

# CONNECT 2 ACES

A QUARTERLY PUBLICATION BY THE ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE



04 

ACES 50<sup>TH</sup> AGM  
– 25 JUNE 2021



05 

TAKE TIME TO CHECK, CLEAN AND  
SHARE ABOUT STF PREVENTION  
WITH YOUR EMPLOYEES



03

PRESIDENT'S MESSAGE



12

DIGITAL DELIVERY  
COMMITTEE UPDATES

*Whilst the pandemic has slowed much of the industry's activities, our contribution through collaborative effort and independent work to improving the Consulting world is still speeding ahead.*



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CONSULTING ENGINEERS  
SINGAPORE

## SEPTEMBER 2021 ISSUE

Editor: Er. Adeline Koh  
Er. Jee Yi Yng

Editorial Team: Ms. Ye Qinyi  
Mr. Chua Chee Ming  
Ms. Lilian Lean

Contributors for this issue: Er. Alfred Neo /  
Er. Chuck Kho  
Er. Yeow Mei Leng  
Er. Yong Fen Leong  
Er. Mak Swee Chiang  
Lim Mee Mee  
Workplace Safety and  
Health Council (WSHC)



ASSOCIATION OF  
CONSULTING ENGINEERS  
SINGAPORE

Please send queries and feedback to:

E-mail : [secretariat@aces.org.sg](mailto:secretariat@aces.org.sg)

Tel : 6659 5023

Address : 18 Sin Ming Lane #06-01  
Midview City,  
Singapore 573960

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Artnexus Design Pte Ltd

## In This Issue

### PRESIDENT'S MESSAGE

3

### FEATURED ARTICLES:

#### ACES 50<sup>TH</sup> AGM – 25 JUNE 2021

4

#### ACES COUNCIL FOR NEW SESSION 2021-2022

4

#### TAKE TIME TO CHECK, CLEAN AND SHARE ABOUT STF PREVENTION WITH YOUR EMPLOYEES

5

### SUB-COMMITTEE UPDATES:

#### BUSINESS & PROFESSIONAL PRACTICE COMMITTEE UPDATES

6

#### M&E PRACTICE COMMITTEE UPDATES

7

#### C&S PRACTICE COMMITTEE UPDATES

10

#### DIGITAL DELIVERY COMMITTEE UPDATES

12

#### ACES PAST AND UPCOMING EVENTS

13

#### ACES-YPC COMMITTEE UPDATES

15

## President's Message



We had our AGM at the end of June 21 and we are happy to report on the progress of our work. Whilst the pandemic has slowed much of the industry's activities, our contribution through collaborative effort and independent work to improving the Consulting world is still speeding ahead.

We were actively involved, through CIJC, to safeguard site work, amidst the pandemic, to keep the industry running. We also had a 2-day Webinar to share and update all on the latest Engineering achievement and innovation. Numerous trainings on Engineering software to strengthen the digital transformation were also arranged. We also assisted in getting the iNPQS completed and launched in November 20.

We also like to thank all the members who attended the AGM, contributed feedback and re-elected 3 members to fill the Council seats. As such, the 2021/2022 Council remains the same.

Moving ahead, as reported previously, we had a session with the Minister of State, MND, Mr. Tan Kiat How in May 21, to share our concern on the state of the Consulting Engineering Community. Moving forward from the discussion, we are now actively engaging, through BCA, on strengthening project bid evaluation, with greater emphasis on quality instead of pricing, for all government or government-related agencies work. We are also engaging, through BCA, the strengthening of equitable terms and conditions of appointment.

On this aspect, especially on the fee issue, we need to review how we price for work as a community. Adverse competition will greatly affect our sustainability and the way we compensate our Engineers. If this is not corrected, we will find it more and more difficult to attract and keep Engineers. As such, we plan to arrange a session with all the Leaders of the Community in November. Looking forward to your participation.

Besides the Business Practise aspect, we are part of the Transport Infrastructure Collaborative Panel (TICP), set up by LTA, foster closer partnership with the Built Environment. We are actively involved with BCA on refining the Corenet X, Common Data Environment (CDE), discussion on the Skills Future Framework and its Accreditation, besides the ongoing dialogue with URA, BCA, PUB, SCDF, Inter-Agency Coordinating Committee (IACC) and many more. On this aspect, we are very appreciative of the many, besides the Council, who have volunteer time and effort to represent the ACES Council.

The Digital Transformation is a given. Building Smart Singapore has started accreditation for Digital Delivery Management and would encourage all to utilise this platform to upskill our resources.

As per the last newsletter, we have submitted a ESG grant application to support our ambitious M&E Design Automation Platform. The response from ESG is very encouraging and we are in the process to refine the application to obtain approval. The plan is to encourage all of us, to be committed and be part of the process to formulate the process for ease of automation. We have already secured a proposal from Software Vendors to transpose our calculated provisions as model input to Revit. To make this all work, we need commitment from all to be users of the Platform. Some of us have already reverted their support and we will be doing another round to get more committed. We are embarking on this initiative to improve our productivity and control the future subscription cost for all committed users. When this is all done, we might just be the first in the world to have a comprehensive platform.

We have planned for a 50<sup>th</sup> Anniversary Gala Dinner in August. Unfortunately, this is not happening and we hope we are able to organise one in April 2022.

We are also happy to note the YPC has been a very active entity within ACES. To continue to be our key collaborator with BCA on the Built Environment Formation Programme. In addition, they have spear headed our Community Social Responsibility via a Blood Donation Drive. We encouraged all to participate and make necessary arrangement with the Blood Bank. Remember to inform them you are contributing as part of ACES Code P1005.

