

MEDIA RELEASE

SINGAPORE FIRMS EXPAND OVERSEAS AMID STRONG GREEN BUILDING DEMAND

- *Singapore firms build up green building capabilities and export their expertise overseas*
- *Increased recognition in green buildings locally and overseas fuels demand for green building capabilities*
- *Singapore homeowners and developers willing to invest in green buildings due to its benefits*

Singapore, 15 November 2017 – Singapore firms are riding on the strong demand for green buildings locally and overseas to export their expertise to the region. This is in line with the recently launched Construction Industry Transformation Map (ITM) which sets out initiatives to build capabilities of local firms and expand their market base.

Local survey shows strong demand for green buildings

2. In Singapore, a survey conducted with a total of 2,200 respondents, comprising homeowners, office tenants, property agents, facility managers and developers, found that residents in Singapore have a keen interest in green buildings and are aware of the benefits and value that green buildings bring. The survey, which asked the respondents about their perception of green buildings, was conducted by management consultancy firm Frost & Sullivan and commissioned by BCA.

3. Some of key findings of the survey include:

- a) The respondents were aware of the ***tangible and intangible benefits of green buildings***.
 - Over 90% of them perceived that green buildings result in lower utility bills, reduced environmental impact and better health benefits.
- b) The respondents were also aware of the ***value of green buildings***.
 - More than 70% of homeowners acknowledged that green buildings have a better resale value and about half of them were willing to pay approximately 3 to 4% more for a green building that is certified by the BCA Green Mark, due to the perceived benefits.
 - 72% of developers also said that they would prefer to invest in or purchase a green building over a non-green building, and were willing to pay up to 5% more.

[Refer to the summary report and Annex A for more details on the survey findings]

4. The results of the survey reinforce the business case and the strong demand for green buildings in Singapore. Mr Hugh Lim, Chief Executive Officer of BCA said: “Meeting the strong demand for green buildings domestically has enabled many Singapore built environment firms to develop specialised capabilities in green building design for the tropics. The greater interest in sustainable buildings abroad has also presented new business opportunities to our firms, especially in developments which have adopted BCA’s well-regarded Green Mark assessment. The Government is providing support for these firms which are keen to internationalise as part of the Construction ITM.”

Growing international recognition of Singapore’s green building capabilities

5. The BCA Green Mark standard has evolved over the past 12 years and is recognised internationally. To date, there are close to 300 Green Mark projects in 80 cities overseas.

6. In China. The Green Building Evaluation Standard (GBES), a green building rating system for the Tianjin Eco-City precinct, is modelled closely after the BCA Green Mark. It is officially recognised as the first and only district-level standard in China to be equivalent to China’s national green building standard, the *Three-Star* rating system. *[Refer to Annex B for more details on GBES]*

7. In the U.S. In October 2017, BCA became the first outside of North America to win the *Go Beyond Awards* by the International Institute of Sustainable Laboratories (I²SL), for the development of the BCA Green Mark for Laboratories Scheme. The *Go Beyond Awards*¹ have been conferred to less than 20 winners under the “individual” category (for persons and organisations), since it started in 2008. It is a unique awards programme honouring advancements in sustainable and high-performance facilities. *[Refer to Annex C for more details on the Green Mark scheme]*

8. Additionally, the Lawrence Berkeley National Laboratory (LBNL)² in the U.S. will be entering into another partnership with BCA following the successful development of the BCA SkyLab³. A new Memorandum of Understanding (MOU) will be signed to collaborate in the area of Zero Energy Buildings and look into areas such as Passive and Active Building Technologies and Smart Energy Management. *[Refer to Annex D for more details on MOU]*

Exploring overseas opportunities: BCA Mission Trips

9. To explore business opportunities overseas, local firms have been participating in mission trips organised by BCA, including participation in international conferences and trade shows to showcase their expertise and network with counterparts.

¹ More info on the Go Beyond Awards: http://www.i2sl.org/conference/awards_index.html

² More info on Lawrence Berkeley National Laboratory: www.lbl.gov/about/

³ The BCA SkyLab is the world’s first high-rise rotatable laboratory for the tropics. It was developed in collaboration with the Lawrence Berkeley National Laboratory in California. For more info, refer to: https://www.bca.gov.sg/newsroom/others/BCASkyLab-AcademicTower_200716.pdf

Examples include BuildTech Yangon, International Green and Energy-Efficient Building Conference in China and the Greenbuild conference in the U.S.

