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## COVER STORY

Paving the Way for a  
Better 2022 and Beyond

Resilience and Growth in the  
Construction Industry

New E-features at SCAL

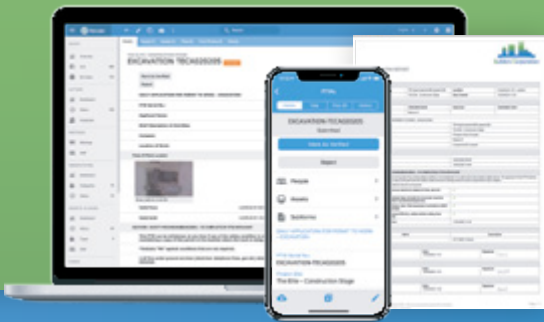


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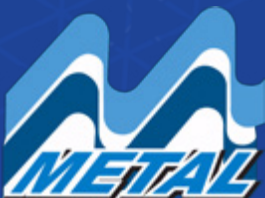
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**Ng Yek Meng**  
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***“The road to recovery will be uncertain and bumpy, but there are also plenty of opportunities amidst this transition – 危机.”***

## PRESIDENT'S MESSAGE

I would like to take this opportunity to wish everyone a Very Happy and Prosperous Chinese New Year! As we enter the year of the Tiger with vigour and fiery passion, we hope to overcome all the challenges caused by Covid-19 and progress strongly into the future.

2021 was another tough year for Singapore's contractors due to the COVID-19 pandemic. Manpower shortages persisted as borders continued to tighten due to the rising Covid cases in source countries that limited the inflow of foreign workers. The rise of building material prices also brought tremendous financial stress to our firms. The lockdowns in several countries caused production and supply chain disruption and increased freight costs significantly as well.

Despite these challenges, Singapore's construction industry rebounded in 2021 and registering better growth with more new projects on the way. The cooling measures for residential properties announced in December 2021 could dampen some growth in the private residential sector but the Building and Construction Authority (BCA) estimates that construction demand for 2022 is estimated to be between S\$26 billion to S\$32 billion. That will mean higher demand for construction services as compared to 2021.

The main challenge for the construction industry is to bring back a sufficient number of skilled migrant workers as many returned home after the lock down in 2020. Without them, the industry will continue to struggle with labour shortage problems, poaching and job-hopping issues. This would lead to further project delays and higher tender prices.

Over the past 9 months, SCAL has been working closely with some private enterprises and government agencies to bring back workers into Singapore in a safe manner. To date, we have brought in more than 4,000 workers without any Covid positive cases. We will continue to explore ways to lower the recruitment costs while continuing to provide a path for a steady inflow of workers.

SCAL, the Construction Industry Joint Committee (CIJC) and BCA have formed a workgroup to introduce more collaborative contract clauses in the Public Sector Conditions of Contracts (PSSCOC) to cover unforeseen pandemic situations. This will help to mitigate the unknown risks and prevent one contracting party from assuming disproportionate risks during pandemic situation.

As we move into an endemic phase, SCAL urges all members to build longer-term resilience to prepare for the future. We should not aim to go back to pre-Covid practices only. The construction industry needs to be more productive and rely less on migrant workers. SCAL will be embarking on a 5-year transformation plan to achieve this goal. Besides improving productivity, we aim to attract more locals to join construction industry and to build a more resilient and sustainable workforce.

The road to recovery will be uncertain and bumpy, but there are also plenty of opportunities amidst this transition (Chinese saying “Wei Ji” 危机). The entire construction industry should work closely together, transform, and emerge stronger.



# PAVING THE WAY FOR A BETTER 2022 AND BEYOND

**As the construction industry forges ahead towards a progressive recovery from COVID-19, what will 2022 hold for SCAL members and what can be done to make it a better year ahead?**

2021 was another tough year for the Singapore construction sector and the topmost concern for any contractor going into the new year could well be the manpower crunch.

To this end, SCAL has been working with relevant authorities on a tightened end-to-end process to increase the inflow of migrant construction workers while mitigating associated public health risks. This is built upon the successful pilot for India workers carried out last July.

Along with labour concerns, the pressure to fulfil contract obligations is also following many contractors into the new year. This makes the extension of the legislative relief periods under the COVID-19 (Temporary Measures) Act, or COTMA, to 28 February 2022 or 31 March 2022, a much welcomed move. This allows for extra time to re-organise their business and adapt to the new normal by adjusting their contract provisions and prices based on the evolving COVID-19 situation. BE sector firms will need to partner with each other closely for long-term sustainability and resilience.

As trends such as labour shortages, supply chain issues and material cost spikes spill into 2022, what can contractors do to not just brace themselves to face new disruptions, but enhance their position to capture new growth opportunities and strengthen their long-term resilience? Here are a few key areas to embrace and include in the game plan for 2022:

- Design for Manufacturing and Assembly (DfMA)
- Upskilling of employees through accreditation and honing young talent
- Structural changes within the industry to adapt to a leaner workforce
- Sourcing for skilled labour to increase productivity
- Collaboration
- Workplace Safety and Health (WSH) policies
- Adoption of technology in work processes
- Sustainability
- Building supply chain resilience and managing the rising cost of materials
- Creating more pipeline projects to level the playing fields for locals, and encouraging sustainable tender pricing.

## #1 Strengthen supply chain resilience

A crucial lesson from COVID-19 for the built environment sector is the importance of diversifying sources of supply of aggregates and other construction materials. Moving forward, contractors have to factor this in and expand their locations to lower the impact of supply chain disruptions to their projects.

SCAL members can also look forward to the S\$200 million Ready-Mixed Concrete (RMC) Port-Centric Ecosystem being developed by Jurong Port. Expected to be completed in 2023, this facility will become the first-of-its-kind logistics and manufacturing node for the local construction industry, providing shorter, leaner and greener supply chains for construction materials in Singapore.



