



THE SINGAPORE CONTRACTORS ASSOCIATION LTD  
*Building Our Nation Together*

Jul - Sep 2021

# THE CONTRACTOR

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## COVER STORY

Easing Singapore's construction industry  
out of its manpower blues

Nuturing future leaders in construction  
industry

Career Conversion Programme (CCP) for  
Building Information Modelling (BIM)  
professionals

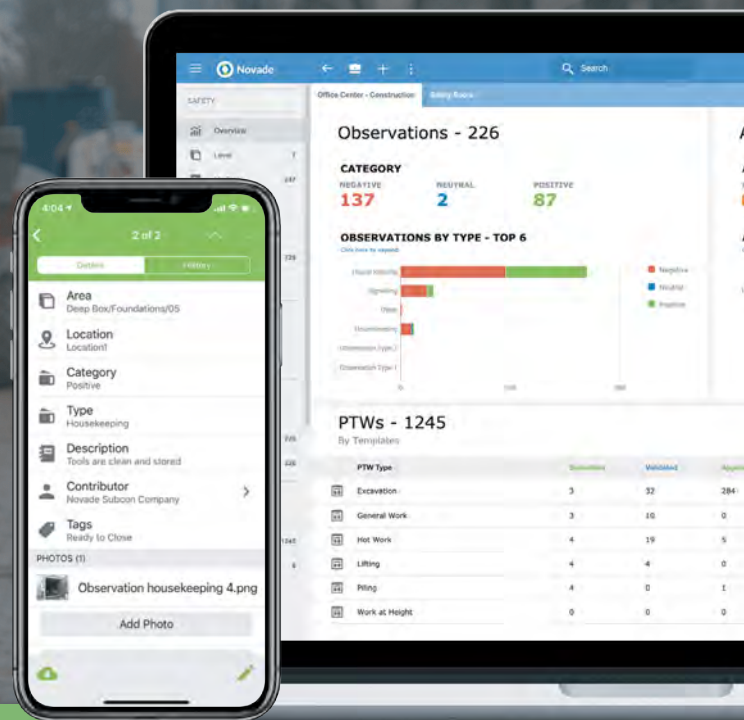




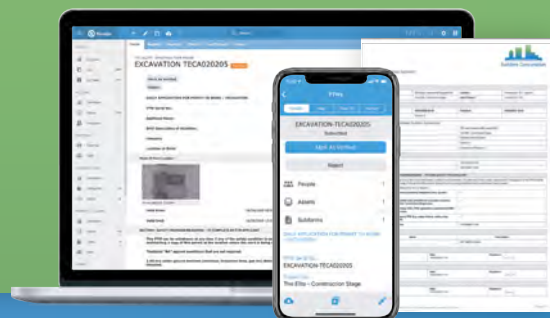


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## Contents

05

President's message

06 | Cover Story

Easing Singapore's construction industry out of its manpower blues

08 | Industry Developments

SCAL Productivity & Innovation Awards (PIA) 2021 Winners' project showcase

- **Gold Winner** – Welltech Construction Pte Ltd on "Smart digital control for PPVC installation"
- **Silver Winner** – Santarli Construction Pte Ltd on "Innovative short PVD method which enhances the productivity and safety of working on slurry clay"
- **Bronze Winner** – Kwan Yong Construction Pte Ltd on "Integrated footing for 12m hoarding"

12 | Industry Developments

SCAL Workplace Safety & Health Awards for SLOTS 2021

13 | Industry Developments

New Construction Safety Audit Scoring System (ConSASS) checklist 2020

16 | Perspectives

Nurturing future leaders in construction

18 | Perspectives

Automating in high-rise worksites to reduce falls from height (FFH) and manpower costs

19 | SCAL Updates

Career Conversion Programme (CCP) for Building Information Modelling (BIM) professionals

22 | SCAL Updates

SCAL accreditation scheme updates

24 | SCAL Members

Welcoming new SCAL members (Jun – Aug 2021)

26 | SCAL Academy

Upcoming courses and webinars for Oct to Dec 2021

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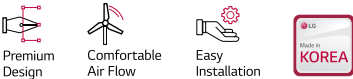
The Contractor | 3



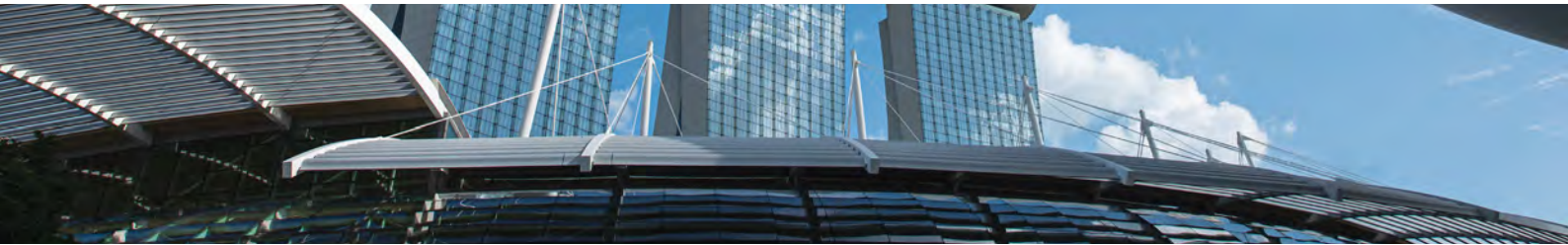


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## PRESIDENT'S MESSAGE



Ng Yek Meng  
President  
The Singapore Contractors  
Association Ltd

***“SCAL, together with some private industry players, successfully brought in workers through the pilot “quarantine at source country” program from India and Bangladesh. This program will be scaled up to bring in more workers into Singapore in the coming months. ”***

Welcome everyone to the Q3 2021 newsletter. We hope that everyone is well and safe in these difficult times. The construction landscape has been changing constantly for the past 22 months in response to the fast-evolving pandemic.

The industry will continue to face challenges on many fronts, with the most critical issues revolving around manpower shortages and the high cost of materials.

On the issue of manpower shortages, SCAL has called for a calibrated opening of borders, to allow more workers to return to Singapore.

SCAL, together with some private industry players, successfully brought in workers through the pilot “quarantine at source country” program from India and Bangladesh. This program will be scaled up to bring in more workers into Singapore in the coming months.

The SCAL Job portal - SCMx was assigned by MOM to administer the Workers’ Retention Scheme to facilitate the retention of cancelled work permit holders who wish to remain in Singapore. Enrolment into this programme is subject to migrant workers meeting certain stipulated criteria. The scheme aims to help displaced workers find new employers with reasonable market-based salary to prevent artificial increases due to high demand.

The recent amendments to PSSCOC were the result of a proposal by a work group which was co-chaired by SCAL. The work group proposed a more equitable share of risks for all the stakeholders during the pandemic.

As Singapore moves toward the endemic phase, SCAL will continue to focus on our long-term goals of developing our industry.

SCAL has recently rolled out the Construction Professional Accreditation Scheme (CPAS) and the SCAL Accredited Builder Scheme (SABS). We would like to encourage all qualified construction professionals and companies to join these schemes and get accredited.

SCAL has also successfully organised the 2021 SCAL Productivity & Innovations Awards and SCAL WSH Awards for our member companies to recognise their outstanding efforts and innovations.

As we navigate through the pandemic, SCAL will work closely with the relevant authorities to put in appropriate measures to safeguard our workers without impeding the progress of our projects.

COVID-19 has exposed many weaknesses in our ecosystem. It has also taught us the need to transform and do things differently. We need to build a more resilient workforce and more robust supply chains to face future pandemics.

Ng Yek Meng  
President  
The Singapore Contractors  
Association Ltd





## EASING SINGAPORE'S CONSTRUCTION INDUSTRY OUT OF ITS MANPOWER BLUES

Since the start of the COVID-19 pandemic, the local construction industry has faced a growing manpower crisis. Full lock downs during the circuit breaker period, tightened border control measures and attrition issues have all contributed to this unprecedented labour crunch.