Er. Teo Yann  
President



## ACES 50<sup>th</sup> AGM – 25 June 2021

BY ER. ADELINE KOH

This year the ACES 50<sup>th</sup> Annual General Meeting (AGM) was held during the COVID-19 Phase 3 (Heightened Alert) period on 25 June 2021 at Venus 1, Level 3, Furama Riverfront, 405 Havelock Road Singapore 169633.

The meeting was called to order at 6.05 pm when the quorum was attained.

President Er. Teo Yann and each of the respective sub-committee chairmen gave a rundown of the ACES activities during the last session 2020-2021.

Honorary Treasurer, Er. Alfred Neo shared the audited accounts that shown ACES is in a healthy financial position.

There were three (3) vacancies to be filled. A total of three (3) nominations were received not less than 3 working days before the AGM, thus election was not required.



The three (3) elected members are:

1. Er. Chuck Kho
2. Er. Choong Choon Guan
3. Er. Ng Han Siong

The Council members will elect the President and EXCO in their next council meeting on 13 July 2021 to form the new Council for Session 2021-2022.

## ACES Council Session 2021-2022

### Executive Committee



**Er. Teo Yann**  
President  
Co-Chair  
Digital Delivery



**Er. Chuck Kho Chza Main**  
Vice-President  
Co-Chair Business &  
Professional Practice



**Er. Koh Lian Suan**  
Adeline  
Hon. Secretary /  
Chair Publications



**Er. Neo Tee Boon,**  
Alfred  
Hon. Treasurer.  
Chair Business &  
Professional Practice



**Er. Chua Tong Seng**  
Imm. Past President  
YPC Advisor

### Council Members



**Er. Ling Shiang Yun**  
Past President (2014-2017)  
YPC Advisor



**Er. Yeow Mei Leng**  
Chair M&E Practice



**Er. Yong Fen Leong**  
Chair C&S Practice



**Er. Liu Wang Lai, Kenneth**  
Chair Social & Membership



**Er. Sivakumaran**  
Murugesu  
Co-Chair C&S Practice



**Er. Choong Choon Guan**  
Chair Professional Dev.



**Er. Ng Han Siong**  
Co-Chair M&E Practice



**Er. Mak Swee Chiang**  
Chair Digital Delivery



**Er. Gwee Siong Mong**  
Co-Chair Professional Dev.

### Appointed Council Member



**Er. Lim Kuan Pow**  
Co-Chair  
Social & Membership



**Er. Jee Yi Yng**  
Co-Chair  
Publications

# Take time to check, clean and share about STF prevention with your employees

Slips, Trips and Falls (STFs) have been the top cause of major and minor injuries in workplaces since 2012. The number of STF-related injuries had increased by 15% from 2015 to 2020. This year's STF Campaign aims to promote the co-creation of safe workplaces by encouraging companies to set and fulfil an [STF Resolution](#) to take time to check, clean and share good practices with their workers to minimise or eliminate STF incidents.

Accidents can occur when accessing or using workspaces, getting up or down the steps, walking up or down the slopes, or when one is distracted or tired. It is important to train your workers to identify STF hazards so that they can take actions to keep themselves safe.



## Look out for these STF hazards in the workplace:

### Slippery areas

Causes:	Wet, powdery, greasy surfaces
Commonly found in:	<ul style="list-style-type: none"><li>• Kitchens</li><li>• Toilets</li><li>• Pantries</li><li>• Corridors</li><li>• Walkways</li><li>• Vehicle platforms</li><li>• Steps used to mount or dismount from vehicles</li></ul>
Actions to take:	Clear spills immediately. Wear slip-resistant shoes.

### Slopes

Causes:	Wet, steep floors
Commonly found:	When accessing different levels of work areas such as: <ul style="list-style-type: none"><li>• Walkways</li><li>• Ramps at loading/unloading bays</li></ul>
Actions to take:	Stay alert. Hold onto handrails. Wear slip-resistant shoes.

### Uneven areas

Commonly found in:	Work areas with slight difference in the levels, or with damaged floor surfaces.
Actions to take:	Ensure work areas are well lit. Repair damaged floor surfaces immediately.

### Cluttered areas

Causes:	Poor housekeeping
Commonly found in:	Work areas and along corridors/walkways
Actions to take:	Keep work areas clean and orderly.



## Make an STF Resolution today.

Watch this [STF Resolution infographic video](#) which will guide you through the process of [setting your company's STF Resolution](#).



To download the pictogram signages, infographic posters and other resources to take care of your employees' safety, visit the [STF Campaign 2021 webpage](#).



## Business & Professional Practice Committee Updates

BY ER. ALFRED NEO & ER. CHUCK KHO

We continue to engage the Industry through the following activities:

Following the earlier three Webinars on the implication of the COVID 19 by Legal Counsel, Mr. David Shanmugam, a fourth Webinar was conducted on 10 Aug 2021 to discuss Part 10A of the COVID-19 (Temporary) Measures Act ("COTMA" 10A) and its' practical implications on Consulting Engineers and the Construction Industry.