## #2 Upskill employees with digital tools for greater productivity

CORENET X, a one-stop integrated digital shopfront for the industry to make regulatory submissions regarding building developments to relevant agencies, is set for implementation in the second half of 2023. To ride on the wave to greater productivity that is offered by this BIM-centric platform, it is essential for project management personnel in the built environment sector to make employee upskilling a priority in their 2022 strategy.

## #3 Focus on accreditation

As the industry keeps transforming, high competency standards of employees will make contractor firms stand out from the competition. SCAL has put in place accreditation schemes to support our members to raise their employees' professional standards while retaining and motivating them.

- For example, SCAL's Construction Professional Accreditation Scheme (CPAS) recognises project management personnel through competency standards which are meticulously curated to promote and gauge professional practices.
- SCAL also runs the SCAL Accredited Builder Scheme (SABS) to recognise builders who have achieved high quality, safety & health and environmental standards. It gives them valuable endorsements by architects, consultants, industry associations and relevant authorities as the "preferred choice".
- Apart from accreditation, SCAL members can take advantage of the Career Conversion Programme (CCP) to retrain existing employees into BIM professionals or recruit trainees who will be put through facilitated classroom or online training by SCAL Academy. They can tap on funding support by the government through course fee subsidy and salary support when training eligible PMETs under this programme.

## #4 Make Total Workplace Safety and Health (Total WSH) a priority

Improving workers' health and lifestyle are critical in keeping them healthy and safe. SCAL members could benefit from proactively adopting the Total WSH approach in the new year to create a safe environment for employees and prevent workplace accidents through good work processes. Meanwhile, the WSH committee is preparing for the annual WSH Awards 2022 and we look forward to receiving submissions from our members.

A good place to start is to participate in the courses offered by SCAL Academy in this area. A good example is the 'Psychological First Aid Course – Strong together in Construction' course that focuses on providing emotional support to colleagues, friends and family members impacted by distressing events. Through the course, learners are able to identify the crisis, types of stress and provide psychological first aid to an affected person. The course has already trained more than 190 participants since December 2020.

## #5 Engage young talents now for future business viability

Attracting and retaining young talents are key for any contractor firm to enjoy an enduring, sustainable business. As the construction industry looks to move out of its traditional menial image to an exciting one driven by technology, now is the best time for any contractor to establish or strengthen its young talent recruitment plan.

SCAL members can proactively create a pipeline of future talents by tapping on SCAL's initiatives such as the SCAL Student Engagement Programme with Institutes of Higher Learning (IHLs). In 2021, Nanyang Polytechnic, Singapore Institute of Technology and Nanyang Technological University worked with SCAL to prepare their students for the transition to a career in the built environment sector through career pathway webinars and other programmes.

The SCAL Young Leaders Programme is another channel for the industry to nurture their talents into next-generation champions for their businesses.

SCAL members can also explore opportunities to co-sponsor suitable candidates through the iBuildSG Scholarship and Sponsorship Programmes. An initiative driven by BCA with the support of SCAL and IHLs, iBuildSG is an avenue for contractor firms to engage high calibre talent, retain high-performing employees and enhance their skills and competencies.

## #6 Integrate sustainability from pre- to post-construction

With increasing emphasis on how projects are designed, constructed and maintained, contractors will need to accelerate the adoption of sustainable practices in their building process. This involves moving towards recycling of concrete and steel from demolishing, use of environmentally-friendly materials to reduce both embodied carbon and operational carbon and adopting non-fuel forms of energy in projects. SCAL is looking into several initiatives such as energy reduction and sustainable recycled timber for formwork, before bringing it to the members.

### Supporting members every step of the way

The year ahead is not going to be an easy one but SCAL members do not need to face challenges on their own. SCAL will continue to extend multi-faceted support to the industry.



## NEW SCAL SUBCOMMITTEE TO SERVE SLOTS COMMUNITY

Members of SLOTS (Singapore List of Trade Sub-contractors) are able to streamline their feedback, propose solutions to improve construction practices to the SCAL Council and more, through the newly-formed SLOTS subcommittee.

This newly introduced Subcommittee by SCAL gives specialist contractors a more direct conduit to channel their opinions and needs to the Council for representation to be pushed to relevant government authorities and agencies. It is a step taken by SCAL to augment SLOTS' professionalism among subcontractors.

The subcommittee's priorities include enhancing the quality and capabilities of subcontractors to meet the industry's future needs. For now, the committee is looking into facilitating subcontractors for a leaner workforce and higher quality of workers by providing support for sourcing.

Launched by SCAL in 1992, the SLOTS membership scheme furnishes main contractors, consultants, and developers with a reference list of competent subcontractors. The scheme enables competent subcontractors to be granted work permits for their foreign workers if they are registered BCA or SLOTS contractors.

The SLOTS subcommittee is chaired by Mr Jeffrey Yu, a council member of SCAL and co-chaired by Mr Roy Khoo, assistant secretary-general of SCAL.

