

THE ASHRAE TIMES

Newsletter of ASHRAE Singapore Chapter

Dear ASC Members

This is the 2nd Newsletter for the year 2014-2015.

I hope you have enjoyed reading the 1st Issue released last July and were updated with the latest events in ASC with activities organized by the various chair person and the Board of Governors.

We hope you will continue to support our seminars, technical talks , networking session and other activities in the future.

To better serve the needs of the members, please continue to give us your feedback and suggestions.

On behalf of ASHRAE Singapore Chapter , I would like to wish all the members and their families Happy & Healthy 2015!

K C Liew

Chapter Chair, Publicity & Publication, 2014-2015

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ASHRAE Distinguished Lecturer Program

By Hee Joo POH

Environmental Control and Energy Performance in Hospital and Healthcare Facilities

On 26th Aug 2014, ASHRAE Singapore Chapter (ASC) and BCA Academy has jointly organized ASHRAE Distinguished Lecturer Program on Environmental Control and Energy Performance in Hospital and Healthcare Facilities. The seminar, taking place at BCAA premise; was delivered by ASHRAE DL Mr. Brian Monk and A/ Prof. Lee Siew Eang from Department of Building, NUS. The 1 day seminar discussed about the environmental quality in high performance buildings, filtration systems, airborne contaminant control in hospital and healthcare environment, as well as hospital energy performance and design for healthcare facilities.



Mr. Brian Monk presents his DL topic on ASHRAE Standard 62.1



A/Prof. Lee Siew Eang presents his topic on Green Mark scheme for Healthcare Facilities



Some of the participants for the ASHRAE Distinguished Lecturer Program



President of ASC, Mr. Matthew Ngan presents Certificate of Appreciation to both Mr. Brian Monk and A/Prof. Lee Siew Eang

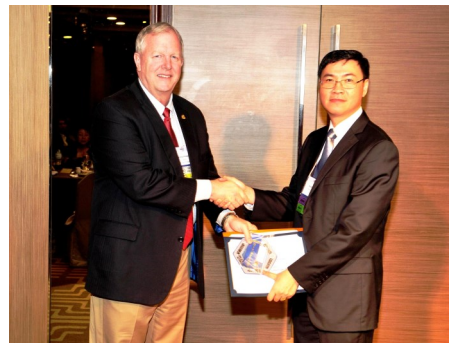
ASC at the Chapter's Regional Conference 2014

By Matthew Ngan

The 17th Chapter's Regional Conference (CRC) of Region XIII was held in Taipei, Taiwan from 15th to 16th August 2014, followed with RPM1 on 17th August. It was attended by ASHRAE President Thomas H. Phoenix and other Society officers. The CRC was also well attended by delegates from the Region. There are total 331 participants, with 9 BOG members and Regional officers and 12 student



Apart from the regular business sessions, there was also seminars (Greener and Smarter Design for High Performance Buildings) and workshops, as well as student program.



Our student members have also presented an interesting cultural performance during the Banquet Dinner.

We have also received some awards from the Society, e.g. PAOE/Star Award, PAOE Sustainability Activities, Red Ribbon Award (2nd highest PAOE points) for MP, Award for RP, etc.

5 motions was submitted during the CRC (1 from Malaysia Chapter and 4 from Singapore Chapter) and 4 motions was passed. The next CRC in 2015 will be in Philippines

ASC at the Chapter's Regional Conference 2014

By Matthew Ngan



**Photo of ASC Team with Mr. Thomas H. "Tom" Phoenix, ASHRAE President
2014-2015 (Fifth from right)**



Group Photo of the Region XIII

MASHRAE & ASC 25th Bilateral Meeting 2014

By K C Liew

The annual bilateral meeting between ASHRAE Malaysia Chapter (MASHRAE) and ASHRAE Singapore Chapter (ASC) was held on 22nd Novemebr 2014 at The Amverton Resort, Klang,, West Malaysia. The meeting was attended by 7 delegates from Singa-pore and MASHRAE member.