10. This year, the annual mission trip to Greenbuild⁴ (held from 8-10 November 2017) brought the Singapore delegation consisting of 15 industry firms, to explore the latest technological advancements in the green building arena and be updated on international best practices and trends.

11. BCA, together with five local companies, participated in the Greenbuild Expo to showcase exemplary Green Mark projects and expertise. Two companies which were featured are:

- Landscaping firm, Elmich Pte Ltd
- Architectural firm, RSP Architects Planners & Engineers Pte Ltd

These companies have built up their expertise and capabilities over the years by working on local green projects such as CapitaGreen and Gardens by the Bay, and have subsequently gone on to carve a niche for themselves in the international market. *[Refer to Annex E and F for more details on their internationalisation efforts]*

12. Mr Alan Lee, Executive Chairman of Elmich Pte Ltd said: “Elmich has built up a strong base in Singapore over the past 30 years. As Singapore market matures, we saw the need to capitalise on overseas opportunities by producing products that are exportable and have a global demand. To achieve that, we ensured that our products are of top quality and environmentally friendly. With the former pre-requisites met, the next step is to source for the right distribution channel by widening our market base through internationalisation efforts. We have been participating in mission trips with BCA to explore overseas markets and showcase quality products under the Singapore brand.”

13. In addition, small and medium-sized firms (SMEs) are also expanding their services overseas, fuelled by the increasing interest and demand for green buildings. G-Energy Global Pte Ltd, an SME energy services company from Singapore has grown from strength to strength since its establishment in 2005. With more than 500 projects in Singapore and overseas, some of G-Energy’s iconic projects are Jewel Changi Airport in Singapore, Saigon Sports City in Vietnam and World Trade Centre 2 in Indonesia. *[Refer to Annex G for more details on their internationalisation efforts]*

Issued by the Building and Construction Authority on 15 November 2017

About BCA

The Building and Construction Authority (BCA) of Singapore champions the development of an excellent built environment for Singapore. BCA’s mission is to shape a safe, high quality, sustainable and friendly built environment, as these are four key elements where BCA has a significant influence. In doing so, it aims to differentiate Singapore’s built environment from those of other cities and contribute to a better quality of life for everyone in Singapore. Hence, its vision is to have "a future-

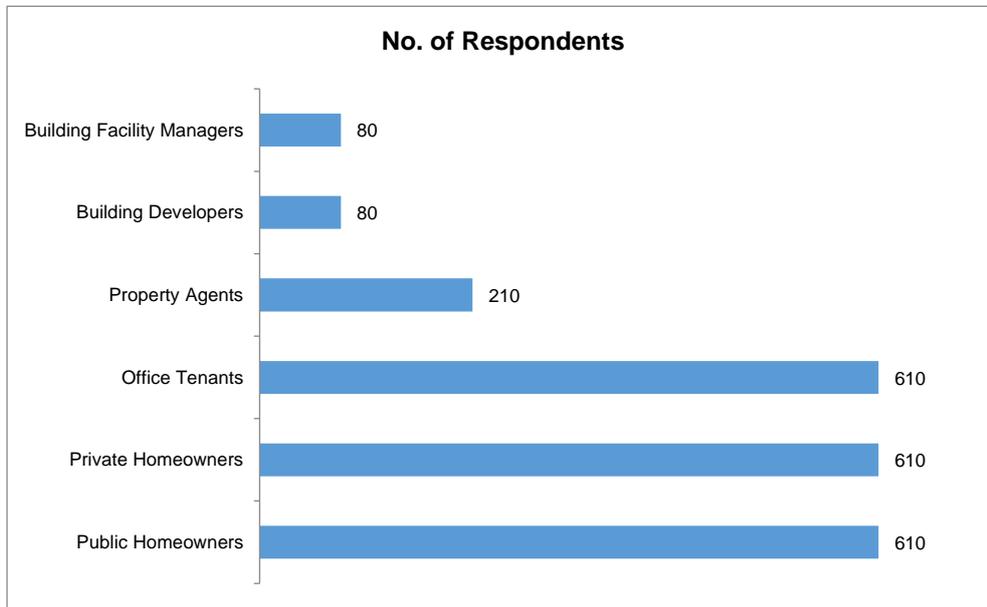
⁴ Greenbuild is the world’s largest conference and expo dedicated to green building, attracting more than 18,000 attendees last year. For more info, refer to the Greenbuild 2016 post-event press release: <https://www.usgbc.org/articles/more-18000-attendees-and-531-exhibitors-gathered-greenbuild-2016>

