



India Chapter

ASHRAE INDIA CHAPTER

BULLETIN

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For the
HVAC&R
Industry.

Presidential Message

My fellow ASHRAE India members,

As we hear and read about the upheaval "Sandy" has brought to New Yorkers, we would like to reach out to our friends in New York with our best wishes for a speedy return to normalcy.



I reproduce here below the message sent by ASHRAE President "ASHRAE Expresses Sympathy and Support for Members Affected by Hurricane Sandy"

In times of trouble and tragedy, our thoughts first turn to the well-being of family and friends. Today, our ASHRAE family expresses the Society's heartfelt sympathy and support to our members who live in the areas that have been devastated by Hurricane Sandy.

As cities and towns begin to rebuild, I'm confident that the dedication and expertise of our members will prove crucial. Our volunteers will serve as leaders in the coming months in ensuring those communities have safe, comfortable and healthy buildings in which your neighbors can live and work.

Please know that ASHRAE has resources in place to help our members as part of its Natural Disaster Relief Action Plan. These resources include various publications that may be helpful, such as the ASHRAE Position Document on

Limiting Indoor Mold and Dampness in Buildings at www.ashrae.org/positiondocuments.

In addition, waiving membership dues and replacing the current Handbook may be available as warranted and upon request.

While we recognize that internet access may be limited, if any member in an area impacted by the storm needs to take advantage of the resources in the Action Plan, please respond to me when you are able, and I will put you in touch with the proper staff and volunteers to help you.

At this most difficult time, may members in those areas gain inner strength from knowing how deeply the ASHRAE community cares for their well being. We will continue to keep them in our thoughts.

Sincerely,

Tom Watson, P.E., Fellow ASHRAE, Life Member
ASHRAE President, 2012-13

Enhancement of Technical Knowledge Dissemination

One of my key Agenda items for year of Presidency was to enhance dissemination of Technical knowledge. To this goal, while we have progressed with our DL programs, as you will read inside about the various DL conducting seminars, we are still a little behind in compiling the specialization matrix of our Knowledge masters within the Chapter. The effort is on. All of you will soon be receiving a form, which we would appreciate your returning duly filled. This would help to form TCs at the Chapter Level.



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Student Membership Promotion

Student membership promotion programme was held on 5th Sept., 2012 at Manav Rachna University, Faridabad. Mr. Rajinder Singh, Chair Student Activities, Mr. U S Jadon, Student Advisor and Mr. Dinesh Rawat, Executive Secretary, ASHRAE India Chapter attended the programme. Mr. Rajinder Singh gave a presentation on 'Scope of Refrigeration & Air-Conditioning in India' to the faculty members and student present. Awareness about ASHRAE membership benefits to student members was created among the present students.



Technical workshop on Automotive Airconditioning

Technical workshop on Automotive Airconditioning was held by Mr. U S Jadon, faculty in Manav Rachna University on 22nd Sept, 2012 at K-43 (Basement), Kailash Colony, New Delhi - 110048. The interactive workshop was attended by 25 delegates.



Mr. Richard H Rooley, ASHRAE Past President and Distinguished Lecturer visits Delhi and Jaipur

ASHRAE India chapter in association with ISHRAE Jaipur Chapter organised a DL event cum membership promotional night on 12th September at Fortune Hotel Bais Godam Circle, Jaipur. Mr. Richard H. Rooley, ASHRAE Past President and Distinguished Lecturer presented a lecture on "Worse Practice of Sustainability". The event was very well attended.

Mr. Richard H. Rooley also visited MNIT, Jaipur and interacted with the students.

ASHRAE India Chapter organised a welcome dinner for Mr. Richard H. Rooley, ASHRAE Past President and Distinguished Lecturer on 10th Sept., 2012 at Maple Room, India Habitat World, Lodhi Road, New Delhi. Members got an opportunity to interact with the visiting dignitary. Mr. Rooley also presented a lecture on 'Leadership and Management for Engineers – how to achieve profit', during the function.