Members of MASHRAE brought up that we should share the various standard used for green building in both countries.

More activities involving family members would encourage members to participate in future events organize by the chapters.

APCBE to be organized more effectively with CRC or other regular events.



Fundamentals of Air Conditioning System

By Albert Sin

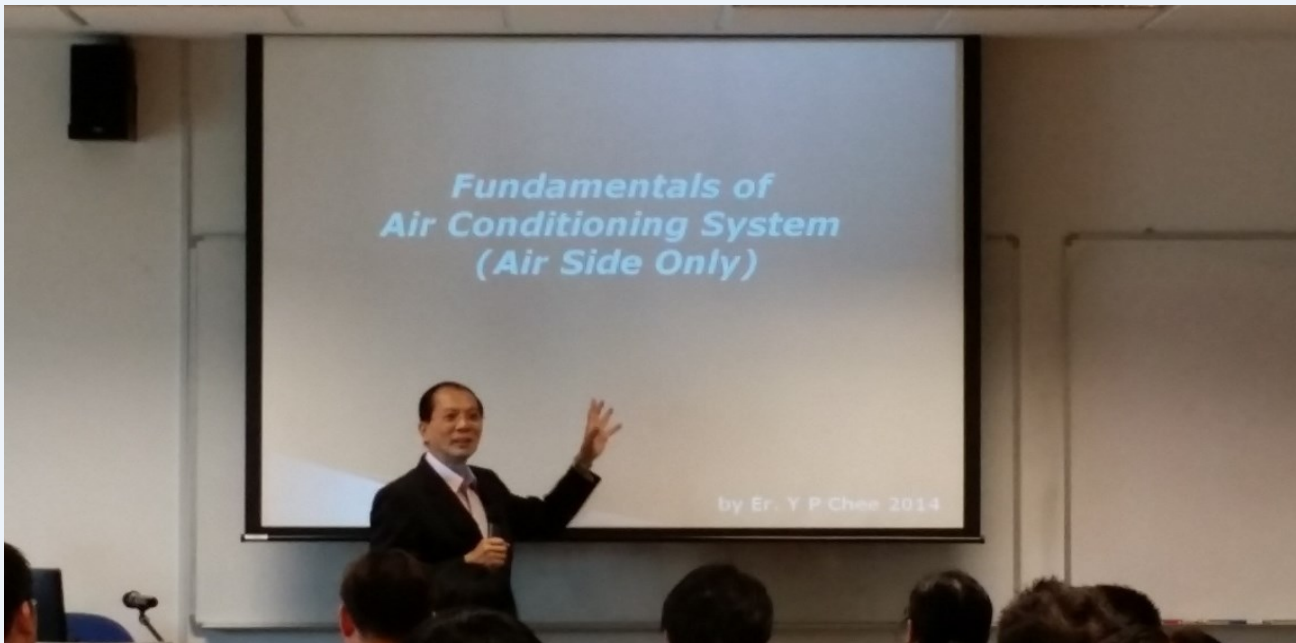
2-day course on “Fundamentals of Air-Conditioning System” at BCA Academy

ASHRAE Singapore Chapter (ASC) and BCA Academy have jointly organised the second run of a 2-day training course on “Fundamentals of Air-Conditioning System” at BCA Academy, 13-14 November 2014.

The course objectives were to develop an understanding of the principles of air-conditioning, with focus on air-movement and components of an air distribution system. An overview of the relevant regulations and guidelines were also covered.

The course trainer, Er Chee Yan Pong is our ASC Chapter Past President who has conducted the course with about 46 participants. A copy of the “Fundamentals of Air System Design” published by ASHRAE was given to the participants.

The second run attracted more than 20 participants.