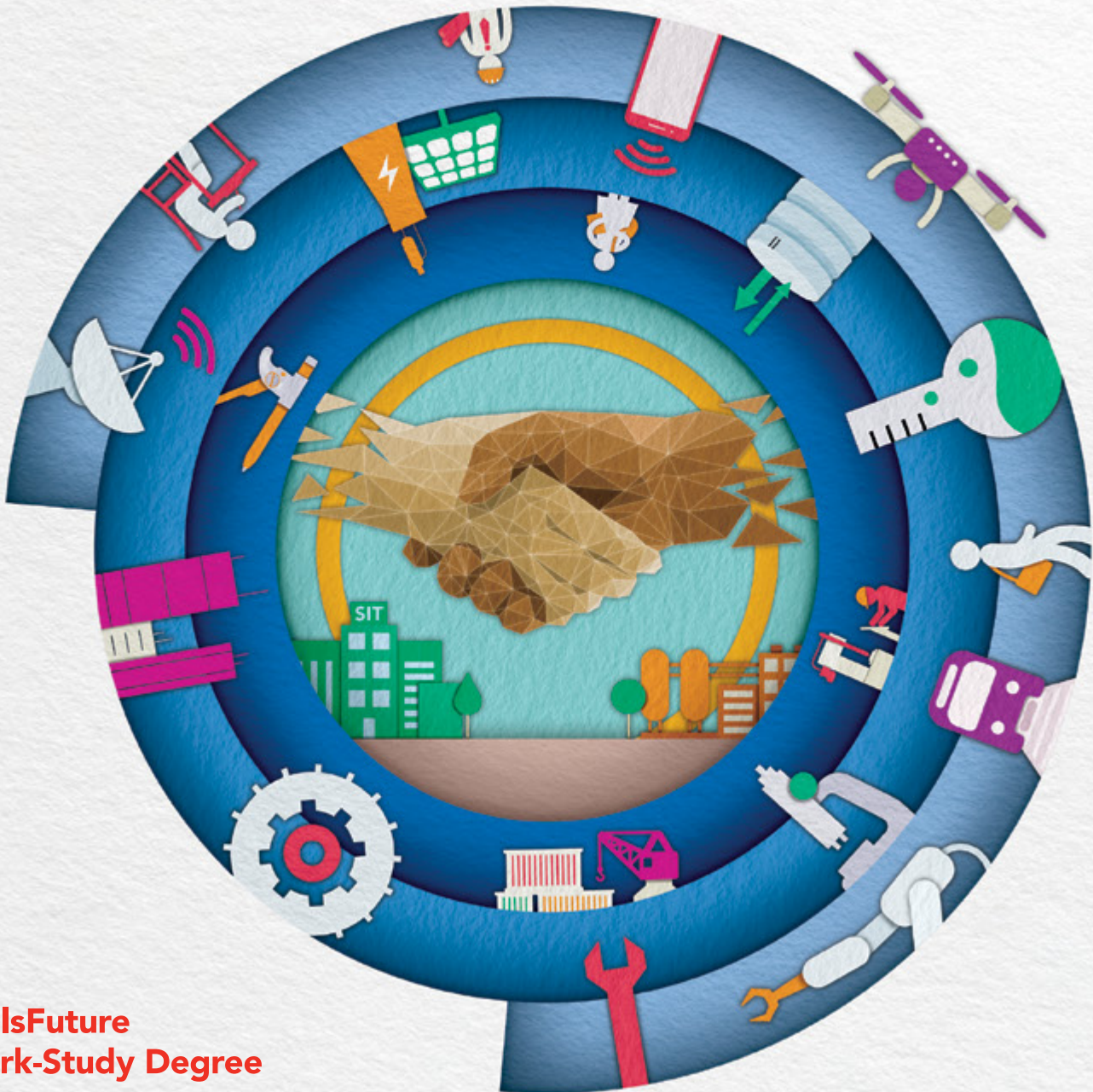


**Mr Jeffrey Yu**  
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**Mr Roy Khoo**  
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# GETTING REAL WITH GOING GREEN IN THE CONSTRUCTION INDUSTRY

"80-80-80" has become a set of numbers highly familiar amongst contractors, as it represents Singapore's green building targets for 2030.

Under the [Singapore Green Building Masterplan \(SGBMP\)](#), an action plan that charts Singapore's environmental sustainability ambitions for the built environment, three clear targets have been identified.

They are: 80 per cent of Singapore's buildings by gross floor area (GFA) to be greened, 80 per cent of new developments by GFA to be Super Low Energy (SLE) buildings and 80 per cent improvement in energy efficiency over 2005 levels for best-in-class green buildings.

Making buildings greener and more efficient – both in their construction and operations – plays a big part in determining Singapore's ability to achieve the green targets set out in the Singapore Green Plan 2030. This is because buildings here make up over 20 per cent of carbon emissions.

## **Moving towards sustainable construction**

With climate emergency warranting a swift transition to green buildings, there is also a growing awareness and acceptance amongst developers, engineers and architects in Singapore to use and adopt sustainable construction materials.

The Building and Construction Authority (BCA) has also been urging and recognising leadership action in addressing embodied carbon emissions from the building and construction sector. This is in alignment with the World Green Building Council's Net Zero Carbon Buildings commitment.

BCA's latest revised compliance framework, the BCA Green Mark 2021, places stronger focus on outcome-based indicators, covers wider sustainability issues and introduces a new SLE energy efficiency standards for residential buildings.



It emphasises on carbon reduction measures especially on sustainable design strategies, sustainable construction and sustainable technologies. This framework guides contractors to:

- Optimise the use of passive design strategies in response to local climate and site conditions so as to improve indoor environmental quality while minimising energy use;
- Adopt sustainable practices, material procurement and design that inculcate responsible use and conservation of resources during construction and building operation; and
- Provide green building technologies that are oriented towards establishing low-energy building consumption and smart control systems that could adapt to users' needs and enhance building energy performance.

### Action and resistance on the ground

The call to decarbonise has led to a notable switch to low-carbon, recycled building materials amongst contractors in Singapore, to reduce the impact on the environment. Some have reduced the use of cement due to its large carbon footprint and adopted the use of recycled concrete or recycled timber in their respective projects.

Due to the rising popularity of timber for formworks, some countries are working on establishing legislations for the use of sustainable timber so as to cut down unnecessary deforestation and replanting.

The uptake of recycled materials, however, has been met with some resistance – stemming from concerns about the costs of investing in high-capital, low-carbon technology or methods to recover and recycle resources. The absence of reliable carbon footprint calculators also poses another challenge – as project clients are not able to know the level of carbon footprint reduction by using green concrete that comes with premium costs.

### Supporting contractors to align with SGBMP 2030

To support contractors in contributing to the targeted sustainability standards under the SGBMP 2030, SCAL has taken over the administration of the Green and Gracious Building Scheme (GGBS) from BCA since April 2021.