New ASHRAE Training and Workshop

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Data Center Energy Efficiency Saturday, Jan 26 – 8:00 a.m. to 3:00 p.m.	Energy Modeling Best Practices and Applications: HVAC/Thermal Tuesday, Jan 29 – 9:00 a.m. to 4:00 p.m.
Healthcare Facilities: Best Practice Design & Applications Saturday, Jan 26– 8:00 a.m. to 3:00 p.m.	
Half Day Short Courses	
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Air-to-Air Energy Recovery Fundamentals Sunday, Jan 27 – 2:00 p.m. to 5:00 p.m.	Commissioning Process & Guideline 0 Monday, Jan 28 – 2:45 p.m. to 5:45 p.m.
Humidity Control: Applications, Control Levels and Mold Avoidance Sunday, Jan 27 – 2:00 p.m. to 5:00 p.m.	Evaluating the Performance of LEED®-Certified Buildings Monday, Jan 28 – 2:45 p.m. to 5:45 p.m.
Air-to-Air Energy Recovery Applications: Best Practices Monday, Jan 28 – 8:30 a.m. to 11:30 a.m.	Optimization of HVAC Systems & Components: Techniques & Real-World Examples Tuesday, Jan 29 – 9:00 a.m. to 12:00 p.m.
Application of Standard 62.1-2010: Multiple Spaces Equations & Spreadsheet Monday, Jan 28 – 8:30 a.m. to 11:30 a.m.	Energy Management in New and Existing Buildings Tuesday, Jan 29 – 9:00 a.m. to 12:00 p.m.
	Avoiding IAQ Problems Tuesday, Jan 29 – 9:00 a.m. to 12:00 p.m.
Combined Heat & Power: Design through Operations Monday, Jan 28 – 8:30 a.m. to 11:30 a.m.	Designing Toward Net Zero Energy Commercial Buildings Tuesday, Jan 29 – 1:00 p.m. to 4:00 p.m.
Understanding Standard 189.1-2011 for High-Performance Green Buildings Monday, Jan 28 – 2:45 p.m. to 5:45 p.m.	Understanding & Designing Dedicated Outdoor Air Systems Tuesday, Jan 29 – 1:00 p.m. to 4:00 p.m.
Introduction to Ultraviolet Germicidal Irradiation (UVGI) Systems Monday, Jan 28 – 2:45 p.m. to 5:45 p.m.	Laboratory Design: The Basics and Beyond Tuesday, Jan 29 – 1:00 p.m. to 4:00 p.m.

HVAC Design Training

Jan 14-18, 2013 • Jan 30-Feb 1, 2013 (Level I only) • Mar 18-22, 2013 • Jun 3-7, 2013 • Aug 12-16, 2013

HVAC Design: Level I - Essentials

Gain practical skills and knowledge in designing, installing and maintaining HVAC systems that can be put to immediate use. The training provides real-world examples of HVAC systems, including calculations of heating and cooling loads, ventilation and diffuser selection using the newly renovated ASHRAE Headquarters building as a living lab.

Registration is \$1239, \$989 (ASHRAE Member)

Enroll 3 or more participants from the same company and save!



HVAC Design: Level II - Applications

Developed by industry-leading professionals, the workshop provides participants with advanced level information about designing, installing and maintaining HVAC systems that can be put to immediate use. Participants will gain an in-depth look into Standards 55, 62.1, 90.1, and 189.1 and the Advanced Energy Design Guides, as well as a range of other HVAC topics including: HVAC equipment and systems; energy modeling; designing mechanical spaces; designing a chiller plant; and BAS controls.

Registration is \$829, \$679 (ASHRAE Member)

Enroll 3 or more participants from the same company and save!



GREEN CORNER: By: Ashish Jain, Sustainability Senior Consultant, Building Engineering – India, AECOM



ARE GREEN BUILDINGS REALLY COSTLIER?

There has been a widespread perception in the real-estate industry that building green is significantly more expensive than traditional methods of development. The perception that green design is more expensive is pervasive among developers and inhibiting green design is the perception that 'green' costs more and does not have an economically attractive payback.

Determining a precise "green premium" for a given project is often very difficult for several reasons viz.

- ★ Some green buildings being built today are showcase projects that may include additional and sometimes costlier materials and finishes that are unrelated to greenness but that nonetheless are counted toward the green building cost increase.
- ★ The design and construction process for the first green building of a client or design/architectural firm is often characterized by significant learning curve costs, and design schedule problems such as late and costly change orders.
- ★ The relative newness of green technologies and systems can make designers, architects and clients conservative when using them. They may oversize green building systems and not fully integrate them into the building, thereby reducing cost savings and other benefits.
- ★ Similarly, cost estimators may add uncertainty factors for new green technologies they are not familiar with, and these can compound, further inflating cost estimates.

Cost Benefits of Green Building

A detailed research report prepared by Davis Langdon cites that "there is no significant difference in average costs for green buildings as compared to non-green buildings. Many project teams are building green buildings with little or no added cost, and with budgets well within the cost range of non-green buildings with similar programs."

It is worthy to note that by complying with the requirements of Ministry of Environment and Forests (MoEF) and Energy

Conservation Building Code of India, many green building

requirements are automatically met in the projects including the following:

- ★ Incorporate rainwater collection system and/or rainwater harvesting to better manage the storm water runoffs and recharge ground aquifer
- ★ Installation of sewage treatment plant and reuse of treated water
- ★ Installation of Solar Hot water systems to meet a part of total hot water demand
- ★ Efficient building envelope to reduce the heat loads and thereby reducing the HVAC system sizing and in turn achieving energy and cost savings

On contrary to the perception the green costs more, it would be interesting to note that many green building requirements are rather cost saving strategies, for instance

- ★ reusing the construction waste generated at site leads to reducing the cost of purchasing fresh materials for site management
- ★ usage of locally available materials allows reducing the transportation costs associated with procurement of the building materials
- ★ usage of salvaged materials enabling the project to procure cheaper materials
- ★ top soil preservation and its reuse leads to saving cost in buying soil for landscaping
- ★ implementing construction indoor air quality management strategies leads to scheduled interior construction activities and avoids the damage of costlier furnishings materials
- ★ selecting a site that's closer or in the middle of previously developed urban areas. The advantage lies in terms of less site clearing activities and removing less vegetation. Additionally, the site is likely to be closer to public transportation and basic amenities which is also a requirement of green buildings.