Er Chee Yan Pong giving an introduction on “Fundamentals of Air-Conditioning System (Air Side)”

Grassroots Government Activities Committee (GGAC) Report

By Albert Sin

Grassroots Government Activities Committee (GGAC) joint meeting

The GGAC joint meeting was held on 18 October 2014 over lunch at City Square Mall. The joint meeting, chaired by Er Albert Sin, was attended by respective ASHRAE Singapore Chapter sub-committees; namely, Students Activities Chair, Young Engineers Associates (YEA), Chapter Technology Transfer Committee (CTTC), and The Institution of Engineers, Singapore (IES) Council Member, Er Alfred Wong.

Er Albert explained the objectives of GGAC are to promote grassroots activities and issues that relate to government agencies in areas of interest to ASHRAE members. He encouraged and highlighted that several of ASHRAE members have been participating with various government bodies in the working group of drafting Singapore Standards, such as SS553, SS554.

Er Albert added that GGAC can also help to promote the ASHRAE's Building Energy Quotient (bEQ) program. It is a voluntary rating program that applies an easily understood scale to compare, or benchmark, a building's energy use to similar buildings in similar climate zone.

The joint meeting with IES representative Er Alfred Wong who is also Chairman, National Committee of Engineering Organisations, is to explore possible joint activities, seminars for the benefits of the engineers in the HVAC industry. Er Alfred shared that IES currently is constructing an Annex building which could be used for future joint activities.



From left front (clockwise): Kris, Mitesh, Syed, Sam Lam, Albert Sin (GGAC Chair), Alfred Wong (IES)

YEA Activities

By Kris Tan

YEA Leadership International 2014

26 – 28 Sep 2014 – The YEA Leadership International was held in Kuala Lumpur, Malaysia. 11 YEAs members from Region 13 had attended this event. It was a great networking platform during this 3-days programme.

The participants discovered more on their personalities and team roles through the “Strength Deployment Inventory (SDI)” and “Belbin Team Inventory” profiling tests. The team-building game indicated the importance on how different roles will contribute to the successful delivery of a “project”.

Self-awareness is the first key to increase relationship and leadership effectiveness. By understanding your social identity and the “team roles” of your team members, it contributes to a more balanced team which leads to better team performance. Top performing teams would normally consist of team members of different behavioral strengths and weaknesses (team roles). The knowledge we have learnt from this programme could be applied in our workplace and daily life. We would like to express our gratitude to Tricia Evans, our trainer.

“It was a good opportunity to learn about team dynamics and different personalities, most importantly how to work well in a team. It was a pleasure to meet and learn from leadership coach, Tricia Evans.”

~ Mr. Mitesh Kumar (Chair, Student Activities)

“YEA Leadership event was a melting pot for Region 13 young engineers in ASHRAE. It was an amazing and fruitful event.”

~ Mr. Syed Mubarak Bin Subukutheen (YEA, Singapore)



YEA Activities

By Kris Tan

Barbecue Networking Event

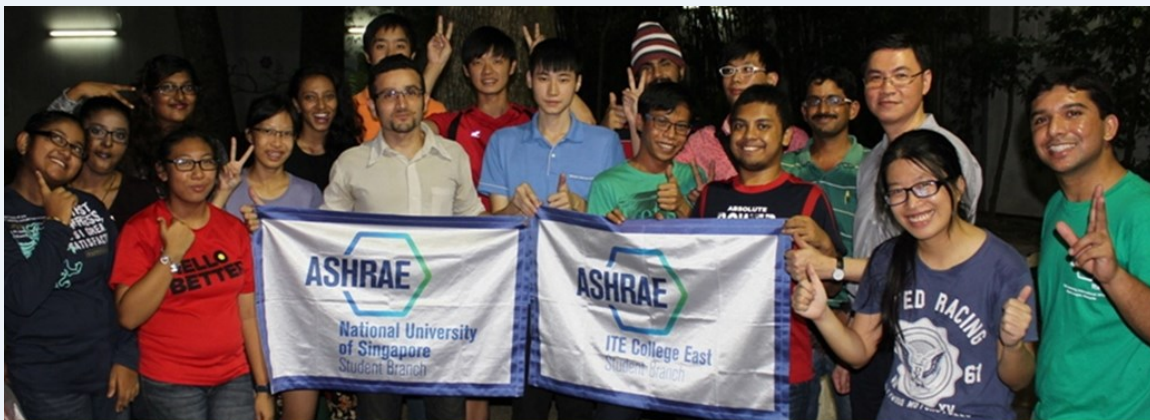
02 Oct 2014 – The BBQ event was a great success and 25 participants had attended. Students from different institutions (NUS, NTU, TP, RP and ITE College East) had the opportunity to network with YEAs and BOG members. We have shared with the students on ASHRAE membership benefits and the SmartStart program.