The talk helped participants to understand:

- COTMA 10A and its' objectives
- How do COTMA 10A works and its' implications
- How the claims are processed for manpower and the role of Assessor
- Key Objectives of the Temporary Measures Act

We continue to have dialogues with BCA and provide feedback to them on the following:

1. Fair and transparent assessment of Consultants' performance under BCA-CPAS (Consultants' Performance Appraisal System) scheme to improve on service quality and delivery.
2. Discussion with BCA on Skills Framework Accreditation Schemes.
3. Awards by Government Procuring Entities (GPE) for Consulting Tenders with fee that is extremely low and unsustainable. Proposed mechanism to discourage fee diving.
4. Challenges faced by Consultants on variation claims arising from additional, abortive and prolongation of contract.
5. Suggestion on nominal or acceptable rates for staff in Consulting Industry.

The Committee also provides feedback to BCA with regards to the proposed CORENET 2 / Electronic Submission for Professionals (ESPro). In the ESPro, it requires QPs to access it via their SingPass. Some QPs reckon their SingPass is personal and private to them and would rather not mix official work matters with their SingPass. The Committee request BCA to consider allowing token to continue to be used as an alternative to SingPass.

A dialogue with the Minister of State for MND was also initiated with the following matters tabled and agreed to be developed further with BCA to discuss on the follow-up:

- a. Contract Matters
- b. QP Responsibilities
- c. Industry Transformation
- d. Talent Attraction and Retention

Through the BCA-CIJC Procurement Discussion Group, ACES continue to provide feedback to BCA on proposals to discourage unhealthy fee diving and strengthen Procurement Policies to support Industry Transformation for sustainable business environment.

We urge members to continue to feedback to us on any contractual issues that the members are facing that are deemed too onerous or unfair with the rationale and proposal so that we can use this Procurement Discussion Group platform to take up with the relevant parties. Through this platform, we strive to understand the consideration and limitation of GPEs on having such clauses which unduly expose the Consultancy Industry to excessive risk that does not commensurate with their remuneration.

We will continue to work with all stakeholders to work towards a sustainable business environment for the Industry.

# M&E Practice Committee Updates

ER. YEOW MEI LENG & ER. NG HAN SIONG

## ACES Webinar 2021

ACES held a joint C&S and M&E webinar over 2 days on 29 & 30 Apr 2021, the M&E sessions were held in the afternoons. There were a wide range of topics on emerging technologies on sustainability. There were 220 participants in attendance.

## PUB Matters

### Specific Requirements for Water Discharge

ACES had obtained a copy PUB Specific Requirements for Water Discharge, which was shared by one of our members. A copy of which is reproduced below.

SPECIFIC REQUIREMENTS FOR WATER DISCHARGE			
[Reference: Regulation 3 of the Sewerage and Drainage (Sanitary Works and Sewerage Works) Regulations, Clause 4.1 (f) and Clause 4.6.4 of the COPSSW (2nd edition Jan 2019)]			
Source of Discharge	Discharge to		Remarks
	Storm Water Drainage	Sewer	
A Areas that receive rain water			
i. Open areas such as backyards/ courtyards/air wells, or other uncovered areas ii. Open-sided areas like void decks, common corridors, balconies verandas, multi-storey car parks (excluding car washing bays) and pump islands at petrol stations <sup>1</sup> iii. Footbaths and open shower points for swimming pool <sup>2</sup> iv. Any other area that receives rain water	√		Rain water shall be channelled to a stormwater drainage system while sewage shall be channelled to sewer network.  <sup>1</sup> No washing of the area using detergent is allowed.  <sup>2</sup> Use of soap/shower foam and gel is not allowed.
B Air Conditioning System (AHU / FCU)			
Condensate from AHU / FCU	√	√*	Condensate shall not discharge in a manner as to cause public nuisance.  *Where there is no available surface outlet connected to the stormwater drainage system in the premises such as in HDB or condominium units, the condensate from AHU can be discharged into a sewer via a floor trap.
Used water from washing of AHU / FCU	√*	√	Used water shall be discharged into sanitary/sewerage system.  *Only for AHU located at outdoor/rooftop where there is no available sanitary/sewerage system, the used water from washing of AHU can be discharged into stormwater drainage system in a manner without causing inconvenience to the public.
C Cooling Tower			
Water from overflow/draining/cleaning of cooling tower		√	
D Swimming Pool			
i. Overflow water from swimming pool balancing tank	√		
ii. Backwash water from swimming pool filter		√	
iii. Draining of swimming pool before cleaning of swimming pool	√		
iv. Used water generated from cleaning of swimming pool		√	



### SPECIFIC REQUIREMENTS FOR WATER DISCHARGE

[Reference: Regulation 3 of the Sewerage and Drainage (Sanitary Works and Sewerage Works) Regulations, Clause 4.1 (f) and Clause 4.6.4 of the COPSSW (2nd edition Jan 2019)]

