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Presidential Address

Dear ASC members,



Once again on behalf of ASC, I am delighted to see good participation for the events held last quarter. The lion dance symbolises prosperity and hope all ASC members prosperous and good healthy for the many years to come.

ASC will be organising more seminars in the month of April to July and sincerely hope more members turn up to participate.

Lastly, kindly be reminded that our 36th Annual General Meeting will be held on 4th May 2018, Friday at Singapore Polytechnic.

Hope to see all of you there.

Yours faithfully

Er. Patrick Ho

MP – RP Night and ASC Chinese New Year Celebration

Membership Promotion (MP) together with Research Promotion (RP) organized a Chinese New Year Celebration on 1 February 2018 at Singapore Polytechnic Graduate Guild. There were a total of approximately 50 ASC members and guests attending the event.

The event started with Lion Dance performance by Singapore Polytechnic Dragon and Lion Dance Club.



Event continued with “Lo Hei” (Tossing up good fortune) and followed by technical talk by Australian Visiting Lecturer, Professor Mat Santamouris on “Predicting the cooling future”.



ASHRAE Distinguish Lecturer Talk by Ms. Patricia Graef

ASC organized ASHRAE DL talk by Ms. Patricia Graef, ASHRAE Fellow on 28 March 2018 at Singapore Polytechnic Graduate Guild. She presented two topics, i.e. “The New Legionella Standard ANSI/ASHRAE 188-2015” and “Legionellosis: Risk Management for Building Water Systems”. There were 40 participants from industries and government agencies attended the seminar.

ASHRAE Legionella & Water Temperature Control

- >70°C (160°F) = 100% Rapid Kill
- 60°C (140°F) = 90% Kill in “minutes”
- 50°C (122°F) = 90% Kill in “hours”
- 35-46°C (95-115°F)
Optimum temperature range
- <25°C (77°F) =
Predominately dormant, but viable

ASHRAE Possible Building Hazards

Where? can Legionella grow:

- Hot and cold water storage tanks
- Water heaters
- Water fountain simulators
- Expansion tanks
- Water lines
- Electronic circuits
- Aerators
- Partial flow restrictors
- Shower heads and hoses
- Mistmakers and atomizing humidifiers
- Intermittently used equipment, including eyewash stations
- Ice machines

ASHRAE SUMMARY

- **Legionella** is a common bacteria in man-built water systems;
- **Disease Causation is Not Simple** – involves many factors:
 - Favorable conditions for LB growth & amplification
 - Means of transmitting water aerosols containing LB
 - Exposure route to Susceptible persons
- **Cooling Water & Potable Water Systems** must be considered
- **ANSI/ASHRAE Standard 188-2015**
 - Responsibility lies with Owners/managers—as well as design engineers
 - Identify minimum legionellosis risk requirements
 - Must establish a water management program

In the seminar, she provided an overview of legionella bacteria, its source, how it amplified, how it is transmitted and who is susceptible. ASHRAE has been actively involved in providing information on legionella and has developed ASHRAE Standard 188 to establish minimum legionellosis risk management required for building water system. She presented the framework for legionella bacteria control measures, health care facility requirements, requirements for adopting a Water Management Program for specific devices such as cooling towers, ornamental fountains, spas, etc., elements of a Water Management Program, and designer requirements.



Student Activities

Technical Tour to Keppel DHCS (Feb 2018)

Keppel DHCS is one of the first and the largest district cooling developer and service provider in Singapore. The technical visit to this site was organized for the students of ASHRAE ASC along with members from the industry which served as a good platform for the students to network and learn about this innovative cooling approach.



The tour included a detailed technical brief on the concept of district cooling so that the students could understand the technology well before the site walk. After the technical brief, the students were taken for an interactive site walk which included the tour to the chiller plant room, the BMS center and the cooling towers. Finally the Keppel team briefed the entire district plan piping network on a site model.



Student Branch Advisor (SBA) Discussion with Singapore Polytechnic (April 2018)

As a part of outreach activities with the different student branches in Singapore, a lunch meeting with the SBA of Singapore Polytechnic was done in April 2018. During this discussion, the SBA and the student chair discussed on the way forward for bringing more student members from SP, the available sponsorship which ASC has for additional support and further discussed on how to bring more students for the CRC which is going to be scheduled in August 2018.



Further the meeting was attended by the Student Sub Committee chair Mr Praveen who also value added in proposing the next set of student tours and technical visits which ASC would propose for the students.

Chapter Member News

ASC is pleased to inform that our ASC BOG and President 2010-2011, Prof. Chandra Sekhar, has been nominated by nominating committee to be ASHRAE Society Director-at-Large for 2018-2019. A Society election of qualifying ASHRAE members is held in late spring 2018 (May/June) and final results of the election are announced on June 25 at the Presidential Luncheon in Houston, Texas.