“The purpose of bringing seniors and juniors together in ASHRAE is a good idea and it was successfully delivered. In my opinion, we should have some team game to spread ASHRAE Singapore Chapter. We must promote in other institutes locally, including private and government colleges”

~ Mr. Kishor Kumar (YEA member)

“It was a great networking event for ASHRAE members. Both BBQ and bowling were entertaining and fun. I like to see more gatherings and technical events to familiarise the members on ASHRAE technical point of view.”

~ Mr. Esmail Saber (Student President, National University of Singapore)



YEA Activities

By Kris Tan

Haze Exhibition

09 Nov 2014 – 2 YEA members had volunteered for the first public haze exhibition in Singapore, “Haze: Know it. Stop it.” at Vivocity. The event was collaborated by Singapore Institute of International Affairs (SIIA) and People’s Movement to stop Haze (PM Haze).

In 2013, the haze in Singapore hits PSI all-time record high of 371. The exhibition at Vivocity created awareness to public on various angles on the haze which included initiatives that were carried out by government at local and international level to reduce the burning of forest in Indonesia.

As volunteers, we had the opportunity to share the bad health effects of haze and understanding the perspective and plight of farmers in Indonesia. Complicated issues underlying the haze and how the public could contribute by consuming sustainable sources of palm oil and paper were also highlighted. The public had an opportunity to touch and feel the palm seeds, palm kernels, paper pulps and peat soil.

“This exhibition provided great insights to haze and it was a great enriching knowledge sharing platform.”

~ Ms. Kris Tan (Chair, YEA)

“It was a great exhibit which provided awareness and explained underlying issues in relation to haze issue and the part as an individual or local community can play to help reduce it in future.”



YEA Activities

By Kris Tan

Green Temple Tour

29 Nov 2014 – The Singapore first green temple "Poh Ern Shih" (Temple of Thanksgiving) was awarded Green Mark Gold by Building & Construction Authority in 2009.

Kenneth, a volunteer showed us the modern eco-friendly technologies which the temple has adopted:

Solar panels on the roof which are used to generate electricity and to heat water;

Solatube daylighting systems are used to provide daylighting;

The natural wind energy is harvested by wind generators which have been erected to convert wind into electricity;

Rainwater harvesting system has been installed. Water stored are used for watering plants and cleaning purposes;

Micro-hydro generators are installed in the building generate electricity.

This is an impressive and amazing tour and we expressed our gratitude to Mr. Lee and Kenneth for the tour.



YEA Activities

By Kris Tan

Outing to Alive Museum

30 Nov 2014 – The Alive Museum outing was fun and relaxing which all 11 participants had a great time on taking pictures with the 3D paintings. The drawing techniques that created visual illusions in this gallery were amazing and the 3D artwork exhibits were an eye-opener for us.

"I like this event as we can take pictures and have fun as a team."

~ Ms. Suzannah Suleman Ali (Student, ITE College East)



YEA Activities

By Kris Tan



SmartStart is a 3-year membership program which allows Student members to transfer their student membership to Associate membership at an affordable subsidised rate of US\$187. Here is the fee breakdown:

First Year: \$20

Second Year: \$73

Third Year: \$94

*Please note that the SmartStart program is only for current ASHRAE Student members.

For more information on this program, please contact our YEA Chair, Kris Tan (kristan.1983@gmail.com).

Goodies to be given away

We have the below items to give away.