Source of Discharge	Discharge to		Remarks
	Storm Water Drainage	Sewer	
E Water Storage Tank Containing Potable Water			
i. Overflow water from swimming pool balancing tank	√		
ii. Water from draining of potable water storage tank before cleaning (emptying the tank)	√		
iii. Used water from washing/cleaning and sterilization of the storage tank	√*	√	Used water shall be discharged into sanitary/ sewerage system.  *Only for water storage tanks located at outdoor/ rooftop where there is no available sanitary/ sewerage system, the used water from washing of water tank can be discharged into stormwater drainage system in a manner without causing inconvenience to the public.
F Fire Protection System			
i. Water discharge during fire emergency or false alarm	√	√	As these are unplanned and uncontrollable events, water from firefighting or false alarm can be discharged to sewer or drain.
ii. Water discharge during non-emergency (ad-hoc inspection or periodic testing/ maintenance)	√		
G Rain Water Harvesting Tank			
i. Unused rainwater overflowed or drained-out from a rain water harvesting tank	√		
ii. Used water from washing/cleaning of the rain water harvesting tank		√	
H Water Features			
i. Water overflowed from outdoor or indoor water features	√	√*	*Only for indoor water feature where there is no available outlet connected to the stormwater drainage system, the overflow of water from indoor water features can be discharged into a sewer via a floor trap.
ii. Used water from washing/cleaning of outdoor or indoor water features		√	
I Industrial Waste Water			
Trade effluent discharge (used water from any industrial process is treated as trade effluent)		√	All trade effluent discharged into the public sewer shall comply with the Sewerage and Drainage Act and the allowable discharge limits as stipulated in the Sewerage and Drainage (Trade Effluent) Regulations. Pre-treatment might be necessary before discharge to sewer.  The operator shall apply to PUB for a "Written Approval to Discharge Trade Effluent".
J Underground Structures (e.g. Basement, Underpass, Rail and Road Tunnel, etc)			
i. Washing activities		√	Such used water discharged into the public sewer shall not contain any silt or chemical substances that are not permitted or exceeded the allowable discharge limits as stipulated in the Sewerage and Drainage (Trade Effluent) Regulations. Pre- treatment might be necessary before discharge to sewer.
ii. Ground water seepage or ingress of rainwater	√		To comply with Singapore Standard SS593: Code of Practice for Pollution Control.



We understand that this document was not official. It was compiled by PUB from PUB Regulations & Code of Practice. However, this document would serve as useful guidance for our members, in particular when AC condensate can be harness for non-potable usage.

### BIM checker

PUB has rolled out its BIM e-checker for the industry to use, since June 2020. This is a self-check system that allows QPs to carry out compliance checks for requirements in SS 636, COPSSW & COPSWD, prior to formal submission via Corenet. With self-checking, the need for consultation can be minimized. There is also a user guide on the PUB website, see link: <https://bit.ly/3igYPeJ>.

PUB will be carrying out training sessions to help ACES members familiarise themselves with the BIM e-checker. As this is a hands-on session, each session is limited to 30 participants. The 1st of such session will be held on 28 Sep 2021. More sessions will be arranged with PUB, if there is a demand from members.

### NEA matters

NEA is proposing amendments to COPEH. Listed are some of the highlights relating to M&E provisions, members to consider them early in the M&E designs, as they can contribute to better designs with good outcomes:

#### Kitchen Exhaust Ducting

1. Fumes from the kitchen exhaust system to be exhausted above roof and not face in the direction of adjacent buildings
2. Aesthetic considerations to the exhaust outlets if near residential premises. Suitable screens to be provided to shield the exhaust outlets from public view
3. Kitchen exhaust outlets to be sited more than 5m away from cooling towers
4. Fumes from cooking exhaust to be treated with an air cleaning system
5. Cleaning of the kitchen exhaust system to be carried out once every 12 months by specialist, and records to be kept. This is to align with SCDF's Fire Code

#### Cooling Towers

1. Located at least 5m from air circulating and ventilation inlet, openable windows & occupied areas, pedestrian thoroughfare, areas of public access
2. At least 5m away from the kitchen exhaust outlet
3. Signage for unauthorized access to cooling tower due to Legionella risk

#### Aquatic Facilities

Proposed new requirements:

1. In addition to Rapid Sand & DE filters, glass & zeolite filters can be used. Cartridge filters for pools up to 120m<sup>3</sup> only
2. Minimum of 2 inlets
3. Foggers and misters to supplied from a potable water source

### SCDF matters

Issues that are under discussion with SCDF are as follows:

1. Location of M&E equipment in protected areas, such as smoke control fans and their control panels in MRL lift controllers in fire fighting lobbies
2. EM locking device on exit doors to be de-energized during building power failure, i.e. PUB supply
3. Demarcation of scope for AQP, MEQP and CSQP particularly locations, system design and on hazardous materials
4. Classification of cluster housing, in terms of compartmentation ad unprotected openings
5. Sub-station in basement

Other matters to take note:

1. Turnstiles, if located along the egress route, will need to be linked to fire alarm system
2. Staff Quarters shall be classified as PG VII, similar to hotels
3. SCDF had taken QP to task and notified PEB on his lack of professionalism. This QP had misinformed his clients that the delay on their FSC Application process for their restaurant was due to SCDF, when in fact it was due to the poor and improper documentation on the QP's part.
4. In an AIC case, it was found that QP had falsely declared that the building plans comply with Fire Regulations & Fire Code, even though he was well aware that the non-compliant issue had been rejected by SCDF earlier. SCDF deemed this as an abuse of QP privilege on self-declaration, and the QP will be charged for this offence.

### IACC matters

BCA has been facing projects not being able to obtain their CSC after 24 months from obtaining their TOP, which should not be happening. BCA deemed 12 months as a good timeline. However, given that other agencies have their timelines to issue their completion certificates, all of which need to be submitted to BCA prior to the issuance of CSC, it was agreed that 18 months is a fair timeline. All agencies, such as LTA, PUB etc. agreed to expedite the documentation on their end.

### M&E Practice Dialogue

The next M&E Dialogue is planned for October 2021. Members who wish to bring issues up for discussion are to submit them early so that they can be assigned to the appropriate representative for clarification.