Dr Chandra Sekhar is currently a Professor and Programme Director (M.Sc – Building Performance and Sustainability) and Co-Director (Centre for Integrated Building Energy and Sustainability in the Tropics) in the Department of Building at the National University of Singapore (NUS). He is also a Founding Director of Enhanced Air Quality Pte Ltd., a NUS Spin-off Company incorporated in June 2004, arising out of his research in the fields of indoor air quality (IAQ) and Energy. He has been an IAQ consultant in Singapore since 1993. He received his PhD in Mechanical Engineering from the University of Adelaide, Australia, in the area of energy efficient cooling and dehumidification systems. In 1992, he joined NUS as a Faculty and has since been teaching and conducting research in the areas of thermal comfort, ventilation and indoor air quality, energy efficient air-conditioning and mechanical ventilation systems, building energy analysis and has published about 225 papers in these areas in several international journals and conferences.

Prof Sekhar is a Fellow of ASHRAE and a Fellow of ISIAQ. He has been an ASHRAE Distinguished Lecturer since 2006 and is regularly invited as a speaker around the world. He is a recipient of the Environmental Health Award (2014), Exceptional Service Award (2013) and the Distinguished Service Award (2010) from ASHRAE. He is a co-recipient of The Enterprise Challenge award of the Prime Minister's Office, Singapore in 2004 and ASEAN Energy Award in 2011. He is also a member of the Institution of Engineers, Australia (CPEng, IEAust). Within ASHRAE, he is a past Chair of the Environmental Health Committee (EHC), was a member of the IEQ-Global Alliance Ad Hoc Committee (2013-2016) and is currently a member of SSPC 62.1, TC 2.1, EHC and TC 4.3.

Upcoming Events

April 2018

- a) Event: ASHRAE DL - ASHRAE Building Energy Quotient (bEQ) and Retro-Commissioning for Energy Savings
Date: 25 April 2018
Time: 2:00pm – 5:00pm
Venue: Singapore Polytechnic Graduates' Guild
Speaker: Mr. Hoy Bohanon

May 2018

- a) 36th AGM
Date: 4 May 2018
Time: 6:30pm
Venue: SPGG

- b) ASC Networking Golf Day
Date: 18 May 2018
Venue: Orchard Country Club

- c) Event: ASHRAE DL - IAQ Issues and Filtration Technologies
Date: 23 May 2018
Time: 2:00pm – 5:00pm
Venue: Singapore Polytechnic Graduates' Guild
Speaker: Mr. Hoy Bohanon

June 2018

- a) Event: ASHRAE DL - Clean Data Centre & Intelligent Buildings/Building Automation
Date: 13 June 2018
Time: 2:00pm – 5:00pm
Venue: Singapore Polytechnic Graduates' Guild
Speaker: Mr. Jim Vallort

July 2018

- a) ASC 2018 Installation Dinner
Date: 20 July 2018
Time: 6:00pm – 11:00pm
Venue: Orchard Hotel

Call for Papers for the Society's 125th Anniversary

ASHRAE will celebrate the 125th anniversary of its founding during the 2019-2020 Society year.

As a part of the celebration, the Historical Committee has announced a call for papers on technologies and topics that occurred after 1920. What do you consider are the milestone industry advances in heating, ventilating, refrigeration and air conditioning? How did they develop, who did it, how does it impact us now? HVAC&R engineering changed our lives! What did we engineers do? How did we do it? Your topic can be specific or broad, but let's document the history. Accepted papers will be published in ASHRAE Transactions and presented at a Society Winter or Annual Conference during the celebration year.

Abstracts are due June 4, 2018. Upon acceptance, papers are due September 2018. Papers can be a maximum of 30 double-spaced pages in length and undergo a double-blind review.

To submit an abstract, go to <https://mc.manuscriptcentral.com/ashrae>.

For more information, contact Jeff Haberl, 979-845-6507, jhaberl@tamu.edu.

ASHRAE Certification

ASHRAE certification programs were founded to meet industry need as identified through market research and today provide value to many important stakeholders. Developed by subject matter experts, including those recruited from allied professional organizations, ASHRAE certification programs benchmark with the ANSI/ISO accreditation standards for personnel certification programs to help ensure quality.



For the past 100+ years ASHRAE has worked hard to earn and maintain a worldwide reputation for being the leader in HVAC&R design. ASHRAE certification programs serve to reinforce that reputation.

ASHRAE has 6 certification programs:

- 1) BCxP – Building Commissioning Professional Certification
- 2) BEAP – Building Energy Assessment Professional Certification
- 3) BEMP – Building Energy Modeling Professional Certification
- 4) HBDP – High-Performance Building Design Professional Certification
- 5) HFDP – Healthcare Facility Design Professional Certification
- 6) OPMP – Operations and Performance Management Professional Certification

Certification FAQ

- 1) Why should I get certified?
Recognized by over 30 national, state and local government bodies and with over 2,500 certifications earned to-date, ASHRAE certifications increasingly have become the must-have credential for built-environment professionals.
- 2) How will people know that I am certified?
The name and location of each active certificant are posted on ASHRAE's website. The list is updated monthly to reflect new certificants. In addition, ASHRAE encourages certificants to include their ASHRAE certification designation on their e-mail auto-signature, business cards, letterhead, social networks and other public locations.
- 3) What does earning an ASHRAE certification involve?
Applicants must submit a completed application attesting to fulfilling the eligibility criteria and then – if approved to sit for the exam – pass an examination.
- 4) Where can I find an application?
The electronic application for each certification program is available on the ASHRAE website.
- 5) What is the application fee?
\$395 for ASHRAE members and \$545 for non-members.
- 6) How will I know if I have successfully submitted my application?
After successful application submission, you will receive an email confirmation.
- 7) Where and when can I take an exam?
Exams may be taken year round at any one of [over 300 testing centers](#) in countries around the world.