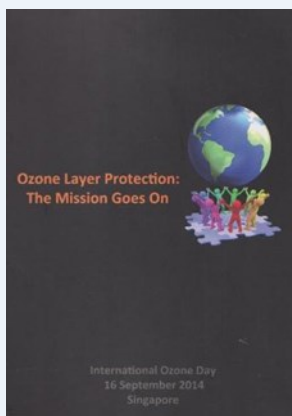
2 x YEA Leadership International T-shirt

1 x L size

1 x XL size

Sample T-shirt can be shown in the "YEA Leadership International 2014" article

5 x customised notebooks in celebration of the Ozone Day 2014 from NEA



Inside each

notebook, consist of:

A pen

Notepad

Post-it sticker

If you are interested in any of the items, please contact Kris Tan (kristan.1983@gmail.com) for self-collection.

Student Activities

By Mitesh Kumar

Team-bonding at Sun Moon Lake and Formosan Aboriginal Culture Village

10 Aug 2014 – This was the first overseas team-bonding event for Singapore Chapter students in 2014. Students from Japan, Malaysia and Taiwan also participated in this event. It provided the student activities chair, YEA chair and students an opportunity to interact and bond with each other. We have explored the famous Sun Moon Lake and learnt more about nine aboriginal tribal cultures in the Formosan Aboriginal Cultural village. The students also gained more independent and learnt more of teamwork during this event.

“This team-bonding session fostered greater teamwork. It also created an informal platform to learn more about the students’ personalities and interests. This will help us in creating future student activities.”

~ Ms. Kris Tan (Chair, YEA)

“We go as a team trying to speak mandarin. We have fun walking around the theme park and taking the rides.”



Student Activities

By Mitesh Kumar

National Chin-Yi University of Technology (NCUT) Summer Camp

11 – 14 Aug 2014 – This 4-days summer camp was organised by National Chin-Yi University of Technology (NCUT). 100 students from different Asia Pacific countries (Singapore, Japan, Hong Kong, Indonesia, Malaysia, Philippines and Taiwan) had attended this event. Other than attending energy conversion / saving courses at the NCUT campus, the students had cycled at Sun Moon Lake, sight-seeing at Chung Tai Chan Monastery, Daxi Old Street, Checheng and experienced local culture at Fengchia Night Market. The students also went for technical visits at Fair Friend Group and Taiwan Power Electric generation factory.

“During our trip, we have gained lots of exposure such as universities green building visits, designing of fan competitions in a team, where we do not get a chance to take part in our school.”

~ Mr. Eric Teo (Student President, ITE College East)

“The summer camp taught us how to interact with different countries. It was a fun summer camp; we get to do things as a team with other countries.”

~ Ms. Suzanah Suleman Ali (Student, ITE College East)



Student Activities

By Mitesh Kumar

Chapter Regional Conference 2014

15 – 16 Aug 2014 – The Region XIII Chapter Regional Conference (CRC) was being held in Taipei, Taiwan. 11 students and 1 lecturer represented Singapore Chapter this year. On the first day, technical seminars were conducted followed by technical visits to Hanbell Precise Machinery Co. Ltd and Taiwan Hitachi Appliances. During the banquet dinner in the evening, students from every country were required to perform an act related to their countries. Our students performed “Di Tanjong Katong” and “Chan Mali Chan”.

On the second day, the students went to National Taipei University of Technology (NTUT), Beitou Thermal Valley (Hell Valley) and Beitou Hot Spring Museum. This was an interesting and fruitful trip for the students.

“It gives us lots of opportunities to talk with bosses and universities’ professors from the Chapter Regional Conference. We learnt to co-operate and care for each other during our team bonding in Taiwan” -Mr. Eric Teo (Student President, ITE College East

“I like the team events that were organised and thus encouraged interaction among students from various countries. Also, the industrial visit was very informative. In the near future, we can have more industrial visits and more sessions where speakers can talk more on ASHRAE objectives, visions and goals to students to make them understand the prime objectives and future plans.” - Mr. Ritesh Kumar (Student, Nanyang Technology University)



Student Activities

By Mitesh Kumar

BEX Asia 2014

01 – 03 Sept 2014 – The BEX Asia is Southeast Asia's premier business platform for the Build Green environment. It provides a one-stop sourcing solution for cutting-edge technologies in building materials, energy efficiency systems, sustainable design and architecture for the future of sustainable communities. BEX Asia provided ASC student members to network with skilled professionals and key industry practitioners from the region.

