

International Built Environment Week

Sector must keep reinventing itself to meet evolving needs

BCA chief Hugh Lim says collaboration across entire value chain is the key to meeting future needs. BY NARENDRA AGGARWAL

SINGAPORE and the built environment industry here have had to constantly reinvent themselves to meet the evolving needs at every stage of the country's urbanisation, and this must continue to enable them to stay ahead of developmental roadblocks that may come in the way.

"These challenges are not unique to Singapore and are faced by cities in the region as well. There is an impetus and also opportunities for the built environment community to come together to share innovative solutions to address such challenges," says Mr Hugh Lim, chief executive officer of the Building and Construction Authority (BCA), the regulatory body for the construction industry.

"Besides focusing on the building design, buildings will have to be well operated and maintained to achieve the best building performance. This enhances the value of the building for owners while offering tangible savings in operating costs, which can amount to 80 per cent of a building's life cycle cost," says Mr Lim.

He says collaboration across the entire value chain is the key to meeting future needs. The efforts in Integrated Digital Delivery (IDD) to leverage data and digital technologies to connect the different project parties will help to facilitate this process.

At the same time a leaner and more productive workforce is needed

in the built environment industry as cities face the challenge of attracting new entrants into the construction and facilities management (FM) workforce.

"Fundamentally, the way we do things is unattractive to younger job-seekers, unless we significantly raise pay. However, we cannot justify raising salaries without a change in the productivity of workers. All these point toward the need to change how we do things, and redesign jobs in the sector. At the same time, we need to put in place education and training to prepare the workforce for these new jobs."

Another step forward is value creation through research and innovation. Robotics and 3D printing can potentially revolutionise the construction industry. A key advantage of automated equipment and robotics is the ability to work 24/7 while reducing errors and the need for rework. 3D printing has the potential to boost productivity in the construction sector by bridging the gap between design and construction.

There is also potential for applying AI solutions in the built environment sector.

Mr Lim says leadership is critical to motivate these changes—at government levels, industry, firm and professional levels, including the educational institutions. Singapore has committed to preparing future generations of leaders for the built environment to work

collaboratively and to embrace the changes needed.

Digitalisation can help in the built environment industry's transformation and it is being driven through IDD which builds on earlier efforts to introduce the use of Building Information Modelling (BIM) and Virtual Design and Construction (VDC).

Given the silo nature in which projects are typically carried out, IDD offers project stakeholders the digital backbone to collaborate better through the use of shared data and information platforms, across the different stages of a building's lifecycle.

"To encourage industry to move towards IDD, we launched the IDD implementation plan last November. We envisage 40 to 60 IDD projects by 2020, involving at least 150 Singapore-based firms competent in IDD and developing 300 to 400 IDD professionals in the process.

IDD is being piloted in over 20 projects now. These projects cover a wide spectrum of building types, from residential, institutional and industrial to commercial projects."

The BCA chief says that Singapore's built environment industry is responding well as it sees the opportunity to break new ground and grow going ahead.

Since the launch of the industry transformation map (ITM) in 2017, there has been good progress with more than 120 Design for Manufacturing and Assembly (DFMA) projects completed or ongoing, and another 60 in the pipeline.

BCA is also stepping up training to support transformation, including the launch of two iBuildSG LEAD programmes for leaders in the built environment sector. The iBuildSG LEAD framework is an initiative under the ITM to develop leaders within the workforce who can drive sustained industry transformation efforts.

Key private sector players in the built environment industry are innovating to keep ahead in the business. One of the early local adopters of construction technology, Lum Chang, was well positioned to implement IDD. Two years on, Lum Chang is currently able to implement all four stages of IDD for its projects.



Mr Lim says a leaner and more productive workforce is also needed in the built environment industry as cities face the challenge of attracting new entrants into the construction and facilities management workforce.

Another key player, Samwoh, has a dedicated team of technical specialists innovating and researching sustainable building materials of the future.

GWS Living Art is doing rooftop greening of residential buildings at Datansha in Guangzhou. The project developer is CapitalLand (China). The company has also done vertical greening at the Jewel mall in Changi airport. It is also experimenting with bus rooftop greening to bring down the temperature in buses.