ready built environment for Singapore". Together with its education arm, the BCA Academy, BCA works closely with its industry partners to develop skills and expertise that help shape a future-ready built environment for Singapore. For more information, visit www.bca.gov.sg.

ANNEX A: PUBLIC PERCEPTION SURVEY FINDINGS ON GREEN BUILDINGS

Type of respondents

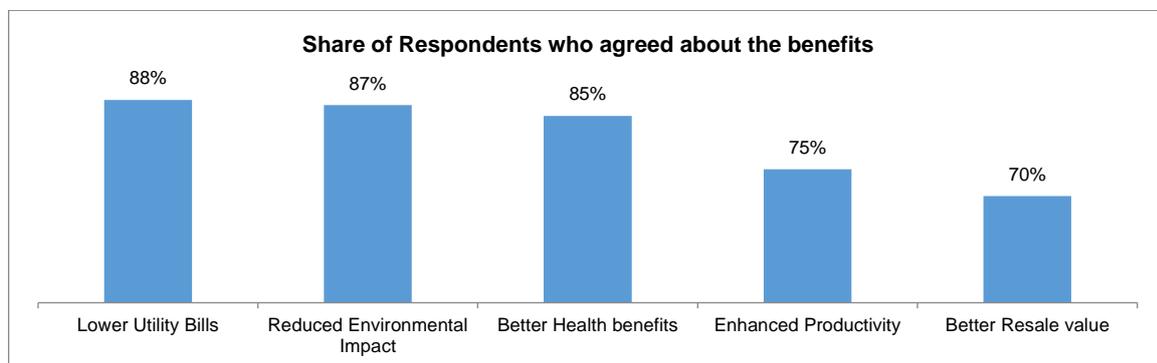
Below is the breakdown of the type of respondents who participated in the survey:



Benefits of green buildings

The respondents were aware of the tangible and intangible benefits of green buildings, with over 90% of them perceiving that green buildings result in:

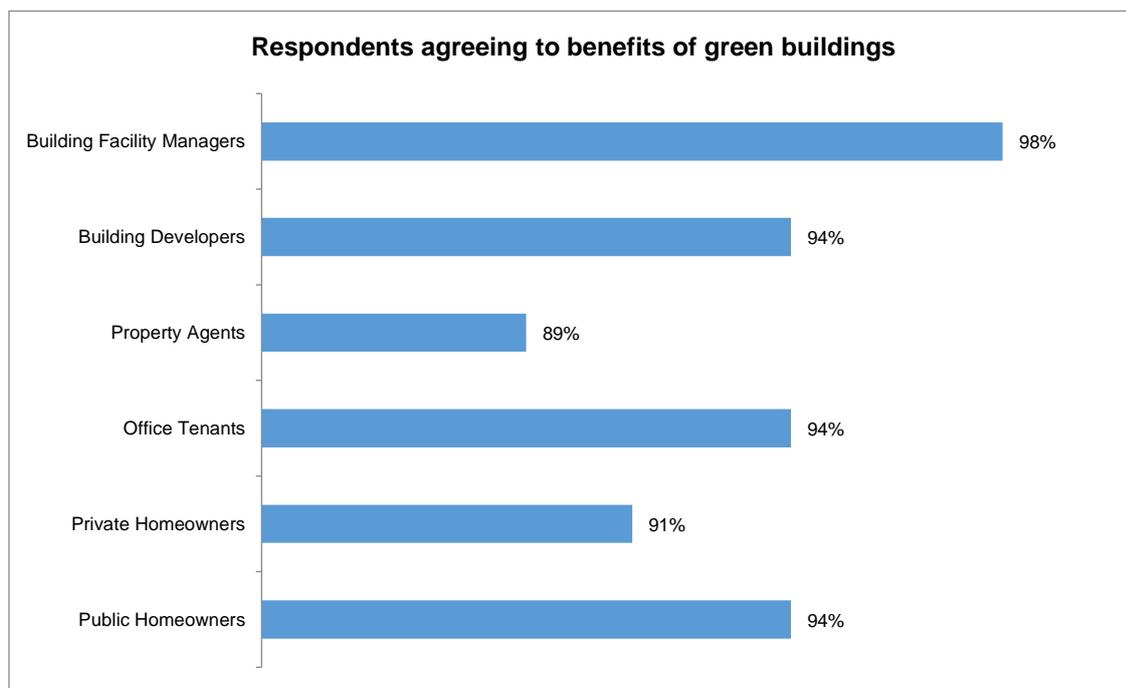
- Lower utility bills (cited by at least 88% of the respondents)
- Reduced environmental impact (cited by at least 87% of the respondents).
- Better health benefits (cited by at least 85% of the respondents).