"This is my first time helping out in an exhibition. I have learnt new things on how ASHRAE and other companies work. I hope to see more and participate in building tours events in the chapter."

~ Ms. Tan Yu Min (Student President, Temasek Polytechnic)

"BEXAsia is a really great experience for me as I get to see wonderful invention by companies. It was fun and exciting. There is nothing like there, it is like an amazement park for businessmen."



Student Activities

Dinner Networking Session at University Town, NUS

16 Oct 2014 – The YEA members and students gained new knowledge from the seminar on Energy Efficient Air-conditioning Technologies & Refrigerant Trends presented by Anil Thakur from Danfoss. After the seminar, we went for a short dinner networking session at University Town at NUS. We shared among each other on what we have learnt and also what the student / YEA members would like to see in Singapore Chapter.



ASC Book Prize Award – ITE College East

16 Oct 2014 – Eric Teo had been awarded the book prize by the school based on his contribution to ASHRAE Singapore. Eric is the student president of ITE College East. He has been promoting ASHRAE in ITE College East and has shared some valuable feedbacks on how to increase awareness of ASHRAE in his campus.

“This is my first time winning this award. I am very happy and hope to contribute more to the chapter in the future.”

~ Mr. Eric Teo (Student President, ITE College East)

Student Activities

By Mitesh Kumar

Technical Visit to 9 Tampines Grande

21 Oct 2014 – Tampines Grande was awarded BCA Green Mark Platinum Award and LEED Gold Certification. This is the first commercial development with the most extensive use of solar technology in Singapore.

Solar photovoltaic (PV) panels are installed on the rooftops to harvest solar energy. Solar thermal panels were used to provide hot water in enabling heat exchange for air-conditioning of the atrium and 1st level lobbies. Carbon dioxide sensors and cold plasma air purifiers were installed in the AHUs of offices to improve air quality, occupational health and comfort for building's users. An eco-indicator display was also installed beside the lift to display the building's information such as energy and water consumption, CO2 emissions, temperature, etc.

The students expressed their gratitude to Miss Tham, the facilities manager and her team for tour.

"They did a good job in design and implementation of energy efficient technologies in their office building."

~ Mr. Esmail Saber (Student President, National University of Singapore)



Student Activities

By Mitesh Kumar

Technical Visit to Singapore Community Sportshub

22 Nov 2014 – The Singapore Sportshub is a key project in the government of Singapore's urban redevelopment and sports facilities master plan – Vision 2030. The objective is to promote a more sustainable and healthy society nationwide. The Sportshub has been awarded with Green Mark Gold plus certification.

The 7 participants had toured the 55,000 seat central area which featured a retractable roof measuring 300m in diameter. They saw the unique stadium dome which is world's largest free-spanning dome and first naturally ventilated stadium, which have an integrated cooling system with energy-efficient technology, delivering cool air to every single seat. Beyond maximizing greenery and passive cooling measures, innovative engineering solutions such as PV panels, rain water harvesting system have been integrated into the design.

The other Hub facilities included, a 6,000 seat indoor Aquatic Centre and a Water Sports Centre for the general public, 3,000 seats Multi-Purpose indoor Arena that will be fully scalable, exhibition centre, sports museum, commercial space and food and beverage outlets.