8) How do I schedule an exam?

Candidates approved to sit for a certification exam will receive an e-mail notification that includes directions on how to schedule their examination, including the selection of an examination center, date and time. Candidates must schedule and take their exam within 90 days of approval to sit for the exam.

9) What is tested on the exam?

Certification exams assess competence in critical job tasks, and their related knowledge, skills and abilities, as identified by the Exam Subcommittee for each program. These tasks can be found in the detailed content outline (DCO) in the *Candidate Guidebook* for each certification program.

10) What is the exam format?

Each exam except the Building Commissioning Professional (BCxP) exam consists of 115 multiple-choice items, of which 100 will be scored. The additional 15 items are interspersed throughout the exam and are used for "pre-test" purposes; candidates do not know which items are scored and which are being pre-tested. The BCxP exam consists of 130 multiple-choice items, of which 10 are unscored, pre-test items. The three cognitive levels tested on exam are recall, application and analysis. Candidates for the Healthcare Facility Design Professional (HFDP) certification have 2 hours in which to complete their exam, while all other exam candidates have 2.5 hours. Non-native English speakers may request an additional 30 minutes of testing time.

11) How do I go about requesting an accommodation for testing?

ASHRAE complies with the Americans with Disabilities Act while striving to ensure that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability. To request an accommodation for testing, please submit a completed "[Request for Special Accommodations Form](#)" immediately following submission of your application. Please note that up to 45 days will be needed to evaluate the request. It is ASHRAE policy to maintain strict confidentiality of all information pertaining to an individual's application.

12) Is there an exam prep course I can take?

Though the best preparation for the exam is your work experience, as it's an exam on competence in critical job tasks, and their related knowledge, skills and abilities, for those interested in preparing for their exam, ASHRAE offers the following resources, which can be found on the landing page for each certification program:

- The Detailed Content Outline (DCO) in Appendix A of the *Candidate Guidebook* lists which critical job tasks are tested on the exam. The DCO even indicates how many questions on the exam are in a particular content area.
- The *Candidate Guidebook* as well lists "Key" and "Related" resources for exam prep, which may include publications and courses. Since no two exam candidates have the same education and work experience background, it must be up to the individual to identify areas of improvement for exam preparation.
- A convenient, 30-question, online practice exam (\$39) is recommended. Though not a gap analysis tool, it will help exam candidates become more familiar with exam content and difficulty.

13) What score do I need to pass my exam? What is the exam pass rate?

The passing score is different for different certification exams, but that doesn't mean one exam or certification is more or less difficult, or more or less rigorous, than another. When the respective certification Exam Subcommittees conduct a passing point study, the expert judgements of subject matter experts are required to produce and interpret exam passing point study results and set the examination passing score.

Score Needed to Pass an Exam

BCxP – 83/120

BCxP Recertification – 48/70

BEAP – 68/100

BEMP – 67/100

HBDP – 60/100

HFDP – 69/100

OPMP – 65/100

Exam Pass Rate: Life-to-Date through 1/2018

BCxP – 72%

BCxP Recertification – 91%

BEAP – 78%

BEMP – 64%

HBDP – 69%

HFDP – 81%

OPMP – 51%

14) What can I bring to the examination?

Candidates may bring into the examination room a non-programmable, scientific calculator. The examination center as well will provide each candidate with scratch paper and a pencil for making calculations. To manage possible noise, U.S. examinees will be provided with ear plugs. International and pencil-and-paper examinees may bring their own earplugs, though the proctor will need to inspect and approve them.

15) If I fail the exam, can I reapply to take it?

Yes – but such candidates must wait at least 90 days before reapplying to retake the exam.

16) Why do I have to recertify?

Over time, the critical tasks of a job, and its related knowledge, skills and abilities, evolve. The purpose of recertifying every three years is to ensure that Certificants maintain a level of continuing competence through acceptable professional development activities.

17) What is required to renew my certification?

Forty-five (45) professional development hours (PDHs) in subject matter related to the certification earned for all ASHRAE certifications, except the BCxP which requires 50 PDHs. In all cases, recertification requirements must be met by December 31 of the renewal year. Complete renewal requirements for ASHRAE certifications may be found in the respective certification *Candidate Guidebooks*. The cost of recertification is \$195 for ASHRAE members and \$295 for non-members, except CPMP recertification as a BCxP which is \$295 for ASHRAE members and \$395 for non-members.

18) For renewal purposes, can acceptable PDHs be earned only through ASHRAE activities?

PDHs can be earned in a wide variety of ways and not just through ASHRAE activities! [Definitions of acceptable PDHs](#) as well apply across all countries in which Certificants live.