# C&S Practice Committee Updates

BY ER. YONG FEN LEONG

In 3<sup>rd</sup> quarter of 2021, ACES C&S has participated primarily in BCA-IES-ACES dialogue and the Inter-Agency Coordinating Committee meetings in August 2021 apart from the specific workgroup initiatives.

## BCA-ACES-IES Dialogue

The latest session was held on 23 Aug 2021. One of the interesting topics discussed was Remote Supervision which garnered a lot of interest. Remote Supervision is an initiative by BCA with the vision and intent to benefit the industry especially when travel restrictions pose constraints to the supervision regimes. Taking this possibility further, the alternative supervision method may also bring about more productive site management. The concepts present an attractive solution or means to carry works. As with all good ideas, rough edges will need to be smoothed with the help of the industry to identify improvements or considerations to realize the initiative. ACES has participated in the discussions and provided the following feedback on behalf of the practitioners to pave a clearer path forward in the implementation.

- a) The Remote Supervision (RS) implementation should ideally provide clarity in guidance and forms of minimum requirements if any in order not to impose unnecessary indirect pressure onto the Qualified Persons (QP) / Professional Engineers (PE) involved in supervision that may inevitably distract them from the main core supervision works.
- b) The RS intent should focus on the benefits of a more digitally streamlined process, reduction in travel time and enhanced accessibility to not portray an "impression" of reduction in the number of Site Supervisors (SS) which potentially may mislead and motivate the consultant's clients in the direction of cost savings. This "impression" if generated may unnecessarily induce indirect pressure to the QP(S) undertaking the supervision to adopt RS and directly reduce SS headcounts which indirectly increases the risk of responsibilities on the QP(S).
- c) RS with restricted localized views may potentially give rise to a lack of overall spatial awareness (macro view of the site in entirety) of the SS. This could potentially affect the effectiveness of the supervision.
- d) RS will inevitably generate a huge amount of video recordings, leading to the need for a huge amount of digital storage space with respect to the proportions of inspections that take place daily. Under such circumstances, the sustainability and the resulting carbon footprint also need to be considered in establishing the necessary information technology (IT) solutions to cater to this volumes of new information generated.
- e) Apart from sustainability, there will also be the question of COST. Awareness and clarity of who to bear the cost for digital storage, provision of the necessary IT infrastructures, internet bandwidth and how long the storage need to be kept in place are crucial to be established. The understanding of this cost apportionment is key to the consultant's business consideration.
- f) As it stands, the industry currently already placed a huge burden on consultants with standard RE/RTO rates imposed by contract procurement without considering the consultant's difficulties in facing constantly rising manpower cost. The awareness of this added cost of RS if not established with clarity will further affect consultants adversely.
- g) The execution of RS relies heavily on IT facilities provision. It must be appreciated that not all Consultants / Qualified Persons / Professional Engineers are savvy or have the necessary depth in IT knowledge to ensure the specifications for such heavy IT provisions are in place to implement RS.
- h) This may also generate mismatching Client expectations whom may also not know what is exactly needed in specific but conveniently expects the QPs to know in detail (it is worthwhile to remember at this juncture that all these provisions lead to cost and who foots the bill). This may greatly impose more distraction, pressure and responsibilities to the QP(S) whom are civil engineers to dabble in the IT provisions that he is not familiar with and unnecessarily extended his scope without the appropriate compensation to decide and determine the necessary IT supports. ACES hence suggests that a common definitive IT provision list be studied and made available to QP, Developers and parties of interest refer to this new initiative as a common base of reference so the QP(S) can focus on what they are tasked to do, the engineering supervision works.
- i) With an option for RS, there is also a need to develop more checks and balances in the course of works to protect the QP(S) responsibilities and liabilities. We need to provide the necessary facilitation to ensure the risks for QP(S) do not unnecessarily increase due to the good intentions of RS.



### Inter-Agency Coordinating Committee

The latest session was held on 20 Aug 2021. In the climate of the approval submission process, some have been plagued with lengthy drag of to and fro Written Directions (WD) from Authorities with no apparent signs of working towards an approval. This forms a grave concern to all practitioners. While all efforts are placed at looking into productivity gain in construction, the time loss incurred in the submission process will nullify the efforts. This is a great injustice to the push forward on productivity. In this IACC meeting, BCA has suggested limiting to the number of WDs and a timeline limit to QP to revert on WD to achieve an objective end to the submission. In response to the proposal, ACES has provided the following feedback:

- a. ACES welcomes the concept to limit the number of Written Directions (WD) by Authorities / Agencies.
- b. ACES proposed that the WD revert timeline imposed to QP should likewise be imposed onto the Authority / Agencies to revert as well. If BCA has a timeline of 2 weeks to reply, likewise all other Authorities like LTA, NParks or NEA should be able to achieve similar practice as KPI.
- c. A KPI of number of WDs and response timeline will set a common motivation for all parties to come together objectively to resolve problems and reach an end.
- d. ACES explained that the endless WDs and undefined timeline for Authority to respond greatly affects productivity and taken a great toll on the consultants in terms of delivery and resources planning.
- e. The efforts to gain a few months in productivity employing construction methods and innovative solutions can easily be wiped out by the drag in approvals which can extend from months to more than a year. This is a huge pain to the industry.
- f. The reasons for the drag vary from no obligation in specific response timeline, new comments in series of WDs, comments requiring QPs to coordinate between agencies, change in personnel requiring history collation.
- g. ACES suggested that IACC coordinate and establish common approaches for various overlapping requirements between different Authorities / Agencies so that to avoid incurring time and resources from the industry practitioners (whom has no jurisdiction) to coordinate and align disagreements between Authorities / Agencies.