"It was an enriching learning experience"



Student Activities

By Mitesh Kumar

Re-activation of ITE College East and Temasek Polytechnic Student Branch

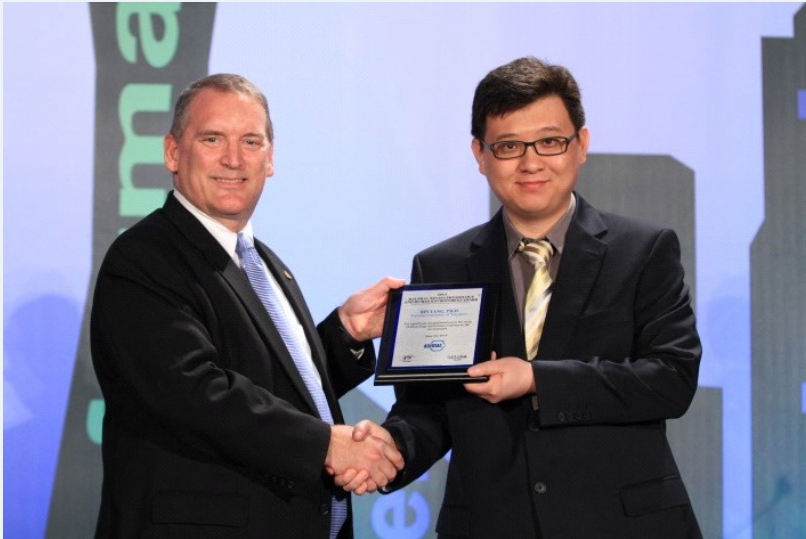
Nov 2014 – ASHRAE Singapore Chapter has successfully re-activated their ITE College East and Temasek Polytechnic branch. The students' branch committees have been busy in creating more activities for the student members such as networking events and technical visits for the coming session. Both the student branches and NUS student branch were presented with the new ASHRAE student branch banner during networking sessions.

"With hard work and continuous effort from student committee members including support from BOG members we have successfully reactivated ITE and TP branches."



ASHRAE News

Assistant Professor Bin Yang won ASHRAE Ralph G. Nevins Physiology and Human Environment Award



We are pleased to announce that Dr. Bin Yang, an assistant professor from energy efficiency research group of Umea University in Sweden, obtained American Society of Heating Refrigerating and Air-conditioning Engineers (ASHRAE) Ralph G. Nevins Physiology and Human Environment Award, which was conferred by ASHRAE President, Prof. William P. Bahnfleth in ASHRAE 2014 Annual Conference.

The Ralph G. Nevins Physiology and Human Environment Award is given once each year to a young researcher who has distinguished himself in man's response to the environment, which may include thermal, acoustical, olfactory, microbial or other effects. The award includes a plaque, \$500 honorarium, and lapel pin. This award recognizes Dr. Nevins' great interest in students and the environmental field, and is funded by memorial contributions in his name.

For more information about the award, please visit this link: <https://www.ashrae.org/resources--publications/periodicals/enewsletters/esociety/2014-06-11-articles/89-to-be-recognized-at-2014-annual-conference>

The Complete Guide to Using Standard 90.1-2013

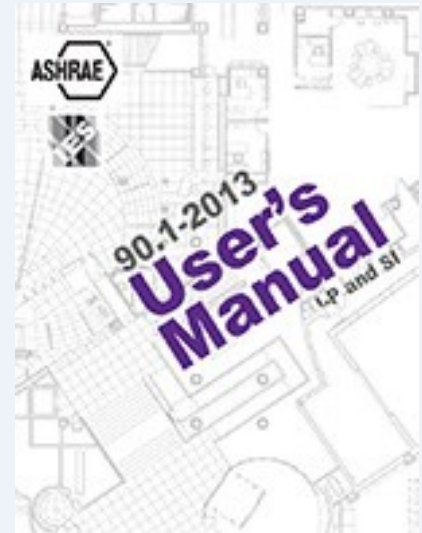
ANSI/ASHRAE/IES Standard 90.1-2013, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, has been a benchmark for commercial building energy codes in the United States and a key basis for codes and standards around the world for more than 35 years. The standard provides the minimum requirements for energy-efficient design of most buildings, except low-rise residential buildings. It is an indispensable reference for engineers and other professionals involved in design of buildings and building systems.

