursued certification, a substantial 79% indicated that they were "somewhat" or "very" likely to pursue certification in the future. Of course, not every intention is followed through to implementation but this is a healthy leading indicator of growth in green building certification.



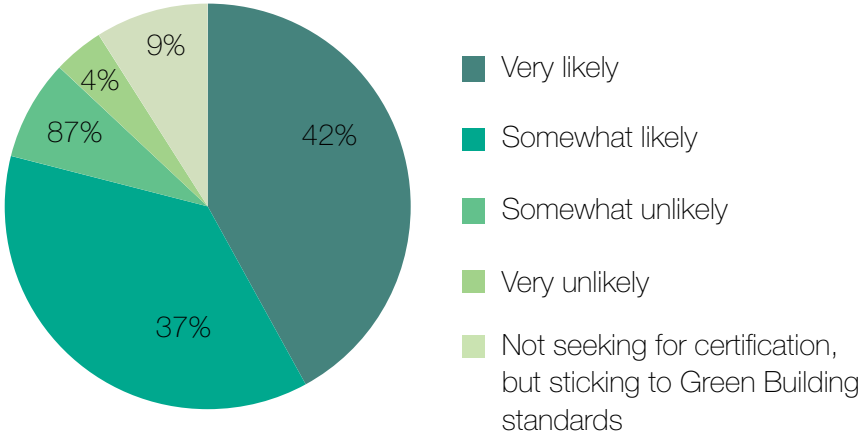
The results country by country were somewhat predictable. In Singapore, Vietnam and Hong Kong, on the one hand, 92%, 91% and even the full 100% of respondents, respectively, stated that they were "very" or "somewhat likely" to strive after green building certification. On the other hand, Indonesia, Thailand and the Philippines appear to be still in "catch-up" mode. However the shares of respondents with declared intentions at 75%, 69% and 72% respectively still compare very favourably with their past actual performance (between 21% and 28%).



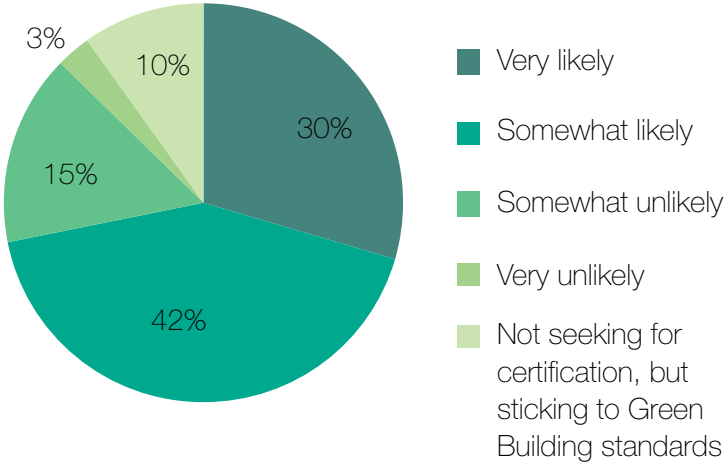
INDONESIA



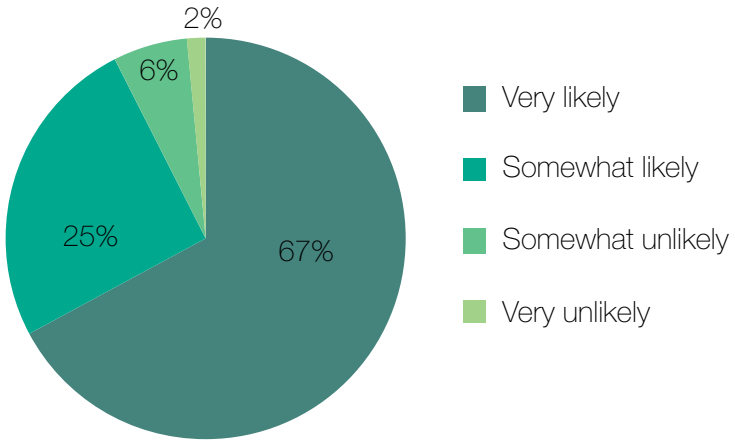
MALAYSIA



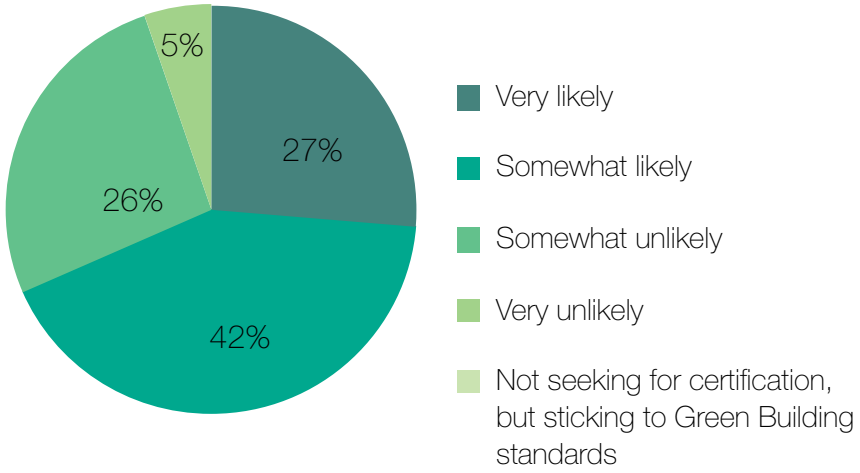
PHILIPPINES



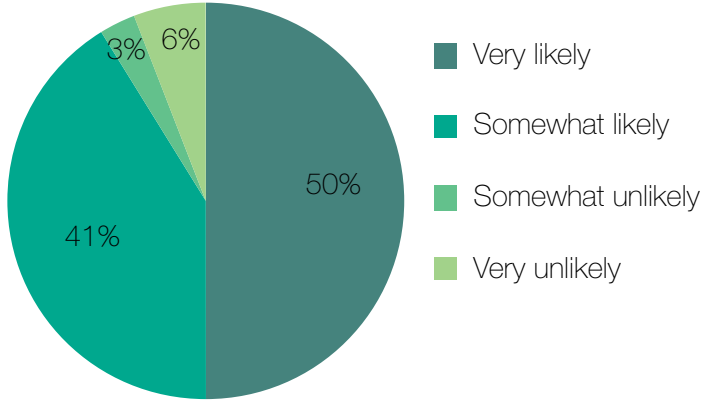
SINGAPORE



THAILAND



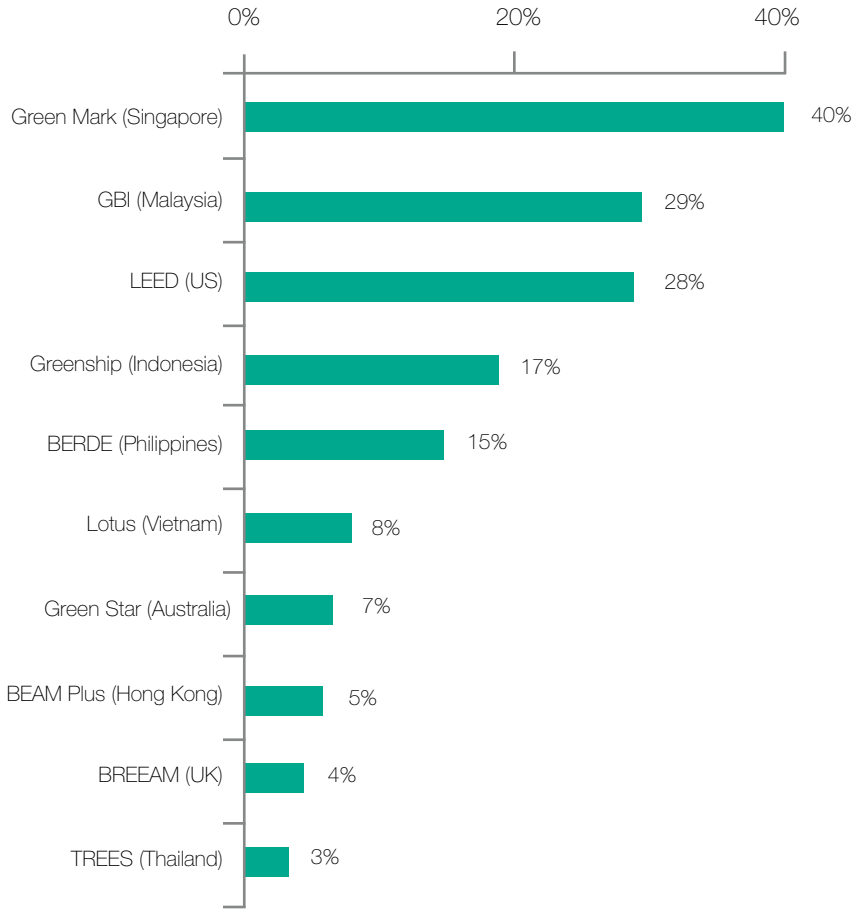
VIETNAM



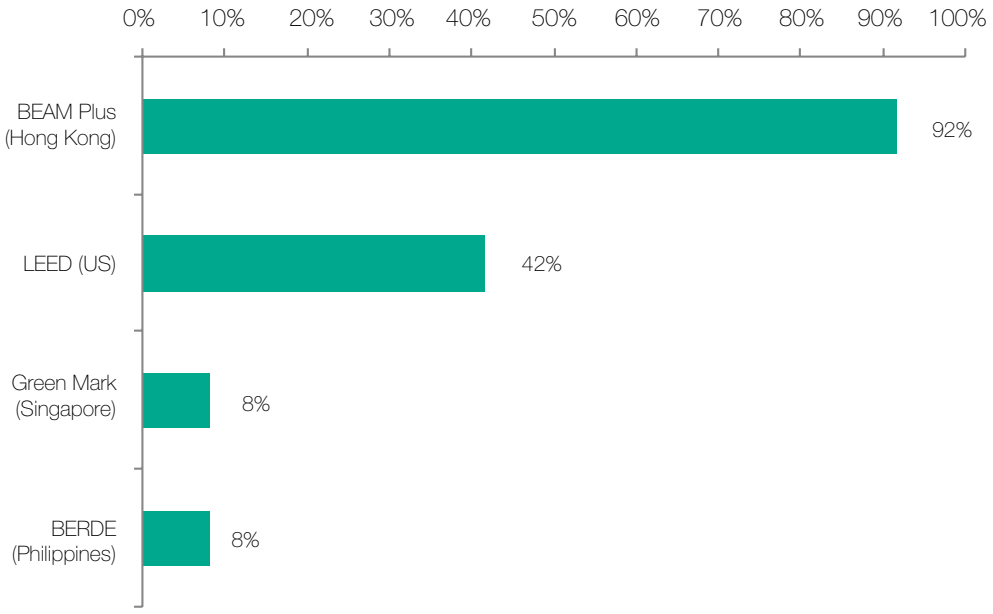
PREFERRED GREEN BUILDING CERTIFICATION

We have asked about familiarity with the various systems but here we have asked bluntly of those respondents who have indicated they are prepared to pursue green building certification, which one will they choose? Not surprisingly, the respondents tended to go with the systems with which they are familiar and accordingly, the three top choices were “Green Mark” (Singapore), “GBI” (Malaysia) and “LEED” (US).

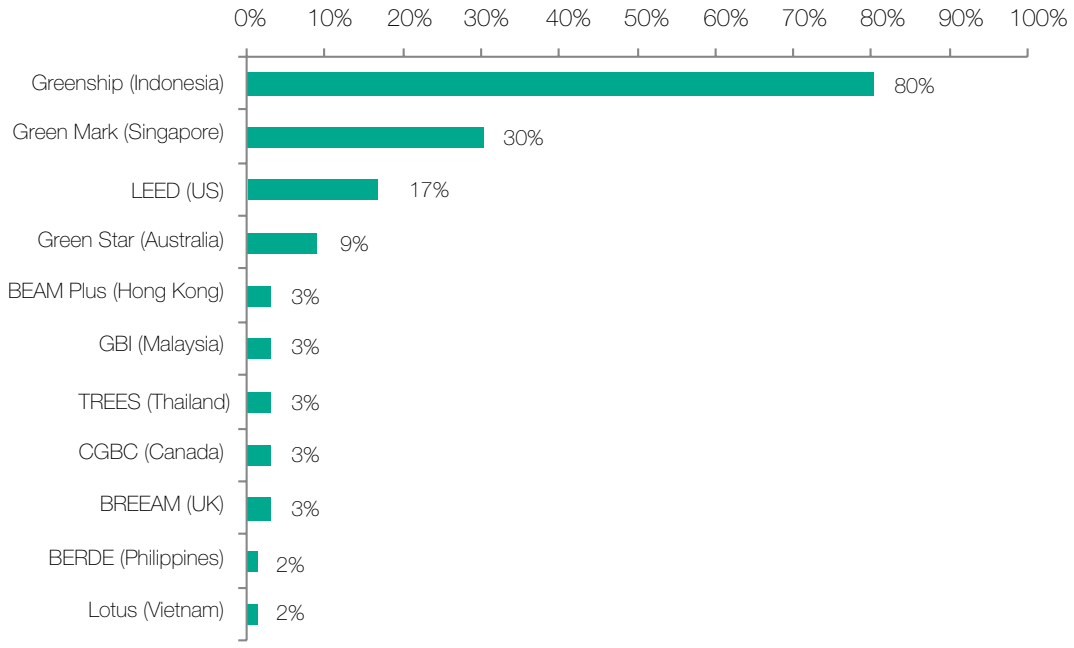
Naturally enough, preference went to the system administered by the country’s own agency. However, it becomes clear the LEED system of the US and the Green Mark from Singapore are the most important back-up choices.



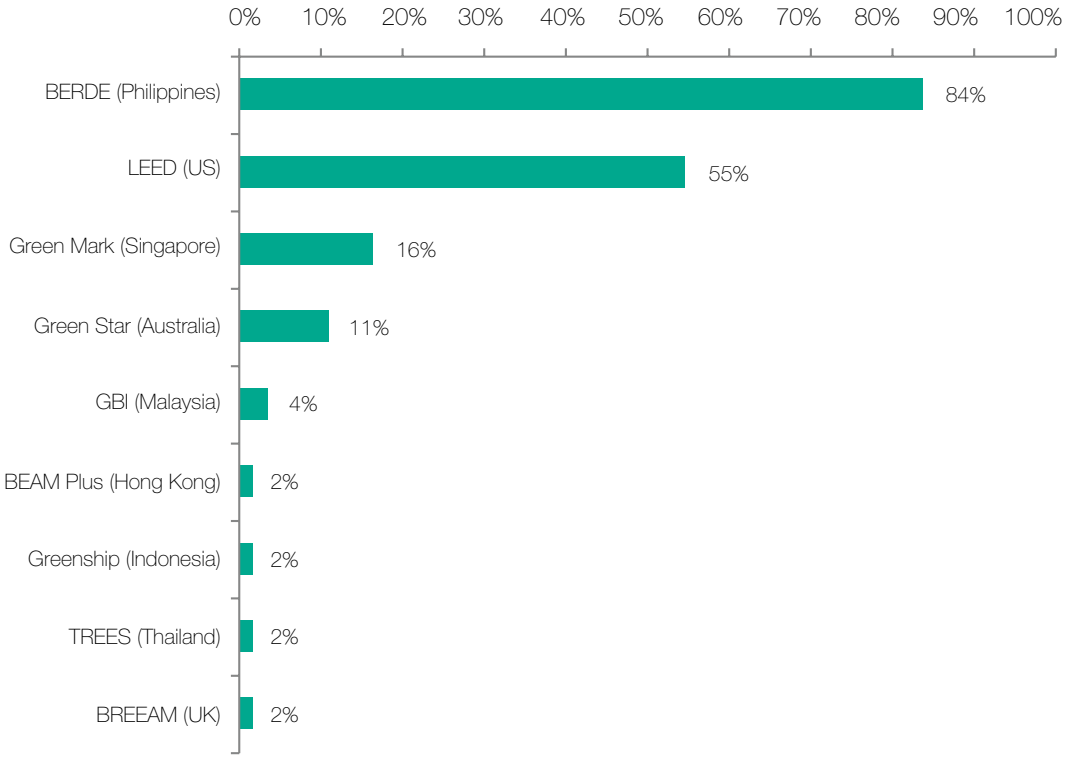
HONG KONG



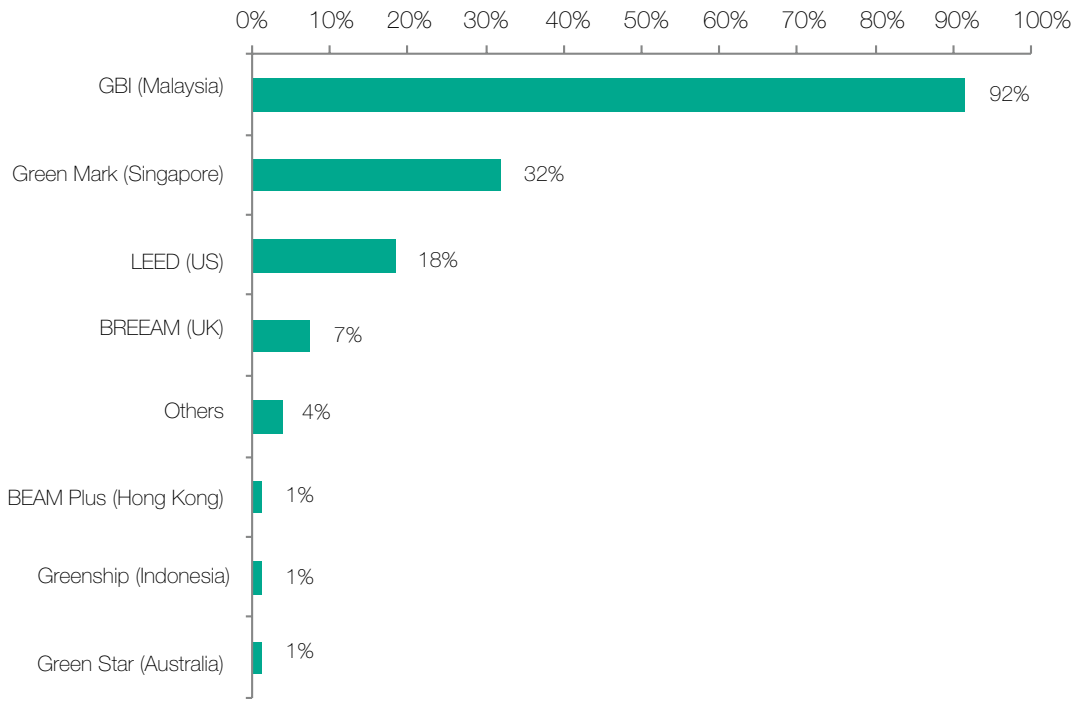
INDONESIA



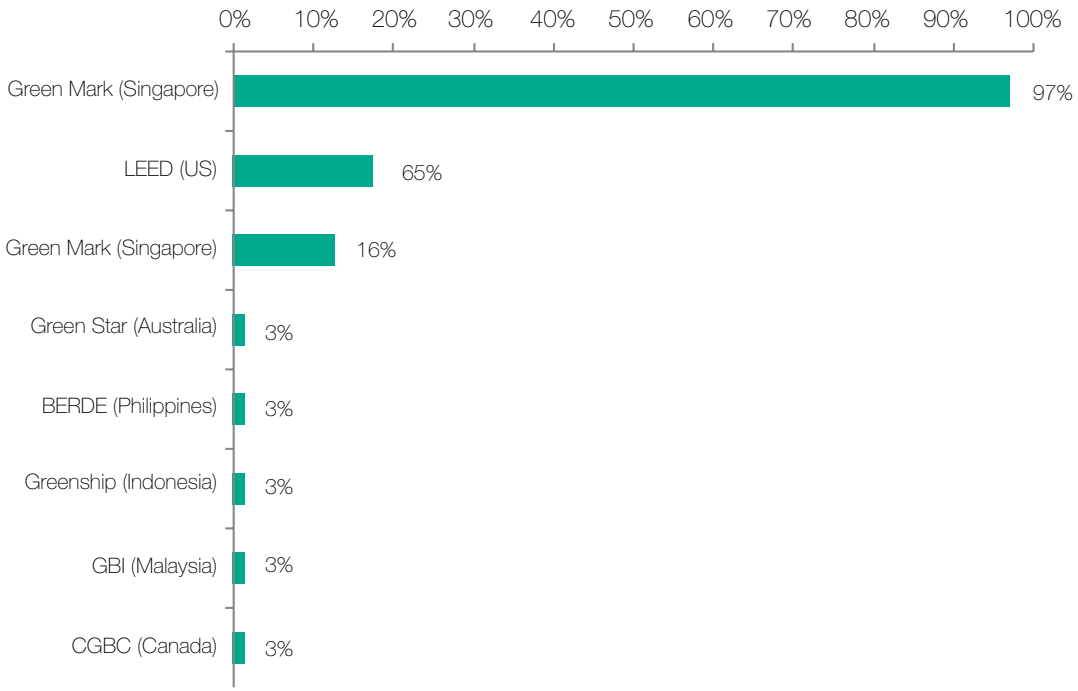
PHILIPPINES



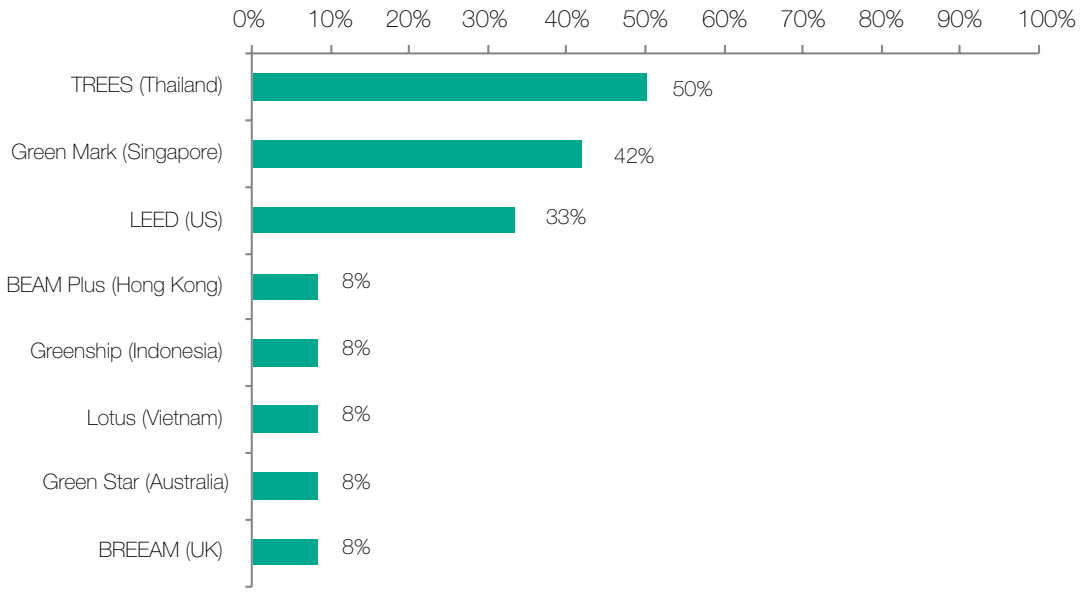
MALAYSIA



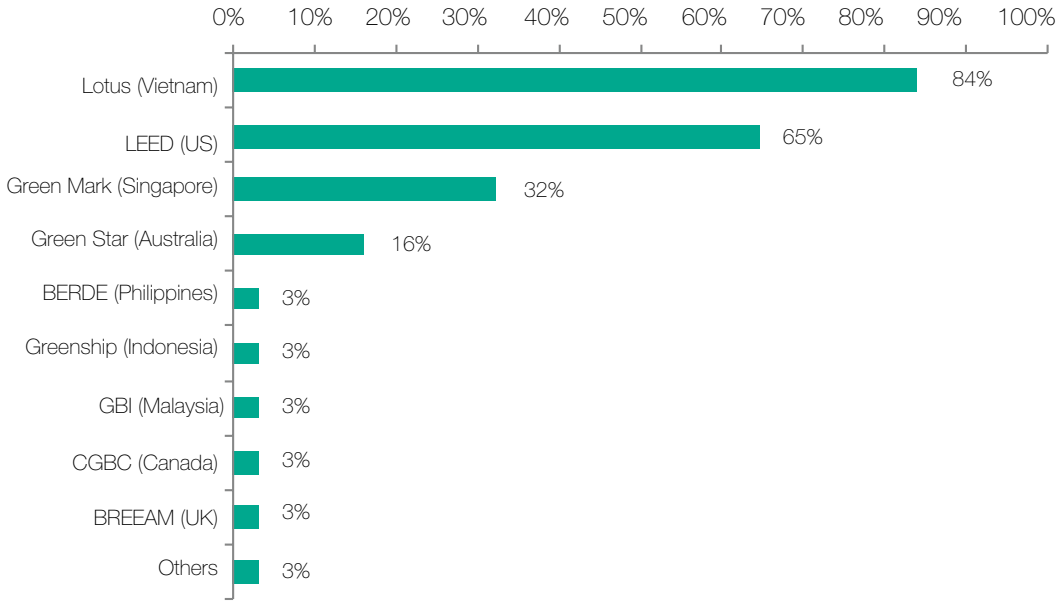
SINGAPORE



THAILAND



VIETNAM


0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Lotus (Vietnam)
84%
LEED (US)
65%
Green Mark (Singapore)
32%
Green Star (Australia)
16%
BERDE (Philippines)
3%
Greenship (Indonesia)
3%
GBI (Malaysia)
3%
CGBC (Canada)
3%
BREEAM (UK)
3%
Others
3%

Efficiency, Sustainability, Innovation. With these principles guiding our thinking, Grundfos has pioneered numerous water technology solutions – that have set industry standards. By reducing energy consumption, a Grundfos pump and pumping system will save far more than just cost.