# Digital Delivery Committee Updates

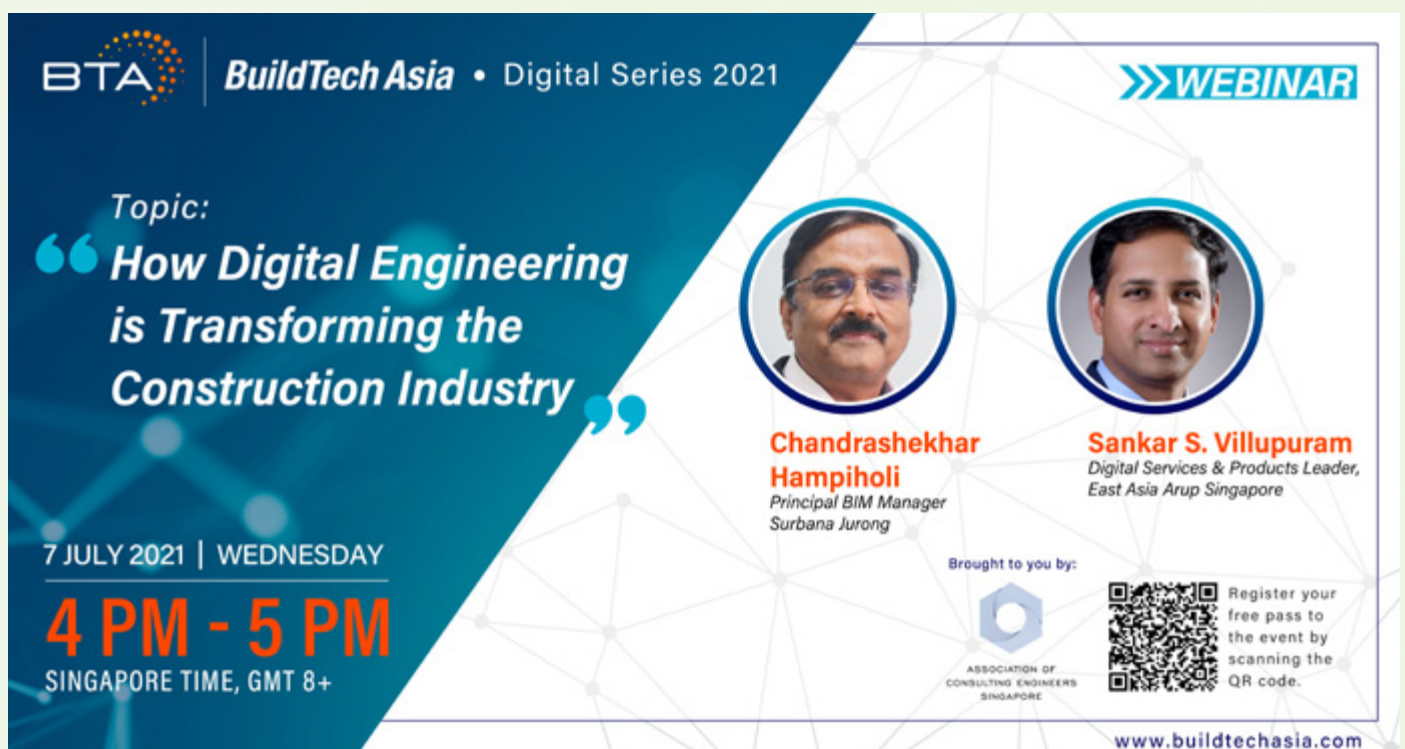
BY ER. YONG FEN LEONG

It has been an eventful 2021 digitally as the ACES digital team engage the government agencies on the various initiatives and also the ACES members in terms of organising training and seminars.

In addition to contributing to many BCA IDD Workgroups (IDD Enablers, DfMA, IFM and DDM Accreditation Scheme), we focused on helping BCA and other agencies align their modelling requirement as far as Corenet X and other Common Data Environment (CDE) are concerned. We invited practitioners from ACES members to constructively comment on the requirements, adding useful parameters or omitting them if they are redundant. This saves time taken for our modellers to complete their BIM model and at the same time push the productivity that BCA is looking for in model checking.

Corenet X aims to be a One-Stop Integrated Digital Shopfront for authority submissions and allows agencies to work together and agree on a collaborated response to the consultant. BCA aims to launch this in 2023.

ACES was one of the supporting organisations for the BuildTech Asia 2021. ACES hosted a one-hour session on 7 July with the topic "How Digital Engineering is Transforming the Construction Industry."




**BTA BuildTech Asia • Digital Series 2021**

**Topic:**  
“How Digital Engineering is Transforming the Construction Industry”

**7 JULY 2021 | WEDNESDAY**  
**4 PM - 5 PM**  
SINGAPORE TIME, GMT 8+

**Chandrashekhar Hampiholi**  
Principal BIM Manager  
Surbana Jurong

**Sankar S. Villupuram**  
Digital Services & Products Leader,  
East Asia Arup Singapore

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Training wise, ACES organised a session to introduce members the benefits of parametric design using Rhino-Grasshopper. ACES invited 2 practising engineers to help conduct 2 nights of training which was very well-received.



ACES organised IDD Seminar 2021 which had a very good attendance of more than 150 people. The feedback was positive as the speakers from various backgrounds discussed and shared about their IDD journey. Topics like ICE coordination, BIM tender documentation, Digital Approval and inspections were touched on.