According to the Ministry of Manpower (MOM), the number of foreigners working in the construction sector, together with the marine and process sectors, was 311,000 as at December 2020 - a significant drop from 370,100 workers in December 2019.

As at May 2021, the construction sector saw an average net outflow of 1,800 work permit and S Pass holders monthly from March 2020 to April 2021<sup>1</sup>. A similar statistic shows that since the circuit breaker in April 2020, an average of 1,000 construction workers have left the country every week<sup>2</sup>. All these have added up to a total outflow, since the outbreak of the pandemic, to more than 55,000 workers as at August 2021<sup>3</sup>.

Apart from outflow, the inflow of migrant workers, especially from higher-risk countries, has also been greatly impacted, except for those needed for key strategic projects and infrastructural works.

### Growing pains - project delays and more

The acute shortage of manpower, along with requirements to segregate workers into teams in adherence to safe distancing measures, has severely weakened the ability of construction firms to complete projects on time. Delays could be seen in projects across sectors, from commercial and housing to healthcare and infrastructure.

For instance, the Housing and Development Board (HDB) revealed that it was facing the most severe manpower shortage,

of up to 24 per cent, since the start of the pandemic in July 2021. As a result, about half of its projects have to run on less than 80 per cent manpower and some of its Build-to-Order (BTO) projects actually have to be halted due to contractor companies running into financial problems<sup>4</sup>.

Immense pressure to finish projects on time despite the challenging situation has also led to unhealthy poaching of workers by some companies<sup>5</sup>. Some firms have actually offered almost double the salary for the limited and shrinking pool of workers<sup>6</sup>. According to SCAL, all these issues have caused rise in manpower costs of as high as 60 per cent<sup>7</sup>, further exacerbating the problems.

### SCAL's support to facilitate inflow and retain existing workers

Committed to easing the construction industry out of its current predicament, SCAL has been closely monitoring the situation on the ground and introduced initiatives tailored to address the problems.

SCAL has supported a pilot by MOM that aims to bring construction workers from India into Singapore via a tightened end-to-end process. Launched in July 2021, the pilot has been designed to be carried out on a small scale and in a calibrated manner to adequately manage the risks involved and validate the robustness of the process.

This programme focuses on on-boarding process of migrant workers from India with Singapore's on-arrival testing and stay-home notice (SHN) protocol. It emphasises on the overall well-being of the workers before they are permitted to start work.

The pilot has brought in a small number of workers from India - an important start to alleviate the manpower shortage from India, a key source of migrant construction workers for Singapore. Due to enhanced border restrictions, workers with recent travel history to India, among other higher-risk countries,

<sup>1</sup><https://www.channelnewsasia.com/singapore/construction-firms-manpower-shortage-covid-19-support-measures-1356411>

<sup>2,5,6</sup><https://www.straitstimes.com/business/companies-markets/construction-blues-manpower-shortage-exacerbated-by-barring-of-south>

<sup>3,4,7</sup><https://www.zaobao.com.sg/news/singapore/story20210828-1187243>

have not been allowed to enter Singapore, except for those needed in key strategic projects and infrastructural works.

Proven to be successful, SCAL is already working with relevant agencies to provide more quota to increase the inflow of workers in a safe and secure manner.

Apart from the above pilot, SCAL is working with MOM to jointly facilitate the retention of work permit holders (WPHs) in the construction sector to reduce the outflow of migrant workers who wish to remain in Singapore despite work permit cancellations.

Under the six-month Retention Scheme that took effect on 1 September 2021, WPHs whose previous employment have been terminated and are not heading back to their home country can explore opportunities to be hired by new employers, subject to successful job match (terms & conditions apply).

Administered jointly by the SCAL Construction Manpower Exchange (SCMX) and MOM, the scheme allows construction firms to access such WPHs by submitting a 'Request to Hire' form. Only construction companies are eligible to apply for this scheme, and allocation is on a first-come-first-served basis, limited to one worker request per company at any one time.

SCAL will continue to work with relevant agencies to increase the quota for incoming migrant workers, with the aim of helping the industry to address manpower needs and put project timelines back on track.

### I heard about the Retention Scheme. What is that?

The Retention Scheme is jointly administered by Singapore Contractors Association Limited (SCAL) and Ministry of Manpower (MOM) to retain experienced Work Permit holders in the construction sector. The trial run is from **1 Sep 2021 to 28 Feb 2022**.

**MINISTRY OF MANPOWER**

#### 1 Can I join this retention scheme?

You can join this scheme if you :

- Are a construction work permit holder, and
- Have work permit cancelled or not renewed by current employer, and
- Did not change employer more than once in the last 12 months\*

If you are eligible to join the scheme, SCAL will follow up with you. You don't need to fill up any application. If you do not wish to participate in this scheme, you may proceed to return to your home country as planned.

#### 2 What happens when I join the scheme?

If you are enrolled in this scheme, you

- Will be given 30-day Special Pass to stay in Singapore.
- Have 3 interview chances with new employer (including current employer), based on your skills and trade.
- Will have a new work permit applied for you by SCAL upon successful job match.

After your new work permit is approved, your new employer will fetch you from SCAL's dormitory and you can begin your new job.

Remember, when you join the scheme, you cannot seek direct employment through other employment agents or employers. Such applications will be rejected by MOM.

#### 3 Where do I stay after I join the scheme? Do I get any salary?

You will stay at a designated dormitory and be provided with 3 meals a day by SCAL. You will not be paid any salary during the 30-day Special Pass stay as you are not working.

#### 4 What happens if I cannot find a new employer after the 3 interviews?

SCAL will pay for your air ticket and send you home. This can happen during or at the end of the 30-day Special Pass stay.

#### I have more questions on the scheme. Who can I call or talk to?

You can find out more from MOM Contact Centre @ 6438 5122 or speak to the MOM Forward Assurance and Support Team (FAST) officers in-charge of your dormitory.

\*Work permit holders who have worked for less than 6 months with their current employer or were brought in under the recent @ source SHN pilot programme are not eligible to join this scheme.

**“SCAL will continue to work with relevant agencies to increase the quota for incoming migrant workers, with the aim of helping the industry to address manpower needs and put project timelines back on track.”**



# SCAL PRODUCTIVITY & INNOVATION AWARDS (PIA) 2021 WINNERS' PROJECT SHOWCASE

Significantly increasing efficiency and safety while reducing time and costs – these achievements have landed three local firms top accolades at SCAL's Productivity & Innovation Awards (PIA) 2021.

Organised by SCAL for the fifth time, the awards applaud SCAL members who have made outstanding efforts in creating and using innovative solutions, with the aim of elevating productivity in the local construction industry. The awards were presented to the winners on 24 September 2021 at the SCAL Construction House.

***"We are pleased to receive the PIA Gold Award. We look forward to leveraging integrated Digital Delivery (IDD) to foster stronger collaboration, reduce abortive works to increase construction productivity and step up our team efforts to automate manpower-intensive construction processes through greater prefabrication and Design for Manufacturing & Assembly (DfMA) technologies."***

***- Welltech Construction, Gold Award Winner***



Gold Award Winner - Welltech Construction Pte Ltd



Silver Award Winner - Santarli Construction Pte Ltd



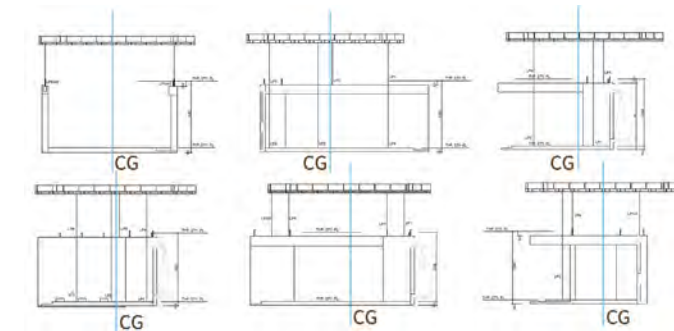
Bronze Award Winner - Kwan Yong Construction Pte Ltd

## Gold Award Winner: Welltech Construction Pte Ltd Smart Digital Control for PPVC Installation

This year's Gold Award has been presented to Welltech Construction Pte Ltd for their exemplary development and application of a smart digital control for Prefabricated Prefinished Volumetric Construction (PPVC) installation.

