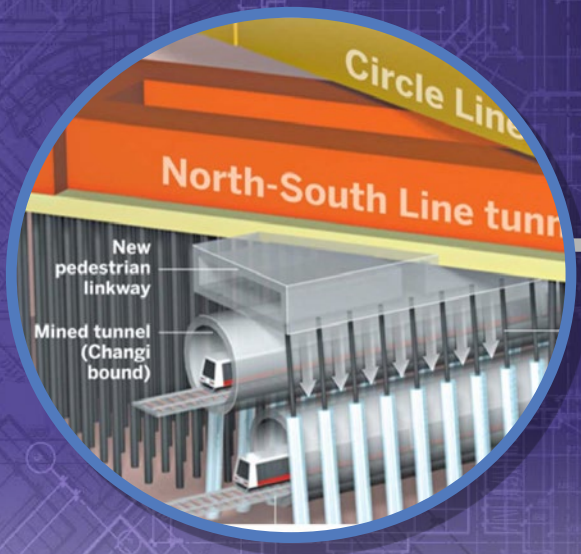
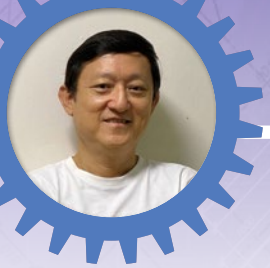
JUNE 2020

CONNECT 2 ACES

A QUARTERLY PUBLICATION BY THE ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE





"One positive outcome of the Circuit Breaker is that all our members are now adopting digital technology to the fullest. This was made necessary when work from home become mandatory."

CONNECT2ACES

A QUARTERLY PUBLICATION BY THE ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE

JUNE 2020 ISSUE

Editor: Er. Adeline Koh

Editorial Team: Er. Yow Cheong Hoe
Ms. Lilian Lean

Contributors for this issue: Er. Alfred Neo / Er. Chuck Kho
Er. Yeow Mei Leng / Er. Teo Yann
Er. Yong Fen Leong / Er. Mak Swee Chiang
Workplace Safety and Health Council
CPG Consultants Pte. Ltd.
Meinhardt (Singapore) Pte. Ltd.
Squire Mech Pte. Ltd.
WSP Consultancy Pte. Ltd.

ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE

Permit No. MCI (P) 062/07/2019

Please send queries and feedback to:

E-mail : secretariat@aces.org.sg
Tel : 6659 5023
Address : 18 Sin Ming Lane #06-01
Midview City,
Singapore 573960

Creative Direction by:
Artnexus Design Pte Ltd

In This Issue

New World in 2020

Working from home in 2020

We had expected to see a better year in 2020, but it turned out to be the year when we are faced with the biggest crisis in the history of the current generation. The degree of changes we are experiencing now could not be foreseen. The emergent of asymptomatic people broke down the wall of detection and required a change in strategy. "Circuit Breaker" engineered to break Covid-19 transmission cycle from 8 April to 1 June, fortunately, succeeded to achieve its intended results for our community. We are now finding our way back where normal will be good enough. Calmness and courage will be the new Cs that we are honoured to have.

After consulting our members on 29 April 2020, we are deferring our 49th Annual General Meeting (AGM) to a later date when the pandemic is under control. Even though we have the technology, two-third of the respondents do not prefer virtual AGM compared to physical AGM – members traditionally interact and touch base with each other. Meantime, the current council members will continue to serve members until the next one is formed. As you have been informed, we are waiving 50% of the annual subscription for members in this challenging time.

One positive outcome of the Circuit Breaker is that all our members are now adopting digital technology to the fullest. This was made necessary when work from home become mandatory. Most found the new working style attractive, save them time on travel and afford more life balance with family. However, some feedback that discussion with management and supervising engineer are not as effective. This aspect must be reinforced to ensure our service, quality and safety of work will not be affected. When given a choice, the majority preferred a combination of working from home and office. While we work toward normalcy, flexibility and adaptive is the way forward.

With digital technology, we get on our scheduled dialogue with our industry partners. Construction Industry Joint Committee (CIJC) meetings were conducted using Zoom. Meeting with our counterpart from other countries, Federation of ASEAN Consulting Engineers (FACE) was also carried out in the same way, saving us time on travelling overseas. We shared common issues. The problems include our fees are tied to the progress of work and our cost is top-heavy because of heavy responsibility carried by QPs. On the other hand, the speed of adaptation of digital technology accelerated across the industry. Our yearly event, the 16th Annual dialogue with our counterpart from Malaysia, the Association of Consulting Engineers Malaysia (ACEM) will also be held virtually.