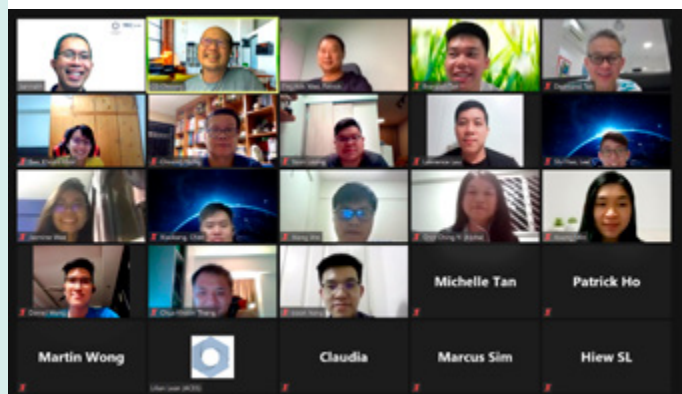
**ACES Digital Delivery Seminar 2021**  
**Date: 15 September 2021 (Wed)**  
**Time: 12.00 noon to 2.00 pm**

DESIGN	CONSTRUCTION & FABRICATION	ASSET MANAGEMENT
1. Digital Request for Information (RFI)		
2. Integrated Concurrent Engineering (ICE) meetings		
3. Visualisation and design checks		
4. Digital submission & approval		
5. BIM-based documentation		
6. BIM-based cost estimation		
	7. Digital logistics	
	8. Digital construction scheduling and sequencing	
	9. Digital progress monitoring	
	10. Digital QA/QC inspections	
	11. Digital defects management	



## ACES Past Events

### ACES-TROX Training Course 'Air-Side Fundamentals' in ACMV Engineering – 20 May 2021 to 15 July 2021



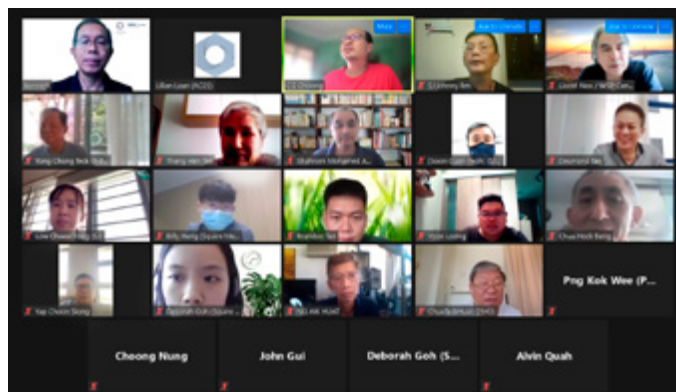
These online training programs are designed for practising engineers in the ACMV industry who need to either extend or update their knowledge on a particular subject(s) in accordance with current developments in the industry.

The trainer, Mr. Kenneth Gong is a qualified Chartered Building Services Engineer with more than 30 years of working experience in the building services industry. He is currently the Technical Consultant of TROX Malaysia Sdn. Bhd.

A total of 29 participants had joined the training, which comprised 9 lessons that were being conducted weekly from 20 May to 15 July 2021, the presentation for each lesson is 1 hour and 30 minutes including tests and assignments.

Lesson 1	Thermal Comfort
Lesson 2	Air Distribution
Lesson 3	Duct Design
Lesson 4	Fans
Lesson 5	Psychometrics
Lesson 6	Building Science
Lesson 7	Acoustics for ACMV systems
Lesson 8	Fire safety in buildings
Lesson 9	Commissioning of ACMV systems

### ACES-TROX Training : Air Distribution Technology – 23 July 2021



Given the current pandemic which has greatly affected businesses and social life, ventilation effectiveness is one of the available tools to help minimise the infection rate in the workspace and in schools.

ACES has conducted another virtual course by Mr. Kenneth Gong on 23 July 2021 with a total of 21 participants.

#### Course Contents

1. Chilled Beam Systems in the Tropics
2. TDV and UFAD Systems in the Tropics
3. Challenges of Air Distribution in times of the Covid-19 Pandemic

The course objective was to review the current need of Air-Conditioning and Mechanical Ventilation (ACMV) systems to conserve energy, highlight their advantages and address the challenges posed to apply them successfully in the tropical climate like Singapore. This training also discussed the current trends of ACMV systems to determine the optimum ventilation rate to help reduce infection risk in accordance with the European Standard EN 16798-1.

### ACES Free Webinar: COTMA 10 A and Its Practical Implications on Consulting Engineers and The Construction Industry – 10 August 2021

We are glad to have Mr. David Shanmugam who is an Advocate and Solicitor of the Supreme Court of Singapore to share with our members for a fourth webinar, this time with the topic on "COTMA 10 A and Its Practical Implications on Consulting Engineers and The Construction Industry".

#### Webinar Outline:

- Objective of COTMA 10 A during the COVID-19 Period?
- How does it help subcontractor's ad stakeholders defray manpower cost?
- The role of the Assessor and the objectives of claiming cost
- Brief discussion on the Temporary Measures Act
- Discussion in brief about the dispute resolution provided under the Act
- Case studies and discussions
- Question and answers

## ACES RHINO-GRASSHOPPER ESSENTIALS – The Must-Learn Platform to Kickstart Your Digital Journey – 17 & 18 August 2021



This course was designed for anyone interested in acquiring the essential knowledge and skills required to begin Grasshopper to complement other digital tools use for the purpose of automating our daily engineering tasks.