SCAL's goal is to raise the environmental consciousness and professionalism of builders through this scheme. Introduced by BCA in 2009, GGBS provides a benchmark of a builder's corporate social responsibility to the government and public during the construction of projects.

In addition, SCAL also aims to improve the image of builders and the built environment sector through GGBS.



# DEVELOPING BIM CAPABILITIES WITH SCAL'S CAREER CONVERSION PROGRAMME

With Building Information Modelling (BIM) identified as a central technology for bringing the construction industry forward, there is no time to waste for contractor firms to build a strong core of BIM capabilities.

Recognising this, many employers have tapped on the Career Conversion Programme (CCP) for BIM professionals administered by SCAL, to equip mid-career individuals with the necessary knowledge and skills to take on a new career in BIM. The CCP operates under the Place-and-Train mode whereby participating companies employ trainees before commencement of the programme.

The seven-month CCP includes facilitated classroom or online training by SCAL Academy and BCA Academy, and structured On-the-Job Training (OJT) by employers with the availability of course fee subsidy and salary support.

Winner Engineering Pte Ltd is one of many participating companies that appreciate the value of the programme. Mr Loi Wai Heng, Director of the company expressed that the CCP is the perfect platform for seeking candidates keen on trying out new technologies and meeting new challenges. He said, "With BIM fast becoming a de facto standard in Singapore, we are accelerating and growing our BIM capabilities by looking for candidates who are willing to learn BIM and join us to push for this change."

Kimly Construction Private Limited's HR Admin Manager Ms Regine Chua said, "SCAL has provided us with ample guidance in the enrolment of the programme. It was seamless to participate."

Another participating company pleased with the outcome is Kok Tong Construction Pte Ltd.

Mr Jerry Law Ming Hui, Digital Engineering Manager of the company said, "Compared to drafting, BIM is a high technical competency job which requires more intensive knowledge and practical skills to achieve mastery. Through the CCP programme, we have managed to secure two locals to lead our digitalisation effort."

Current employers on board the CCP are also upbeat about the programme's potential.

Ms Clarus Chong, Human Resource, NatSteel Holdings Pte Ltd said, "We expect to see our employees adopting this skill and putting it into practice in the workplace to raise our productivity and provide better business solutions to our customers. We are sending our first batch of employees for this programme and if it proves to be successful, we hope to send more employees for this programme."

Mr Loi added, "We are looking to recruit more employees with the mindset of doing something new. Together with our current experienced BIM team, they can further push the boundaries of innovation in BIM. This will form the foundation for a new BIM culture to flourish in the company and help us raise to new heights."



Join these employers in enjoying the benefits offered by CCP-BIM. Register today.

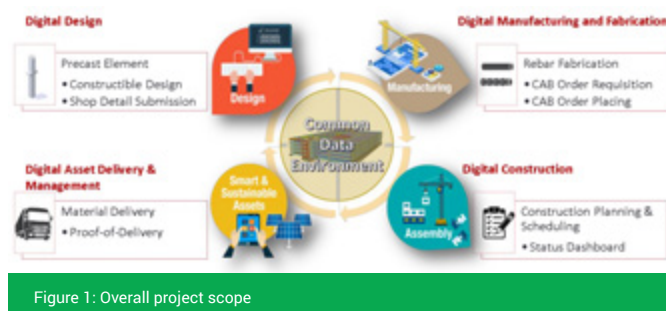




# INTEGRATED DIGITAL DELIVERY OF STRUCTURAL COMPONENTS

Traditional construction workflows typically suffer from challenges such as low productivity, time delays, and cost overruns. Among the reasons for such inefficiencies are the fragmented nature of the project, ineffective communication amongst teams, and inefficient paper-based collaboration and exchanging of project data. This traditional silo approach critically affects project outcomes. The introduction of Building Information Modelling (BIM) has helped to resolve some of these issues, but there is still room for improvement on vertical integration.

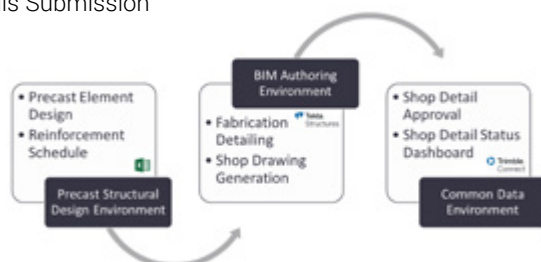
To effectively integrate workflow for all project parties in the early design stage, Trimble took up a research and development project initiated by BCA on the integrated Digital Delivery of Structural Components from 1st April 2019 to 31st March 2020. The project focused on the workflow integration of the various project stages and a common data environment (CDE) is employed for workflow integration where it is focused on four areas (Figure 1).



## Common Data Environment (CDE)

Trimble Connect, a cloud-based collaboration platform, is the CDE platform in this project to single source of truth, information transparency and data accuracy amongst all project teams. OpenBIM was adopted to allow a free flow of information across the project stages. The key benefit of using openBIM is that it is vendor-neutral and widely usable with any open standards BIM authoring tool, allowing seamless integration of the project workflow into the CDE platform.

Digital Design – Constructible Structural Design and Shop Details Submission



The project aims to bridge the design gap between precast design and detailing, where specific fabrication requirements are considered during the early design stage (see Figure 2). Design outputs contained in a spreadsheet is transferred into the BIM authoring environment, Tekla Structures. It will then

be transferred to the Shop Details Submission and Approval tool to help provide key functionalities throughout the process, including uploading of shop drawings, generating drawings lists, generating 3D models, as well as to allow checkers to inspect, comment, reject or approve shop drawings in CDE.