### A tilting problem

Difficulty in pinpointing the centre of gravity (CG) of PPVC modules had slowed down lifting activities for Welltech, making every installation extremely inefficient. It was a huge challenge to hook modules in the right position to keep them from tilting during the lifting process, as different modules have different CG points. The problem was made worse with an obstructing metal deck on each PPVC module that made alignment to the lifting frame challenging.



CG points vary from one module to another

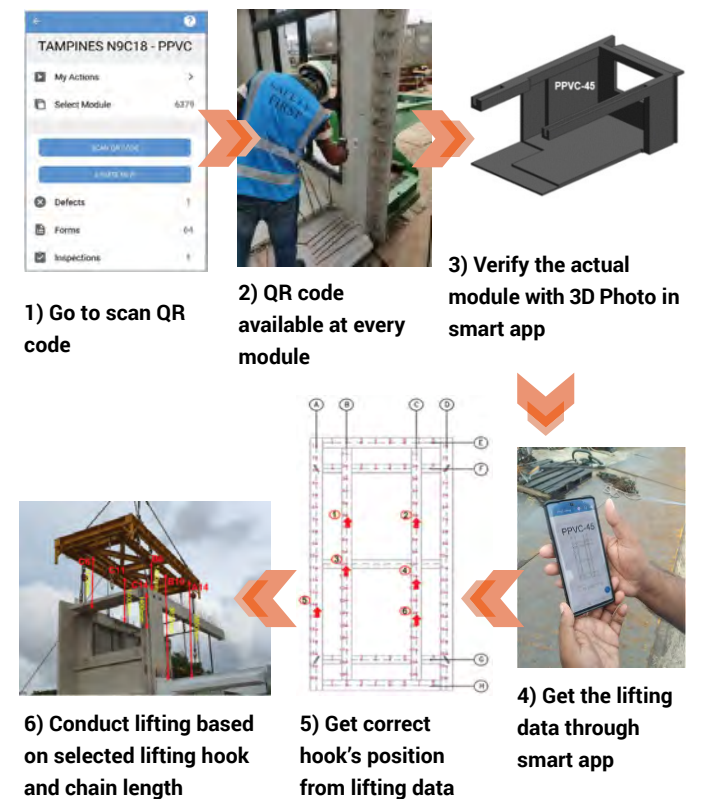


It was a challenge to lift a PPVC module without tilting it

### The Solution: Smart Digital Control for PPVC Installation

Determined to improve the situation, Welltech engaged a Professional Engineer to calculate the CG points of its range of PPVC modules; specify the length and placement point of chain block for each module; and mark and number every hole on the lifting frame. All these information, together with dimensions of each lifting component and other details, were then uploaded into a smart app.

With this app, before lifting of a module, the installation team can simply scan its QR code to acquire information such as the specific hook type, hook location and chain length. This takes the guess work out of lifting and brings about a precise and efficient lifting process.



### All-round benefits

Since adopting this solution, Welltech is able to reduce the installation time of each PPVC module from 150 minutes to 90 minutes; increase the number of modules installed per day from four to six; and complete 2.5 storeys instead of just 1.5 storeys a month for each block. This adds up to an average reduction of S\$1.5 million or 33.8% in costs, about 15,000 in man-hours and about four months in overall project duration.

In addition, this improved installation process has made it significantly safer for workers. The use of digital technology has also eliminated the need for supervisors, engineers and the lifting team to handle hardcopy drawings, thereby reducing risk of COVID-19 transmission. Finally, the efficiency of the process cut down emissions from the cranes, allowing Welltech to achieve its goal of making its processes environmentally-friendly.



Silver Award Winner: Santarli Construction Pte Ltd  
Innovative Short PVD Method which enhances the productivity and safety of working on slurry clay

Santarli Construction Pte Ltd has won the Silver Award for their innovative Short Prefabricated Vertical Drain (PVD) method that enhances the productivity and safety of working on slurry clay.

On unstable ground

Due to high costs and complexity of importing sand, the local built environment has turned to soft clay for infilling works at construction sites. However, the slurry nature of soft clay is insufficient in bearing machineries for subsequent sand-laying and soil improvement works.

Being a labour-intensive and highly manual process, the laying also presents problems in productivity, quality assurance and quality control. In addition, undulating ground levels, “quicksand” areas and leakages threaten the safety of workers.

The Solution: Short PVD installation

To address the limitations of the conventional method, the Santarli team has developed a method whereby Short PVDs are installed, followed by vacuum preloading, to strengthen the top layers of infilled soft clay.

The solution consolidates the top 4.5 metres of soft clay with 0.63 metre of thick sand. This fortified tier serves as a flat, stable working platform for machineries with adequate bearing capacity to support safe operations of the 57-tonne PVD machine.



Savings in cost and time

By reducing geotextile from three layers to one layer and capping thickness of sand at 0.63 m instead of 2.0 m, the method has helped Santarli achieve great cost savings. Its replacement of excavators with more efficient wheel loaders also removes the need for drivers to be too close to machines, thus eradicating sinking hazards.

Using this method, Santarli Construction has recorded 46% savings in total construction costs, 64% cost savings in materials and increase in productivity of almost 300%. Furthermore, this approach has also considerably eliminated worksite risks and improved occupational health and safety.

Looking ahead, with growing difficulty in accessing sand supply, this practical approach provides other projects in the market with a great reference for uplifting productivity and safety in Singapore's construction industry.

“Innovation is the process of turning a new concept into commercial success or widespread use. The innovation put up by Santarli, the success of the project to its completion with the cost and time savings speak for itself.”

Be inspired by the award winners!

Join us at the online webinar to hear from the winners as they showcase their winning project. Gain tips on how to increase productivity at the worksite. Registration begins soon. Indicate your interest to attend at [www.tinyurl.com/PIA2021toattend](http://www.tinyurl.com/PIA2021toattend).



Scan to register

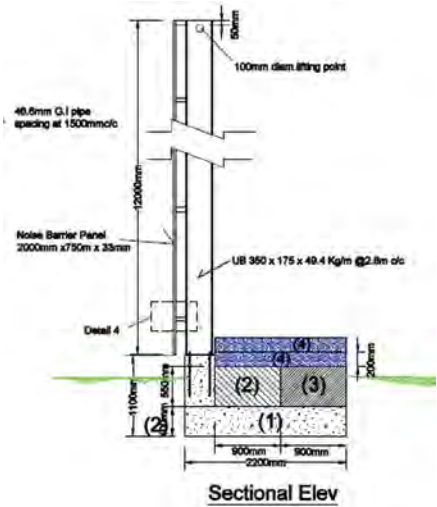
Bronze Award Winner: Kwan Yong Construction Pte Ltd  
Integrated Footing for 12m Hoarding

Kwan Yong Construction Pte Ltd clinched the Bronze Award for developing an integrated footing solution for 12-metre hoardings that brilliantly improves space usage, reduces construction noise and enhances worksite safety.

Wastage of valuable space

During preliminary site planning of the Kallang Whampoa C58 project, the Kwan Yong Construction team realised that mandatory requirements to erect 12-metre-high hoarding structures at the project boundary would result in ‘dead’ spaces that could not be used for any other purposes.

This was not ideal for a project with a long and narrow site layout as it would lead to the loss of precious access and storage space. In addition, onsite casting of strip footings involved a long, noisy process and removal of the footings at the completion of the project would also encompass loud demolition works that would disturb residents in nearby estates.



Assembling the precast structures to form the footing



Large footings that act as bases to 12-metre hoardings take away significant amount of usable space

Integrating various uses with the precast footing

After constructing the footing, the Kwan Yong Construction team continued to explore ways to use the space occupied by the footing to enhance safety and convenience. This included installation of a pedestrian path to provide workers with dedicated, sheltered access in and out of the construction site rather than sharing a path with vehicles; and fitting restrooms between the supporting I-beams.