Because the standard is written in mandatory language and therefore not intended as a design specification or an instruction manual, this User's Manual was developed to minimize multiple interpretations of Standard 90.1 that may occur. This Manual helps users of Standard 90.1-2013 understand its principles and requirements and how to comply with them. It is written in clear, direct language, making it understandable to professionals and laymen alike. It also includes measurements and calculations in both I-P and SI units, making it usable with either edition of Standard 90.1.

With sample calculations, application examples, forms to demonstrate compliance, and references to helpful resources and websites, this Manual is intended for architects, engineers, contractors, code officials, and other building professionals, and is also suitable for use in educational programs. In addition, purchasers of this User's Manual can download interactive compliance forms and tools from ASHRAE's website

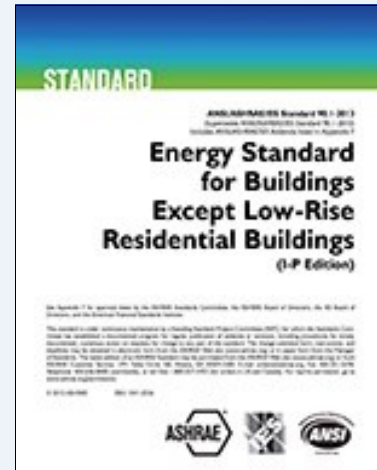
ASHRAE Datacom Series CD 4th Ed.

This CD-ROM presents the full text of all eleven ASHRAE Datacom Series publications and Standard 127-2012 in fully searchable and printable PDF format. The ASHRAE Datacom Series, authored by TC 9.9 Mission Critical Facilities, Technology Spaces and Electronic Equipment, provides a comprehensive treatment of datacom cooling and related subjects.



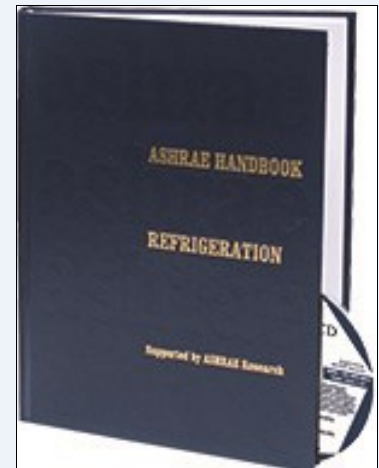
New Standard 90.1 Revised, Expanded

Standard 90.1 offers detailed minimum energy-efficient requirements for the *design and construction of new buildings*. It's an *indispensable* reference for engineers and other professionals involved in the design of buildings and building systems. The 2013 edition has been expanded to include new features, an expanded scope, and more detailed requirements, as well as incorporated changes from more than 100 addenda.



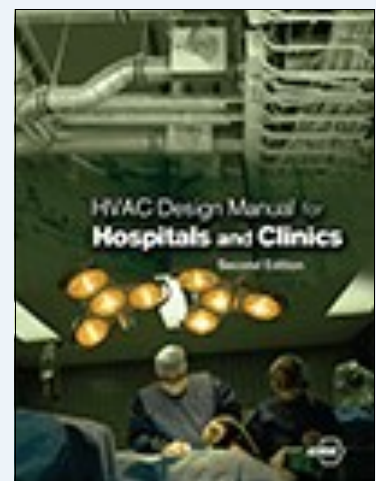
2014 ASHRAE Handbook Now Available

The 2014 ASHRAE Handbook—**R**efrigeration covers the refrigeration equipment and systems for applications other than human comfort. This volume includes data and guidance on cooling, freezing, and storing food; industrial and medical applications of refrigeration; and low-temperature refrigeration; and includes a dual-unit CD



ASHRAE Reference Offers Essential Guidance on Health Care HVAC Design

The new edition of *HVAC Design Manual for Hospitals and Clinics* provides in-depth design recommendations based on best practices from consulting and hospital engineers, with a focus on presenting what's different about health care HVAC.



For details on ordering of the above publications, please log on to

http://www.techstreet.com/ashrae?ashrae_auth_token