In particular, about 80% of the office tenants who were surveyed, agreed that working in green buildings leads to higher productivity and efficiency, with 86% of them highlighting that working in green buildings leads to better health benefits for their employees. This affirms the findings from a recent research study conducted by BCA

and NUS on Indoor Environmental Quality which concluded that BCA Green Mark buildings provided a healthier indoor environment. Occupants in BCA Green Mark buildings were also more satisfied with their indoor environment and have less risk of experiencing sick building syndrome.

The share of respondents who agreed that green buildings lead to benefit is shown in the chart below:



Business case for green buildings

The respondents were also aware of the value of green buildings.

- **Homeowners:** More than 70% of homeowners acknowledged that green buildings have a better resale value and about half of them were willing to pay approximately 3 to 4% more for a green building that is certified by the BCA Green Mark, due to the perceived benefits.
- **Developers:** 72% of developers also said that they would prefer to invest in or purchase a green building over a non-green building, and were willing to pay up to 5% more.
- **Property agents:** 80% of the property agents interviewed agreed that green buildings help improve sales and that their clients have a preference to invest in, purchase or rent green developments. They felt that their clients would be willing to pay up to 7% more for a home or office in a green building, as compared to one in a non-green building.
- **Office tenants:** Interviews with office tenants showed that they were willing to pay an average of 3.5% premium in lease for an office in a green building, due to the perceived benefits for their employees. Typically, they expect to generate returns on their higher investment in 7 to 8 years.

ANNEX B: GREEN BUILDING EVALUATION STANDARD

How it was developed

- BCA worked with the Sino-Singapore Tianjin Eco-City Administrative Committee (ECAC) and the Ministry of Housing and Urban-Rural Development (MoHURD) to develop the Green Building Evaluation Standard (GBES) for the Tianjin Eco-City precinct in 2009.
- It follows the structure of China's National Green Building Evaluation Standard (NGBES, the 'Three-star System') and adopts the scoring system of BCA Green Mark.

Significance and impact

- Recently, in August 2017, China's MoHURD officially recognised GBES as the only local standard in China to be equivalent to the national green building standard. This recognition has helped affirmed the standing of Singapore's Green Building standards in China and will help boost the competitive edge our local practitioners may have in designing buildings in accordance with GBES.
- Local firms such as Jurong Consultants and Building System Diagnostics (BSD) have been participating actively as green building consultants in various projects within Sino-Singapore Tianjin Eco-City (SSTEC).

ANNEX C: BCA GREEN MARK FOR LABORATORIES SCHEME

Background

- Introduced in June 2017, the BCA Green Mark for Laboratories scheme is the first green certification scheme in the world that is dedicated to laboratories design and operation. The scheme recognises the sustainable efforts and commitment of laboratory owners and operators to reduce the environmental impact of laboratory operations which are energy intensive.
- It also complements the BCA Green Mark for Buildings scheme by encouraging laboratory operators to adopt best practices, optimise the operations of laboratory equipment and systems, while addressing the safety requirements for laboratories.
- The scheme was developed based on a Laboratory Energy Performance Benchmarking study in Singapore conducted by the Energy Research Institute @Nanyang Technological University (ERI@N) and the Singapore Sustainable Lab (S²Lab) group at the Sustainable Energy Association of Singapore (SEAS). This study was initiated by BCA last year and funded by the National Research Foundation under the Green Buildings Innovation Cluster (GBIC) programme.