We conducted ACES Design Excellence Awards Judging Session on 27 February 2020 with a panel of distinguished judges from the industry. We are pleased to announce that 9 projects were conferred ACES Design Excellence Awards – Category 'Excellence'. Outstanding projects that impressed the Judges includes critical project for hospitals, unique and complex tunnelling project using Ground Freezing; and a delicate retrofitting of the existing in-use vehicular bridge. The awards were planned to be given out at the now postponed ACES Annual Dinner but will be re-scheduled for the next befitting occasion.

Covid-19 is a test against the social norm. We had to put all our remaining social events on hold but hope to resume it soonest when the situation permits. While we are forced to coop-up, we begin to cherish many wonderful memories we have together in the past ACES events. Starting from this publication, in line with our digital drive, our Newsletter will be in electronic format.

Together with all our Council Members and Past Presidents, we will continue to serve our members and will keep you posted on the latest development. We look forward to presenting our new session Council in the next available opportunity. Meantime, please let us know if there is any issue that you would like the current Council to work on.

We cannot change the new world. The pandemic has forced us to slow down. This allows us to adapt to it, get stronger and find new ways to carry on with our profession and life calmly and courageously. I wish all of you and your family, Good Health and Genuine Happiness.

Er. Chua Tong Seng
President

ACES-ACEM Interim Dialogue on 25 June 2020

There was an interim dialogue session between ACES and ACEM Council being held virtually on 25 June 2020 to share on the impact of COVID-19 pandemic to the consultants and built environments industry and the government supports and measures towards a safe restart in both Singapore and Malaysia.

ACES Awards 2020

BY ER. ALFRED NEO AND ER. CHUCK KHO

On 15 November 2019, ACES invited nominations from members for the following awards:

- ACES Young Consulting Engineer of the Year Award
- ACES Design Excellence Awards

ACES YOUNG CONSULTING ENGINEERS OF THE YEAR AWARD 2020

Young Consulting Engineers are our future for the Consultancy Industry. This award aims to recognise, celebrate and encourage young consulting engineers working in Singapore.

Recipients are judged in respect of the following attribute:

- Demonstrated communication and leadership skill,
- Positive/notable outcomes from their engineering work / Contribution to profession and community,
- Engineering competence,
- Creativity and innovation.

Despite lowering the age limit for the award, we have a good range of submissions this year. The submissions were assessed and accorded to the following 13 Awardees:

	AWARDEE	COMPANY	CATEGORY
1.	Mr. Praveen Kumar Vontville Premnath	AECOM Singapore Pte. Ltd.	Civil & Structural
2.	Ms. Lim Mee Mee	CPG Consultants Pte. Ltd.	Civil & Structural
3.	Mr. Muhammad Fahizul Bin Mansor	CPG Consultants Pte. Ltd.	Civil & Structural
4.	Er. Tan Fie Chen	KTP Consultants Pte. Ltd.	Civil & Structural
5.	Ms. Young Jie Yu	WSP Consultancy Pte. Ltd.	Civil & Structural
6.	Mr. Goh Kuen Luen	Beca Carter Hollings & Ferner (S.E.Asia) Pte. Ltd.	Electrical
7.	Ms. Nwe Ni Win	DSCO Group Pte. Ltd.	Electrical
8.	Ms. Chia Sy En	WSP Consultancy Pte. Ltd.	Electrical
9.	Mr. Chua Chee Ming	Aurecon Singapore (Pte.) Ltd.	Mechanical
10.	Mr. Lee Wei Wen	Beca Carter Hollings & Ferner (S.E.Asia) Pte. Ltd.	Mechanical
11.	Er. Evan Satya Budisarwono	Squire Mech Pte. Ltd.	Mechanical
12.	Mr. Jonathan Lim Wei Jie	WSP Consultancy Pte. Ltd.	Mechanical
13.	Mr. Pang Kang Wei	WSP Consultancy Pte. Ltd.	Mechanical

We are glad that there are many young promising consulting engineers which augur well for the future of the Consulting Industry. We look forward to them serving actively in ACES.

ACES Design Excellence Awards 2020

The ACES Design Excellence Awards were assessed and selected in February 2020. This award accord recognition to projects in Singapore which have been judged to have demonstrated engineering design excellence.

The Awards aim to:

1. Serve as an incentive for engineers practising in Singapore to pay particular attention to high standards of engineering design and quality,

2. Provide an avenue through which competition for work excellence may be enhanced,

3. Give recognition to design projects and engineering achievements carried out by members of the Association of Consulting Engineers Singapore,

4. Provide an opportunity to demonstrate to clients and the general public the broad range of services and technical expertise provided by consulting engineers.