Providing pedestrian access into the worksite

Turning unused into functional space

The team decided to embark on the development of a solution that focused on increasing usable space while reducing manpower and material wastage. The outcome is using individual precast components to form an integrated footing to replace the conventional reinforced concrete (RC) footing.

Precast components could be constructed using the same moulds, thereby reducing the amount of materials, time and manpower needed, while improving quality and consistency. Furthermore, the concrete, reinforcing bars and precast components could be reused at subsequent project sites. Overall noise pollution would also be lowered through the elimination of concreting and hacking works.

Installing the entire footing using precast construction methods has reduced labour and manpower costs. Standardisation of the construction process has also made duplication of parts easier.

Overall, this new design has reduced man-days by about seven times and manpower by about 2.7 times, while improving site productivity by about 250%.



# SCAL WORKPLACE SAFETY & HEALTH AWARDS FOR SLOTS 2021

The winners of the SCAL Workplace Safety & Health Awards for the Singapore List of Trade Subcontractors (SLOTS) have emerged!

The awards recognise sub-contractors that have harnessed workplace safety and health (WSH) management systems to achieve commendable WSH performance. It is a part of SCAL's goal to promote greater commitment in advocating and raising WSH practices and standards for the benefit of Singapore's construction industry.

This year, SCAL received 19 award submissions, and shortlisted companies were interviewed by a panel of independent judges. Key evaluation criteria include:

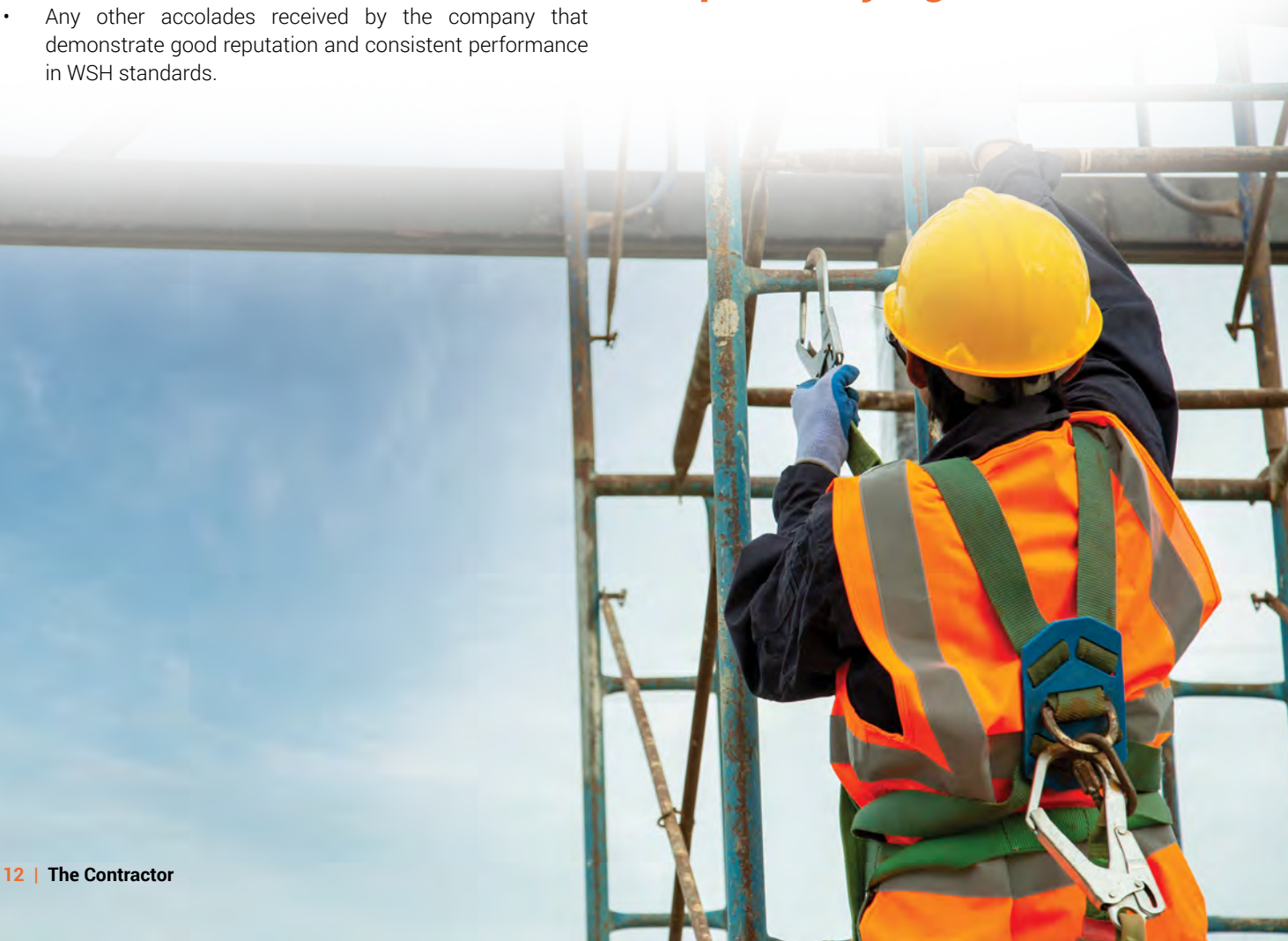
- Safety and health performance measured by the number of reportable accidents, non-compliance cases and demerit points filed with the Ministry of Manpower (MOM).
- The level of commitment in the area of WSH from the management taking into consideration the level of involvement by directors and senior managers, as well as the amount of training provided to the workforce, among other criteria.
- If the company has implemented any innovative solution, adopted any technology or made any achievements to improve WSH practices.
- Any other accolades received by the company that demonstrate good reputation and consistent performance in WSH standards.

The proud winners of the 2021 awards are:

- **Bachy Soletanche Singapore Pte Ltd**, a subsidiary of the world's foremost geotechnical specialist engineering contractor, Soletanche Bachy.
- **Wee Chwee Huat Scaffolding & Construction Pte Ltd**, a provider of quality scaffold services for the construction industry in Singapore since 1991.
- **Zhao Yang Geotechnic Pte Ltd**, a leading specialist provider of ground engineering solutions and construction for complex infrastructure projects.

We would like to offer our congratulations to these outstanding companies and thank all participating companies for their support.

***"This year, SCAL received 19 award submissions, and shortlisted companies were interviewed by a panel of independent judges."***



# NEW CONSTRUCTION SAFETY AUDIT SCORING SYSTEM (ConSASS) CHECKLIST 2020

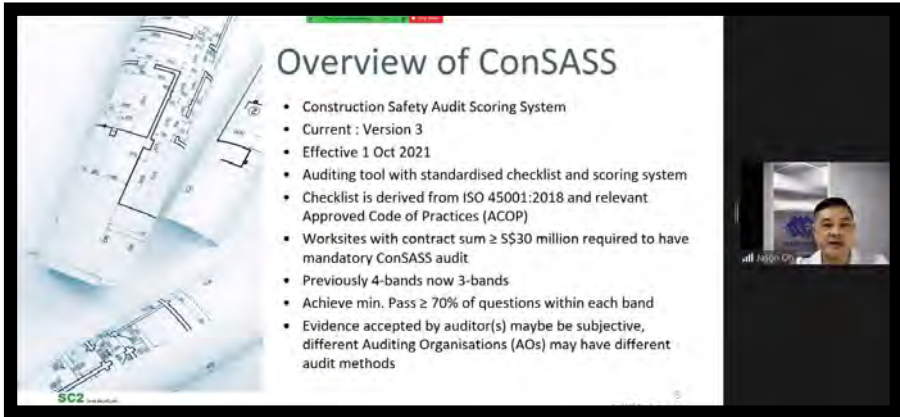
Published on 25 May 2021, the new ConSASS checklist 2020 is the latest version of an important tool designed to promote workplace health and safety (WSH) in Singapore.

The principles of the ConSASS audit remain the same where graduations to higher bands reflect the increasing maturity of the elements. Each band is still required to satisfy at least 70% of the questions within each band.