Tomorrow's Solutions, Today from Grundfos.

Cut your pump's energy consumption by up to 60%!

Visit **www.tomorrowspumpstoday.com/BCI** to view how choosing the right pump can contribute to energy sustainability and savings.

GRUNDFOS

WWW.BSD.COM.SG

ENERGY AND ENVIRONMENTALLY SUSTAINABLE DESIGN | CARBON MANAGEMENT | GREEN EDUCATION | RESEARCH PROJECTS

BUILDING GENERATIONS
FROM ENVIRONMENTALLY SUSTAINABLE DESIGN

BSD believes that the built environment should be designed and managed with a mutually beneficial relationship with nature, thereby shaping our future through a sustainable environment.

Since our establishment in 2003, our teams in Singapore, Malaysia and China have been working alongside key building stakeholders to provide advisory solutions towards an environmentally sustainable and energy efficient built environment.

No. 18, Boon Lay way #07-107 tradehub 21, Singapore 609966 | Tel +65-6560-0702 | Email info@bsd.com.sg

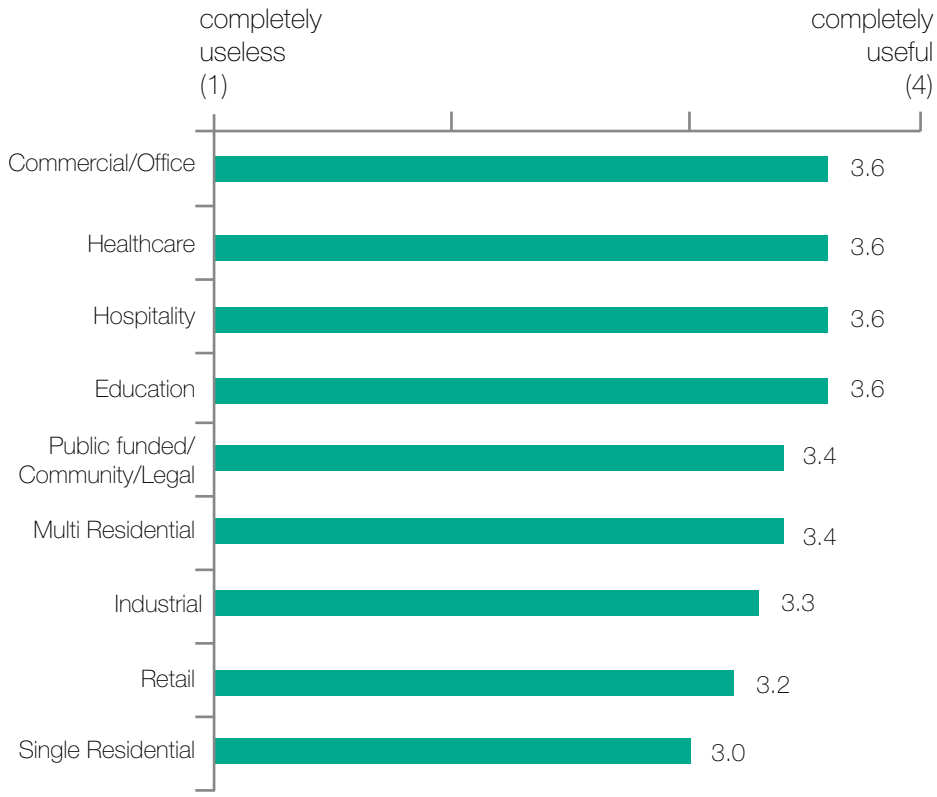
BSD
building system & diagnostics

PERCEIVED USEFULNESS OF CERTIFICATION BY BUILDING CATEGORY

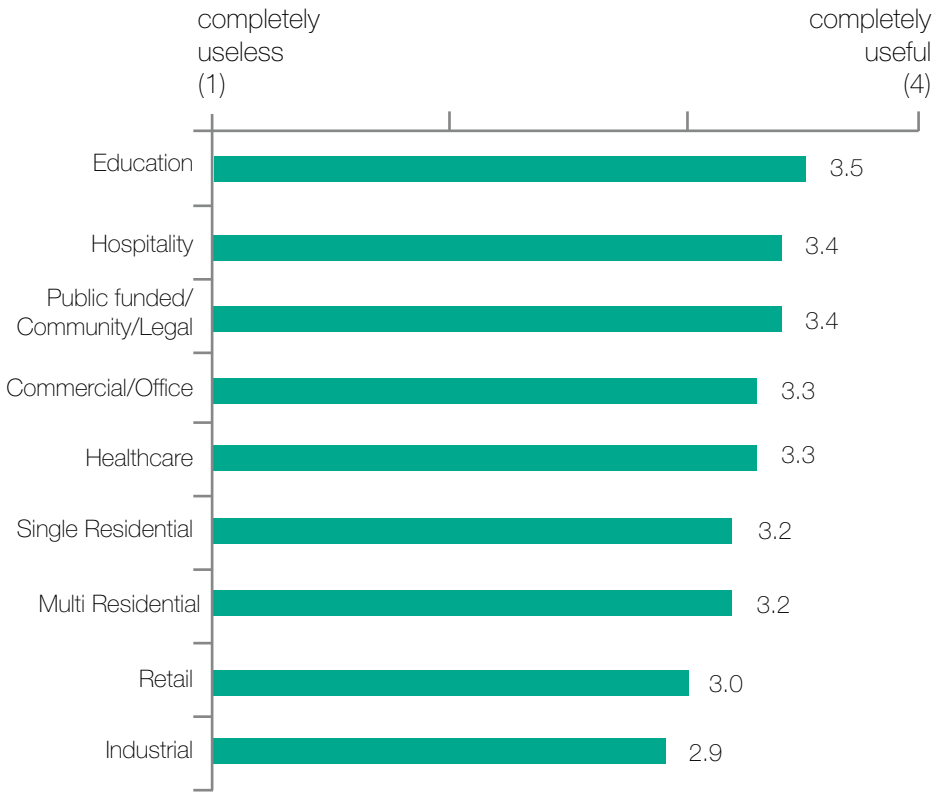
We wished to determine whether the industry professionals regarded certification as being more useful for certain building categories than others. Across South East Asia there appears little to choose between the top 4 categories, namely commercial/office, healthcare, hospitality and education.

Not that far behind come publicly funded projects (including community and legal), multi residential and industrial. However, certification does not appear to be regarded as valuable for retail and single residential developments.

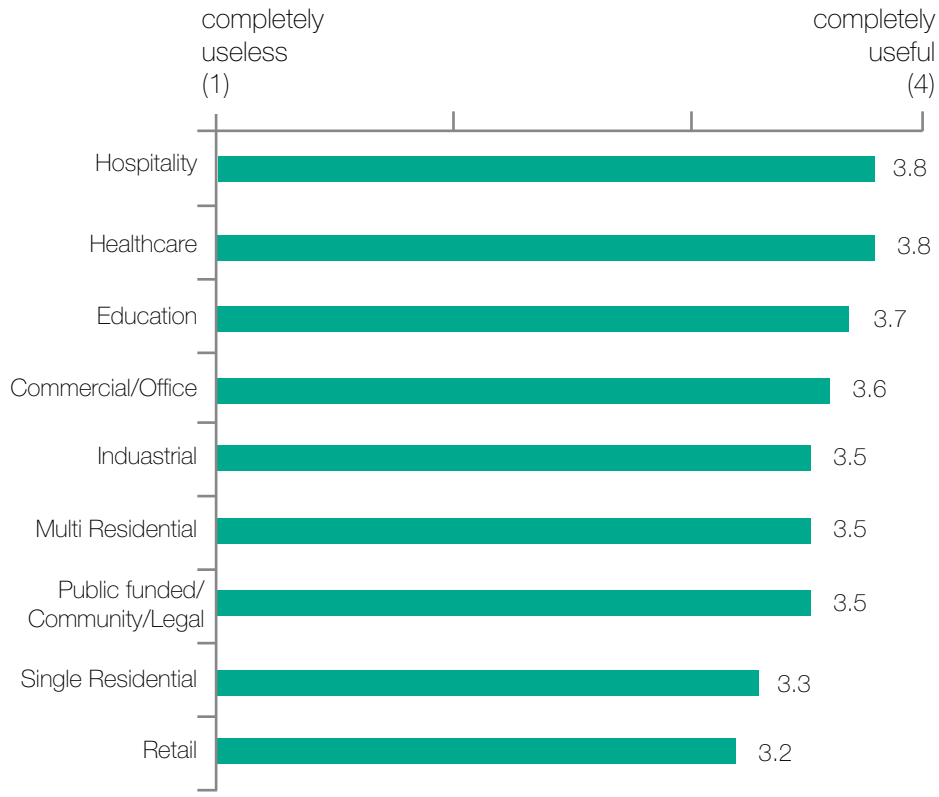
The profiles for each country do bear some similarity with the overall picture, however, there are some interesting variations reflecting differences in market opportunities.



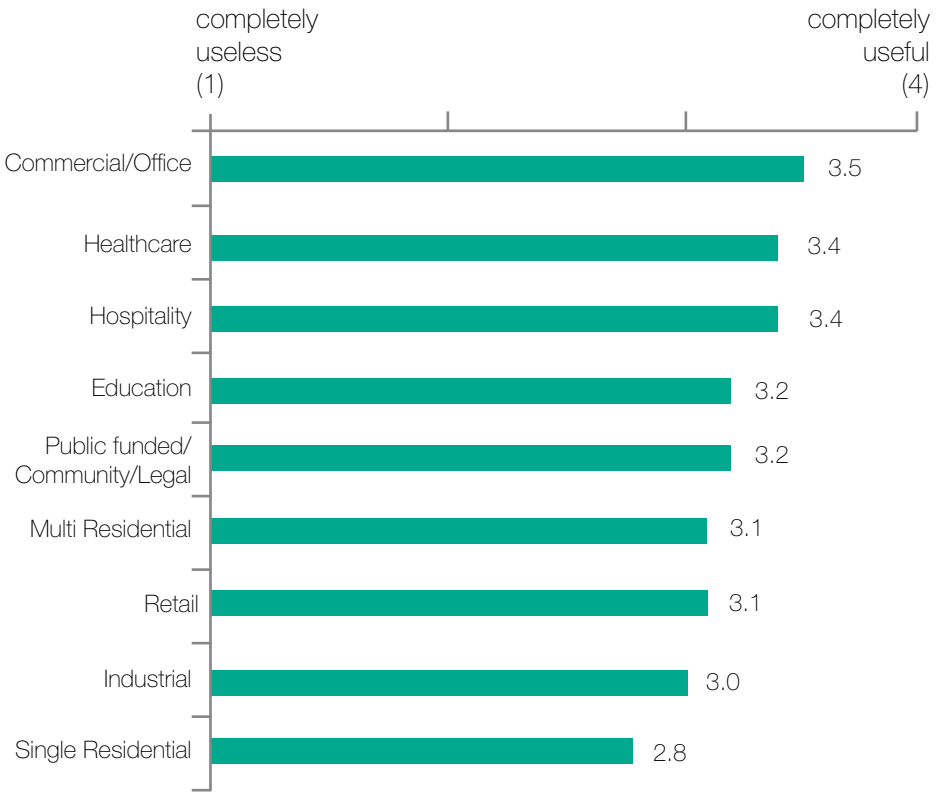
HONG KONG



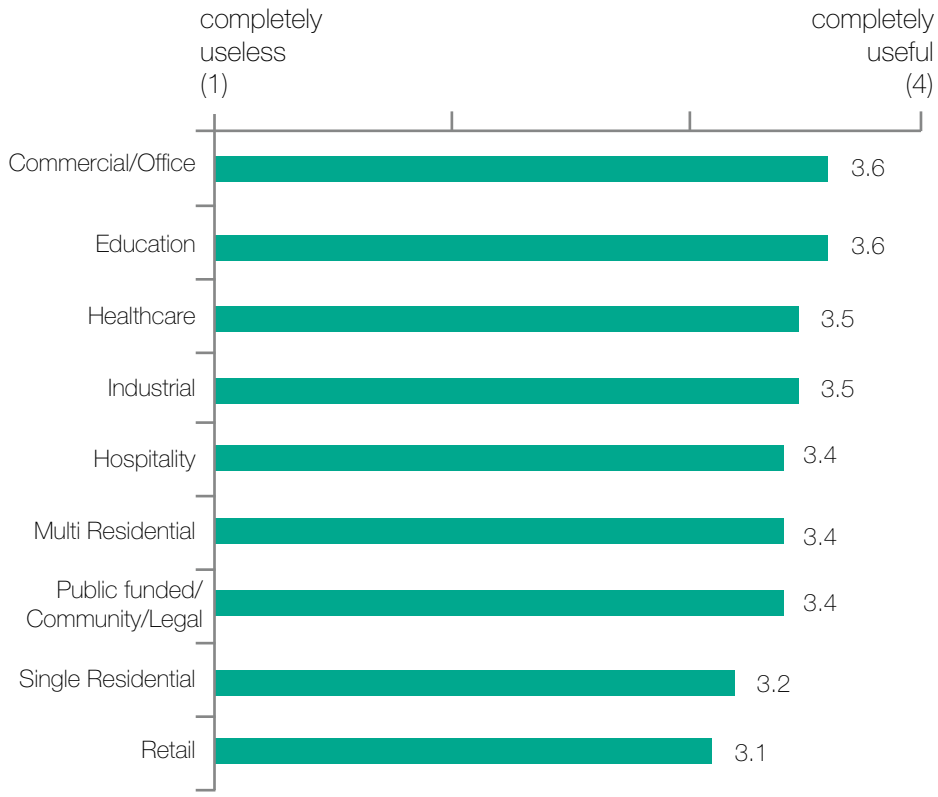
INDONESIA



MALAYSIA

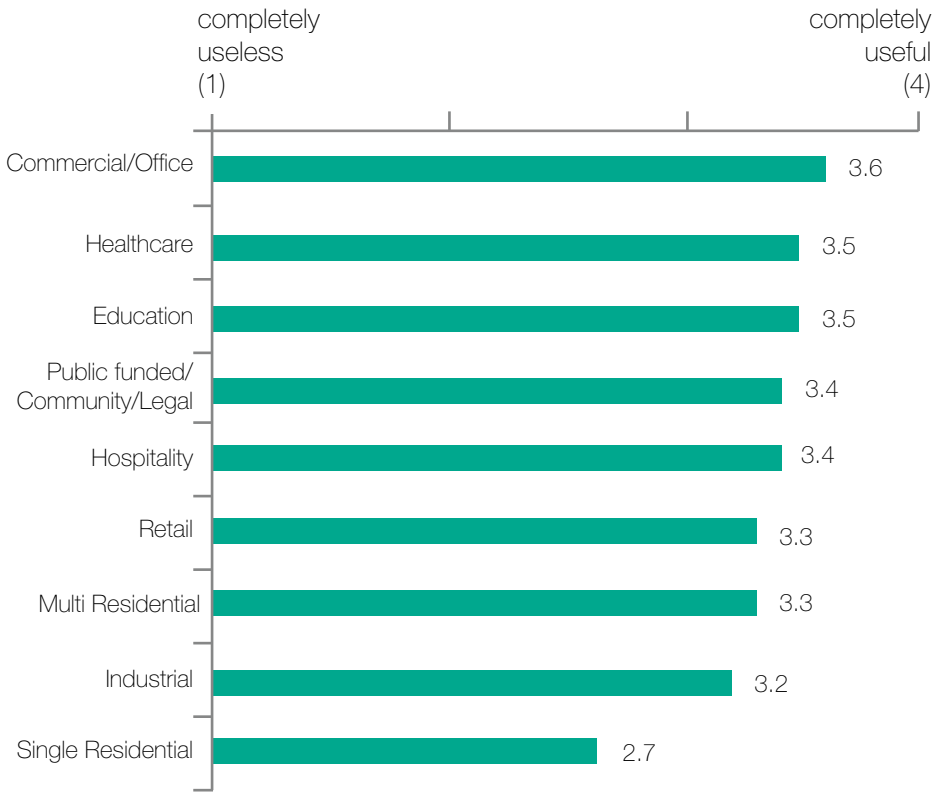


PHILIPPINES

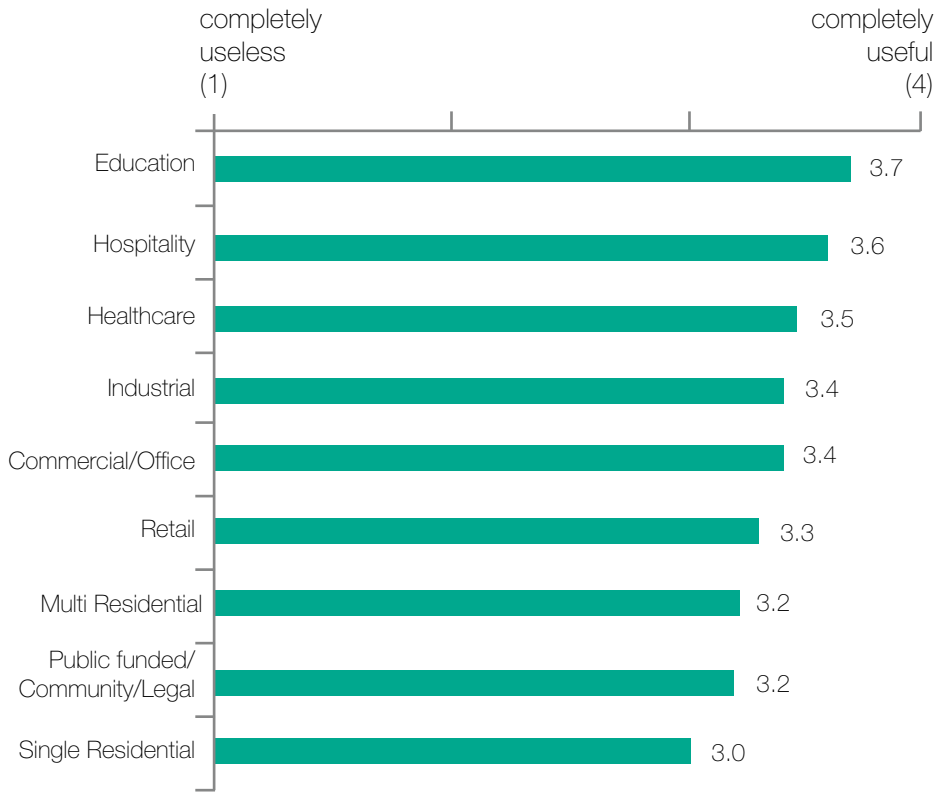


PERCEIVED USEFULNESS OF CERTIFICATION BY BUILDING CATEGORY

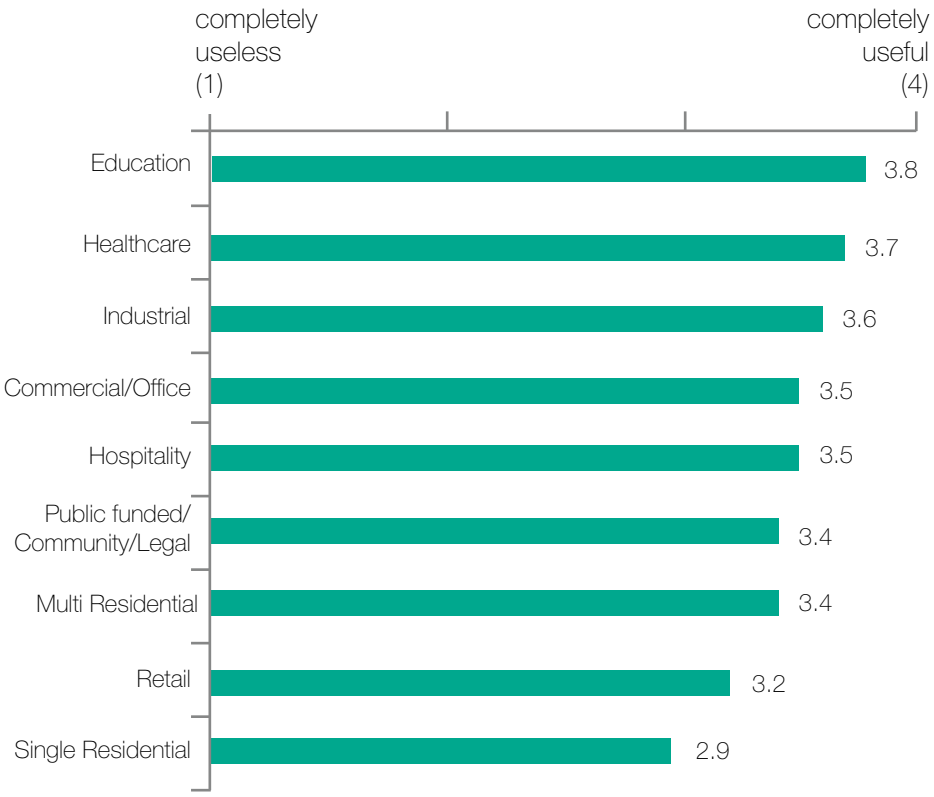
SINGAPORE



THAILAND



VIETNAM


completely useless (1)
completely useful (4)
Education
3.8
Healthcare
3.7
Industrial
3.6
Commercial/Office
3.5
Hospitality
3.5
Public funded/ Community/Legal
3.4
Multi Residential
3.4
Retail
3.2
Single Residential
2.9

THE MAIN REASONS FOR NOT SEEKING CERTIFICATION

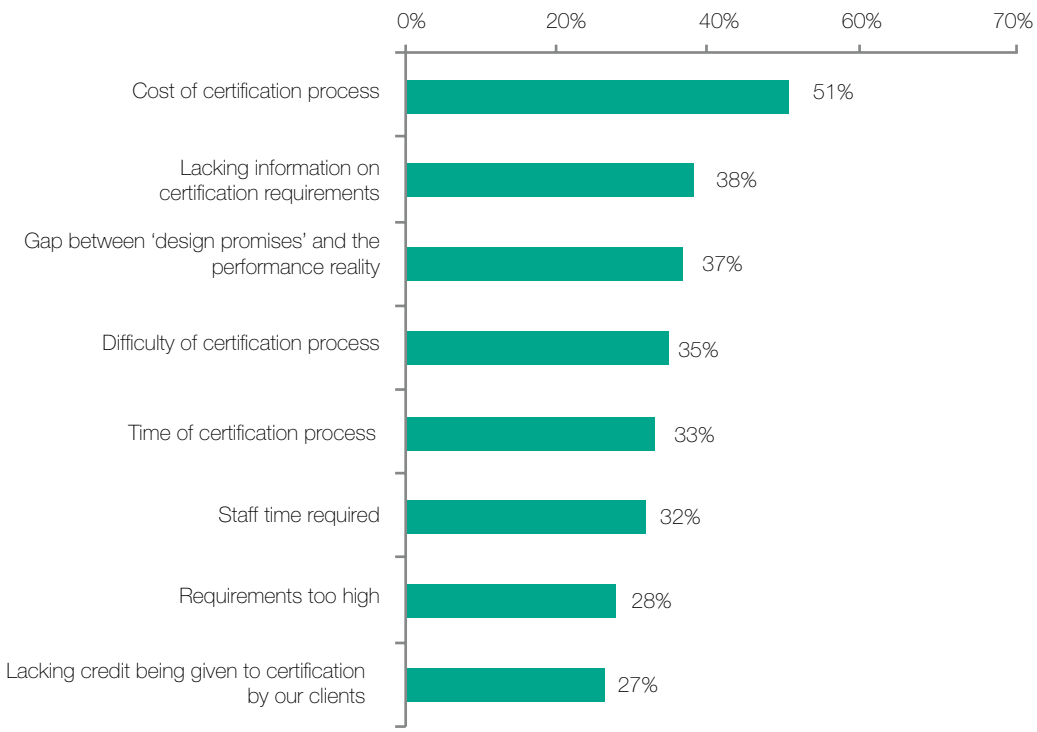
The sheer upfront cost is clearly the favourite reason for not seeking certification. Having considered the benefits and opportunities afforded by achieving certification, we now need to address the obstacles to making the commitment. Clearly our respondents have demonstrated strong intentions for having their projects accredited but the level of action has fallen far short.

Overall, the leading objection by a sizeable margin and cited by just over half the respondents to our South East Asia survey, is the cost of the certification process.

The second most frequently mentioned reason is the lack of knowledge as to what is required to obtain certification and a close third place was taken by the sense that design promises espoused in the certification process do not match the performance reality when the building is operational.