## Digital Fabrication – BIM Based Cut and Bend Order Processing

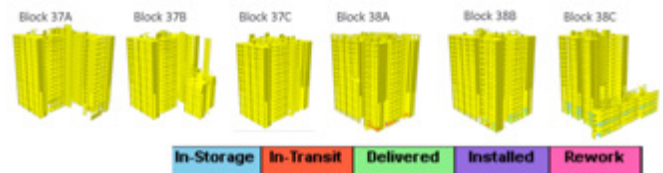
To model the rebar quickly and accurately in a high level of development, several detailing components/libraries were developed utilising Tekla Structures. These components enabled quick rebar modelling in Tekla Structures, with rebar data subsequently extracted from the BIM model for ordering processing.

## Digital Construction – Construction Status Dashboard

To improve traceability and visibility of construction activity status in real-time, a dashboard was developed to provide such visibility. Each precast element is colour-coded and given a unique ID tagged with a barcode. This allows easy identification in the production yard or on-site for real-time updates which will be reflected in its respective construction stages.

## Digital Asset Delivery – Material Proof-of-Delivery

The final focus of this project was to provide a digital means of proof of delivery on-site, with the aim to establish a digital delivery order once a precast element is delivered and received on-site. The same pilot project that was used for the construction status dashboard was used for this. Figure 3 shows the project status as of 28th October 2019.



## Observations

This research and development project aligned with the goal of pushing for a better-integrated project workflow in the built environment in Singapore. Among the novel approaches employed were the openBIM approach to project integration based on a CDE platform; a BIM-based construction dashboard that provides accurate, transparent, and up-to-date information from a single central source; and combining precast design, fabrication detailing and shop detail approval within a single workflow.

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# RESILIENCE AND GROWTH IN THE CONSTRUCTION INDUSTRY

The Contractor invited several of our members to share their biggest challenges brought about by the pandemic, key lessons learned in 2021 and their plans for the year ahead.

## 1. What do you think were some of the biggest challenges faced by your company or across this industry during the pandemic?

**Patrick Lin, Head of Sales for Energy and Industry:** The nature of our work is highly physical and largely on-site, and we have to learn to cope with an extended period of labour crunch, inflation of raw material costs and unpredictable supply chain disruptions.

**Raymond Ng, Executive Director, Hong Aik Engineering:** The shortage of workers is the biggest issue. Our workers play a very big part of construction – without them, we can't take on many new jobs.

**Kenneth Loo, Executive Director, Straits Construction:** *Other major factors that affected our supply chain in 2021 were the strict border closure from Malaysia and subsequently the energy crisis in China. At one point, even if some of our job sites have workers, we lacked the materials. Because they work in tandem, neither can move the construction work forward without the other.*

## 2. How do you cope with these developments? Is your company doing anything differently now as compared to pre-COVID-19 times?

**Tan Man Ee, Chief Operating Officer, Natsteel Holdings Pte Ltd:** Throughout this period, we have been investing in automation and technologies to significantly improve supply chain flexibility and manpower productivity. We are continuing to look at ways to reduce our reliance on foreign workers such as by upskilling our current employees, deploying integrated digital delivery (IDD) and Building Information Modelling (BIM) processes across the whole construction value chain, and also attracting young local talents to join us, to ensure long-term business sustainability.

**Jacob Wong, Kwan Yong Construction:** *Last year, there was a lockdown in Malaysia and as a result, a lot of precast components were not able to enter Singapore, bringing many projects to a halt. We decided that the best way was to adapt and improvise on some construction methods. For some of our projects, we also converted a lot of standard construction processes into precast technology. This has reduced our dependency on manpower and also accelerated the progress of our ongoing projects.*

**Patrick:** Since there's a limited supply and higher cost, the only way we can go is to optimise whatever we have or are given. For example, instead of doing trial-and-error onsite, we simulate the design and fabricate an off-site analysis using relevant software. In this way, we can be better informed on how to mitigate risks and time-delaying processes and implement them quickly.

**Kenneth:** A lot of meetings with our consultants now take place virtually. I think it's become quite common but having said that, we are still a brick and mortar industry – it's quite difficult to build a house entirely over Zoom. The physical work still has to take place onsite. Many of us are currently calibrating between these two domains,





deciding how much we can shift things virtually.

### 3. What factors do you think will remain?

**Raymond:** I think safe distancing measures will remain for a long time as we cope and live with the endemic, so adopting digital processes along the way will be useful.

**Jacob:** Even before COVID-19, we had begun our digital transformation. However, when the pandemic hit, it sped things up and we had to maximise all our resources from everywhere to continue upgrading our processes. For example, in programme planning, we use BIM to get a better overview and various stages of the project. This will remain useful to us even in the long term.

**Man Ee:** *We are likely to continue having a high dependence on foreign labour, and as long as borders are not operating at full capacity, we will still have to cope with rising manpower costs and a volatile supply chain.*

### 4. Looking at the challenges ahead, is the company prepared for a 'new normal' in 2022?

**Jacob:** Improving on the coordination process has helped our company. If the coordination is not well-implemented, it will often result in a lot of work and time loss. To help boost this aspect, we have been adopting new digitalisation tools for productivity.

**Man Ee:** A vital trait to improve our operations for 2022 and beyond is agility. After two years, we have become better equipped to anticipate and respond to our ever-changing business environment and operational needs as new variants and other disruptions will continue to loom over us indefinitely. We will also look at means to improve employees' morale and knowledge during this period of ambiguity as we believe this can bring the company closer together and be better prepared for the storms ahead.

**Patrick:** We are using this challenging time to fine-tune our business strategy so that we can be more adjusted to the current climate and revisit some of our existing business opportunities. Most importantly, we also want to ensure that everybody is mentally healthy. Many of them could be working from home for a very long period of time, facing a lot of uncertainty or ups and downs. So as a company, we also want to ensure that all our staff are healthy, resilient and able to embrace more changes. This requires a lot of constant communication and engagement with our employees. *We want them to know that we are here to help and that they are not alone.*

### 5. Are there any other developments or trends you hope to see in the industry?

**Raymond:** The main priority now is to find ways to improve our worker count. An increase in the number of entry permits issued will be very helpful for everyone.