A summary of the key revisions to the ConSASS checklist is as follows:

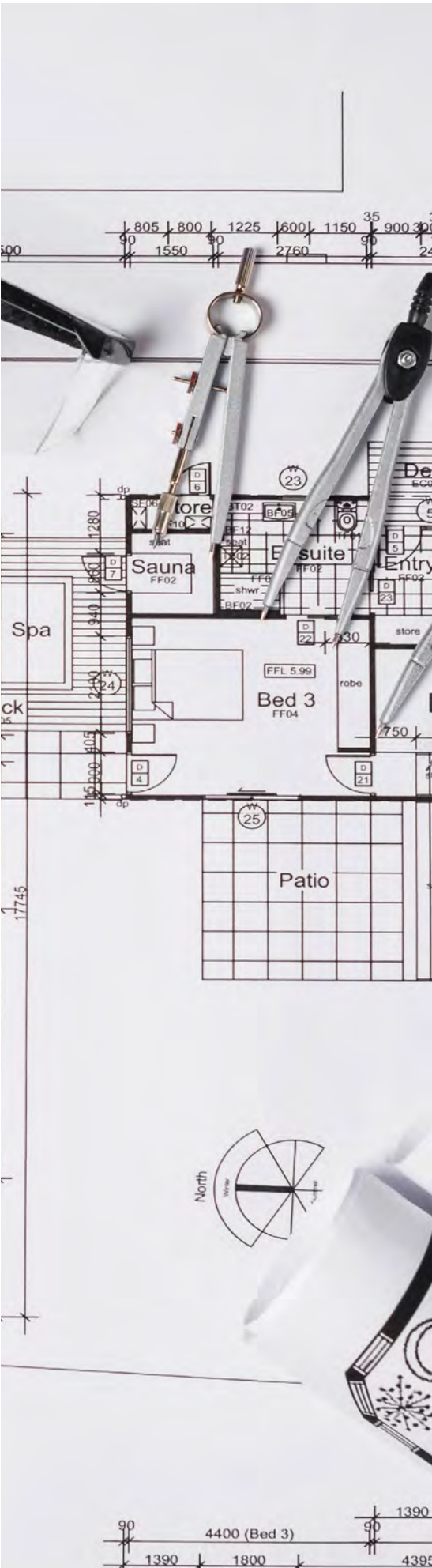
- Number of System Elements is increased from 17 to 20, in alignment with ISO 45001;
- Number of bands is decreased from 4 to 3, to place lesser focus on documentation checks;
- Number of questions is reduced from 348 to 204 (reduction of 41.1%);
- Added focus on the implementation of WSH practices, with percentage of questions on implementation increased from 37.9% to 50.9% of total questions; and
- Addition of new questions aligned to WSH 2028 recommendations (Ownership, Health and Technology), Design for Safety, Near Miss Reporting etc.

To familiarise the industry with this new checklist, along with the revised scorecard, interview sheets and user guide, ahead of its effective date on 1 October 2021, SCAL has conducted a series of trainings.



More than 180 WSH managers, Safety Managers, Environmental Control Officers and other personnel in charge of Safety and Health Management System (SHMS) attended the sessions. They learnt about key revisions to the checklist, transition timeline to the new tool and how to use the conversion matrix to change new 3-Band to 4-Band scorings.

For more information about ConSASS, visit <https://tinyurl.com/AboutConSASS>.





# LATERAL LOAD LAUNCHER

**HOISTING VEHICLE FOR  
HIGH FLOOR, ROOFED  
SPACE ACCESS**

M.O.M CERTIFIED FOR SINGAPORE WORKSITES

- high load & fast lifting
- 100% safety
- versatile & robust design
- for day & night operations
- up to 8-tons cargo
- value-added accessories



**Making light work  
of heavy lifting**

## HIGH LOAD, FAST LIFTING & 100% SAFETY

RAM Spreaders is the leading lifting equipment manufacturer for container ports worldwide. A half-century experience in heavy equipment design goes into the latest innovation for crane deployments. Saving massive costs for developers who now rely on traditional loading platforms, the Launcher will make operations much safer and faster for the lifting crew.

## AN IMPORTANT SPECIAL-OPS TOOL

Lifting crews have for decades struggled with rigid, low capacity structures to execute large-load transfers in and out of high floors. Often, they rely on risky rigging techniques or time-consuming double handling methods to move heavy loads such as chillers, generators, and transformers between roofed plant rooms on high floors and open ground accessible to trucks.

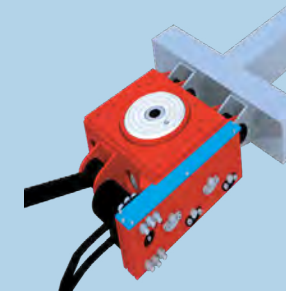
## HOW IT WORKS

The Launcher's electrically driven platform extends to accept cargo of up to 8-tons\* and retracts the load back to the CG for hoisting. A mobile or tower crane lifts the Launcher to the roofed target floor where on docking, the platform projects the cargo up to 3.4 metres into the plant room without the need to un-lash the load or insert skates under the load. The load is taken off the platform by chain block or skates, the crew working entirely from within the safety of the room throughout the operation.



CREW COORDINATION SYSTEM ▲  
WITH ONBOARD CAMERA

HIGH-LOAD HYDRAULIC  
CRAWLERS ▼



PRODUCT VIDEO

## TRANSPORTATION

The LLL8N (SWL 8-ton) fits perfectly onto a 20', 10-ton truck and separates into 2 halves for transportation in urban areas with height restrictions. This construction also allows for lifting of taller cargo.

## CONSTRUCTION & ACCESSORIES

The overall unit is made of top-grade steel hollow-section construction and designed to be robust yet easy to maneuver. Easy access ladders allow the ground crew to reach hoisting eyelets quickly and safely.

An onboard battery pack powers the hoisting alert & platform movement sirens, beacon lights and floodlights in night operations.

## POWER OPTIONS & VALUE-ADDED ACCESSORIES

The Launcher comes with 5-metre retracting cable reel quick connector to provide power for the telescoping platform.

Fully battery operated versions of the LLL8N are also available on order.

A state-of-the-art video communications and operations technology, the Crew-Coordination System is also available as an add-on order.

Other optional accessories include High-Load Hydraulic Crawlers and docking attachments for quick docking / undocking in multi-floor operations.



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## NURTURING FUTURE LEADERS IN CONSTRUCTION

As Singapore forges beyond the pandemic, the construction sector is in pressing need to strengthen its talent core to better tackle immediate challenges and capture emerging opportunities. Development of an advanced and integrated sector, as envisioned in the Construction Industry Transformation Map (ITM), requires the support of a skilled and competent workforce.

As the national association for contractors in Singapore, SCAL is committed to fostering the next generation of builders who could turn visions in the Construction ITM into reality. SCAL's approach focuses on knowledge sharing, career guidance, networking and job opportunities and mentorship for our young generation.

### Platform for identifying and cultivating young professionals

The **SCAL Young Leaders Programme** aims to develop young professionals in the construction industry to be the next generation of industry champions. Supported by leading industry firms, the programme acts as a platform for employers to identify and nominate talented young professionals.

Nomination criteria include age of 40 or below, good track record, experience with construction projects and passion for the industry.

To date, the programme has already taken in 23 construction professionals. As part of the programme's curriculum, the participants have been attached to SCAL's various sub-committees.

For more information on the SCAL Young Leaders Programme, visit <http://www.scal.com.sg/who-we-are/scal-young-leaders-programme>.