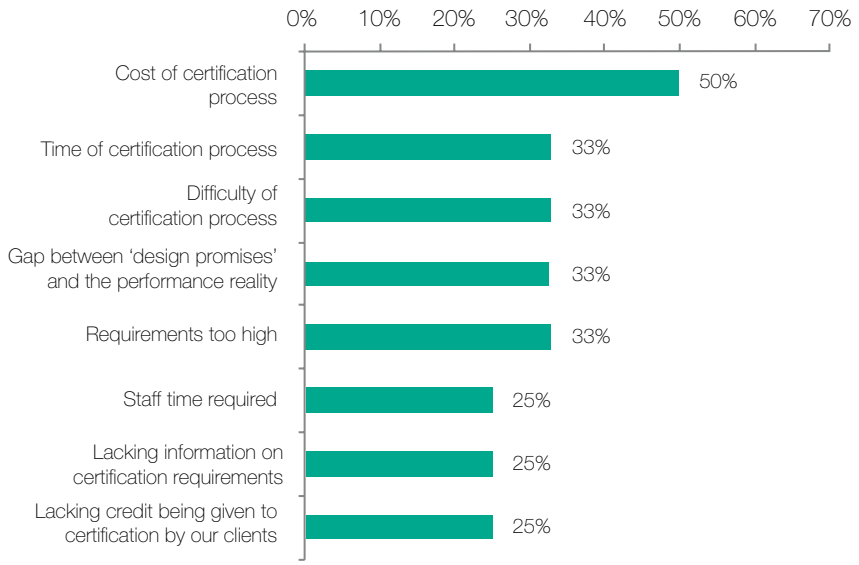
Bunched fairly close behind are the objections because of the difficulty of the certification procedures, the length of time the process requires and the amount of staff time that needs to be dedicated.

A small but significant number of respondents felt that the certification requirements were too demanding and a similar number reckoned that their clients did not place much value on having their buildings certified.

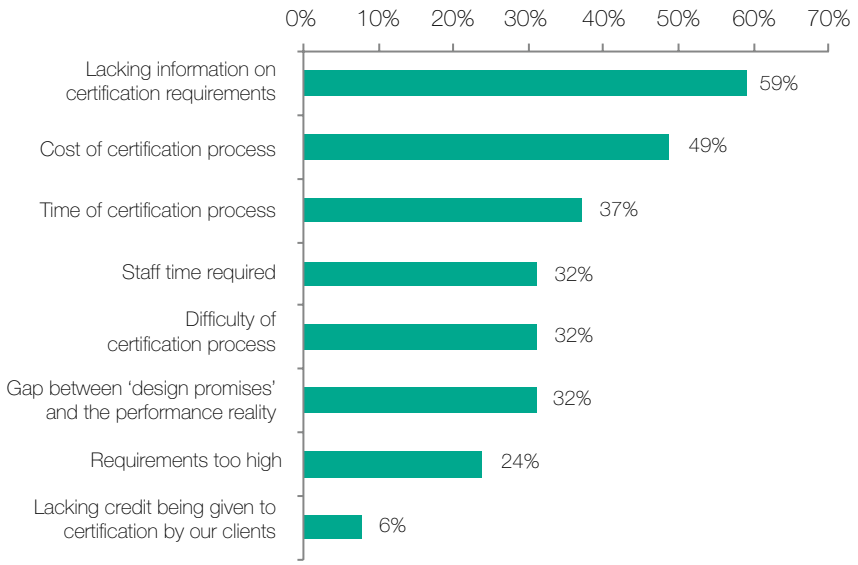


Although the major objection overall, certification costs were not top of every country's list. In Indonesia the main obstacle elicited by our survey was the lack of information regarding what the certification process required. The respondents in Thailand mostly referred to the difficulty of the certification process, whereas in Vietnam, the main objection was that there was a gap between design promises and actual building performance.

HONG KONG

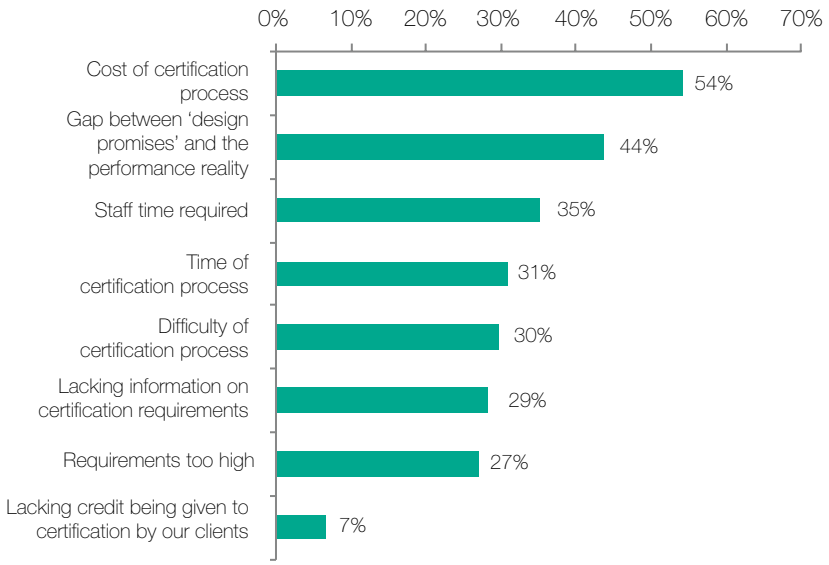


INDONESIA

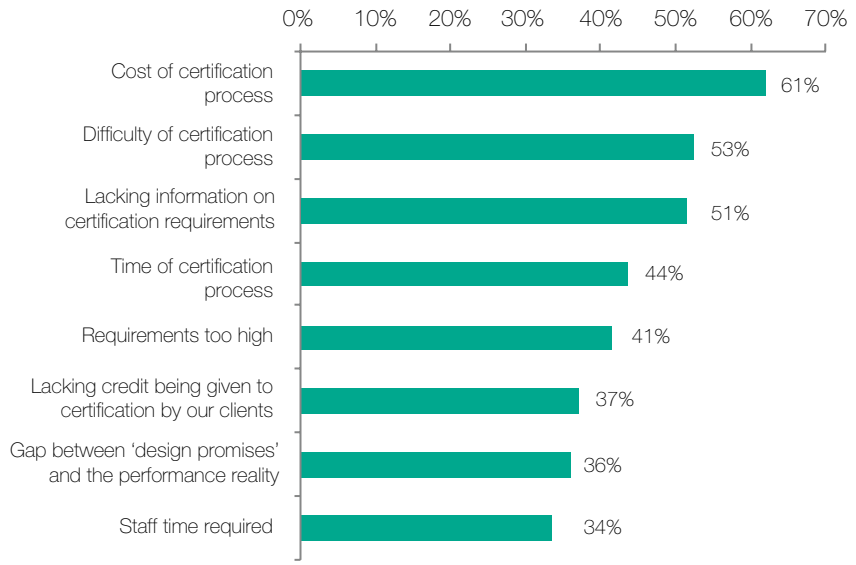


THE MAIN REASONS FOR NOT SEEKING CERTIFICATION

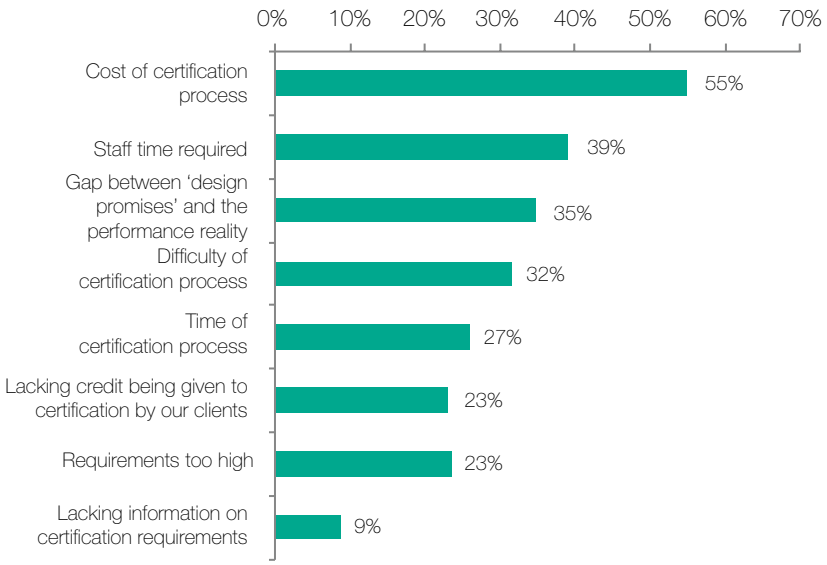
MALAYSIA



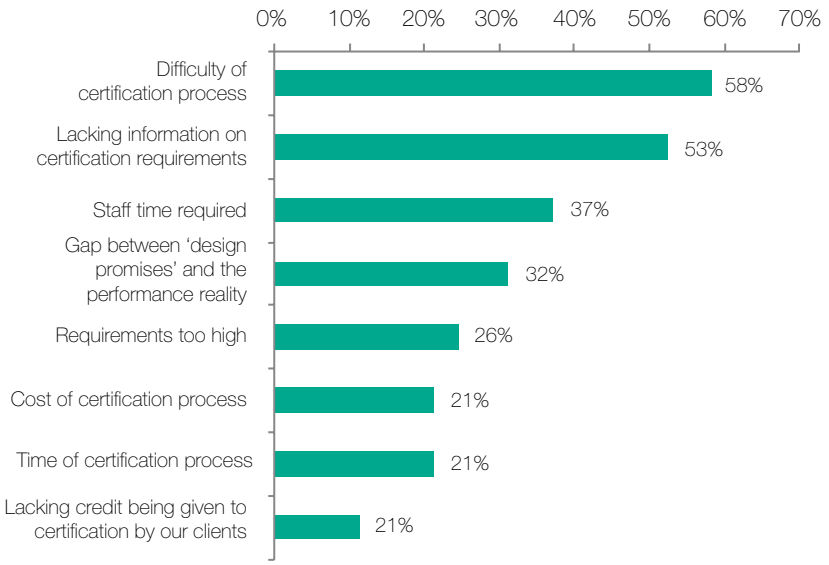
PHILIPPINES



SINGAPORE

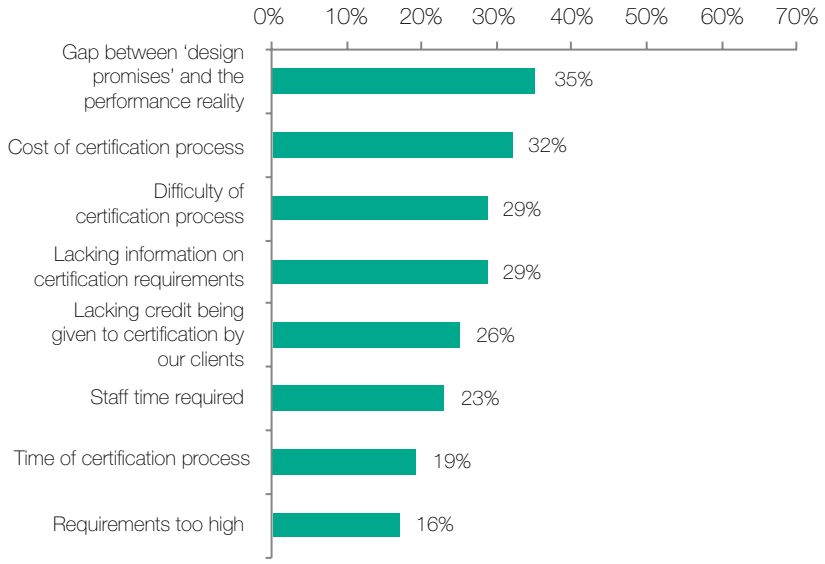


THAILAND



THE MAIN REASONS FOR NOT SEEKING CERTIFICATION

VIETNAM

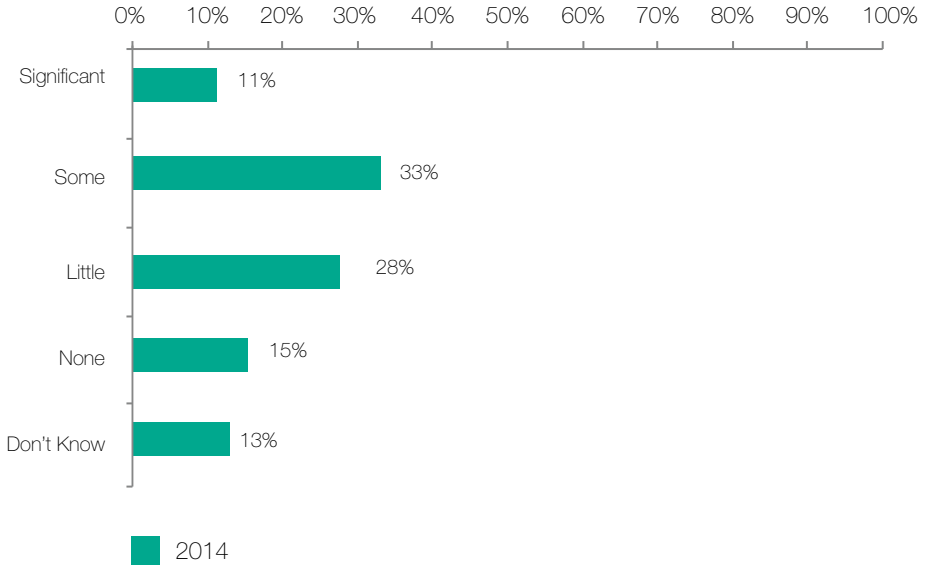


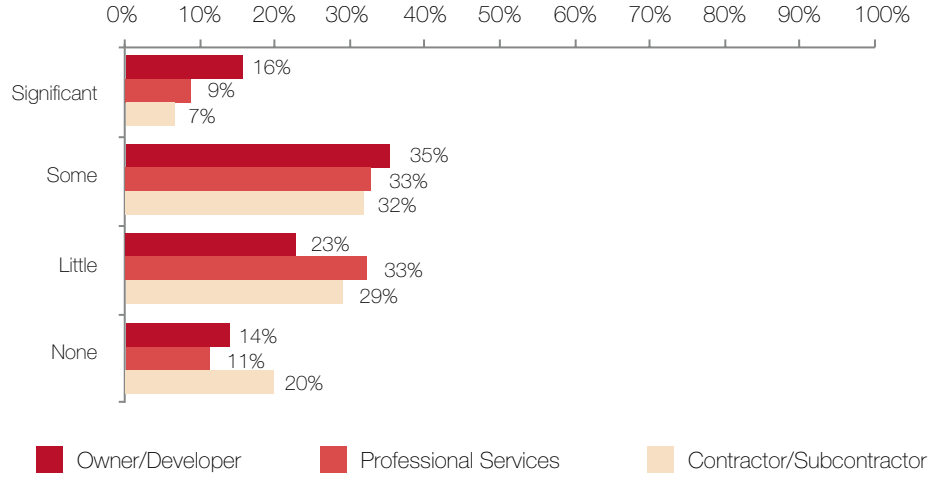
SALES GROWTH ATTRIBUTABLE TO GREEN BUILDING

As mentioned above, there is a growing awareness of the commercial benefits of adopting green building principles. Our survey enquired whether this had translated into additional revenue for those companies getting involved.

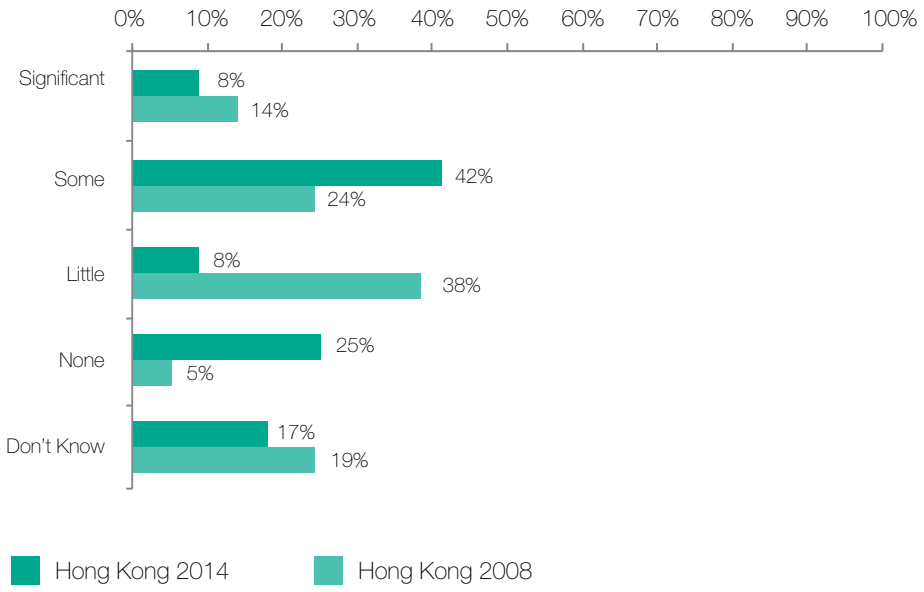
Only 15% reported that there had not been any sales growth (with a further 13% who could not say). A little bit of growth was noticed by 28% whereas 34% of respondents claimed some measurable growth with a further 10% who reported the sales growth attributable to green building to be significant

Analysing the results by respondent type, owners and developers appeared to have the highest percentage of significant growth with contractors and subcontractors notably “less fortunate”.

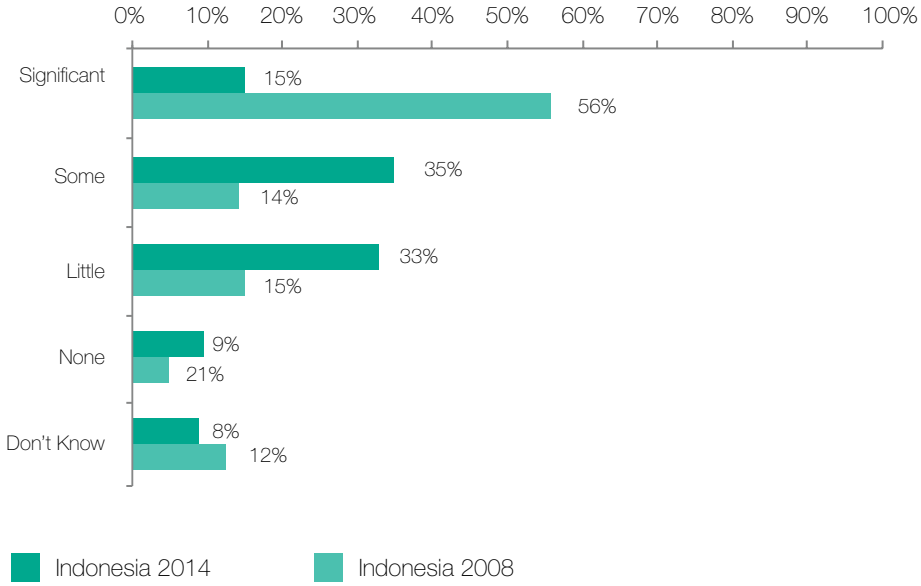




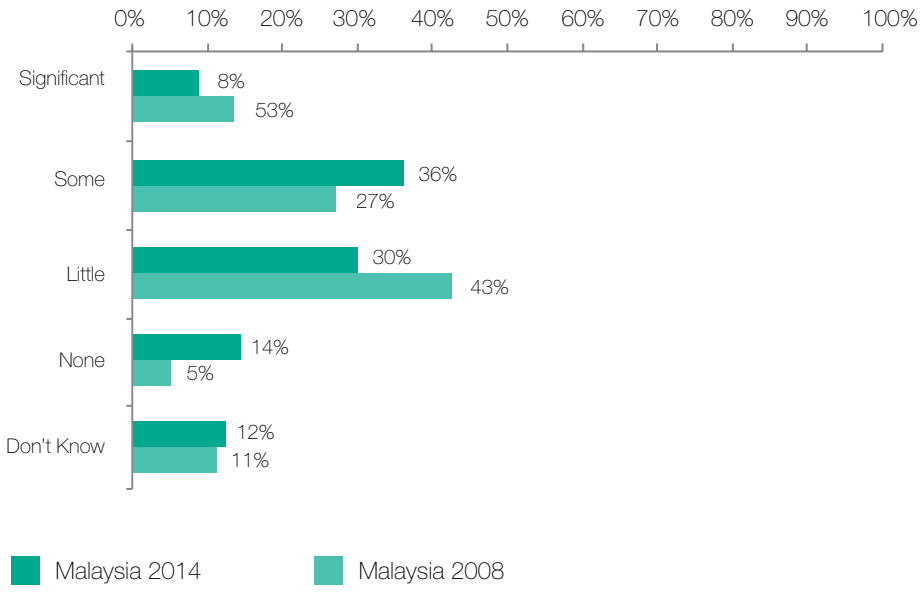
HONG KONG



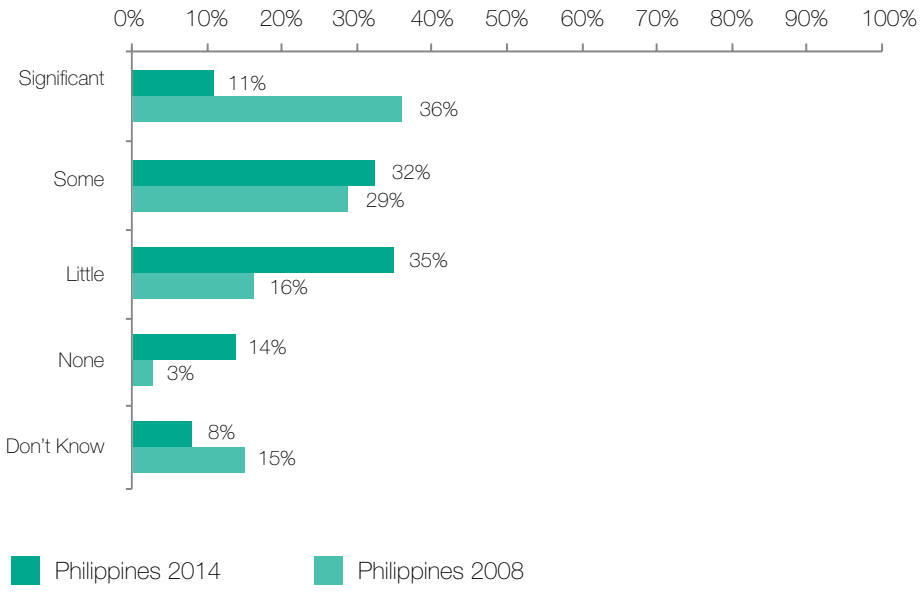
INDONESIA



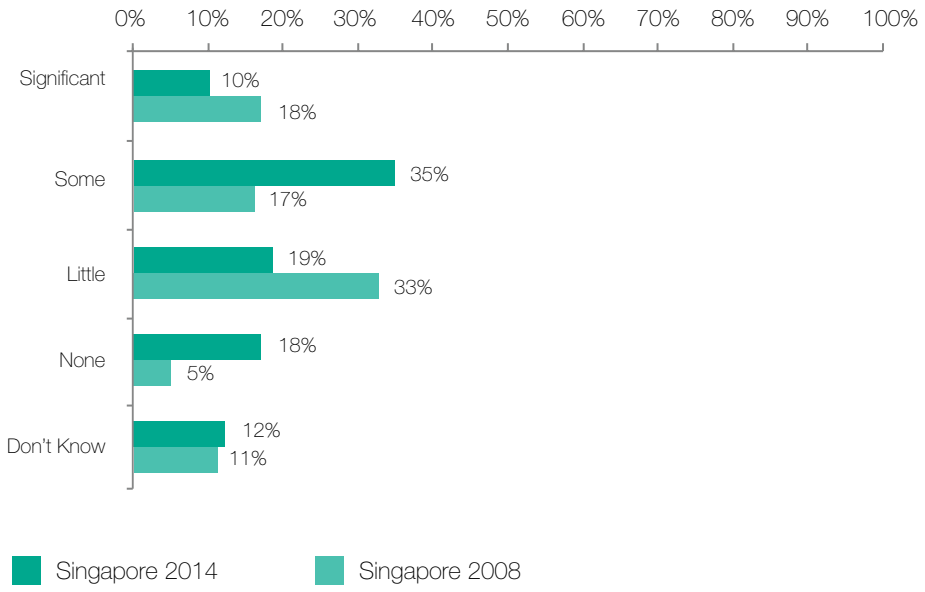
MALAYSIA



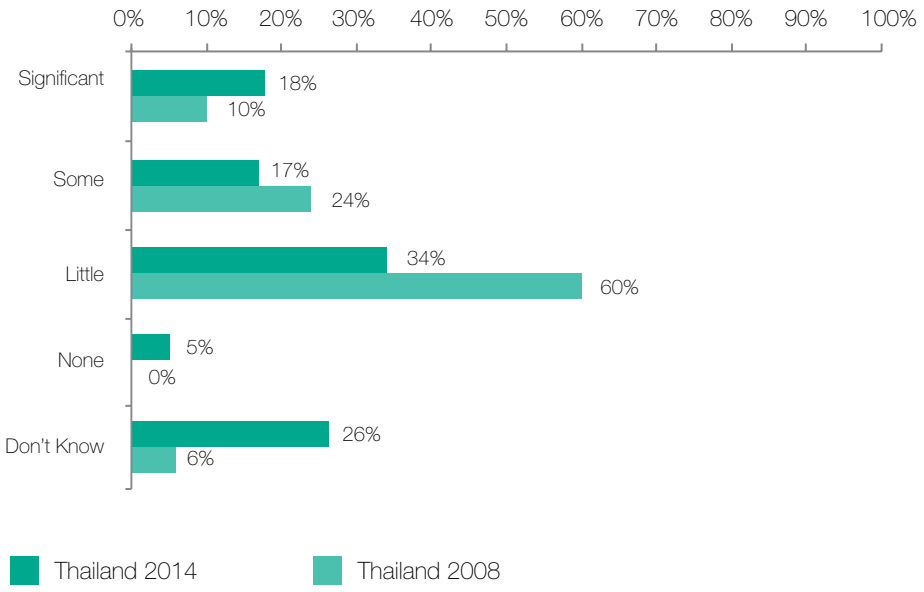
PHILIPPINES



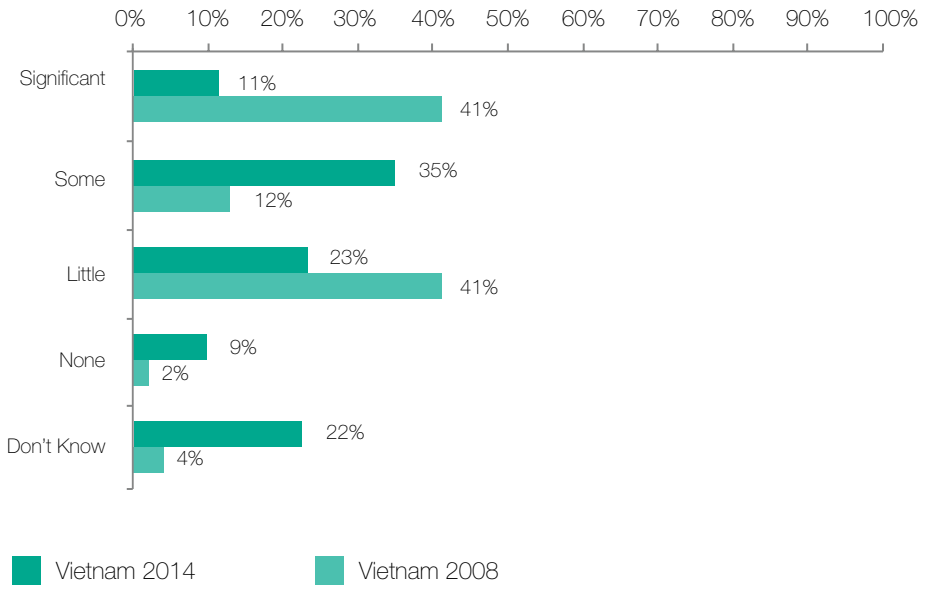
SINGAPORE



THAILAND



VIETNAM


0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Significant
11%
41%
Some
35%
12%
Little
23%
41%
None
9%
2%
Don't Know
22%
4%
Vietnam 2014
Vietnam 2008

One partner from start to finish

Philips Lighting offers end-to-end turnkey solutions to realize your lighting needs. Select from a suite of services that suits your business objectives or entrust us with a complete turnkey package.