ANNEX D: MEMORANDUM OF UNDERSTANDING BETWEEN BCA AND LAWRENCE BERKELEY NATIONAL LABORATORY

Background

- Following the successful partnership with LBNL under the MOU in 2012 and the development of the BCA SkyLab, BCA is keen to continue the collaboration with LBNL in the field of Zero Energy Buildings through a new enhanced MOU. The 2012 MOU continues to be effective and is intended to complement the new MOU.
- Under the new MOU, the collaboration with LBNL could take the form of mutual visits, the exchange of publicly-available information, exchanges of researchers and experts, training, and planning for potential future joint research.

Scope

- The BCA and LBNL will collaborate in the area of Zero Energy Buildings (ZEB), covering the below topics:
 - a) Design Strategies
 - b) Passive and Active Building Technologies
 - c) Renewable Integration
 - d) Smart Energy Management
 - e) Occupant Comfort
 - f) Energy Modelling & Simulation
 - g) Building Technologies & Controls Test Facility – Design and Operations
 - h) Building Technologies & Controls Test Facility Research Programs

Duration

- 5 years (from Nov 2017 to Nov 2022)

ANNEX E: PROFILE OF COMPANIES – ELMICH PTE LTD

Background

Established in 1985, Elmich is a supplier of engineered landscape systems and waterproofing. It seeks to provide the most cost-effective solutions to their clientele of developers, contractors and architects.

Internationalisation efforts

Headquartered in Singapore with international offices in Australia, Germany, Malaysia, Switzerland and the United States, Elmich works closely with its network of partners that cover more than 30 countries across 6 continents.

With a diverse array of languages and cultures encountered, Elmich prides itself as being versatile in responding to the different needs of its stakeholders through investing heavily in its human capital and innovating for sustainability.

Establishing a Strong Foothold in the Landscape Engineering Market of North America

Leveraging on its experience in dealing with overseas markets, Elmich extended its capabilities and eco-solutions to the United States demonstrating its firm commitment with the setup of a representative office in Washington State. Two recent projects where Elmich products were installed include:

The New Orleans Botanical Garden in City Park was one of the prominent green wall projects completed with its partner, Tournesol Siteworks. Adorning the entire garden entrance and event court, the majestic VersiWall® GM Green Wall System (see image below) was part of an effort to beautify the renovated garden.



VersiWall® GM Green Wall System at New Orleans Botanical Garden

Aside from gaining success in the green wall market, Elmich also supplies to the US green roof industry. Philadelphia's first blue-green roof, which can route storm water to the green roof areas used VersiCell®. This project was designed and managed by

Roofmeadow, a green roof landscape architecture and engineering design firm and supplied by our local partner, Tournesol Siteworks. (see images below).



Elmich Intensive Green Roof at Cira Green, a 5000 sqm Urban Park
Photos Courtesy of Roofmeadow

To further strengthen its position, Elmich will take advantage of its strong manufacturing expertise and is considering initial footprint operations to bring its products closer to customers located in the European Union and North America.

ANNEX F: PROFILE OF COMPANIES – RSP ARCHITECTS PLANNERS & ENGINEERS PTE LTD

Background

Founded in 1956, RSP Architects Planners & Engineers (Pte) Ltd. provides planning, design, architecture, engineering, and interior design services. The company handles educational, hospitality, industrial, infrastructure, institutional, mixed, office, residential, retail, and sports and recreation works, as well as various master plans.

Internationalisation efforts

Headquartered in Singapore, the company has offices in China, Vietnam, the United Kingdom, the United Arab Emirates, and Ghana, as well as associate offices in Malaysia and India. They are active in China, India, Vietnam, Middle East, UK. Recently bought AC Consortium to strengthen their capability for industrial building design.