This year we have a bountiful of good submissions and it was a difficult decision to differentiate the submissions. After intense discussion, the Design Excellence Awards were awarded to the following submissions for two levels of quality:

A. EXCELLENCE AWARD
B. MERIT AWARD

A. 9 projects were conferred ACES Design Excellence Awards – Category 'EXCELLENCE"

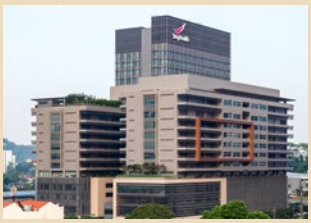
CPG Consultants Pte. Ltd.
National Centre for Infectious Diseases (NCID)
M&E, A2

Squire Mech Pte. Ltd.
Additions & Alterations to Changi Airport Terminal 1
M&E, A2

WSP Consultancy Pte. Ltd.
Sengkang General & Community Hospitals
M&E, A2

Arup Singapore Pte. Ltd.
Thomson East-Coast Line Contract T203 (TE2)
C&S, A2

Arup Singapore Pte. Ltd.
SingHealth Tower and Outram Community Hospital
C&S, A2



Kiso-Jiban Singapore Pte. Ltd.
Contract T226 Marina Bay Station, TEL
C&S, A2

Meinhardt (Singapore) Pte. Ltd.
Frasers Tower
C&S, A2

Meinhardt (Singapore) Pte. Ltd.
National Centre for Infectious Diseases and Centre for Healthcare Innovation
C&S, A2

YWL Engineering Pte. Ltd.
Keppel Viaduct Widening
C&S, A2

B. 6 projects were conferred ACES Design Excellence Awards – Category 'MERIT'

	COMPANY	PROJECT NAME	CATEGORY
a)	Arup Singapore Pte. Lt.d	Paya Lebar Quarter	C&S, A2
b)	Arup Singapore Pte. Ltd.	JTC trendspace (Furniture Hub)	C&S, A2
c)	Aurecon Singapore (Pte.) Ltd.	Global Switch Singapore Woodlands Data Centre	M&E, A2
d)	Aurecon Singapore (Pte.) Ltd.	Renewable Energy Integration Demonstrator - Singapore	M&E, A1
e)	Meinhardt (Singapore) Pte. Ltd.	Singapore Management University (SMU) Connexion	C&S, A2
f)	Ronnie & Koh Consultants Pte. Ltd.	Kampung Admiralty	C&S, A2

C&S = Civil and Structural
M&E = Mechanical and Electrical
A1 = Project value up to S$20 Million
A2 = Project value above S$20 Million

ACES DESIGN EXCELLENCE AWARDS 2020

National Centre for Infectious Diseases (NCID)

M&E Consultant: CPG Consultants Pte. Ltd.

Over the last couple of decades, we have had encounters with infectious diseases which posed as threats to the public and which required various treatment and containment procedures. For example, the SARS crisis in 2003 had highlighted the need for preparedness in the healthcare sector. CPG Consultants Pte Ltd is the multi-disciplinary team chosen to work with the Ministry of Health for designing a purpose-built facility to strengthen Singapore's capabilities in infectious disease management and prevention. The result is the NCID (National Center for Infectious Diseases) and CHI (Centre for Healthcare Innovation), which houses clinical services, public health, research, training and education, and community engagement under one overarching structure. The CPG Consultant team was actively involved in Architectural, Mechanical & Electrical engineering, Civil & Structural engineering as well the Quantity Surveying aspects of the project.

The NCID consists of 2 blocks (1 clinical block of 15 levels and 1 medical education training block of 9 levels) with 4 basements. The Gross Floor Area (GFA) is approximately 100,000m2.

The building is well equipped to handle outbreak responses through its screening centre, clinic and isolation wards with negative-pressured rooms to tackle diseases transmitted through airborne, droplet and contact routes. It consists of a comprehensive range of facilities such as laboratories, pharmacies, operation theatres and supporting services. The building is designed to be safe to use by healthcare workers, patients and visitors at all times. All wards are designed to have the flexibility for conversion from "daily-usage" mode to "outbreak" mode and vice versa. The building is also connected to neighbouring healthcare buildings such as Lee Kong Chian School of Medicine and Tan Tock Seng Hospital. Connections vary from overhead link bridges to underground pedestrian walkways.