Advisory Services
- Energy audit
- Solution design
- Lighting stimulation

Project Services
- Project management
- Installation
- Testing and commissioning

Financing
- Zero capex model
- Support on government incentives*

Lifecycle Services
- Warranty
- Maintenance
- Performance tracking

To find out more about our lighting solutions and services, email us at **lighting.b2b@philips.com** or visit our website at **www.philips.com.sg/lighting**

*Based on available grants

A world leader in LED lighting

PHILIPS

LVFAR

ECOGRANIC

Air Purifying Block

LVFAR
綠發環保

綠發建峰環保工業有限公司
LVFAR Kin Fung Green Reusable Industry Ltd.

Tel: 852-31885000
Fax: 852-35791917
Email: info@lvfarkf.com
Website: www.lvfarkf.com
Address: Rm 1201, 12/F, Shatin Galleria, 18-24 Shan Mei Street, Fotan, Shatin, Hong Kong

BUSINESS ENVIRONMENT COUNCIL 商界環保協會
GENERAL MEMBER 2014

HKGPC HONG KONG GREEN PURCHASING CHARTER
Associate Member of HKGPC

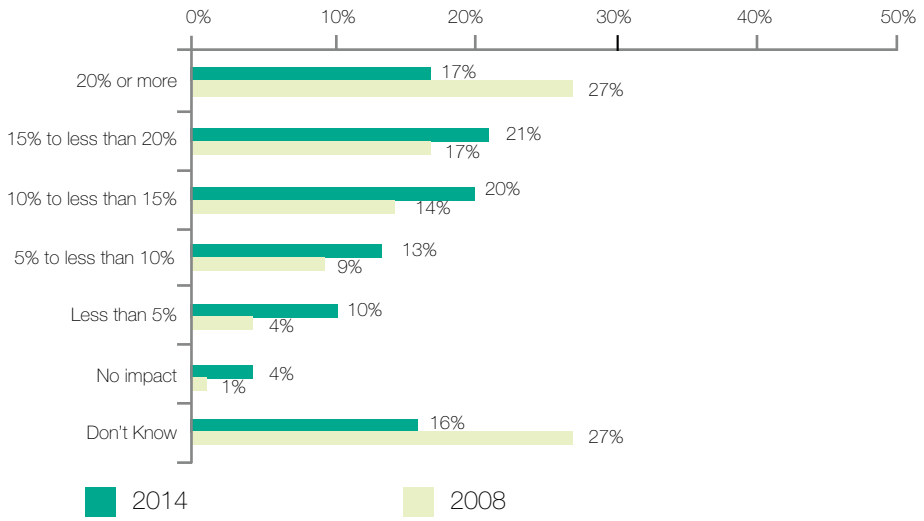
ADDITIONAL UPFRONT BUILDING COSTS ATTRIBUTABLE TO GREEN BUILDING

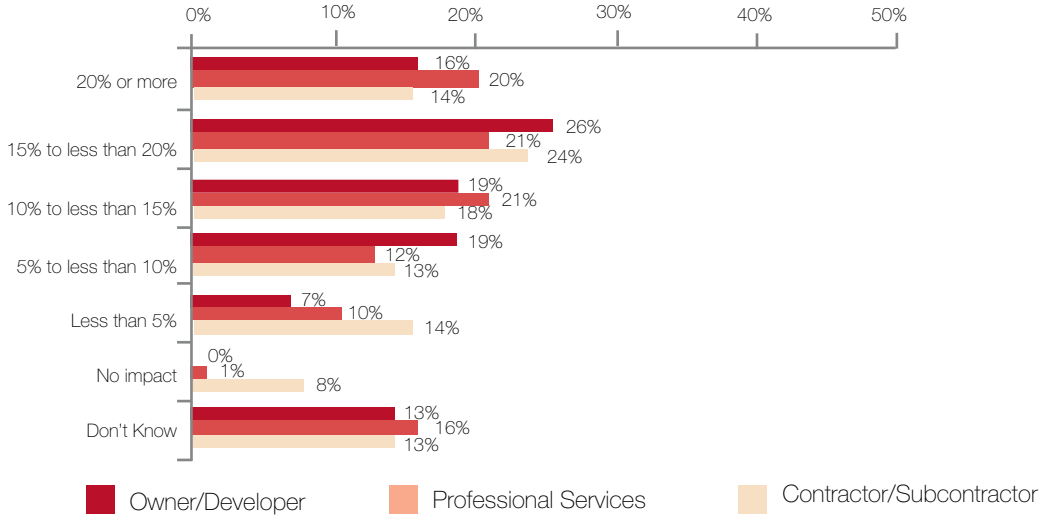
It has always been taken for granted that green building would involve additional building costs. It has also been frequently cited that the extra expense was a major factor inhibiting the uptake of green building design principles. In 2008, our survey reported on what the industry professionals thought the extra cost might be but in 2014 we asked what their actual experience was which gives us the opportunity to compare the reality with the expectation.

An interesting observation is that in 2008, 27% of respondents could not provide an estimate of the additional costs whereas in 2014, the "Don't Know" response was only 16%, affording us reasonable confidence in the reliability of our data.

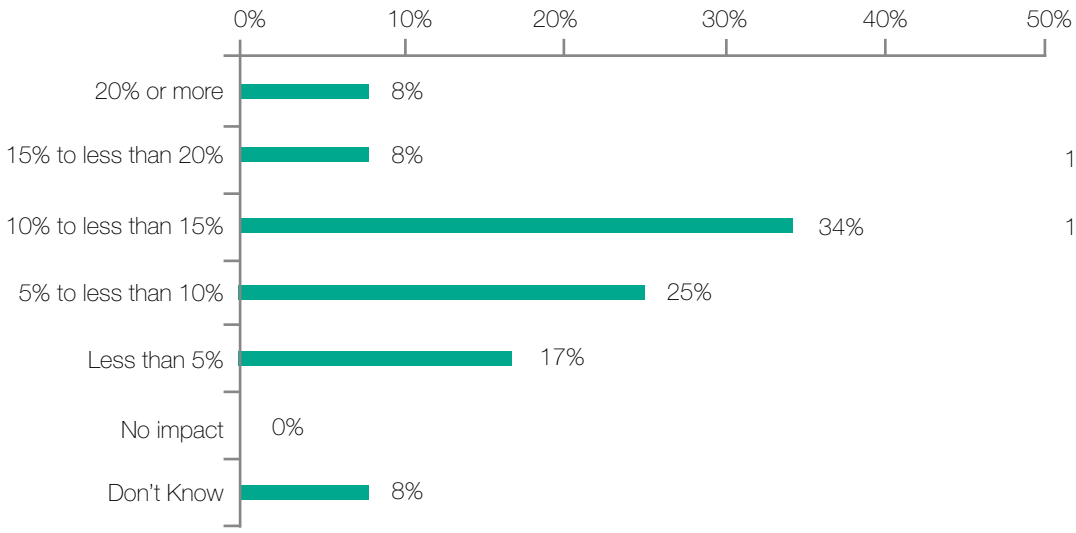
It is clear that there is a premium to be paid for delivering a building according to green principles with only 4% claiming there was no cost impact. However, there is a spread of values for the extra costs reflecting the different levels of certification. At the top end, 17% of the projects incurred at least 20% of additional costs. Another 20% of the estimates put the incremental cost at between 15% and 20% with 20% more between 10% and 15%.

This compares favourably with the expectations reported in 2008 where the percentage believing that costs would be in excess of 20% was up to 27%. Yes, there is a premium for building green, but the price tag is not as scary as it was thought to be.

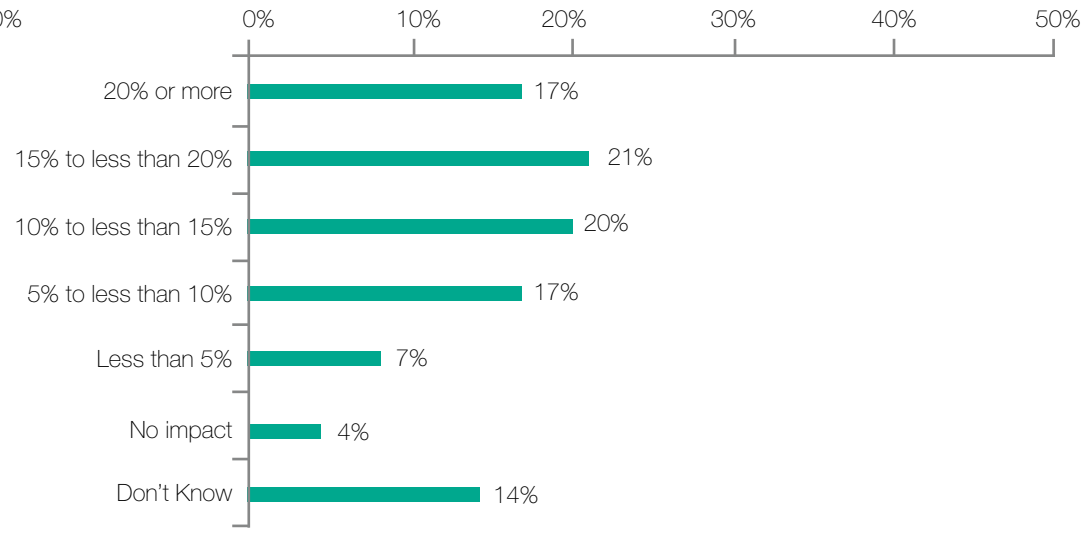




HONG KONG

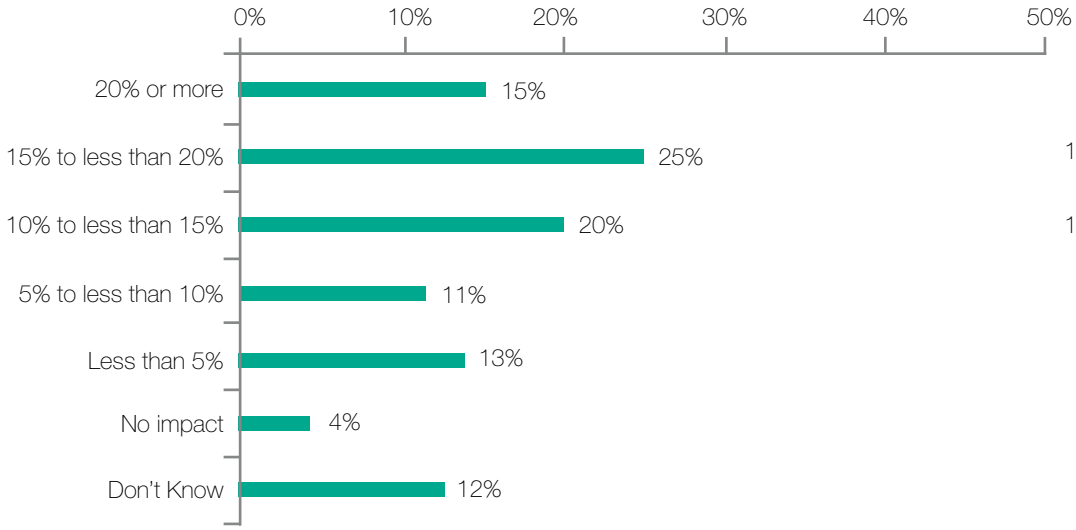


INDONESIA

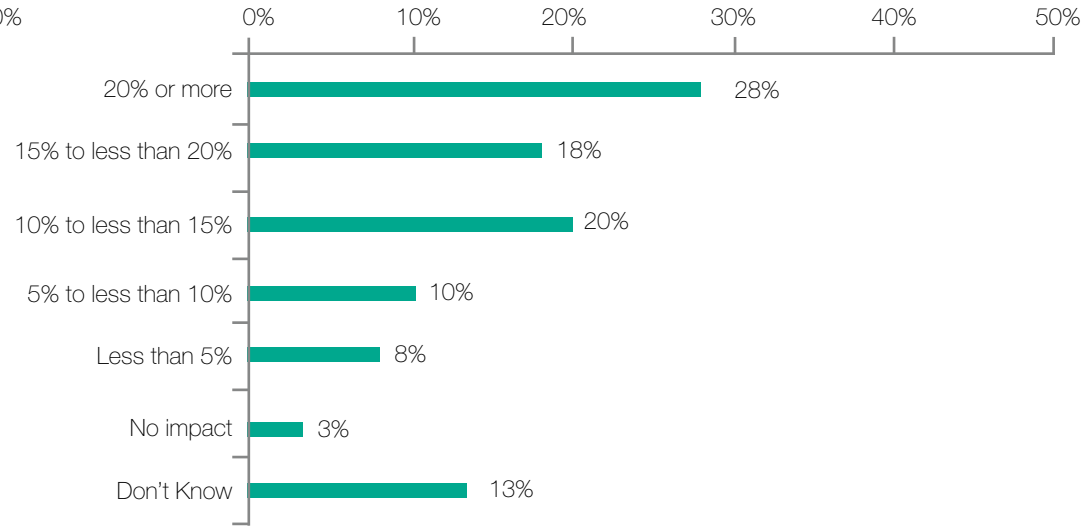


ADDITIONAL UPFRONT BUILDING COSTS ATTRIBUTABLE TO GREEN BUILDING

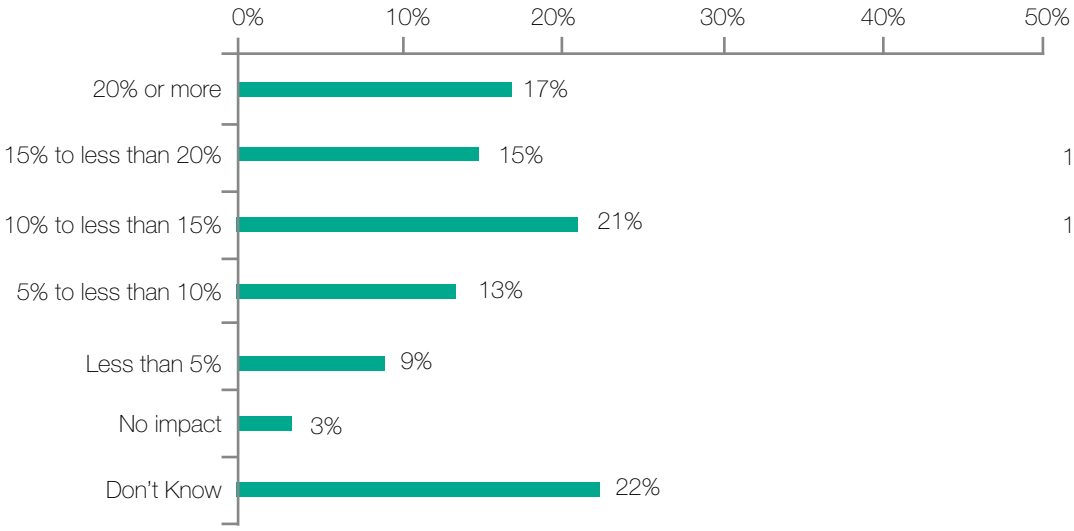
MALAYSIA



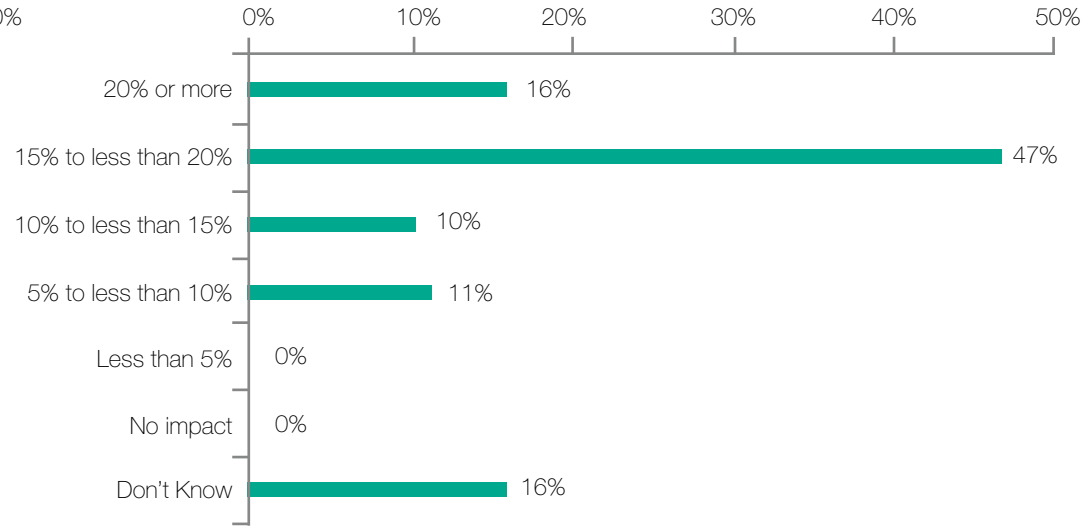
PHILIPPINES



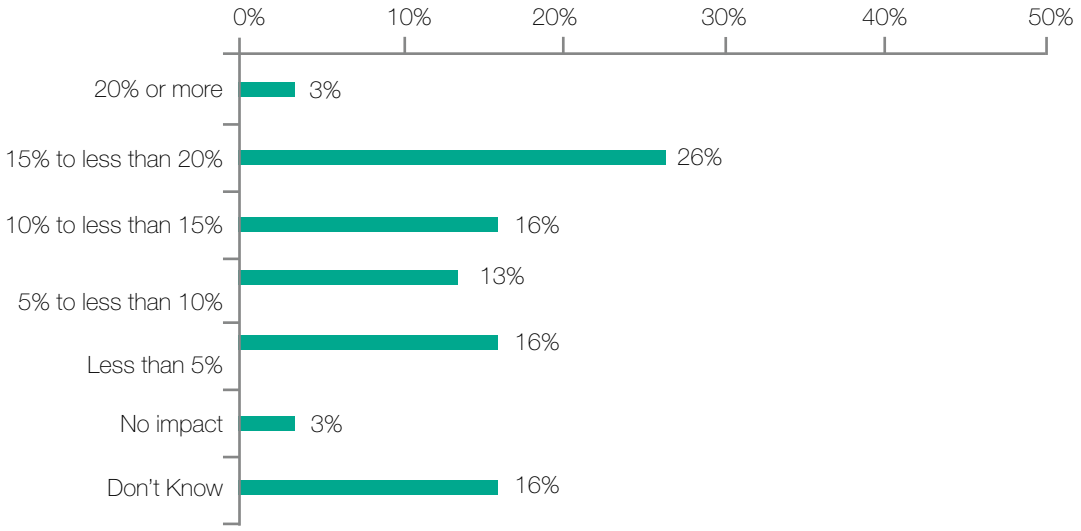
SINGAPORE



THAILAND



VIETNAM

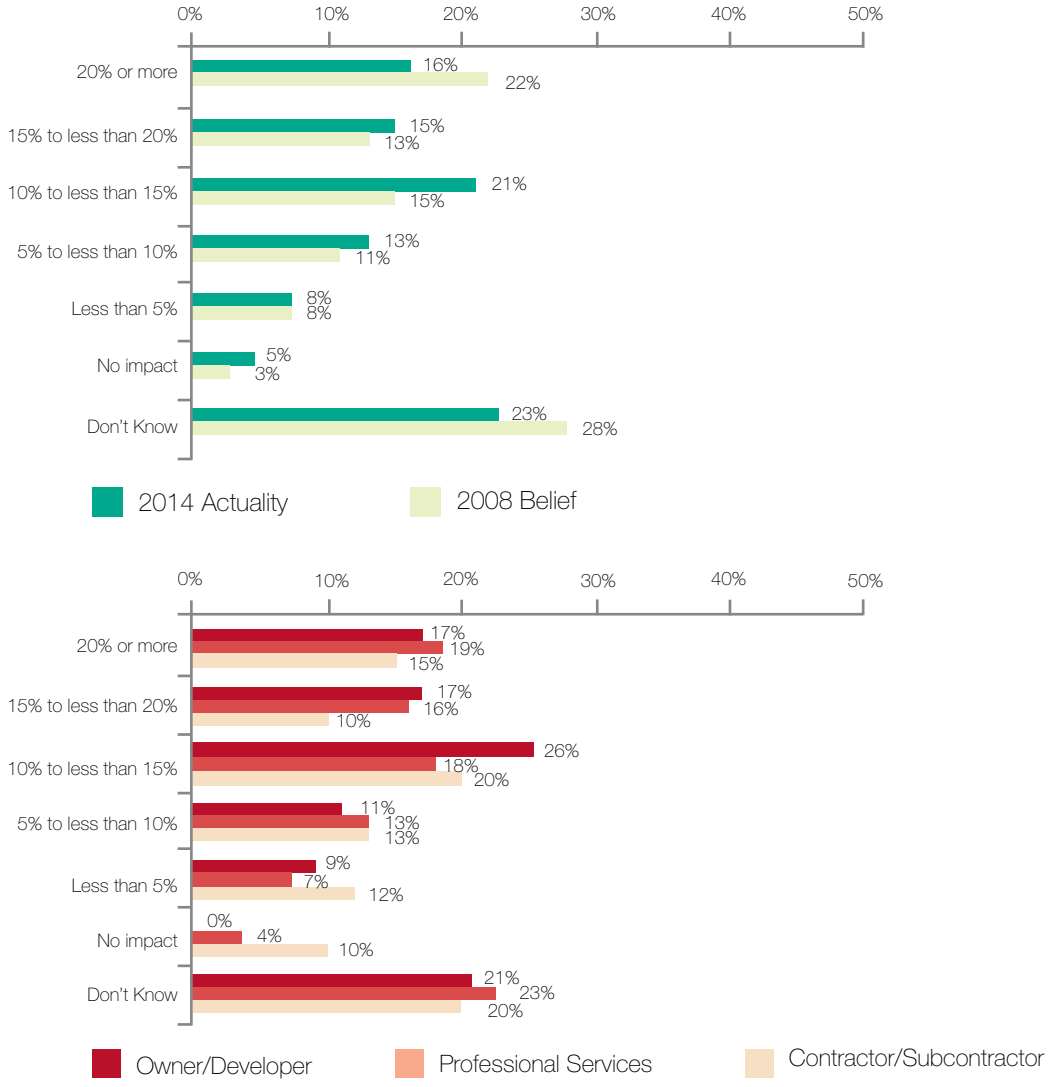

0%
10%
20%
30%
40%
50%
20% or more
3%
15% to less than 20%
26%
10% to less than 15%
16%
5% to less than 10%
13%
Less than 5%
16%
No impact
3%
Don't Know
16%

SAVINGS IN OPERATING COSTS ATTRIBUTABLE TO GREEN BUILDING

As mentioned above, a major commercial motive for embracing green building principles has been the belief that these would lead to significant savings in operating costs, in particular, the lower consumption of energy and water. Notably, in this year's survey we enquired as to the actual savings that had been experienced whereas in 2008 we could only ask about the outcomes expected by the industry professionals.