*"I hope that the construction industry will be able to find effective ways to use technology that can benefit both SMEs and large construction companies."*

**Mr Seah Kah Howe**  
Project Manager of  
Seah Kim Cheok Construction Co. (Pte) Ltd  
and SCAL Young Leader



*"I am excited to be part of SCAL's Young Leader programme. I believe innovative construction professionals equipped with the know-how to integrate the latest technologies available in the market into building processes, can make significant contributions to Singapore's construction industry."*

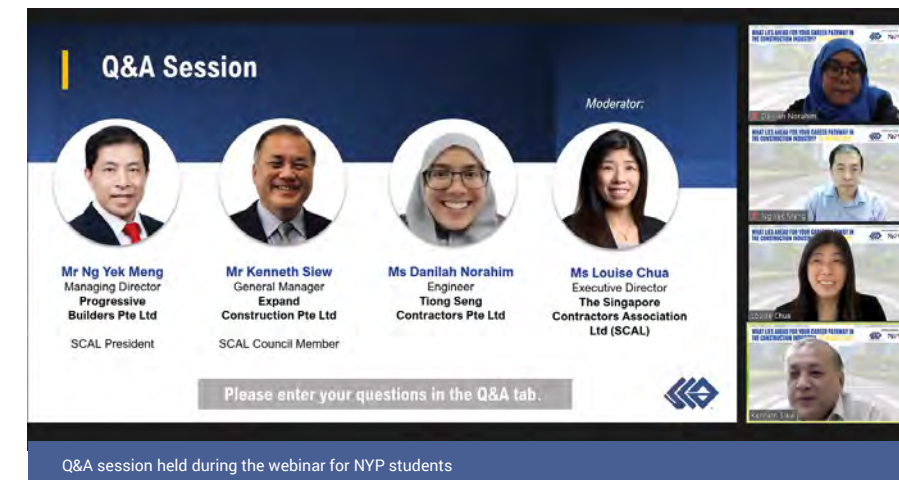
**Mr Chin Khee Hoo,**  
Engineer of Low Keng Huat (S) Ltd and  
SCAL Young Leader



## Student outreach programmes

As part of its student engagement programme, SCAL has held online webinars in collaboration with Nanyang Technological University (NTU) and Nanyang Polytechnic (NYP) for final year students in built environment courses.

The webinars, titled "What lies ahead for your career pathway in the construction industry" featured industry veterans from the SCAL council as well as a young professional from the SCAL Young Leaders programme. These speakers shared insights, challenges and opportunities available in the construction industry with more than 80 students. SCAL is pleased to welcome the inaugural batch of SCAL student members and look forward to their contributions.

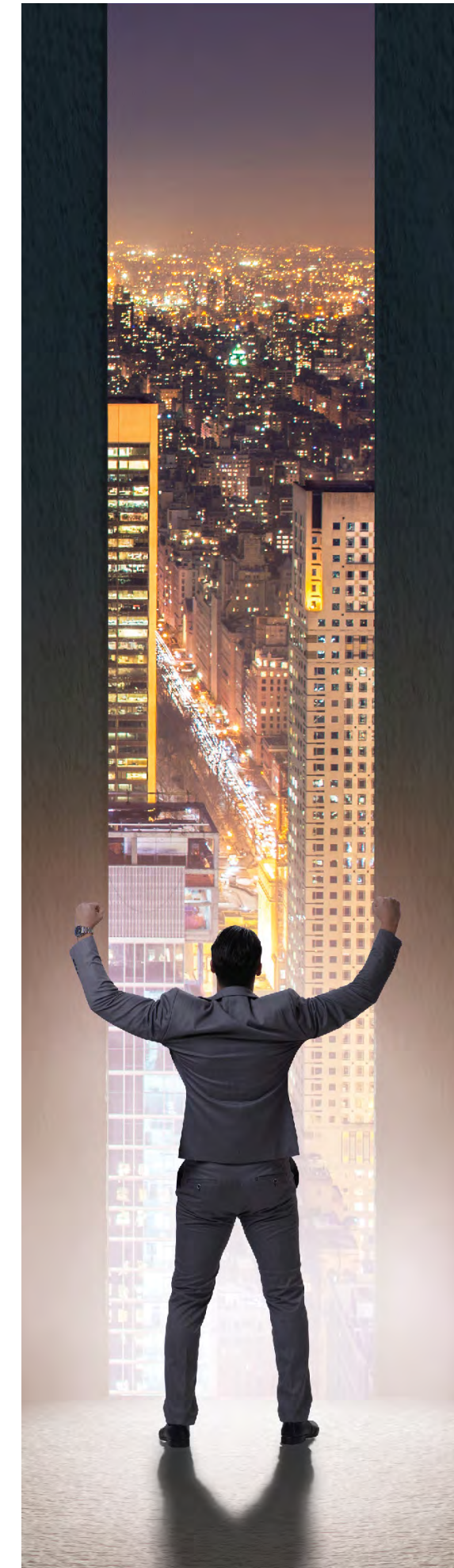


In addition, SCAL is currently working with other Institutes of Higher Learning (IHLs) to reach out to more students and prepare them for the exciting transition to a career in the built environment sector.

## SCAL participating actively in the iBuildSG Tripartite Committee

The iBuildSG Tripartite Committee is an initiative driven by the Building and Construction Authority (BCA). SCAL together with other agencies, Trade Associations & Chambers (TACs), Unions and IHLs are working together to develop plans and programmes for students (up to tertiary level), mid career entrants and in-service personnel. These programmes aim to attract more people to join the industry and to retain and continually develop the skills of in-service personnel, in order to meet the sector's immediate and longer term manpower and skills requirements.

*"In addition, SCAL is currently working with other Institutes of Higher Learning (IHLs) to reach out to more students and prepare them for the exciting transition to a career in the built environment sector."*





# AUTOMATING IN HIGH-RISE WORKSITES TO REDUCE FALLS FROM HEIGHT (FFH) AND MANPOWER COSTS

Simple automation of construction activities, while not in the class of 3D printed building parts, can still give immediate benefits in manpower cost savings and project speed in high-rise worksites. Projects in Singapore are getting higher and involve larger workforces, creating a lot of vertical movement within the site. The industry can consider far reaching investment in automation technology to improve the movement of people, material, and equipment in high-rise worksites at a time when acute manpower shortage has forced the industry to take a breather.

Adoption of automation beyond the deployment of better cranes, material hoists, loading platforms and gondolas also

benefits the high-rise worksite in reducing FFH incidents. FFH is of special significance in such projects as all personnel going to the higher floors are susceptible to the danger of FFH. Nearly always fatal, FFH not only deprives families of breadwinners but also deeply affect witnesses and colleagues. Technology and work redesign together can cut down FFH possibilities in two ways—

- reduce vertical traffic of personnel
- remove or reduce risky work situations that expose workers to the risk of FFH.

## Use of innovative machinery in lifting operations to remove risk of FFH incidents

The tools of high-rise lifting operations are presently limited to a platform and a crane of sufficient capacity. A crucial work segment consists of riggers coupling or uncoupling the load to / from the crane. Lifting crew normally use mobile lifting platforms to hoist large / heavy items and fixed cantilevered platforms for daily lifting of material and debris. In both cases riggers need to mount the platforms exposing them to infinite possibilities of mishap as they focus on handling loads while standing on extended temporary support. Mishaps not only result from worker inexperience, negligence, or fatigue. There is also ever-present danger from debris falling off higher floors, to riggers who stand exposed on the platform with little opportunity to react in time given the limited egress.

Automated equipment can feed the load into the floor for riggers to handle the load without having to mount platforms at all. Live feed of the operations via onboard cameras mounted on such equipment will also assist the crane operator to better manoeuvre the load during the hoisting process and allow stakeholders to observe the proceedings without having to access high floors.

## Use of remote supervision technology to reduce wasteful movement of personnel

Both the resistance to, and the importance of, implementing remote work supervision cannot be overstated. Traditional work culture holds close in-person supervision in high regard. In practice, multiple stakeholders' concern in work progress combined with statutory regulations lead to redundant supervision creating high vertical traffic and overcrowding

at critical points. Material hoists double up as passenger lifts in high-rise worksites. Besides reducing the possibility of FFH, establishing standards of remote supervision to reduce unnecessary people traffic also frees up space for movement of material and speeds up work progress. It is apparent that the use of drones in the construction industry is imminent. Experimenting with surveillance devices at fixed points can be a useful precursor and catalyst for the advent of drone technology in high-rise worksites. It is noteworthy that drones would feature as supervision instruments in container ports soon.