RSP have had opportunistic commissions in Indonesia, Sri Lanka, Kazakhstan, Ghana, Panama and Greece. When there is a critical mass of projects which looks sustainable over the longer term, RSP would set up office to better service the market and clients, such as in China, Vietnam, Dubai and India.

Master Planning

RSP has been involved in specialised district master plans such as Central Business Districts and Conservation Districts. They were also involved in the Baosteel Group's Wusong Industrial Estate – a revitalisation project in Shanghai, when they proposed to create as the Second CBD for Shanghai. Other specialised urban planning and design includes the Central Axis of Xiangyang Old City and its surroundings and the intercity rail corridor in Zhuhai linking Guangzhou and Zhuhai.

A few of their projects are currently under implementation including Guangzhou Knowledge City and Kazan Innopolis. In the Republic of Tatarstan, Russia, RSP devised a model for self-sufficient towns with its master plan for Innopolis, Russia's first self-sustaining technology hub, which was officially opened in June 2015 by H.E. Dmitry Medvedev, Prime Minister of Russia. Designed to support Russia's growing hi-tech sector, Innopolis is created as a cutting-edge satellite town based on extensive studies of the terrain and detailed research on people's lifestyles and behaviours, with the aim to establish a holistic, nurturing environment poised to become a work-live-play destination for a projected 20,000 talents.

District Developments

RSP participated in a consortium of Singapore GLCs and MNCs to develop a pioneering technology park in Bangalore, India. Although the development was financially challenging in the initial years because the IT park concept was still in its infancy and gaining traction, the project was the impetus to start RSP's office in India, which began with a staff of two but has since grown to become one of the leading

design consultancies in India with a staff strength of about 400 in 5 offices. Their experience with the pioneering Bangalore IT Park also set the stage for RSP India to win many more projects from US MNCs and other IT majors investing in India by building IT campuses, such as Cisco Campus Bangalore, Embassy Golf Links Bangalore and Microsoft Hyderabad.

In China, RSP Beijing won a design competition to design Chinese multinational media company StarTimes' research and technology headquarters in Yizhuang, Beijing. This led to further contracts and *new project opportunities* in Africa with StarTimes, where it enjoys significant presence.

ANNEX G: PROFILE OF COMPANIES – G-ENERGY GLOBAL PTE LTD

Background

G-Energy Global Pte Ltd is an energy services company (ESCO) and a sustainable energy consultant from Singapore. Established in 2005, G-Energy has been a long-standing trainer for the Singapore Certified Energy Manager (SCEM) programme and Green Mark certification programme.

Internationalisation efforts

G-Energy has regional offices in Malaysia, Indonesia, China, Philippines as well as a presence in Vietnam. They are constantly seeking to expand their services to provide integrated solutions to their clients. They also have M&E services, BIM and simulation services. Their team specialises in energy and environmentally sustainable design for different types of buildings.

G-Energy's main goal is to help clients develop and operate buildings which are more energy, water, and other resources efficient. Their client's buildings' high performance is recognised through the awards received, including the prestigious ASEAN Energy Award and green certification awards like LEED, BCA Green Mark, Green Building Index (GBI) and Greenship (Indonesia's green building rating system).

With more than 500 projects in Singapore and overseas, some of G-Energy's iconic projects are:

- Resort World Sentosa, Singapore
- Jewel Changi Airport, Singapore
- World Trade Centre 2, Indonesia
- Sinarmas Land Plaza Tower 2 and 3, Indonesia
- Saigon Centre, Vietnam
- Saigon Sports City, Vietnam

G-Energy Global has grown from strength to strength, largely fuelled by the increasing interest in the energy and sustainability industry. With the progressive nature of the company, they are able to seize these opportunities as they arise and capitalize on them, transforming their four-man startup in 2004 to the current 90-odd team, with the inclusion of regional offices. With projects in Ho Chi Minh like Saigon Centre, Saigon Sportscity, One Hub Saigon and Empire City, they plan to extend their energy strengths in Vietnam.

In 2008, the company achieved two firsts in foreign Green Mark Consultancy in the form of G-Tower (Malaysia) and Tuan Sing (Shanghai, China). The two projects are the first-of-its-kind Green Mark projects in Malaysia and China respectively, which were fully handled by G-Energy Global.