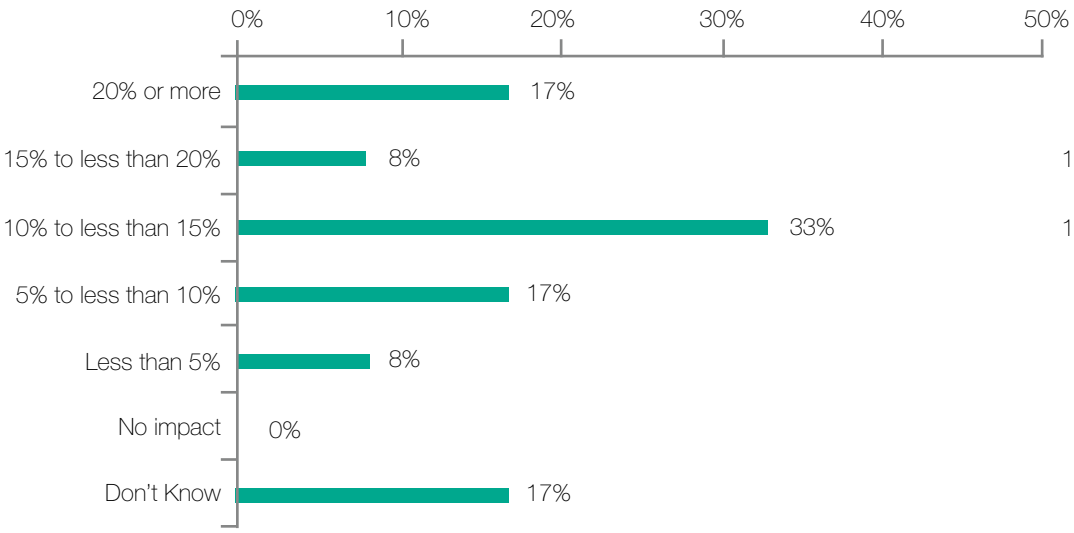
Although our conclusions are somewhat dampened by a degree of uncertainty (we registered a "Don't Know" result of 23%) they are nevertheless very encouraging. Only 5% of respondents had apparently not observed any impact, whereas over half claimed savings of 10% and more.

The comparison with the expectations we recorded in our 2008 survey is quite favourable. As might be expected, the earlier results displayed a degree of optimism, hence a higher percentage of respondents (22%) anticipated savings of at least 20%. The distribution of actual results may show a slight downwards shift but the share of respondents reporting savings of 10% and over has been maintained.

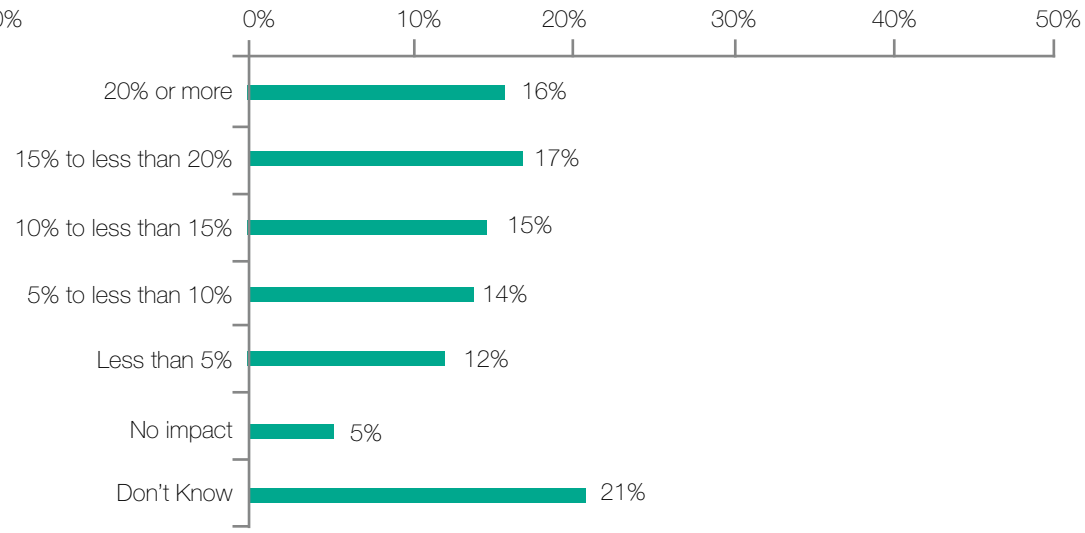


SAVINGS IN OPERATING COSTS ATTRIBUTABLE TO GREEN BUILDING

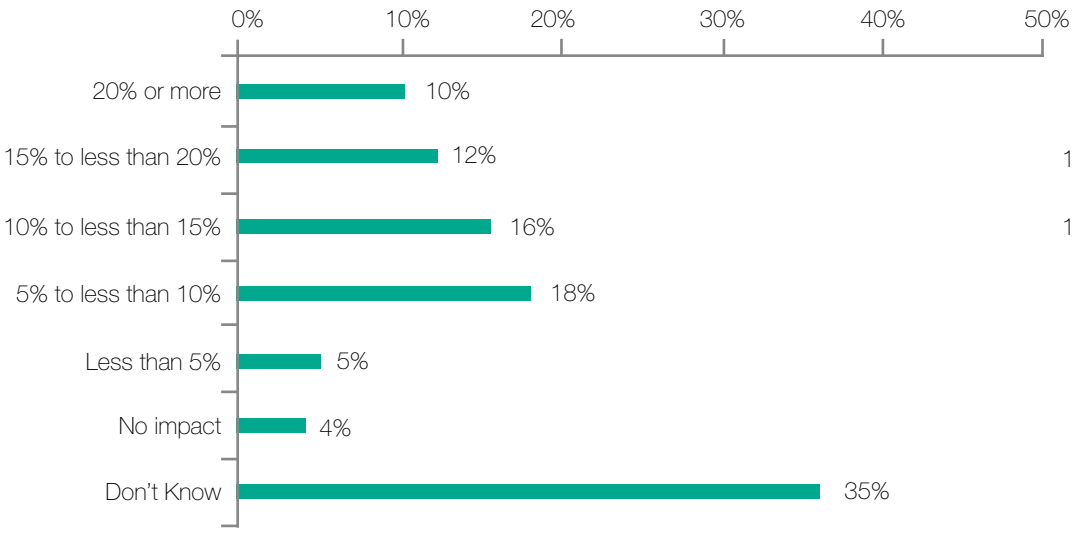
HONG KONG



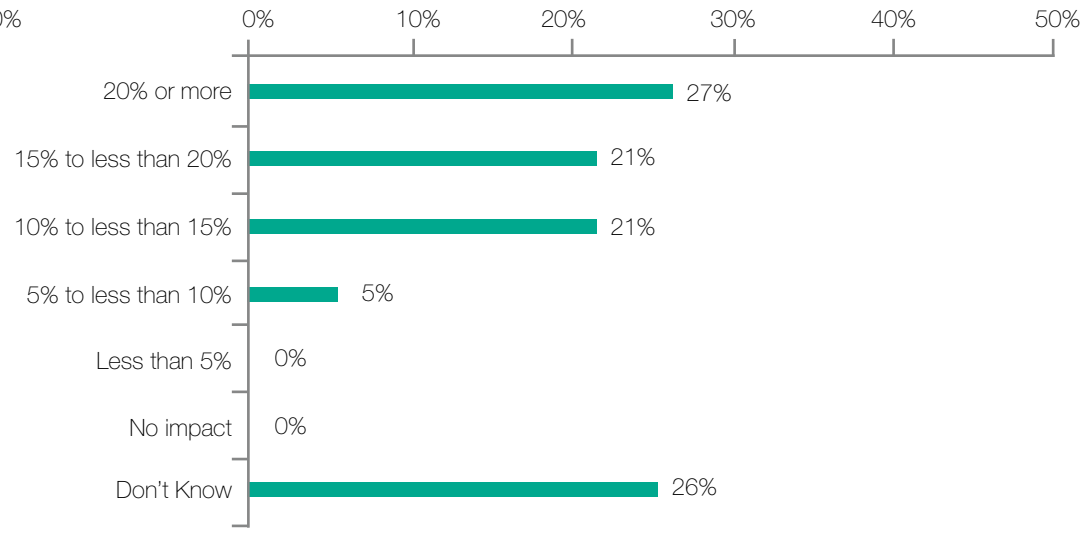
INDONESIA



SINGAPORE

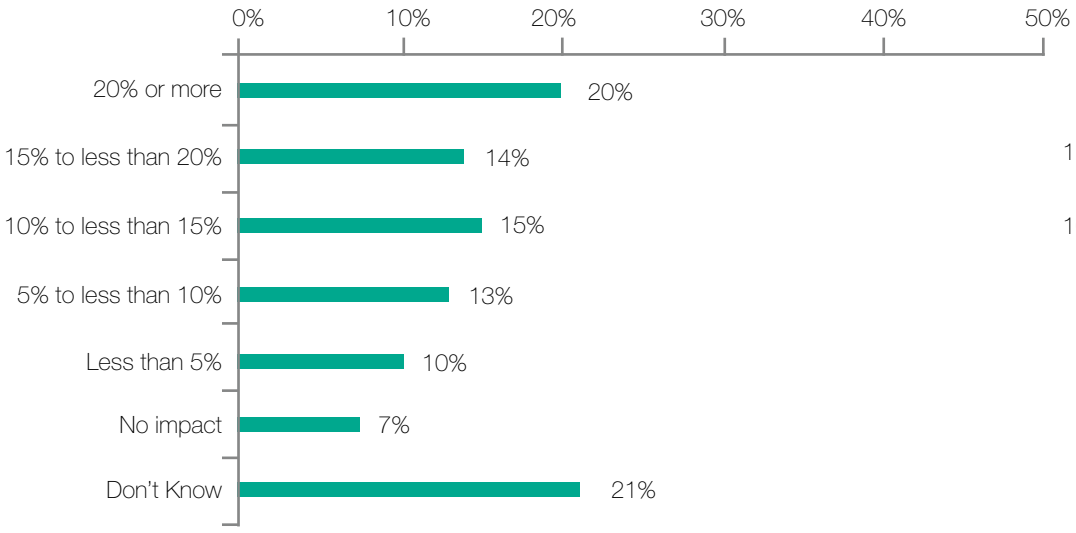


THAILAND

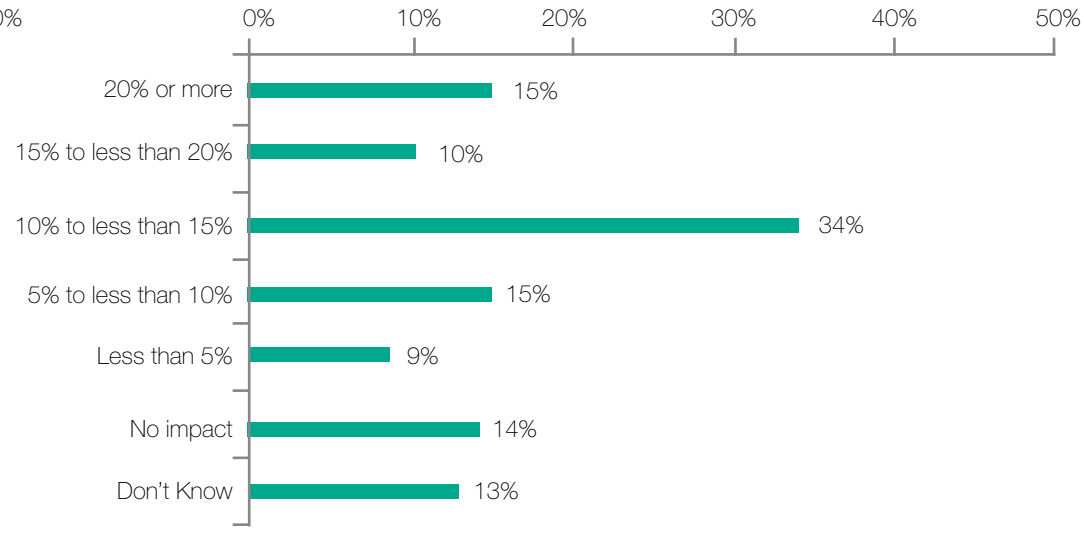


SAVINGS IN OPERATING COSTS ATTRIBUTABLE TO GREEN BUILDING

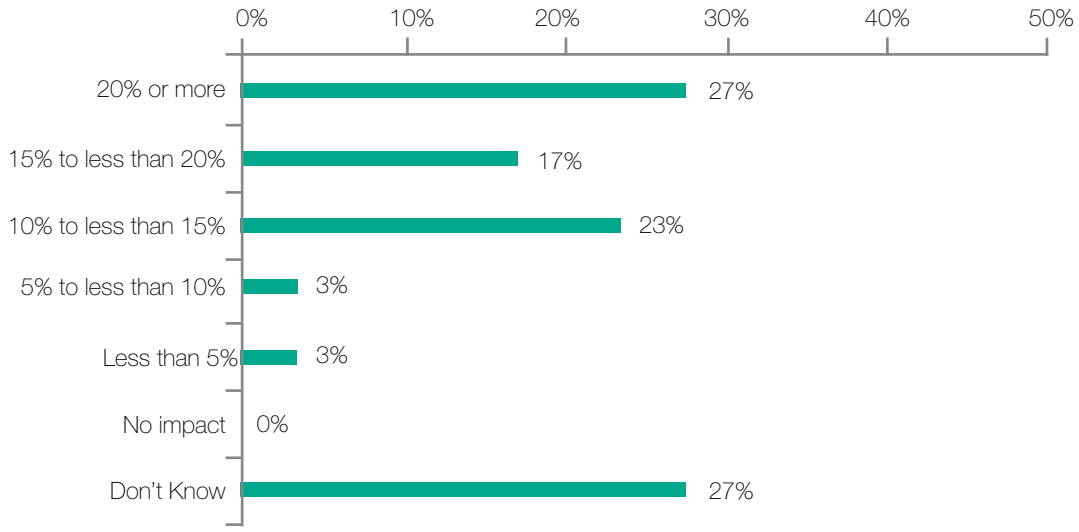
MALAYSIA



PHILIPPINES



VIETNAM


0%
10%
20%
30%
40%
50%
20% or more
27%
15% to less than 20%
17%
10% to less than 15%
23%
5% to less than 10%
3%
Less than 5%
3%
No impact
0%
Don't Know
27%

COMMSCOPE®

redwood®

REDWOOD MAKES EVERY SYSTEM SMARTER

Optimise space and energy usage with an intelligent sensor network

CommScope's Redwood solution is a high-density network of sensors that track motion, temperature and light coupled with low-voltage dc LED lights. The long-term cost savings of LED lighting with an intelligent, software-based platform enables you to increase energy efficiency and optimise space. The solution integrates with other building systems through an open API and data from the sensor network can be used to leverage efficiency opportunities across the building—including data, HVAC and security systems.

Find out more with this case study and learn how one of the highest ranked software companies in the Dow Jones Sustainability Index used Redwood to help them achieve up to 75 percent in energy cost savings and other benefits over their previous system.

YOUR NETWORK RUNS ON COMMSCOPE™

We are committed to a Sustainable Built Environment

QUICSEAL Green-certified products comply with:

032-025
Environmentally Preferred Coating
040-011
Low Emission, Low Toxicity Adhesive

WATERPROOFING: QUICSEAL 103 ECO • QUICSEAL 104 / 104 ECO • QUICSEAL 124 / 124 ECO • QUICSEAL 161 ECO • QUICSEAL 166

FLOORING: QUICSEAL 531 • QUICSEAL 543C • QUICSEAL 541C • QUICSEAL 571 • QUICSEAL 579

TILE ADHESIVES: QUICSEAL 601 • QUICSEAL 600 ECO • QUICSEAL 604 + QUICSEAL 602 • QUICSEAL 606 • QUICSEAL 612 • QUICSEAL 615

SGBP 2011-056, SGBPDC-12-023, SGBPDC-12-024

Singapore Green Building Product (SGBP) Certification Scheme

The first dedicated green building product certification scheme to support the Building & Construction Authority (BCA) Green Mark Scheme.

WATERPROOFING: QUICSEAL 104 / 104 ECO • QUICSEAL 104S • QUICSEAL 124 / 124 ECO

THE PROFESSIONAL'S CHOICE OF QUALITY PRODUCTS AND SYSTEMS FOR BUILDING CONSTRUCTION

QUICSEAL is a leading manufacturer and supplier of quality construction chemicals that includes:

- **Waterproofing, Sealers & Water Repellants**
- **Sealants**
- **Tile Adhesives, Mortar Additives, Stone Treatment & Protection**
- **Repairs & Refurbishments**
- **Flooring, Resurfacing & Restoration**

QUICSEAL's Environmentally Friendly Range

As part of QUICSEAL's support for the Sustainable Built Environment, we continually innovate to offer a comprehensive range of environmentally friendly products to the construction industry. Our green label certified products reaffirm the care and commitment to our customers and environment, making us the premier choice for Architects, Interior designers and Contractors.

For complete waterproofing, tiling and stone installation systems, contact QUICSEAL today.

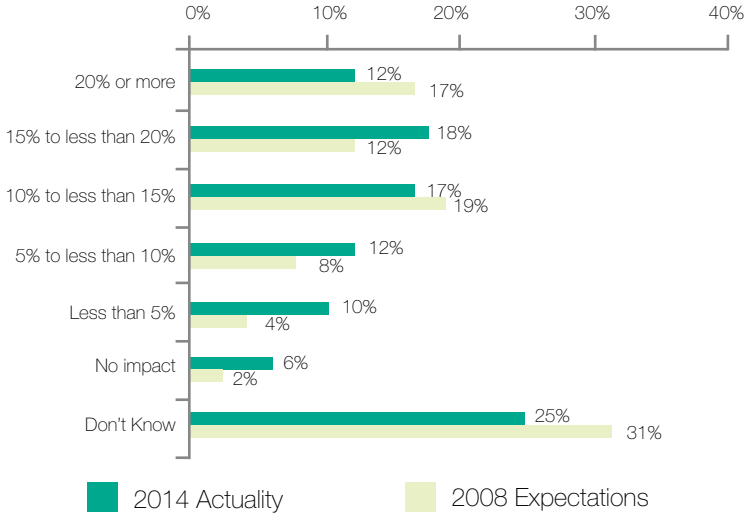
Tel: +65 6742 4466
Email: sales_sg@quicseal.com

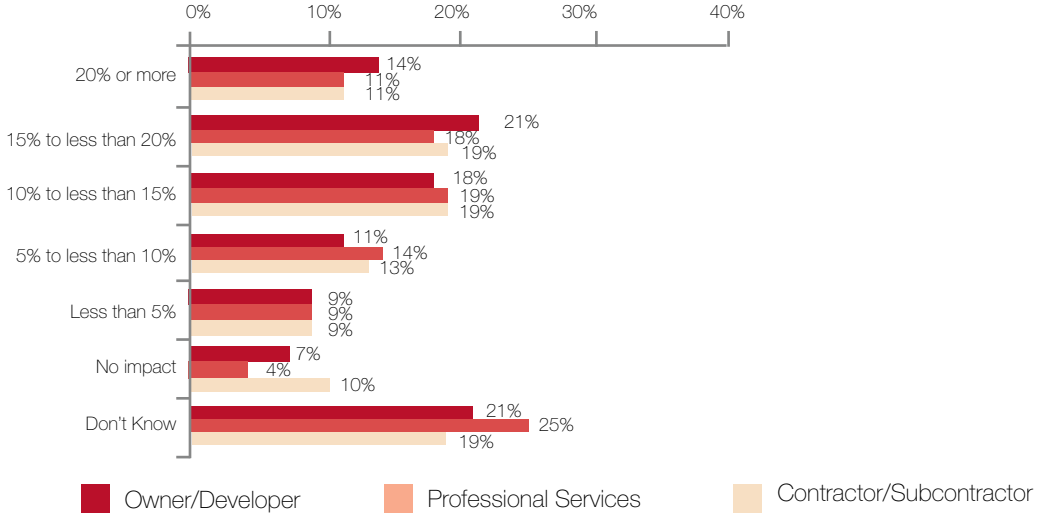
www.quicseal.com

INCREASE IN BUILDING VALUE ATTRIBUTABLE TO GREEN BUILDING

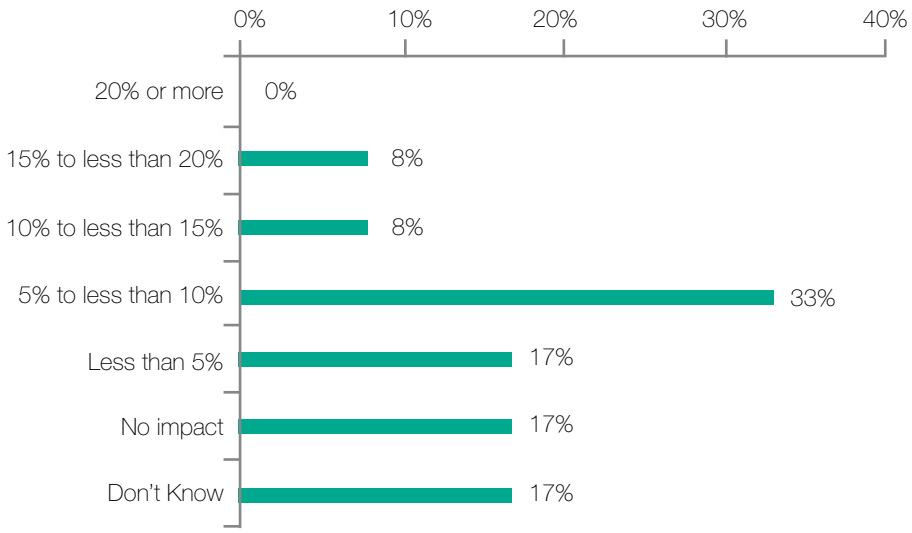
The second ranked commercial motivation for developing a building to green standards was found to be the increase in value of the end product and naturally we wanted to know the extent to which this was realised. Again we should acknowledge a degree of uncertainty (25% of respondents were unable to provide any estimate) but the outcome does look to be very positive. Although 6% of the industry professionals we surveyed claimed there had not been any impact on the building value, 12% advised their buildings were worth at least 20% more because of their green credentials. In all, just under a half of the responses put the increase in building value at a minimum of 10%.

2008 results were “Expectations” may have proved somewhat over optimistic but the reality check we have conducted in 2014 is far from disappointing.