MECHANICAL & ENGINEERING DESIGN CONSIDERATIONS

The air-conditioning design of NCID is critical in ensuring the success of NCID in meeting its primary need as an isolation facility. A few features are adopted for the air-conditioning system design:

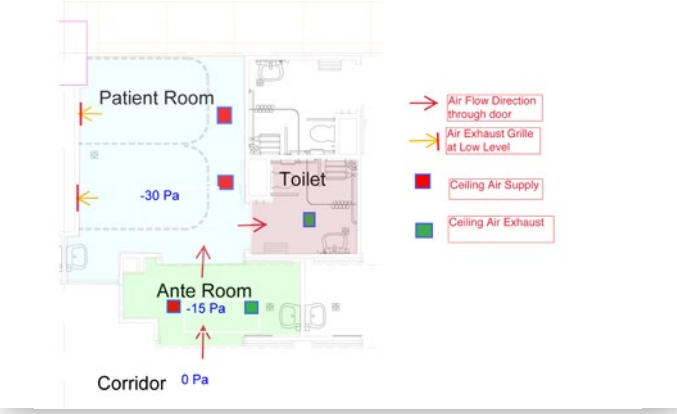
a. Single-pass through air-conditioning for clinical spaces such as infectious patient clinics, patient wards, operation theatres.

b. Directional airflow and air pressure regime with minimum -2.5 Pa and 12 Air Changes per Hour.

c. Use of motorised dampers, HEPA filters and venturi valves in the air distribution network to maintain the required air change volumes.

These allow for the dilution of contaminated air and the controlled flow from 'clean' to 'dirty' areas for the protection of the patients and staff.

Temperature of 24±1°C, RH of 55±5% is provided in accordance to SS 553.



CONSTRUCTION AND TESTING

In addition to the attention to details and quality of installation and construction, it is also essential that the areas and rooms are airtight to meet the required directional airflow with the minimum differential pressure. Each of the patient rooms was tested for air tightness upon completion. This also takes into consideration the construction margin and deterioration of the rooms throughout the building life cycle.

During the testing and commissioning stage, various failure scenarios were checked. Failure scenario tests include AHUs, High Plume Fans, Controls and Network. In particular, critical equipment were operated in hot standby mode to prevent the backflow of air from "dirty area" to "clean areas" during failure scenarios. These tests ensured that the designs are effective and functional to serve its purpose against infection control.

ACES DESIGN EXCELLENCE AWARDS 2020

National Centre for Infectious Diseases & Centre for Healthcare Innovation

Meinhardt (Singapore) Pte. Ltd.

The National Centre for Infectious Diseases (NCID) and Centre for Healthcare Innovation (CHI) are two blocks of 14- and 9-storey buildings respectively. NCID is a purpose-built facility to enhance Tan Took Seng Hospital's capabilities in infectious disease management and control. At the same time, CHI aims to establish a platform and ecosystem for healthcare innovation and co-learning. The two buildings share a common 4-level basement. The development also provides integrated vehicular and pedestrian connectivity to Tan Took Seng Hospital (TTSH), and pedestrian connectivity to Lee Kong Chian (LKC) School of Medicine Building. The project was located on a site along Jalan Tan Tock Seng, and bounded by the two junctions between Jalan Tan Tock Seng / Tan Tock Seng Link and Jalan Tan Took Seng / Akyab Road.

Being located within Health City Novena, the site is surrounded by many sensitive buildings, structures and services. These include the main hospital TTSH, Ren Ci Community Hospital, LKC School of Medicine, LKC conservation building, Dover Park Hospice and also nearby residential housings. The safeguarding of these existing structures, control of vibration, noise, dust and minimum disruption to hospital operations were critical considerations in the design and selection of construction methods. The new overhead bridges and underpasses below the busy Jalan Tan Tock Seng posed additional challenges to the design and construction of the development.

There was a level difference of 15m across the site which rendered the deep basement design and construction extremely challenging. The maximum depth of excavation was approximately 24m. A robust contiguous bored pile wall was designed as the Earth Retaining or Stabilising Structure (ERSS). The full top-down method was adopted with the basements and superstructure constructed concurrently to achieve timely completion. High-performance kingposts were installed to support the superstructure when the basements were being constructed. These kingposts were designed to support a construction load up to roof level, as it was anticipated that the completion of Basement 4 would be about the same time as structural topping out. The basement formation level was underlain by the residual soil and weathered rock of the Jurong Formation. An innovative piled raft foundation was adopted. The piles that were installed to support the kingposts for top-down construction were integrated into the raft to provide an effective and cost-efficient foundation system in the permanent condition.