A total of 24 participants had attended these 2-evenings course conducted physically on 17 & 18 August 2021 at SMU.

This course is relevant to PE's work for the following reasons:

- Grasshopper is a graphical algorithm editor that is easy to learn and use so provides an entry into the world of coding for non-coders
- It can be used to automate, optimize and visualize engineering solutions
- Coding is a core skill that Professional Engineers need to learn to ensure they maintain relevance as the industry digitally transforms

The trainers:

**Alistair Sargeant** is an Associate structural engineer at Arup. He has over 10 years' experience using Grasshopper to automate structural engineering workflows.

**Adrian Foo** is a structural engineer at Arup. He has the experience applying knowledge of Grasshopper in real project to streamline design workflows.

ACES will continue to conduct this course if there is a demand from members.

## ACES-Winston Training: Common Pump Failures and New Age Pumping Solutions – 14 September 2021

One of the biggest problems that the maintenance teams encounter in the recent years, is the ever-growing skills gap. ACES has arranged a presentation by Winston Engineering to share their expertise to diagnose and repair the major faults that could eventually lead to catastrophic failures.

The speaker Mr. Karthik P Sampath, Product Specialist (Process Pumps) shared on the following two topics:

1. Two ways to cause a pump to fail
2. Predictive Maintenance with IoT Sensors

A total of 35 participants had attended the virtual sharing conducted on 14 September 2021.

## ACES Digital Delivery Seminar – 15 September 2021

Continuing our series of seminars to help the industry appreciate the benefits of digitising the work processes. We are delighted to invite contractors from our industry to share the up-and-downs of their journey in digital delivery. The seminar hopes to hear from the contractors on what the consultants can adjust or improve on to streamline processes and avoid abortive design or construction work.

A total of 170 participants had attended the seminar hosted by ACES via Zoom. We would like to thank our speakers for their interesting sharing session on the following topics:

1. Daniels Chandra (ONG&ONG) on Embracing the Digital Workplace
2. Kho Teok Siong (Kimly) on Midwood BIM tender documentation and model release to contractor
3. Ar. Rita Soh and Kee Zhi Wei (RDC) on Driving Productivity and Quality Improvements in Healthcare Projects with Integrated Digital Delivery
4. Angel Neo Kae Yan (CPG) on BIM-based Virtual Mock-up Implementation in Construction

## ACES DfS Workshop: Introduction to Design for Safety (DfS) 2<sup>nd</sup> Run – 21 September 2021

A total of 38 participants attended the ACES Introduction to Design for Safety (DfS) course (2nd Run) delivered by our two experience trainers namely Er. Koh Boon Liang and Mr. Jason Oh on 21 September 2021 via Zoom platform.

This DfS introductory course aims to share the WSH guidelines (DfS) published by WSHC in August 2016. Upon attending this introductory course, participants will have the knowledge to work together with stakeholders such as Developers, DfS Professionals, Designers and Contractors/Subcontractors to address risks at source and plan for safe work in regard to a building or structure as a workplace. By working together, they can identify and eliminate or reduce, as far as reasonably practicable, all foreseeable design risk (s) to any person's safety or health.



## ACES Upcoming Events

- **ACES Awards 2022**  
– *please look out for announcement in November 2021*
- **ACES-TROX Training: 'Systems & Equipment'**  
– 9 lessons – **20 October to 15 December 2021**
- **ACES DfS Workshop: Introduction to Design for Safety (DfS) 3<sup>rd</sup> Run – 17 November 2021**
- **ACES Golden Jubilee 50<sup>th</sup> Anniversary Gala Dinner**  
– **19 April 2022 (Tuesday)** – *more details to be shared*



## ACES-YPC Updates

### ACES-YPC Blood Donation Drive

ACES-YPC recognises the need to give back to our community and as part of a continuous effort, the team has organised a year long blood donation drive to encourage engineers to give the "Gift of Life". We strongly encourage all members to participate in this meaningful event. Do also keep a lookout for our emails and follow our Instagram account (@aces\_ypc) for more information.

Members can make the blood donation at your timing and use ACES code P1005 when making an appointment with the Bloodbank. Through the organisation code (P1005), we will be able to track the participation rate from ACES.



SM's Effort for a Good Cause

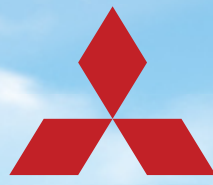
### Joint Virtual Escape Room by ACES-YPC & Young BATU

Similar to ACES-YPC, Young BATU (Building Construction and Timber Industries Employees' Union) consists of young professionals representing employees in the building, property management, construction, cleaning and timber industries. ACES-YPC and Young BATU committees have been actively trying to reach out to their members during this downtime due to COVID. Hence this time round, both committees came together and organized a Joint Virtual Escape Room event on 23 July 2021.

The event is an interactive online game built-in with clues and tools, where participants from ACES-YPC & Young BATU worked together in groups of 5 to solve the puzzles and uncover the mystery. The puzzles were relatively challenging and required a lot of teamwork and coordination among the members. Through this event, it has helped to promote some connections and budding friendship among ACES-YPC and Young BATU members.

We have received positive feedback from the participants that they have enjoyed the virtual interaction as it was a refreshing experience. There are more activities in the pipeline with Young BATU for the last quarter of 2021 and we look forward to seeing your participation!





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MUY-GN10VA



MXY-2G20VA2



MXY-3G28VA2



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MXY-5G48VA2



MXY-4C100VA



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