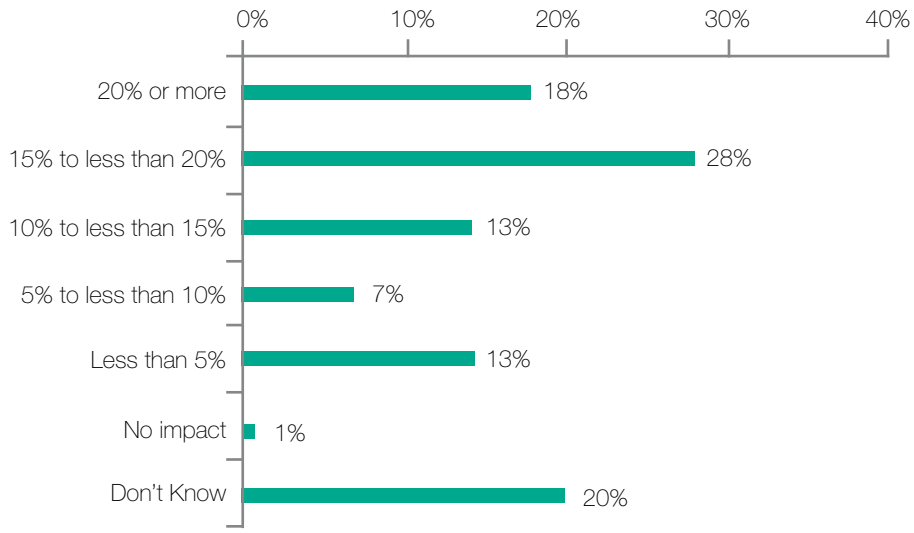




HONG KONG

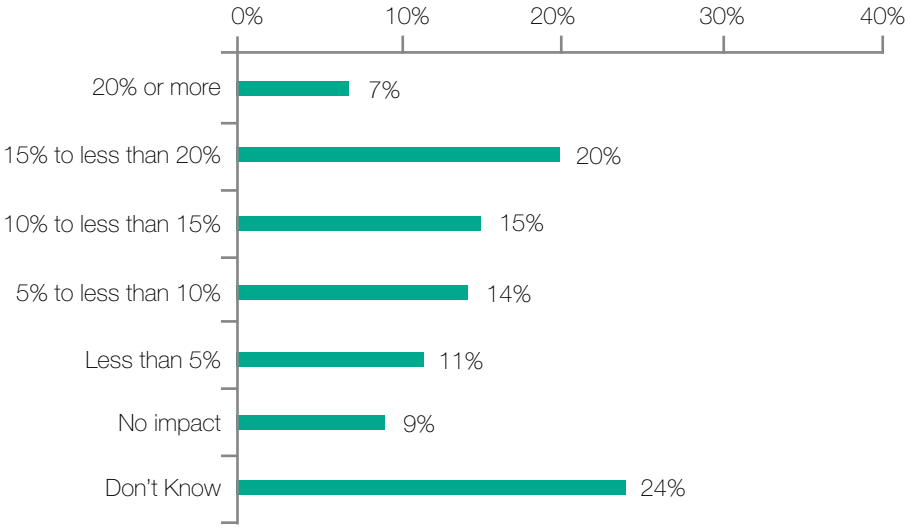


INDONESIA

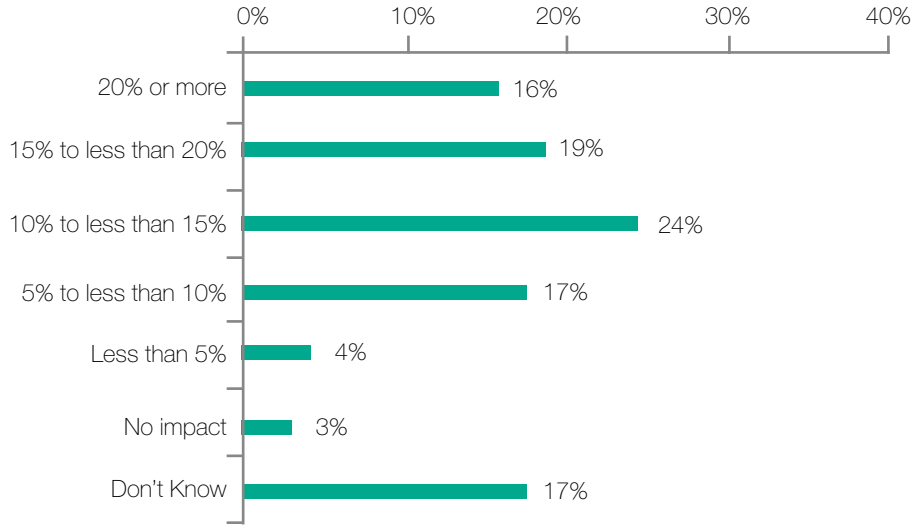


INCREASE IN BUILDING VALUE ATTRIBUTABLE TO GREEN BUILDING

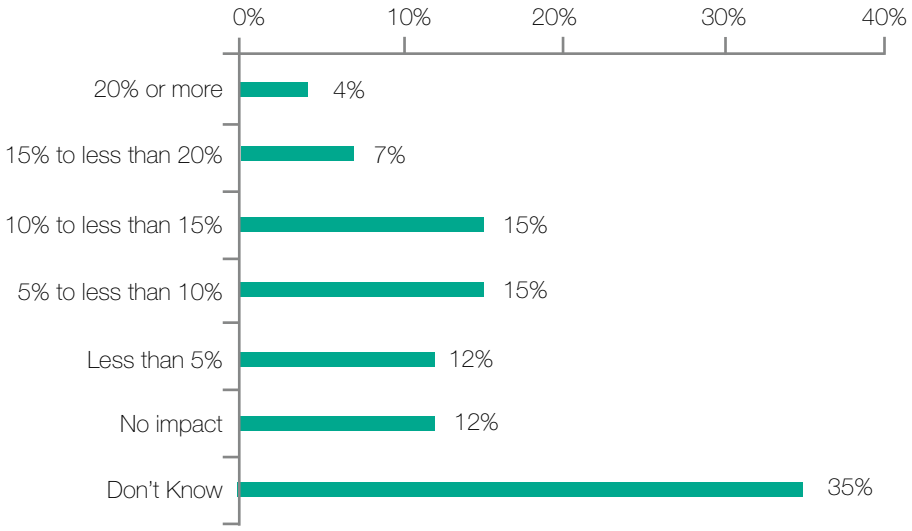
MALAYSIA



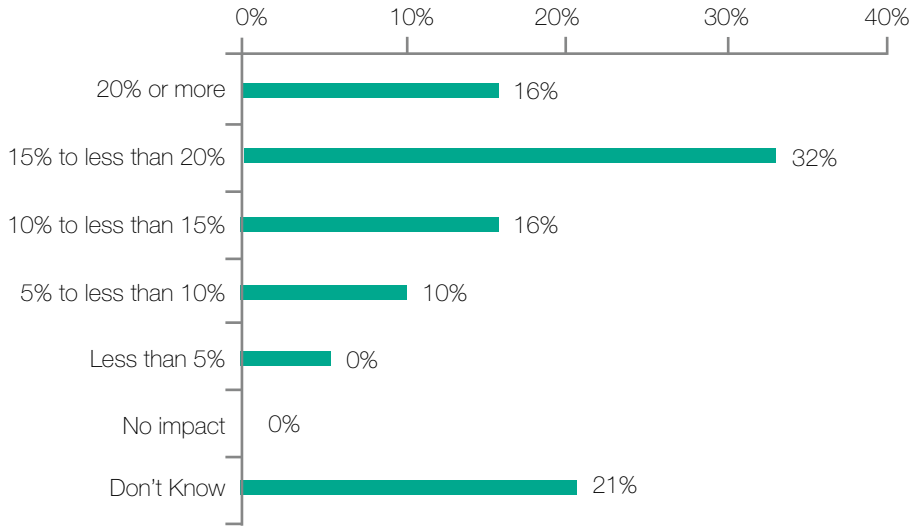
PHILIPPINES



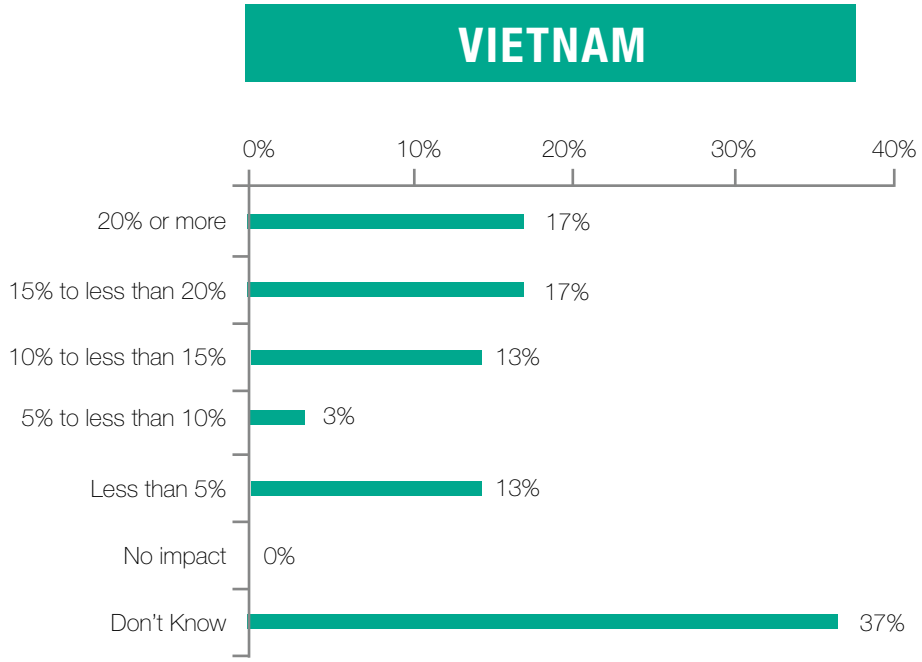
SINGAPORE



THAILAND



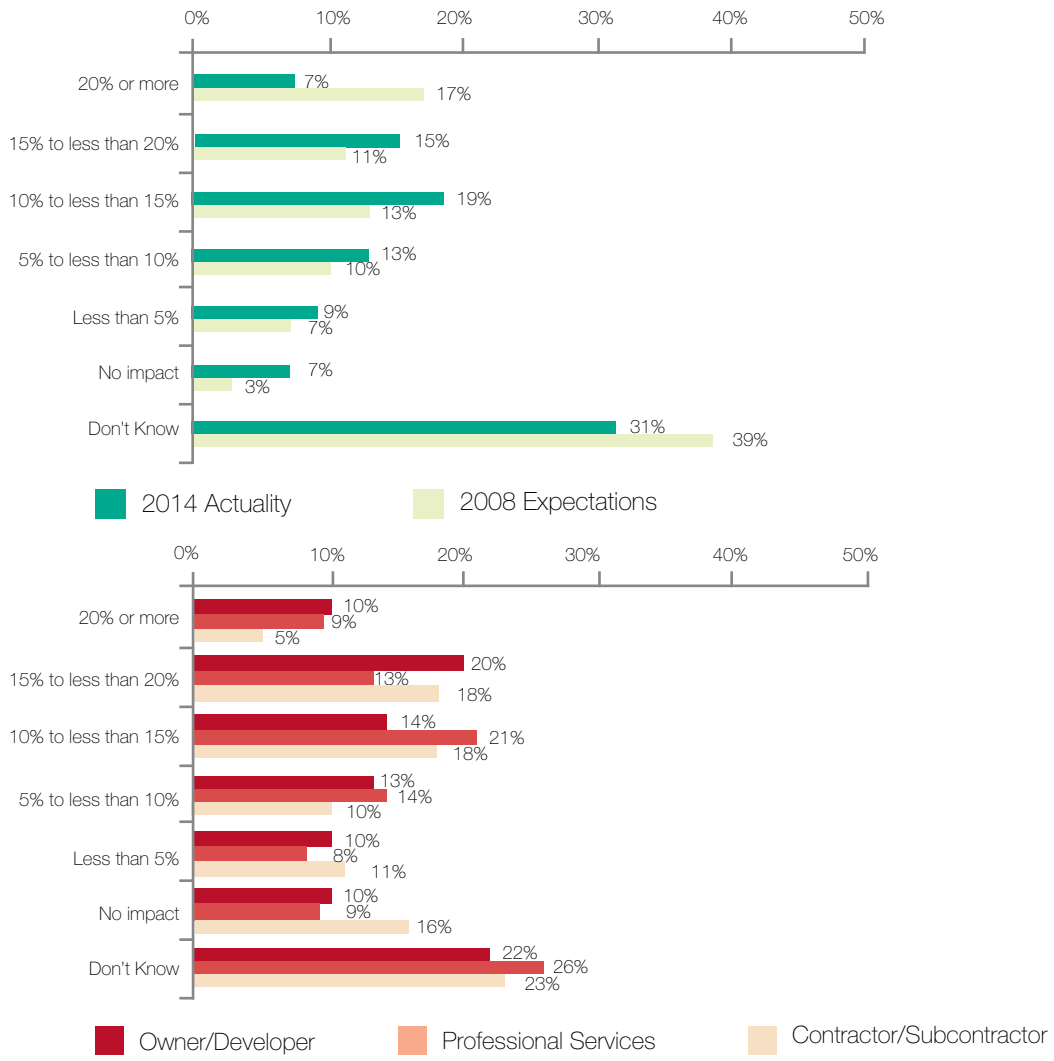
INCREASE IN BUILDING VALUE ATTRIBUTABLE TO GREEN BUILDING



INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

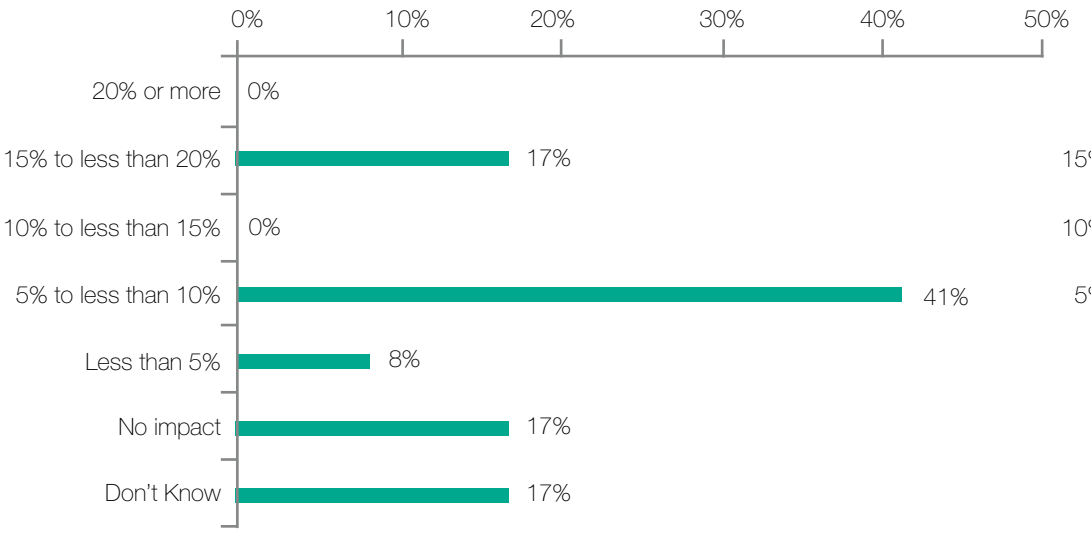
The extent by which green building has enhanced the ROI of their building projects is clearly not easy to calculate with 31% of our respondents unable to provide us with an answer. Nevertheless, this degree of uncertainty (slightly better than the figure of 39% encountered back in 2008) is not severe enough to detract from our confidence in reporting a positive outcome with over 40% of our respondents reporting improvements of at least 10%.

As with the previous two survey topics, the industry's optimism may have been tempered in the light of experience but was by no means ill-founded.

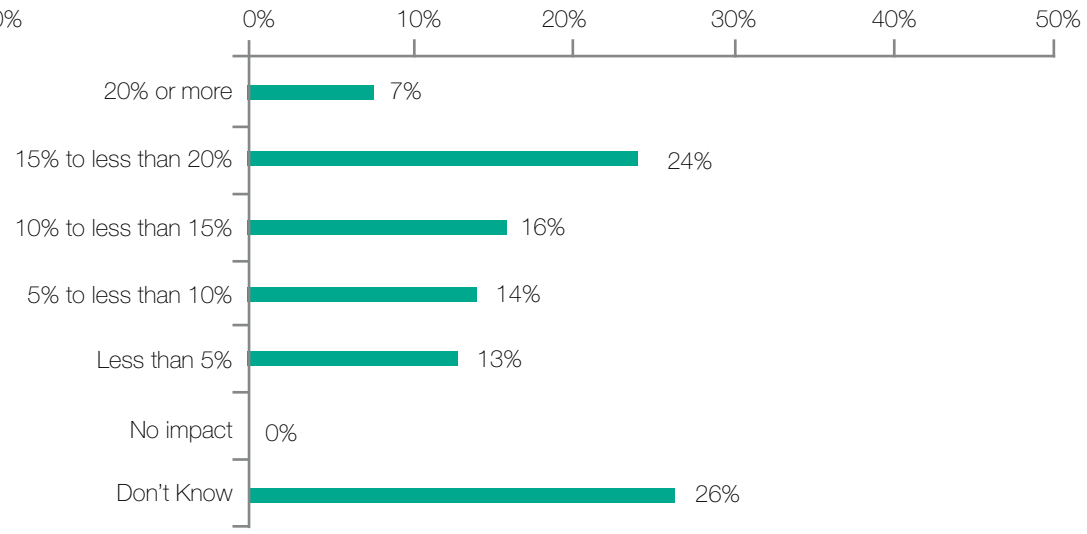


INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

HONG KONG

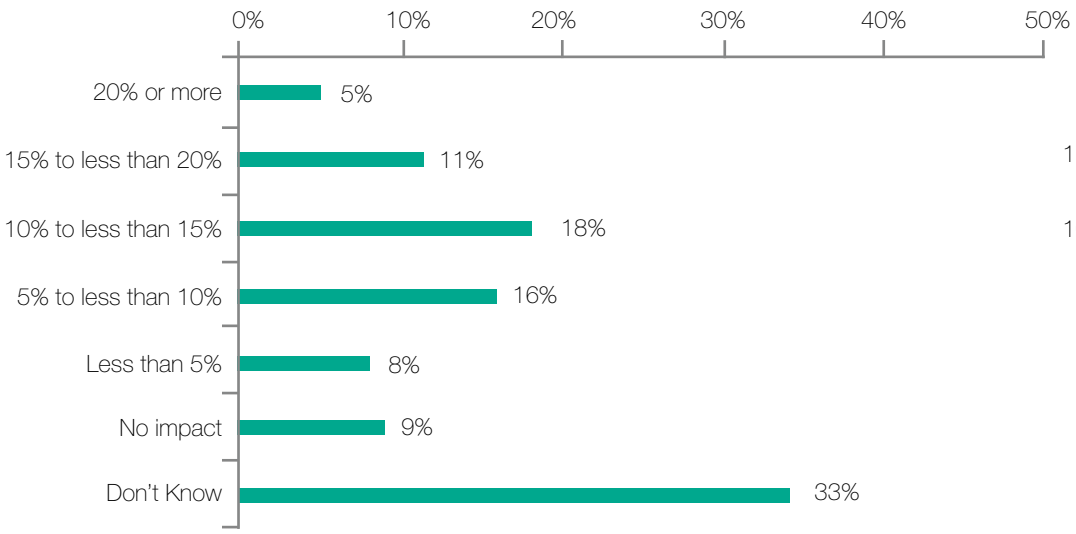


INDONESIA

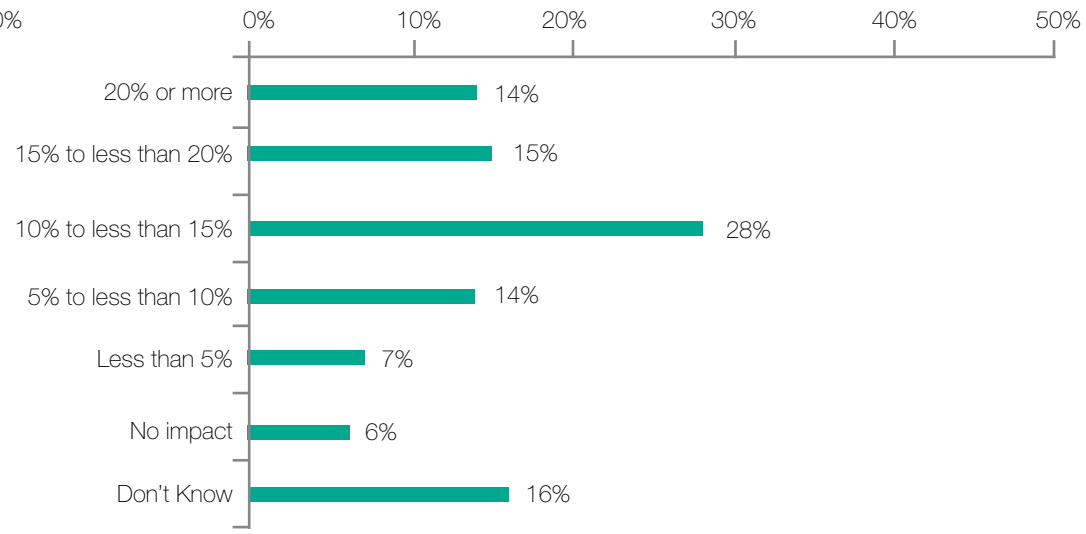


INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

MALAYSIA

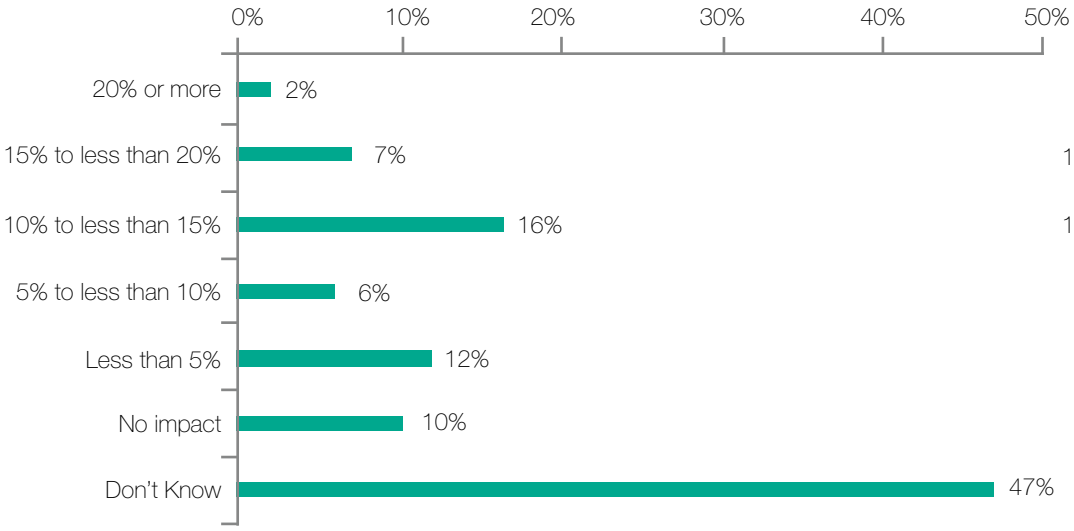


PHILIPPINES

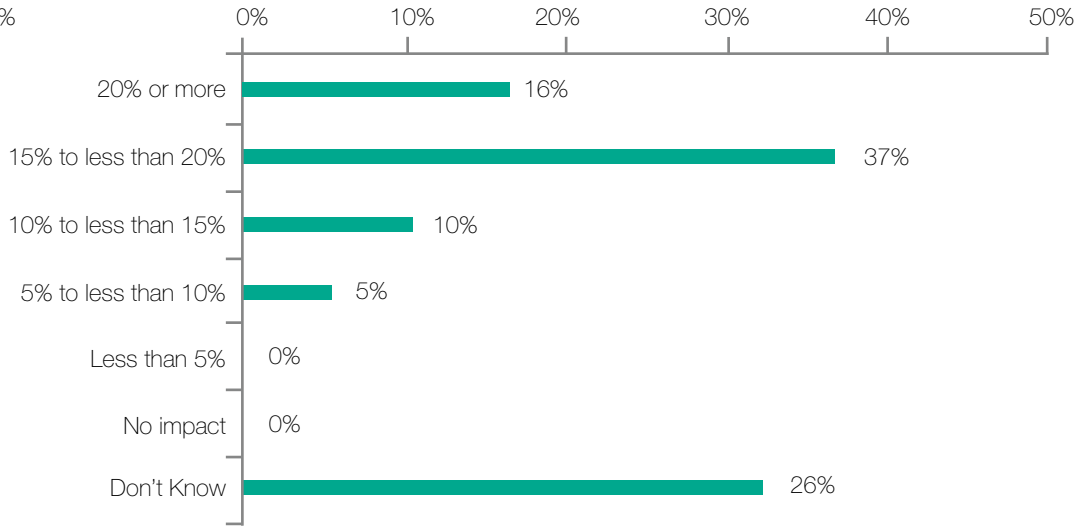


INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

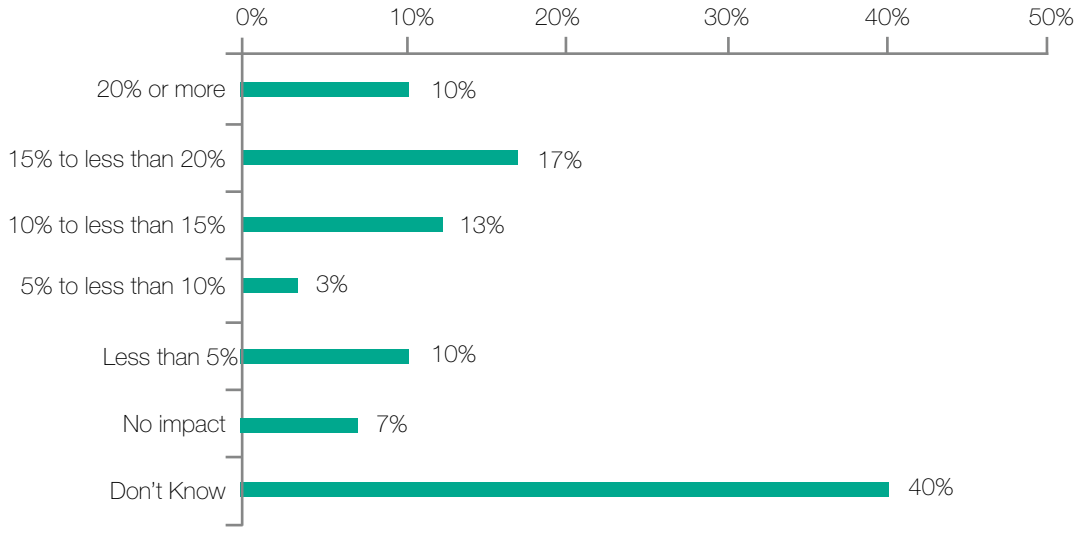
SINGAPORE



THAILAND



VIETNAM


0%
10%
20%
30%
40%
50%
20% or more
10%
15% to less than 20%
17%
10% to less than 15%
13%
5% to less than 10%
3%
Less than 5%
10%
No impact
7%
Don't Know
40%

HABITAT by milan ceramics

iCare Ceramic System

" Habitat with iCare Ceramic System is undoubtedly a technological breakthrough that will considerably beneficial to the end-user as well as the environment. "

The public awareness to environmental-friendly actions or products has incredibly been increased year by year. Not to mention, in building construction industry. Widely-ranged from building contractor, developer and the architects to the building material products as sanitary, roof, tiles and many more. They have demonstrated their concern towards ecological issue by developing eco-friendly products or technology.