Highly buildable structural systems were adopted. Flat-plate and flat-slab were generally adopted for the basements to simplify excavation. Semi-precast construction comprising band beams and hollow core slabs was implemented for the superstructure of both buildings. As the new facilities formed an integral part of the entire healthcare campus, three sky bridges and five underground tunnels were also constructed to connect to the adjoining Tan Took Seng Hospital and Lee Kong Chian School of Medicine. There were many challenges in the design and construction of the underground

pedestrian and vehicular tunnels as these were located very near to existing structures. There were also extensive underground services affecting the work which required to be managed and safeguarded. Re-engineering of the existing structures was also carried out to decommission some of the ground anchors installed previously for the construction of Tan Tock Seng Hospital. An integrated design strategy, with a well-planned traffic management and multi-staged diversion scheme enabled the successful completion of these tunnels. This holistic approach was similarly applied to the sky bridges, whereby the design adopting lightweight steel construction, had also taken duly into consideration the installation sequence and methodology.

The NCID/CHI project was indeed complex and very challenging. Innovative hybrid solutions in adopting buildable designs, high performance materials and practical construction methodologies were individually devised to overcome the many challenges faced for each of these work components in the project. The project was successfully completed on time, meeting the Client's requirements, safely and within budget.

ACES DESIGN EXCELLENCE AWARDS 2020

Sengkang General & Community Hospitals

M&E Consultant: WSP Consultancy Pte. Ltd.

The Sengkang General and Community Hospitals (SKGH) is an addition to Singapore's public healthcare infrastructure, serving the country's northeastern region. SKGH is a 10-storey building with three basements, comprising 1000 beds in the general Hospital, 400 beds in the community hospital, operating theatres, intensive/ critical care units, isolation rooms, diagnostic & treatment facilities, as well as other service and support facilities.

As the appointed MEP consultant, WSP was responsible for the design of a sustainable and reliable MEP system.

ENERGY EFFICIENCY FEATURES

To reduce the energy usage in SKGH, key energy-saving features such as high-efficiency chilled water system, air to water heat pump for production of hot water, plate heat exchanger for energy recovery from exhaust air were implemented.

SKGH was awarded BCA Green Mark Platinum for healthcare facilities in 2014. This is an endorsement of the project's energy efficiency measures.

HOSPITAL INFECTION CONTROL

WSP worked closely with various stakeholders to meet the stringent hospital infection control requirement.

The operating theatres were designed in a positive pressure regime, with supply air passing through high-efficiency particulate air filters to ensure sterility within the operating environment.

The isolation rooms are designed in a negative pressure regime, to ensure possible contaminants are contained within the rooms and do not spread to other clean zones.

ENVIRONMENTAL AND SOCIAL CONSIDERATION

As the healthcare facility is in the heartlands, the discharge of exhaust air and waste must be carried out in an environmentally safe manner.

Exhaust air from isolation rooms will flow through Bag-In-Bag-Out (BIBO) HEPA filters before discharging through a high plume ventilation fan. Wastewater from laboratories and isolation rooms are collected via dedicated discharge pipes and are continuously treated and monitored before discharging into the sewer.

EFFICIENT DESIGN THROUGH INNOVATION

In 2013, SKGH was the first healthcare project to fully utilise BIM (Building Information Modelling) from the conceptual to the final construction stages. The use of BIM aided in multi-disciplinary coordination and the identification of technical issues at the design stage.

Computational Fluid Dynamics (CFD) was used to simulate various modes of ventilation to verify the eventual thermal comfort conditions for the naturally ventilated wards.

In line with the government's push for Design for Manufacturing and Assembly (DfMA), WSP worked closely with its MEP contractors to identify MEP works that can be fabricated off-site. Implemented DfMAs includes prefabricated and pre-insulated ductworks, pre-assembled fan coil units completed with valves and accessories, common framing system, pre-assembled pump sets, and pre-wired motor control panel complete with BMS controllers.

These innovations have significantly enhanced the quality of the completed works and the overall construction productivity.

ACES DESIGN EXCELLENCE AWARDS 2020

Changi Airport Terminal 1 Expansion

M&E Consultant: Squire Mech Pte. Ltd.

Changi Airport Terminal 1 was opened for operations in 1981. The completed S$323 million expansion project started works in 2015 and completed in 2019. Expansion works included the renovation of the Departure Check-in Hall by replacing existing check-in counters and installing two new check-in rows. Self-bag-drop facilities are implemented and there are additions of self-service check-in kiosks. Arrival Baggage Claim Hall has received a facelift with 90% expansion in floor area and integrated with Level 1 of Jewel. Two additional baggage claim belts are installed and existing claim belts are upgraded. The Baggage Handling System (BHS) at T1 was upgraded to a fully automated system with automatic sorting capability that enables self-check-in, self-bag-drop and hence reduces check-in time. The automated Early Bag Storage System stores baggage of early check-in passengers at T1 and Jewel. New electrical switchgears, emergency generators, sprinkler pump and tank are some of the infrastructure installed to support the upgrading of BHS. Major diversion of existing live M&E services was carried out at arrival claim hall ceiling and at the baggage sorting area to give way for the installation of new BHS.