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Many green building requirements are either low or no cost strategies including

- ★ Adequate sizing of parking spaces
- ★ Providing preferred parking spaces for alternate fuel vehicles, carpools and differently able people
- ★ Using reflective paints on roof to reflect the heat and reduce surface temperatures
- ★ Using low voc paints for interior spaces to maintain healthy indoor environment
- ★ Providing electric and water meters for specific end-uses
- ★ Using energy star rated appliances
- ★ Installing low flow water fixtures
- ★ Using native/adaptive species for landscape to reduce irrigation water demand
- ★ Using pervious pavers for pathways and parking lots
- ★ Using CFC free refrigerant in air-conditioning systems etc.

Incorporating above mentioned strategies form a considerable part of overall requirements of specified under different green building rating systems. Combining these strategies with conscious passive architectural design strategies viz. optimum building orientation, form and shapes of the buildings enable the projects to not only attain green building certifications but also achieve reasonable operational savings at almost no or negligible cost premium.

Incremental Cost & Paybacks

Additional measures including the installation of onsite renewable energy generation like solar photovoltaics; incorporation of advanced technologies in the design of building's mechanical, electrical and plumbing systems; installation of sensing devices for light, carbon dioxide, carbon monoxide, occupancy etc. though

add to the project's incremental costs however provide operational savings in terms of reduced utility bills and maintenance costs and thereby additional cost spend in implementing those can be recovered within a reasonable period.

Incorporation of these measures also enables the projects achieving higher levels of rating viz. GOLD or PLATINUM that, as a subtle advantage, provides a higher brand image for corporate, owners and other stakeholders.

Considering the economic, social and environmental benefits associated with the green buildings, local regulatory bodies have also started providing supplementary benefits for constructing green buildings. The prime example has been shown by Noida Authority that offers 5% extra buildable FAR to the developer if they construct a building to achieve GOLD rating. Through this, green building movement has been considerably accelerated in this region and the question of incremental cost has almost been vanished due to the simple fact of having increased saleable area. In fact, developers are now expecting increased revenues by constructing green buildings.

In addition, a number of other studies document measurable benefits for enhanced day lighting, natural ventilation, and improved indoor air quality in buildings. Benefits associated with these "green" features include enhanced worker and student productivity, as well as reduced absenteeism and illness. A study at Herman-Miller showed up to a 7% increase in worker productivity following a move to a green, daylight facility.

We continue to see project teams conceiving of sustainable design as a separate feature. This leads to the notion that green design is something that gets added to a project – therefore they must add cost. This tendency is especially true for less experienced teams that are confronting higher levels of certifications (Gold and Platinum). Until design teams understand that green design is not additive, it will be difficult to overcome the notion that green costs more, especially in an era of rapid cost escalation.



ASHISH JAIN

Sustainability Senior Consultant
Building Engineering - India

Key Experience

Ashish is a versatile and skilled professional with 10 years of comprehensive work experience. He is one of the founder members of Spectral Sustainability Group (SSG) and currently working as Sustainability Senior Consultant of Spectral Sustainability Group. He is a certified Project Manager from American Academy of Project Management and one of the first two LEED AP's in India having specialty in the category of Building Operation and Maintenance.

Excellent hands-on experience in developing and improving organizational working processes and methodologies. Adaptable with experience across multiple projects globally. Proven ability to plan, manage, control & deliver the high quality deliverables within the agreed deadlines with a meticulous attention to detail.

As a Sustainability professional, Ashish has a strong professional experience within the field of sustainable building design. He has worked on issues such as passive design strategies and energy efficient design of various building types through advanced BIM techniques. His core expertise is in advising Architects, Engineers and other professionals of the building industry in sustainability and positively influencing their designs in order to reduce energy consumption and the negative impacts on the environment.

Ashish is also Member of the Core Committee for upgradation of IGBC Green Homes Rating System with Indian Green Building Council.

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Technical Workshop by Dr. Apichit Lumlertpongpana, P.E

ASHRAE India Chapter organised a Technical workshop on 21st August, 2012 at Willow, India Habitat Centre, New Delhi. The workshop was held by ASHRAE's distinguished lecturer, Dr. Apichit Lumlertpongpana, P.E. The topics of workshop were Start to End of Turnkey Industrial Refrigeration Plant Design-Built and Manufacturing & Industrial Refrigeration for Food Preservation such as Abattoir, Meat, Poultry, Marine products, Vegetable and Tropical Fruit Processing plant. The workshop was attended by 37 participants. Oventrop were partners for the event.



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