Milan Ceramics as one of the concerned company has carefully developed a technology for HABITAT – the TOP RANGE product of Milan Ceramics – to demonstrates green-values. A BREAKTHROUGH technology called iCare Ceramic System. iCare ceramic system, an innovative process of applying special treatments on our tiles that is specifically designed to guarantee their cleannes and hygiene.

The treatments are conducted during the production process, when the tiles are in the final stage of firing at 70-90 degree celcius. This special treatment closes the nano pinholes on our tules surface that will greatly reduce the use of detergent and any other cleaning chemicals to clean the tiles.

The little water stickes on the tiles surface, the fewer bacteria stick on the tiles. therefore, HABITAT helps homes and all public buildings to be clean and hygienic. HABITAT with iCare Ceramic System is undoubtedly technological breakthrough that will considerably beneficial to the end-user as well as the environment.

Habitat strives to create revolutionary products and give the best for our customers.

housingestate MEREK FAVORIT DEVELOPER2014

Bagai air di daun talas icare CERAMIC SYSTEM Mudah dibersihkan & Ramah lingkungan HABITAT

HABITAT RECTIFIED ukuran keramik lebih PRESISI

HABITAT Extra 8% 1,08M² DALAM 1 BOX

www.milantiles.com

FUGRO BUILDING THE FUTURE

Fugro (Hong Kong) Limited
7/F., Guardian House, 32 Oi Kwan Road, Wanchai, Hong Kong
Tel: +852 2577 9023
Fax: +852 2895 2379 / 2895 3499
Email: mcl@fugro.com.hk

With clients in numerous locations, operating in differing environments, Fugro is best able to meet their needs through a decentralized and client oriented organizational structure, offering a broad scope of services in a variety of operating environments and conditions, delivered from a global network of offices and facilities. Our clients include many Government departments, private developers, architects and planners, utility companies, oil and gas companies, contractors and other consulting engineering firms.

Fugro's sustainable building design team has extensive experience in carrying out work in the following key areas:

- **Green Building Consultancy and Certification**
- **Low Carbon Building Design**
- **Sustainable Building Services Consultancy**
- **Air Quality Monitoring and Management**
- **Carbon and Energy Management**
- **Corporate Sustainability**

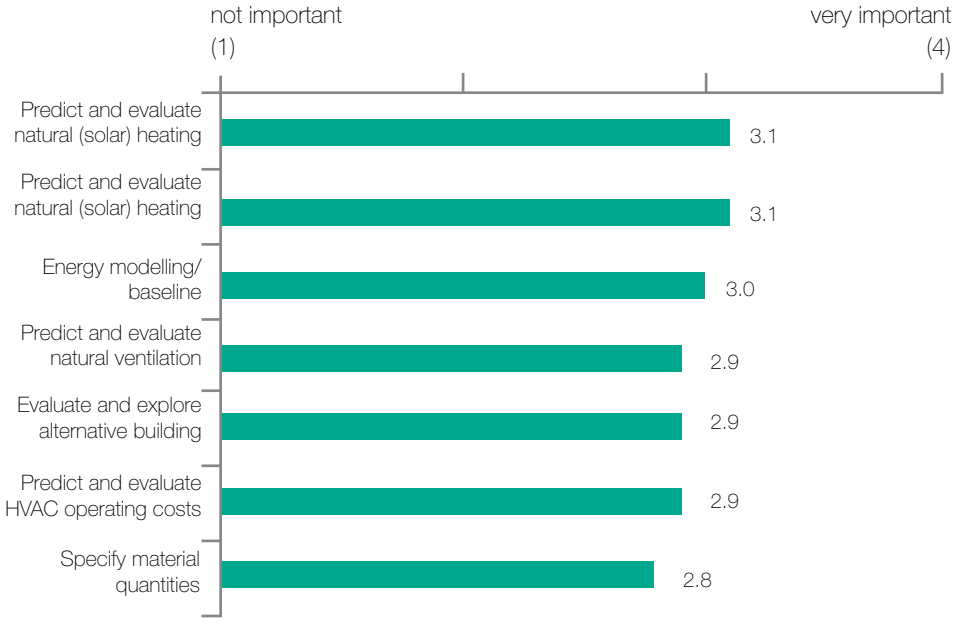
Fugro also provides other environmental consultancy services to support building and infrastructure developments. For details, please visit our website: www.fugro.com

THE IMPORTANCE OF DESIGN SOFTWARE TO OPTIMISE ENVIRONMENTAL PERFORMANCE

Given the development advances in computer aided design (CAD) and building information modelling (BIM) software, these digital tools have achieved wide acceptance within the South East Asian construction industries. Therefore, we wanted to investigate in which ways they are contributing to the adoption and integration of green building principles.

We posed the question "how important is the use of design software to optimize the environmental performance of your projects?" and nominated seven key tasks to be rated from 1 (not important) to 4 (very important). At the end of the day, there was little to choose between those tasks in terms of the benefit to be derived from using design software, although, overall in South East Asia, prediction and evaluation of natural (solar) lighting and energy modelling (baseline analysis) were the two areas benefitting the most from the digital tools available.

The overall results are instructive but represent the averaging across the countries in the region with their individual preferences. There are some similarities between the profiles for each country, however, the differences are instructive as they represent the local influences of the various climactic conditions, the relative costs of power, water and other resources and, to some extent, product availability.



TECHNOLOGIES EMPLOYED IN GREEN BUILDING PROJECTS

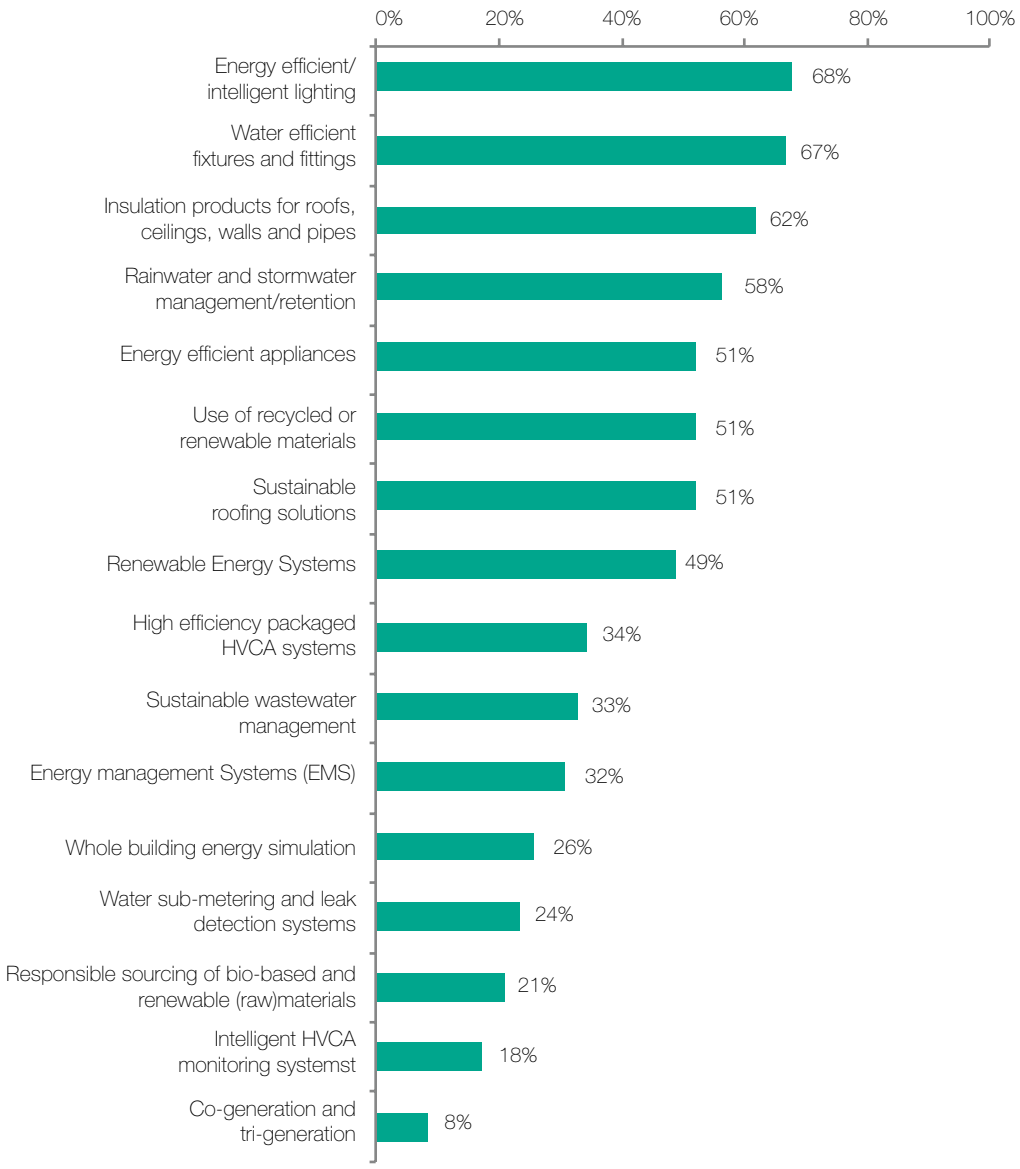
To assess the relative significance of the various technologies available for achieving green building credentials, we asked our respondents to indicate what they had actually used at least once in any of their projects.

Overall in South East Asia, the most frequently mentioned items were:

- Energy efficient/intelligent lighting
- Water efficient fixtures and fittings
- Insulation products
- Rainwater and stormwater management/retention

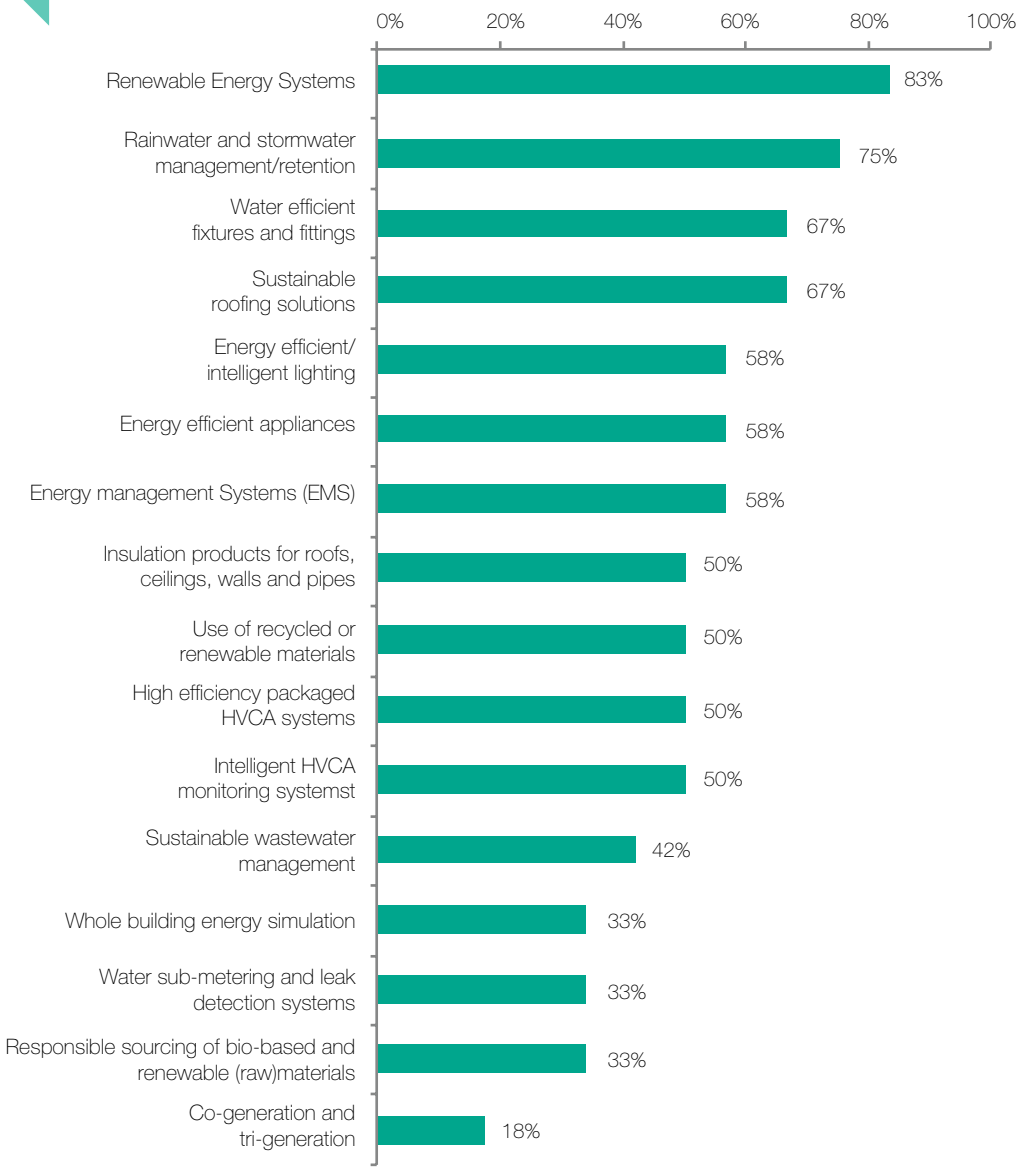
However, sitting just behind this group with around 50% frequency of mention were:

- Energy efficient appliances
- Use of recycled or renewable materials
- Sustainable roofing solutions (including reflective and green roofs)
- Renewable energy systems