**Patrick:** I feel that more companies, from big to medium to small-sized contractors and even our customers have become more receptive to adopt digital tools to optimise productivity. At

this juncture with limitations on so many things, companies may see more advantages for them to embrace these changes, to move to the next phase of growth for the construction industry.

**Jacob:** *So far, the government has helped us with subsidies to upskill our workers and enable them learn more IT skills. I think it will be helpful to take this a step further, such as providing financial subsidies to encourage contractors to acquire more machinery and invest in innovative technology.*

**Man Ee:** Upskilling our workforce along with job redesigning will be key to attracting locals to join our industry. Besides automation and digitalisation tools, *we are hoping to see higher degrees of modularisation and standardisation to be implemented in the coming years. By doing so, lead time for design, production and installation would be shorter for all stakeholders.*

**Kenneth:** While introducing some manufacturing processes locally is a way to improve our supply chain resilience, Singapore may still face limitations due to our existing infrastructure and land size. Another possibility is to look at acquiring our materials much earlier on and keeping them in storage, so that there is a buffer for any future disruptions, albeit at a higher cost. *Perhaps we may see such shifts in project management timelines.*

### 6. What do you think is a positive takeaway from these tough times?

**Man Ee:** I think the amount of cohesiveness, understanding and support displayed by the authorities, contractors and other key stakeholders have been very encouraging. One of the lessons learned is that collaboration in the construction value chain is critical in forging a strong built environment industry.

**Kenneth:** All of us are facing the same challenges, and I think crises do bring people closer together. Certain issues affecting our industry that were previously not open for discussion have been put forth now. There is strength in unity.

**Patrick:** As an industry, we have kind of co-created the initial momentum to spur on the discussion on productivity. We are seeing it grow from strength to strength, taking us to the next steps in 2022 and beyond. At the end of the day, a pandemic disruption like this one is something that we cannot control. We just have to adapt ourselves to these external factors, mitigate the challenges and look at the opportunities that come our way. This topic is still very dynamic right now, but at least that's some light at the end of the tunnel.



# COFFEE BREAK CONVERSATIONS: BRINGING CONSTRUCTION TO THE NEXT FRONTIER

At the end of a tough year for the construction industry, The Contractor spoke to **Mr James Yuen, Chairman of the SCAL Productivity and Technology Sub-Committee** and **Mr Raymond Chan, Chairman of the Digitalisation Sub-Committee**, to find out what the biggest challenges were in 2021 and what can we expect for the industry in 2022.

## 1. What do you think has been the biggest challenge faced by our industry in 2021?

**Mr. James Yuen:** In many ways, 2021 was a subtler continuation of 2020, with the shadow of the pandemic and its variants casting over the construction industry heavily. The Delta variant made vaccine booster shots necessary as the efficacy of vaccines has been proven to wane over time. At the end of 2021, the Omicron variant of the virus has emerged, throwing much uncertainty over the re-opening of the stabilisation phase in Singapore. The predominant and overriding concern amongst companies remains as it has through 2020 and 2021: when will the much needed Non-Traditional Sourced (NTS) workers, who form the bulk of migrant construction workers here, be able to transit from this juncture and augment the severely depleted construction workforce here?

**Mr. Raymond Chan:** As COVID-19 manifests itself with its variants in 2021, the industry continues to face many challenges especially in the aspect of manpower crunch.

## 2. How did the industry react/overcome to the changes?

**James:** One of the most progressive changes rolled out in the industry is the introduction of digitalisation to work processes. Digitalisation has so far been positively impacting the environment, with fewer physical documents being circulated in the traditional workplace. Electronic documents, signatures and payment systems have also rapidly become prevalent methods of transactions. This is also in line with more companies embracing work from home (WFH).

For the construction sector particularly, remote site supervision will likely take hold as 5G bandwidths become more widely available over the next year or two. Construction companies are adopting digitalisation to offset the multiple challenges brought about by the pandemic. Here are some examples:

- Digitalisation have become essential in the face of dwindling availability of workers, by bringing in contactless methods to ensure optimal safe distancing measures.
- Digital tools have also been adopted for more efficient close



contact identification. The rapid adoption of TraceTogether, SafeEntry, and zoning of worksites have greatly improved safe management measures, minimising chances of transmission clusters forming onsite.

- Disruptive new technologies have been emerging and rapidly developing. Building Information Modelling (BIM), digital coordination, design-development collaboration using Common Data Environment (CDE) tools are constantly improving and being utilised across many worksites.

### 3. What is your key takeaway for 2021?

**James:** There is a strong push towards finding more sustainable solutions for the construction industry this year as a result of digitalisation. Working from home, reduced commuting, contactless work processes, digital meetings, collaborations, and documentation – these are all good outcomes for the environment and climate.

**Raymond:** The pandemic is changing the way we work, and we need to learn to embrace this new style of working. The pandemic has spurred the realisation that we need to leverage on technology and digital solutions to replace the traditional method of working which can be labour-intensive.

### 4. What do you look forward to discussing in 2022?

**James:** Some of the new technologies we can see emerging are electrification of the construction site, sustainable technology solutions and sourcing, and an increase in digital remote supervision whether at DfMA factories or at project sites.

With the widespread introduction of technology, we should offer avenues for our workers to learn and adapt to these new tools. If everyone collectively embraces digitalisation, we can greatly upgrade the construction industry ecosystem into an innovative and revolutionary community.

### 5. What can the members look forward to at SCAL?

**James:** SCAL has launched a members' portal with a resource library made available for all member companies, to aid those who are looking for digital solutions and construction innovation methods.

We will also be helping member companies connect with industry experts in critical technology areas to share their experience and gain new skills through seminars and webinars. By helping member companies collaborate through such platforms, we can tap on complementary capabilities of like-minded construction firms and improve as an industry.