Changi Airport is a critical live building with non-stop operation and involves passenger traffic, baggage handling, flights schedule and immigration security. Zero or minimal downtime is a requirement for the airport system operation.

A very detailed design plan needed to be implemented in the project design phase. The consultants need to plan and breakdown the construction work into micro phasing so that the live terminal building can keep operates with minimum disruption. Considerations have to be given for passenger traffic flow, immigration security zoning, constraint of existing M&E system serving area and capacity. Temporary M&E provisions are provided in between the micro phases to make the planning work. To keep the existing arrival claim hall in operation during the work being carried out above the arrival hall ceiling, multiple temporary working staging is erected. M&E services including lighting, air-con supply and sprinkler protection are provided underneath the temporary working staging within the arrival hall so that the bag claim process is not affected and fire protection in the live arrival hall is maintained throughout the construction process. The most challenging work is the diversion of existing live M&E services to give space for new BHS. One of the most critically affected services is the chilled water system. To maintain zero or minimal system downtime, hot tapping and pipe-freezing are being implemented during the diversion works. There is a case where there is no valve at the existing pipe and hence pipe freezing is not feasible. In lieu of pipe freezing, we bring in another method which is the line stop using a mechanical plug to stop the flow instead of ice plug in the pipe freezing method. With these methods implemented, chiller plant is not required to shut down for the diversion works. T1 building is more than 30 years old and the as-built information is not accurate. To save time and manpower to do manual survey, high speed accurate 3D laser scanning technology is used to scan the existing site to capture all the as-built layout. The as-built point cloud data are incorporated into the existing building BIM model to identify the affected existing M&E services and to plan the diversion of new routing.

There are major savings in manpower and construction time and subsequently construction cost saving. These concepts can be easily adopted and applied effectively to other similar nature of A&A work regardless of the scale of the project.

National WSH Campaign 2020

By Workplace Safety and Health Council

The WSH Council calls upon the industry, employers and employees to "Take Time to Take Care" of their safety and health at work. This year, the emphasis is for everyone to set aside time to care for their health to build a safer and healthier workforce at the workplace.

A HEALTHIER YOU IS A SAFER YOU

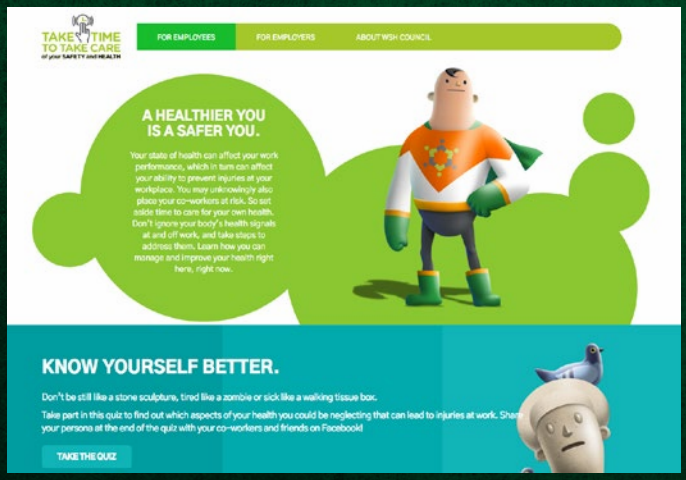
Your state of health can impact your work performance, which in turn can affect your ability to prevent injuries at work. You may also unknowingly place your co-workers at risk.

Be conscious of your body's health signals, at and off work, and take steps to address them – whether these signals are due to a momentary state of poor health, fatigue, age, or chronic illness.

This year's Campaign drives employees and employers to do these:

- Employees: Always set aside time to care for your health so that you can be safe and productive at work.
- Employers: Demonstrate care for your employees by encouraging them to look after their health, which in turn will create a healthy workforce.

ENGAGEMENT AND OUTREACH



Campaign Microsite http://www.taketimetotakecare.sg/

The WSH Council has created a Campaign microsite with information catered for both employers and employees.

A. Microsite for Employers

Your employees' health is important. They need to be healthy in order to be safe at work. Learn the 3 ways in creating a healthy workforce and the actions you can take. Share with them on how they can take care of their health and well-being through disease management and lifestyle management.