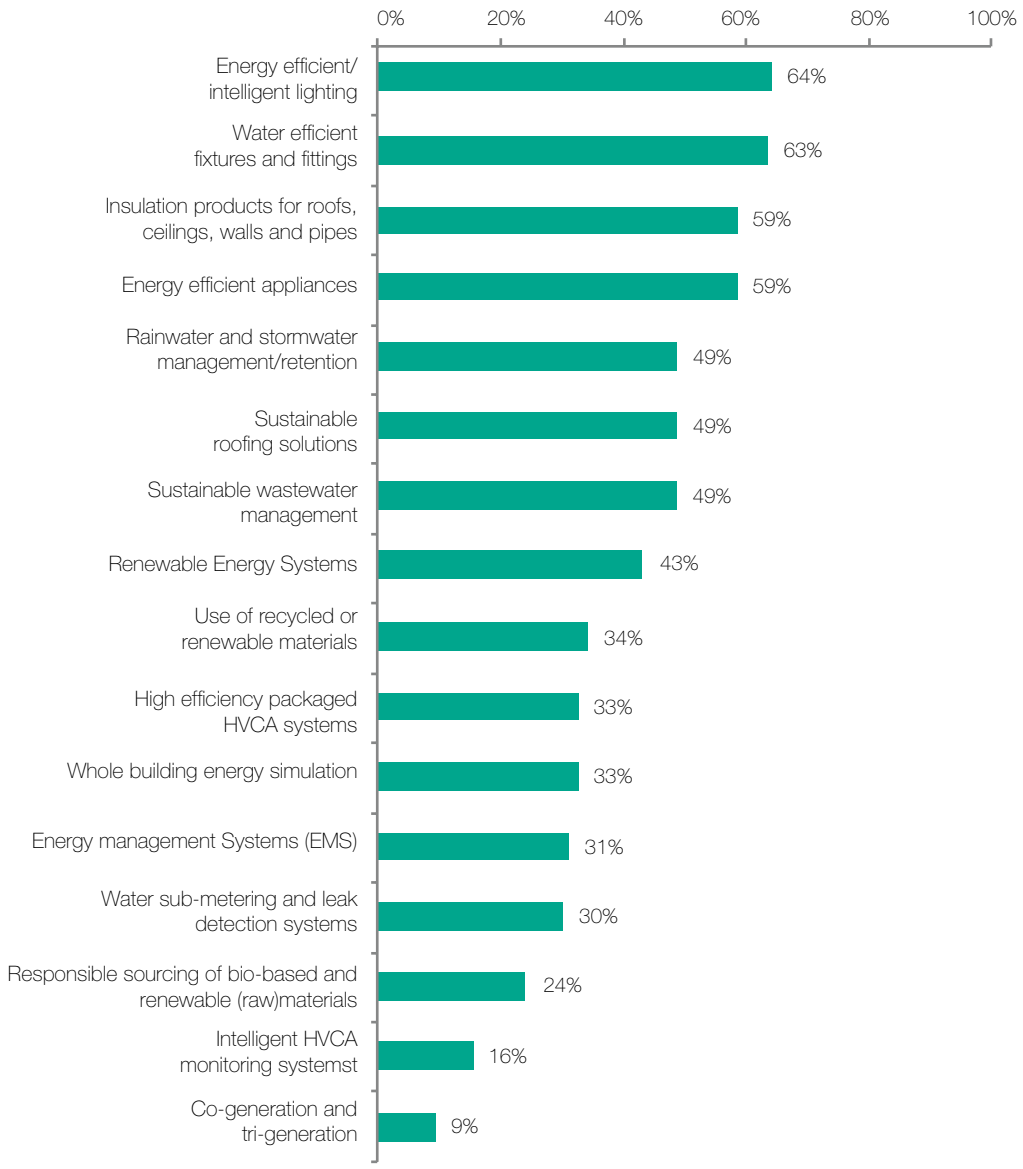


TECHNOLOGIES EMPLOYED IN GREEN BUILDING PROJECTS

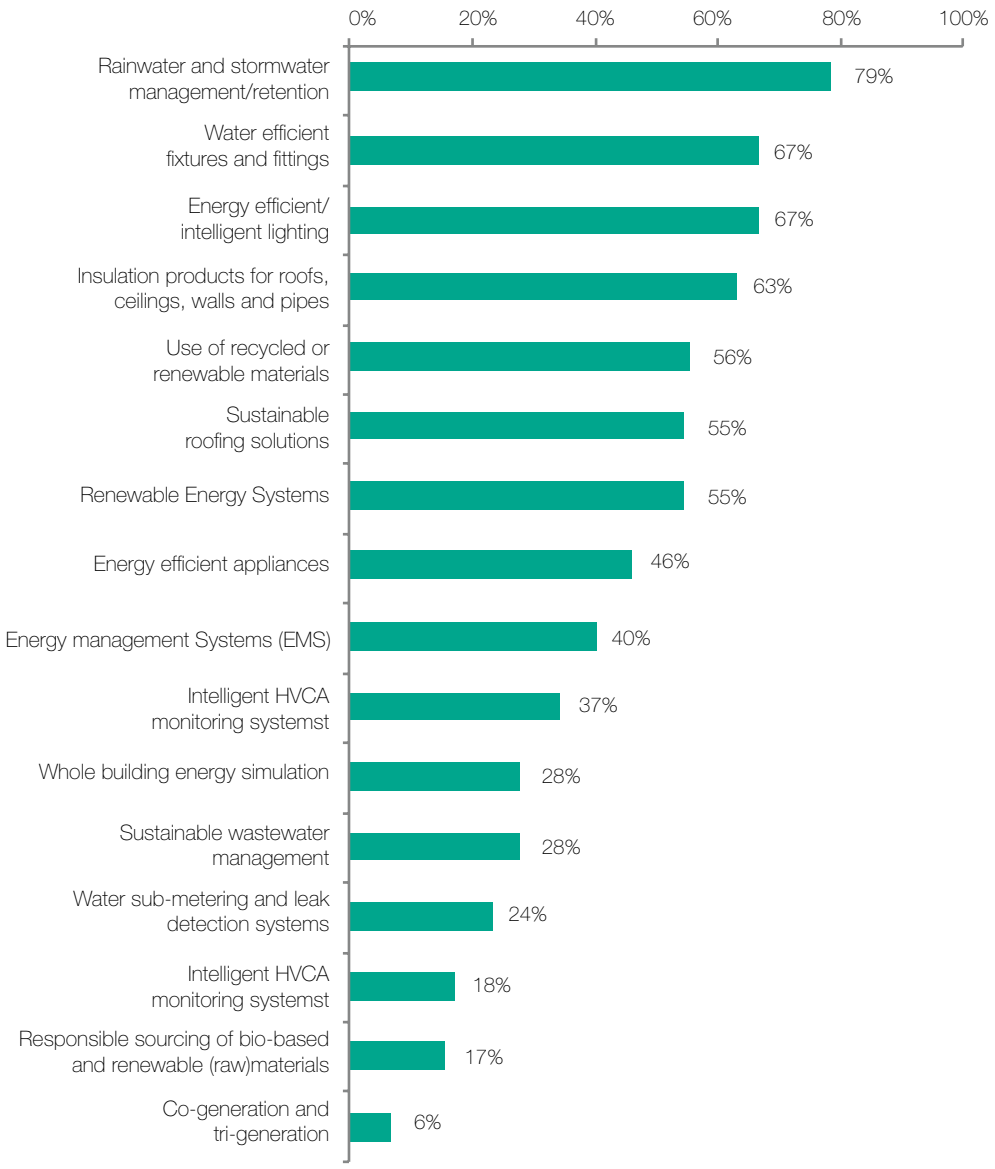
HONG KONG



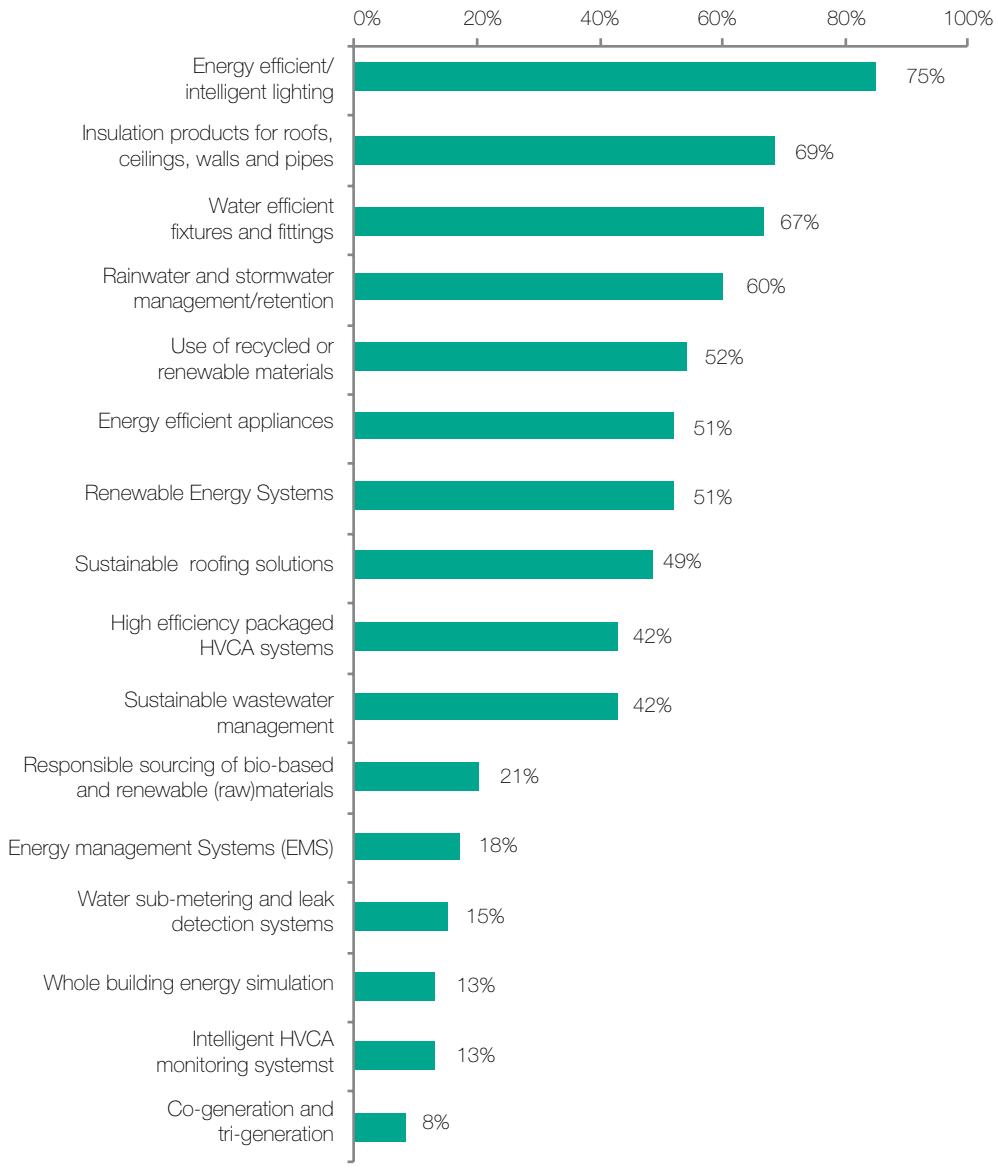
INDONESIA



MALAYSIA

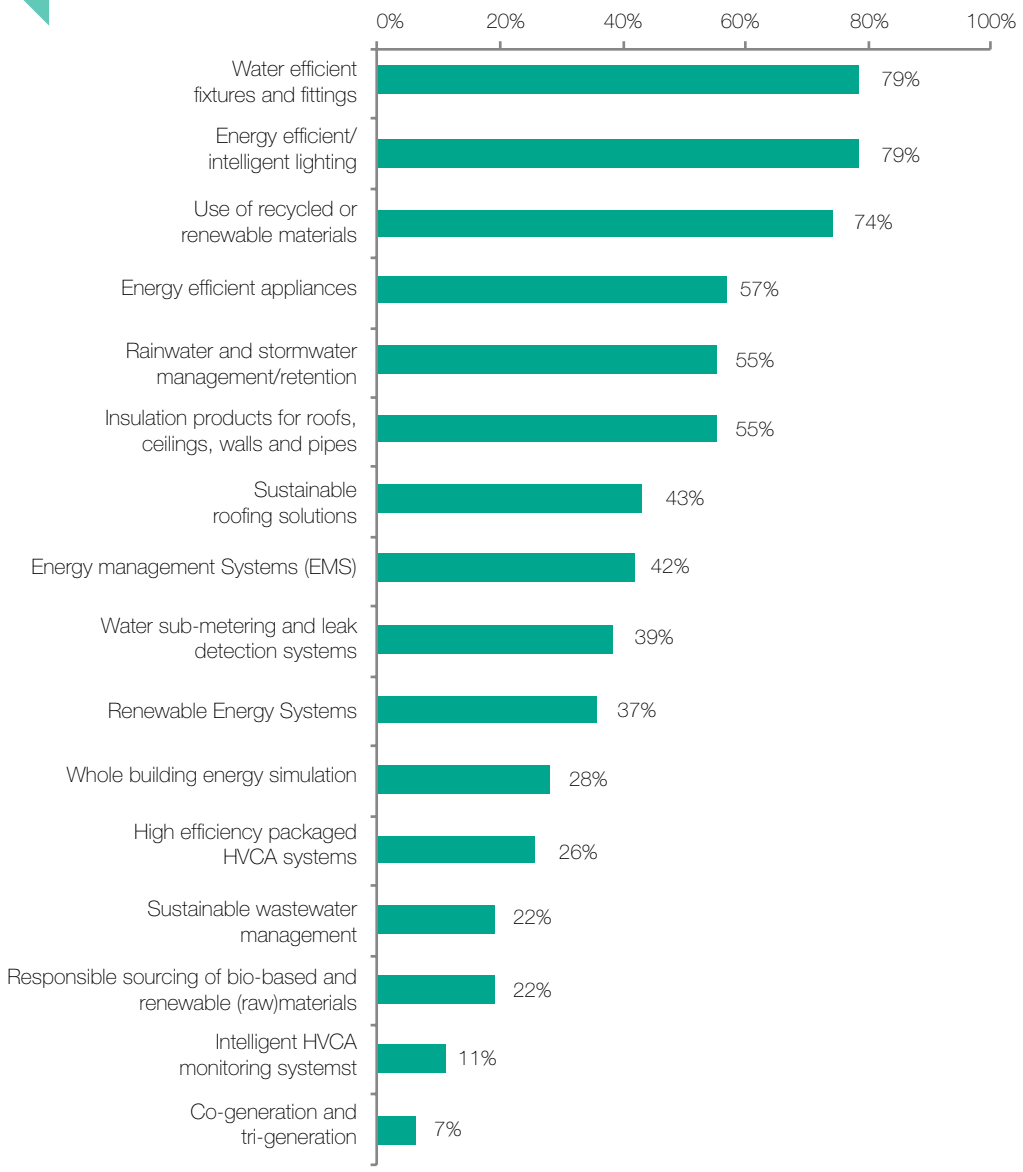


PHILIPPINES

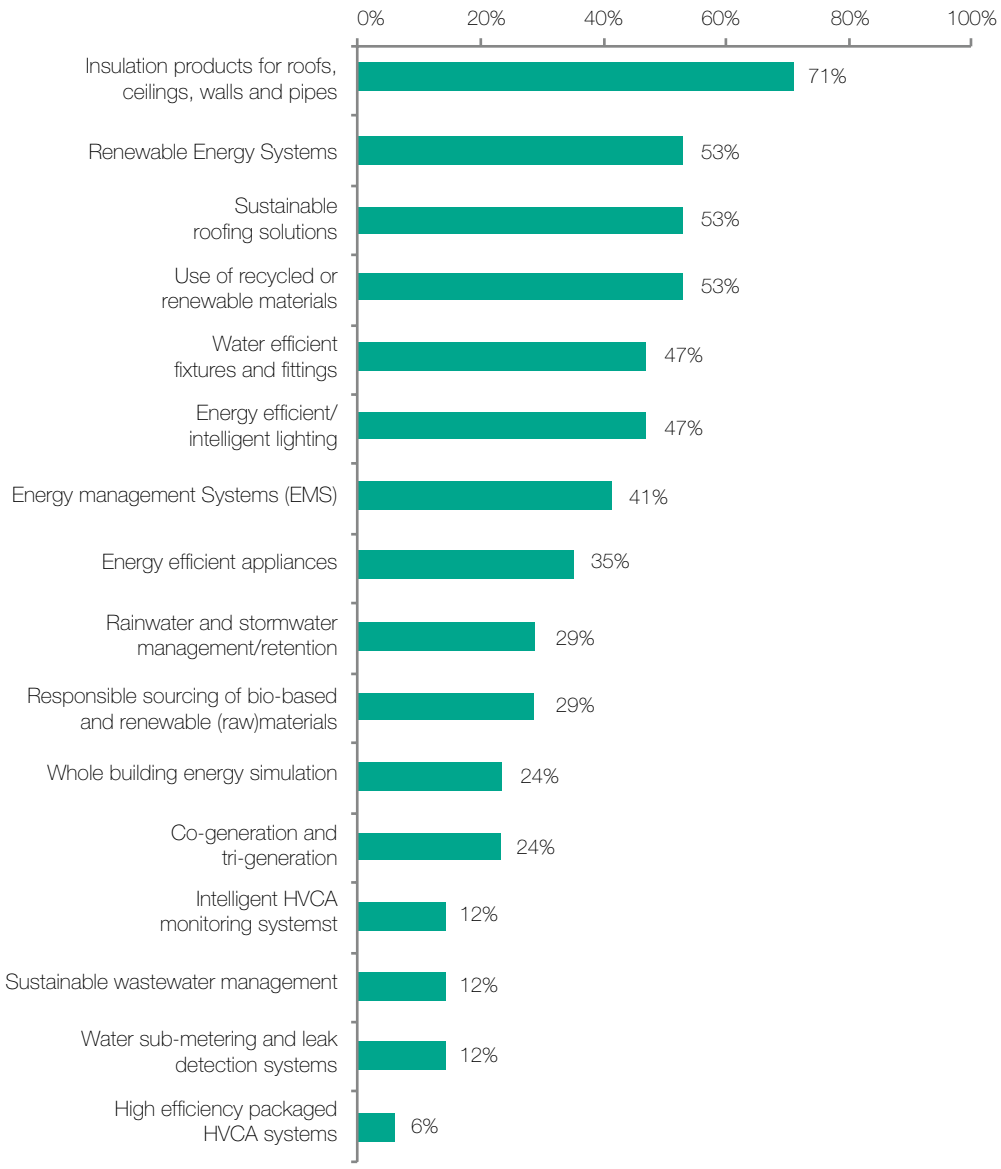


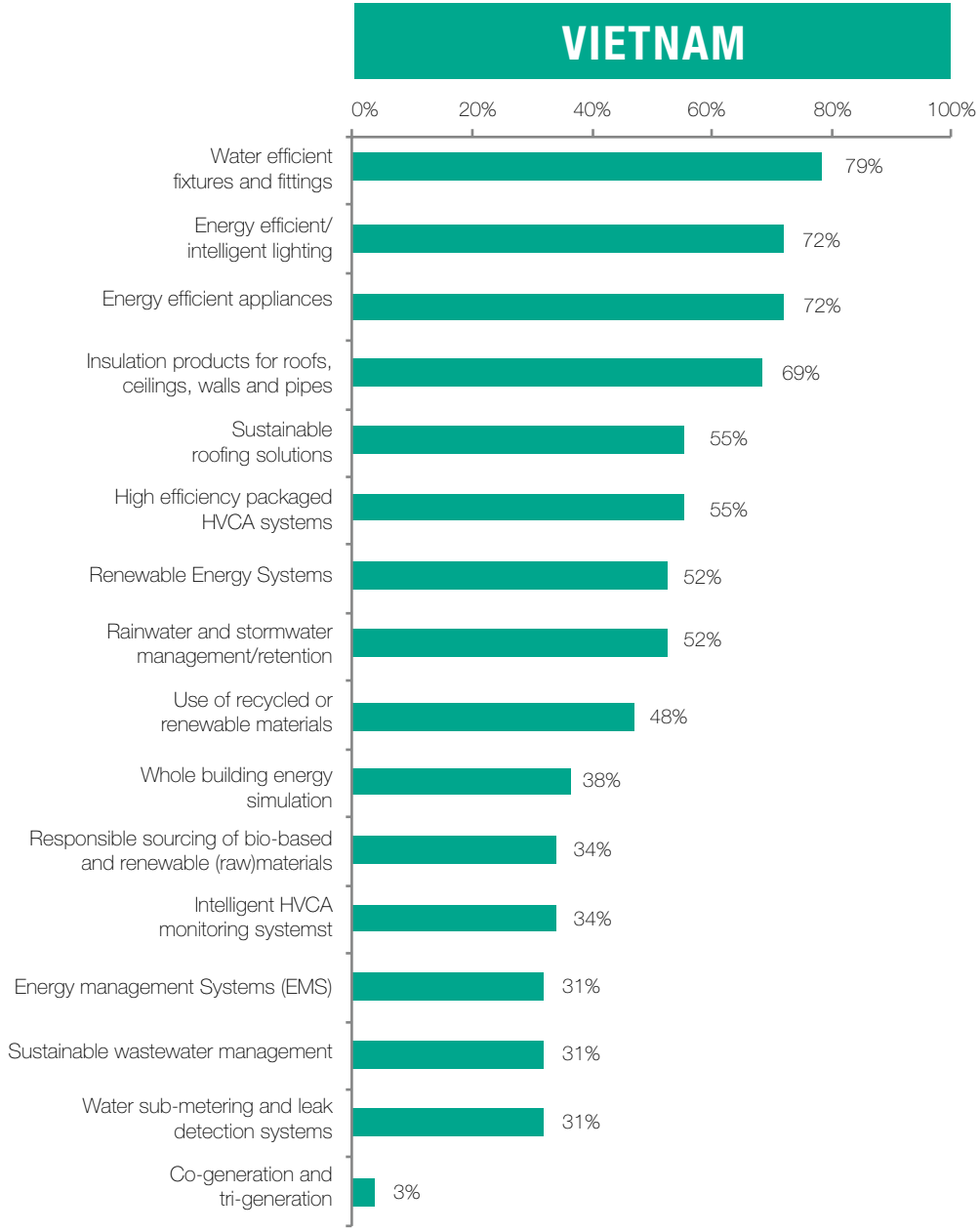
TECHNOLOGIES EMPLOYED IN GREEN BUILDING PROJECTS

SINGAPORE



THAILAND




VIETNAM
0%
20%
40%
60%
80%
100%
Water efficient fixtures and fittings
79%
Energy efficient/ intelligent lighting
72%
Energy efficient appliances
72%
Insulation products for roofs, ceilings, walls and pipes
69%
Sustainable roofing solutions
55%
High efficiency packaged HVCA systems
55%
Renewable Energy Systems
52%
Rainwater and stormwater management/retention
52%
Use of recycled or renewable materials
48%
Whole building energy simulation
38%
Responsible sourcing of bio-based and renewable (raw)materials
34%
Intelligent HVCA monitoring systemst
34%
Energy management Systems (EMS)
31%
Sustainable wastewater management
31%
Water sub-metering and leak detection systems
31%
Co-generation and tri-generation
3%

In the landmark Boston Opera House, the unusual dimension of the balcony were a challenge for every conventional loudspeaker tested. The unique Progressive Directivity Array configurations of Bose Room Match loudspeakers provide precise array coverage tailored to exact room dimensions. So the more than 1,100 listeners in the balcony can enjoy full, consistent coverage. In every seat. We invite you to hear what consultants, integrators and FOH engineers are saying about RoomMatch systems.

What will you say when you heart it.

Bose® RoomMatch®
Progressive Directivity Array Loudspeakers

See the videos at
www.Bose.com/hearitnow

Bose Professional Systems Division

Design | Performance | Support

+852 2123 9000 | pro_hk@bose.com | pro.bose.com

Xsolar L-S

No energy costs.
No power connection.
No compromising.

RS Pro LED S1

All-inclusive LED System.

IR Quattro Slim

The World's Slimmest Presence Detector.

PRO HF 360

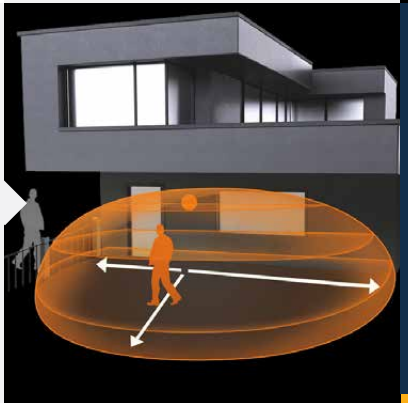
You can hardly see it.
But it sees everything.

PROLog

FREE CONSULTATION with customized energy saving report. Call us to find out more.

iHF 3D

Makes all the difference outside. Precisely where you want it to.



QUICK CONTACT

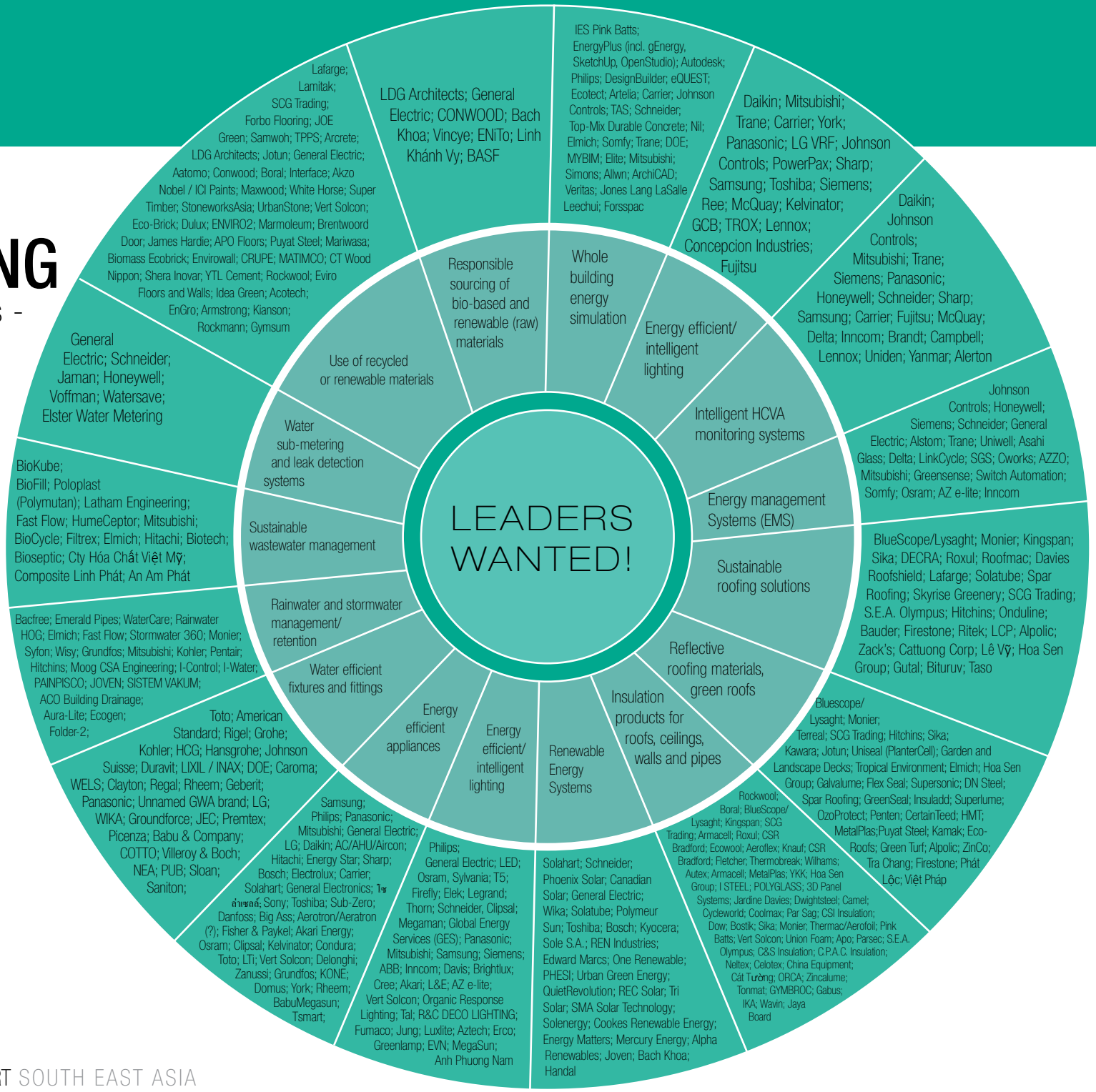
+65.6276.9188
enquiry@intellihub.com.sg
www.intellihub.com.sg

INTELLIHUB

GREEN BUILDING

Products and Technologies - Brand Recognition

We asked our respondents to nominate 2 to 3 brands for each of the technologies that we had previously identified. We then collated the responses and have listed the brands according to the frequency of mention.



GREEN BUILDING MARKET REPORT FOR AUSTRALIA/NEW ZEALAND 2014

While BCI Economics was surveying the green building market in South East Asia, we were also analysing responses from 243 developers, architects, main- and sub-contractors in Australia and New Zealand to a questionnaire about their views on and experiences with green building.

In this survey, we found that virtually 90% of respondents in Australia and just over 80% in New Zealand have been involved in a project that entailed "green" building elements during the period 2008-2014.

In contrast with their South East Asian counterparts, only 34% of Australian and 24% of New Zealand respondents were prepared to proceed with green building certification.

Attitudes for and against the adoption of green building principles in general as expressed by the Australian and New Zealand respondents were fairly comparable with those in South East Asia with the additional costs incurred in green building being balanced against the perceived commercial benefits. Interestingly, although the additional upfront costs were perceived to be lower in Australia and New Zealand than in South East Asia, the financial benefits were also seen to be proportionately less.

Across the countries, water efficient fixtures and fittingsstood out as being frequently incorporated into green building projects together with energy efficient/intelligent lighting and insulation products although the individual rankings did vary. And, as has been done for South East Asia, we have reported the popular brands identified by the participants in the Australia and New Zealand survey.

If we have sparked your interest you can easily access the results of the survey by logging on to:

http://www.bciaustralia.com/bci-economics/green-building-market-report-2014/

And we are happy to advise that the report may be downloaded free of charge!

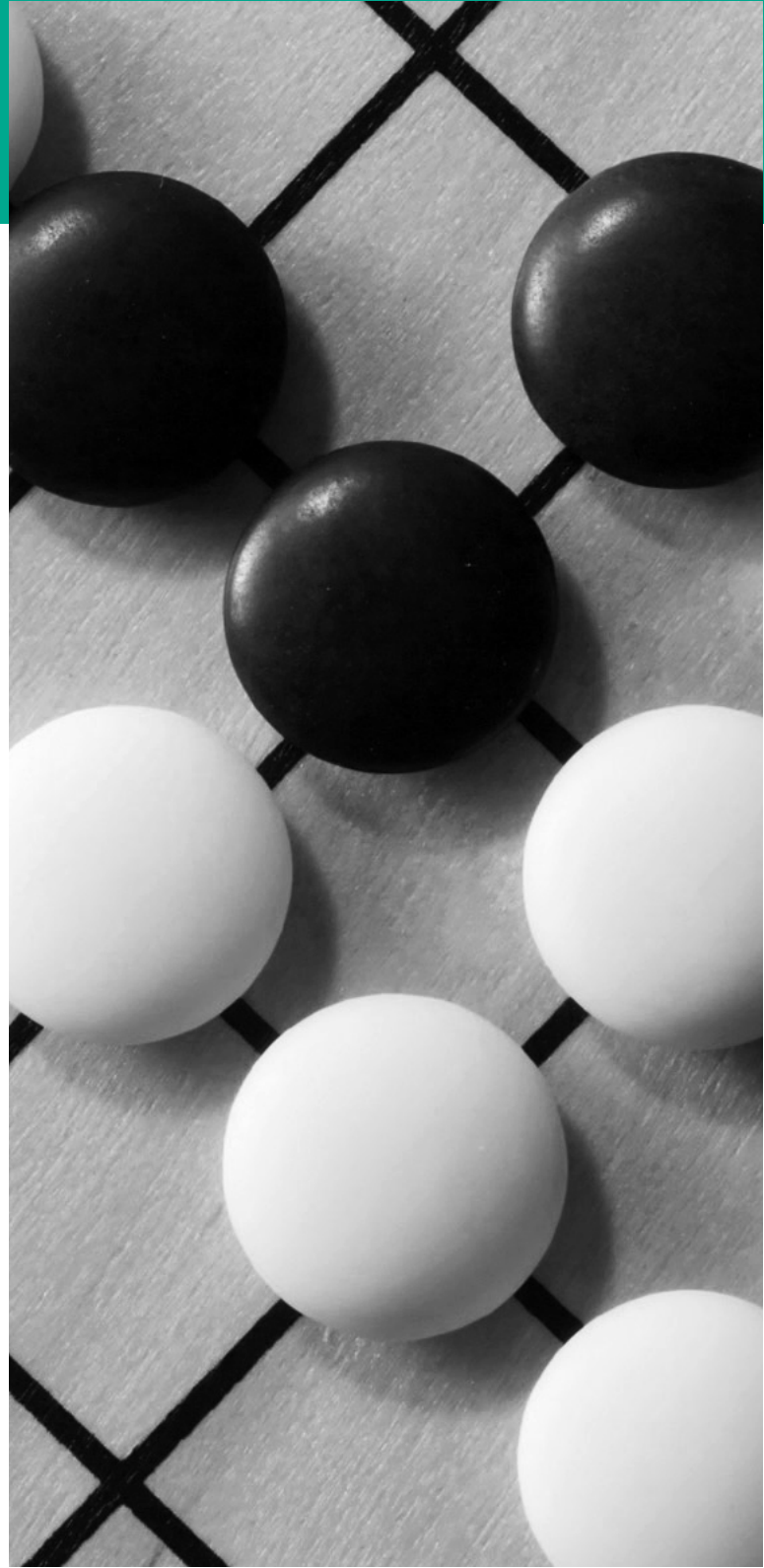
METHODOLOGY

Research for this report was conducted under the supervision of Dr Matthias Krups PhD, Chairman of BCI Media Group and spearheaded by Petra Berning, General Manager of BCI Economics.

The survey was taken online and analysed by BCI Economics' in-house analysts. Between March and May of 2014, invitations to participate in our online survey were sent out to a random sample of contacts drawn from BCI's highly sophisticated industry database. Given that the decision to participate in the survey was out of interest in the topic of green building, it is fair to assume that our sample would be likely skewed in favour of sustainability principles.

In order to compare the 2014 results with the results ascertained in the prior surveys in 2008, we utilised a questionnaire that was similar to the previous surveys. A few changes were made to take account of the new conditions in the market.

For those issues where value judgements were canvassed, a 4 or 5 point Likert scale was adopted with '1' representing a very negative rating and '4' or '5' a very positive rating.



DISCLAIMER

Information utilised in this report is current as of 1 September 2014. This information has been prepared without taking your specific needs or objectives into account. Because of this you should consider its appropriateness with regard to your objectives or needs before acting on this information. BCI Asia does not warrant the accuracy or completeness of the information in this publication, and accepts no, and disclaims all, liability for any loss or damage whether occasioned by reliance on such information or otherwise. The information is subject to change without notice and BCI Asia is under no obligation to update the information or correct any inaccuracy which may become apparent at a later date.

BCI Economics

CONTACTS

Matthias Krups PhD
CEO BCI Media Group

E: m.krups@bcimediagroup.com
P: 0421 381 000

Robert Krups
COO BCI Asia

E: r.krups@bciasia.com
P: (02) 9432 4142

Petra Berning
General Manager BCI Economics

E: p.berning@bcimediagroup.com
P: (+49) 2501 809875

Don Smith
Senior Analyst BCI Economics

E: *d.smith@bciaustralia.com*
P: *(02) 9432 4124*

Sally Kheng
Regional Research Director

E: *s.kheng@bciasia.com*
P: (+65) 6536 7197