**Raymond:** From our observations of our member companies and peers in the construction industry, we see digitalisation can be daunting to many companies. Currently, there is a plethora of digital solutions in the market for our industry, and the list will only continue to expand. Some bigger companies may have a larger capacity to support digitalisation whereas smaller contractors may not have the right pool of talents or budget to explore and fully reap the benefits of digitalisation yet.

With different companies having to fulfil different demands and having different levels of infrastructure, it is important for us to note that each company has its own development curve in digitalisation.

SCAL is taking steps to support the digitalisation journey in this industry by providing different platforms for them to stay connected and engaged to learn more about the solutions available in the market. Some of these include regular webinars, skills training, and workshops, and even networking sessions with solution providers or between member companies to help cater to each company's needs and digitalisation efforts.



**Mr James Yuen**

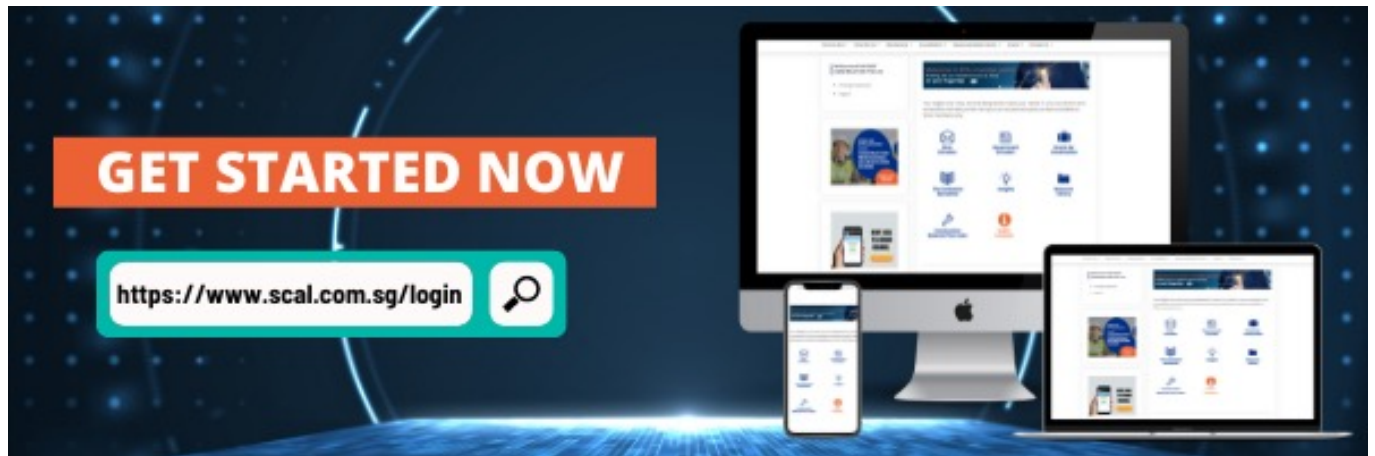
Chairman of the SCAL Productivity and Technology Sub-Committee



**Mr Raymond Chan**

Chairman of the Digitalisation Sub-Committee

# NEW E-FEATURES AT SCAL



As part of our continuous efforts to make it simpler and faster for members to access our services and resources, SCAL is pleased to launch a brand new portal exclusively for our members.

Now, from anywhere and at any time, SCAL members can:

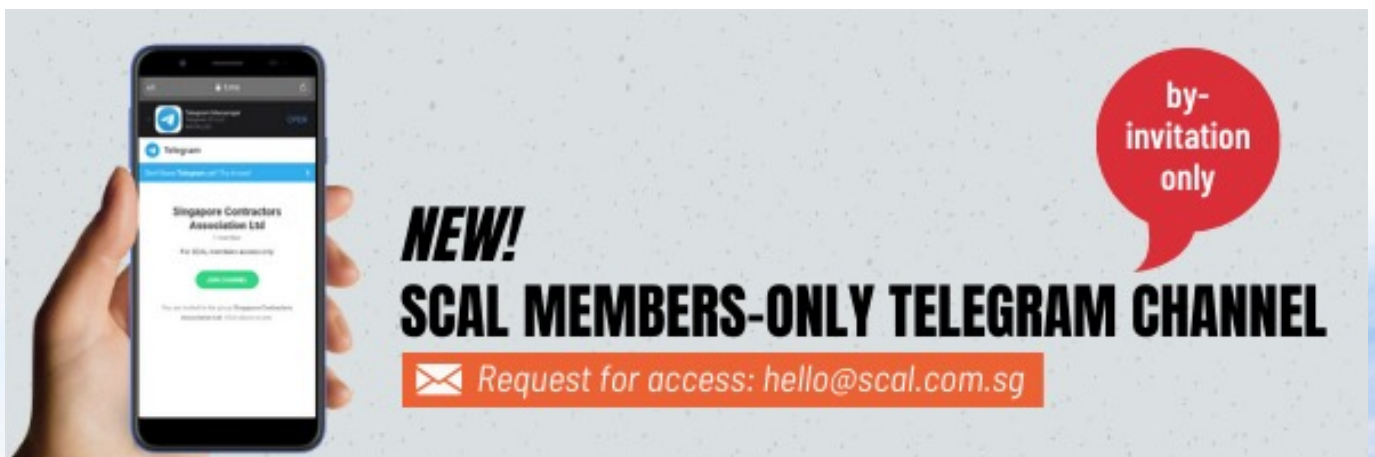
- Manage your membership account (for authorised representatives only)
- Access a members-only resource centre that presents useful information such as SCAL circulars
- Discover first-hand the latest members-only events,

workshops, courses and webinars and get first dibs on other industry events

- Acquire useful contacts across SCAL and its subsidiaries

Take advantage of this one-stop destination to enjoy the benefits of your SCAL membership. Continue to watch this space as we bring you more features and services.

For more information about the portal or technical assistance, please email Elaine Lee at [elaine@scal.com.sg](mailto:elaine@scal.com.sg).