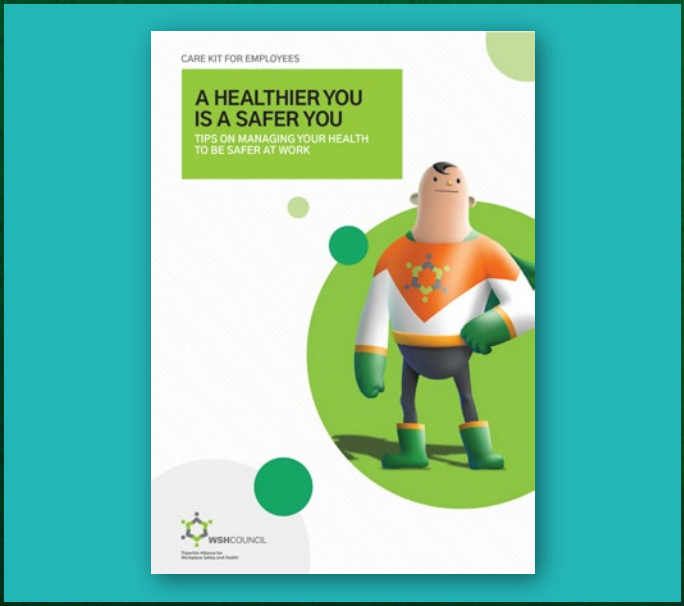
Disease management

Your employees can protect themselves through early detection of common medical conditions which can be done through regular check-ups, age-appropriate health screenings and health coaching.

Lifestyle management

Encourage your employees to adopt lifestyle management programmes to stay fit and well by embracing a healthy lifestyle. Healthier employees are generally happier and more productive at work.

Download the Campaign CARE kit (from this location: https://taketimetotakecare.sg/assets/pdf/Care_Kit_for_Employees.pdf) which comes with educational health messages, health tips, and other useful resources. Share the CARE kit with your employees, whether they are working from home or at designated work locations, to help them kick-start their journey in managing and improving their health.



B. Microsite for Employees

Your health is not just about you. It affects your work performance, and can put yourself and your co-workers at risk.

Learn from the bite-sized educational messages on the microsite and share them with your co-workers via the social media platform to remind them to stay safe and healthy.

Take part in the Campaign quiz, and discover what your persona is and receive tips on how you can improve your health and lifestyle habits.

Visit https://taketimetotakecare.sg/index.html#quiz-section to take the persona quiz.

Business & Professional Practice Committee Updates

By Er. Alfred Neo & Er. Chuck Kho

The Business and Professional Practice Committee continues to engage Government GPEs and Agencies through the year to promote the interests of consulting engineers through the following actions.

Representing our Members and providing feedback

ACES is concerned with the low fee situation in the Industry that has great impact to the long-term sustainability of the Consultancy Industry. To this, we are part of the Construction Industry Joint Committee] (CIJC) Procurement Discussion Group chaired by BCA.

The Discussion Group seek to achieve the following:

- Provide a direct channel for feedback and consultation for construction procurement issues,
- Foster close collaboration between BCA and Industry Associations in construction procurement policies,
- Provide an avenue for direct liaison with the single point-of-contact (POC) representing Industry Associations.

Through this platform, ACES has given feedback on some conditions in the Public Sector Consultancy Agreement which we deem overly onerous and unfair of which the Consultant cannot reasonably anticipate and priced for. In addition, we have also given feedback on the following issues:

- Challenges faced by Consultant on variation claim arising from additional, abortive and prolongation of contract,
- Compensation mechanism on tender requiring design proposal,
- Awards by GPEs for Consulting Tenders that are extremely low and unsustainable,
- Suggestion on nominal or acceptable rates for staffs in Consulting Industry.

We urge members to continue to feedback to us on any contractual issues that they are facing that are deemed too onerous or unfair with your rationale and proposal so that we can use this Procurement Discussion Group platform to take this 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.

M&E Practice Committee Updates

By Er. Yeow Mei Leng & Er. Teo Yann

NATIONAL PRODUCTIVITY AND QUALITY SPECIFICATIONS (NPQS)

SIA/IES/ACES are jointly working on a National Productivity and Quality Specifications (NPQS) via a joint company iNPQS Pte. Ltd. ACES is leading the C&S discipline. The iNPQS was started in March 2019 as per BCA's request for SIA/IES/ACES to digitize the HDB, LTA, JTC and iNPQS Core Specification with Building Information Modeling (BIM) interface for the industry to use as a platform to issue specification for project work in Singapore. The work on the digital platform is almost completed and the effort to formulate the iNPQS Core Specification should complete by end August 2020. The M&E discipline, is led by IES with ACES assisting and supported by staff from iNPQS. There are 138 M&E sections requiring almost 40 DE/DR (Domain Expert/Domain Reviewer) allocated with 2,300 hours to complete the iNPQS Core Specification. The commercial terms-for-usage is now being developed and should be available by July 2020. The test run would be conducted in July/August 2020 and the launch should happen by September 2020.