The BCA has been encouraging the local built environment industry to transform itself and take advantage of the new opportunities that are opening up.

"Our trade associations such as REDAS, SIA, ACES and SCAL have each developed their own action plans for firms and professionals in their respective domains to transform the

way we do things in the sector, and we are growing new linkages across other sectors, for example, with FM, cleaning, security, and landscaping which used to be seen as downstream participants in the built environment."

To help built environment firms and PMETs build essential capabilities for growth, the BuildSG Transformation Fund (BTF) offers a range of support schemes for the entire value chain, from start-ups to businesses at different stages of growth, to students and professionals.

The BCA chief says that its push for having more green buildings ties in with the new focus on built environment transformation. "Singapore's green building journey began in 2005.

To date, Singapore has 'greened' close to 40 per cent of the country's gross floor area, bringing us closer to our national target of greening 80 per cent of all buildings by 2030."

The BCA Green Mark has achieved international recognition since it was launched 14 years ago. To date, some 300 projects across 80 cities have attained the Green Mark certification.

Globally, with growing awareness of the dangers of climate change, there is greater support for the drive towards zero energy buildings. In Singapore, BCA retrofitted an existing building at the BCA Academy into Singapore's first zero energy building in 2009.

In 2018, the BCA launched the Super Low Energy (SLE) programme to push the envelope of environmental sustainability in Singapore.

It is working with industry professionals to deliver cost-effective super-low-energy buildings which can achieve a minimum of 60 per cent energy efficiency improvement over the 2005 building codes, when the BCA Green Mark was first introduced.

Showcasing latest developments in the industry

THE inaugural International Built Environment Week (IBEW) being held from Sept 3 to 6 at the Sands Expo & Convention Centre in Singapore has been conceptualised by the Building and Construction Authority (BCA) to tap know-how, resources and talents to enhance the transformation of Singapore's built environment industry.

"As the flagship event in the region for the built environment sector, we want to create a space which encompasses all aspects of the built environment value chain, showcasing new and innovative technologies across the entire built environment sector which could be applied globally as well," says BCA chief executive officer Hugh Lim.

Importantly, the first IBEW is a showcase for the latest innovations and developments across the entire built environment value chain. It is unique as it offers both buyers and sellers an integrated platform to showcase new and innovative technologies.

"In Singapore's context, the inaugural IBEW is a manifestation of our collective BuildSG movement by all stakeholders to deepen collaboration with one another. But on a global level, it is an opportunity to reap international collaboration and sharing of innovative practices that transcend borders," Mr Lim says.

One novel IBEW platform is the BE Connect. It is conceived as a premier business platform that brings together urban solution providers, regional developers, government agencies, and investment communities to address urban challenges in the region. It is a unique platform to match suitable overseas business opportunities with local urban solution providers.

The BCA says that over the past nine months it has met close to 100 developers in China, India, and South-east Asia to understand their needs for introducing solutions and sharing relevant experience through various platforms.

"BE Connect marks a major milestone in a year-round campaign to connect buyers in the region to access fully integrated solutions across the entire built environment value chain for their building needs. We are confident that regional buyers and firms will find good answers and partners in Singapore," says Mr Lim.

Jointly developed by the Building and Construction Authority (BCA) and 12 trade associations and chambers, with participation from more than 20 Singapore firms and partner agencies, the inaugural IBEW event has been convened under the theme "Transforming The Way We Build".

Bringing together more than 12,000 attendees, the IBEW is an ideal platform for industry leaders and professionals from the global built environment to exchange ideas and experiences on policies, business solutions and technologies, as well as explore business opportunities.

Serving as an important accelerator of the industry's transformation, it will help those attending it to keep abreast of changes and facilitate their business evolution as the industry shifts towards smarter and more sustainable living spaces of tomorrow.

The IBEW builds on the Singapore Green Building Week (SGBW) and Singapore Construction Productivity Week (SCPW), which were the previous annual industry events to push the green and productivity agendas.

Looking ahead, the BCA is aiming for the development of the IBEW on a multi-year basis with conference discussions lead up to actual project showcases in subsequent editions. The plan is to evolve the IBEW along an overarching narrative and bring in complementary events by tripartite partners.

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