# SCAL ACADEMY UPDATES

## HR Masterclass: Workforce Transformation Journey

As the construction industry continues to transform, issues related to its workforce have become increasingly complex.

Seeking to put HR professionals in better positions to address common workforce challenges and create long-term solutions, SCAL Academy organised the Workforce Transformation Journey Masterclass on 27 August 2021 and 30 September 2021.

Supported by Building and Construction Authority (BCA) and Workforce Singapore (WSG), the two-part masterclass focused on the themes of “Relooking at your current HR practices and align to the future workforce needs” and “Driving the future of HR by relooking at workforce transformation”. Facilitated by Ernst & Young Advisory, the sessions saw 45 HR professionals in attendance.

The speakers covered a wide range of topics including top human capital challenges, initiatives and approaches to address workforce transformation challenges, talent management, compensation and benefits, job-redesign and driving efficiency through the use of technology. The attendees walked away from the session with knowledge and strategies that could be applied effectively to their practice.

## Digitalisation and What's Next for the Construction Industry

The digitalisation revolution is well underway in the construction industry, making it critical for every player to embrace digital technologies to be successful now and in the future.

To help businesses gain good headway in this digital revolution, SCAL held a webinar on digitalisation solutions on 21 October 2021. With the support of SCAL Academy and the Chartered Institute of Building (CIOB), SCAL attracted 90 local and international business owners and construction practitioners to attend.

Ms Vicki Reynolds from i3PT, UK offered her insights on sustainability in digitalisation. Mr Robert Neuabuer from RIB SAA, Vienna shed light on the use of integrated 5D Building Information Modelling (BIM) in prefabricated construction and its applications for the industry. Local speaker, Mr Eugene Seah from Surbana Technologies Pte Ltd, then discussed the company's experiences in adopting digitalisation in design and construction.



## Construction Safety Webinar on “Total Workplace Safety and Health (Total WSH)”

SCAL Academy, with the support of the Workplace Safety and Health Council (WSHC) and SCAL's WSH Sub-Committee, held the webinar on 2 December 2021. It was attended by over 100 business owners and safety practitioners.

The speakers reinforced the importance of health and safety in the workplace and shared ways for companies to tap on the guided services of the WSHC's Total WSH programme to start their journey.

The webinar also offered case studies showcasing processes, findings and limitations arising out of the unprecedented COVID-19 period and practical ways to overcome challenges with the help of technology.







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## WELCOMING NEW SCAL MEMBERS (SEP - DEC 2021)

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 CGW ENGINEERING PTE LTD  
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# UPCOMING COURSES AND WEBINARS FROM FEB TO APR 2022

## Manage Workplace Safety and Health in Construction Sites (Online and Physical)

**Period: Monthly | Duration: 4 days or 10 nights | Language: English**

This is a mandatory training course for individuals who are assigned to manage any construction project exceeding \$10 million in contract value. Recommended for project managers, project directors, construction managers, project engineers.

## Develop a Risk Management Implementation Plan (Online)

**Period: Weekly | Duration: 2 days**

Acquire the knowledge and skills to be a Risk Management Champion for the organisation in reducing risks at source by managing the risk management process at workplace and for recognition of bizSAFE Level 2 by Workplace Safety and Health Council.

## Workshop to Enhance the Safety of Crane Operation (Physical)

**Period: Monthly | Duration: 1 day | Language : English and Mandarin**

The objective of this workshop is to update crane operators with the latest legal requirements as well as to provide them a platform to discuss safe lifting procedures and case studies which identify causes of crane accidents.

## Mandarin Webinar - Mediation for Construction Industry (Online)

**[网络研讨会] 调解建筑纠纷**

**Date: 8 Feb 2022 | Time: 2.00pm – 5.00pm**

建筑纠纷的各方当事人，在当前项目的利益相关者之间的合作中会遭遇损失，最可怕的是令人窒息的现金流，有时还会失去与其他争议方未来的商业合作机会。这些争议方在诉诸于通过调解的辅助谈判时，面临着不知道什么是能够达成适合他们的解决办法的诀窍。本次网络研讨会旨在让与会者了解调解的过程，带领他们了解如何通过调解过程，解决纠纷。此外，将向与会者分享纠纷的摘要，以及通过调解解决争端的考虑和理由。与会者能够领会从准备、参与以及通过调解达成和解的推动中所期待的结果；如果没有达成和解，争议双方也会通过调解缩小双方的分歧。

## Introduction to Integrated Digital Delivery (IDD) (Online)

**Date: 8 Mar 2022 | Time: 2.00pm – 5.00pm**

This webinar provides an insight as to how building professionals and their supply chain partners can engage and collaborate in the Integrated Digital Delivery (IDD) framework. It will highlight common methodologies, collaborations and the use of technologies in 7D BIM and VDC processes to demonstrate the benefits and challenges for adopting IDD. The webinar aims for trainee to have good knowledge and understanding of the IDD framework and implementation requirements in IDD projects.

## Safe Work with Precast Concrete (Online)

**Date: 15 Mar 2022 | Time: 1.00pm – 5.00pm**

The webinar aims to give the participants an opportunity to learn and understand the safety in precast concrete construction in terms of precast concrete production and installation to prevent accidents and limit property damage and on-time completion of project.

## Manage Demolition of Buildings and Structures (Online)

**Date: 28 Apr 2022 | Time: 9.00am – 5.00pm**

The webinar aims to give the participants an opportunity to learn and understand the key aspects in managing demolition of buildings and structures through careful planning, scheduling and controlling of demolition work.

To enrol or view full list of courses by SCAL Academy, please visit [www.scal-academy.com.sg](http://www.scal-academy.com.sg) or email us at [enquiry@scal-academy.com.sg](mailto:enquiry@scal-academy.com.sg).







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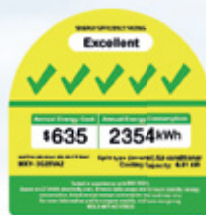
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