IES/ACES M&E RE/RTO REGISTRY

The Registry was started in 2014 and to date we have almost 480 registered M&E RE/RTO. A M&E RE/RTO Handbook was launched in 2018 and we are now in discussion with BCA Academy to organize specific training to refresh/upgrade the knowledge of existing and aspiring registered M&E RE/RTO. Applicants meeting minimum academic qualifications and work experience are usually only registered after an interview. ACES has 12 members on rotation to support the interview exercise. Members who are keen to assist are welcome.

Recently, BCA has also requested that the Registry to manage the Lift & Escalator Inspectors. Registered Inspectors would authorize to assist SPE (L&E) to perform their work.

INDUSTRY TRANSFORMATION MAP DISCUSSION

We have been actively participating with the Industry Transformation Map (ITM) Discussion and the following are the updates:

1. Talent & Resource - The ITM recognising the challenges the Industry faces are attracting talent, in view of poor perception of the working environment and compensation scheme.

2. To overcome some of these challenges the ITM proposed to work with the Trade Associations and Chambers (TACs) to imply the following:

    - Transform the Industry to be more Digitized through BIM, PPVC, VDC, VC, IDD
    - Attracting talent through Talks, Work/Learn Scheme and Scholarship
    - Better co-ordination of Training through PET and CET
    - Targeted Talent Development Scheme
    - Skills Accreditation to provide Recognition

3. To improve on compensation there are discussion on Tender Evaluation to move towards heavier weightage on Quality in the Quality-Fee Method (QFM).

SINGAPORE CIVIL DEFENCE FORCE (SCDF) REPRESENTATIVE

Er. Vincent Han and Er. Choong Choon Guan will continue to represent ACES on the Standing Committee for April 2020 to March 2021.

C&S Practice Committee Updates

By Er. Yong Fen Leong & Er. Mak Swee Chiang

INTEGRATED DIGITAL DELIVERY (IDD)

In support of Integrated Digital Delivery (IDD), ACES-BCA planned to conduct a second Digital Delivery sharing session on 24 April 2020 but it was cancelled due to COVID-19 crisis.

With the collaboration with BCA Academy, ACES has successfully co-chair a webinar free-of-charge for members participation on 21 May 2020. The webinar was well received and joined by more than 800 participants.

Three speakers from three separate contracting firms were invited to share their works, experiences, and digital delivery efforts. They gave a very in-depth illustration of what exactly was executed and answered many of the questions raised in the session. This seminar hopes to increase the collaboration between consultants and contractors by understanding the nature of the digital information which are important.

The speakers and their projects shared:

a) **Mr. Muhammad Khalil bin Shaiful** Digital Delivery Manager Boustead Projects E&C Pte. Ltd.	JTC Kranji Green Multi-Storey Recycling Facility (MSRF)
b) **Mr. Chris Bai Guang Yu** BIM Manager BHCC Construction Pte. Ltd.	JTC CleanTech Two Block B @ CleanTech Park
c) **Mr. Andy Wong** General Manager Digital G (a member of Gammon Group)	Innovative Digital Construction in Practice

In addition, on the 6 May 2020, ACES was also involved as the Webinar co-chair for BCA-SIA-ACES with the theme "Staying the Course In Unprecedented Times" where we contributed to the moderation of the Q&A session.

LTA DIALOGUE

ACES C&S had a dialogue with LTA on 17 January 2020 to provide practitioner feedback, practical implications and suggest improvements to the regulatory implementation of the new requirements.

Matters discussed are recorded in official minutes of meetings by LTA:

- Improvement on Traffic Impact Assessment (TIA) Processes,
- Updates from Previous LTA-IES/ACES Dialogue Session,
- Reducing touch-points at DC and CSC stages.

ACES Upcoming Seminars and Events

ACES Free Webinar
- 2 July 2020 (Thu)

ACES Design for Safety for Professionals (DfSP) Course for 2020
- 22 & 23 July 2020 (Wed / Thu)
- 29 & 30 September 2020 (Wed / Thu)

ACES 49th Annual General Meeting 2020
- Postponed till further notice

ACES 49th Anniversary Gala Dinner
- Postponed till further notice

ASSOCIATION OF
CONSULTING ENGINEERS
SINGAPORE

We will emerge stronger together.

Stay strong and stay safe.