## Use of automation for standard tasks that require workers' prolonged exposure to FFH risks

Track mounted multi axis robots equipped with vision technology have been developed for some time now. Local and overseas concerns have already announced painting robots developed for interior precision painting. These can be adapted for painting the exterior of high-rise buildings, thus reducing work on gondolas to the much shorter time it takes to install tracks for the painting robots from the many hours now spent on gondolas by workers.

In normal times, implementing automation would be disruptive and costly. At present the construction industry is offered an unforeseen window of opportunity to put in place technology that can directly address manpower shortage faced by contractors. Indeed, these are merely the few applications that occur to the writer. The writer has some background experience in high-rise lifting operations and robotics design and is a Senior Manager for Business Development in new products at RAM SMAG Lifting Technologies Pte. Ltd.

Article contributed by RAM SMAG Lifting Technologies Pte Ltd

# CAREER CONVERSION PROGRAMME (CCP) FOR BUILDING INFORMATION MODELLING (BIM) PROFESSIONALS

The Career Conversion Programme (CCP) for BIM Professionals aims to equip mid-career individuals with the necessary knowledge and skills to take on a new career in the built environment industry.

Administered by the **Singapore Contractors Association Limited (SCAL)**, the CCP operates under the Place-and-Train mode in which the participating companies will employ the trainees before commencing the CCP. The seven-month CCP includes facilitated classroom / online training by SCAL Academy and BCA Academy, and structured On-the-Job Training (OJT) by the employers which comes with **course fee subsidy** and **salary support**.

## Target Audience

Mid-Career PMET entrant, graduated from full-time studies or completed National Service for at least 2 years, whichever is most recent and min Diploma in any discipline or Advanced Certificate / Higher NITEC with relevant work experience in construction sector. Not from a similar job function in BIM prior to joining this programme.

## Funding Support

Companies can tap on Government funding through **course fee subsidy** and **salary support** when training eligible PMETs under this CCP programme.

## Redeployment CCP for BIM Professionals

The programme also supports in-company redeployment\* to help companies undergoing business transformation, to reskill and redeploy affected employees.

\*Interested companies can contact us for more information.



## Contact us

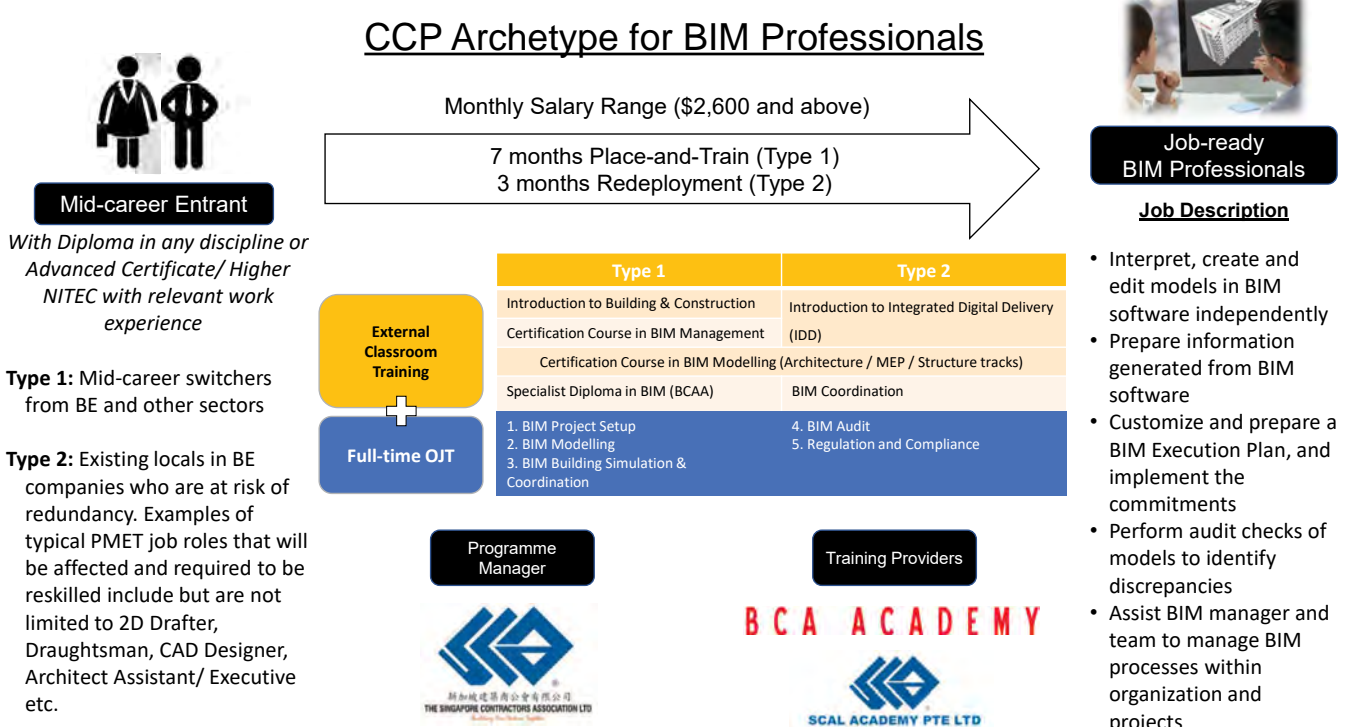
**Ms Tan Wei Xuan**  
Tel: 67939020  
Email:  
[weixuan@scal-academy.com.sg](mailto:weixuan@scal-academy.com.sg)



## Registration

### Register as a CCP-BIM Employer today!

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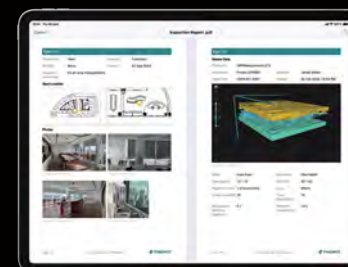
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# SCAL ACCREDITATION SCHEME UPDATES

To ensure that its members are aware about accreditation opportunities and changes to assessment criteria of various schemes and initiatives, SCAL organises regular briefing sessions.



## Construction Professional Accreditation Scheme (CPAS) Briefing

Developed by SCAL as a peer recognition programme, CPAS is aimed at raising the standards of professionals working in the industry, particularly in contractor firms.

To help more construction project managers discover the advantages of being a CPAS-accredited professional and learn more about the application process, SCAL has organised a series of online briefing sessions since July. In total, more than 200 construction project managers attended the sessions, reflecting a strong demand for professional accreditation in the built environment sector.

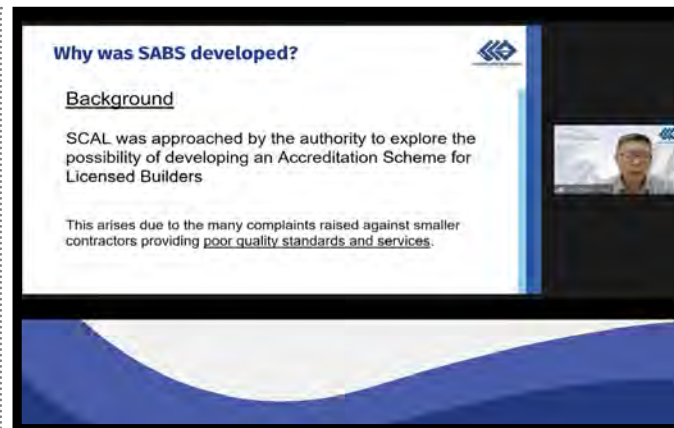
During the briefings, the attendees learned that the programme comprises a standard benchmark of competency standards curated according to professional practices, skills and qualifications most relevant to the current market.

Application for the upcoming cycles of CPAS is underway. SCAL invites all construction project management personnel to apply for the accreditation. For more information about CPAS, visit [www.scal.com.sg/accreditation/cpas](http://www.scal.com.sg/accreditation/cpas).

**Want to find out about the scheme? Join us for the next CPAS online briefing session. Register for your complimentary seat at [www.tinyurl.com/CPASReg](http://www.tinyurl.com/CPASReg).**



Scan to register.



## SCAL Accredited Builder Scheme (SABS) Briefing

To promote greater quality and standards of building works in Singapore, SCAL launched the new SABS scheme for general and specialist builders.

The inaugural SABS briefing session achieved its goal of encouraging builders to strive for excellence in quality as well as high safety & health and environmental standards - and gaining recognition for their efforts through SABS.

Participants were able to get a clear idea of the benefits of being SBAS-accredited. Besides being endorsed by architects, consultants, industry associations and authorities as the "preferred choice", their firms can also demonstrate their commitment to provide a safe, healthy and environmentally-friendly work environment. Accreditation can also act as a verification of compliance with applicable legal and regulatory requirements.

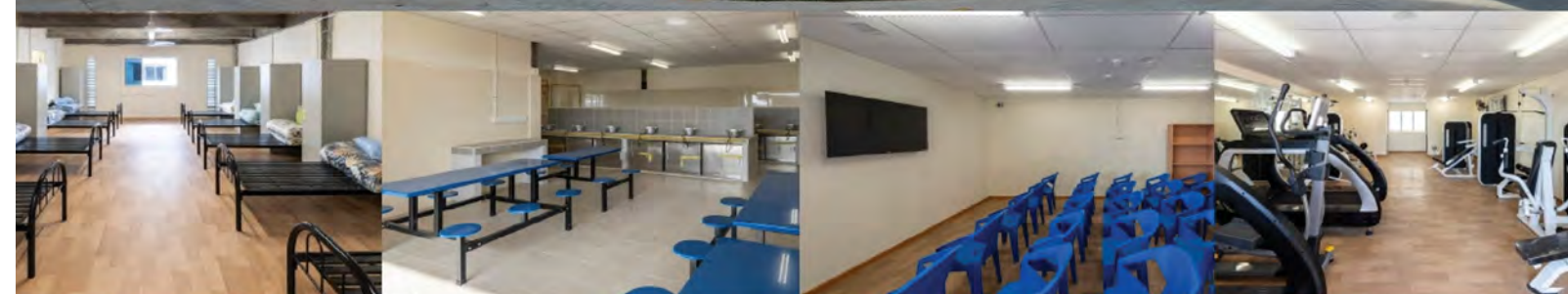
The briefing also gave attendees a good understanding of the scheme's assessment criteria. Apart from fulfilling stipulated requirements in financial capability, track records and human resources, the company also needs to have implemented sound management systems. Best practices on key areas of operations, along with physical product quality will also be taken into consideration.

For more information about SABS, please visit: [www.scal.com.sg/accreditation/sabs](http://www.scal.com.sg/accreditation/sabs).

**Join us for the next SABS briefing session. Register for your complimentary seat at [www.tinyurl.com/SABSReg](http://www.tinyurl.com/SABSReg).**



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# UPCOMING COURSES AND WEBINARS FOR OCT TO DEC 2021

## Perform Design for Safety (DfS) Professionals Duties [Physical]

**Period: Oct, Nov, Dec | Duration: 2 days**

Mandatory WSH training course for all persons who would like to undertake the role of a DfS professional. Learners will be able to facilitate the DfS review meetings to identify and mitigate the safety and health risks, maintain records of safety and health issues arising from the DfS review meetings and actions taken and communicate safety and health information to stakeholders.

## CET for Multi-skilling (Safety) Pathway: Workplace Safety and Health-related Trades [Online]

**Period: Weekly | Duration: 0.5 day**

Stay updated with the current development in the Workplace Safety and Health. Learn the latest Regulation, Code of practice, innovative on safety and good industry practices related to Workplace Safety and Health. SCAL Academy is an Approved Training and Testing Centre (ATTC) by BCA.

## Registered Earthworks Supervisor Course [Online]

**Period: Weekly | Duration: 0.5 day**

Learn the relevant earthworks legislation and code of practice relating to construction earthworks carried out in the vicinity of the electricity cable / gas pipes. Find out key requirements of the relevant legislation, control measures and good practices to prevent damage to the underground cable, gas pipes and services.

## Mediator training courses & Mediation Skills Assessment

**Period: Nov | Duration: 1 day**

- Dispute Resolution Mediation course for Professionals (Module 1) [Online]
- Dispute Resolution Mediation course for Professionals (Module 2) [Online]

Spilt into 2 modules, module 1 will equip you with basic understanding of the process and principle of mediation. After which, enroll in Module 2 to learn how you can be an effective mediator through mastering the techniques and then role playing to experience the dynamics and difficulties of mediation process. Finally, be accredited after you have completed the practical and written test.

## Apply Labour Legislation in People-Management Practices for the Built Environment Sector [Physical]

**Period: Nov | Duration: 1 day**

Accredited by IHRP, the course will equip you with in-depth knowledge of current labour policies & legislation in the Built Environment Sector. Receive the national IHRP Paper A on labour policies and legislation upon the completion of course and assessment – one step closer to achieving the IHRP-Certified Professional qualification.

## Certification Course in BIM Management [Online]

**Period: Oct, Nov | Duration: 1 day**

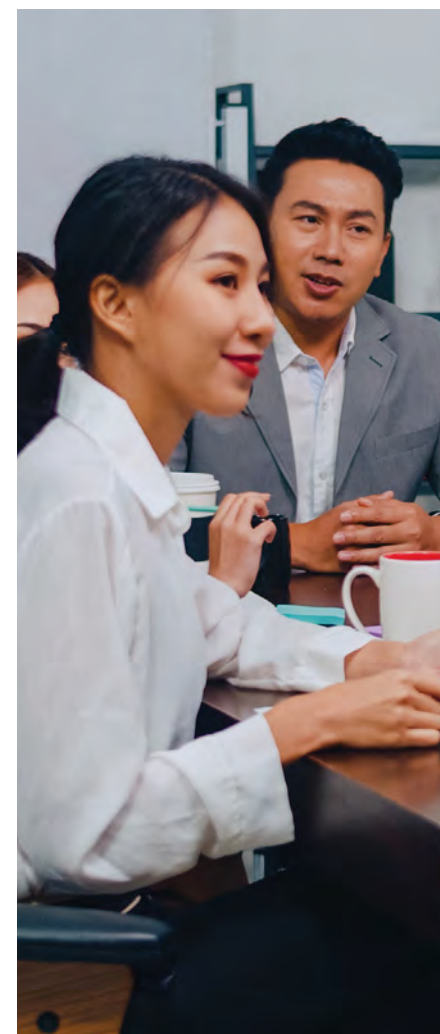
Learn how to implement BIM standards and strategies, design reviews and quality assurances according to the BIM Execution Plan. The learning will be based on parts of a live project/s to demonstrate the BIM design implementation stages and you would be able to participate in BIM project implementation at the end of the session.

## Data Analytics – Building & Delivering a Compelling Data Story [Online]

**Period: Nov | Duration: 1 day**

This workshop provides a practical overview of the entire analytics value chain; with a focus on building a compelling narrative to secure an audience to care and to act. This includes organizing pivotal messages from data into a story, how a data story in a concise, coherent, and compelling fashions that makes an audience take an interest in.

To enroll or find out more about the courses, 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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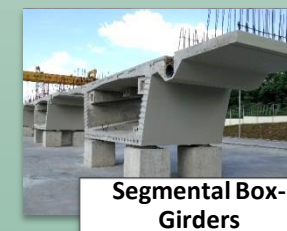
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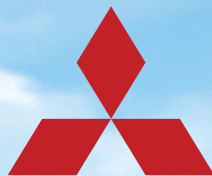
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MXY-2G20VA2



MXY-3G28VA2



MXY-4G33VA2



MXY-4G38VA2



MXY-5G48VA2



MXY-4C100VA



MXY-5C125VA



MXY-6C140VA

## WIDE RANGE OF EXCELLENT ENERGY SAVINGS 5-GREEN TICKS AIR-CONDITIONERS IN SINGAPORE



Manufacturer of the  
World's First  
Wall-Mounted  
Split Air-Conditioner\*  
\*applying line flow fan